Health Protection Agency

Shooting Up

Infections among injecting drug users in the United Kingdom 2004
An update: October 2005

DHSSPS

National Public Health Service for Wales
Gwasanaeth Iechyd Cyhoeddus Cenedlaethol Cymru

Health Protection Scotland

Imperial College London

Glossary of abbreviations:

anti-HBc	Antibodies to hepatitis B core antigen
anti-HCV	Antibodies to hepatitis C virus
anti-HIV	Antibodies to Human Immunodeficiency Virus
CfI	Centre for Infections
CRDHB	Centre for Research on Drugs and Health Behaviour, Imperial College London
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)
MSSA	Methicillin sensitive *Staphylococcus aureus*
MRSA	Methicillin resistant *Staphylococcus aureus*
NEX	Needle Exchange
NHS	National Health Service
NPHSW	National Public Health Services for Wales
RSIL	Respiratory and Systemic Infection Laboratory
SRL	Staphylococcus Reference Laboratory
UAPMP	Unlinked Anonymous Prevalence Monitoring Programme
UASSG	Unlinked Anonymous Surveys Steering Group
UK	United Kingdom

Cover photograph: *Varieties of narcotics placed together* - Getty Images

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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, Imperial College London

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Preface

This report uses data gathered by surveillance systems operated by the Health Protection Agency Centre for Infections (CfI), Health Protection Scotland (HPS), National Public Health Service for Wales (NPHSW), 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 Imperial College London, 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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Contents

Summary

Key points

1. The prevalence of HIV infection among injecting drug users (IDUs), in England & Wales at least, has probably increased in recent years. Overall HIV infection among IDUs in the UK remains, when compared to other countries, relatively rare with around one in every 65 injectors infected. The prevalence of HIV among IDUs has remained substantially higher in London than the rest of the country with around one in 25 IDUs having HIV in the capital.
2. Overall more than two in five IDUs in the UK have been infected with hepatitis C. In England and Wales hepatitis C transmission among IDUs is high with one in six of those who had started to inject since the beginning of 2002 having become infected. In Glasgow, transmission was higher with one in two IDUs, who had been injecting for less than two years in 2004, having been infected with hepatitis C.
3. Uptake of testing for hepatitis C among IDUs in contact with drug services has increased in recent years. It is estimated, however that around half of those IDUs with hepatitis C in contact with these services still remain unaware of their infection. There will also be substantial numbers of current and former IDUs who are not in contact with services that will be unaware that they have hepatitis C.
4. Those who report injecting crack-cocaine have higher prevalences of HIV and hepatitis C infection. Whilst crack-cocaine use is associated with increased injecting risk behaviours, the underlying factors for the higher levels of blood borne virus infection are not as yet clear, but it is a cause for concern as crack-cocaine use has become more widespread.
5. The continuing occurrence of wound botulism cases indicates that environmental contamination of heroin with bacterial spores remains a problem. Whilst there are continuing problems with injecting site infections associated with methicillin resistant *Staphylococcus aureus* and severe group A streptococcal infection.
6. Transmission of both hepatitis A and B continues among IDUs even though there are effective vaccines. The proportion of IDUs reporting uptake of the hepatitis B vaccine has increased markedly in recent years, with the prison vaccination programmes being a major factor in this increase.
7. Needle and syringe sharing increased in the late 1990s, and since then has been stable with around one in three IDUs reporting this activity in the last month. The sharing of other injecting equipment is more common, whilst few IDUs swab injecting sites prior to injecting.

Priorities for the Commissioning of Services for Drug Users

When commissioning community based services to reduce the harms 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 spread of infections among IDUs and reducing the harm these infections cause through:

1. Continuing the development of high-quality needle-exchange (NEX) services for those unable to stop injecting, 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;
   c. ensuring an appropriate range of NEX services are provided, including provision by drug services, retail pharmacies, and mobile or outreach services.

   Trained drug workers and nurses should staff NEX services.
2. Ensuring NEX, and other services working with IDUs, provide:
   a. information and practical advice on safer injecting practices, avoiding injecting site infections, prevention of blood-borne virus transmission, and on the safe disposal of used injecting equipment.
   b. onsite hepatitis B vaccination services, with follow-up strategies for those who have started vaccination courses in line with national service specifications[7].
   c. easy access to health checks, treatment for abscesses, and diagnostic tests for hepatitis C and HIV.
3. Developing mechanisms, with local providers, to ensure that services that aim to prevent or reduce infections among IDUs, such as NEX, can respond in a timely fashion to evolving patterns of drug use (such as increased crack-cocaine use) and risk.
4. Further improving access to diagnostic testing for hepatitis C – particularly to those who have ceased injecting – in line with strategies such as the '*Hepatitis C Action Plan for England*'[8] and the proposed Hepatitis C Action Plan for Scotland.
5. Developing procedures for offering tetanus vaccine and boosters to those IDUs who may need them and offering hepatitis A vaccination where this is appropriate[9].
6. 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.

* 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.

Introduction

Priorities for Public Health Surveillance Development and Research

In commissioning developments to public health surveillance and research studies priority should be given to:

1. Improving the quality and consistency of the surveillance of viral hepatitis, through the more complete and consistent reporting of laboratory diagnoses, and in particular, improved completeness of the risk factor information.
2. There is a need for research to examine the wider extent of bacterial infections among IDUs as current data on bacterial infections is focused on the more severe cases.
3. The pilot of the enhancement to the UAPMP survey of IDUs has provided useful additional data and the continuation of this enhancement needs to be considered. Establishing a comparable unlinked anonymous survey programme in Scotland is essential to monitor the impact of interventions on the spread of blood-borne viruses, particularly hepatitis C, among IDUs.
4. NEX services are a key service for preventing infections among IDUs, however it is currently not possible to assess the extent of provision. The ongoing national audits of NEX services, which are mapping current provision and service levels, should provide important insights. Needle exchange monitoring systems are however needed to provide ongoing information. The National Treatment Agency for Substance Misuse is committed to initiating a national monitoring system of throughput of injecting equipment in England in 2006/07.
5. The recent increase in infections among IDUs suggests a need to re-examine the nature and range of services provided to 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 is also needed to examine the impact of crack-cocaine injecting on infections among IDUs and into appropriate services responses.

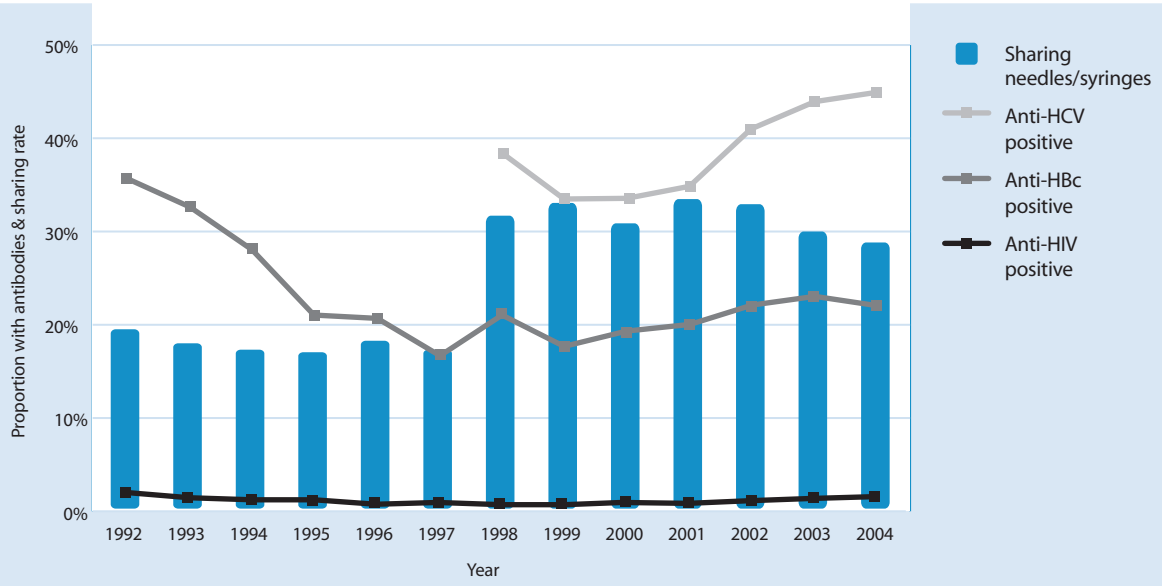
1. Injecting drug users (IDUs) are vulnerable to a diverse range of both bacterial and viral infections, including HIV, hepatitis C, and wound botulism. These can result in high levels of morbidity and mortality. The public health surveillance of infectious diseases, and the associated risk and protective behaviours, among this group are important.
2. The extent of injecting drug use in the United Kingdom (UK) is uncertain. 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 had reduced from around 25,000 in 2000 [10,11], to 19,000 in 2003 [12] (representing 0.9% and 0.7% of those aged 15 to 54 years, respectively). In England there are only estimates for selected cities (for example, 34,000 (1.2%) injectors aged 15 to 44 years in London [13]), but these are believed to be high prevalence areas. There are no recent published studies for Wales or Northern Ireland. It is likely, however, that the overall prevalence has increased [14]. The National Survey of Sexual Attitudes and Lifestyle reported that for those aged 15 to 44 years 1.3% in 2000 had "ever injected" compared to 0.8% in 1990 [15,16]. The number of opiate overdose deaths increased five-fold from 1990 to 2000 and a pilot back-calculation model suggested that in 2000 [17] there may have been between 100,000 and 150,000 current IDUs (0.5% to 0.7% of those aged 15 to 44) [18].
3. In 1998 the national drug strategy was launched - *Tackling Drugs to Build a Better Britain* [19]- and this was updated in 2002 [2]. Scotland [6], Wales [4] and Northern Ireland [5] have adopted country-specific strategies within the national one. There have also been a number of initiatives, such as the establishment of the National Treatment Agency for Substance Misuse and the Models of Care [20] initiative 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 in 2004. It includes data on the more severe bacterial infections affecting IDUs, on relevant markers of HIV and viral hepatitis prevalence and incidence, and on associated risk and protective behaviours.

