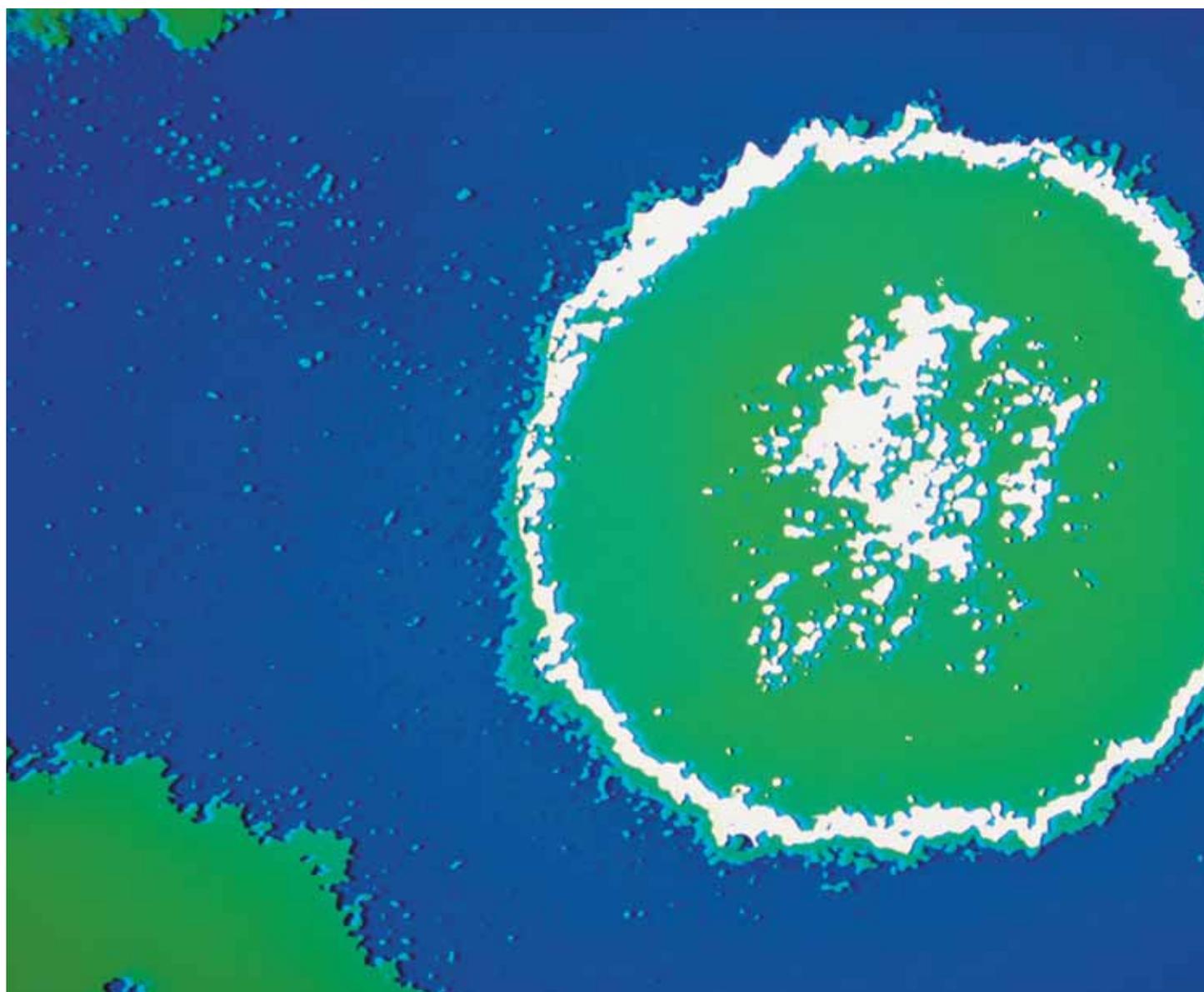


# Shooting Up

Infections among injecting drug users in the United Kingdom 2003  
An update: October 2004



### **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
CDSC	Communicable Disease Surveillance Centre
CRDHB	Centre for Research on Drugs and Health Behaviour, Imperial College London
DHSSPS	Department of Health, Social Services and Public Safety (Northern Ireland)
EARSS	European Antimicrobial Resistance Surveillance System
FSML	Food Safety Microbiology Laboratory
GAS	Group A Streptococcus
HIV	Human Immunodeficiency Virus
HPA	Health Protection Agency
HTLV	Human T-Cell Lymphotropic Virus
IDU	Injecting Drug User
ISD	Information and Statistics Division (Scotland)
MSSA	Methicillin sensitive <i>Staphylococcus aureus</i>
MRSA	Methicillin resistant <i>Staphylococcus aureus</i>
NEX	Needle Exchange
NHS	National Health Service
NPHSW	National Public Health Services for Wales
RSIL	Respiratory and Systemic Infection Laboratory
SCIEH	Scottish Centre for Infection and Environmental Health
SRL	Staphylococcus Reference Laboratory
SRMD	Specialist & Reference Microbiology Division
UAPMP	Unlinked Anonymous Prevalence Monitoring Programme
UASSG	Unlinked Anonymous Surveys Steering Group
UK	United Kingdom

# Shooting Up

Infections among injecting drug users in the United Kingdom 2003

Health Protection Agency's Communicable Disease Surveillance Centre & Specialist and Reference Microbiology Division

Scottish Centre for Infection and Environmental Health

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's Communicable Disease Surveillance Centre (CDSC) and Specialist and Reference Microbiology Division (SRMD), the Scottish Centre for Infection and Environmental Health (SCIEH), National Public Health Service for Wales (NPHSW), CDSC Northern Ireland, and other collaborating institutions. Data from research studies undertaken by these organisations with the Centre for Research on Drugs and Health Behaviour (CRDHB) at Imperial College London have also been included.

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# Summary

## Key points

1. Overall more than two in five injecting drug users (IDUs) have been infected with hepatitis C, and the incidence among recent initiates in both Glasgow and London has been estimated to be high. In England and Wales hepatitis C transmission among IDUs may have increased recently, with one in six of those who had started to inject since the beginning of 2001 having become infected.
2. There had been around 60,000 reported laboratory diagnoses of hepatitis C in the United Kingdom (UK) by the end of 2003. The majority of these reports are associated with injecting drug use. Although uptake of testing for hepatitis C among IDUs has increased in recent years it is estimated that around half of IDUs with hepatitis C still remain unaware of their infection.
3. In recent years there has been a growing problem with injecting site infections associated with methicillin resistant *Staphylococcus aureus* and severe group A streptococcal infection among IDUs.
4. The recent outbreak of tetanus and the continuing occurrence of other clostridia infections among IDUs, such as wound botulism, indicate that environmental contamination of heroin, with the spores from these bacteria, remains a problem.
5. Transmission of both hepatitis A and B continues among IDUs even though there are effective vaccines. Although the proportion of IDUs vaccinated against hepatitis B has increased in recent years many still remain unvaccinated. In Scotland the rise in vaccine uptake has followed the implementation of universal vaccination to all prisoners in Scotland.
6. Overall HIV infection remains rare among IDUs in the UK, however there is evidence of ongoing and possibly increased transmission. The prevalence of HIV among IDUs has remained substantially higher in London than the rest of the country.
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 wash their hands or swab injecting sites prior to injecting.

