Public Health England

Shooting Up:
Infections among people who inject drugs in the UK, 2016

An update, November 2017

Health Protection Scotland

GIG CYMRU NHS WALES
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Published November 2017
PHE publications
gateway number: 2017594

PHE supports the UN
Sustainable Development Goals

Contents

Suggested citation:
Public Health England, Health Protection Scotland, Public Health Wales, and Public Health Agency Northern Ireland. Shooting Up: Infections among people who inject drugs in the UK, 2016. London: Public Health England, November 2017.

List of abbreviations

DAA	Direct acting antivirals
GAS	Group A streptococci
HIV	Human immunodeficiency virus
HCV	Hepatitis C virus
iGAS	Invasive group A streptococci
MRSA	Meticillin-resistant *Staphylococcus aureus*
MSSA	Meticillin-sensitive *Staphylococcus aureus*
NESI	Needle Exchange Surveillance Initiative
NDTMS	National Drug Treatment Monitoring System
NPS	New psychoactive substances
PHE	Public Health England
PWID	People who inject drugs
UAM	Unlinked Anonymous Monitoring Survey

Summary

Hepatitis C prevalence remains high and half of those infected are undiagnosed

Hepatitis C remains the most common blood-borne infection among people who inject drugs (PWID), and there are significant levels of transmission among this group in the UK. Two in every 5 PWID are living with hepatitis C and approximately half of these infections remain undiagnosed. The increasing availability of the new directly acting antiviral drugs provides an opportunity to reduce morbidity and mortality from hepatitis C, and to decrease the risk of onward transmission.

HIV levels remain low, but risks continue

In the UK, around 1 in 100 PWID is living with HIV. Most have been diagnosed and will be accessing HIV care. However, HIV is often diagnosed at a late stage among PWID.

Hepatitis B remains rare, but vaccine uptake needs to be sustained, particularly in younger age groups

In the UK, around 1 in every 200 PWID is living with hepatitis B infection. About three-quarters of PWID report taking up the vaccine against hepatitis B, but this level is no longer increasing, and is particularly low in younger age groups and among those who recently began injecting.

Bacterial infections continue to be a problem

One-third of PWID report having a recent symptom of a bacterial infection. Outbreaks of bacterial infections are continuing to occur in this group.

Injecting risk behaviours have declined but remain a problem

The level of needle and syringe sharing among PWID has fallen across the UK, but needle and syringe sharing remains a problem, with over 1 in 6 reporting sharing of needles and syringes in the past month.

Changing patterns of psychoactive drug injection remain a concern

In recent years, there has been an increase in the number of “new psychoactive substances” being used in the UK. There is also evidence for an increase in crack injection in England and Wales.

Provision of effective interventions needs to be maintained and optimised

The provision of effective interventions to reduce risk and prevent and treat infections needs to be maintained. These interventions include needle and syringe programmes, opioid substitution treatment and other treatments for drug misuse and dependence. Vaccinations and diagnostic tests for infections need to be routinely and regularly offered to people who inject or have previously injected drugs. Care pathways and treatments should be optimised for those testing positive.

Introduction

Drug use in the UK is among the highest reported in Western Europe (1). In 2015 to 2016, around 2.7 million (8.4%) 16-59 year olds in England and Wales reported using a drug in the last year (2). This proportion has reduced over the past decade, but has remained stable over the last 7 years. There were 203,808 people who received treatment for drug misuse in England in 2015 to 2016, and about 40% of those were currently or had previously injected drugs. The proportion currently or previously injecting among those in drug treatment differed between those starting treatment for opiates (61%) and non-opiates (10%) (3).

People who inject drugs (PWID) are vulnerable to a wide range of viral and bacterial infections, which can result in high levels of illness and death. Sharing needles and syringes is a highly effective transmission mechanism for HIV, hepatitis B virus and hepatitis C virus. Bacterial infections such as *Staphylococcus aureus* and Group A streptococci are often related to unsterile injection practices. Spore-forming bacterial infections, such as tetanus, botulism and anthrax, can be associated with contaminated drugs, and although these infections are rare they can be life-threatening. Public health surveillance of infectious diseases and the associated risk and protective behaviours among PWID, provides important information to understand the extent of these infections, the risk factors for their acquisition, and for monitoring the effectiveness of prevention measures.

The advent and increasing availability of the new directly acting antiviral (DAA) drugs provides an opportunity to reduce morbidity and mortality from hepatitis C among those aware of their diagnosis, and to decrease the risk of onward transmission (4). More than 90% of hepatitis C infections are diagnosed among PWID (5), and as such, they are a prime target group for the roll-out of DAAs.

In July 2017, the Government published a new Drug Strategy. The overall aims of the Government’s strategy are to reduce illicit and other harmful drug use, and increase the rate of individuals recovering from their dependence (2). New psychoactive substances (NPS) were regulated in the Psychoactive Substances Bill which came into force in May 2016 (6).

The epidemiology of infections among PWID is influenced by evolving injection practices and the availability of new treatments. This annual national report describes trends in the extent of infections and associated risks and behaviours among PWID in

the UK to the end of 2016.[a] Further details can be found in the set of data tables that accompany this report: https://www.gov.uk/government/publications/shooting-up-infections-among-people-who-inject-drugs-in-the-uk

This report focuses on infections among people who inject psychoactive drugs. Information on infections among people who inject image and performance enhancing drugs, such as anabolic steroids, peptides and melanotan, can be found in the 2016 Shooting Up report, available at: https://www.gov.uk/government/publications/shooting-up-infections-among-people-who-inject-drugs-in-the-uk

[a] Where data have been previously published, only the proportions are usually given in this report. The numerators and denominators for these proportions can be found in the source publications.

Data sources

The data for this report is extracted from various national surveillance systems. The **Unlinked Anonymous Monitoring (UAM) Survey** of PWID monitors HIV, hepatitis B and hepatitis C, and associated risk and protective behaviours in PWID in contact with specialist services. Those who agree to participate provide a dried blood spot sample, and self-complete a behavioural questionnaire.

The **Needle Exchange Surveillance Initiative (NESI)** monitors the prevalence of hepatitis C and injecting risk behaviours among PWID in Scotland. Participants are recruited from selected needle and syringe programmes and pharmacies that provide injecting equipment. Participants complete a short interviewer-administered questionnaire and provide a voluntary dried blood spot sample for anonymous hepatitis C testing.

The **National Drug Treatment Monitoring System (NDTMS)** collects patient-level information about the people using drug and alcohol treatment services across England. All services that provide structured treatment for drug and/or alcohol users are asked to submit data to NDTMS.

Voluntary confidential reports of new HIV diagnoses are received from laboratories and clinicians in England, Wales, and Northern Ireland by Public Health England (PHE). Scottish data are collected separately and incorporated with data from England, Wales and Northern Ireland to create a UK dataset.

Information on bacterial pathogens is available through **surveillance of clinical and laboratory reports.** Reporting of meticillin-resistant *Staphylococcus aureus* (MRSA) and meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemias is mandatory for NHS Trusts since 2005 and 2011, respectively. Data on MRSA and MSSA infections in PWID are also available through referral of isolates for reference microbiology. Isolate referrals are also one of the primary sources of data on group A streptococcal (GAS) infections. For tetanus, wound botulism and anthrax among PWID, enhanced surveillance involves the follow up of laboratory or clinical reports with a surveillance questionnaire.

Hepatitis C prevalence remains high and half of those infected are undiagnosed

On 28 May 2016, the World Health Assembly adopted a Global Health Sector Strategy on viral hepatitis for the period 2016 to 2021 (4). This strategy has as its goal to eliminate viral hepatitis as a major public health threat by 2030, and introduced the first ever global targets for viral hepatitis, including a 30% reduction in new cases of hepatitis B and C by 2020 and a 10% reduction in mortality (4). National action plans to tackle hepatitis C are in place and are being developed across the UK (7-10).

