DRUG-RELATED BLOODBORNE VIRUSES IN IRELAND

2018

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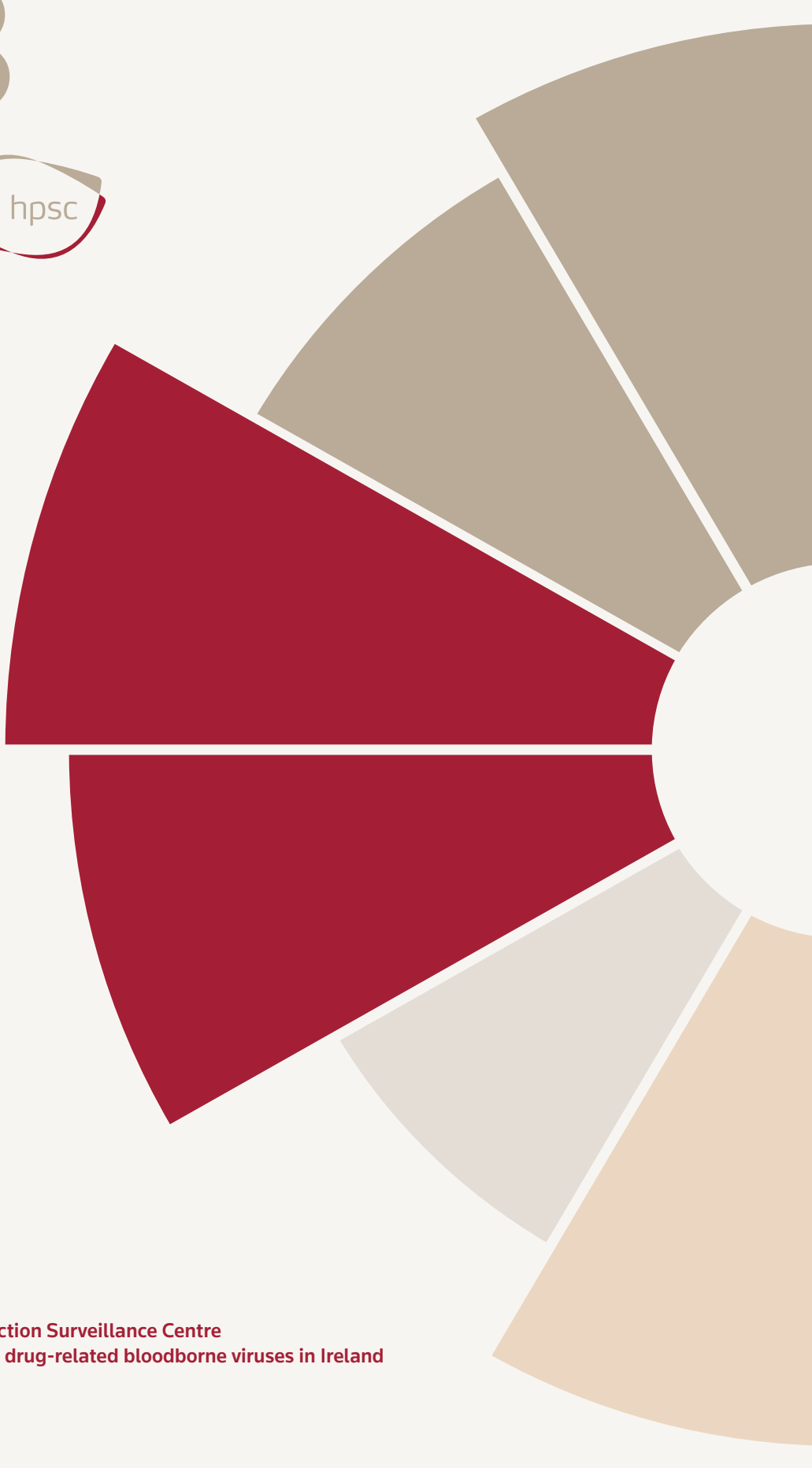

Report prepared by the Health Protection Surveillance Centre
on behalf of a collaborative group on drug-related bloodborne viruses in Ireland
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Abbreviations

BBV	Bloodborne virus
CRC	Capture-recapture study
CTL	Central Treatment List of people on methadone
DoH	Department of Health
ECDC	European Centre for Disease Prevention and Control
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
HPSC	Health Protection Surveillance Centre
HRB	Health Research Board
HSE	Health Service Executive
HIPE	Hospital In-Patient Enquiry Scheme
SHCPP	Sexual Health & Crisis Pregnancy Programme
HAV	Hepatitis A
HBV	Hepatitis B
HCV	Hepatitis C
HIV	Human immunodeficiency virus
IPED	Image and performance enhancing drugs
ICGP	Irish College of General Practitioners
IPS	Irish Prison Service
MSM	Men who have sex with men
NACDA	National Advisory Committee on Drugs and Alcohol
NDRDI	National Drug-Related Deaths Index
NDTRS	National Drug Treatment Reporting System
NVRL	National Virus Reference Laboratory
NPS	New psychoactive substances
NSP	Needle and syringe programme
OST	Opioid substitution treatment
PWID	People who inject drugs
SIF	Supervised injecting facility

Authorship

This report was prepared by a collaborative group, which was primarily established for the purpose of preparing a comprehensive summary of drug-related bloodborne viruses in Ireland. This group comprised representatives from the HSE Health Protection Surveillance Centre, the Health Research Board, the Irish Prison Service, the HSE National Social Inclusion Office, the HSE Sexual Health and Crisis Pregnancy Programme, the National Virus Reference Laboratory and the HSE Addiction Services.

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Summary

The main risk factor for transmission of bloodborne viruses (BBVs) in drug users in Ireland is injecting opioids, particularly heroin. Estimates from a 2014 capture-recapture study indicate that there are just under 19,000 problem opioid users in Ireland, with over 70% living in Dublin[1]. This is similar to the estimate from a previous capture-recapture study carried out in 2006[2]. However, the age profile of opioid users changed significantly between 2006 and 2014. Results from the 2014 study indicate that 60% of Ireland's opioid users are aged between 35 and 64 years compared to less than one third in the 2006 study. Furthermore, only 6% were aged between 15 and 24 years compared to over one fifth in the previous study. These results indicate a high prevalence of opioid use among older drug users, but a declining incidence of problem opioid use in Ireland.

Trends from the National Drug Treatment Reporting System (NDTRS) indicate a steady decline in new entrants to treatment who reported opioids as their primary problem drug between 2009 and 2016, and a decrease in the proportion who inject[3-6]. However, cocaine and benzodiazepine use has increased in recent years. These are associated with a lower risk of BBVs, as they are less likely to be injected. However, 2% of those entering treatment for cocaine in 2015 were currently injecting and a further 12% had injected drugs in the past. Cocaine was also hypothesised to be responsible for high rates of HIV infection in a cohort of drug users in an inner-city area of Dublin in a 2001 study[7]. Furthermore, people who use cocaine, benzodiazepines and other drugs, such as new psychoactive substances, image and performance enhancing drugs, or chemsex drugs, may be less likely to self-identify as problem drug users and less likely to avail of BBV testing, harm reduction and drug treatment.

Over three quarters of diagnosed cases of hepatitis C in Ireland are in people who inject drugs (PWID)[8,9]. Data from statutory notifications, studies in opioid substitution treatment (OST) settings and studies in prisons indicate a high prevalence, but declining incidence, of hepatitis C in opioid users in Ireland[7-31]. OST is readily available in Ireland, particularly in the greater Dublin area, and the uptake of BBV testing in OST settings is reported to be high. With the advent of highly effective (>95% cure) direct-acting antiviral drugs, hepatitis C elimination is now achievable in Ireland[32]. Implementation of the National Hepatitis C Screening Guidelines[33] and the Clinical Guidelines for OST[34] will be important in maximising the proportion of cases diagnosed and treated and further reducing the incidence of hepatitis C infection in Ireland.

Data from statutory notifications show that the number of new HIV diagnoses in PWID is also decreasing in Ireland[9]. Data from the National Virus Reference Laboratory (NVRL) in 2016 showed ongoing transmission of HIV in this cohort, but the numbers were small.[35] Viral suppression is now achievable for most diagnosed and treated cases of HIV[36,37]. Screening and early treatment are essential to prevent onward transmission and to decrease morbidity and mortality. However, a recent outbreak of HIV among homeless PWID in Dublin highlighted the ongoing vulnerability of this population to infection and future outbreaks.[38]

Results from studies in OST settings and from statutory notifications data indicate a low prevalence and incidence of hepatitis B in PWID in recent years [9,13,18,24]. This is likely to be due to a combination of immunity post-infection in the past and good vaccine coverage. However, there is a need to collect better data on vaccine uptake, to encourage vaccination in OST settings and to increase the availability of vaccination in other settings, such as through needle exchange services.

Currently, in most addiction treatment clinics and prisons, information on BBV screening uptake and laboratory results has to be extracted manually, for each patient, from paper records and scanned images. Computerisation of the drug treatment services, with an emphasis on the importance of recording laboratory results in an extractable format, would greatly enhance monitoring and data reporting. There are also missed opportunities in relation to Dublin-based needle exchange services. Although needle exchange is designed to be a low-barrier service, it would be useful to collect a minimum dataset on the cohort at highest risk of BBVs. It would also be beneficial to service users if on-site vaccination, BBV screening and referral to other services were available through needle exchange services [39,40].

1. Introduction

People who use drugs are at risk of acquiring viral and bacterial infectious diseases, which can cause significant morbidity and premature mortality. Surveillance of drug use and drug-related bloodborne viruses (BBVs) is essential for monitoring the impact of prevention and harm reduction programmes. A report on BBVs in PWID was published by the Health Research Board (HRB) in 2006[41]. Since then, there have been many changes in the patterns of drug use, in addiction services, and in the incidence and prevalence of BBVs in drug users in Ireland.

There have also been significant changes in the efficacy of, and access to, hepatitis C and HIV treatment. Treating hepatitis C, with new direct acting antiviral (DAA) drugs, results in a cure for over 95% of patients[32]. The HSE has established a National Hepatitis C Treatment Programme (NHCTP) to ensure that people living with hepatitis C are offered effective treatment in a structured way. Elimination of hepatitis C is now achievable in Ireland (described in more detail in section 5.1 box 1). Recent advances in HIV treatment and prevention include the recommendation in 2017 from the HSE that all people newly diagnosed with HIV should be offered antiretroviral therapy (ART), regardless of their stage of HIV infection. (See section 5.2 box 3 for further information on HIV treatment).

The aim of this report is to summarise what is currently known about drug-related BBVs in Ireland. The report focuses on hepatitis C, HIV and hepatitis B and begins by outlining problem drug use associated with an increased risk of these infections. Problem drug use is defined as 'injecting drug use, or long duration, or regular use, of opioids, cocaine and/or amphetamines' (http://www.emcdda.europa.eu/stats07/PDU/methods). Trends in the number of drug users and drug treatment services are also described. Available information on the incidence and prevalence of hepatitis C, HIV and hepatitis B in drug users is summarised. Gaps in knowledge and opportunities for improvements in the way information is collected or recorded are identified.

2. High-risk drug use in Ireland

Injecting or smoking heroin, snorting cocaine and using benzodiazepines or new psychoactive substances are common among high-risk drug users in Ireland, particularly among homeless people and those living in socioeconomically deprived areas. People who use drugs are at high risk of BBVs, tuberculosis and bacterial infections at injection sites. Alcohol misuse and mental health problems are common co-morbidities. Discrimination and the stigma of addiction are ongoing issues, and some people who use drugs may find it difficult to access addiction services due to their chaotic lifestyles.

The following sources of information were used to describe high-risk drug use in Ireland:

- Capture recapture studies carried out in 2001[42], 2006[2] and 2014[1]
- HRB National Drug Treatment Reporting System (NDTRS)
- Central Treatment List (CTL)
- Other published studies and Irish reports

2.1 Opioids

The most significant risk factor for the transmission of BBVs in drug users in Ireland is through opioid use, in particular through injecting heroin. Heroin first became widely available in Ireland in the late 1970s and early 1980s. Its use was initially concentrated in areas of local authority housing in deprived north and south inner-city areas of Dublin. Studies in these areas at the time found that 9-10% of 15-24 year olds were using heroin and that most were injecting[10,11,14]. Unsafe injecting practices in small communities of drug users posed a high risk of BBVs and significant proportions of these early heroin users became infected with hepatitis C, HIV and hepatitis B. In a 25 year longitudinal study (1985-2010) of 82 early heroin users in a south inner-city area of Dublin, 71% became infected with hepatitis B and 63% became infected with HIV over the time period of the study. A significant number were not tested for hepatitis C as there was no test available when the study began, but of those subsequently tested two thirds were positive[27].

The opioid epidemic plateaued in the mid-1980s, but there was a resurgence in the 1990s and heroin use spread more widely to other areas of Dublin, including newer suburban local authority housing estates[10,14]. Three capture-recapture (CRC) studies, commissioned by the National Advisory Committee on Drugs and Alcohol (NACDA), and carried out between 2001 and 2014, indicate that there are now a significant number of problem opioid users in Ireland[1,2,42].

The first two studies were carried out in 2001[42] and 2006[2]. The data sources used were the Central Treatment List of clients on methadone (CTL), the Hospital In-Patient Enquiry scheme (HIPE) and the Garda PULSE database. A third study, commissioned in 2014[1], used four data sources: drug treatment clinic data, information from general practice, prison records and statistics provided by the Irish Probation Service.

Table 1 (CRC 2014) shows the most recent prevalence estimates of opioid use in Ireland. Data from this study indicated that the national prevalence of opioid users in 2014 was between 18,720 and 21,454[1]. The point estimate was 18,988, giving a rate of 6.18 per thousand population aged 15-64 years (95% CI: 6.09-6.98). Sixty nine percent were male[1].

Seventy one per cent of opioid users lived in Dublin. The estimates for Dublin were 13,458 (95% CI: 12,564-14,220), suggesting a population rate of 15.15 per thousand population. The prevalence for the rest of Ireland (excluding Dublin) was determined to be 5,530 (95% CI: 5,406-8,023), 2.53 per thousand population[1].

In terms of regional differences by county, County Sligo had the lowest prevalence of opioid use with a rate of 0.37 per thousand population (95% CI: 0.21-1.73). Other counties with prevalence rates lower than 1.0

per thousand were Donegal, Leitrim, Mayo and Monaghan. With regard to regional differences by city, after Dublin, Limerick had the highest rate of use at 8.82 per thousand population (95% CI: 7.11-13.16) followed by Waterford (6.72, 95% CI: 5.24-15.12) and Cork (5.67, 95% CI: 4.91-6.71). Galway had the lowest city prevalence of opioid use at 1.93 per thousand (95% CI: 1.55-2.73)[1].