## Priorities for the Commissioning of Services for Drug Users

When commissioning services to reduce the harms associated with problem drug use, in support of the aims of the Government's *Updated Drugs Strategy 2002*<sup>2</sup>, primary care bodies\* and Drug Action Teams should give priority to:

1. Developing high-quality needle-exchange (NEX) services for those unable to stop injecting, with sufficient coverage to prevent the sharing of needles and syringes. All NEX services should also provide:
  - a. information and advice on safer injecting practices, avoiding injecting site infections, the prevention of blood-borne virus transmission, and on the safe disposal of used equipment;
  - b. injecting related equipment other than needles and syringes; and
  - c. easy access to other on-site services such as vaccinations, health checks, and diagnostic tests.These services are likely to be most effectively provided through fixed site, mobile and outreach exchanges staffed by trained drug workers and nurses.
2. Ensuring hepatitis B vaccination services are easily accessible to IDUs, and the development of follow-up strategies for those who have started vaccination courses.
3. Examining the incorporation of hepatitis A vaccination into community and prison vaccination programmes for IDUs, and developing procedures for the provision of tetanus vaccine and boosters to those IDUs who may need them.
4. Further improving access to diagnostic testing for hepatitis C in line with the strategies such as the *Hepatitis C Action Plan for England*<sup>3</sup>.
5. Ensuring easy access to treatment and support services for all those who wish to cease injecting, or to 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.



## 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 of the surveillance of viral hepatitis, through the more complete reporting of laboratory diagnoses, and in particular, improved completeness of risk factor information provided.
2. Data on bacterial infections is focused on the more severe cases. There is a need for research and development work to examine the wider extent of bacterial infections among IDUs. Consideration also needs to be given to improving surveillance, for example through the development of a sentinel surveillance system for bacterial infections among IDUs. Results from the enhanced surveillance of group A streptococcal infections should provide some useful insights for further epidemiological investigation.
3. The pilot of the enhancement to the UAPMP survey of IDUs is providing useful additional data and this enhancement needs to be continued. 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 so as to provide national data.
4. NEX services are a key service for preventing infections among IDUs. As there is currently no national surveillance of these services it is not possible to assess the extent of, or changes in, provision and uptake of these. Consideration needs to be given to establishing a UK wide system for monitoring the form and extent of NEX provision. Such a system has been proposed for England<sup>3</sup>.
5. The recent growth 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 service models, which aim to encourage and support hygienic injection practice, are needed. Such research projects should draw upon the lessons learnt from the approaches developed in other countries, but not adopted within the UK, such as safer injection facilities.

# Introduction

1. Injecting drug users (IDUs) are vulnerable to a diverse range of infectious diseases, including viral infections (such as hepatitis C and HIV) and bacterial infections (such as tetanus and *Staphylococcus aureus*). These can result in considerable levels of morbidity and mortality. The public health surveillance of infectious diseases among this group, and the associated risk and protective behaviours, is important.
2. The extent of injecting drug use in the United Kingdom (UK) is uncertain. A recent national estimate for Scotland indicated around 23,000 IDUs throughout Scotland in 2000<sup>4</sup> giving a prevalence of 0.8% among those aged 15 to 54 years. In England there are only estimates for selected cities (for example, from 2.0% of those aged 15 to 44 years in Brighton to 1.2% in London<sup>5</sup>), but these are believed to be high prevalence areas. There are no recent published studies for Wales and Northern Ireland. It is likely, however, that the prevalence has increased<sup>6</sup>. 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<sup>7,8</sup>. The number of opiate overdose deaths increased five-fold from 1990 to 2000<sup>9</sup> and a pilot back-calculation model suggest that in 2000 there may have been between 100,000 and 150,000 current IDUs (0.5% to 0.7% of those aged 15 to 44)<sup>10</sup>.
3. In 1998 the national drug strategy was launched – Tackling Drugs to Build a Better Britain<sup>11</sup> – and this was updated in 2002<sup>2</sup>. Scotland<sup>12</sup>, Wales<sup>13</sup> and Northern Ireland<sup>14</sup> 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<sup>15</sup> and the Models of Care<sup>16</sup> initiative in England, to support the development of services to meet the strategies aims.
4. This report presents available data on the extent of infections among IDUs in the UK in 2003. It includes data on the more severe bacterial infections affecting IDUs, as well as bringing together information on relevant markers of HIV and viral hepatitis prevalence and incidence, and associated risk and protective behaviours.

# Viral Infections

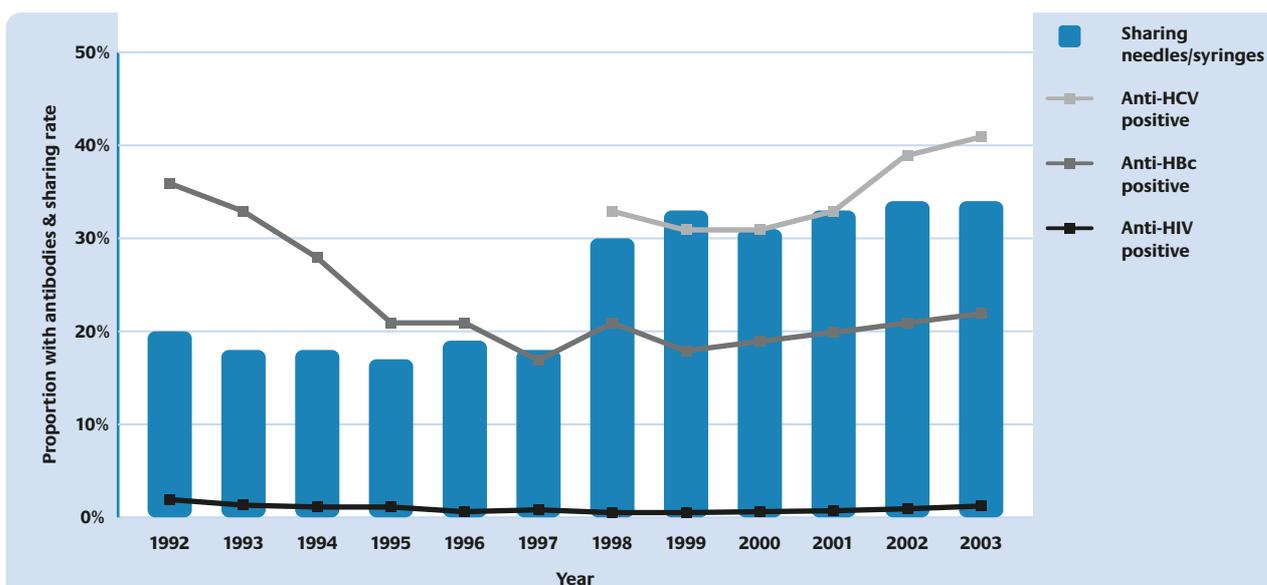
## Hepatitis C

5. 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. Around 80% of those acquiring hepatitis C develop chronic infection and are at risk of developing cirrhosis and liver cancer. Until recently treatment options were limited. With the development of new and more effective antiviral therapies, uptake of diagnostic testing for hepatitis C by IDUs is increasingly important. 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”*<sup>17</sup>. Countries within the UK have developed strategies to respond to hepatitis C<sup>3,18</sup> and much of the focus of these is on current and former IDUs.

### England

6. Up to the end of 2003 laboratories had reported a total of 38,352 diagnoses of hepatitis C infections to Communicable Disease Surveillance Centre (CDSC) 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 diagnostic tests for hepatitis C became available in the early 1990s, from under 1,000 per annum prior to 1994 to 6,187 in 2003. This rise most probably reflects the increasing numbers of those at risk being tested, rather than an increase in infection.
7. In 2003, 41% (1,081 of 2,615) of IDUs who took part in the Unlinked Anonymous Prevalence Monitoring Programme’s (UAPMP) survey of current and former IDUs in contact with drug agencies had antibodies to hepatitis C. This prevalence is higher than in 1998, the year hepatitis C testing was added to this survey, when the prevalence was 36% (1,151 of 3,188)<sup>19</sup>. This increase is also seen when only current IDUs (those who had injected in the four weeks prior to taking part in the survey) were considered: from 34% (741 of 2,179) in 1998 to 42% (704 of 1,672) in 2003 (figure 1).