The advent and increasing availability of the new directly acting antiviral (DAA) drugs provides an opportunity to reduce morbidity and mortality from hepatitis C among those aware of their diagnosis, and decrease the risk of onward transmission (4). PWID, as main drivers of the hepatitis C epidemic, are a prime target group for the roll-out of DAAs (11).

Although previously available interferon-based therapy was available to PWID, patient, provider, health system, structural and societal barriers have led to low diagnosis and treatment for hepatitis C in this group (11). New DAA therapies have fewer side effects, are orally administered, and shorter in duration (8-12 weeks vs. 24-28 weeks). There are several studies providing support that DAA treatment can be effective in PWID, although there remains a risk of reinfection with ongoing injecting drug use (11).

Hepatitis C prevalence

In the UK, it is thought that around 214,000 people are living with chronic hepatitis C (4). PWID are the group most affected by hepatitis C in the UK (4). Around 92% of hepatitis C infections diagnosed in England are thought to have been acquired through injecting drug use (Accompanying Data, Table 1a). Across the UK, 13,486 positive test results for hepatitis C were reported during 2016 (Accompanying Data, Table 1a). Although data on exposure is often incomplete or missing, extrapolation from the results where information is available suggests that in 2016 approximately 12,400 positive test results were for PWID.

UK-wide data indicate that around half of those who inject psychoactive drugs have ever been infected with hepatitis C: with 58% of those surveyed in Scotland having antibodies to hepatitis C (12), 52% in Wales, 54% in England, and 22% in Northern Ireland (13). As around a quarter of those infected with hepatitis C naturally clear their infection, these data suggest that about 2 in 5 of those who inject psychoactive drugs are currently living with chronic hepatitis C infection in the UK.

Hepatitis C incidence and outbreaks

The overall level of hepatitis C transmission among PWID in the UK appears to have changed little in recent years. Recent transmission of hepatitis C virus (HCV) can be explored in 2 ways: by assessing the prevalence of antibodies against HCV among recent initiates to injecting, and by using biological markers to assess whether the virus is present (demonstrated by the detection of HCV RNA) without the presence of HCV antibodies, or in the presence of recently developed HCV antibodies (13).

Prevalence of HCV antibodies among recent initiates to injecting (those who began injecting in the last 3 years) can be taken as a measure for hepatitis C incidence when assuming that the hepatitis C infection is related to their injecting drug use. In England, Wales and Northern Ireland, 27% of recent initiates to injecting surveyed in 2016 had been infected with hepatitis C (Accompanying Data, Table 1a) (13).

Hepatitis C incidence can also be monitored by assessing whether individuals have recently developed antibodies to HCV. This has been undertaken by testing the HCV antibody positive dried blood samples collected in the UAM survey for antibody avidity. Samples from currently HCV-infected individuals (demonstrated by the detection of HCV RNA), with HCV antibodies whose avidity is weak are likely to be from individuals who have recently been infected with the virus. Since 2016, all samples collected through the UAM survey have been tested for HCV RNA to estimate HCV incidence. The length of time that samples from recently infected individuals will have HCV RNA but no antibody response is estimated to be 51-75 days; for antibodies with weak avidity this time period is more uncertain, but this state may last from 2 to 6 months (14-16). In Scotland, recent transmission of HCV has been explored in a similar way among participants in the NESI Survey of PWID by looking for those who test positive for HCV RNA, but are negative for HCV antibody. Like those with weak avidity antibody, individuals in this viraemic pre-seroconversion window are likely to have acquired their infections recently.

These data suggest that incidence of infection has remained relatively stable over recent years, with the rates observed in 2016 (16/100 person years in England/Wales/Northern Ireland, 11.5/100 person years in Scotland) not differing significantly from those reported in earlier years (4).

In Northern Ireland, an outbreak of acute hepatitis C among PWID was detected in 2016 (Box 1). This outbreak highlights the ongoing risk of outbreaks in PWID, particularly in tight networks, and the need for ongoing surveillance to detect such outbreaks quickly to allow for an appropriate response.

Box 1: Outbreak of acute hepatitis C infections in Northern Ireland

Northern Ireland has lower levels of infection with hepatitis C in its PWID population compared with the rest of the UK in the UAM study (2016: 22% antibodies against HCV in Northern Ireland compared to 52% in Wales and 54% in England) (8). In 2016, through screening of PWID by the homeless nursing service, 3 cases of acute hepatitis C infections were diagnosed, which were a cause for concern. The injecting networks of these cases were identified and targeted for screening and harm reduction education. The screening has identified that those at risk are mainly injecting heroin and, despite the availability of clean injecting packs and education on blood-borne virus transmission, they are still sharing injecting equipment such as spoons and filters. This enhanced testing is still ongoing as more people at risk of acquiring infection are identified, mainly via the homeless nursing team; as of November 2017, a total of 40 currently infected (RNA positive) individuals have been identified.

The situation is being managed by raising awareness of the risks of blood-borne virus transmission among users and also those working with them, eg homeless hostel staff. There has been increased testing of PWID for blood-borne viruses including the introduction of dried blood spot testing and increased availability of clean injecting equipment. New users have been identified through the enhanced screening which has allowed them to be referred to drug addiction services and for hepatitis C treatment.

Uptake of voluntary confidential testing

Recently updated UK clinical guidelines recommend that all PWID accessing treatment services are tested for HCV and HIV at first assessment, and that repeat testing should be considered when the risk of exposure continues (17). When risk is assessed as high, testing may need to be carried out up to once or twice a year (17).

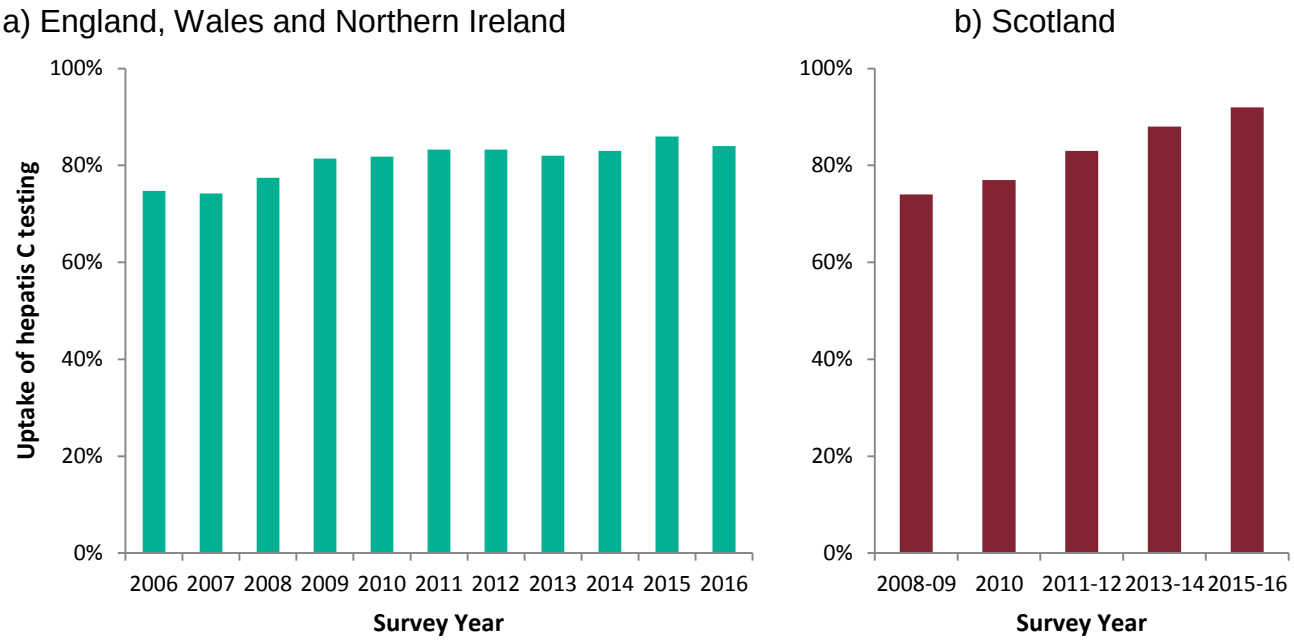
The uptake of voluntary confidential testing for hepatitis C among PWID has increased across the UK in the last decade, but while Scotland has seen a sustained increase, England, Wales and Northern Ireland have seen a more gradual increase which has possibly plateaued over the last 6 years (Figure1; Accompanying Data, Table 3b). The sustained increase in Scotland is synchronous with the Hepatitis C Action Plan 2006-2011 (18, 19) and the Scottish Government Sexual Health and Blood-borne Virus Framework 2011-15 (8), which both aimed to increase diagnoses and treatment of hepatitis C among those who inject drugs.