The 2014 CRC study collected data from all sources for a four year period (2011-2014)[1], allowing opioid use prevalence estimates for 2014 to be compared with estimates from 2011, 2012 and 2013. There was an increase each year, rising from 17,387 in 2011 to 18,988 in 2014 (figure 1). However, this was not a statistically significant increase over time. Other trends observed include the following:

- There was a non-significant decline in opioid use both inside and outside of Dublin when compared to 2006 (table 2).
- The proportion of opioid users aged 15-24 years also declined (6% in 2014 compared to 21% in 2006).
- There was an increase in the proportion of opioid users who were aged between 35 and 64 years (60% in 2014 compared to less than one-third in 2006), suggesting an ageing cohort.

Although findings from the 2014 CRC study suggest that the prevalence of problem opioid use in Ireland may have stabilised, it should be noted that estimates remain high, with comparable international studies suggesting that rates of use remain amongst the highest in Europe (figures 1 & 2). In addition, the authors of the most recent CRC study highlight that there is limited validity in making direct comparisons with previous CRC studies conducted in Ireland, due to the use of different data sources. Furthermore, none of the slight decreases observed was statistically significant[1].

Table 1. Summary of prevalence estimates of opioid use in 15-64 year olds, in Ireland, 2014

Area	Estimate	Lower bound	Upper bound	Rate/1000 population
Dublin	13,458	12,564	14,220	15.15
Rest of Ireland	5,530	5,406	8,023	2.53
State total	18,988	18,720	21,454	6.18
Age group				
15-24 years	1,092	1,076	1,234	1.88
25-34 years	6,672	6,578	7,539	8.84
35-64 years	11,224	11,065	12,681	6.46
Gender				
Female	5,966	5,882	6,741	3.86
Male	13,022	12,838	14,713	8.52

Source: NACDA, 2017[1]

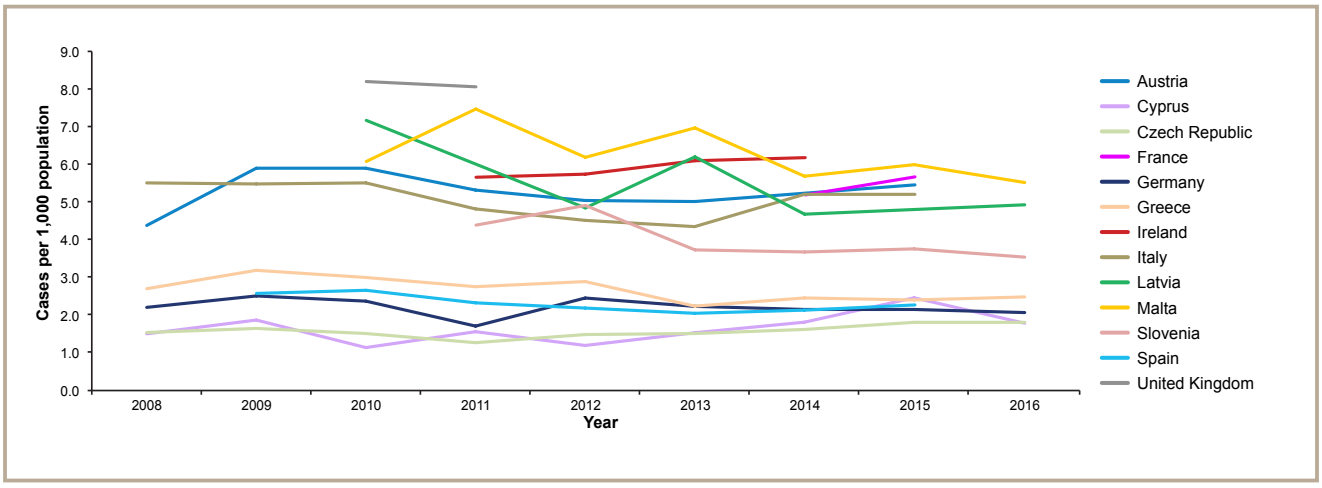

Figure 1. National estimates of the annual prevalence rate of high-risk opioid use
Source: EMCDDA, 2018

Table 2. Estimated prevalence of opioid use, in 15-64 year olds, in Ireland for 2001, 2006 and 2014

Area	2001 estimate	2001 rate/1000 population	2006 estimate	2006 rate/1000 population	2014 estimate	2014 rate/1000 population
Dublin	12,456	15.9	14,909	17.6	13,458	15.15
Rest of Ireland	2,225	1.2	5,886	2.9	5,530	2.53
State total	14,681	5.6	20,790	7.2	18,988	6.18

Source: NACDA, 2017[1]

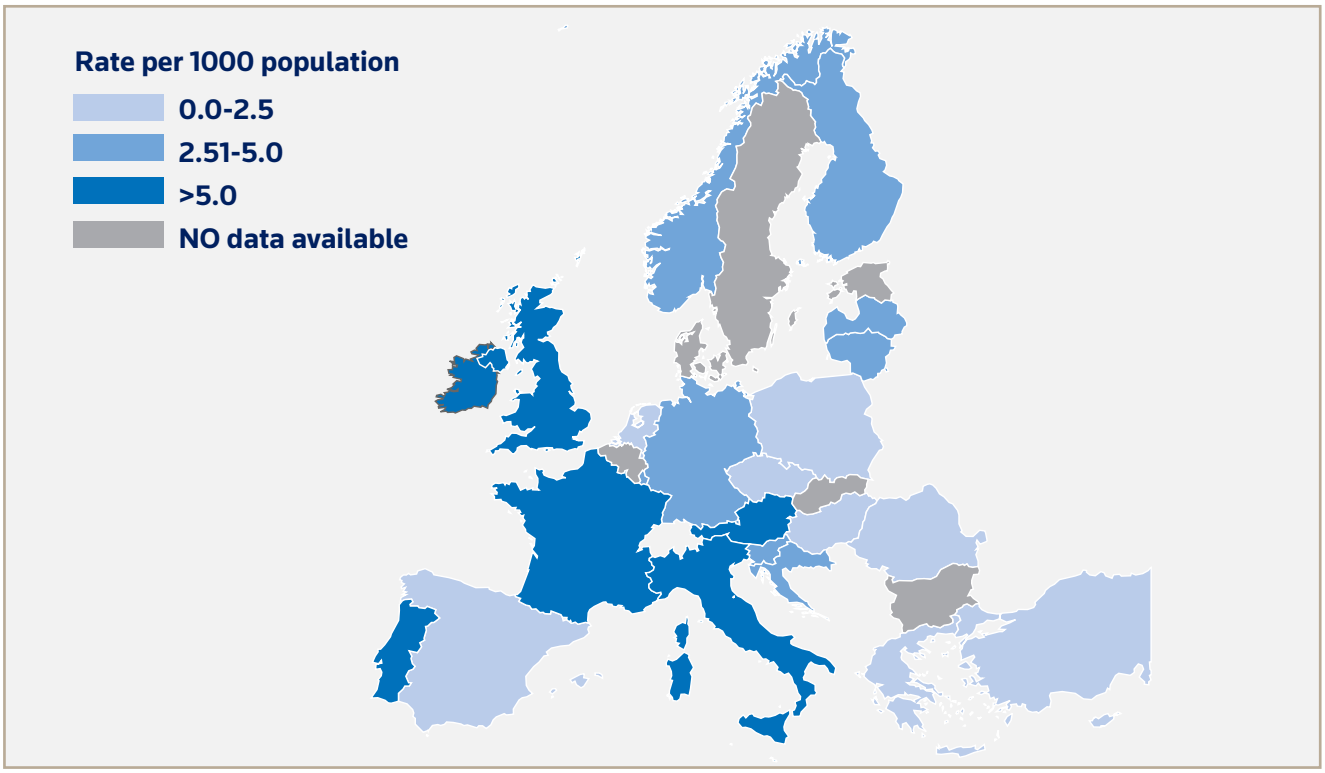

Figure 2. National estimates of the annual prevalence rate of high-risk opioid use in Europe
Source: EMCDDA, 2018

National Drug Treatment Reporting System (NDTRS)

Surveillance of treated problem drug use in Ireland is carried out using an on-line epidemiological database (NDTRS). This is co-ordinated by the Health Research Board (HRB) on behalf of the Department of Health (DoH). The NDTRS reports on treatment episodes, rather than individuals, per calendar year. It was established in 1990 in the Greater Dublin Area and was extended to cover all areas of the country in 1995.

Although it is evident that there is a significant opioid problem in Ireland, trends from the NDTRS indicate that the incidence of treated opioid use (mainly heroin) and of injecting opioids has declined[3-6]. Since a peak in 2009, there has been a steady decline in the total number of new entrants to treatment reporting opioids as their main problem drug (38% decrease between 2009 (n=1,523) and 2016 (n=950)). In recent years, there were also significant differences between those who were entering drug treatment for the first time and those who had been previously treated. Twenty seven percent of first time entrants to drug treatment in 2016 reported opioids as their main problem drug compared to 60% of those who had been previously treated and were re-entering treatment in 2016.[3-4] New entrants to treatment were also less likely to have injected. These trends indicate that more recent problem drug users are less likely to be opioid users and that fewer are injecting. These data support the results from the 2014 CRC study, which indicated an ageing cohort of opioid users in Ireland[1,5]. Figure 3 shows trends in the number of new entrants to treatment for heroin use (most common problem opioid used in Ireland).

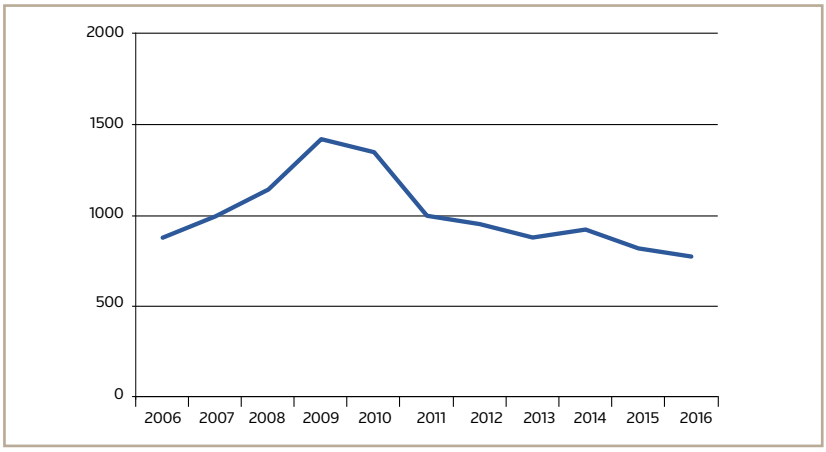

Figure 3. Number of first time entrants to treatment for heroin use (main problem drug) in Ireland, 2006-2016
Source: EMCDDA, 2018

2.2 Polydrug use

Over 60% of entrants to drug treatment in 2016 reported problem polydrug use (individual taking a combination of two or more drugs)[4]. Polydrug use was also found to be very common in a 2016 audit of hepatitis C testing in addiction treatment centres in CHO7[31]. In this audit, almost all (99%, n=375) of the 379 respondents with risk factor information were opioid users, 79% (n=298) of whom were either current injectors or had injected in the past. However, 59% (n=224) also used benzodiazepines, 56% (n=214) used cocaine and 5% (n=19) used new psychoactive substances (NPS).

2.3 Cocaine

Treatment data from the NDTRS show that the number of treatment entrants reporting cocaine as their main problem drug tripled between 2004 (n=353) and 2016 (n=1138). Twelve percent of treatment entrants in 2016 reported cocaine as their primary problem drug and 26% of those who reported a different main problem drug reported cocaine as an additional problem drug[4]. Furthermore, on routine drug screening, the average positivity rate for cocaine among clients attending opioid substitution treatment (OST) clinics in Dublin in June 2017 was 18%, and over a third of clients in one clinic tested positive[43]. Cocaine is most commonly taken by snorting and less commonly by injecting. Some published studies have reported an association between snorting cocaine and hepatitis C infection and others have found no association[33]. However, the risk of BBVs would be expected to be significantly increased in those who use cocaine and have a history of injecting. Two percent of those entering treatment for cocaine in 2015 were currently injecting drugs and a further 12% had injected drugs in the past (NDTRS interactive tables, accessed August 2018, https://www.drugsandalcohol.ie/tables/). Figure 4 shows trends in the number of new entrants to treatment for cocaine use.

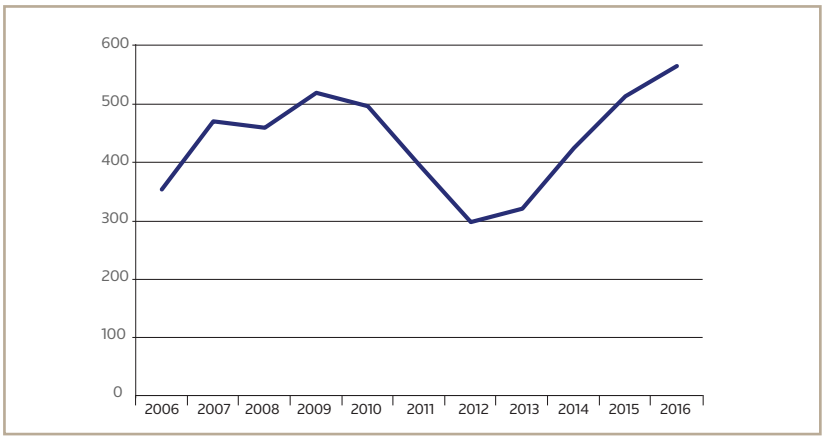

Figure 4. Number of first time entrants to treatment for cocaine use (main problem drug) in Ireland, 2006-2016
Source: EMCDDA, 2018

2.4 Benzodiazepines

Ten percent of entrants to drug treatment in 2016 reported benzodiazepines as their main problem drug[4,5]. However, benzodiazepines are much more commonly reported as an additional problem drug among polydrug users and over a third (37%) of treatment entrants reported benzodiazepines as an additional problem drug in 2016. The misuse of benzodiazepines increases the risk of opioid overdose and is associated with a higher risk of acquiring HIV infection, experiencing anxiety and depression, and having poorer drug treatment outcomes and poorer social functioning[44].