Figure 1  
Trends in equipment sharing<sup>†</sup>, past hepatitis B & C infection, and HIV infection among current Injecting Drug Users\* in England and Wales: 1992 to 2003



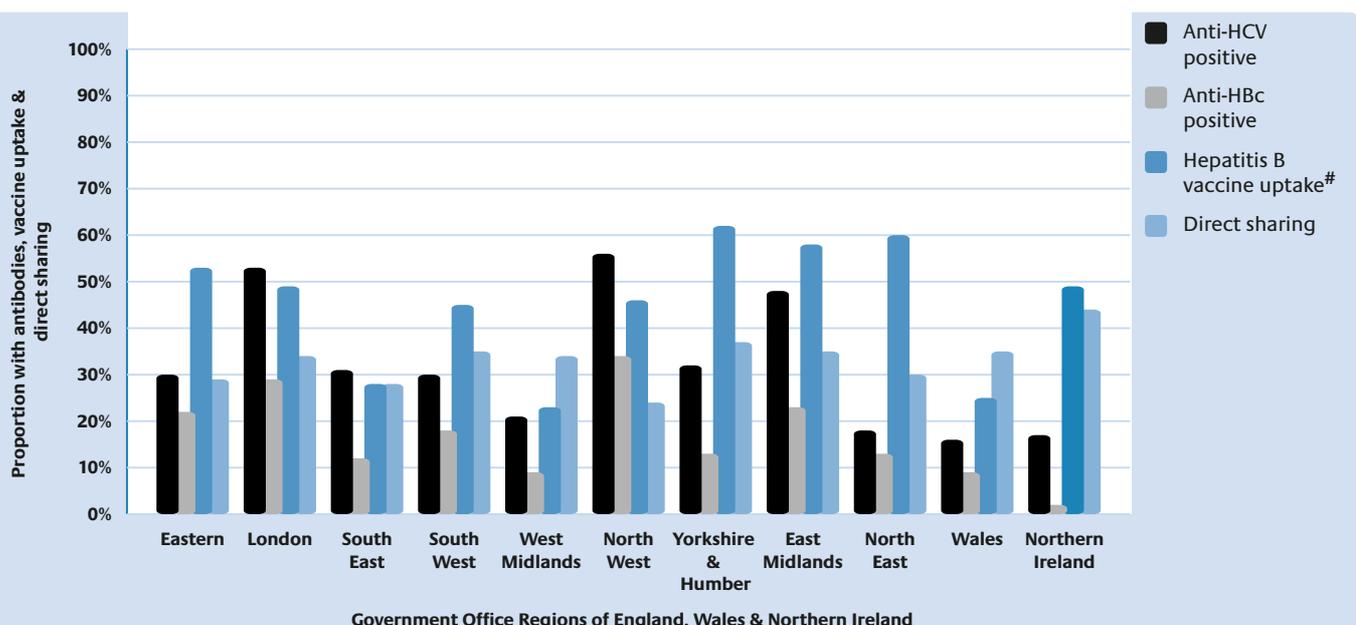
\*Those who last injected drugs in the four weeks prior to participating in the survey.

<sup>†</sup>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.

8. There were marked regional variations in the prevalence of hepatitis C (figure 2) from 18% (86 of 477) in the North East to 53% (750 of 1,408) in London and 56% (551 of 982) in the North West (UAPMP data from 2002 and 2003 combined).
9. One of the aims in the *'Hepatitis C Action Plan for England'*<sup>3</sup> 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. In 2003, 37% of IDUs (897 of 2,449) who took part in the UAPMP survey reported **not** 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, 53% (511 of 972) were unaware of their infection, compared to 60% (569 of 956) in 2000.
10. One of the *Hepatitis C Action Plan for England*<sup>3</sup> outcome measures is the prevalence of hepatitis C in those who began injecting in the last three years; a measure of recent transmission. In 2003 among those in this group who participated in the UAPMP survey the prevalence was 18% (67 of 365), twice the prevalence among this group in 2000 (9%, 66 of 767) and earlier years (figure 3).
11. In 2003 for the first time the UAPMP survey of IDUs asked participants about their country of birth. The prevalence of hepatitis C infection was found to be higher among those born in Portugal 81% (46 of 57) and Italy 71% (20 of 28), when compared to those born in the UK 38% (816 of 2,121), Republic of Ireland 46% (12 of 26), and elsewhere 43% (37 of 86).
12. Preliminary results from the first sites in the pilot enhancement of the UAPMP survey in the South West region found 60% (240 of 402) had antibodies to hepatitis C. This compares to four in ten of those from this region in the UAPMP agency survey (result adjusted for different test sensitivity).
13. A cohort study of IDUs has recently been undertaken in London by Centre for Research on Drugs and Health Behaviour, Imperial College London (CRDHB) to estimate the incidence of hepatitis C infection. This study, which followed a group of IDUs with short injecting careers for one year, has estimated incidence to be high and suggests that transmission may have increased recently<sup>20</sup>.

Figure 2  
**Geographic variations in the prevalences of hepatitis C and B, hepatitis B vaccine uptake<sup>#</sup> and equipment sharing<sup>†</sup> among current & former Injecting Drug Users in England, Wales & Northern Ireland (2002 and 2003 data combined)**



<sup>#</sup>Self reports, those receiving one or more vaccine doses.

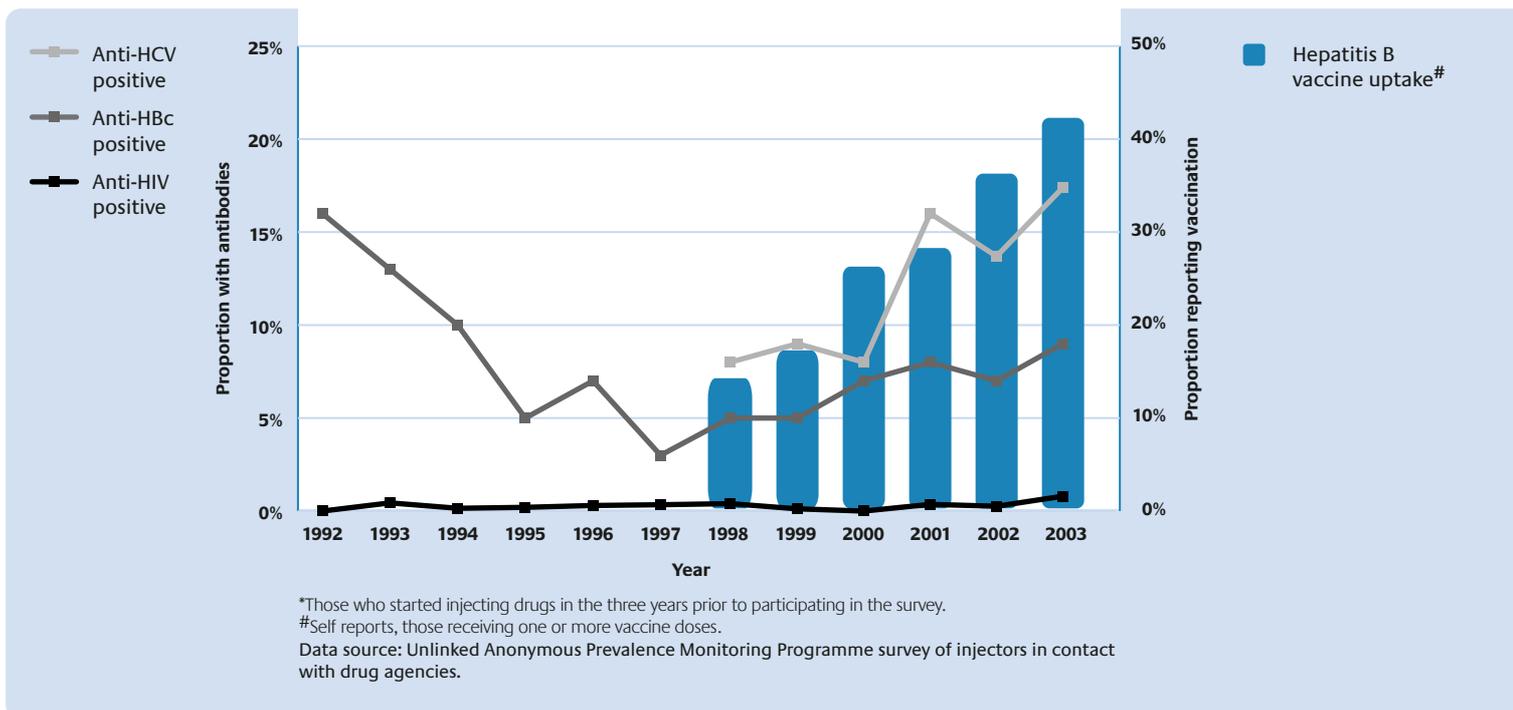
<sup>†</sup>Sharing of needles or syringes in the previous four weeks.