In 2016, among those injecting psychoactive drugs surveyed across England, Wales and Northern Ireland, about half (48%) of those with hepatitis C were unaware of their hepatitis C positive status (Accompanying Data, Table 3b)(13). This proportion has remained relatively stable over the past decade. Many of those who were unaware of their infection reported that they had either never tested or not tested recently; 22% reported never having had a test for hepatitis C; and of those unaware but tested, 44% reported that their last test had been more than 2 years ago.[b] Of those surveyed at needle and syringe programmes across Scotland in 2015 to 2016 with hepatitis C, 37% were unaware of their hepatitis C positive status (Accompanying Data, Table 3b)(12).

Although clinical guidelines recommend that repeat testing in PWID should be considered when the risk of exposure continues, up to once or twice a year where the risk is high, frequency of testing remains inadequate. Further work is required to understand whether the proportion unaware of their status are accurately recalling never or not recently having been tested, and where testing opportunities can be optimised.

[b] Of those participants from across England, Wales and Northern Ireland in the 2016 UAM Survey who had antibodies detected in the sample they provided and who did not report being aware of their hepatitis C status, 134 out of 608 (22%) reported never having had a voluntary confidential diagnostic test for hepatitis C. Of those who had been tested, 149 out of 339 (44%) reported that their last test was prior to 2015.

Figure 1. Uptake of voluntary confidential testing for hepatitis C among people who inject drugs: a) England, Wales and Northern Ireland, and b) Scotland



Data source: Unlinked Anonymous Monitoring survey of people who inject drugs (England, Wales and Northern Ireland) and Needle Exchange Surveillance Initiative (Scotland).

In England, the National Drug Treatment Monitoring System (NDTMS) found that among those who have ever injected drugs and who are in treatment for their drug use, the proportion who had been offered and accepted a hepatitis C test has increased to 65% in 2016 from 53% in 2010 (Accompanying Data, Table 3b). Offer of HCV testing at the start of treatment is very high, with 96% of those who have ever injected drugs and were eligible to receive one (i.e. at risk of hepatitis C) having been offered a hepatitis C test at the beginning of their most recent treatment period.[c] Uptake of HCV testing is lower with 67% accepting the offer of testing[c]. Stigma and discrimination are well evidenced barriers to HCV testing (20). Individuals may fear confidentiality breaches in relation to their HCV status if positive, and may fear the resulting discrimination this may provoke. In addition, patient and provider concerns regarding the co-morbidities, adherence and side effects of treatment may affect HCV testing uptake (20).

These data show that hepatitis C continues to be a major problem among PWID in the UK, with high levels of transmission. About half of the hepatitis C infections among

[c] National Drug Treatment Monitoring System data in England indicates that 65% (62,304/96,390) of people who have ever injected drugs and who are in treatment for their drug use had been offered and accepted a hepatitis C test in 2015-16, up from 53% (61,106/114,848) in 2009/10. Among those who have ever injected drugs, 96% (92,805/96,390) of those who were eligible to receive a hepatitis C test (this excludes those 'assessed as not appropriate to offer') had been offered a test at the beginning of their most recent treatment period, however only 67% (62,304/92,805) had accepted that offer.

PWID are currently undiagnosed (13). This is because those with undiagnosed infection have either never been tested or have been infected since their last test. These findings suggest that the approaches used to encourage testing for hepatitis C, and other blood-borne viruses, may need further development. For example, Wales is moving to routine opt-out testing in the community of those at risk, to support earlier diagnosis and referral to treatment (Box 2). Interventions to reduce the transmission of hepatitis C, diagnostic testing services and care pathways for those infected need to be continued and where appropriate expanded (17).

Box 2: Introduction of opt-out testing in Wales

Public Health Wales, with the support of the Welsh Government and service providers, has introduced routine opt-out testing for all at-risk individuals in contact with substance misuse and related services across Wales in 2017. Routine opt-out testing requires the provision of testing for hepatitis B, hepatitis C and HIV, via dried blood spot or venepuncture, at least once per year to all at-risk individuals as part of standard service and harm reduction support. This new approach encourages active offer and follow-up for all individuals in contact with substance misuse and related health, criminal justice and social care services including homelessness centres and needle syringe programme services. This work supports the Welsh Government's commitment to the WHO goal of elimination of hepatitis C by 2030, as well as re-prioritising and normalising blood-borne virus screening, diagnosis, referral and treatment for high risk individuals across Wales.

To support this, an additional 'Blood-borne virus module' has been developed for the web-based Harm Reduction Database Wales to record all screening, testing, diagnosis and referral to treatment, as well as an automated record of hepatitis B vaccination and provides a national surveillance mechanism for use across Wales. The system allows for the unique patient records to be updated over time and accounting for changes in geographic area of residence, creating a testing and vaccination history. Upon a positive result for a blood-borne virus, automatic electronic referral into specialist treatment services aims to prevent the historic issue of 'loss to follow-up'. Referral and treatment initiation and outcomes are recorded including sustained viral response and re-infection options. The system will be live in all areas of Wales by end October 2017 and all records backdated to 1st January 2017. The introduction of routine opt-out blood-borne virus testing in the community supported the introduction of routine opt-out blood-borne virus testing in all prisons in Wales from November 2016.

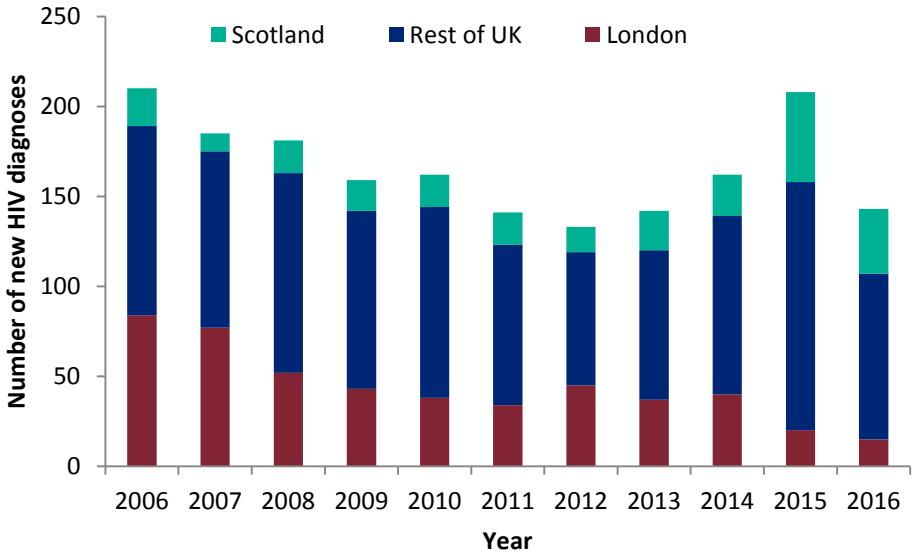
HIV levels remain low, but risks continue

Overall HIV infection is uncommon among PWID in the UK, and HIV prevalence among PWID in the UK is low compared to many other European countries (21). In England, Wales and Northern Ireland, 0.9% of the people who inject psychoactive drugs surveyed in 2016 were infected with HIV (Accompanying Data, Table 1c) (13). Among those attending needle and syringe programmes in Scotland during 2015-16, 1.9% were HIV antibody positive (Accompanying Data, Table 1c) (12). Both these HIV prevalence estimates are higher than the overall adult HIV prevalence in the UK which was estimated to be 0.16% in 2016 (22).