2.5 New psychoactive substances (NPS)

The percentage of entrants to treatment in 2016 who reported NPS as their primary problem drug (<1%) or an additional problem drug (2%) was low[4] However, NPS are still considered a threat as they may lower inhibitions and lead to more risk taking behaviour, in terms of sharing injecting equipment used for other drugs, and high-risk sex. NPS drug use during sex (chemsex) among men who have sex with men (MSM) is a cause for concern because of the direct effects of the drugs themselves (e.g. overdose, acute intoxication, addiction, loss of capacity to give sexual consent), and because of an increased risk of transmission of sexually transmitted infections (STIs). The impact of chemsex is discussed in greater detail in section 6.3.

Although many NPS are taken orally, some may be injected, significantly increasing the risk of BBVs. An outbreak of acute HIV infections in PWID in Dublin, between 2014 and 2015, was found to be associated with injecting the synthethic cathinone, 'snow blow'[38]. This outbreak is further described in section 5.2, box 2.

2.6 Image and performance enhancing drugs (IPED)

Limited data are available on the prevalence of BBVs in people who inject image and performance enhancing drugs (IPED) in Ireland. A small study of 89 IPED users attending Merchant's Quay Ireland for harm reduction services found that about half had been tested for BBVs[45]. Of those tested, 10% self-reported that they had hepatitis C and none reported testing positive for HIV or hepatitis B. Almost all study participants (97%) reported lifetime injecting use of anabolic-androgenic steroids, but polydrug use was also very common. Sixty eight percent reported that they had used cannabis, 57% had used cocaine, 6% had injected cocaine, 36% had used benzodiazepines, 11% had injected heroin and 2% had injected NPS. All of those who tested positive for hepatitis C had also injected psychoactive drugs. Although there is currently insufficient evidence to ascertain the risk of BBVs in IPED users in Ireland, this may emerge as an issue in the future and it is important that screening is improved and that hepatitis B vaccination is encouraged.

Summary

The 2014 CRC study estimated that there are approximately 19,000 problem opioid users in Ireland, with no significant change since the 2006 CRC study. The rate of opioid use in Ireland is still among the highest in Europe. Seventy one percent of problem opioid users lived in Dublin and over two thirds were male. Sixty percent of problem opioid users were aged between 35 and 60 years in the 2014 study, compared to less than one third in 2006. This, combined with NDTRS data showing a decrease in the incidence of opioid use, indicates an ageing cohort of opioid users in Ireland.

The number of entrants to drug treatment reporting cocaine and benzodiazepines as their main problem drug has increased in recent years. Cocaine, benzodiazepines and NPS are associated with a lower risk of BBVs compared to opioids, as these drugs are less likely to be injected. However, people who use these, or image and performance enhancing drugs, may be less likely to access BBV screening and hepatitis B vaccination.

3. Drug treatment and harm reduction services

Needle and syringe programmes (NSP) were introduced in Ireland in 1989 and access to opioid substitution treatment (OST) was expanded. Prior to 1989, there was limited access to OST (e.g. for pregnant women and those with severe health problems, including HIV). There was a move in the early 1990s to provide a broader range of harm reduction services for those who were opioid dependent. This was specifically driven by a public health approach to the issue of HIV prevalence in this population. Consequently, addiction services were greatly expanded during the 1990s[13,27] particularly after the publication of the 1996 Ministerial Task Force report on measures to reduce the demand for drugs[46]. This report identified harm reduction measures such as OST, rehabilitation, and education and prevention as key priority areas in tackling the drugs problem in Ireland. Harm reduction remained a key focus area in National Drugs Strategy reports in 2001, 2009 and 2017[47,48,49].

A complete list of drug treatment services is available from http://www.services.drugs.ie/ and further detail is contained in the EMCDDA 2018 report, available from http://www.emcdda.europa.eu/countries/drug-reports/2018/ireland_en

The following sources of information were used to describe drug treatment and harm reduction services:

- Central Treatment List (CTL)
- HSE Annual Report and Financial statements, 2017[50]
- Evaluation of the pilot stage of the Pharmacy Needle Exchange Programme in Ireland[40]
- Other published studies and Irish reports

3.1 Opioid substitution treatment (OST)

OST using methadone is provided by specialised HSE outpatient treatment clinics/satellite clinics (n=80), through specially trained general practitioners (GPs) in the community (n=376) and in prisons (n=10). All OST patients are registered on the CTL, which is an administrative database, established to regulate the dispensing of methadone. It is a complete register of all patients receiving methadone (as treatment for problem opioid use) in Ireland. The number of clients on this list has increased each year since 2006 (figure 5). By the end of 2017, over 10,000 patients were receiving OST, 53% through specialised clinics, 41% through community GPs and 6% in prisons. OST is readily available in Ireland, with an average waiting time from referral to assessment in 2017 of 5.5 days. In 2017, 99% of adults commenced treatment within one month of assessment, and 97% of those aged less than 18 years commenced treatment within one week of assessment[50]. However, there may be regional variations in the availability and waiting times for OST. Seventy percent of clients on the CTL in 2017 were male and 72% of all clients were 35 years or older.

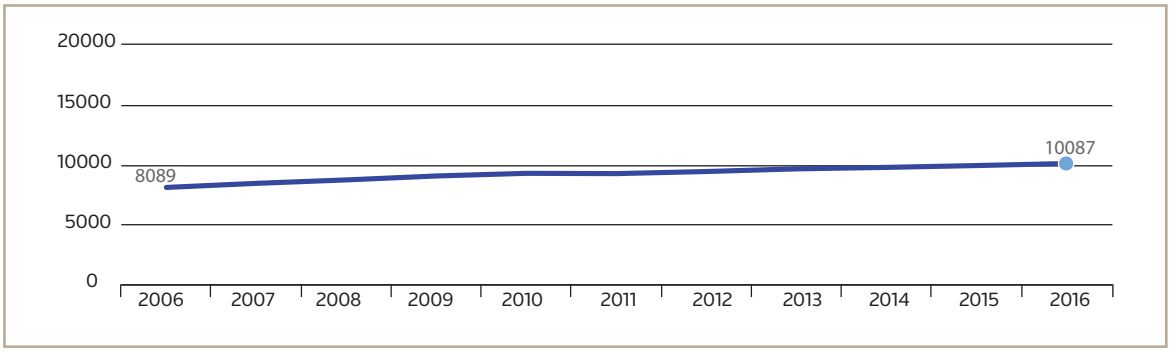

Figure 5. Trends in the number of clients in OST in Ireland, 2006-2016
Source: EMCDDA, 2018

3.2 Needle and syringe programmes (NSP)

There are three models of NSP in use in Ireland:

- Static – 24 sites mainly in Dublin city
- Outreach – 14 sites mainly in counties Dublin, Kildare, Laois, Offaly, Waterford and Wicklow
- Pharmacy – 111 sites in regions outside Dublin, Kildare and Wicklow.

Merchants Quay Ireland and Ana Liffey Drug Project operate NSP in the Dublin area and within Ireland as a whole. Data on the number of syringes exchanged from static and outreach sites in the Dublin area were unavailable for this report.

Outside of the greater Dublin area, needle exchange services are almost exclusively pharmacy-based, but this scheme has not extended to Dublin-based pharmacies yet. Monthly and annual data are only recorded in relation to the pharmacy-based needle exchange programme. The number of pharmacies providing needle exchange packs increased from 42 in 2011 to 110 by the end of 2017. Almost 2,000 (n=1,933) unique individuals attended pharmacy-based needle exchanges in 2017 and an average of 13 needle/syringe packs were distributed per person per month (168 per person for the year)[50]. This is less than the target for 2020 (200 syringes per PWID per year), set in the WHO Euro Action plan for hepatitis[51].

Currently, BBV testing and hepatitis B vaccination are not available at needle exchange sites in Ireland, and integrated needle exchange services are not available at most OST sites. A study which evaluated the pharmacy-based needle exchange programme found that approximately one-third of clients reported never having been tested for BBVs and almost half (49%) of clients reported having used a needle with which someone else had already injected, with 28% having done so in the past month[40]. With these figures in mind, the study authors made a number of recommendations which included the following:

- To consider offering in-pharmacy testing for BBVs. Where this is not possible, to ensure that pharmacy staff are provided with sufficient information on local services to enable efficient referral processes and signposting.
- To provide a wider range of equipment or packs suitable for all clients and look at potentially providing 'pick and mix' services, in addition to pre-prepared packs, to better meet client needs.
- To ensure that pharmacy staff have sufficient training and knowledge about drug use and health-related issues to confidently provide harm reduction advice and support.
- To oversee the transition from a paper-based monitoring system to an electronic data monitoring system to be used by all participating pharmacies.

3.3 Supervised injecting facilities (SIF)

Supervised injecting facilities (SIFs) have been operating in several European countries for the past 30 years. Harm reduction is provided at these sites as drug users can safely inject drugs using sterile equipment under the supervision of trained personnel. It has been found that SIFs are very effective at reaching the most chaotic of drug users, who are often homeless, providing these high-risk, vulnerable and marginalised individuals with easier access to information, support and services. In 2017 the Irish Government passed "The misuse of drugs (supervised injecting facilities) Act" which allows the Minister for Health to grant licences for SIFs to be set up in Ireland. Once established, these will be a major extension to the harm reduction services available to drug users in Ireland. (Press Release Department of Health 2017). The HSE has entered into a tendering process for a service to provide a SIF subject to the necessary local authority planning laws.

4. Guidelines for testing for BBVs and immunisation

The following sources of information were used to describe guidelines for BBV testing and immunisation in drug users:

- Clinical Guidelines for Patients on OST[34,52]
- Immunisation Guidelines for Ireland[53]
- National Hepatitis C Screening Guidelines[33]
- Healthcare Standards for Irish Prisons[54]
- National Sexual Health Strategy (2015-2020)[55]

The latest clinical guidelines for patients on OST were published in 2017[34]. These recommend that all patients attending OST services be screened for hepatitis A, hepatitis B, hepatitis C and HIV, even if they are not injecting drug users and that all be vaccinated against hepatitis A and B. Repeat testing is recommended for those who initially test negative for HIV if they report engaging in behaviours that would put them at ongoing risk of infection. The guidelines also recommend referral to specialist services and treatment, as clinically appropriate, for patients who test positive for hepatitis C or HIV. These replaced the 2008 Irish College of General Practitioners (ICGP) guidelines[52] but the earlier guidelines also recommended testing for BBVs and hepatitis A and B vaccination, and this has always been common practice in the addiction services. The Immunisation Guidelines for Ireland also recommend vaccination against hepatitis A and B for non-immune PWID[53].

Similar testing recommendations were made in the 2017 National Hepatitis C Screening Guidelines[33], which include a recommendation to offer hepatitis C testing to all of those who have ever injected any illicit drugs and to re-test those who test negative every 6-12 months if they remain at risk of infection. These guidelines also recommend testing drug users who have never injected, if there is a possibility of transmission of HCV by the route of administration, and offering testing to all prison inmates on entry to prison or on request.

The Healthcare Standards for Irish Prisons recommend screening for HIV and hepatitis for all inmates who volunteer a background history of risk factors for these diseases[54]. Immunisation against hepatitis A and hepatitis B is recommended for all prison inmates[53,54]. The prison healthcare standards are currently being revised. In practice, BBV testing and hepatitis A and B vaccination are offered to all inmates on committal, regardless of declared risk factors, or at other times if requested.

As a consequence of these policies and guidelines, testing for BBVs, particularly hepatitis C, has been reported to be high (93-95%) for patients in OST in studies published in recent years[29,30,31]. However, uptake of testing may be lower in some settings. Cullen et al reported that just over three quarters (77%) of clients attending 25 general practices for OST had been tested for hepatitis C[25], but data for this study were collected in 2002 and testing may have improved since then. Routine reporting of BBV screening uptake and results is not possible for most addiction treatment clinics in Ireland as most services are not computerised. Even in some that are, laboratory results are often scanned, rather than entered into the system in an extractable format.

Studies reporting information on hepatitis B immunisation status indicate that vaccination coverage is not as high as would be expected given the recommendations to vaccinate prisoners and PWID. Only 37% of prison inmates reported receiving at least one dose of hepatitis B vaccine in a 2011 prison study. However, prisoners with a history of injecting drug use were more likely to have been vaccinated, with over half (54%)

reporting having been at least partially vaccinated[28]. Similar results were reported in a study of OST clients attending level 1 and level 2 GPs (GPs with training in substance misuse, who can prescribe OST), with just under half (49%) of patients having received at least one dose of hepatitis B vaccine and only 23% being fully immunised[25].

Immunisation levels may be higher in patients attending OST clinics. In an older study of a sample of clients attending 21 OST clinics in the greater Dublin area, 81% of those who were not infected with hepatitis B had received at least one dose of vaccine and 69% had been fully vaccinated. Of the remaining 19%, 4% had been offered immunisation and had refused and 15% had no evidence of vaccination or past infection[24].

There is no adult register for recording hepatitis B vaccine uptake and information on vaccination may not be recorded systematically in medical notes. In some studies, data on hepatitis B vaccination status is self-reported and may not be accurate. Anecdotally, the practice in OST settings is to vaccinate and it is likely that the actual vaccination coverage is higher than reported here. However, hepatitis B vaccination levels could be optimised by ensuring that an accelerated schedule is used and also by offering vaccination in needle exchange and other non-OST settings.

The National Sexual Health Strategy (2015-2020) recommended that national HIV testing guidelines should be developed[55] and the HSE Sexual Health and Crisis Pregnancy Programme (SHCPP) has established a working group to develop these. They will be guided by the updated HIV and hepatitis testing guidelines which are currently being prepared by the European Centre for Disease Prevention and Control (ECDC). Current guidance from the EMCDDA and ECDC recommends regularly offering hepatitis B, hepatitis C and HIV tests to PWID at least once every 6 to 12 months[56].

Summary

OST availability and coverage is high in Ireland. Guidelines recommending screening for BBVs in OST and prison settings are in place and screening is reported to be carried out routinely in these settings. Those found to be positive can avail of hepatitis C and HIV treatment, which should result in significantly improved health outcomes and decreased transmission of these BBVs to others. The lack of computerisation in most addiction treatment clinics means that data on BBV screening and results, and hepatitis B vaccination uptake, cannot be routinely reported.

Although data are available from pharmacy-based needle exchange programmes outside of the Dublin area, there are significant gaps in knowledge in relation to Dublin-based needle exchange services. It is not currently possible to assess if sufficient needle/syringe packs are distributed to meet the needs of service users or to monitor progress towards the targets set in the WHO Euro Action Plan for Hepatitis. The lack of availability of BBV screening and vaccination through needle exchange services is also a missed opportunity for harm reduction in the cohort of drug users at greatest risk of infection.