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

## Scotland

14. To December 2003, laboratories had reported to Scottish Centre for Infection and Environmental Health (SCIEH) 18,109 diagnoses of hepatitis C infection. In 2003, 1,779 cases 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.
15. The 18,109 diagnoses in Scotland to December 2003 corresponds to a rate of 44 per 10,000 adults; this contrasts with a rate of 9 per 10,000 in England. This difference may be due to a higher prevalence of hepatitis C (diagnosed and undiagnosed) in Scotland than in England, a higher rate of hepatitis C antibody testing in Scotland than in England, greater under-reporting of hepatitis C diagnoses by laboratories in England than in Scotland, or a combination of all three.
16. In Scotland, residual sera from specimens provided by IDUs, originally tested for HIV, are anonymously tested for hepatitis C antibodies so that trends in the prevalence of hepatitis C among this population can be monitored. 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 of hepatitis C 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%).
17. 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). Figure 4 shows the prevalence of hepatitis C among these 2,141 IDUs by health-board area, ranging from the lowest at 23% among IDUs in Forth Valley to the highest prevalences in Greater Glasgow (62%) and Tayside (53%)<sup>4</sup>.
18. A community-wide behavioural and hepatitis C prevalence survey of recent initiates, undertaken in Glasgow during 2001 and 2002, revealed an estimated incidence of 29 per 100 years of injecting<sup>21</sup>.

Figure 3  
Trends in hepatitis B vaccine uptake<sup>#</sup>, past hepatitis B & C infection, and HIV infection among recently initiated Injecting Drug Users\* in England & Wales: 1992 to 2003



## Wales

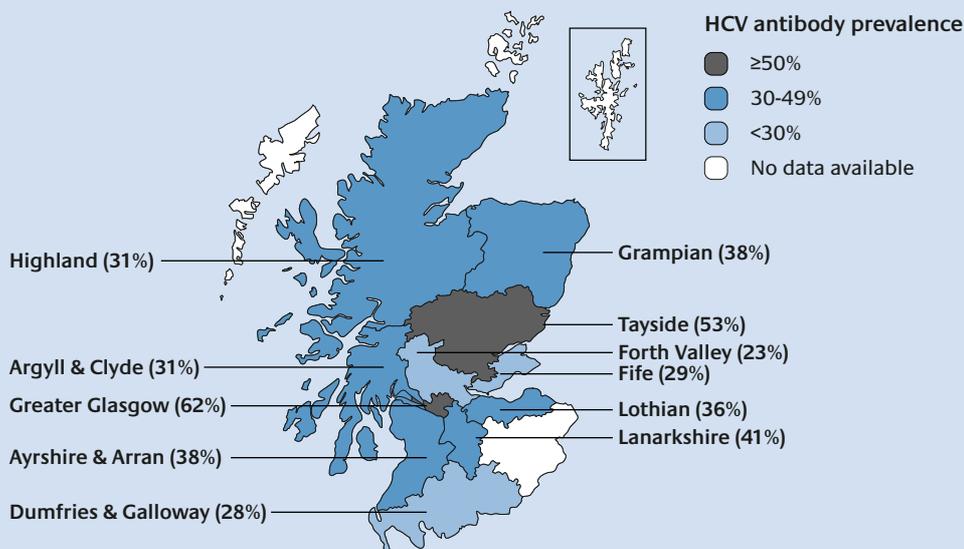
19. Laboratories in Wales have reported a total of 3,160 diagnoses of hepatitis C infection; including 308 diagnoses reported in 2003. Over 90% of infections in individuals with a known risk factor were associated with injecting drug use.
20. Combining data from the IDUs who took part in the UAPMP survey in 2002 and 2003, 16% (42 of 260) had antibodies to hepatitis C. This was unchanged from the prevalence in 1998/99 (18%, 59 of 325)
21. Of participants in the UAPMP survey in 2002/03, 60% (120 of 201) reported not having a voluntary confidential test for hepatitis C. Two thirds (21 of 32) of the IDUs with hepatitis C from Wales participating in the survey were unaware of their infection.

23. Combining data from the IDUs who took part in the UAPMP survey in 2002 and 2003, 17% (22 of 130) had antibodies to hepatitis C. Of the participants, 21% (26 of 125) reported not having a voluntary confidential test for hepatitis C. One third (6 of 17) of the IDUs with hepatitis C from Northern Ireland participating in the survey were unaware of their infection.

## Northern Ireland

22. Laboratories in Northern Ireland have reported a total of 673 diagnoses of hepatitis C infection. In 2003 there were 83 new diagnoses the highest yearly total reported so far. Fifty-three percent (118 of 222) of infections in individuals with a known risk factor were associated with injecting drug use.

Figure 4  
**Hepatitis C antibody prevalence among 2,141  
 Injecting Drug Users in Scotland by health-board  
 area, 1999-2000**



Data source: Unlinked anonymous anti-HCV testing of specimens taken for voluntary confidential (named) anti-HIV testing.

24. 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.
25. In England and Wales acute hepatitis B cases are reported to CDSC (table 1). The total number of laboratory reports of acute hepatitis B infection in England was 644 in 2003. Transmission of hepatitis B is continuing among IDUs who, in 2003, remained the main risk group associated with hepatitis B infection, accounting for 34% of individuals with a known risk factor. There were a total of 25 reports for 2003 in Wales, 27% of those with a known risk factor were associated with injecting drug use.
26. In Scotland and Northern Ireland, reported hepatitis B diagnoses encompass both acute and chronic hepatitis B infections. In Scotland, there were 342 reports in 2003; this total is similar to those reported annually since 2000. The proportion of the total number of reports which indicated that cases had injected drugs declined from 30% in 1999 – the year in which an outbreak of infection among the IDU population in Aberdeen occurred – to 6% in 2003. 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, and in 2003 the total number of reports was 76. Some of these infections will have been related to injecting drug use.
27. In 2003, 22% (600 of 2,697) of IDUs who took part in the UAPMP survey in England, Wales & Northern Ireland had evidence of previous or current hepatitis B infection; this was similar to the level observed in 2002 (table 1). The prevalence of antibody to hepatitis B core antigen (anti-HBc) varied by region and country when data for 2001 and 2002 were combined. In England, the highest prevalence was in the North West (34%, 330 of 980) and the lowest prevalence was found in the West Midlands (9%, 16 of 185) (figure 2). In Wales and Northern Ireland the prevalences were also low at 8% (22 of 260) and 2% (3 of 130) respectively.
28. 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 survey found that prevalence among this group increased from 3.4% in 1997 to 7.9% in 2001, and in 2003 it was 9.1% (35 of 386) (figure 3).