New infections and diagnoses

Overall, there were 145 new HIV diagnoses associated with injecting drug use in the UK during 2016; this is slightly lower than the annual average of 168 new HIV diagnoses between 2006 and 2015 (Figure 2) (Accompanying Data, Table 1c) (23).

Figure 2. Annual number of new HIV diagnoses associated with injecting drug use: 2006 to 2016



Data source: HIV and AIDS reporting system

In Scotland there were 38 new HIV diagnoses in PWID in 2016. There were 30 new HIV diagnoses in the NHS Greater Glasgow and Clyde area; this is lower than 44 new diagnoses in 2015 when an outbreak of HIV was detected among PWID in Glasgow city (5), but higher than an average of 18 new diagnoses per year in the Greater Glasgow and Clyde area from 2006 to 2014. During the first 6 months of 2017, 19 new HIV diagnoses were reported among PWID in Greater Glasgow and Clyde, indicating

ongoing transmission in this group (24). In response to the ongoing HIV outbreak in Glasgow, recommendations were made for the development of existing harm reduction services and the introduction of new harm reduction services (25).

Localised outbreaks of HIV continue among PWID, as is highlighted by the ongoing outbreak in Glasgow. There was also an outbreak of HIV in South West England with 8 new cases of HIV of a specific subtype (CRF-11) diagnosed among PWID in 2016 (Box 3). HIV outbreaks and increases in HIV transmission among PWID have also occurred in a number of other European countries in recent years (26-29).

Box 3. Cluster of 8 HIV infections (CRF-11) in South West England

In January 2017, the South West Health Protection Team (HPT) identified an HIV cluster of a specific sub-type; circulating recombinant form (CRF) 11. Prior to this, only sporadic cases of HIV CRF-11 had been identified in the UK. Three of the cluster cases had been diagnosed prior to 2016 and 5 cases were diagnosed in 2016. All of the 8 cases in the cluster were known to have injected drugs at some time and were part of a small injecting network. Three cases were female, of whom two were also known to be commercial sex-workers. Local services and the local health protection team responded by supporting increased HIV testing by drug services and the homeless health care team; giving out safe sex messages to local PWID; conducting a GP awareness raising session to encourage access to HIV testing through GPs; distributing posters in GP surgeries; and delivering harm reduction messages, such as not to share needles or other injecting equipment. No new HIV CRF-11 cases have been identified in South West England since 2016.

This outbreak highlights the ongoing risk of localised clusters of HIV among PWIDs and the importance of early detection and control measures.

Testing and care

The majority of those who inject psychoactive drugs reported ever being tested for HIV (77% in 2016 in England, Wales and Northern Ireland, and 84% in 2015-16 in Scotland) (Accompanying Data, Table 3b).

Although the majority (95%) of PWID living with HIV in the UK are aware of their infection (13), and most of those aware are accessing HIV treatment and care services (22), late diagnoses remain a problem. In 2016, 51% of the HIV diagnoses among people who had acquired their infection through injecting drugs were made at a late stage of HIV infection (Accompanying Data, Table 1c). This compares to 42% overall (for all the risk groups combined), and 32% of those exposed through sex between men (23). People who are diagnosed late have a ten-fold risk of dying within a year of diagnosis compared to those who are diagnosed promptly (30). In addition, those who

have been diagnosed late have probably been living with an undiagnosed HIV infection for a number of years, and may have been putting others at risk through sexual transmission in addition to the sharing of injecting equipment. Data from the UAM survey show that there are missed opportunities for HIV testing; the majority of those who reported to have never been tested or not to have been tested in the last 2 years, reported that they had attended their GP, had been prescribed a substitution drug, or had used a needle and syringe programme in the previous year (31).

Owing to improved survival, the number accessing HIV treatment and care in the UK who had acquired their infection through injecting has increased over the past decade, with 1,869 people accessing care in 2016 (Accompanying Data, Table 1c). Among the 423 PWID who were accessing HIV care with CD4 counts ≤350 in 2016 (the recommended level to start anti-retroviral therapy prior to 2015), 94% were on anti-retroviral therapy (Accompanying Data, Table 1c); this compares with 97% of those who had acquired HIV through heterosexual sex and 96% of those who acquired HIV through sex between men (23). Current treatment guidelines indicate treatment for all with a CD4 count ≤350 cells and that those with CD4 counts >350 who wish to take treatment to prevent onward transmission (Treatment as Prevention) may do so after discussion with their health practitioner (32). A new policy of immediate anti-retroviral therapy at HIV diagnosis is currently being considered, which would complement current Treatment as Prevention policy. Viral suppression (as measure by a viral load <200) was reached by 93% of PWID on antiretroviral therapy; this compares with 97% of those who had acquired HIV through heterosexual sex and 97% of those who acquired HIV through sex between men (23).

Although HIV infections continue to occur among PWID, the overall HIV prevalence in this group in the UK is currently comparatively low. Most of those with HIV are aware of their infection and uptake of treatment and care for HIV among those diagnosed is high. However, the HIV outbreaks among PWID in Glasgow and South West England and the high proportion of PWID with their HIV infection diagnosed late are a concern. These findings highlight the importance of accessible HIV testing services. HIV testing and prevention services for all groups of PWID need to be maintained in a range of appropriate settings, and these services should be responsive to changes in both drug use and sexual risks.

Hepatitis B remains rare, but vaccine uptake needs to be sustained, particularly in younger age groups

Hepatitis B prevalence

Hepatitis B virus can be transmitted in PWID as a result of blood-to-blood contact through the sharing of needles and other equipment. Data from the UAM survey indicate that the transmission of hepatitis B continues among PWID, but has probably declined in recent years. The proportion of PWID who have ever been infected with hepatitis B in England, Wales and Northern Ireland has halved over the past 10 years, falling from 28% in 2006 to 14% in 2016 (Accompanying Data, Table 1b). In 2016, only 0.43% were currently infected with hepatitis B[d], which is similar to the level seen in recent years (33). This suggests that only around 1 in 200 people who have injected psychoactive drugs is currently living with hepatitis B infection.

Hepatitis B vaccine uptake

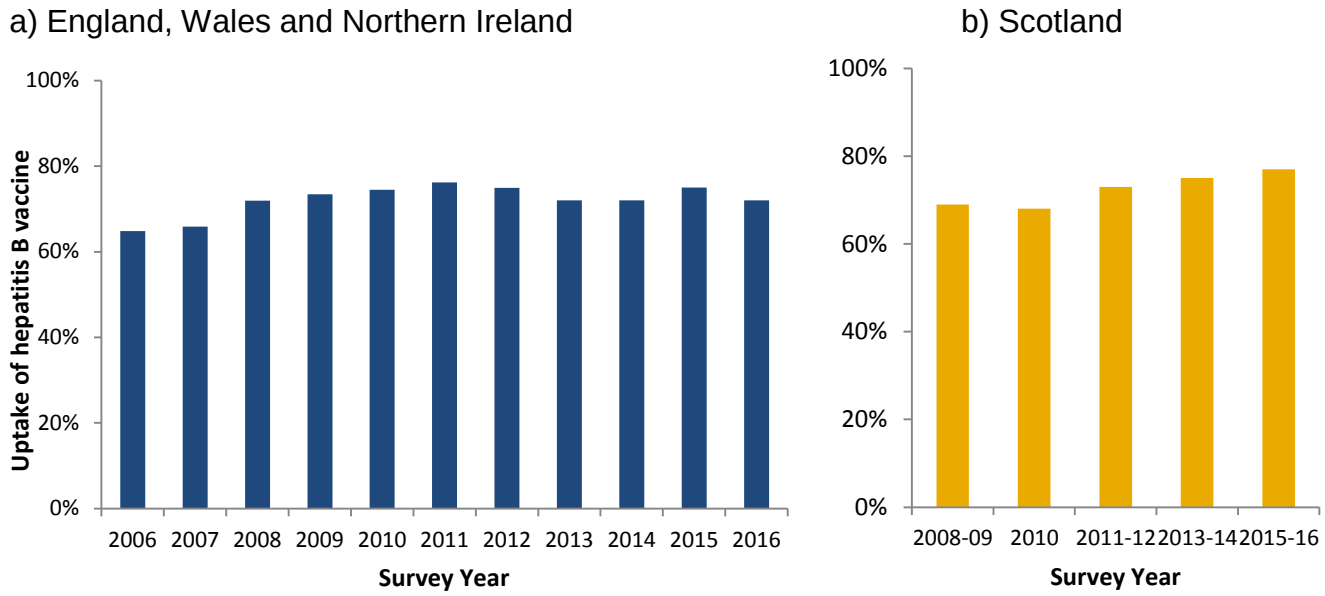
Hepatitis B vaccination is recommended with high priority for all people who currently inject drugs, including those who inject intermittently and those who are likely to 'progress' to injecting, for example those who are currently smoking heroin and/or crack (17, 34). A course of 3 doses is recommended, with vaccine given at 0, 1, and 2 months, although an accelerated course (with doses given at 0, 7, 21 days, and a booster dose at 12 months) may be appropriate for service users with chaotic lifestyles and those who have difficulty engaging with services (17, 34).