5. Drug-related bloodborne viruses

People who use drugs are at risk of acquiring viral and bacterial infectious diseases, which can cause significant morbidity and premature mortality. Aside from bacterial infections at injection sites, hepatitis C, HIV and hepatitis B are the most common infections associated with illicit drug use. In this section, each of these three viral infections is described separately. Bacterial infections are not covered in this report.

The following sources of information were used to describe the trends and the burden of disease from these viruses in drug users:

- Surveillance data from the Health Protection Surveillance Centre (HPSC)
- Data from the Irish National Drug-Related Deaths Index (NDRDI)
- A review of published studies and reports

For the literature review, the primary areas of focus were incidence and prevalence of BBVs, BBV-related mortality and morbidity, and BBV-related risk behaviours of people who use drugs. Four electronic databases were searched (PubMed, EMBASE, Scopus, Web of Science) for peer-reviewed articles. Google Scholar, Lenus and the HPSC webpage were searched for scientific grey literature. A MeSH and keyword search strategy was used. The searches were refined to articles in English, published between 1995 and 2018.

5.1 Hepatitis C

The hepatitis C virus (HCV) was first identified in 1989. It primarily affects the liver, but can also have extrahepatic manifestations. The acute stage of infection is usually asymptomatic, but around three quarters of those infected develop chronic infection, which can cause cirrhosis of the liver, hepatocellular carcinoma (liver cancer) and liver failure. Between 10 and 20% of those who are chronically infected develop cirrhosis after 20-30 years of infection[57]. Liver disease progression is faster in those with high alcohol consumption, in males and in those who are co-infected with HIV and/or hepatitis B[57].

Diagnosed cases of hepatitis C

National virus reference laboratory, 1989-2004

The National Virus Reference Laboratory (NVRL) carried out approximately 95% of confirmatory tests for hepatitis C in Ireland between 1989 and 2004. A joint HPSC/NVRL study, which involved converting NVRL specimen-based data into person-based data, estimated that over 10,000 people (n=10,384) were diagnosed with hepatitis C between 1989 and 2004[8]. Risk factor information was available for over three quarters of these cases and 80% were current or former PWID (figure 6).

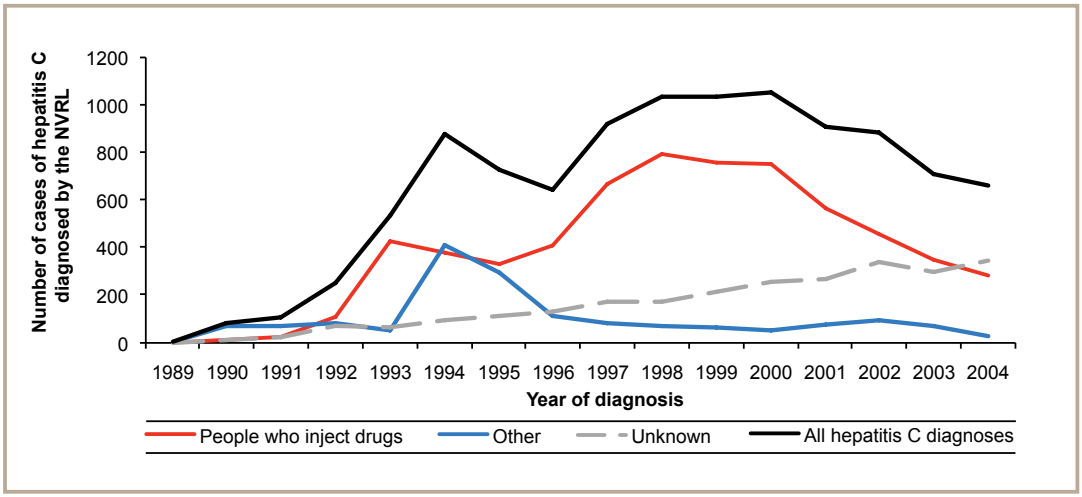

Figure 6. Number of NVRL-confirmed cases of hepatitis C by year of diagnosis and reported risk factor, 1989-2004

Source: Adapted from Thornton et al. Determination of the burden of hepatitis C virus infection in Ireland. Epidemiol Infect 2012, 140:1461-1468.

Hepatitis C notifications, 2004-2017

Hepatitis C became a notifiable disease in Ireland in 2004. This means that all clinicians and laboratory directors are required to report all diagnosed cases of hepatitis C to their local Department of Public Health. Regional data are entered by the Department of Public Health, or uploaded directly by the laboratory, onto the national computerised infectious disease reporting system (CIDR). HPSC is responsible for reporting on notification data at a national level. Enhanced surveillance data on hepatitis C, including risk factor information, have been collected since 2007.

Almost 15,000 (n=14,700) cases of hepatitis C were notified between 2004 and 2017 (figure 7)[58]. Cases which were diagnosed pre-2004 are notifiable if the case comes to the attention of a clinician/laboratory director and has not been previously notified; therefore not all cases notified since 2004 were diagnosed since 2004. The number of hepatitis C notifications peaked in 2007 and decreased by almost 60% between 2007 and 2017. Information on risk factor was available for just over half of cases notified since 2007 (5595/10975), of whom 80% were PWID (figure 7). In 2017, 621 cases (13/100,000 population) of hepatitis C were notified to HPSC. Risk factor data were available for 48% (n=299), of whom 70% (n=209) were PWID. The proportion of cases attributed to injecting drug use has decreased in recent years (80% in 2014, 75% in 2015, 68% in 2016 and 70% in 2017). However, as risk factor data were only available for half of hepatitis C notifications, this trend should be interpreted with caution. The median age at notification for hepatitis C cases identified as drug users has increased steadily over the past ten years, from 32 in 2008 to 39 in 2017. Over a third of cases notified in 2017 were aged 30-39 years and 50% were 40 years or older (figure 8). The increase in the age of notified cases is likely to indicate a declining incidence of hepatitis C among younger drug users. Seventy two percent of cases of hepatitis C attributed to drug use were male.

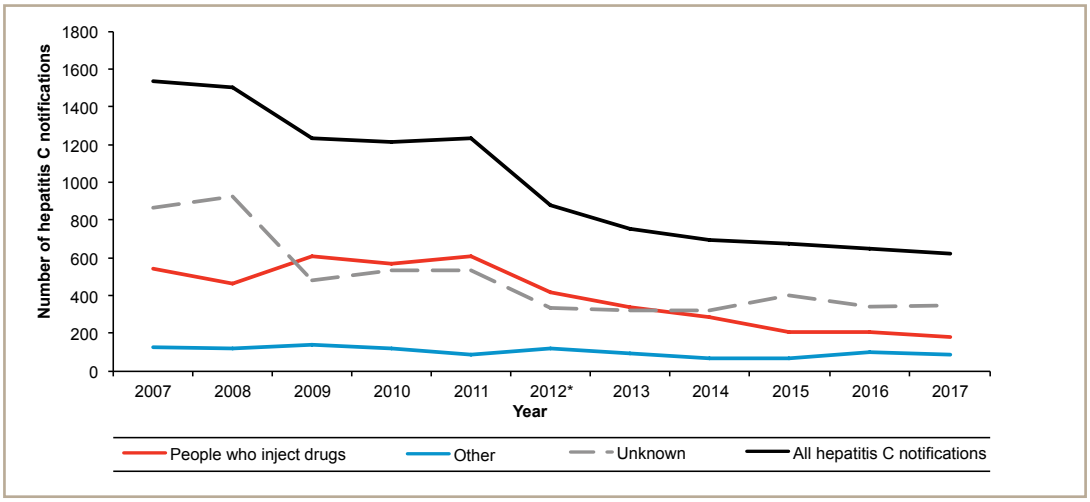

Figure 7. Number of notifications of hepatitis C by year of notification and reported risk factor, 2007-2017

Source: HPSC

*Case definitions changed in 2012 to specifically exclude cases known to have resolved infection

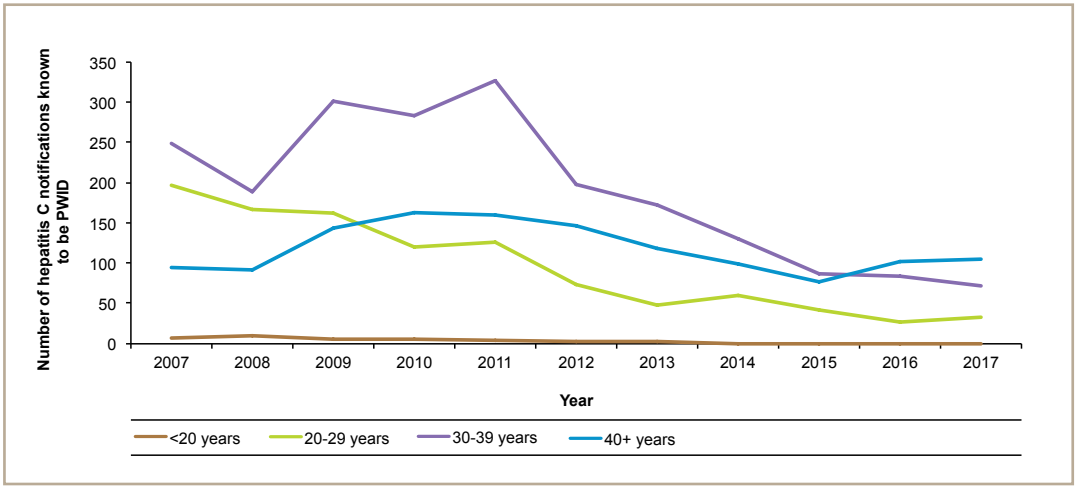

Figure 8. Number of notifications of hepatitis C with injecting drug use reported as the most likely risk factor for infection, by year of notification and age group in years, 2007-2017

Source: HPSC

Using NVRL person-based data from 1989-2004, HPSC notifications data from 2005-2009 and literature estimates for chronicity (75%) and mortality (13%), the total number of individuals living with diagnosed chronic hepatitis C in Ireland in 2009 was estimated to be 9,913[8]. There were an additional 6,707 notifications to HPSC between 2010 and 2017[58]. After taking account of the notification of duplicates, resolved cases and deaths, approximately 15,000 people (0.3% of the population) were likely to have been diagnosed, and living, with chronic hepatitis C in Ireland by the end of 2017, most of whom were PWID or have injected drugs in the past.

The level of under-diagnosis of hepatitis C is not known in Ireland[8]. Studies in the UK indicate that around 50% of cases of hepatitis C are not diagnosed[59]. If the situation in Ireland is similar, the total number of people living with chronic hepatitis C would be approximately 30,000. Diagnosis levels may be higher in Ireland, particularly in PWID, as access to OST and testing in OST services is reported to be very high. However, even if 75% of cases of hepatitis C in Ireland are diagnosed, the total estimated number of people living with hepatitis C would be 20,000. If 70% of these were people with a history of injecting drug use, this would equate to between 14,000 and 21,000 current or former drug users infected with hepatitis C. However, these estimates do not take account of the impact of hepatitis C treatment on the numbers currently infected. Hepatitis C treatment is discussed in section 5.1, box 1.

Mortality due to liver disease in people who use drugs

The Irish National Drug-Related Deaths Index, 2004–2015

Established in 2005, the Irish National Drug-Related Deaths Index (NDRDI) is an epidemiological database which records all deaths by drug and alcohol poisoning, and deaths among people who use drugs and those who are alcohol dependent, using data from four sources: the Coroners Service, HIPE, the CTL and the General Mortality Register (GMR) from the Central Statistics Office (CSO). The NDRDI is maintained by the Health Research Board (HRB) and is jointly funded by the DoH and the Department of Justice and Equality.

Between 2004 and 2015, there were 187 non-poisoning deaths among people who used drugs where hepatitis C, hepatitis B or unspecified hepatitis were mentioned on the death certificate. This only includes deaths where hepatitis was mentioned on the death certificate and does not include deaths in those with a history of hepatitis infection where it was not mentioned on the death certificate.

In total, 174 deaths involved hepatitis C. The number of hepatitis C deaths per year ranged from 9 to 25 with an average of 17. Hepatitis B was mentioned on the death certificate for 11 deaths, but most were in conjunction with hepatitis C. Ten deaths were due to unspecified hepatitis. Cause of death is categorised by the NDRDI to enable presentation of the data in broad categories. Non-alcohol related liver disease was the most common cause of death (n=35, 19%) between 2004 and 2015. A further eighteen deaths (10%) were attributed to liver cancer (Personal communication: Dr Suzi Lyons, HRB – data is as of 31st May 2018 and is unpublished and provisional).

Modelled incidence of hepatitis C in drug users in Ireland

A study was carried out in 2015 using HRB NDTRS data to estimate the incidence of injecting for drug users who entered drug treatment in Ireland between 1991 and 2014[60]. The incidence of hepatitis C infection was then estimated by applying published incidence rates to the injecting curve (figure 9). Over this time period, over 14,000 injectors were registered on NDTRS. Almost three quarters were male and 94% injected an opioid, mostly heroin. There were an estimated 2,000 additional injectors who had never attended drug treatment services. Using published incidence rates of hepatitis C in PWID in Ireland and adjusting for those who never shared equipment, it was estimated that 12,000 PWID had been infected with hepatitis C (76%) by 2014 and that over 9,000 had become chronically infected. The incidence of hepatitis C infection increased rapidly in the 1980s and 1990s and peaked in 1998. Almost one third of those who became chronically infected had been infected for over 20 years by the end of 2014.