Table 1

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

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

\* Provisional, reports are subject to reporting delay.

<sup>#</sup> Data on exposure is often incomplete or missing.<sup>^</sup> Includes Northern Ireland from 2002.<sup>~</sup> Unlinked Anonymous Prevalence Monitoring Programme survey of injectors in contact with drug services.<sup>‡</sup> Denotes past or current infection with hepatitis B/C.

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
-	-	228	410	796	1,463	2,116	2,652	4,101	5,294	4,892	4,666	5,547	6,187
-	-	53	66	76	80	85	92	90	91	92	96	97	94
-	-	13	25	43	183	411	386	378	429	341	292	351	308
-	-	13	100	100	88	84	97	93	96	97	96	99	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
0	9	3	50	27	43	53	64	68	78	82	75	89	75
-	-	-	-	-	-	-	-	35	32	33	35	38	41
-	-	-	-	-	-	-	-	8	9	8	16	14	17
89	-	-	-	-	77	80	68	-	-	62	-	-	64
91	-	-	-	-	59	61	43	-	-	41	-	-	43
599	555	512	605	603	584	525	621	806	712	704	554	829	644
26	21	20	25	26	39	41	48	45	51	46	37	37	34
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
22	25	18	9	10	9	10	11	20	30	25	19	10	6
37	28	34	22	33	30	31	22	18	24	42	37	67	76
33	31	35	34	29	22	22	18	22	20	21	21	22	22
21	7	16	13	10	5	7	3	5	5	7	8	7	9
112	121	109	90	78	101	80	74	59	53	51	53	53	34*
38	51	38	58	27	29	34	43	26	22	18	21	10	12*
60	70	51	63	59	59	61	64	53	42	45	64	47	54*
238	284	227	239	210	215	223	191	160	133	142	150	133	113*
2.8	3.2	1.9	2.9	1.5	1.5	1.5	1.6	0.9	0.6	0.7	0.8	0.4	0.4
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
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
-	24	20	18	17	17	18	17	32	33	31	33	34	29
-	35	27	25	25	26	24	25	38	40	31	36	43	37
-	26	22	23	21	22	21	22	31	31	24	28	33	28
-	-	-	-	-	-	28	28	34	34	34	36	32	34
-	-	-	-	-	-	53	50	54	54	52	51	52	50
-	-	-	-	-	-	-	-	-	-	84	86	84	86
-	-	-	-	-	-	-	-	-	-	49	54	57	63
-	-	-	-	-	-	-	-	14	17	26	28	35	42
-	-	-	-	-	-	-	-	25	29	35	37	43	50
-	-	-	-	-	-	-	-	-	-	60	59	57	52
-	-	-	-	-	13	29	38	32	16	18	40	21	31

<sup>†</sup> 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 2003 there were 12 acute cases.

29. Up to the end of the 1990's, hepatitis A infection in the UK occurred most frequently through community acquisition, in gay men and travellers to endemic countries. There appears to have been a change in the epidemiology of hepatitis A in recent years with significant numbers of infections now occurring in IDUs. Large outbreaks can occur because most of the population of the UK is now susceptible to hepatitis A virus infection. There is an effective vaccine which is offered to those at risk such as contacts of cases and people travelling to endemic countries.
30. IDUs may acquire hepatitis A infection through person-to-person contact with other infected individuals through poor hygiene, via blood through sharing contaminated needles and paraphernalia, through sexual activities that increase risk of oro-faecal contamination, or from drugs that have been contaminated with faeces during smuggling.
31. In 2003 the number of laboratory reports of hepatitis A in England and Wales was 984 compared with 1,352 in 2002. Only a small, and declining, proportion of hepatitis A reports contained information on risk factors and in 2003 only 8% (78 of 984) had such information. Injecting drug use was however the most frequently mentioned risk factor (45%, 35 of 78) in 2003. In recent years there have been a number of outbreaks of hepatitis A that have been mainly associated with injecting drug use and homelessness. The majority of the outbreaks have been in the South West, West Midlands and Yorkshire and Humber regions of England, although outbreaks have occurred elsewhere<sup>22</sup>. The age and sex distribution of the laboratory reports, suggest that the outbreaks of hepatitis A in IDUs may have been waning over the past year<sup>23</sup>.
32. 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 opportunity for transmission<sup>24</sup>. 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<sup>25</sup>. The main approaches to limiting the spread have been an emphasis of the importance of good personal hygiene and the provision of vaccination.

33. Transmission of HIV through injecting drug use was recognised early in the HIV epidemic at the beginning of the 1980's. Explosive outbreaks of HIV infection among IDUs have occurred worldwide, with ongoing widespread 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.
34. By the end of 2003 there had been a total of 4,093 HIV diagnoses reported in the UK where infection had probably been acquired through injecting drug use. These account for 6.5% of all the diagnoses reported (62,998) in the UK, 4.9% (2,824 of 58,040) of the reported infections in England, 33% (1,210 of 3,699) in Scotland, 4.5% (40 of 890) in Wales, and 2.7% (8 of 291) in Northern Ireland.
35. The annual number of new HIV diagnoses among IDUs in recent years has been low and constant (table 1), at an annual average of 103 reports during the period 1998 to 2003. So far, 107 HIV diagnoses, where infection was thought to have been acquired by injecting drug use, have been reported in the UK for 2003 (37 in London, 9 in Scotland, and 61 elsewhere). Of these diagnoses, country of infection was reported for 71 (66%). Where reported, 33 (46%) infections were probably acquired within the UK and 38 (54%) outside of the UK, mostly in Southern Europe.
36. The prevalence of HIV infection among IDUs attending specialist agencies taking part in the UAPMP survey in London during 2003 was 2.9% (23 of 801) and 0.5% (9 of 1,815) elsewhere in England. Combining data for 2002 and 2003, no HIV infections were detected among the 215 participants in Wales and one among those in Northern Ireland (0.8%, 1 of 130). Although the prevalence of HIV infection among IDUs taking part in this survey appears not to have changed in recent years, in 2003 HIV infections were found among those who had begun injecting in the past three years (0.8%, 3 of 386), and this was the highest prevalence seen in this group since the survey's first year in 1990 (figure 3).
37. The majority (28 of 32) of the HIV-infected IDUs who took part in the UAPMP survey and who answered the question reported having had a voluntary confidential blood test for HIV in the past. Almost a third (31%, 9 of 29) were unaware of their HIV infection, because they had either reported not having had a voluntary

confidential test or that the result of their last test was negative. Compared with other groups at risk of HIV infection, IDUs are the group with the lowest proportion of HIV-infected individuals unaware of their infection<sup>26</sup>.

38. The community recruited cohort study of recent onset IDUs undertaken by CRDHB in London found incidence and prevalence to be similar among this group. This is suggestive of a recent increase in transmission, though this needs to be corroborated<sup>20</sup>.
39. Among 224 IDUs attending GUM clinics in Scotland during 2003, one HIV infection was detected, yielding a prevalence of 0.4%. The finding constitutes the culmination of a declining trend; prevalences ranged from 2.5% to 5.3% during the early to mid-1990s, from 0.9% to 1.5% during 1998 to 2001 and no infections were detected in 2002.
40. Among 2,008 IDUs undergoing voluntary confidential HIV testing in Scotland during 2003, the prevalence was 0.4%. This compares with prevalences of 1.5% to 3.2% in the early to mid-1990s and 0.4% to 0.9% during the period 1998 to 2002 (table 1).
41. HTLV-II (Human T-Cell Lymphotropic Virus, type II) is endemic among native Amerindian tribes<sup>27</sup>, and in Europe it has been documented among IDUs<sup>28</sup>. HTLV-II infection has been associated with neurological disorders<sup>29</sup>, an increase risk of bacterial infections and in those co-infected with HIV an increase risk of neuropathy<sup>30</sup>.
42. During 2002 and 2003, 175 individuals were newly diagnosed with HTLV and reported to CDSC, of whom ten were known to be HTLV-II infected<sup>31</sup>. Of the ten individuals diagnosed with HTLV-II infection, eight were female and two male. Probable route of infection was reported for six individuals: two were 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 (eight), seven were born in the UK and one in Southern Europe. Eight individuals were tested as blood donors and the other two because of symptoms. As there is no routine testing for the infection among IDUs, HTLV-II infection among this group is likely to be under-diagnosed.