In England, Wales and Northern Ireland, self-reported uptake of the hepatitis B vaccine (i.e. receiving at least one dose), after increasing from 65% in 2006, has plateaued at around 72% between 2008 and 2016 (Figure 3a) (Accompanying Data, Table 3b). In 2016, hepatitis B vaccine uptake was particularly low in the under-25 age group at 54%, which is a drop from 76% in 2011, and among those who began injecting in the last 3 years at 54%, which is a drop from 67% in 2011 (13). Vaccine uptake also decreased in the 25-34 years age group from 79% in 2011 to 70% in 2016 (13). In 2016, reported uptake in England was 71% and 67% in Wales (13). Hepatitis B vaccine uptake has increased in Northern Ireland, from 68% in 2011 to 82% in 2016 (13), which is

[d] Current infection is defined as testing positive for both antibodies to the hepatitis B core antigen (anti-HBc) and for hepatitis B surface antigen (HBsAg).

synchronous with the introduction of a Northern Ireland wide patient group direction (PGD) in 2015 to facilitate hepatitis vaccination in drugs and addiction services and improve uptake in risk groups (35). Among those attending needle and syringe programmes in Scotland during 2015-16, 77% reported uptake of the hepatitis B vaccine (Accompanying Data, Table 3b, Figure 3b).

Figure 3. Uptake of the vaccine against hepatitis B among people who inject drugs: a) England, Wales and Northern Ireland, and b) Scotland



Data source: Unlinked Anonymous Monitoring survey of people who inject drugs (England, Wales and Northern Ireland) and Needle Exchange Surveillance Initiative (Scotland).

Data from the NDTMS in England indicate that half (50%; 8,823/17,756) of those who have ever injected drugs and were at risk of hepatitis B were offered and accepted vaccination against hepatitis B when they presented for treatment for their drug use in 2015-16 (Accompanying Data, Table 3b). However, the proportion of those offered vaccination who accepted the offer has decreased from 70% (15,478/22,142) in 2009/10 to 56% (8,823/16,694) in 2015/16.

Although hepatitis B vaccination is recommended as high priority for all people who currently inject drugs, around a quarter of PWID have never been vaccinated. Even though hepatitis B infection among this group is now rare, it is essential that high vaccination levels are maintained, particularly in younger age groups.

Bacterial infections continue to be a problem

Bacterial infections such as *Staphylococcus aureus* and Group A streptococci in PWID are often related to poor general hygiene and unsterile injection practices. Morbidity can be severe for bacterial infections in PWID, with severity compounded by delays in seeking healthcare in response to the initial symptoms (36). Mortality can occur from invasive infections resulting in sepsis, bacteraemia or necrotizing fasciitis. Bacterial infections can have a substantial impact on health services (37), with studies indicating that about 1 in 10 PWID are admitted to hospital each year because of a bacterial infection (36).

Symptoms of an injecting site infection

Approximately 1 in 3 (36%) of those injecting psychoactive drugs in England, Wales and Northern Ireland in 2016 reported that they had experienced an abscess, sore or open wound (all possible symptoms of an injecting site infection) during the past year (Accompanying Data, Table 2). This is an increase from 28-29% reported in 2011-2013. The levels of possible injection site infection were particularly high among the under-25 year age group at 43% (13). These symptoms are more commonly reported by women (40%) than men (34%)(13). Among those surveyed during 2015-16 at needle and syringe programmes across Scotland, 20% reported that they had experienced an abscess, sore or open wound during the past year (Accompanying Data, Table 2).

Meticillin-sensitive and -resistant *Staphylococcus aureus* (MSSA, MRSA)

Data on meticillin-sensitive *Staphylococcus aureus* (MSSA) and meticillin-resistant *Staphylococcus aureus* (MRSA) infections in England in PWID is available from 2 different data sources; NHS Trusts report the number of MRSA and MSSA bacteraemias through mandatory enhanced surveillance, and isolates of MRSA and MSSA infection (including, but not limited to bacteraemias) are sent to the PHE Staphylococcus Reference Laboratory for characterisation. Sending of isolates is currently not mandatory.

Data from the mandatory enhanced surveillance of MSSA and MRSA bacteraemias indicate that in England in 2016, of those with risk factor information, 13% (324/2493) of the MSSA bacteraemias were associated with injecting drug use, as were 8.1% (22/271) of the MRSA bacteraemias (Accompanying Data, Table 2). This represents an increase in the proportion of cases for which injecting drug use was indicated over the last 6 years; from 6.9% (190/2741) in 2011 for MSSA, and 1.6% (7/434) in 2011 for

MRSA. These numbers need to be considered with caution, however, as risk factor information is missing for a large proportion of MRSA and MSSA bacteraemias reported. In Scotland, there were 139 MSSA and 4 MRSA bacteraemia cases associated with injecting drug use reported in 2016: this is 9.2% and 4.6% of all MSSA and MRSA bacteraemia cases reported, respectively.

Data on MSSA and MRSA among PWIDs are also available from the PHE Staphylococcus Reference Laboratory. During 2016, 29 isolates from PWID were received (15 bacteraemia [2 with endocarditis and 1 with pneumonia], 11 skin and soft tissue infections, 2 respiratory and 1 musculoskeletal infections). The age range of cases was 20-50y (median 37y); 19 were male. The isolates included 22 MSSA, 2 of which were positive for the Panton-Valentine Leukocidin (PVL) toxin which is associated with increased virulence. The 22 MSSA isolates belonged to at least 9 different genetic lineages, suggesting multiple disparate clones can cause disease in this population. All 7 MRSA were negative for PVL toxin and belonged to at least 4 different genetic lineages of MRSA.

In Bristol, an increase in the number of severe MRSA infections among PWID was observed in 2014. In response to this, a study was conducted to estimate the prevalence of MRSA colonisation in PWID living in Bristol, and identify risk factors associated with MRSA colonisation (Box 4).

Box 4: MRSA colonisation in people who inject drugs in Bristol

A study funded by the Elizabeth Blackwell Institute for Health Research at the University of Bristol was undertaken to estimate the prevalence of meticillin-resistant *Staphylococcus aureus* (MRSA) colonisation in PWID living in Bristol. This was in response to an increase in the number of MRSA infections in this group.

The study estimated that approximately 1 in 11 (8.7%) PWID in Bristol were carriers of MRSA. This was high compared to estimates of 1 to 4% for the UK general population. Analysis indicated that reporting at least one of the following: frequently injecting outside, having recently had skin and soft tissue infection at an injection site, and/or recent healthcare contact characterised those PWID most likely to be colonised with MRSA. The data suggested that a particular lineage of MRSA was circulating within these groups and that risky injecting practice, such as groin injecting, were putting persons at particular risk of MRSA infection.

The data suggest that the emergence of a particular clone of MRSA, together with possible changes in behaviour, such as increased outside injection into the groin or altered living conditions, such as homelessness, were probably responsible for the observed increase in the number of MRSA infections seen among PWID in Bristol.