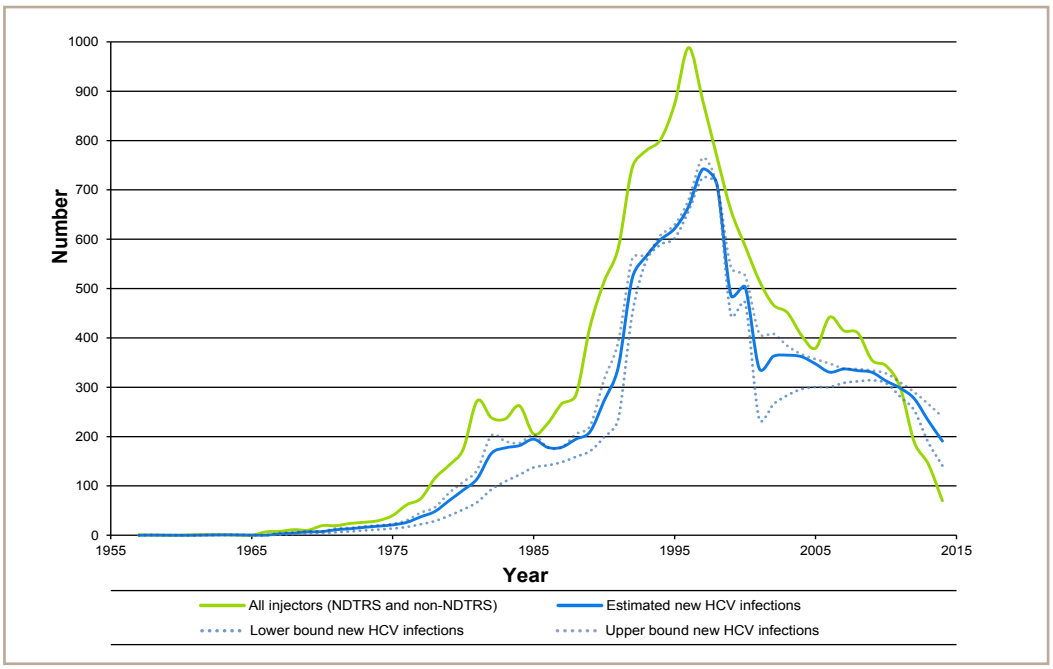

Figure 9. Estimates of new injectors by year commenced injecting and new hepatitis C infections by year infected

Source: Carew et al. Incidence of hepatitis C among people who inject drugs in Ireland. Hepatol Med Policy 2017,2:7

Estimates of the prevalence and incidence of hepatitis C in drug users in Ireland from published studies

Although available evidence suggests a declining incidence of injecting and of hepatitis C among drug users, prevalence studies indicate a considerable existing burden of disease. Studies of opioid users in Ireland between 1995 and 2018 estimated the hepatitis C prevalence in this population to be between 52% and 84% (table 3). Of note, the prevalence in younger clients attending OST was lower in some recent studies[30-31], providing further evidence of a decreasing incidence of hepatitis C among drug users in Ireland. Although several studies have been carried out assessing hepatitis C prevalence in PWID, most were carried out many years ago and the cohorts studied mostly attended Dublin-based addiction treatment centres or GPs. There is a lack of recent, nationally representative data on hepatitis C prevalence in PWID.

Box 1. Hepatitis C treatment in Ireland

Between 1992 and 2014, hepatitis C was treated using injected interferon on its own or in combination with ribavirin, or with ribavirin and boceprevir or telaprevir. Treatment uptake, particularly in PWID, was generally reported to be low[25,29]. Interferon-based treatment was associated with significant side effects, and sustained virological response (SVR) was only achieved for about half of those treated. In late 2014 and early 2015 new highly effective interferon-free oral treatments using direct acting antivirals (DAAs) became available in Ireland. Treatment with these newer drugs results in SVR (cure) for over 95% of patients[32] and elimination of hepatitis C is now an achievable goal.

The HSE established a National Hepatitis C Treatment Programme (NHCTP) in 2015 in order to ensure that people living with hepatitis C in Ireland are offered effective antiviral drug regimens in a structured way that ensures quality and governance in keeping with international best practice (https://www.hse.ie/eng/about/who/primarycare/hepcprogramme%20.html). Information on all patients being treated, or being considered for treatment, is recorded in a National Hepatitis C Treatment Registry.

There are currently 4,455 patients included in this registry. Risk factor for acquisition of hepatitis C is recorded for two thirds of patients, and 77% of these are PWID. Between 2012 and mid-June 2018, 1,652 PWID and three intranasal drug users were treated. Ninety percent of these patients were treated between 2015 and mid-2018. Treatment outcome is currently pending for 36% and a further 3% have been lost to follow-up. Of the remaining 1,007 treated patients, 91% (n=902) achieved SVR, 7% (n=72) stopped treatment early and 2% (n=15) did not achieve SVR (Personal communication: Michele Tait, National Hepatitis C Treatment Programme Manager, NHCTP, June 2018).

Improvements in screening, referral to appropriate services and treatment uptake among PWID are now needed. The NHCTP is developing different models for providing hepatitis C treatment in settings beyond the traditional hospital-based model in an attempt to extend treatment to hard to reach groups such as PWID. The programme has commenced a number of pilot sites in the OST setting to assess the feasibility, acceptability, sustainability and safety of providing treatment to PWIDs where they receive their methadone.

5.2 HIV

HIV is a disease of major public health significance in Ireland and worldwide. It disproportionately affects certain population groups including PWID, MSM and migrants. Voluntary HIV testing has been available in Ireland since 1985 and NVRL provided data on HIV positive results to the Department of Health until 2001. In 2001, HPSC took over national reporting of HIV, and HIV case-based voluntary reporting was introduced in Ireland in 2003, with detailed information collected on risk group, age, sex, country of birth, co-infections and other epidemiological and clinical data. In 2011, HIV became a notifiable disease and was included in CIDR in 2012.

Diagnosed cases of HIV

HIV notifications, 1986 to 2017

Between 1985 and 2017, 1,645 diagnoses of HIV among PWID have been reported which account for 18.6% of total HIV notifications (figure 10). The data presented in Figure 10 are based on data reported to the DoH (1986-2000) and to HPSC (2001-2017). In the early 1980s, PWID were the population most affected by HIV in Ireland and accounted for over half of new diagnoses. In the 1990s, the number of new diagnoses among PWID fluctuated and accounted for between 21% and 47% of new diagnoses. Between 2004 and 2011, the number of diagnoses of HIV among PWID steadily decreased (from 74 to 17). An outbreak of HIV among PWID which occurred in Dublin in 2014/2015 resulted in 49 notifications among PWID in 2015 (see box 2). The number of notifications decreased to 21 in 2016 and 11 in 2017, accounting for 4% and 2% of total notifications respectively, although data for 2017 are provisional at the time of this report.

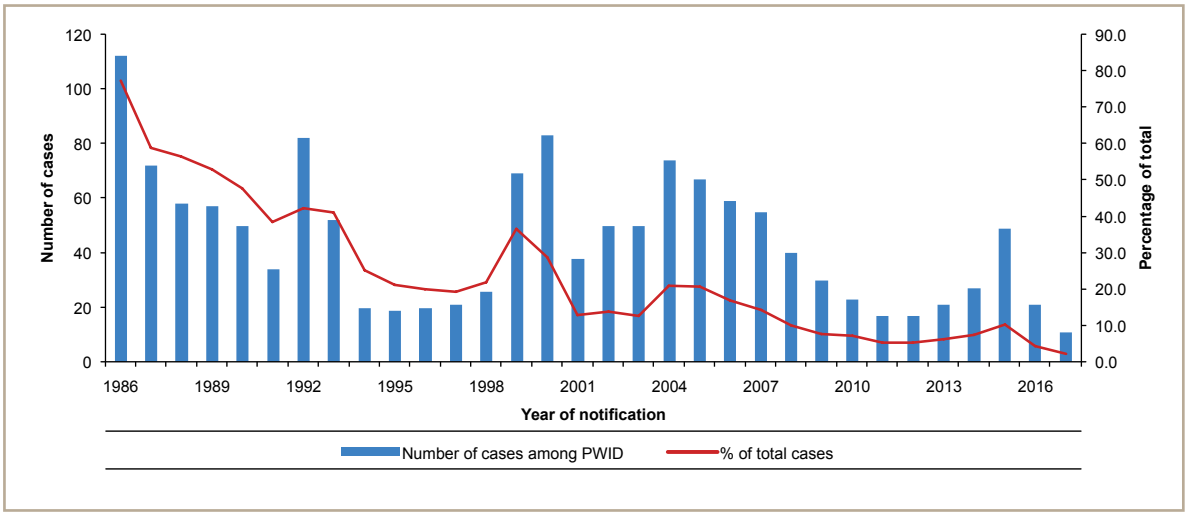

Figure 10. Number of newly diagnosed HIV cases in persons infected through injecting drug use, 1986 to 2017

Source: HPSC

Latest data – 2003 to 2017

Since HIV case-based reporting began in 2003, 561 new diagnoses of HIV among PWID have been reported which accounts for 10% of all diagnoses in this time period. Of the 561 new diagnoses among PWID, 68% were among men and 32% among women (figure 11).

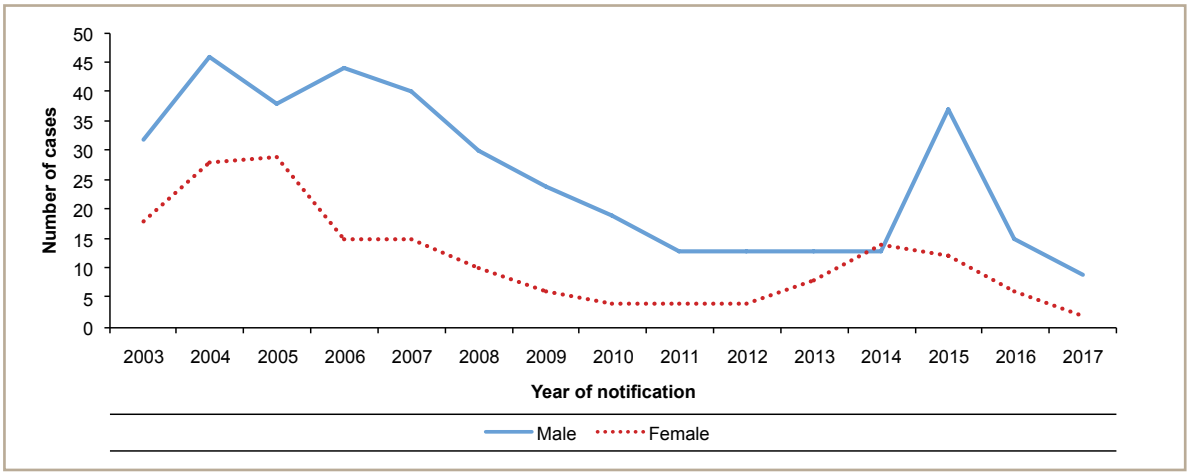

Figure 11. Number of newly diagnosed HIV cases in persons infected through injecting drug use by sex, 2003 to 2017

Source: HPSC

The average age at diagnosis in cases diagnosed from 2003 to 2017 was 32 years (range: 17 to 61 years). The number of new diagnoses among those aged less than 30 years has decreased since the early 2000s (figure 12).

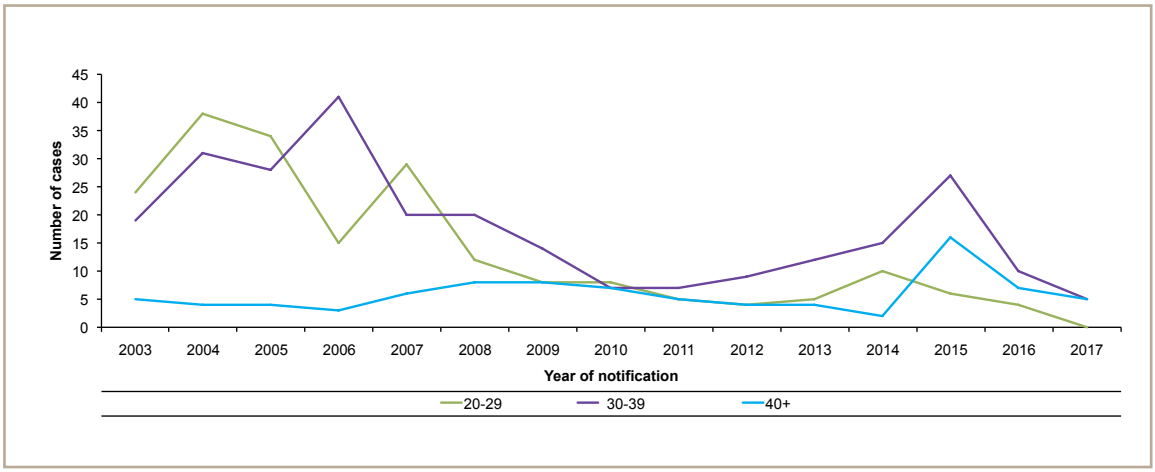

Figure 12. Number of newly diagnosed HIV cases in persons infected through injecting drug use by age group, 2003 to 2017
Source: HPSC

The majority (71%) of PWID diagnosed with HIV between 2003 and 2017 were born in Ireland with a further 16% born in other European countries. Seventy three percent of PWID were co-infected with hepatitis C at the time of their HIV diagnosis.

Between 2012 and 2017, 53% of PWID with HIV were diagnosed at a late stage of infection (i.e. their CD4 count was ≤350 cells/µl at time of diagnosis). This compares with 44% diagnosed late in all other risk groups (excluding PWID). Eight percent of PWID newly diagnosed with HIV had an AIDS defining illness at the time of their HIV diagnosis.

In 2016, NVRL carried out avidity testing on all new diagnoses of HIV to determine the proportion of diagnoses that are recent infections (infected within four months). The study found that overall 13% of HIV diagnoses in 2016 were likely to be recent infections, with 26% of diagnoses among PWID likely to be recent[61]. However, the actual number of recent infections (n=5) were small. This indicates on-going transmission of HIV among PWID. HIV treatment is discussed in box 3.

Box 2. HIV outbreak among PWID in Dublin, 2014/2015

In early 2015, surveillance of HIV in the Department of Public Health in Dublin identified an increase in the number of acute cases of HIV (p24 antigen positive) among PWID. Drug treatment clinicians had also identified increased use of a new psychoactive substance (NPS), alpha-pyrrolidinovalerophenone (α-PVP), known as 'snow blow', which was being used by some PWID and which they suspected might be linked to the increase in HIV. A multi-disciplinary, intersectoral outbreak control team (OCT) was established by the Director of Public Health to investigate the outbreak, coordinate the outbreak response and advise on control measures[61].

From January 2014 to December 2015, 39 cases of recently acquired HIV among PWID were identified (figure 13). Fifty nine percent were male and the median age was 35 years (range: 20-51 years). The majority (74%) of cases were registered as homeless (94% of females and 61% of males). Seventy four percent were co-infected with hepatitis C.