# Bacterial infections

## Staphylococcus aureus Infections

43. IDUs are vulnerable to a range of bacterial infections, such as wound botulism, tetanus, and bacteraemias, as a result of non-sterile injecting or injecting contaminated drugs. In recent years these infections have caused growing public health concern.
44. *Staphylococcus aureus* is a common pathogen among IDUs, causing infections which 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.

45. A number of centres in England have reported encountering MRSA as a cause of injecting drug use related sepsis in the community<sup>32</sup>. The HPA's Staphylococcus Reference Laboratory (SRL) has received sporadic and small clusters of isolates. From April 2003 to December 2003, 18 cases of injecting drug use related sepsis due to MRSA have been identified from geographically distinct areas throughout England and Wales (figure 5). There were ten males and eight females; six presented with bacteraemia, six with injection site abscess, two with skin ulcers and one with cellulites (clinical data were not available for three). A further case (from August 2001) was identified through retrospective testing. Cases are continuing to be reported.

46. Detailed analysis of the MRSA isolates has revealed that they represent an unusual clone that displays a number of characteristic markers\*. This clone is quite distinct from currently prevalent healthcare-associated epidemic MRSA in the UK (EMRSA-15 and EMRSA-16) and from classical community-acquired MRSA strains\*\*.

47. In addition to cases reported via SRL, *S. aureus*-related bacteraemias are reported through the routine laboratory-reporting scheme and through European Antimicrobial Resistance Surveillance System (EARSS). However, inclusion of risk factors, such as injecting drug use, through both systems is voluntary and often poorly reported.

48. Of the 15,448 *S. aureus* bacteraemias reported in England, Wales and Northern Ireland, less than 5% included any risk factor information. Two per cent (16 of 732) of these indicated injecting drug use related sepsis. Without more comprehensive recording of risk factors, it is difficult to make any useful interpretation from this surveillance system. Among the reports made by sentinel laboratories participating in the EARSS scheme, 0.21% (2 of 964) of all MRSA reported to EARSS were recorded as being isolated from IDUs between 1997 and 2003.

49. The mainly sporadic occurrence of the MRSA strains, in association with their geographical and temporal distribution (more than 2 years), 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 5  
Distribution of laboratories referring MRSA#  
from Injecting Drug Users with sepsis in England  
& Wales during 2003



#Methicillin resistant *Staphylococcus aureus*

\*Similar strains have occurred in the Liverpool area.

Data source: MRSA isolate referrals to the Staphylococcus Reference Laboratory.

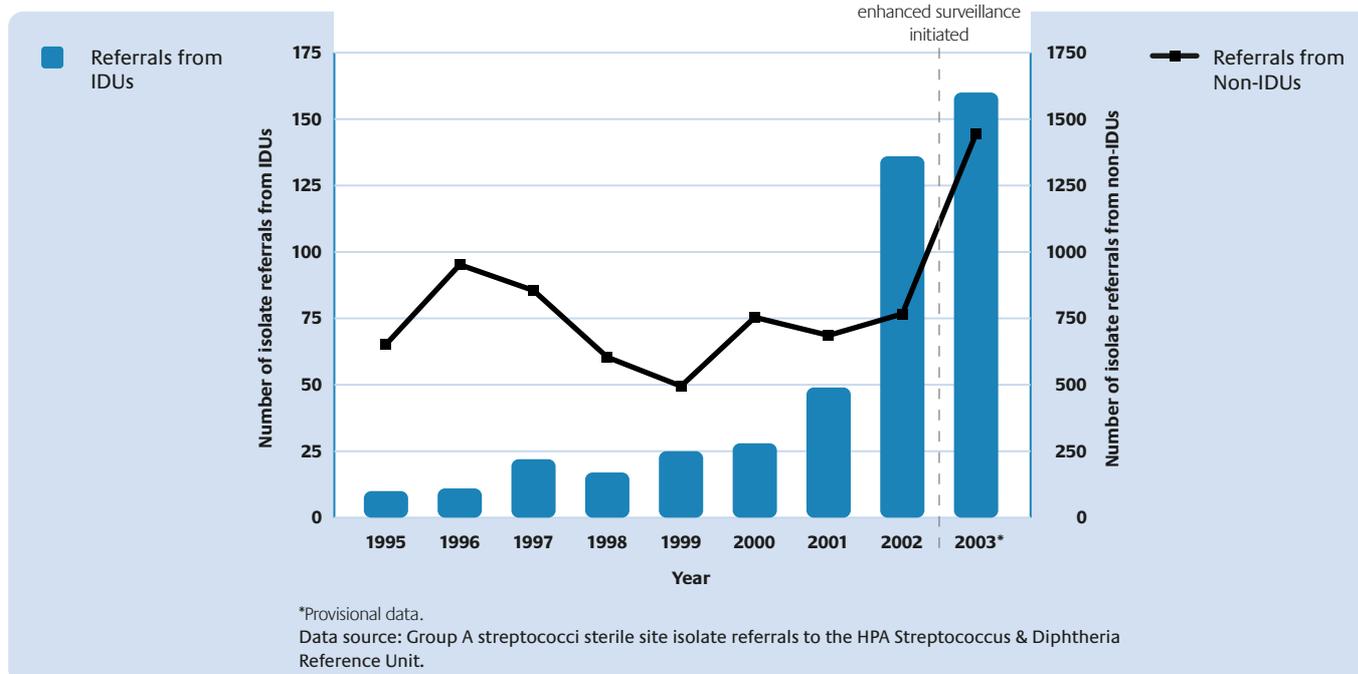
\* The strains exhibit a distinctive antibiogram (ciprofloxacin susceptible, but fusidic acid and erythromycin resistant), are lysed by a broad range of bacteriophages, and encode enterotoxins A and H.

\*\* Classically resistant to  $\beta$ -lactam antibiotics only and encode the Panton Valentine Leucocidin gene.

## Group A Streptococcal Infections

50. Group A streptococci (GAS) can cause skin sepsis, bacteraemia and necrotic infections among IDUs through infection of injecting sites.
51. Although routine laboratory reports of invasive GAS infections to CDSC 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<sup>33</sup>. A total of 136 invasive GAS reports were received in 2002 and 160 in 2003 (figure 6).
52. Most cases (87%) were young male adults (18 to 30 years) presenting 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.
53. The reasons for this increase in reports of GAS bacteraemia amongst IDUs are not yet understood. They may be due in part to increased awareness and microbiological investigations following the severe unexplained illness amongst IDUs in 2000, which was primarily attributed to heroin contaminated with *Clostridium novyi*<sup>34,35</sup>. However, the trends seen by CDSC and RSIL 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 observed<sup>36</sup>. Increases have also been reported from specific areas in the North of England<sup>37</sup>.
54. Data from strep-EURO will help place the current trends observed in the UK in a pan-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 single risk factor for severe group A streptococcal infections<sup>38</sup>. Further epidemiological investigation should be undertaken to gain specific risk information of relevance to IDUs, particularly injecting practices.

Figure 6  
Invasive isolates of group A streptococci from Injecting Drug User (IDU) and non-IDU patients: United Kingdom 1995 to 2003



\* 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.

55. 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.