5. Infections among IDUs are associated with a wide range of behavioural and environmental factors, such as, the sharing of injecting equipment and homelessness. Preventive interventions are designed to target these factors and reduce the harms associated with drug use.

England, Wales & Northern Ireland

6. In 2004 the proportion of current IDUs (those who had injected in the four weeks prior to taking part in the survey) sharing needles and syringes (direct sharing) remained high, with 28% (435 of 1,547) of participants in the Unlinked Anonymous Prevalence Monitoring Programme's (UAPMP) survey of IDUs in contact with drug agencies reporting this (figure 1).
   The proportion reporting direct sharing varied by region and country (figure 2). When data for 2003 and 2004 were combined the highest level was found in Northern Ireland, where 36% (30 of 84) reported direct sharing, whilst in Wales 22% (14 of 63) reported this.
7. Initial results from the UAPMP enhancement pilot (which recruited current IDUs at locations in the South West, North West and North East regions of England during 2003/04) found that 34% (213 of 628) reported direct sharing. This survey also asked participants about the number of times they had used their last needle and 47% had used it more than once (441 of 939). Whilst almost three quarters (72%, 680 of 946) reported ever having tried to clean needles and syringes before reuse.
8. The sharing of items such as filters, spoons and flushing water by participants in the UAPMP agency survey continued at high levels in England with 50% (719 of 1,442) of current injectors reporting this in 2004. High levels were also found in Wales 44% (27 of 62) and in Northern Ireland 52% (44 of 84) (2003 and 2004 data combined). The most commonly shared items in England, Wales and Northern Ireland were mixing containers such as spoons (43%, 701 of 1,627).
9. The UAPMP enhancement pilot asked about injection hygiene and found that only a third of IDUs always swabbed injection sites (33%, 313 of 948). In the last year four fifths (58%, 555 of 952) of the participants

Figure 1
Trends in equipment sharing #, past hepatitis B & C infection, and HIV infection among current Injecting Drug Users* in England & Wales: 1992 to 2004



#Sharing of needle or syringes in the previous four weeks.
*Those who last injected drugs in the four weeks prior to participating in the survey.
Data source: Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug agencies.

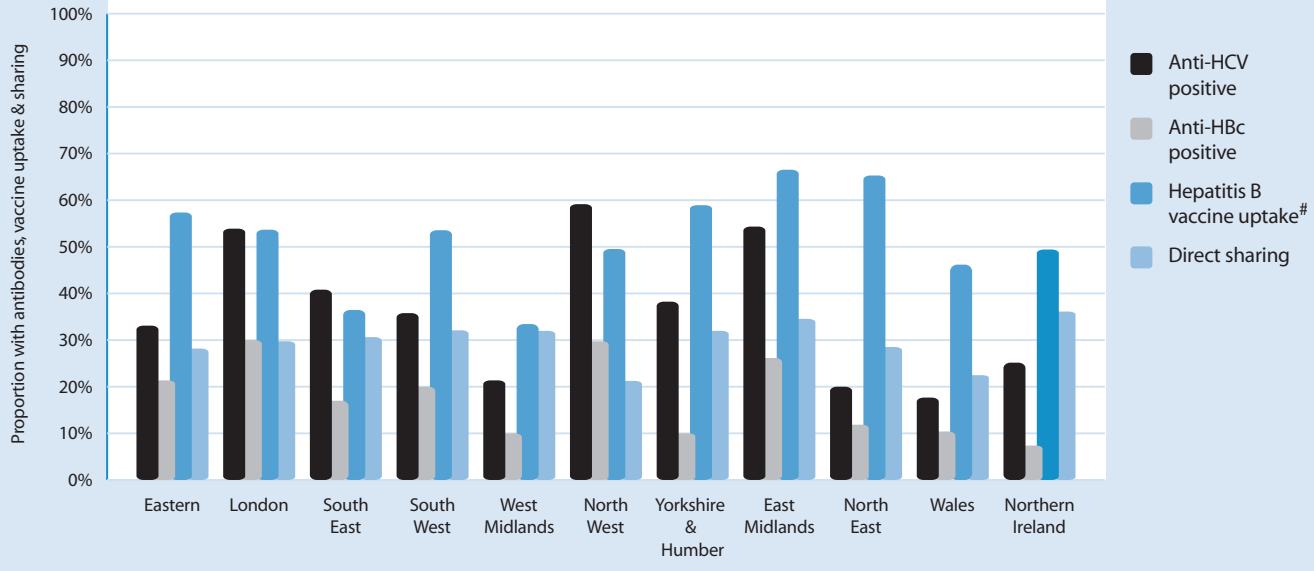
reported having a possible symptom of an injection site infection or reaction (redness, swelling or tenderness), and a third (36%, 344 of 952) reported an abscess, sore, or open wound at an injection site. Almost half of those reporting these had sought medical attention (53%, 341 of 645).

10. The UAPMP enhancement pilot asked participants about the different drugs they had injected. Those that reported injecting crack-cocaine (40%, 382 of 952), either alone or with other drugs, reported higher levels of risk behaviours. Those injecting crack-cocaine were more likely than those who had not to report direct sharing in the last month (42% (102 of 243) compared with 29% (111 of 385)), and to have used their last needle five or more times (15% (57 of 377) compared with 8% (47 of 562)). They were also more likely to have had an abscess, sore, or open wound at an injection site in the past year (45% (172 of 382) compared with 30% (172 of 570) of those not injecting crack-cocaine). Crack-cocaine injectors were also more likely to have been homeless in the last year (67% (310 of 381) compared with 53% (417 of 569) for those not injecting crack-cocaine).

11. In 2004, 88% (2,326 of 2,644) of IDUs participating in the UAPMP agency survey reported that they had, at some time in their injecting career, accessed a needle exchange (NEX) service. In 2004 of those who had first injected in the previous three years, 85% (291 of 341) had accessed a NEX (table 1).

12. The numbers of IDUs participating in the UAPMP agency survey self-reporting* that they had been vaccinated against hepatitis B has more than doubled from 25% (784 of 3,114) in 1998 to 56% (1,468 of 2,631) in 2004 (table 1). Of those who had reported vaccination, just over half self-reported receiving three or more doses of the vaccine (55%, 776 of 1,402). Self-reported vaccination uptake varied by region and country (combining 2003 and 2004 data, figure 2), and in Wales was 46% (44 of 96) and in Northern Ireland 49% (74 of 151). In 2004 of those who had first injected in the previous three years, 51% (173 of 341) reported uptake of the vaccine (figure 3).

Figure 2
Geographic variations in the prevalences of hepatitis C and B, hepatitis B vaccine uptake # and equipment sharing+ among current & former Injecting Drug Users in England, Wales & Northern Ireland (2003 and 2004 data combined)



#Self reports, those receiving one or more vaccine doses.
+Sharing of needles or syringes in the previous four weeks.
Data source: Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug agencies.

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

13. The UAPMP enhancement pilot asked about sources of hepatitis B vaccine doses. Of those participants who received one or more doses of vaccine the most common reported source was prisons 37% (221 of 598). Only 14% (84 of 598) reported receiving a dose from a NEX.

14. The UAPMP enhancement pilot also found that 20% (165 of 831) self-reported receiving hepatitis A vaccination, indicating low uptake.