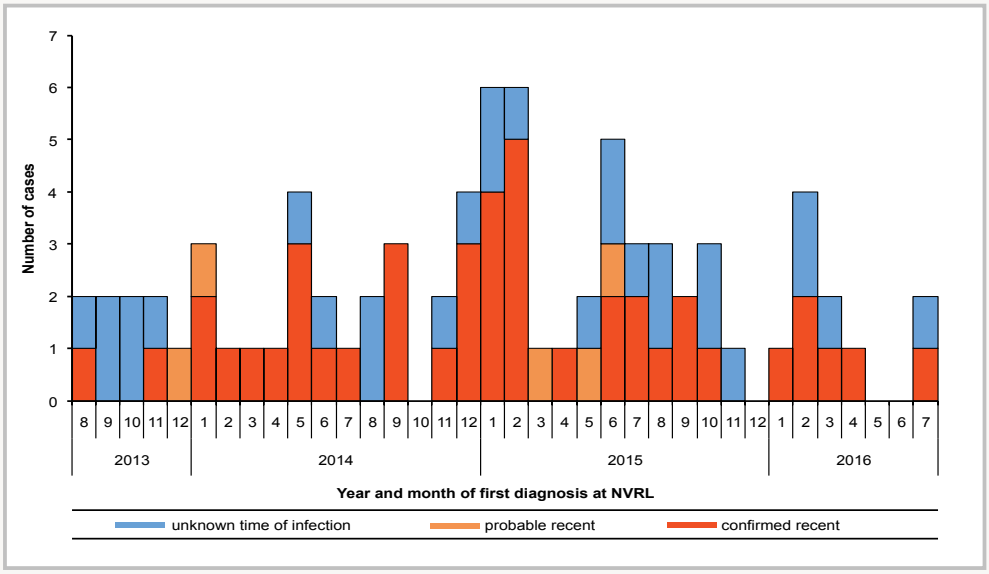

Figure 13. Number of new diagnoses in PWID in Dublin, August 2013-December 2015

A case control study found that 'snow blow' was independently associated with HIV infection and there was a dose response effect[38]. In addition, sex with PWID and sharing needles were also independently associated with HIV infection. Key control measures included raising awareness among clinicians, addiction services and PWID, intensive case finding and contact tracing, early treatment of HIV infection in those most at risk, greater promotion of needle exchange, increased access to methadone treatment, frontline worker training and raising awareness about safe injecting and safe sex. Leaflets were distributed in hostels and settings in Dublin where patients/clients attended.

The outbreak was declared over in February 2016. However, this population remains very vulnerable, with a potential for future HIV outbreaks particularly with the introduction of different types of NPS and the continuing homelessness situation. There is a need to maintain HIV testing in this population even when the risk of HIV is perceived as low. HIV outbreaks and an increase in HIV transmission among PWID have also occurred in a number of other European countries in recent years[62-64]. Complacency about HIV infection has emerged as an important threat to the success of HIV prevention for PWID. Successful HIV prevention for PWID needs to include high OST, NSP and ART coverage and these need to be adapted to changes in the patterns of drug use. Particular attention should be paid to people who inject stimulants (e.g. cocaine and NPS), areas of deprivation, women and homeless PWID.

Mortality due to HIV/AIDS in people who use drugs

The Irish National Drug-Related Deaths Index, 2004-2015

According to data from the NDRDI, between 2004 and 2015 (most recent data available), there were 94 non-poisoning deaths among people who used drugs where HIV/AIDS was mentioned on the death certificate. The number of deaths per year ranged from five to 13. This only includes deaths where HIV/AIDS was mentioned on the death certificate and does not include those with a history of HIV infection where it was not mentioned on the death certificate. Of those who died where HIV/AIDS was mentioned on the death certificate, 44 were co-infected with hepatitis C, 6 were co-infected with hepatitis B and four with unspecified hepatitis. The most common causes of death were HIV/AIDS related illnesses (43%), respiratory infection (19%) and liver disease (12%).

HIV national surveillance

Between 1986 and 2017, there were 233 deaths reported to the national surveillance system among PWID with HIV or AIDS (AIDS surveillance 1985-2001; HIV surveillance 2001-2017). The majority of these deaths (67%) occurred in the 1980s and 1990s before highly active antiretroviral therapy (HAART) became available. However, it should be noted that there is considerable under-reporting of deaths among those living with HIV and AIDS as deaths are usually only reported to Departments of Public Health if they occur at the time of HIV diagnosis (<5 deaths reported per year).

Estimates of the prevalence of HIV in drug users in Ireland from published studies

Table 3 describes HIV prevalence studies that have been carried out among PWID living in Ireland over a 20 year period from 1997 to 2017. Depending on the population and setting chosen, the HIV prevalence rate in these studies varied from 1% to 19%. It is evident that certain areas within Dublin's inner city have very high rates (19%) of HIV among PWID[7]. The most recent peer-reviewed study indicated a prevalence rate of 8%[29]. It is clear that although HIV prevalence among PWID has been measured by a number of studies, there is a lack of recent and nationally representative data.

Box 3. HIV Treatment

One of the priority actions in the National Sexual Health Strategy 2015-2020[55] is to "*develop and implement guidance to support the appropriate use of antiretroviral therapy in HIV prevention*." The HSE Position on Antiretroviral Therapy (ART) for all people living with HIV (PLHIV)[65] recommends that all people living with HIV attending HIV services in Ireland are offered ART and informed of the benefits of ART in improving their personal health and reducing HIV infectiousness (HIV Treatment as Prevention: TasP).

Continuum of HIV care audit

The Continuum of HIV Care is a conceptual framework that enables countries to monitor the effectiveness of key areas of their HIV programme. ECDC recommends a standardised monitoring approach in Europe, and developed definitions for monitoring the four priority stages: the number of PLHIV in the population; the number/proportion diagnosed; on ART; and virally suppressed[36]. These are in line with the UNAIDS 90-90-90 targets for 2020[66].

In order to improve reporting in line with national obligations to ECDC and UNAIDS, HSE-SHCPP established a Continuum of HIV Care Steering Group, including relevant specialists and representation from all HIV treatment services in Ireland. It was agreed that the UNAIDS Spectrum modelling software would be used to estimate the first two stages of the continuum i.e. the estimated number of people living with HIV, the number and proportion undiagnosed and the number diagnosed with HIV, and that a nationally coordinated audit of HIV treatment would be used to monitor the third and fourth stages i.e. the number on ART and the number virally suppressed.

HPSC worked with UNAIDS to develop the modelling estimates and HSE-SHCPP conducted the clinical audit in collaboration with HIV services[37]. The results of the 4-stage continuum of HIV Care, combining the modelling estimates for stages 1 and 2 with the HIV treatment audit results for stages 3 and 4, are shown in figure 14.

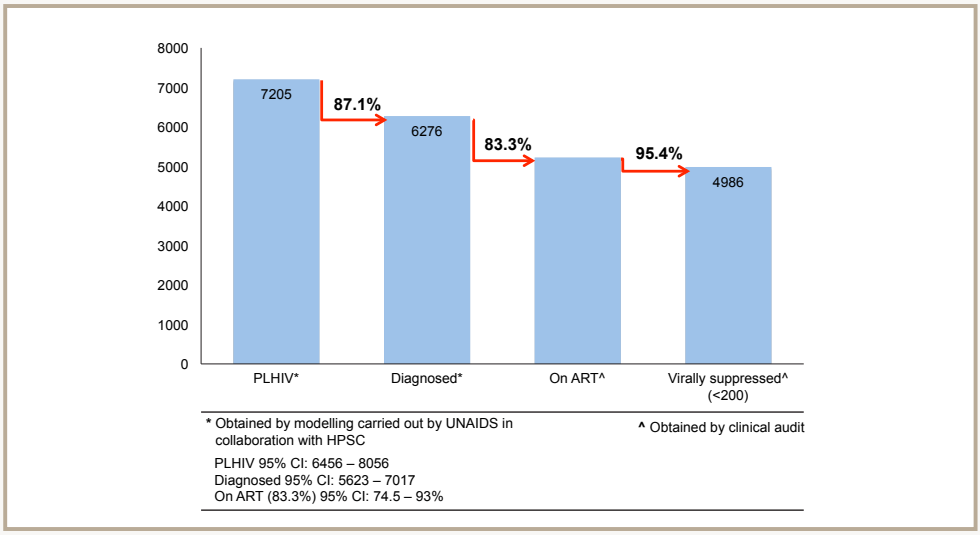

Figure 14. 4-Stage Continuum of HIV Care results for all people living with HIV, 2017

Of the estimated 7,205 (95% CI: 6,456 - 8,056) people living with HIV, an estimated 87.1% have been diagnosed. Of the estimated 6,276 (95% CI: 5,623 - 7,017) people diagnosed with HIV, an estimated 83.3% (95%CI: 74.5% - 93.0%) are on ART. Of the 5,227 people on ART, 95.4% are virally supressed (<200 copies per ml). Future work will involve refinement of the modelling and analysis by individual population groups, such as PWID.

In a study carried out in a Dublin hospital looking at the HIV continuum of care, results are available by risk group. Of a cohort of 1,000 patients attending the hospital from 1993 to 2014, 222 (22.2%) were PWID. Of the PWID, 75% (n=167) were found to be retained in care. Of those retained in care, 93% (n=155) were on ART and of those on ART, 80% (n=124) were virally suppressed[67].

5.3 Hepatitis B

Hepatitis B is a vaccine preventable viral infection. It primarily affects the liver. Less than 10% of people infected as adults develop chronic infection. The impact of chronic infection is similar to that of hepatitis C, with the patient at risk of cirrhosis of the liver, hepatocellular carcinoma (liver cancer) and liver failure[68].

Diagnosed cases of hepatitis B

Hepatitis B notifications, 2004-2017

Data from statutory notifications indicate that the incidence and prevalence of hepatitis B infection in PWID has been low in recent years. Fewer than five notified cases of hepatitis B have been attributed to injecting drug use annually between 2014 and 2017 (figure 15). Of 9,016 cases of hepatitis B notified between 2004 and 2017, only 65 (<1%) were reported as likely to have been infected through injecting drug use and only five of these were reported to be acute infections. This may be an underestimate due to incomplete reporting of risk factor information, particularly for chronic cases. However, the notifier and source of patient sample are recorded for most notifications and there is no evidence of significant numbers of cases of hepatitis B being diagnosed as a result of testing in the addiction services.

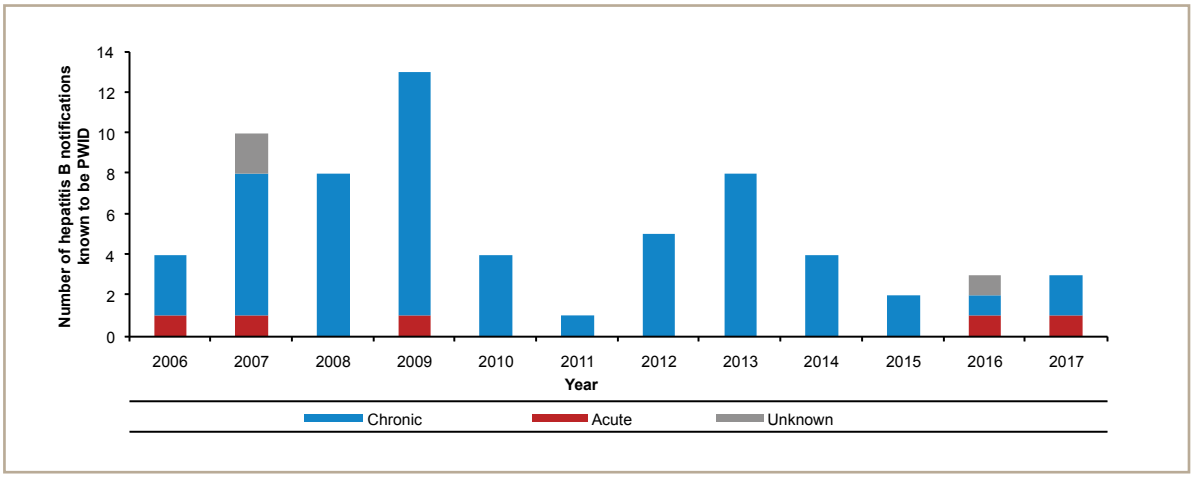

Figure 15. Number of notifications of hepatitis B with injecting drug use reported as the most likely risk factor for infection, by year of notification, 2006-2017

Source: HPSC

Estimates of the prevalence and incidence of hepatitis B in drug users in Ireland from published studies

Results from studies in inner city areas in Dublin indicated a high prevalence of hepatitis B in early heroin injectors. A small cohort (n=82) of inner-city heroin injectors in Dublin was recruited for a study in 1985 and followed for 25 years[27]. Over 70% ultimately tested positive for hepatitis B antibodies (current or past infection). However, this was a particularly high-risk cohort: 9% of 15-24 year olds in this region of Dublin were estimated to be using heroin in 1981[10]. Estimates from other studies in drug users in prison and treatment settings, carried out between 1997 and 2002, found a hepatitis B core antibody prevalence of between 14 and 28% (table 3). However, as the vast majority of people infected with hepatitis B as adults clear the infection and develop lifelong immunity, high antibody prevalence in early cohorts of drug users in Dublin did not translate to high prevalence of chronic infection. Where markers of current infection (hepatitis B surface antigen or DNA results) were reported, the prevalence ranged from 1-5% (table 3). The low prevalence of chronic hepatitis B reported in studies of BBVs in addiction treatment settings supports the data from statutory notifications, indicating a low prevalence of chronic hepatitis B infection in people who use drugs in Ireland.