### Wound Botulism

56. Botulism is an illness caused by botulinum toxin, which is 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.

57. There had been no reported cases of wound botulism among IDUs in the UK before 2000. During in 2003 there were 14 reports of suspected cases of wound botulism among IDUs, seven of which were confirmed by laboratory tests. Between March 2000 and the end of 2002 there had been 33 clinically diagnosed cases of wound botulism in the UK and Republic of Ireland. During 2002 there were 19 cases with a clinical diagnosis of wound botulism in England and Wales, in 13 of these cases the diagnosis was confirmed by laboratory tests<sup>39</sup>. During September and October 2002 there was an outbreak of eight cases possibly related to a contaminated batch of heroin<sup>40</sup>.

### Tetanus

58. Tetanus is caused by a toxin produced by *Clostridium tetani*. It usually presents with local fixed muscle rigidity and painful spasms confined to the area close to the site of injury or injection. Tetanus can present with symptoms ranging from mild trismus ('lockjaw'), neck stiffness and/or abdominal rigidity to generalised tetanus, which is a more 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.

59. In the UK tetanus has 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<sup>41</sup>. Only two of the 175 tetanus cases identified in England and Wales through

enhanced surveillance between 1984 and 2000 were known to be IDUs<sup>42</sup>. Potential sources for tetanus infection in IDUs are contaminated drugs, injecting equipment and skin.

60. An outbreak of tetanus among IDUs occurred in 2003 continued into 2004. A total of 11 cases were reported in the UK between July and December 2003, and further cases were reported in 2004<sup>43</sup>. The majority of cases had generalised tetanus and one case died in 2003. The majority of the cases were in women (eight), and the male cases that occurred were older than the women. Most cases reported subcutaneous injection of heroin ('skin popping'). Ten cases were reported from England, and two cases from Scotland. Most cases were un-immunised or partially immunised and most had tetanus antibody levels below the protective threshold on admission to hospital.

61. This outbreak of tetanus can be explained by contamination of heroin with tetanus spores at some stage, which is more likely than a sudden change in injecting practices. The widespread distribution of cases within the UK suggests that contamination may have occurred relatively high in the supply chain.

### Other Clostridial Infections

62. In addition to botulism and tetanus there are other serious Clostridial infections that may be acquired through injecting contaminated drugs.

63. During 2000 there was an outbreak, most probably due to *Clostridium novyi* infection of injection sites, of serious illness and death among IDUs. This outbreak was probably a result of injecting with contaminated heroin<sup>34,44</sup> and laboratory work has shown that *C. novyi* spores can easily survive the "cooking-up" process prior to heroin injection<sup>45</sup>.

64. There were a number of reports of *Clostridium histolyticum* infection among IDUs<sup>46</sup>, some of whom also had tetanus, during 2003. Molecular typing has revealed that isolates obtained from cases in nine cities and towns across the UK are indistinguishable indicating a common source of contamination with these spores<sup>47</sup>. Cases are continuing to be reported.

# Risk and Protective Behaviours

## England, Wales & Northern Ireland

65. In 2003 the proportion of current IDUs, participating in the UAPMP survey, sharing needles and syringes (direct sharing) remained high, with 29% (494 of 1,677) reporting such practices (figure 1). The proportion reporting direct sharing varied by region and country. When data for 2002 and 2003 were combined the highest level was found in Northern Ireland, where 44% (35 of 79) reported the direct sharing of needles and syringes, whilst in Wales 35% (52 of 148) reported this. The highest level in England was in the Yorkshire & Humber region (37%, 28 of 76) whilst the lowest was in the North West region (23%, 126 of 529).
66. The sharing of items such as filters, spoons and flushing water by participants in the UAPMP survey continued at high levels in England with 49% (797 of 1,616) of current injectors reporting this in 2003. High levels were also found in Wales 56% (83 of 148) and in Northern Ireland 63% (50 of 79) (2002 and 2003 data are combined). The most commonly shared items in England, Wales and Northern Ireland were mixing containers such as spoons (45%, 781 of 1,816).
67. In 2003, 90% (2,391 of 2,666) of IDUs participating in the UAPMP survey reported that they had, at some time in their injecting career, accessed a needle exchange (NEX) service. In 2003 of those who had first injected in the previous three years, 86% (331 of 384) had accessed a NEX.
68. The numbers of IDUs participating in the UAPMP survey self-reporting\* that they had been vaccinated against hepatitis B has doubled from 25% (784 of 3,114) in 1998 to 50% (1,322 of 2,646) in 2003 (table 1). Of those who had reported vaccination, only just over half self-reported receiving three or more doses of the vaccine (54%, 689 of 1,268). Self-reported vaccination uptake varied by region and country (combining 2002 and 2003 data, figure 2). In Wales the uptake was low 25% (61 of 246), whilst it was higher in Northern Ireland 49% (62 of 127).
69. Preliminary results from the first sites in UAPMP enhancement pilot (in the South West region of England) indicate that 41% (117 of 284) reported direct sharing. This survey also asked about injection hygiene and preliminary data indicate that less than one in five IDUs (17%, 68 of 402) washed their hands before injecting, and less than a quarter swabbed injection sites (22%, 90 of 402). Four fifths (80% 322 of 402) of the participants reported having a possible symptom of an

injecting site infection in the last year, and almost half of these had sought medical attention in relation to this (48%, 155 of 322).

70. Preliminary results from the first sites in UAPMP pilot enhancement (in the South West region of England) found that 19% (66 of 343) self-reported receiving hepatitis A vaccination, indicating low uptake. In response to the changing epidemiology of hepatitis A the PHLS recommendation<sup>48</sup> that IDUs be vaccinated against hepatitis A has recently been re-emphasised<sup>49</sup>.

## Scotland

71. In 2003/04 financial year, 34% of IDUs reported to Scotland's Drug Misuse Database had indicated that they had shared a needle and syringe in the previous month; this compares with 32% to 36% during the period 1998 to 2002.
72. Scotland's Drug Misuse Database recorded data on the sharing of injecting equipment other than needles and syringes for the first time in 2001/2002. The proportion of IDUs sharing spoons, filters and water in the previous month was 49% in 2003/2004, 48% in 2002/2003 and 50% in 2001/2002.
73. Community-wide surveys of IDUs (who had injected for ≤5 years) in Glasgow found a significant increase in hepatitis B vaccine uptake among those surveyed in 2001-2002 (52% of 387) compared to 1993, 1994 and January-March 1999 (16% of 432)<sup>50</sup>. These results, together with the decreasing number of laboratory reports of hepatitis B diagnoses among IDUs in Scotland, indicate that the Scottish prison vaccination programme has had a major impact on uptake among IDUs.