Scotland

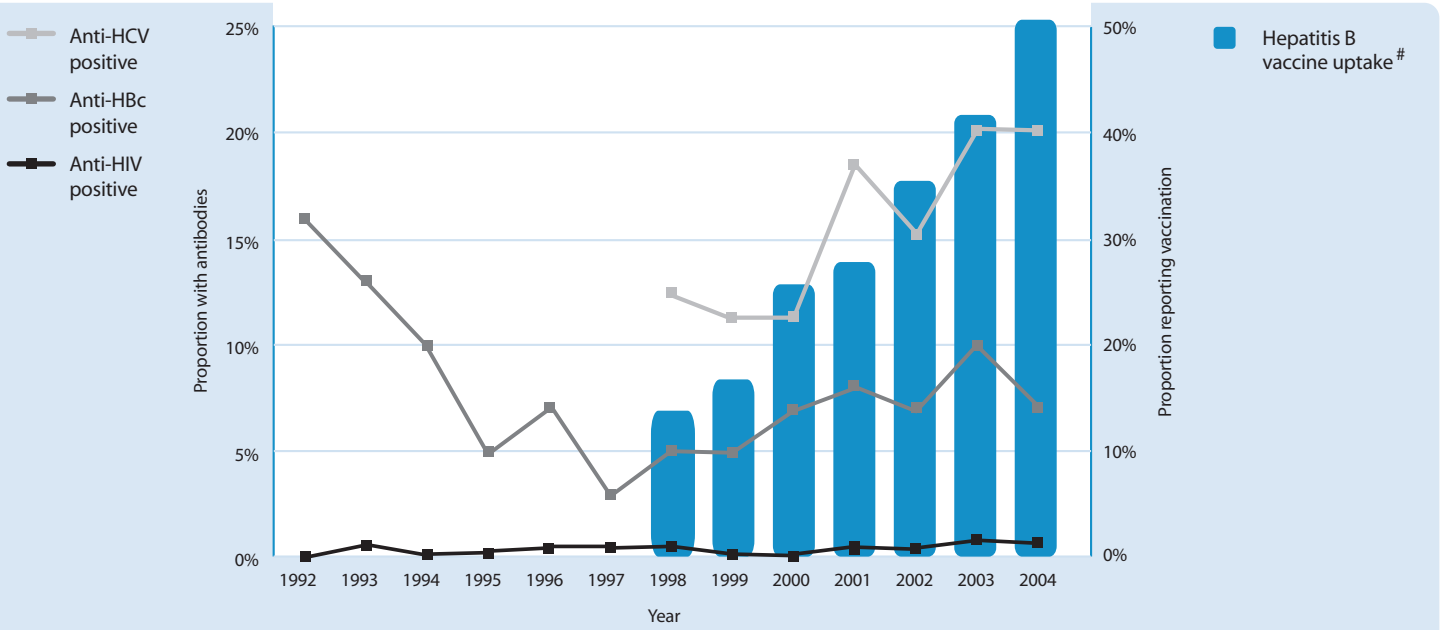
15. In the financial year 2004/05, drug treatment agency reports to the Scottish Drug Misuse Database (SDMD) indicated that 31%† of current IDUs had shared a needle and syringe in the previous month; this compares with rates in the range of 33% to 36% during previous years 1998/99 to 2003/04 (table 1). Figure 4 shows the regional variation in reported direct sharing in the previous month by current IDUs during the financial year 2003/04‡, ranging from 19% in Dumfries and Galloway to 46% in Forth Valley.

16. SDMD recorded data on the sharing of injecting equipment other than needles and syringes for the first time in the financial year 2001/02. The percentage of current IDUs sharing spoons, filters and water in the previous month was 48%† in 2004/05, 49% in 2003/04, 48% in 2002/03 and 50% in 2001/02.

17. Community-wide surveys of IDUs in Glasgow found a significant increase in hepatitis B vaccine uptake among those who had injected for ≤5 years in 2001/02 (52% of 387) compared to 1993, 1994 and January-March 1999 (16% of 432)[21]. During 2004, a further increase in vaccine uptake was detected among IDUs surveyed in Glasgow (65% of 167 individuals who had injected for ≤5 years).

18. In December 2002, Scotland's Lord Advocate introduced new guidelines on the number of needles and syringes dispensed at any one visit to a NEX: a maximum of 20 sets (previously 5 sets) on the first visit; a maximum 60 sets (previously 15 sets) on subsequent visits; and an upper limit of 120 sets (previously 30 sets) for holiday periods. In a study conducted in Glasgow during 2004[22], only 20% of current IDUs were aware of these increases. Nevertheless, significant reductions in both frequency of injecting and rates of needle and syringe sharing among recent initiates to injecting were observed between 2001/02 and 2004[22].

Figure 3
Trends in hepatitis B vaccine uptake#, past hepatitis B & C infection, and HIV infection among recently initiated Injecting Drug Users* in England & Wales: 1992 to 2004



#Self reports, those receiving one or more vaccine doses.
*Those who started injecting drugs in the three years prior to participating in the survey.
Data source: Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug agencies.

† Provisional data.

‡ Health-board data for financial year 2004/2005 were not available at the time of publication.

Bacterial infections

Staphylococcus aureus infections

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

Staphylococcus aureus Infections

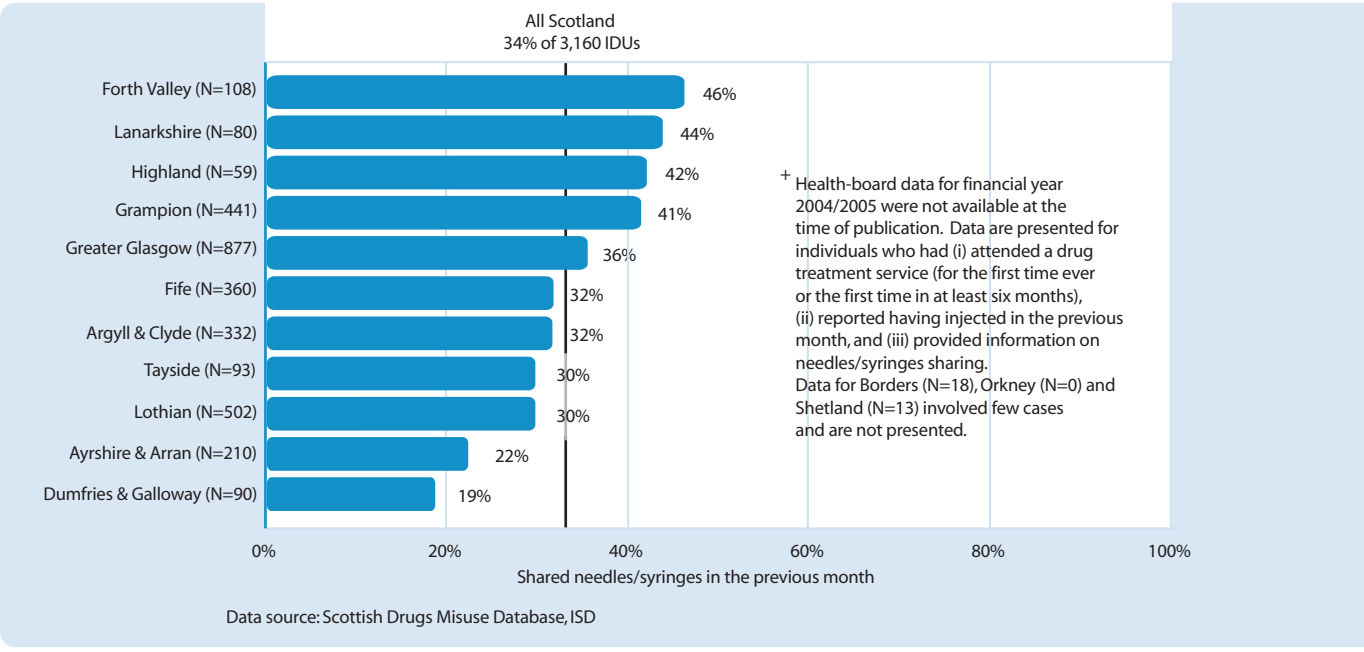
20. *Staphylococcus aureus* is a common pathogen among IDUs, causing infections that vary in severity from minor skin and soft tissue infections through to life-threatening invasive disease such as bacteraemia and endocarditis. Typically, isolates from these individuals are methicillin sensitive S. *aureus*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

21. A number of centres in England and Wales have reported encountering MRSA as a cause of injecting drug use related sepsis in the community [23,24]. The Health Protection Agency's (HPA) Staphylococcus Reference Laboratory (SRL) has received sporadic and small clusters of isolates. Between April 2003 and March 2005 a total of 37 cases of injecting drug use related sepsis due to MRSA have been identified from geographically distinct areas throughout England and Wales. There were 25 males and 12 females; 20 presented with injection site abscesses or skin infection, 11 with bacteraemia, and two with endocarditis (clinical data were not available for four). Cases are continuing to be reported.

22. Detailed analysis of the MRSA isolates has revealed that they represent a community MRSA clone that displays a number of characteristic markers[§]. This clone is distinct from prevalent healthcare-associated epidemic 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 community-associated MRSA strains currently seen in England and Wales [25] and has been reported previously in Australia [26]. It is important to note that this strain does not encode the Panton Valentine Leucocidin (PVL) toxin that has been associated with serious disease. Nevertheless, as with PVL-positive community MRSA strains, this clone can cause skin and soft tissue infection.

23. The mainly sporadic occurrence of the MRSA strains, with their geographical and temporal distribution, does not suggest a drug contamination problem. Nevertheless, more detailed epidemiological information would be required to elucidate possible links. Continued surveillance will further our understanding of the pathogenicity and epidemiology of this unusual clone.

Figure 4
Prevelance of needles/syringes sharing in the previous month among 3,160 injecting drug users in Scotland by health-board area, 2003/2004 financial year[+]



Data source: Scottish Drugs Misuse Database, ISD

[§]The MRSA exhibit a distinctive antibiogram (ciprofloxacin susceptible, but fusidic acid and erythromycin resistant), are lysed by a broad range of bacteriophages, and encode enterotoxins A and H.

Group A Streptococcal Infections

24. Group A streptococci (GAS) can cause skin sepsis, bacteraemia and necrotic infections among IDUs through infection of injecting sites.