This study recommends community based targeted screening with health promotion messaging, wound care and suppression therapy (body and clothing) when MRSA is identified. Targeting should focus on those people with the characteristics that indicate elevated risk, such as having had a recent injection site infection and persons who most frequently report injecting outside. This group also have frequent hospital contact and thus implications for local infection prevention and control. The next steps are to expand this study to a national level to examine the geographical extent of the problem, understand the fitness and adaptation of this MRSA clone, and develop and test interventions that can reduce MRSA colonisation and infection in PWID.

Group A streptococci (GAS)

There are indications of a recent increase in invasive group A streptococcal (iGAS) infections identified among homeless people and PWID in England and Wales. Clusters of infection have been noted in several parts of the country including an ongoing *emm*66 cluster in Brighton, Gloucestershire, Bristol and London in 2016-2017 (Box 5) and more recently a cluster of *emm*94 among PWIDs in the Bournemouth area which appears to be spreading more widely. These clusters had varied clinical presentations including injection site infections, infections at other body sites and a small number of deaths. The clusters were associated with history of homelessness and/or alcohol use.

Box 5: Outbreak of group A streptococci (GAS) *emm*66 in England and Wales

An outbreak of invasive and non-invasive disease due to an unusual type of group A Streptococcus (GAS), *emm*66, among a vulnerable population largely comprised of PWID and people who were homeless was first detected in Brighton in September 2016 (38). Cases continue to be detected throughout England and Wales, but active investigation was stepped down at the end of May 2017.

Between January 2016 and May 2017, 65 *emm*66 infections were identified, of which 53 met the outbreak case definition of injecting drugs (n=42), being homeless (n=34) and/or reporting problematic alcohol use (n=7). There were 39 invasive infections. Incidence was protracted and became more geographically dispersed over time.

Although there was no epidemiological data to suggest a direct link between cases, whole genome sequencing analysis showed 32 sequences from outbreak cases grouped into the same clade as 3 non-outbreak cases and 6 historical *emm*66 isolates from 2015. The microbiological and epidemiological evidence was suggestive of a new introduction of bacteria into the PWID population in 2015 with limited spread in the general population, local circulation within towns but no direct transmission between cases in different towns. Transmission related to use of contaminated drugs or packaging was thought to be unlikely.

In towns with multiple cases, local outbreak control teams reviewed the policies and practices of affected needle and syringe programmes and homeless hostels around injecting, infection control and environmental cleaning. Frontline service providers, including GPs, drug and alcohol workers, homeless shelters and hostels, hospital in-reach teams and nurse-led community services, pharmacies and dental services, were contacted to raise awareness of GAS infection and infection control measures.

The *emm*66 lineage continues to be a less common GAS type in England and Wales, although its relative contribution to the overall iGAS burden increased from 0.2% in 2010-15 to 1.4% in 2016. It has become the most dominant type seen among PWID as a result of this outbreak and the protracted incidence seen to date may well continue.

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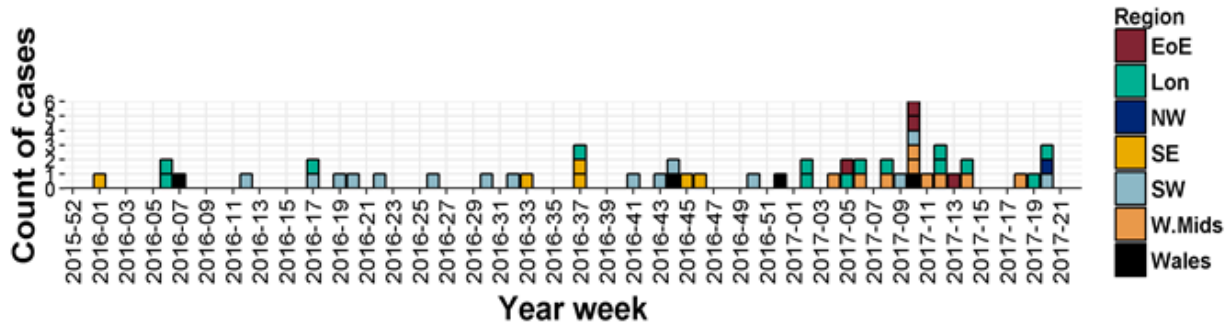
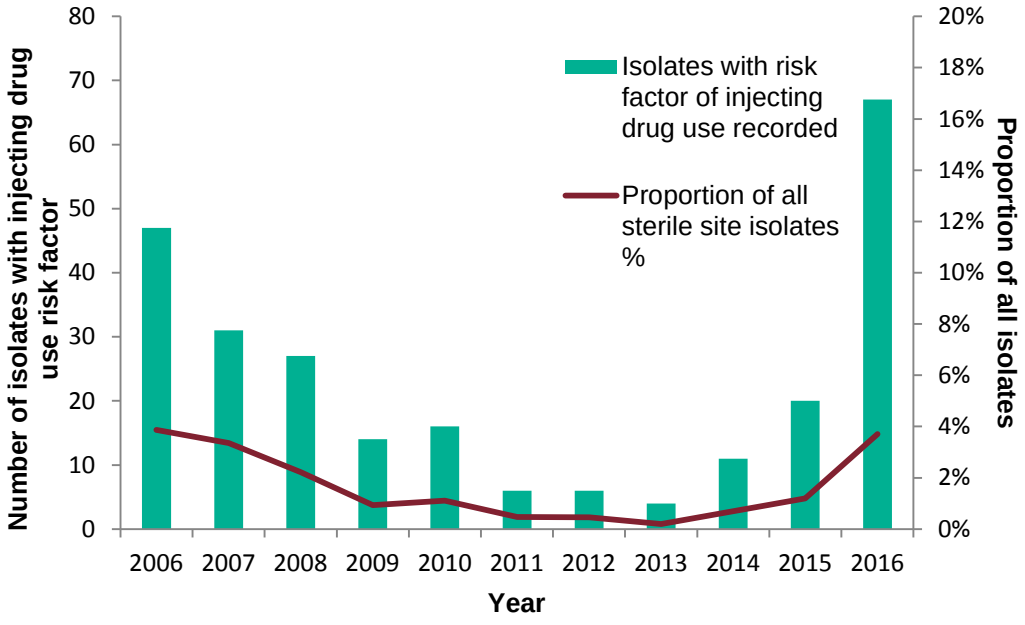


*Outbreak cases of group A Streptococcus type emm*66 *infection, by region of residence and week of sample date, England and Wales, 2016-2017*

Since 2010, there has been an increase in the number of iGAS isolates typed by the PHE Respiratory and Vaccine Preventable Bacteria Reference Unit. Since 2013, there has been an increase in the proportion of these isolates that included drug injection as a risk factor on the referral form (Figure 4). In 2016, there were 67 isolates of iGAS for which injecting drug use was indicated; this is 3.7% (67/1817) of all invasive isolates (Accompanying Data, Table 2). Sixteen iGAS isolates were part of the ongoing outbreak of type *emm66* in England and Wales (Box 5). Excluding *emm*66 isolates, there were 51 isolates for with injecting drug use was indicated; 2.8% (51/1791) of all invasive isolates. This is more than double the amount of isolates from PWID reported in 2015 (20; 1.2%).

Figure 4: iGAS isolates received by PHE Respiratory and Vaccine Preventable Bacteria Reference Unit with risk factor of injecting drug use recorded, 2006-2016



Data source: PHE Respiratory and Vaccine Preventable Bacteria Reference Unit

Although the increases in MRSA/MSSA and group A streptococci could be an artefact of enhanced clinical awareness and case ascertainment, there are other indicators of an increase in bacterial infections among PWID. An investigation was recently done on Hospital Episode Statistics data from 1997-2016 for patients 15-55 years of age for injecting-related problems or invasive infections related to injecting (39). From 2012–13 through 2015–16, the total number of injecting-related admissions increased each year in all age groups. The largest relative increase was for 45–55-year-olds (18% per year).