# Comments and Conclusions

74. It is a cause for concern that in recent years the prevalence of hepatitis C infection has increased amongst IDUs in England, whilst studies in both London and Glasgow have estimated high incidences among recent initiates to injecting. Overall around two in five IDUs have been exposed to hepatitis C. Although these prevalences are low in comparison with many other developed countries, they are still substantial, and the high incidences and increasing prevalences suggest a deteriorating situation.
75. The ongoing occurrence of MRSA infections, and the recent marked increase in severe GAS infection indicate a growing problem with infectious diseases amongst IDUs. The reasons for the occurrence of these infections are unclear and need further investigation, though they may possibly reflect an increased vulnerability in IDUs to skin sepsis through a change in risk behaviour<sup>51</sup>, possibly linked to increased use of stimulants, known to be associated with increased risk behaviour compared to opiod use<sup>52</sup>. However, they are an increasing cause of morbidity amongst this group and, if the number of these infections continues to grow unchecked, they will lead to a rising burden on health services.
76. HIV infection remains comparatively rare among IDUs in the UK, with around one in 100 infected, and the majority of those with HIV would appear to have had their infection diagnosed. Although many of the new diagnoses of HIV infection associated with injecting drug use are attributed to infection acquired abroad there is evidence of ongoing transmission, and that this may have increased in recent years.
77. More than one in five injectors have been infected with hepatitis B, and new infections are occurring. Despite the continuing increase in the uptake of the hepatitis B vaccine, which probably reflects improved provision through drug services and the prison vaccination programme<sup>53</sup>, many injectors remain unvaccinated. It is encouraging that since the Scottish Prison Service implemented, in April 1999, a comprehensive hepatitis B vaccination programme to all inmates, there have been no outbreaks of acute hepatitis B virus infection among IDUs in Scotland<sup>50</sup>.
78. The continuing occurrence of hepatitis A among IDUs is a concern; however offering vaccination to IDUs can very effectively prevent infection. Where appropriate consideration should be given to possibly introducing hepatitis A vaccination in conjunction with existing hepatitis B vaccination programmes. A combined hepatitis A and B vaccine is available and this could be used rather than the single vaccines. However, single hepatitis A vaccine given at the same time as hepatitis B vaccine offers more effective protection against hepatitis A if there is a risk that the course of combined vaccine may not be completed, and costs about the same to administer. Offering the single vaccines together may be less popular with clients who would prefer a single injection<sup>49</sup>. Vaccination can be offered effectively through community programmes<sup>54</sup>, the prison service and through drug services.
79. The recent outbreaks of tetanus and the ongoing occurrence of wound botulism cases indicate continuing problems with environment contamination of heroin with bacterial spores. Healthcare workers should remain alert to the possibility of these infections among IDUs, particularly those who inject subcutaneously or intramuscularly.
80. 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<sup>55</sup>. Even individuals who have received five doses of tetanus vaccine in childhood may eventually have insufficient antibody levels to protect them against a heavily contaminated wound. Those who are exposed to risk of tetanus through injury are recommended to receive prophylactic tetanus immunoglobulin even if fully vaccinated. This recommendation is impracticable for IDUs who may be at recurrent risk. They might benefit from regular boosters to ensure protection from ongoing contamination of heroin and/or from exposure to other sources, but the benefits and costs of such an approach requires further evaluation.
81. Just over half of IDUs in England and Wales with hepatitis C infection are still unaware of their infection. The proportion of IDUs reporting having a voluntary confidential test for hepatitis C has however increased indicating that efforts to improve access to testing may be working.
82. In the late 1990s the reported levels of needle and syringe (direct) sharing during the previous month increased<sup>51</sup>, and this higher level of sharing has been sustained since then. Data from across the UK suggest that around one in three IDUs reported direct sharing during the previous month in 2003. A study that has

estimated the number of IDUs in several areas of England and related these to the levels of service provision has suggested that the coverage of NEX services is inadequate<sup>5</sup>. Those commissioning services should re-examine NEX provision to ensure adequate coverage so as to provide sufficient needles and syringes to prevent sharing.

83. In recent years there may have been a shift in NEX provision towards pharmacy-based services<sup>56</sup>. Whereas agency-based NEX, be they fixed site, mobile or outreach, typically provide a range of other services, such as face-to-face advice on safer injecting and vaccination, this is not usually the case with pharmacy-based NEX services. Studies have suggested that those IDUs using pharmacy-based NEX, as opposed to those provided by drug services, may be more likely to share equipment<sup>57</sup>. However the current lack of a UK wide NEX monitoring system means it is not possible to assess the extent and type of provision, or any changes in these.
84. 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 therefore supply injecting equipment in addition to needles and syringes, such as mixing containers, as their reuse is a potential source of contamination. In re-examining exchange provision those commissioning services should also consider what other injecting related items should be provided to their clients. Following recent legislative changes health services can now provide IDUs with ampoules of sterile water for injection, swabs, utensils for the preparation of a controlled drug (such as spoons), citric acid, and filters<sup>58</sup>.
85. The national drugs strategy<sup>2,11</sup> 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<sup>59</sup>. 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 range and recent growth 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 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.
86. 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 from the approaches that have been used in other countries such as safer injection facilities<sup>60,61,62</sup>.
87. IDUs in the UK are increasingly contracting a growing range of infections. Continued vigilance through the maintenance and development of public health surveillance systems is needed. There is a need for improved quality of surveillance of GAS and MRSA and viral hepatitis, particularly hepatitis A, through more complete reporting of laboratory diagnoses and improved completeness of risk factor information. Systems also need to be developed to improve our understanding of the extent of injecting site infections, and the reasons for the recent growth of these.
88. The UAPMP survey continues to provide valuable data on blood-borne viruses and associated risks among IDUs in contact with services. Preliminary data from the recent enhancement is providing important additional 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 CSDC in England, to the NPHSW in Wales, to CDSC in Northern Ireland and to SCIEH 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](http://www.hpa.org.uk/infections/topics_az/tetanus/menu.htm) and from SCIEH for Scotland at <http://www.show.scot.nhs.uk/scieh/infectious/tetanus/tetanus.html>

Information on reference laboratory services for tetanus are included in the RSIL User manual at [http://www.hpa.org.uk/srmd/div\\_rsil/rsiluser.pdf](http://www.hpa.org.uk/srmd/div_rsil/rsiluser.pdf)

**Hepatitis A.** Laboratories are requested to report all confirmed cases to CSDC in England, to the NPHSW in Wales, to CDSC in Northern Ireland and to SCIEH 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](http://www.hpa.org.uk/infections/topics_az/hepatitis_a/menu.htm)

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

Further information can be found for hepatitis B at [http://www.hpa.org.uk/infections/topics\\_az/hepatitis\\_b/menu.htm](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](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 Immunisation Department CDSC (England and Wales), Specialist and Reference Microbiology Division, and National Public Health Service for Wales (Wales), CDSC Northern Ireland and SCIEH (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](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*): HPA Food Safety Microbiology Laboratory, Specialist and Reference Microbiology Division, Central Public Health Laboratory, 61 Colindale Avenue, London NW9 5HT. 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. Telephone: 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](http://www.hpa.org.uk/infections/topics_az/strepto/pyogenic/menu_a.htm)

Information on reference laboratory services for GAS are included in the RSIL User manual at [http://www.hpa.org.uk/srmd/div\\_rsil/rsiluser.pdf](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](http://www.hpa.org.uk/infections/topics_az/staphylo/menu.htm). Identification and characterisation of MSSA and MRSA from IDUs: Staphylococcus Reference Laboratory, Specialist and Reference Microbiology Division, HPA, 61 Colindale Avenue, London, NW9 5HT. Telephone: 020 8327 7227.

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# 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, and 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 CDSC 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.

## 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, and are overseen by the UASSG.

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<sup>1</sup>. 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](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 HPA 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. This collects dried bloodspot 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 SRMD, HPA Colindale) for reference microbiology.

Isolate referrals to the national reference laboratory RSIL (part of SRMD, HPA Colindale), 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 part of SRMD, HPA Colindale, and for tetanus RSIL. For the other clostridia this is undertaken by the Anaerobe Reference Laboratory, NPHS Microbiology Cardiff.

## European Antimicrobial Resistance Surveillance System (EARSS)

Surveillance of *Staphylococcus aureus* is also undertaken through the EARSS. This voluntary scheme covers 28 countries in Europe. In the UK, the scheme has operated as a sentinel reporting system, with a small number of participating laboratories contributing augmented surveillance data and submitting isolates to the national reference laboratory.

## strep-EURO

Data from reference laboratory isolates, combined with routine laboratory reports have been combined as part of a two year enhanced surveillance programme. Augmented surveillance data is 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 CDSC Immunisation Department ([http://www.hpa.org.uk/infections/topics\\_az/tetanus/menu.htm](http://www.hpa.org.uk/infections/topics_az/tetanus/menu.htm))

## HTLV

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

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