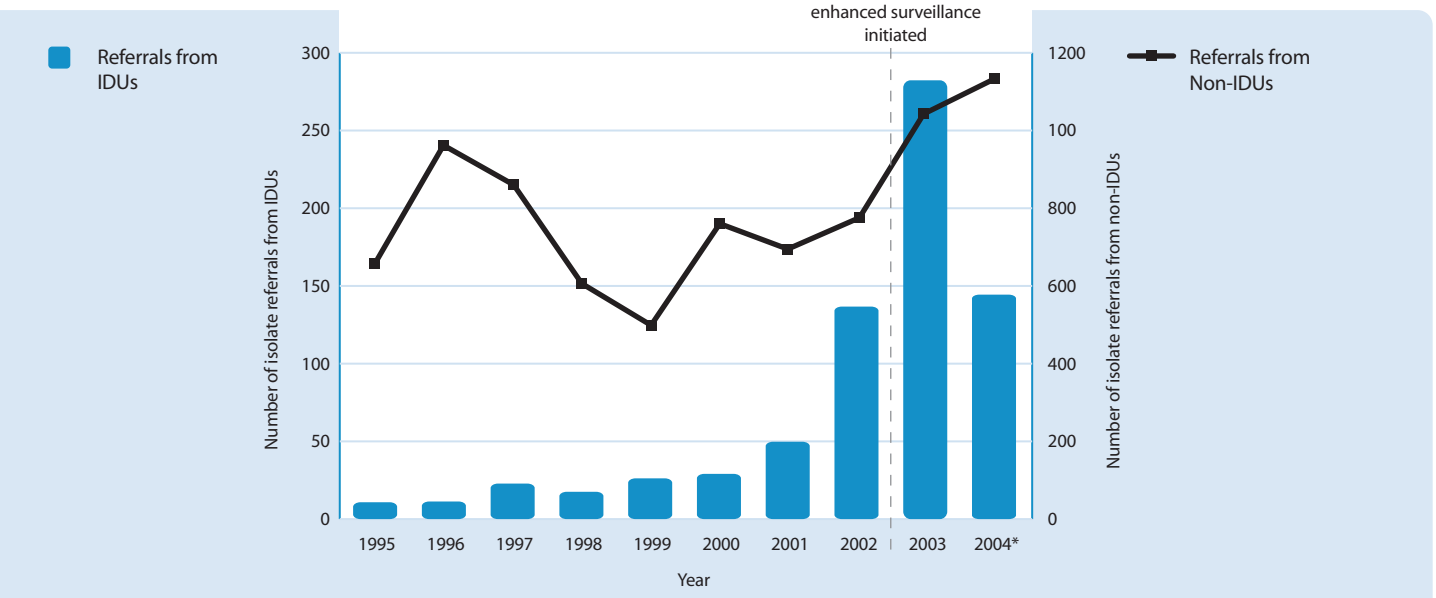
25. Although routine laboratory reports of invasive GAS infections to Centre for Infections (CfI) rarely contain information on risk factors, isolate referrals to the HPA's Respiratory and Systemic Infection Laboratory (RSIL) do contain such information. Monitoring of these has identified a rise in referrals from IDUs, from less than ten per annum in the early to mid-1990s to 81 in the first nine months of 2002[27]. A total of 281 invasive GAS reports in IDUs were received in 2003 and 143 in 2004 (figure 5).

26. 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 has revealed a diverse range of types**. The geographical and temporal dissemination along with the serological typing data do not suggest a drug contamination problem.

27. The reasons for the changes in reports of GAS bacteraemia amongst IDUs are not fully understood. The increases up to 2003 may be due in part to increased awareness and microbiological investigations following the severe unexplained illness amongst IDUs in 2000 probably due to *Clostridium novyi*[28,29]. However, the trends seen by CfI pre-date that outbreak. Furthermore, findings from a cluster in London where risk factor information and routine sampling had been undertaken in a consistent fashion since 1970 argue against increased ascertainment as the sole explanation for the increase[30]. The subsequent decrease in 2004, particularly in specific areas in the north of England where previous increases have been reported[31], may be attributable to the success of targeted healthcare interventions, but this has yet to be confirmed.

28. Data from strep-EURO will help place the current trends observed in the UK in European context and describe any other common risk factors in these cases. Early results from the UK are pointing to injecting drug use being the most important risk factor for severe group A streptococcal infections[32]. Further epidemiological investigation should be undertaken to gain specific risk information of relevance to IDUs, particularly injecting practices.

Figure 5
Invasive isolates of group A streptococci from Injecting Drug User (IDU) and non-IDU patients: United Kingdom 1995 to 2004



*Provisional data.
Data source: Group A streptococci sterile site isolate referrals to the HPA Streptococcus & Diphtheria Reference Unit.

** 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.

Clostridial infections

29. 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 tetanus or 'gas gangrene' with potentially severe or fatal outcomes.

Wound botulism

30. Botulism is an illness caused by botulinum toxin, a poison produced by the bacterium *Clostridium botulinum*. Symptoms of botulism include blurred vision and difficulty in swallowing and speaking, and it can also result in paralysis and death. However there is an effective antitoxin. When it infects wounds, including injecting sites, it causes wound botulism.

31. Prior to 2000 no cases of wound botulism had been reported among IDUs in the UK, by the end of 2004 a total of 89 cases have been reported in the UK and Eire. Overall, 70 (79%) of the cases occurred in England, 13 in Scotland, 2 in Wales and the remaining 4 in Eire. No cases were reported from Northern Ireland. Overall, 40 (45%) of the 89 cases were laboratory confirmed by the detection of botulinum neurotoxin in serum (33 cases), or by the isolation of C.*botulinum* from wounds (25 cases). Based on the neurotoxin detected or the C.*botulinum* isolated from the 40 laboratory confirmed cases, 35 were due to type A, three to type B and two to types A and B.

32. During 2004, 41 cases were reported, and 36 of these were in England. There was some geographical clustering with cases being concentrated in two regions of England: Yorkshire and Humber, and London (figure 6).

Tetanus

33. 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 indications[9]. Potential sources for tetanus infection in IDUs are contaminated drugs, injecting equipment and skin.

34. In the UK tetanus had rarely been reported in IDUs, in contrast to reports from the United States of America where IDUs accounted for around one in six of tetanus cases between 1995 and 2000[33]. Only two of the 175 tetanus cases identified in England and Wales through enhanced surveillance between 1984 and 2000 were known to be IDUs[34]. An outbreak of tetanus among in IDUs occurred in 2003 and continued into 2004 with 23 cases reported in England and Wales[35,36,37] the majority had generalised tetanus and two cases died. There were also three cases in IDUs, one of whom died, notified in Scotland during 2003 and 2004[37]. 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 within the UK suggest that the outbreak may have been due heroin being contaminated with tetanus spores relatively high in the supply chain. This has led to vaccination guidance for IDUs being updated to ensure that their tetanus immunisation status is actively checked[9].

Other Clostridial infections

35. 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*[28,38]. Laboratory work has shown that C.*novyi* spores can easily survive the "cooking-up" process prior to heroin injection[39]. There have been reports of *Clostridium histolyticum* infection among IDUs[40], 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 contamination[41].

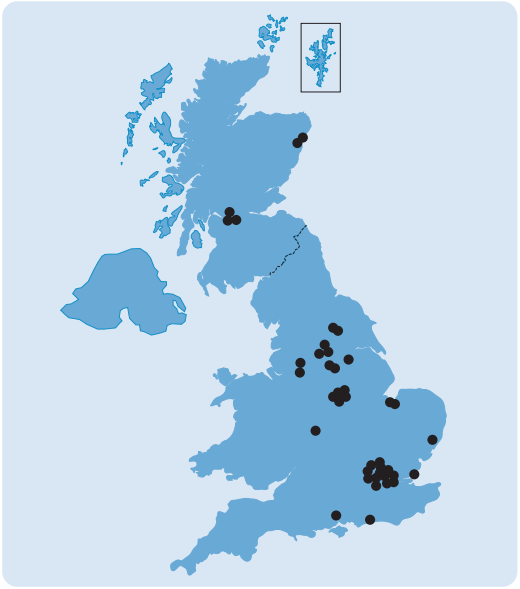


Figure 6
Distribution of reported wound botulism cases among injecting drug users in the United Kingdom: 2004

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	%
		First injected during the last 3 years	%
Prevalence among those having voluntary confidential HIV tests	Glasgow	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 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 *unaware* that they have hepatitis C infection – self reported~	England, Wales & Northern Ireland^	Current & former injectors anti-HCV positive	%
Proportion of those *unaware* 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.
‡ Denotes past or current infection with hepatitis B/C.