Toxin-producing bacteria (botulism, tetanus, anthrax)

Illnesses, such as botulism, which are caused by the toxins produced by spore-forming bacteria, continue to cause problems among PWID. The spores produced by these bacteria are found in the environment, and may end up in drugs, such as heroin, through contamination. Although these infections are rare, they can be life-threatening. There were 7 cases of wound botulism in 2016; 4 confirmed and 3 probable cases. Two cases were identified in the same area, but no links were identified between them, or between any of the other cases. There was 1 case of clinically confirmed tetanus reported among PWID in the UK in 2016. There were no cases of anthrax reported among PWID in the UK in 2016 (Accompanying Data, Table 2).

Injecting risk behaviours have declined but remain a problem

Sharing of injecting equipment

Many PWID remain at risk of blood-borne viruses such as HIV and hepatitis B and C through their injecting drug use and also through sex. Overall, the level of needle and syringe sharing (either borrowing or lending a used needle or syringe) among those currently injecting psychoactive drugs has fallen across the UK. In Scotland, sharing of needles and syringes in the previous month fell from 22% during 2006-07 to 18% in 2015-16 among individuals attending drug treatment services (Accompanying Data, Table 3a), while in England, Wales and Northern Ireland sharing of needles and syringes fell from 23% of those surveyed in 2006 to 17% in 2016 (Accompanying Data, Table 3a). When including the sharing of mixing containers or filters as well as needles and syringes, the proportion of those reporting sharing was 39% in 2016 in England, Wales and Northern Ireland (Accompanying Data, Table 3a).

One harm reduction measure that can be taken to reduce blood-borne virus transmission as a result of needle and syringe sharing is the provision of low dead space syringes (Box 6).

Box 6: Detachable Low Dead Space Syringes for people who inject drugs

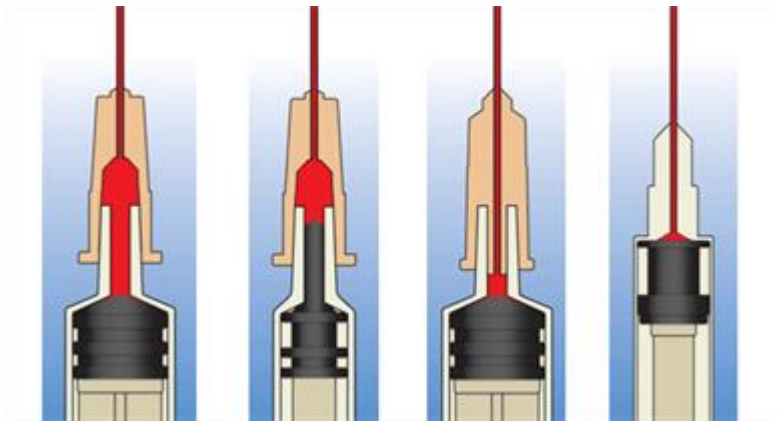
The National Institute for Health and Care Excellence (40) recommends needle and syringe programmes offer low dead space syringes (LDSS). Compared to standard injecting equipment with detachable needles, which are needed for femoral vein (groin) injecting, LDSS contain less space between the plunger and needle (41) and transfer less blood if re-used (42, 43). LDSS use can reduce the chance of spreading infections among PWID (40, 44-49). Fixed needle and syringe combinations (1ml) are the lowest dead space equipment; therefore, PWID should be encouraged by needle and syringe programmes to use this equipment whenever possible.

Box continued on next page

Research conducted by The National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care West (NIHR CLAHRC West), NIHR Health Protection Research Unit (HPRU) in Evaluation of Interventions and Bristol Drugs Project found detachable LDSS are likely to be acceptable to PWID (50). PWID valued that using detachable LDSS meant less wasted drug (compared to standard detachable equipment) and reduced risk of passing infections. Recommendations for introducing detachable LDSS included: training and education for needle and syringe programmes providers and service users, gradual equipment introduction and adverse event monitoring. Encouraging appropriate rinsing is also needed because several rinses are required to remove hepatitis C virus from detachable LDSS (51).

To accelerate the rollout and uptake of detachable LDSS, a group of national stakeholders are producing infographics covering these topics: needle and syringe programmes benefit; equipment choice; safer injecting practices; encouraging the return of used equipment; low dead space needles and syringes; rinsing and sterilising equipment.

In Scotland, LDSS were rapidly introduced in April 2016 in response to the outbreak of HIV among PWID in Glasgow (52). Although 1ml LDSS were available previously, the majority of newly diagnosed HIV cases had recently accessed 2ml syringes which were posing high risk for the transmission of blood-borne viruses. A new 2ml LDSS was developed to address this need, and supplied as part of the injecting equipment provision programme in Glasgow. By virtue of a national procurement contract in Scotland for injecting equipment provision equipment, the 2ml LDSS pioneered in Glasgow are currently being rolled out across Scotland (52).



Illustrations of dead space in common needle and syringe designs (artwork licensed by Creative Commons). Reproduced with permission from William Zule. From left to right: Standard detachable needle on standard syringe, Standard detachable needle on low dead space syringe, Low dead space detachable needle on standard syringe, Low dead space syringe with fixed needle.

Adequate provision of injecting equipment is important, not only to reduce sharing of injecting equipment, but also to reduce the re-use of equipment by the same individual which could lead to accidental sharing in situations where people store injecting equipment together (53). Needle and syringe provision is considered ‘adequate’ when the reported number of needles and syringes received met or exceeded the number of times the individual injected. In 2016, the proportion of PWID in the UK reporting adequate needle needle/syringe provision was sub-optimal; around half (46%) of PWID who had injected during the preceding 28 days reported adequate needle/syringe provision in England, Wales and Northern Ireland; this was 72% among PWID who had injected in the past 6 months in Scotland (4).

Sexual behaviour

PWID are also at risk of acquiring and transmitting blood-borne viruses through sexual transmission. Among PWID surveyed across England, Wales and Northern Ireland, 64% reported anal or vaginal sex during the preceding year and of these, 37% reported 2 or more sexual partners (13). Of those with 2 or more partners during the preceding year, only 23% reported always using condoms (13).

Among the men injecting psychoactive drugs included in the UAM survey across England, Wales and Northern Ireland, the proportion who reported sex with men during the preceding year has risen from 4.4% (74/1,692) in 2006 to 7.9% (96/1,223) in 2016. The prevalence of HIV in this group of men who have sex with men has increased in recent years to 6.3% (6/96) in 2016; this compares with 5.0% (44/885) over the period 2006 to 2015. This probably reflects the emergence of injecting drug use among some groups of (often HIV positive) men who have sex with men (MSM) who take drugs around or during sex (54, 55). Comparing MSM with the other men recruited in the UAM Survey between 2013 and 2015 suggests they have a distinct profile: MSM were more often recent initiates to injecting, and a greater proportion injected mephedrone and ketamine, 2 drugs associated with ‘slamming – that is; the injection of drugs before or during planned sexual activity to sustain, enhance, disinhibit or facilitate sex (56). MSM were more likely to report needle/syringe sharing than heterosexual men, and were more likely to have 10+ sexual partners. The data suggest that ‘slamming’ is evident among MSM accessing general drug services, which could negatively impact the UK’s low HIV prevalence among PWID (56).