Table 3. Summary of publications estimating the prevalence and incidence of hepatitis C, hepatitis B and HIV in drug users in Ireland

Year published, first author, ref num	Year of study or data	Title	Summary	Hepatitis C antibody (current or past infection)		Hepatitis B antibody (current or past infection)		Hepatitis B surface antigen (current infection)		HIV	
				Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)
1995, Smyth[12]	Aug 1992-Aug 1993	Hepatitis C infection among injecting drug users attending the National Drug Treatment Centre	The prevalence of hepatitis C was determined in PWID attending the National Drug Treatment Centre in Dublin over a 1 year period. Those with a longer history of injecting had a higher HCV prevalence.	272 (NA)	229 (84%)						
1997, Dorman[69]		HIV Risk Behaviour in Irish Intravenous Drug Users.	This study aimed to determine the prevalence of HIV along with the risk factors associated with acquiring HIV among PWID. Participants were interviewed and asked about their risk behaviours in the previous six months. A blood/saliva test was also obtained to determine HIV status.							180 (97%)	15 (8%)
1998, Smyth[13]	1992-1997	Bloodborne viral infection in Irish injecting drug users	Cross-sectional survey to determine the prevalence of BBV infections and the associated risk factors in patients attending the National Drug Treatment Centre in Dublin. Older age, longer history of injecting, higher drug expenditure and commencing injecting before 1990 were associated with higher risk of HCV and HIV infection.	733 (96%)	453 (62%)			729 (96%)	7 (1%)	600 (79%)	7 (1%)
1999, Smyth[15]	July 1993-Dec 1996	Evaluation of the impact of Dublin's expanded harm reduction programme on prevalence of hepatitis C among short-term injecting drug users	New attenders at the National Drug Treatment Centre with an injecting history of less than 25 months, were tested for anti-HCV. Those who had been injecting for one year or less and those who commenced injecting after January 1994 had a lower prevalence of hepatitis C.	353 (NA)	184 (52%)						
2000, Allwright[16]	Sept-Nov 1998	Prevalence of antibodies to hepatitis B, hepatitis C, and HIV and risk factors in Irish prisoners: results of a national cross sectional survey	Anonymous survey using oral fluid samples to determine the prevalence of BBVs in prison inmates in 9 of the 15 prisons in Ireland. Participation rate was 88% and 43% of participants had injected drugs. Only data for prisoners who inject drugs are presented here.	509 (NA)	414 (81%)	509 (NA)	94 (19%)			509 (NA)	18 (4%)
2001, Long[17]	1999	Prevalence of antibodies to hepatitis B, hepatitis C, and HIV and risk factors in entrants to Irish prisons: a national cross sectional survey	Anonymous survey using oral fluid samples to determine the prevalence of BBVs among entrants to 5 of the 7 Irish committal prisons during a one month period. The participation rate was 97% and 29% of participants had injected drugs. . Only data for prisoners who inject drugs are presented here.	173 (NA)	124 (72%)	173 (NA)	31 (18%)			173 (NA)	10 (6%)

Year published, first author, ref num	Year of study or data	Title	Summary	Hepatitis C antibody (current or past infection)		Hepatitis B antibody (current or past infection)		Hepatitis B surface antigen (current infection)		HIV	
				Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)
2001, Fitzgerald[18]	1997	Blood-borne infections in Dublin's opiate users	A retrospective study of a random sample of patients attending five methadone clinics in the Eastern Health Board was carried out to assess BBV testing and prevalence, and hepatitis B vaccine coverage. The clinical records of 138 patients (20% sample) were reviewed. There was no information on hepatitis B vaccination or immunity for almost two thirds of patients.	99 (72%)	78 (79%)	64 (46%)	18 (28%)	79 (57%)	4 (5%)	90 (65%)	15 (17%)
2003, Cullen[19]	1999	Hepatitis C infection among drug users attending general practice	The medical records of 571 patients attending 42 general practices in the Eastern area for methadone maintenance were reviewed to assess BBV testing, prevalence and risk factors. Just under half of invited GPs participated in the study and their patient population represented 62% of patients attending GPs for methadone maintenance.	380 (67%)	276 (73%)	316 (55%)	43 (14%)				
2003, Kavanagh[20]	2001	High morbidity expected from cirrhosis in injecting drug users	Hepatitis C prevalence was determined from the medical records of all patients attending two GPs in a community-based drug treatment clinic in the Eastern area. Hepatitis C antigen/RNA results were available for 84% (n=59) of those who tested antibody positive, and 66% (n=39) were chronically infected.	91 (NA)	70 (77%)						
2003, Smyth[21]	Nov 1992-Sept 1998	Retrospective cohort study examining incidence of HIV and hepatitis C infection among injecting drug users in Dublin	The incidence of HCV and HIV were retrospectively determined for a cohort of drug users who originally tested negative for these viruses. Just under one third (n=100) had a follow-up test for HCV by the end of the study period and two thirds had seroconverted, giving an incidence rate of 66/100 person years at risk. One quarter (n=164) had a follow up test for HIV and 2 (1.2%) had seroconverted, giving an incidence rate of 0.7/100 person years at risk.	100 (32%)	67 (67%)					164 (25%)	2 (1.2%)
2004, Moloney[22]	1998-2001	Hepatitis C: Lower prevalence in young person's addiction treatment programme than in adult programmes	Letter describing the lower prevalence of HCV among a cohort of 54 adolescent drug users attending a young person's community-based treatment programme in Dublin, between 1998 and 2001. Almost two thirds smoked heroin, rather than injecting it. The prevalence of HCV was higher in those who injected (55%)	54 (NA)	15 (27%)						

Year published, first author, ref num	Year of study or data	Title	Summary	Hepatitis C antibody (current or past infection)		Hepatitis B antibody (current or past infection)		Hepatitis B surface antigen (current infection)		HIV	
				Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)
2005, Smyth[23]		Irish injecting drug users and hepatitis C: the importance of the social context of injecting	A cross-sectional study to determine the prevalence of hepatitis C in 242 PWID recruited from 10 addiction treatment centres in Dublin. All had injected in the previous 6 months and had not been previously tested for hepatitis C. Testing positive for hepatitis C was associated with the total number of lifetime injecting episodes. Patients who reported closer social relationships with other injecting drug users were at increased risk of infection.	159 (66%)	97 (61%)						
2005, Grogan[24]	Dec 2001 to Jan 2002	Bloodborne virus infections among drug users in Ireland: a retrospective cross-sectional survey of screening, prevalence, incidence and hepatitis B immunisation uptake	This study assessed BBV screening and prevalence in 358 patients attending specialist addiction treatment centres in the Dublin area. The incidence of BBV was also determined for patients who initially tested negative and had at least one follow-up test.23% of patients who had tested negative for HCV were re-tested and 41% (11/27) had seroconverted - incidence of 24.5/100 person years at risk. 21% of patients who had tested negative for HIV were re-tested and 7% (4/59) had seroconverted - incidence of 3.4/100 person years at risk.	316 (88%)	207 (66%)	244 (68%)	42 (17%)	299 (84%)	6 (2%)	307 (86%)	33 (11%)
2006, Long[7]	2001	HIV infection among heroin users and area of residence	The aim of this study was to determine the prevalence of BBVs among heroin users in two areas of Dublin, Dublin 24 (suburban area) and Dublin 8 (area close to South inner-city) to establish whether area of residence was associated with BBV prevalence. Test results were extracted from an existing dataset of BBV results (derived using systematic sampling (25%) of the CTL). The cohort in Dublin 8 was found to have higher prevalence of BBVs. Unlinked drug-related behavioural data was extracted from NDTRS data on new entrants to treatment for heroin between 1997 and 2000. Heroin users in Dublin 8 were older, were more likely to have injected drugs, and were five times more likely to report cocaine as an additional problem drug. The researchers concluded that there could be an association between injecting cocaine and HIV infection in the cohort in Dublin 8.	58 (91%) 92 (91%)	31 (53%) 67 (73%)			53 (83%) 80 (80%)	0 1 (1.3%)	55 (86%) 94 (93%)	1 (2%) 18 (19%)

Year published, first author, ref num	Year of study or data	Title	Summary	Hepatitis C antibody (current or past infection)		Hepatitis B antibody (current or past infection)		Hepatitis B surface antigen (current infection)		HIV	
				Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)
2007, Cullen[25]		Management of hepatitis C among drug users attending general practice in Ireland: baseline data from the Dublin Area hepatitis C in general practice initiative	The aim of this study was to describe hepatitis C care among drug users attending general practice in the Dublin area prior to the implementation of clinical practice guidelines. Stratified random sampling was used to select 196 patients who were attending 25 general practices for methadone maintenance. Their clinical records were examined to determine the prevalence of BBVs and progression along the care pathway. Of those who tested antibody positive, just over one third (n=34) were tested for antigen/RNA and of those tested, 85% (n=29) were chronically infected. Of those who were known to be chronically infected, only 10% had commenced anti-viral treatment.	146 (77%)	104 (71%)	118 (62%)	13 (11%)			135 (71%)	14 (10%)
2009, Cullen[26]		Chronic illness and multimorbidity among problem drug users: a comparative cross sectional pilot study in primary care.	A cross-sectional study of chronic illness and multi-morbidity among problem drug users. The medical records of patients attending three large urban general practices in Dublin for methadone treatment were reviewed.	57 (NA)	38 (67%)					57 (NA)	8 (14%)
2014, Drummond[28]	2011	Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population	Cross-sectional study targeting all prisons and prisoners in Ireland. Included oral fluid samples for BBV testing. The overall participation rate was 42%. Data shown are for prisoners identified as PWID only. The prevalence of BBVs in those with a history of injecting heroin was higher (hepatitis C 54%, HIV 7%).	200 (97%)	83 (41.5%)					200 (97%)	12 (6%)
2017, Murtagh[29]	2016	Hepatitis C prevalence and management among patients receiving opioid substitution treatment in general practice in Ireland.	This study assessed hepatitis C prevalence and management in a sample of 134 patients attending 14 OST prescribing GPs in the Dublin North inner city area. Screening levels were high but follow up antigen/RNA testing levels were low. Data on hepatitis C antigen/RNA testing was collected from half of the participating practices. 57% of HCV antibody positive patients in those practices had been tested and 74% of those tested were chronically infected. Hepatitis B results were reported as either anti-HBc or HBsAg positive and 8% of patients tested positive for one, or both, of these markers.	124 (93%)	95 (77%)					97 (72%)	8 (8%)

Year published, first author, ref num	Year of study or data	Title	Summary	Hepatitis C antibody (current or past infection)		Hepatitis B antibody (current or past infection)		Hepatitis B surface antigen (current infection)		HIV	
				Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)	Num tested (%)	Num pos (%)
2017, Keegan[30]	2015	Prevalence and risk factors for hepatitis C viral infection amongst a cohort of Irish drug users attending a drug treatment centre for agonist opioid treatment (AOT)	Retrospective cross-section study to determine the prevalence of HCV and risk factors for infection among patients attending a Dublin north inner-city addiction clinic (Thompson Centre) for OST. The prevalence of HCV was high overall, but significantly lower in younger clients.	228 (95%)	145 (64%)						
2018, Murphy[31]	Late 2014 to early 2015	Audit of Hepatitis C Testing and Referral in Addiction Treatment Centres in Community Health Organisation Area 7. 2016.	An audit of patient charts to assess HCV testing and prevalence in addiction treatment centres in CHO7 was carried out in late 2014/early 2015. Forms were returned for 40% of the eligible population. Almost all were opioid users and 79% were current or past injectors. Results are presented for all patients and those who reported a history of injecting. Hepatitis C antigen/RNA testing had been carried out for 89% of the patients who tested HCV antibody positive and almost two thirds (65%) were chronically infected.	358 (95%) 282 (97%)	235 (66%) 222 (79%)					349 (91%) 274 (94%)	49 (14%) 46 (17%)

NA: not available

Planned study on BBV screening and prevalence in OST settings

Although a significant number of studies have been carried out estimating the prevalence of BBVs in OST settings, most are over 15 years old and many were carried out in single site Dublin-based clinics. Available evidence indicates a declining incidence of BBVs in PWID, but updated, geographically representative estimates are now needed to establish if this is the case. A joint study by the ICGP and HPSC will be carried out in 2018/2019, with the aim of obtaining current estimates of screening for BBVs, and the prevalence of BBVs, in a nationally representative sample of patients attending OST. Advances in HCV treatment (DAAs, mobile elastography, less restrictive treatment criteria and movement of treatment into community-based services) have revolutionised the management of HCV infection. This study will also seek information on the proportion of patients with chronic hepatitis C infection who have had fibroscans to assess their degree of liver fibrosis, the proportion who have been treated, and the proportion who have achieved SVR. Ethical approval from the ICGP Ethics Committee has been granted. (Personal communication: Dr Des Crowley, lead researcher.)

Summary

PWID comprise the majority of diagnosed cases of hepatitis C in Ireland. There is a high prevalence of hepatitis C infection in PWID (52-84% anti-HCV positive), but available data from hepatitis C notifications and published studies indicate a decreasing incidence of hepatitis C in drug users in Ireland. This is likely to be due to a combination of education and harm reduction measures, in addition to changes in the types of drugs used and a decline in injecting. Highly effective DAA drugs have made hepatitis C elimination achievable in Ireland. Implementing the hepatitis C screening guidelines and the clinical guidelines for OST will be important in improving the proportion of cases diagnosed and treated.

Prevalence studies carried out over the last 20 years indicate a HIV prevalence in PWID of between 1-19% depending on the population and setting. There are relatively few data from recent or national prevalence studies of HIV in PWID in Ireland. Available data from HIV notifications indicate a decrease in new diagnoses of HIV in PWID in Ireland and an increase in the age at diagnosis. Some of the more recent studies in OST or prison settings show a reduction in prevalence. Annual notifications of HIV among PWID were low in both 2016 and 2017, and accounted for less than 5% of total HIV notifications. Among HIV notifications in PWID, more than two thirds were male and more than two thirds were born in Ireland. The majority were co-infected with hepatitis C. An outbreak of acute HIV among homeless PWID in Dublin in 2014/2015 highlighted the ongoing vulnerability of this population to infection and future outbreaks.

Available data from hepatitis B notifications and published studies indicate a low incidence and prevalence of acute and chronic hepatitis B in PWID in Ireland. This is likely to be due to immunity following infection or vaccination. However, hepatitis B vaccine coverage data are limited. There is no formal register to record uptake in most settings in which vaccination is delivered to PWID. Many of the studies in which vaccine uptake is recorded are based on self-reported status.

6. Sub-populations of drug users at high risk

People who inject drugs share intersecting characteristics and adverse circumstances throughout life that lead to considerable social exclusion[70]. They are at greatly increased risk of additional experiences leading to further social exclusion such as homelessness and incarceration. PWID may also experience accelerated ageing and cognitive impairment, which can lead to increased risk taking behaviours and challenges in engaging in healthcare for BBVs. MSM who use drugs also have an increased risk of acquiring BBVs.

6.1 Prisoners

BBV testing and vaccination in prisons

Every prisoner undergoes a committal health screen on entering prison. This is repeated for every committal and transfer. During that initial screening, information is gathered on drug use and BBV status, and BBV testing is offered. All prisoners are also offered hepatitis A and hepatitis B vaccinations. However, uptake of BBV screening and vaccination is sub-optimal and it could be argued that a health committal screen is not the best time to ask a prisoner to consider all of this. Many initially refuse but then return later and request screening. It is also very difficult to obtain data on the uptake of BBV screening, the prevalence of BBVs and the incidence of new infections within each prison service as this information is not recorded in an extractable way on the prison database system. Recruit prison staff (RPOs) and current serving staff now receive infection control and prevention education as part of the Irish Prison Service (IPS) continuous professional development (CPD) programme. This has created a greater awareness of best practice around infection control, making the prison environment a safer place in which to work. Box 4 describes the implementation of a peer to peer education initiative in Irish prisons.