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
–	–	228	410	796	1,463	2,116	2,652	4,101	5,294	4,892	4,666	5,547	6,341	7,843
–	–	*53*	*66*	*76*	*80*	*85*	*92*	*90*	*91*	*92*	*96*	*97*	*95*	*95*
–	–	13	25	43	183	411	386	378	429	341	292	351	322	244
–	–	*13*	*100*	*100*	*88*	*84*	*97*	*93*	*96*	*97*	*96*	*99*	*100*	*100*
37	274	381	524	839	1,147	1,256	1,468	2,008	1,961	2,175	1,904	2,325	1,779	-
45	*32*	*57*	*85*	*88*	*85*	*91*	*92*	*95*	*95*	*94*	*94*	*93*	*93*	-
1	13	48	7	43	63	55	54	65	46	55	65	75	83	85
0	*9*	*3*	*50*	*27*	*43*	*53*	*64*	*68*	*78*	*82*	*75*	*89*	*75*	*100*
–	–	–	–	–	–	–	–	*41*	*35*	*35*	*36*	*39*	*42*	*41*
–	–	–	–	–	–	–	–	*12*	*11*	*11*	*18*	*15*	*20*	*20*
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
22	*25*	*18*	*9*	*10*	*9*	*10*	*11*	*20*	*30*	*25*	*19*	*10*	*6*	*6*
37	28	34	22	33	30	31	22	18	24	42	37	67	76	60
33	*31*	*35*	*34*	*29*	*22*	*22*	*18*	*22*	*20*	*21*	*21*	*22*	*22*	*21*
21	*7*	*16*	*13*	*10*	*5*	*7*	*3*	*5*	*5*	*7*	*8*	*7*	*9*	*7*
112	121	108	90	78	101	80	76	59	55	52	53	59	48	50*
28	51	27	52	30	22	32	31	19	16	15	16	7	10	11*
61	71	52	61	59	59	61	63	54	42	47	64	48	69	57*
239	287	228	238	211	216	224	192	161	135	147	151	140	146	133*
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
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*
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*
–	*24*	*20*	*18*	*17*	*17*	*18*	*17*	*32*	*33*	*31*	*33*	*34*	*29*	*28*
–	*35*	*27*	*25*	*25*	*26*	*24*	*25*	*38*	*40*	*31*	*36*	*43*	*37*	*36*
–	*26*	*22*	*23*	*21*	*22*	*21*	*22*	*31*	*31*	*24*	*28*	*33*	*28*	*27*
–	–	–	–	–	–	*28*	*28*	*34*	*34*	*34*	*36*	*32*	*34*	*34*
–	–	–	–	–	–	*58*	*55*	*63*	*63*	*60*	*59*	*60*	*55*	*55*
–	–	–	–	–	–	–	–	–	–	*84*	*86*	*84*	*86*	*85*
–	–	–	–	–	–	–	–	–	–	*49*	*54*	*57*	*63*	*67*
–	–	–	–	–	–	–	–	*14*	*17*	*26*	*28*	*35*	*42*	*51*
–	–	–	–	–	–	–	–	*25*	*29*	*35*	*37*	*43*	*50*	*56*
–	–	–	–	–	–	–	–	–	–	*60*	*59*	*58*	*53*	*49*
–	–	–	–	–	*13*	*29*	*38*	*32*	*16*	*18*	*40*	*21*	*31*	*50*

[¶] Scottish drug misuse database: data are for financial years, for example, 2002 data relates to 2002/03 financial year.

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

*** Northern Ireland data prior to 2003 could not distinguish between acute and chronic hepatitis B infection: in 2004 there were 20 acute cases.

Hepatitis C

36. 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

37. Hepatitis C is currently the most significant infectious disease affecting those who inject drugs. Very high prevalences have been reported among IDUs from many countries. Up to 80% of those acquiring hepatitis C develop chronic infection and are at risk of developing cirrhosis and liver cancer. Uptake of diagnostic testing for hepatitis C by current and former IDUs is increasingly important with the development of new and more effective antiviral therapies. At the Royal College of Physicians of Edinburgh 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*"[42]. Countries within the UK have developed strategies to respond to hepatitis C[8,43,44] and much of the focus of these is on current and former IDUs.

England

38. Up to the end of 2004 laboratories had reported a total of 46,349 diagnoses of hepatitis C infections to 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 7,843 in 2004. This rise most probably reflects the increasing numbers of those at risk being tested, rather than an increase in infection.

39. In 2004, 42% (1,063 of 2,521) of IDUs who took part in the UAPMP agency survey‡ had antibodies to hepatitis C (anti-HCV). This prevalence is similar to that in 2003, 43% (1,132 of 2,615). There were marked regional variations in the prevalence of hepatitis C (figure 2) from 20% (103 of 525) in the North East to 55% (787 of 1,445) in London and 59% (410 of 697) in the North West (data from 2003 and 2004 combined).

40. Amongst current IDUs (those who had injected in the four weeks prior to taking part in the survey) the prevalence had increased from 40% (870 of 2,179) in 1998, the year hepatitis C testing was added to this survey[45], to 45% (695 of 1,531) in 2004.

41. Initial results from the UAPMP enhancement pilot found that 54% (512 of 952) of the participating current IDUs were anti-HCV positive. This is comparable to the UAPMP agency survey after allowing for the differences in test sensitivity and recruitment areas. Those who reported injecting crack-cocaine had a much higher prevalence than those who did not (67% (255 of 382) and 45% (257 of 570) respectively).

42. One of the aims in the '*Hepatitis C Action Plan for England*'[8] is to increase the proportion aware of their infection through improved uptake of voluntary confidential testing. It sets a national standard of good practice that all those attending specialist drug treatment services should be offered hepatitis C testing routinely. Whilst most IDUs who took part in the UAPMP agency survey reported having accepted the offer of a test, in 2004 33% of IDUs (774 of 2,351) reported never having had a voluntary confidential test for hepatitis C, this compares with 51% (1,532 of 2,998) in 2000. Of those who were infected with hepatitis C, 49% (461 of 945) were unaware of their infection, compared to 60% (620 of 1,032) in 2000.

43. One of the '*Hepatitis C Action Plan for England*'[8] outcome measures is the prevalence of hepatitis C in those who began injecting in the last three years; a measure of recent transmission. In 2004 among those in this group who participated in the UAPMP agency survey the prevalence was 20% (66 of 327), which was similar to that between 2001 and 2003 but almost twice the prevalence among this group in 2000 (12%, 89 of 767) and earlier years. A recent increase in transmission is supported by the findings of the cohort study undertaken in London by Centre for Research on Drugs and Health Behaviour (CRDHB) in 2001/03. This study, which followed a group of IDUs with short injecting careers for one year, estimated the incidence to be 42% [46]. As this incidence rate is similar to the prevalence it too suggests that transmission may have recently increased.

‡ Note: Hepatitis C antibody results from the UAPMP agency survey are different from those reported previously. This is due to the retrospective application of a more sensitive cut-off point to the hepatitis C laboratory test used on the oral fluid samples.

Scotland

44. During 2004, it was estimated that approximately 50,000 persons were infected with hepatitis C in Scotland (representing 1% of the population)[44]. Of the 50,000 persons living with hepatitis C, it was estimated that 37,500 (75%) were chronically infected (including 33,000 individuals who had ever injected drugs) and that for between 30% and 40% their infection had been diagnosed[44].

45. Of the 33,000 ever injectors living with chronic hepatitis C in Scotland during 2004, it was estimated that 22,800, 8,400 and 1,800 had mild, moderate and severe (cirrhosis) hepatitis C disease, respectively[47]. UK consensus guidelines recommend that antiviral treatment should be considered for patients who have at least moderate hepatitis C disease according to histological appearances[48]. 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, respectively[47].

46. To the end of 2003‡, a total of 18,109 persons had been diagnosed anti-HCV positive in Scotland. In 2003, 1,779 new diagnoses were reported; this compares with an annual average of 2,075 reports during the period 1998 to 2002 (table 1). Among the 12,166 reports for which risk information was available, 11,010 (90%) were known to have ever injected drugs.

47. In Scotland, residual sera from specimens provided by IDUs, originally tested for HIV, are anonymously tested for anti-HCV so as to monitor trends in hepatitis C prevalence among this group[49]. Table 1 shows that the prevalence of hepatitis C among IDUs in Glasgow reduced significantly 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 the incidence during the 1990s. Since then, the prevalence of hepatitis C among IDUs in Glasgow has risen slightly, but not significantly (in 2002/03, all IDUs: 64%; IDUs aged under 25 years: 43%).

48. In 1999/2000, the prevalence of hepatitis C among IDUs who had undergone a voluntary confidential HIV test throughout Scotland was 44% (946 of 2,141). The prevalence of hepatitis C among these 2,141 IDUs by health-board area ranged from 23% among IDUs in Forth Valley to 62% in Greater Glasgow and 53% in Tayside[10].

49. During 2004, a community-wide survey of 531 current IDUs in Glasgow found the prevalence of hepatitis C was as high as 77%[50]. Among the 55 IDUs who had commenced injecting in the previous two years, the prevalence of hepatitis C was 51%; this prevalence was higher than that detected among equivalent IDUs surveyed in 1999 (24% of 126) and 2001 (43% of 120).

Wales

50. Laboratories in Wales have reported a total of 3,418 diagnoses of hepatitis C infection; including 244 diagnoses in 2004. Over 90% of infections in individuals with a known risk factor were associated with injecting drug use.

51. Combining data from the IDUs who took part in the UAPMP agency survey in 2003 and 2004, 18% (17 of 97) were anti-HCV positive. This was unchanged from the prevalence in 1998/99 (18%, 59 of 325). Of participants in the UAPMP agency survey in 2003/04, 54% (49 of 91) reported not having a voluntary confidential test for hepatitis C. Four fifths (14 of 17) of the IDUs with hepatitis C from Wales participating in the survey were unaware of their infection.

Northern Ireland

52. Laboratories in Northern Ireland have reported a total of 758 diagnoses of hepatitis C infection. In 2004 there were 85 new diagnoses the highest yearly total reported so far.

53. Combining data from the IDUs who took part in the UAPMP agency survey in 2003 and 2004, 25% (38 of 153) were anti-HCV positive. Of the participants, 23% (33 of 145) reported not having a voluntary confidential test for hepatitis C, and one fifth (7 of 34) of the participating IDUs with hepatitis C were unaware of their infection.