Changing patterns of psychoactive drug injection remain a concern

Patterns in psychoactive drug use

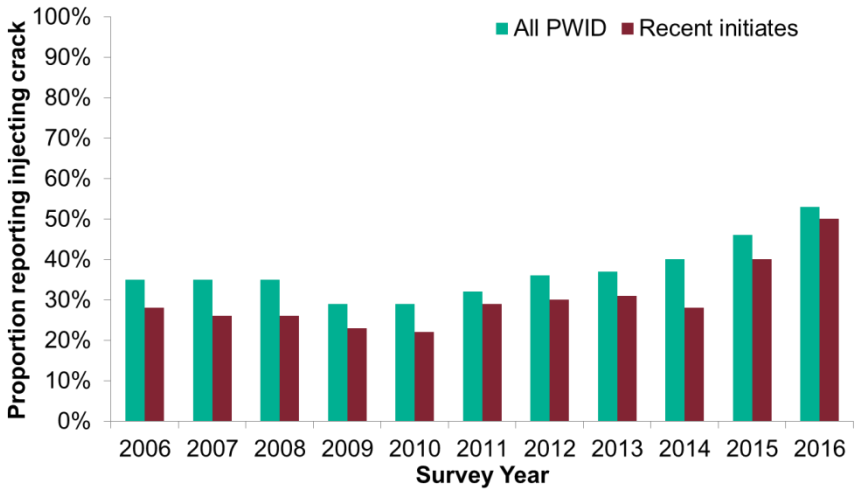
Heroin remains the most commonly injected drug in the UK: in 2016, 94% (1,369/1,458) of those who injected drugs in the previous month in England, Wales and Northern Ireland reported injecting heroin. In Scotland, among people who had injected drugs during the past 6 months, heroin was the most commonly injected drug, reported by over 90% of those surveyed at services providing injecting equipment between 2008 and 2016 (12).

Injection of amphetamine ('speed') or amphetamine-type drugs has decreased in recent years, following an increase up to 2014. In 2016, 6% (69/1,216) of those who injected drugs in the previous month in England, Wales and Northern Ireland reported amphetamine or amphetamine-type drugs as the main drug they injected; this compares with 12% in 2011-2014. In Scotland, injection of amphetamines was reported by 4% of those who injected in the last 6 months in 2015-16 (12).

Increase in crack injection

Data from the UAM survey indicate that injection of crack has increased in recent years in England and Wales, with 53% of those who had injected in the preceding 4 weeks reporting crack injection in 2016 as compared to 35% in 2006 (Figure 5) (13). A significant increase was observed in Wales and in multiple regions in England (East of England, London, South East, South West and East Midlands). Crack injection also increased among recent initiates, with 50% of those who had injected in the preceding 4 weeks reporting crack injection in 2016, vs. 28% in 2006 (Figure 5) (13). No crack injection was reported in Northern Ireland in 2016. In Scotland, injection of crack was reported by 3% of those who injected in the last 6 months in 2015-16 (12).

Figure 5. Crack injection in the last 4 weeks, England, Wales and Northern Ireland, 2006-2016 (13)



Data source: Unlinked Anonymous Monitoring survey of people who inject drugs (England, Wales and Northern Ireland) and Needle Exchange Surveillance Initiative (Scotland).

New psychoactive substances (NPS)

In recent years, there has been an increase in the number of “new psychoactive substances” (NPS) being used in the UK. NPS is a term for substances that are intended to mimic the effects of controlled drugs such as cannabis, cocaine, amphetamine, ecstasy and heroin (57). The Psychoactive Substances Act came into force in 2016, prohibiting the production, distribution, sale and supply of NPS in the UK (6). Various drugs, also often referred to as NPS, had already been controlled before the 2016 Psychoactive Substances Act came into force; for example, mephedrone was controlled under the Misuse of Drugs Act in 2010.

Some NPS, typically short acting stimulants, can be injected and this is a concern due to the associated risky injecting practices. There is evidence, however, that the injection of some NPS, such as mephedrone, has declined; in England, Wales and Northern Ireland, 4.4 % (85/1,927) of those surveyed in 2016 reported that they had injected mephedrone at some point during the preceding year, which is a decrease from previous years (9.0% in 2014, 8.2% in 2015) (5). Those who had injected mephedrone during the preceding year were twice as likely to report having injected drugs with a needle or syringe that had previously been used by someone else (5). In Scotland, injection of NPS was monitored for the first time in 2015-16: it was reported by 10% among those who injected in the last 6 months (12).

Emergence of heroin mixed with fentanyl

Heroin mixed with fentanyl has been linked to a number of overdose deaths reported late in 2016 and early in 2017 (58). Fentanyls are synthetic opioids which have similar effects to heroin, but they are more potent and toxic, meaning using a small amount can result in overdose and death. There is no indication that heroin mixed with fentanyl is related to changes in any injection related infections.

Provision of effective interventions needs to be maintained and optimised

Infections remain common among PWID. This reflects ongoing injecting risk particularly through reuse and sharing of injecting equipment. PWID are also at risk of infections through sexual behaviours. Interventions that can prevent infections among this group, such as needle and syringe programmes and opioid substitution treatment, need to be sustained. The impact of these interventions is dependent on their coverage (3, 59), so it is important that the level of their provision is regularly reviewed to ensure that it is sufficient to prevent infections. Good intervention coverage among those who have very recently started to inject is particularly important, as the extent of hepatitis C infection in this group indicates that many people are becoming infected soon after they start injecting.

Those who commission services to reduce the harm associated with injecting drug use should give appropriate priority to preventing the spread of infections. National drug strategies, including the 2017 Drug Strategy, acknowledge that tackling drug-related harm and reducing infections are important components of a recovery-focused response to drug use (2, 60-62). Services commissioned in line with these strategies, relevant action plans (7-10), related guidance (17, 63-67) and local needs assessments (68) should include appropriate provision of:

- needle and syringe programmes
- opioid substitution treatment
- other drug treatments

These services, and primary care and sexual health services, should provide information and advice on safer injecting practices, preventing infections and the safe disposal of used equipment.

Hepatitis C prevalence remains high in PWID with around half of those having ever been infected with hepatitis C. The Global Health Sector Strategy 2016-2021 has set the first-ever global targets to eliminate viral hepatitis as a major public health threat by 2030 (4). The advent and increasing availability of the new directly acting antiviral drugs provides an opportunity to reduce morbidity and mortality from hepatitis C among those aware of their diagnosis, and decrease the risk of onward transmission (4). PWID are the main drivers of the hepatitis C epidemic and are thus a prime target group for the roll-out of direct acting antivirals. More work is needed to meet the 2030 targets set by the Global Health Sector Strategy. Improving the offer and uptake of testing for hepatitis C is particularly important because **many hepatitis C infections remain undiagnosed** among PWID. Opt out testing approaches should be considered where appropriate.

Well-designed, supportive care pathways for those infected are needed, and those diagnosed with hepatitis C and who continue to inject should have access to effective treatment and care in line with current guidelines (17, 69, 70).

In the UK, **HIV levels remain low, but risks continue** among PWID, and HIV outbreaks still occur. Injecting drug use among some groups of men who have sex with men is also a concern. To ensure HIV levels remain low, it is important that diagnostic testing for HIV is offered regularly to all those at risk, that care pathways for those infected are maintained, and that services adapt to changing patterns of HIV risk (17).

Hepatitis B remains rare, but vaccine uptake needs to be sustained, **particularly in younger age groups**. The provision of vaccination for this population should be maintained in line with guidance (34) and ways of further improving uptake among PWID explored. The use of innovative approaches to reduce the number of missed opportunities for vaccination, such as contingency management including the use of incentives (71), should be considered.

Information and advice on safer injecting practices and avoiding injection site infections are important as **bacterial infections continue to be a problem**. This should include the provision of tetanus vaccination when appropriate (34), wound care services, and treatment for injection site infections (17). Appropriate urgent referral for potentially serious injection site infections may be needed for some patients (17).

The **changing patterns of psychoactive drug injection remain a concern** due to the higher levels of risk associated with stimulant drugs. Services that are provided to reduce the risk of infections should reflect the increasing range of drugs that are now being injected (17). These services should also be appropriate to the needs of particular groups of PWID, such as some men who have sex with men (72).

Injecting risk behaviours have declined but remain a problem. The level of needle and syringe sharing among those currently injecting psychoactive drugs has fallen across the UK, but needle and syringe sharing remains a problem. People continue to be at risk of infection through injecting behaviours. A range of easily accessible needle and syringe programmes for all PWID, including those using drug treatment services, need to be provided in line with guidance (40, 67). Low dead space equipment should be offered and encouraged where appropriate (17, 40). Needle and syringe programmes should also offer interventions that support entry into treatment and other interventions to decrease or stop injecting. They should aim to distribute appropriate and sufficient injecting-related equipment to prevent sharing and to support hygienic injecting practices.

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