Box 4. Peer to Peer education for prisoners

Community Based Health & First Aid (CBHFA) in Action was originally designed by the International Red Cross to be facilitated globally in communities in a simple and flexible way through the National Red Cross/Red Crescent Society of each of the 190 countries where the movement is present. Ireland is the first country in the world to introduce CBHFA through groups of special status Irish Red Cross Volunteer Inmates in a prison setting. It first began at Wheatfield Prison in June 2009 and following the success of the pilot, it was extended to ten prisons by 2013 and to all fourteen prisons in Ireland in 2014.

The programme takes place under a partnership between the Irish Red Cross (IRC), the IPS and Education & Training Boards Ireland (ETBI). It is a unique approach to raising community health and hygiene awareness and first aid in prison communities through peer to peer education.

The programme has recruited almost 800 IRC volunteer inmates since 2009 and benefits prisoners directly every day, in addition to staff and families of the prisoners. This project has shown that it can change the outlook of prisoners to become more proactive and positive towards developing their community for the better. There is noticeable improvement in trust, communication and relationships amongst prisoners and with staff.

Volunteers have been instrumental with regards to educating their peers in relation to infection prevention, control and awareness, by reducing stigma around HIV and testing, by promoting the message that it is important to know your status. These special status inmate volunteers bring what they have learned in the classroom back to the landings and through project work, posters, leaflet drops and talks raise community health and hygiene awareness and first aid in prison communities. This has resulted in an increase in prisoners requesting testing for STIs and BBVs. Prisoners now feel that they can request testing without being stigmatised by fellow inmates for doing so.

Peer to peer education carried out by inmate volunteers from the IRC was used in a study of point of care testing for HIV in three Irish prisons[71]. Following an extensive awareness campaign aimed at educating prison inmates about HIV and reducing the stigma associated with HIV, large scale point-of-care HIV testing was offered in Wheatfield, Cloverhill and Mountjoy prisons over short time periods in 2010, 2012 and 2013, respectively. Prior to this study being carried out, it was estimated that only 10% of prison inmates in Wheatfield were aware of their HIV status. Just over half of inmates were screened (n=741) and only one tested positive for HIV (0.1%). This study showed that peer to peer education worked well in terms of encouraging relatively high HIV testing uptake. However, no data were collected on risk factors for infection or reason for refusal, making it difficult to interpret the very low prevalence found amongst those tested[71].

2011 study of drug use and BBV in Irish prisons

In a prison study carried out in 2011, 824 randomly selected prison inmates were asked about substance abuse in the previous year[28]. Almost one third (30%) reported heroin use, 29% reported powdered cocaine use and 12% reported crack cocaine use. Overall, of prison inmates who were tested, 13% were positive for hepatitis C antibodies, 2% were HIV positive and 0.3% were chronically infected with hepatitis B. Of the prison inmates who had ever injected drugs, 41.5% (n=83) tested positive for hepatitis C antibodies and 6% tested positive for HIV. The prevalence of both viruses was higher in the subset of prisoners who injected heroin: 54% were positive for hepatitis C antibodies and 7% were positive for HIV. Although the prevalence of HIV was similar to that found in two previous prison studies carried out in 1998[17] and 1999[16] (4% and 6%), the prevalence of hepatitis C antibodies had decreased significantly compared to the earlier studies (81%, 72%).

Hepatitis B results were not reported by injecting status in the 2011 study, but only 0.3% (n=2) of prison inmates tested positive for hepatitis B surface antigen, indicating that the prevalence of hepatitis B infection is very low in the prison population. Just over half (54%) of those with a history of injecting drug use reported having been vaccinated against hepatitis B, but a further 13% were unaware of their vaccination status, so this may be an underestimate. Almost one fifth of prison inmates with a history of injecting drugs tested positive

for hepatitis B antibodies in the two previous prison studies (19%[16],18%[17]), so it is likely that a number of those with long-standing drug use may have been infected in the past, have resolved infection and have natural immunity to hepatitis B.

2017 study estimating the seroprevalence of untreated chronic hepatitis C in Mountjoy Prison

A cross sectional study of male prisoners in Mountjoy prison was carried out in 2017. Over 400 prisoners (n=422, 78% of total eligible) participated in the study. Ninety five percent were tested for hepatitis C. Of those tested, 23% were HCV antibody positive with one quarter showing spontaneous clearance. Of those with chronic infection (persistent RNA > 6 months), 77% (n=53) had untreated active HCV infection and 23% (n=16) had an SVR post treatment giving a seroprevalence estimate for untreated chronic hepatitis C infection of 13%.

Of those who tested hepatitis C antibody positive, 10 (11%) were co-infected with HIV and 6 (6%) had been infected with hepatitis B. The seroprevalence of hepatitis C among prisoners with a history of injecting drug use was 80%. On multivariate analysis, injecting drug use and having a history of receiving a non-sterile community tattoo were the only significant risk factors independently associated with hepatitis C acquisition (p=0.005, β=0.468). (Personal communication: Dr Des Crowley (lead author), study submitted for publication).

6.2 Homeless population

Homelessness has become a crisis in Ireland. The number of homeless adults in Dublin has increased from approximately 3,000 in 2015 to over 5,000 in 2018 (Dublin Regional Homeless Executive). Many homeless adults are now accommodated in emergency shelters on a night-by-night basis with little continuity of care (Focus Ireland).

Homeless adults who use drugs are a sub-population of drug users at particularly high risk of BBV infections. In a study carried out in the north inner-city area of Dublin in 2005, 356 homeless adults (70% response rate) were interviewed over a two week period[72]. Access to free healthcare was poor with just over half (55%) having a medical card. Sixty four percent of study participants reported illicit drug use and 55% reported heroin use in particular. Forty eight percent of participants were currently injecting drugs or had injected in the past. Access to harm reduction services was relatively poor. Over a quarter of current heroin injectors had not attended needle exchange in the previous six months and one third had not been vaccinated against hepatitis B. The self-reported prevalence of BBVs among the total study population (including those who did not use drugs) was 36% for hepatitis C, 6% for HIV and 5% for hepatitis B[72].

A follow up study was carried out in September 2013 and included just over 600 homeless adults in Dublin (n=538) and Limerick (n=63)[73]. Access to free healthcare had significantly improved, with 77% of study participants having a medical card. Drug use amongst the homeless had increased, with over three quarters (78%) of the study population reporting illicit drug use. Polydrug use was very common (71% of current drug users). Just over half (52%) of the study population had used heroin and 68% of those with a history of heroin use were currently taking methadone. Forty three percent of participants were currently injecting drugs or had injected drugs in the past. Almost all of those who injected used heroin. The self-reported prevalence of BBVs in the Dublin cohort had decreased compared to the previous study: 28.5% positive for hepatitis C, 3.6% positive for HIV and 4.8% positive for hepatitis B. None of the Limerick cohort reported testing positive for BBVs.

A further study was carried out in 2015 to establish to effectiveness of intensified HCV screening in homeless people attending Safetynet primary healthcare services in Dublin, and to determine the HCV prevalence in this population[74]. Over 600 individuals were offered testing and 88% accepted. Where results were available, 40% (n=206) tested positive for hepatitis C antibody. Over half were not aware of their positive status prior to testing. Sixty percent of those referred to specialist care did not attend, with participants indicating barriers to treatment that included on-going drug use, mental health problems and lack of stable accommodation. The authors concluded that there was a need for outreach community-based treatment alongside the more traditional specialist services in order to provide appropriate care for the homeless population.

6.3 Men who have sex with men (MSM)

Chemsex

Sexualised drug use or chemsex involves the use of recreational drugs for or during sex. Chemsex commonly involves crystal methamphetamine (crystal meth), gamma-hydroxybutyrate/gamma-butyrolactone (GHB/GBL) and mephedrone but may also include other drugs such as ketamine and cocaine.

Chemsex among sub-groups of MSM is an emerging threat in Ireland and other countries, because of the direct effects of the drugs themselves, and because of an increased risk of transmission of HIV, hepatitis B and C and other STIs[75-77]. The use of GHB/GBL for chemsex has caused particular concern because of its association with physical dependence, potentially life-threatening withdrawal, overdose and death (box 5). There are also concerns about the emergence of injecting drug use during chemsex, often referred to as "slamming".

The MSM Internet Survey (MISI) 2015, with 3,090 respondents, found that 7% had used one or more of four drugs commonly associated with chemsex (GHB/GBL, crystal meth, mephedrone and ketamine) in the previous 12 months[76]. The use of chemsex drugs was found to be more common among younger men and HIV positive men. Two percent of respondents had ever injected drugs in their life.

A survey of MSM attending the Gay Men's Health Service in Baggot Street Dublin in 2016 found that 27% of respondents had engaged in chemsex in the previous 12 months, using one or more of the following drugs: GHB/GBL; crystal meth; mephedrone; ketamine; cocaine; NPS; other stimulants[77]. Of those who had engaged in chemsex, 9% reported that they had ever injected drugs for sex. GHB/GBL was the drug most commonly reported as being used for chemsex; over half (57%) of those who had engaged in chemsex had used GHB/GBL. Almost one fifth of the men (17%) had lost consciousness as a consequence of engaging with chemsex. One in four (25%) reported that chemsex was impacting negatively on their lives and almost one third (31%) reported that they would like help or advice about chemsex. Those engaging in chemsex were more likely to have had more sexual partners , more partners for anal intercourse and to have had anal intercourse without a condom. They were also twice as likely to report having been treated for gonorrhoea over the previous 12 months than those who did not. Other STIs/HIV were not found to be independently associated with chemsex.

There was a recent increase in the number of hepatitis C notifications identified as MSM[58]. Twenty nine cases were identified in 2016 and 17 in 2017, compared to an average of 7 per year between 2012 and 2015. Most were acute cases diagnosed through STI services. Two thirds were also HIV positive and 59% had other recent STIs. Information on chemsex is not requested on the hepatitis C enhanced surveillance form, so it is not known if this increase was related to chemsex.

Box 5. G Clinic

A qualitative study, carried out in 2017, looked at problem G (GHB/GHL) use in a small number of people who socialised as part of the 'gay scene' in Dublin[78]. Participants commonly reported increased sexual desire and significantly reduced inhibitions and two reported other people having sex with them while they were unconscious as a result of taking G.

In order to meet the needs of MSM engaging in sexualised drug use, the National Drug Treatment Centre established a 'G' clinic in 2017. This clinic has links with a community-based counselling service. They provide both inpatient and outpatient 'G' detoxes and received extra funding to expand the clinic in 2018.

The national drugs strategy, Reducing Harm, Supporting Recovery 2017-2025, has recognised the need to develop specialist referral groups for MSM who may not otherwise attend traditional drug services[49]. Further information on services and supports available for people using GHB/GBL can be found at http://www.drugs.ie/ghb and http://man2man.ie/alcohol-drugs-cigarettes/g/

7. Conclusions

This report summarises what is known about BBVs in drug users in Ireland. Although there are some gaps in information, the focus on harm reduction and drug treatment appears to be working. Available data indicate a relatively high prevalence of hepatitis C in older opioid users, but a declining incidence of opioid use, injecting and hepatitis C. The number of newly diagnosed cases of HIV in PWID has also declined in recent years and the incidence and prevalence of hepatitis B is low. OST seems to be fairly readily available and screening is generally reported to be good in the drug services. However, most of the studies of BBV prevalence in OST settings were carried out many years ago and focused on larger addiction treatment centres in the Dublin area. A much needed, nationally representative prevalence study of BBVs in OST settings is planned for 2018/2019.

The lack of computerisation in most HSE addiction clinics means that monitoring the uptake of BBV screening and test results, and hepatitis B vaccine uptake, is difficult. Aside from monitoring adherence to clinical guidelines, a computerised system would provide important data on the incidence and prevalence of BBVs in PWID in Ireland and would facilitate early detection of outbreaks or unusual events. There are plans to have all sites computerised and for the same system to be used by all relevant services. This, in conjunction with unique health identifiers, will facilitate linkage of the addiction services. There is already a good database system in use in the prison services, but a unique health identifier will also be useful in terms of linking prison and community addiction services. A key deficit in the prison database system, and in some databases used in addiction treatment clinics, is that laboratory results are scanned and saved as images. This information is not readily extractable for reporting. The prison database does include fields for recording laboratory results, but these are not routinely completed.

The NDTRS provides detailed information on all drug users entering drug treatment in Ireland each year. This is essential for monitoring trends in the types of drugs used, mode of use and the demographics of drug users. The system can record if drug users have been tested for BBVs, but the test results are not recorded. This would be a useful addition to the dataset.

Needle and syringe programmes and supervised injecting facilities are intentionally low-barrier services, with very little information requested from service users. However, this makes it difficult to accurately quantify the total number of service users, the number of needle/syringe packs provided to each user and to determine whether service users were able to obtain sufficient supplies to meet their needs. There is a need to expand and increase the accessibility of needle and syringe services. It would also be very useful to collect minimal demographic data and ensure that all service users are offered hepatitis B vaccination, screening for BBVs and referrals to drug treatment services. The lack of information on image and performance enhancing drug users and on PWID who are not in drug treatment, could also be partially rectified by collecting data from needle and syringe services. Furthermore, this type of information is required for reporting to EMCDDA and for monitoring key indicators in the WHO/ECDC hepatitis elimination plan.

The National Hepatitis C Treatment Programme has been successfully introduced in acute hospitals and has now commenced a number of pilot treatment sites in OST settings. Providing hepatitis C treatment to patients at sites they attend regularly for OST should significantly improve treatment uptake and adherence in drug users. Increased community-based treatment is very welcome and treatment through homeless shelter clinics and GPs may also be possible in the future.

There is a now a need to implement the hepatitis C screening guidelines with a view to increasing diagnosis of hepatitis C in Ireland and linking patients to treatment as early as possible. This will help minimise the morbidity and mortality associated with hepatitis C and decrease transmission to others. There has been increasing recognition nationally and internationally of the profound effect of social exclusion, such as that experienced by PWID, on health and access to health care[79]. Although there have been improvements in health screening in the homeless and prison populations in Ireland in recent years, there is a need to continue to develop BBV prevention, screening and treatment services which meet the needs of socially excluded people and ensure equity of access and outcomes using an Inclusion Health approach[80].

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