‡ Note: Hepatitis C diagnoses data were not available for Scotland up to the end of 2004 at the time of publication.

Hepatitis B

54. Hepatitis B infection is usually acquired in adulthood in the UK, with sexual activity or injecting drug use being the most commonly reported routes of infection. Infection with 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.

55. In England and Wales acute hepatitis B cases are reported to CfI, in 2004 there was a substantial deterioration in the quality of hepatitis B reporting and data for 2004 is unavailable[§§]. However, in 2003 injecting drug use was the main risk group associated with hepatitis B infection, accounting for 34% of individuals with a known risk factor in England, and 27% in Wales.

56. In Scotland and Northern Ireland, reported hepatitis B diagnoses encompass both acute and chronic hepatitis B infections. In Scotland, there were 341 reports in 2004; this annual total is similar to those for the period 2000 to 2003. The proportion of reports that indicated that cases had injected drugs declined from 30% in 1999 – the year in which an outbreak occurred among the IDU population in Aberdeen – to 6% in 2004 (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, 76 in 2003, and in 2004 there were 60 reports. Some of these infections will have been related to injecting drug use.

57. In 2004, 21% (572 of 2,686) of IDUs who took part in the UAPMP agency survey in England, Wales & Northern Ireland had antibody to hepatitis B core antigen (anti-HBc, a marker of previous or current hepatitis B infection); this was similar to the level observed since 1995 (table 1). The prevalence varied by region and country (combining 2003 and 2004 data): in England, the highest prevalence was found in the North West (29%, 205 of 695) and the lowest in the West Midlands (10%, 11 of 112) and Yorkshire & Humber (10%, 24 of 242) regions (figure 2). In Wales and Northern Ireland the prevalences were 10% (10 of 97) and 7% (11 of 153) respectively.

58. The UAPMP enhancement pilot found a comparable prevalence (allowing for differences in test sensitivity and recruitment areas) among IDUs in England outside London in 2003/04 of 32% (305 of 943).
Those participants in UAPMP enhancement pilot survey who reported injecting crack-cocaine had a higher prevalence than those who did not (44% (167 of 377) and 24% (138 of 566) respectively).

59. Prevalence of anti-HBc among those who began injecting in the previous three years is an indicator of relatively recent transmission of hepatitis B virus.
The UAPMP agency survey found that prevalence among this group increased from 3.4% in 1997 to 9.1% in 2003, and in 2004 it was 6.7% (23 of 345) (figure 3).

[§§] 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 had fallen.

Hepatitis A

60. Up to the end of the 1990s, hepatitis A infection in the UK occurred most frequently in gay men and travellers to endemic countries. There is an effective vaccine that is offered to those at risk[9]. There appears to have been a change in the epidemiology of hepatitis A in the early part of the decade with significant numbers of infections occurring in IDUs who may have acquired hepatitis A infection through person-to-person contact with other infected individuals through poor hygiene, via blood through sharing contaminated injected equipment, through sexual activities that increase risk of oro-faecal contamination, or from drugs that have been contaminated with faeces during smuggling.

61. In 2004 the number of laboratory reports of hepatitis A in England and Wales was 627 compared with 984 in 2003 and 1,352 in 2002[51]. Only a small, and declining, proportion of hepatitis A reports contained information on risk factors and in 2004 only 7% (44 of 627) had such information. Travel abroad was the most frequently mentioned risk factor (73%, 32 of 44) in 2004 as opposed to injecting drug use being the most frequently reported risk factor in 2003. 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[52]. The 2004 data suggest that the outbreaks of hepatitis A in IDUs have been waning.

62. 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 transmission[53]. During June to December 2003, there was an increase in the number of notifications of hepatitis A in Ayrshire, Scotland; 13 cases were reported among IDUs[54].

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

63. HTLV-II is endemic among native Amerindian tribes[55], and in Europe it has been documented among IDUs[56]. HTLV-II infection has been associated with neurological disorders[57], an increase risk of bacterial infections, and in those co-infected with HIV an increase risk of neuropathy[58].

64. During 2003 and 2004, 185 individuals were newly diagnosed with HTLV and reported to CfI, of whom seven were known to be HTLV-II-infected and one a HTLV-I&II co-infection[59]. Of the eight individuals diagnosed with HTLV-II infection the probable route of infection was reported for five individuals: one was infected through injecting drug use, two were infected through heterosexual intercourse with an IDU partner, one was infected through heterosexual intercourse with no information on the partner, and one was infected through transfused blood. Where reported (five), four were born in the UK and one in Africa. Four 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.

HIV

65. 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 1980's HIV infection among IDUs has remained relatively uncommon in the UK, probably as a result of prompt community and public health responses.

66. By the end of 2004 there had been a total of 4,239 HIV diagnoses reported in the UK where infection had probably been acquired through injecting drug use. These accounted for 6% of all the diagnoses reported (70,808) in the UK, 4.5% (2,964 of 65,385) of the reported infections in England, 30% (1,222 of 4,067) in Scotland, 4.5% (45 of 1003) in Wales and 2.3% (8 of 353) in Northern Ireland.

67. The annual number of HIV diagnoses among IDUs in recent years has been low and constant (table 1), at an annual average of 122 reports during the period 1998 to 2003. So far, 118 HIV diagnoses, where infection was thought to have been acquired by injecting drug use, have been reported in the UK for 2004 (50 in London, 11 in Scotland, and 57 elsewhere). Of these diagnoses, country of infection was reported for 73 (62%). Where reported, 32 (44%) infections were probably acquired within the UK and 41 (56%) outside of the UK, mostly in Southern Europe. Where country of birth was reported (63), 38% (24) were born within the UK and 62% (39) outside of the UK, mostly in Southern Europe.

68. Among 218 IDUs attending GUM clinics in Scotland during 2004, one HIV infection was detected, yielding a prevalence of 0.5%. This finding is consistent with rates observed in recent years; prevalences ranged from 2.5% to 5.3% during the early to mid-1990s and from 0% to 1.5% during 1998 to 2003. The surveillance of persons undergoing voluntary confidential HIV testing in Scotland found a prevalence of 0.5% among 2,115 IDUs during 2004; this rate compares with prevalences of 1.4% to 3.2% in the early to mid-1990s and 0.5% to 0.8% during the period 1998 to 2003 (table 1).

69. The UAPMP agency survey found a HIV prevalence of 3.9% (25 of 645) among IDUs in London in 2004 and a prevalence of 0.6% (11 of 1,940) elsewhere in England and Wales. This is the highest HIV prevalence seen outside London in this survey since 1993. The UAPMP enhancement pilot found a prevalence of 0.7% (7 of 952) among IDUs in England outside London in 2003/04. The prevalence of HIV infection among IDUs attending services taking part in the UAPMP agency survey in Northern Ireland was 2.0% (3 of 153, combining data for 2003 and 2004).

70. A recent analysis combining data from IDUs participating in the UAPMP agency survey with data from IDUs recruited through a series of community recruited surveys undertaken by CRDHB has permitted a closer examination of trends in HIV infection among current IDUs in England and Wales between 1990 and 2003[60]. HIV prevalence was found to have declined in the early 1990s from 5.6% in 1990 to 0.6% in 1996 and then to have increased in the most recent years to 1.4% in 2003. The prevalence amongst current IDUs participating in the UAPMP agency survey in England in Wales in 2004 was 1.5% (24 of 1,574), this is the highest level seen amongst current IDUs in this survey since 1992 when the prevalence was 2.0% (40 of 2,005) (figure 1). In London the prevalence among current IDUs in 2004 was 4.4% (16 of 361) and elsewhere in England and Wales it was 0.7% (8 of 1,213).

71. In 2004, 37% of IDUs (944 of 2,550) 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, only 50% (15 of 30) were aware of their infection, this is the lowest level of awareness seen in this survey since this was first asked about in 1995 (the average between 1995 and 2003 was 74% (172 of 232)).

72. The community recruited cohort study of recently initiated IDUs undertaken by CRDHB in London estimated that HIV incidence to be 3.4% per annum[46]. As this incidence is similar to the prevalence in London at that time it is suggestive of a recent increase in transmission. Corroboration for this comes from UAPMP agency survey, in which since 2003 the HIV prevalence among those who had begun injecting in the proceeding three years was higher than that found in earlier years: in 2004 it was 0.6% (2 of 345) (figure 3).

73. The cohort study also found evidence that the incidence of HIV among those who reported injecting crack-cocaine during follow-up was around 6%, which is higher than among those who had not injected crack-cocaine. Whilst the UAPMP enhancement pilot found that those who reported injecting crack-cocaine had a higher prevalence than those who did not (1.3% (5 of 382) and 0.4% (2 of 570) respectively).

Comments and Conclusions

74. The recent, and probably ongoing, increase in the prevalence of HIV infection among current IDUs is a cause for concern. Whilst HIV infection still remains comparatively rare among this group overall, with around one in 65 infected, it is elevated among IDUs in London with around one in 25 infected. Although many of the new diagnoses of HIV infection associated with injecting drug use are attributed to infection acquired aboard there is evidence of ongoing transmission within the UK and that this has most probably increased in recent years.

75. The prevalence of hepatitis C infection has also increased with more than two in five current IDUs now having been infected. This, and the incidence studies, indicates that transmission of hepatitis C among IDUs may have increased since the beginning of the current decade. Further insights into the extent of current transmission will come from the ongoing incidence study in Wales.

76. The higher levels of HIV and hepatitis C infections among those who report using crack-cocaine are of particular concern. These associations with crack-cocaine use need further investigation in order to inform effective prevention, for example, whether it is the prevention of crack-cocaine injection or addressing other factors associated with crack-cocaine use, such as homelessness, that is important. Nevertheless, the high levels are worrying as whilst injecting crack-cocaine, usually in combination with opiates would currently appear to be focused in some areas of the UK, there is evidence to suggest that both the use and injection of crack-cocaine are becoming more common[61].

77. The proportion of IDUs in contact with drug services reporting having had a voluntary confidential test for hepatitis C has increased. However, 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 higher proportion of those with hepatitis C who are not in contact with drug services will be unaware of their infection. More worryingly half of IDUs in contact with drug services were unaware of their HIV infection in 2004, twice the level seen in earlier years.

78. More than 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. This improvement in uptake probably reflects improved provision through drug services and, in particular, the prison vaccination programmes. In England around two-fifths of prisons offer a hepatitis B vaccination, and now that Primary Care Trust are responsible for delivering prison health services uptake should continue to rise. 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 Scotland[21]. It is of concern that few IDUs in the UAPMP enhancement survey reported having received vaccination doses through NEX, given that these are likely to be the first drug service that new IDUs will come into contact with.

79. Hepatitis A vaccination is very effectively preventing infection among IDUs[9,62]. Where appropriate, consideration should be given to introducing hepatitis A vaccination in conjunction with existing hepatitis B vaccination programmes. A combined hepatitis A and B vaccine is available and this may be more popular with clients than offering the single vaccines together[62].

80. The reasons for the continuing occurrence of MRSA and elevated level of severe GAS infections are unclear and need further investigation, though they may possibly reflect an increased vulnerability of IDUs to skin sepsis through a change in risk behaviour[63]. This might be associated with the increased use of stimulants, such as crack-cocaine[61], which UAPMP enhancement found to be associated with both risk behaviours and symptoms of injecting site infections. This survey also indicated that overall symptoms of injecting site infections were common among IDUs.

81. The continuing occurrence of wound botulism cases indicates an ongoing problem with environment contamination of heroin with bacterial spores. A similar increase in wound botulism amongst IDUs occurred in California in the mid-1990s[64], and the use of 'black tar' heroin (which differs to that generally used in the UK) was identified as a contributing factor[64]. The increase in reports in the UK may reflect better case recognition and monitoring, although this is unlikely to fully explain the increase seen. The clustering of wound botulism cases in 2004, and an absence of cases in some areas with higher levels of drug injecting (such as Merseyside), supports the possibility of a causal relationship between the cases, possibly the contamination of specific heroin batches. Since a major risk factor is also skin- or muscle-'popping'[38,35,41], injection practices are also likely to be important, and variations in these might explain the absence of outbreaks in other European countries. However, small numbers of cases have been reported in several countries[65,66,67,68]. Healthcare workers should remain alert to the possibility of clostridial infections among IDUs, particularly those who inject subcutaneously or intramuscularly.

82. Considering the recent outbreak of tetanus, health professionals in contact with IDUs should ask about their tetanus immunisation status. IDUs who have not received five doses of tetanus-containing vaccine or are unsure about their vaccination status, should be offered additional vaccination boosters as appropriate. Unvaccinated IDUs should be encouraged to complete a full course of vaccinations[9].

83. In the late 1990s the reported levels of needle and syringe (direct) sharing during the previous month increased[63], and this higher level of sharing has been sustained since then. Data from across the UK suggest that almost one in three IDUs reported direct sharing during the previous month in 2004. Data from the UAPMP enhancement survey also suggest extensive reuse of needles and syringes.

84. Concern has been raised about the coverage of NEX services and that this may have been insufficient[13]. Moreover, there is also evidence of a shift away from agency-based provision towards pharmacy-based services[69]. Whereas agency-based NEX typically provide a range of other services, such as face-to-face advice and vaccination, this is not usually the case with pharmacy-based services. Studies have suggested that IDUs using pharmacy-based NEX rather than agency based ones may be more likely to share[70]. The current lack of a UK wide NEX monitoring system means that it is not possible to assess changes in provision. However, national audits of NEX are underway in England, Scotland and Wales and these will shortly provide important information on current provision.

85. The significant reductions in both frequency of injecting and rates of direct sharing among recent initiates in Glasgow[22] following the introduction of the new 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 investigators[22] concluded that "*it would seem prudent to continue with the current new policy on needle and syringe distribution*" and that further work should be undertaken to encourage IDUs to make use of their entitlement to a greater number of sterile needles and syringes.

86. Improvements are needed to IDUs injection hygiene so as to reduce the growing burden from injecting related infections. Infections, such as hepatitis C, may be reduced by the provision of sterile injecting equipment other than needles and syringes. NEX services should, when appropriate, offer clients ampoules of sterile water for injection, swabs, utensils for preparation (such as spoons), citric acid, and filters in addition to needles and syringes. Those commissioning services should monitor NEX provision to ensure adequate coverage so as to provide sufficient needles and syringes to prevent sharing and that provision is responsive to changing patterns of drug use and risk. They should also consider what other injecting related items should be provided locally.

87. The national drugs strategy[2,19] has since the late 1990s broadened the focus of policy around drug use from a public health perspective to the minimisation of the wider social harms, including crime and anti-social behaviour[71]. This has resulted in a welcome expansion of treatment services with the aim of getting more users off drugs. It also identifies the need for further action to "*improve the health of drug misusers and drive forward action to reduce the risk of death*". Considering the current extent of injecting related infections, services should be commissioned to provide clear information and advice on safer injecting, injecting related infections, and the importance of safe disposal of injecting 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 and reduce their drug use.

88. There is also a need for research projects to develop, 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 safer injection facilities[72,73,74]. There would also appear to be a need for research to explore the role of both crack-cocaine use and injecting, and appropriate service responses.

89. 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. In particular there is a need to improve surveillance of viral hepatitis through the more consistent reporting by laboratories of diagnoses with complete risk factor information. Systems to improve our understanding of the extent of injecting site infections need to be investigated and developed.

90. 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 has provided important additional data, particularly on behaviours and drug use, and its continuation needs to be considered. Particularly as the development and pilot of a companion unlinked anonymous survey in Scotland could in the future provide comprehensive UK-wide data.

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

Notifiable diseases

Tetanus. Laboratories are requested to report all confirmed cases to Cfi in England, to the NPHSW in Wales, to CDSC in Northern Ireland and to HPS in Scotland. Information and advice for clinicians, microbiologists and injecting drug users in England and Wales is available on the HPA website at: http://www.hpa.org.uk/infections/topics_az/tetanus/menu.htm and from HPS for Scotland at http://www.show.scot.nhs.uk/scieh/infectious/tetanus/tetanus.html

In formation on reference laboratory services for tetanus are included in the RSIL User manual at

http://www.hpa.org.uk/srmd/div_rsil/rsiluser.pdf

Hepatitis A. Laboratories are requested to report all confirmed cases to CfI in England, to the NPHSW 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: http://www.hpa.org.uk/infections/topics_az/hepatitis_a/menu.htm

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

Further information can be found for hepatitis B at http://www.hpa.org.uk/infections/topics_az/hepatitis_b/menu.htm and http://www.show.scot.nhs.uk/scieh/infectious/hepatitisb/infhepatitisb.htm

Further information can be found for hepatitis C at http://www.hpa.org.uk/infections/topics_az/hepatitis_c/menu.htm and http://www.show.scot.nhs.uk/scieh/infectious/hepatitisc/infhepatitisc.html

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 the CfI and National Public Health Service for Wales (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: http://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, CfI, 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: http://www.hpa.org.uk/infections/topics_az/strepto/pyogenic/menu_a.htm

In formation on reference laboratory services for GAS are included in the RSIL User manual at

http://www.hpa.org.uk/srmd/div_rsil/rsiluser.pdf

Staphylococcus aureus infections. Information and advice for clinicians is available on the HPA website at: http://www.hpa.org.uk/infections/topics_az/staphylo/menu.htm. Identification and characterisation of MSSA and MRSA from IDUs: Staphylococcus Reference Laboratory, CfI, 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. Home Office, London 2002. ISBN 1-84082-9397

3 Tackling Drugs to Build a Better Britain: The Governments Ten-year Strategy for Tackling Drug Misuse. Stationary Office, London 1998

4 Tackling Substance Misuse in Wales – A Partnership Approach. The National Assembly for Wales, Cardiff, 2000. ISBN 0 7504 2438 9

5 Drug Strategy for Northern Ireland. Northern Ireland Office, Belfast, 1999. http://www.nics.gov.uk/drugs/pubs/strat.pdf

6 Tackling Drugs in Scotland - Action in Partnership. The Scottish Office, Edinburgh 1999. ISBN 0 7480 7293 4 http://www.scotland.gov.uk/library/documents-w7/tdis-00.htm

7 National enhanced service: patients suffereing from drug misuse' at http://www.nhsemployers.org/PayAndConditions/pcc_gmscontract_documentation.asp

8 Hepatitis C Action Plan for England. Department of Health, London, 2004 http://www.dh.gov.uk/assetRoot/04/08/47/13/04084713.pdf

9 Salisbury D, Begg N. Immunisation against infectious disease (The Green Book). London: HMSO, 1996. http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/GreenBook/GreenBookGeneralInformation/fs/en.

10 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

11 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.

12 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.

13 Hickman M, Higgins V, Hope VD, et al. Injecting drug use in Brighton, Liverpool, and London: best estimates of prevalence and coverage of public health indicators. Journal of Epidemiology & Community Health 2004;58:766-771

14 Working Party of the Royal College of Psychiatrists and Royal College of Physicians. Drugs Dilemmas and Choices. London: Gaskell, 2000

15 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

16 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

17 Deaths related to drug poisoning: England and Wales, 1998 –2002. Health Statistics Quarterly 21, Spring 2004. National Statistics, London ISSN 1465 1645

18 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

19 Tackling Drugs to Build a Better Britain: The Governments Ten-year Strategy for Tackling Drug Misuse. Stationery Office, London 1998

20 Models of Care for the treatment of drug misusers. National Treatment Agency for Substance misuse, London 2002. ISBN 0-9544534-0-9

21 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.

22 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.

23 Methicillin resistant Staphylococcus aureus (MRSA) in injecting drug users. CDR Weekly 13(27); July 3rd 2003. http://www.hpa.org.uk/cdr/PDFfiles/2003/cdr2703.pdf

24 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.

25 Community MRSA in England and Wales: definition through strain characterisation. CDR Weekly 15(11); March 17th 2005. http://www.hpa.org.uk/cdr/archives/2005/cdr1105.pdf

26 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.

27 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

28 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

29 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.

30 Group A streptococcal bacteraemia among injecting drug users. CDR Weekly 12(22); 30 May 2002. http://www.hpa.org.uk/cdr/PDFfiles/2002/cdr2202.pdf

31 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

32 Lamagni TL, Neal S, Efstratiou A. Emerging trends in the epidemiology of invasive Group A streptococcal infections in England and Wales. 6th European Congress of Chemotherapy and Infection. 24th Réunion Interdisciplinaire de Chimothèrapie Anti-Infectieuse; Dec. 2004; Paris. Int J Antimicrob Agents 24(Suppl 2):S78

33 CDC. Tetanus surveillance – United States, 1998-2000. MMWR; 52: noSS-3, 2003. http://www.cdc.gov/mmwr/PDF/SS/SS5203.pdf

34 Rushdy AA, White JM, Ramsay ME, Crowcroft NS. Tetanus in England and Wales 1984 – 2000. Epidemiology & Infection 2003; 130:71-7

35 Ongoing outbreak of tetanus in injecting drug users in the UK. Eurosurveillance Weekly 8(4) 22 January 2003 http://www.eurosurveillance.org/ew/2004/040122.asp

36 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

37 Tetanus in England and Wales: 2001 to 2004. CDR Weekly 15(34): 25 August 2005. http://www.hpa.org.uk/cdr/archives/2005/cdr3405.pdf

38 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.

39 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. Anearobe 2003;9:141-144

40 Clostridium histolyticum in injecting drug users. CDR Weekly 13(51) 18 December 2003. http://www.hpa.org.uk/cdr/PDFfiles/2003/cdr5103.pdf

41 Outbreak of Clostridium histolyticum infections in injecting drug users in England and Scotland. Eurosurveillance 2004;9:3;15-16

42 Royal College of Physicians of Edinburgh. Consensus Conference on Hepatitis C. April 2004. http://www.rcpe.ac.uk/esd/consensus/hep_c_04.html

43 A Strategic Framework and Action Plan for the Prevention and Control of Hepatitis C in Northern Ireland 2004-2007. Department of Health, Social Services and Public Safety, Belfast, 2004 www.dhsspsni.gov.uk/publications/2004/HepatitisC_strategic_framework.pdf

44 Scottish Executive. Hepatitis C: proposed action plan in Scotland. Edinburgh, 2005. http://www.scotland.gov.uk/Publications/2005/06/14134528/45311

45 Hope VD, Judd A, Hickman M, Lamagni T, Hunter G et al. Prevalence of hepatitis C virus in current injecting drug users in England and Wales: is harm reduction working? American Journal of Public Health, 2001; 91:38-42

46 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

47 Hutchinson SJ, Bird SM, Goldberg DJ. Modelling the Current and Future Disease Burden of Hepatitis C among Injecting Drug Users in Scotland. Hepatology (in press)

48 Booth JCL, O'Grady J, Neuberger J, on behalf of the Royal College of Physicians of London and the British Society of Gastroenterology. Clinical guidelines on the management of hepatitis C. Gut 2001;49(S1):I1-21.

49 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.

50 Prof. Avril Taylor, University of Paisley, personal communication.

51 HPA. Laboratory reports of hepatitis A in England and Wales: 2004. CDR Weekly 15(34); 25 August 2005. http://www.hpa.org.uk/cdr/archives/2005/cdr3405.pdf

52 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.

53 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.

54 Current notes. Hepatitis A in injecting drug users in Ayrshire. SCIEH Weekly Report 2004; 37 (2004/03): 20.

55 Black FL, Biggar RJ, Neel JV, Maloney EM, Waters DJ. Endemic transmission of HTLV-II among Kayapo Indians of Brazil. AIDS Res Hum Retroviruses 1994;10:1165-1171

56 Krook A & Blomberg J. HTLV-II among injecting drug users in Stockholm. Scandinavian Journal of Infectious Disease 1994;26:129-132

57 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

58 Zehender G, Colasante C, Santambrogio S, De-Maddalena C, Massetto B, Cavalli B, et al. Increased risk of developing peripheral neuropathy in patients coinfected with HIV-1 and HTLV-2. Journal of acquired immune deficiency syndromes 2002;31:440-447

59 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

60 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.

61 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, in press.

62 Crowcroft NS, Hepatitis A virus infections in injecting drug users. Communicable Disease and Public Health 2003;6:82-84

63 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.

64 Werner SB, Passaro D, McGee J, Schechter R, Vugia DJ. Wound botulism in California, 1951-1998: recent epidemic in heroin injectors. Clin Infect Dis. 2000;31:1018-24

65 Kuusi M, Hasseltvedt V, Aavitsland P. Botulism in Norway. Eurosurveillance 1999;4;11-12. http://www.eurosurveillance.org/em/v04n01/0401-225.asp

66 Burnens A. Cases of wound botulism in Switzerland. Eurosurveillance Weekly 4(5) 3 February 2000. http://www.eurosurveillance.org/ew/2000/000203.asp

67 Scheibe F. Wundbotulismus Nach Drogeninjektion (Wound botulism after drug injection) Deutsche Medizinische Wochenschrift 2002;127:199-202

68 Rundervoort RS, van der Ven AJ, Vermeulen C, van Oostenbrugge RJ. The clinical diagnosis 'wound botulism' in an injecting drug addict. Ned Tijdschr Geneeskd. 2003;147:124-7.

69 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

70 Thein HH, Denoe M, van Beek I, Dore G, MacDonald M. Injecting behaviour of injecting drug users at needle and syringe programmes and pharmacies in Australia. International Journal of Drug Policy. 2003;14:425-430

71 Stimson, GV. 'Blair declares war': the unhealthy state of British drug policy. International Journal of Drug Policy 2000;11:259-264

72 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

73 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

74 Hedrich D. European report on drug consumption rooms. EMCDDA 2004. Office for Publications of the European Communities, Luxubourg. ISBN 92-9168-183-0

Data sources

Reports of HIV infection

Voluntary confidential reports of new HIV diagnoses in adults (15+ years) are received from laboratories and clinicians in England, Wales, Northern Ireland and Scotland. Reports are collated on a quarterly basis to form 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 report was phased out. AIDS information is now collected on the clinician HIV report.

Laboratory reports of viral hepatitis & bacterial infection

Clinically significant infections diagnosed in England, Wales and Northern Ireland are routinely reported to CfI and held on a central system known as LabBase2. Most laboratories participate in the system, but reporting is not mandatory. LabBase2 is therefore one of the most comprehensive sources of surveillance data, covering nearly all microbiologically-confirmed infections. Data on MRSA, group A streptococci and hepatitis A, B and C were all extracted from this reporting system. These reports contain demographic and risk information, with the risk factor information not always being provided. In Scotland, HPS collates data on all confirmed HCV antibody tests from the main HCV 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 those 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 saliva sample and complete a behavioural questionnaire. Detailed methods used for the survey have been published previously[1]. 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:
http://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 CfI uses fieldworkers to target recruitment in settings were the UAPMP agency survey is difficult to deploy, such as mobile needle exchanges and through community recruitment. This collects dried blood spot specimens rather than oral fluid samples.

Reference laboratory submissions

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

Isolate referrals to the national reference laboratory RSIL (part of CfI), 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 undertaken by the Anaerobe Reference Laboratory, NPHS Microbiology Cardiff.

strep-EURO

Data from reference laboratory isolates and routine laboratory reports have been combined as part of a two year enhanced surveillance programme. Augmented surveillance data was being sought through questionnaires sent to microbiologists nationally.

Notifications of infectious disease

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 CfI Immunisation Department
http://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 CfI HIV & STI Department, with FSML. Reports are followed up with a surveillance questionnaire.

HTLV

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

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