Public Health England

Protecting and improving the nation's health

Unlinked Anonymous Monitoring (UAM) Survey of HIV and viral hepatitis among PWID: 2020 report

Health Protection Report
Volume 14 Number 18

Advanced Access report published 6 October 2020

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Data tables associated with this report:

- **Data tables of the Unlinked Anonymous Monitoring Survey of HIV and Hepatitis in People Who Inject Drugs [tables 1 to 11, 24 and 25]**
- **Data tables for English regions and Devolved Administrations [tables 12 to 23]**

(Available at: People who inject drugs: HIV and viral hepatitis monitoring.)

Executive summary

The aim of the Unlinked Anonymous Monitoring (UAM) Survey of People Who Inject Drugs (PWID) is to monitor the prevalence and incidence of HIV, hepatitis B (HBV) and hepatitis C (HCV) infection, and associated injecting risk behaviour in people who inject psychoactive drugs, such as heroin, crack cocaine and amphetamines. This annual cross-sectional survey is co-ordinated by Public Health England (PHE), with support from Public Health Wales and The Public Health Agency for Northern Ireland.

New data from the UAM Survey have been published on the PHE website in a set of data tables which cover the period 2010 to 2019 [1]. Data from 1990 to 2009 can be found in previous years' data tables [2]. In addition to combined data for England, Wales and Northern Ireland (the areas covered by this survey), the tables also include data for each country and the regions of England separately.

This report presents an overview of the trends between 2010 and 2019 for the prevalence of HIV, HBV and HCV, injecting risk behaviours, and uptake of harm reduction services. It also includes an overview of the trends of non-fatal overdoses and use of naloxone – results for which were previously reported in a stand-alone report [3]. Further data from this survey related to HCV will be reported in the next *Hepatitis C in the UK* report. The previous year's report can be found online [4]. PHE is undertaking further analyses of UAM data received during 2020 to assess the impact of the COVID-19 response on PWID. Provisional findings will be included in *Shooting Up: Infections among people who inject drugs in the UK*, which will be released in the coming months.

Main points

Principal trends apparent from the new UAM-PWID data published on the PHE website are as follows:

- An ageing cohort of people who inject drugs (PWID) is evident from the Unlinked Anonymous Monitoring (UAM) survey, with the median age increasing from 35 years in 2010 to 40 years in 2019. This is consistent with an ageing cohort of PWID observed in other data sources nationally and internationally

- HIV prevalence in this population remained stable at 0.82% in 2019, with 100% of those HIV-positive aware of their status

- The prevalence of antibodies to the hepatitis B (HBV) core antigen (anti-HBc), a marker of past or current infection, has decreased in recent years to 6.9% in 2019 (from 16% in 2010)

- The proportion of UAM participants with antibodies to hepatitis C (HCV) (i.e. ever infected) who have markers of chronic infection (RNA) has decreased from 58% in 2011 when it was first measured to 42% in 2019; this corresponds with the timing of the scale-up of direct acting antiviral treatment against HCV among PWID

- In 2019, only 30% of UAM participants were aware of their chronic HCV infection, which is a drop in the level of awareness from the previous year (47% aware in 2018); however, this should be interpreted with caution due to variable sampling methods and geographical distribution in 2019. Trends should continue to be monitored in future sample years

- The level of HCV infection among the recent initiates to injecting participating in this survey are not suggestive of a decline in HCV transmission in recent years

- The proportion of UAM participants who reported having a HCV test in the current or previous year has increased from 39% in 2010 to 46% in 2019

- In 2019, among those with treatment status available, 39% of those aware of being HCV antibody positive had seen a specialist nurse or doctor for their HCV and been offered and accepted treatment; this is an increase from 20% in 2011 when it was first measured

- HBV vaccine uptake decreased in under 25-year olds to 57% in 2019 from 76% in 2011, when vaccine uptake was highest, and in those aged 25-34 years to 66% in 2019 from 79% in 2011

- Symptoms of an infection at an injection site were reported by 38% of UAM participants who had injected in the last year in 2019; this is a decrease from 54% in 2018

- The level of needle and syringe (direct) sharing reported by UAM participants who had injected during the preceding four weeks was 20% in 2019; similar to levels seen in 2010 (21%) and an increase from 14% in 2012 when reported sharing levels were lowest

- Injection of crack remained high in 2019; 57% of those who had injected in the preceding four weeks reporting crack injection as compared to 60% in 2018 and 29% in 2010

- An increase was seen in the proportion who reported being homeless during the last year (28% in 2010 to 42% in 2019)

- In 2019, 20% of those who had injected in the last year reported overdosing during that period; this is an increase from 16% in 2013 when it was first measured. Carrying naloxone was reported by 65%, an increase from 54% in 2017.

Methods

The UAM survey recruits people who inject drugs through specialist agencies within England, Wales and Northern Ireland. These agencies provide a range of services to those who inject psychoactive drugs, from medical treatment to needle and syringe programmes and outreach work. People using these services who are either currently injecting drugs or who have done so previously are asked to take part in the survey by service staff. Those who agree to take part provide a biological specimen that is tested for infection with or exposure to HIV, HBV and HCV viruses. Behavioural and limited demographic information is collected through a brief anonymous subject-completed questionnaire linked to the specimen but unlinked from any client identifying information. This includes questions on the uptake of diagnostic testing for HIV and HCV, HBV vaccination and the sharing of injecting equipment; participants may opt out of answering any questions. The questions asked have varied over time. No personal identifiers are collected; the questionnaire and specimen testing are anonymous.

The biological sample collected in the survey was changed from an oral fluid sample to a dried blood spot (DBS) during 2010. From 2011 onwards, only DBS samples have been collected. The sensitivities of the tests on a DBS sample for antibodies to HIV, HCV and HBV core antigen (anti-HBc), and that on an oral fluid sample for antibodies to HIV, are all close to 100%. However, the sensitivity of the oral fluid sample test for antibodies to HCV is about 92% and that for antibodies to the anti-HBc is about 75%. Prevalence figures and its associated data tables based on these samples have been adjusted to account for these differences.

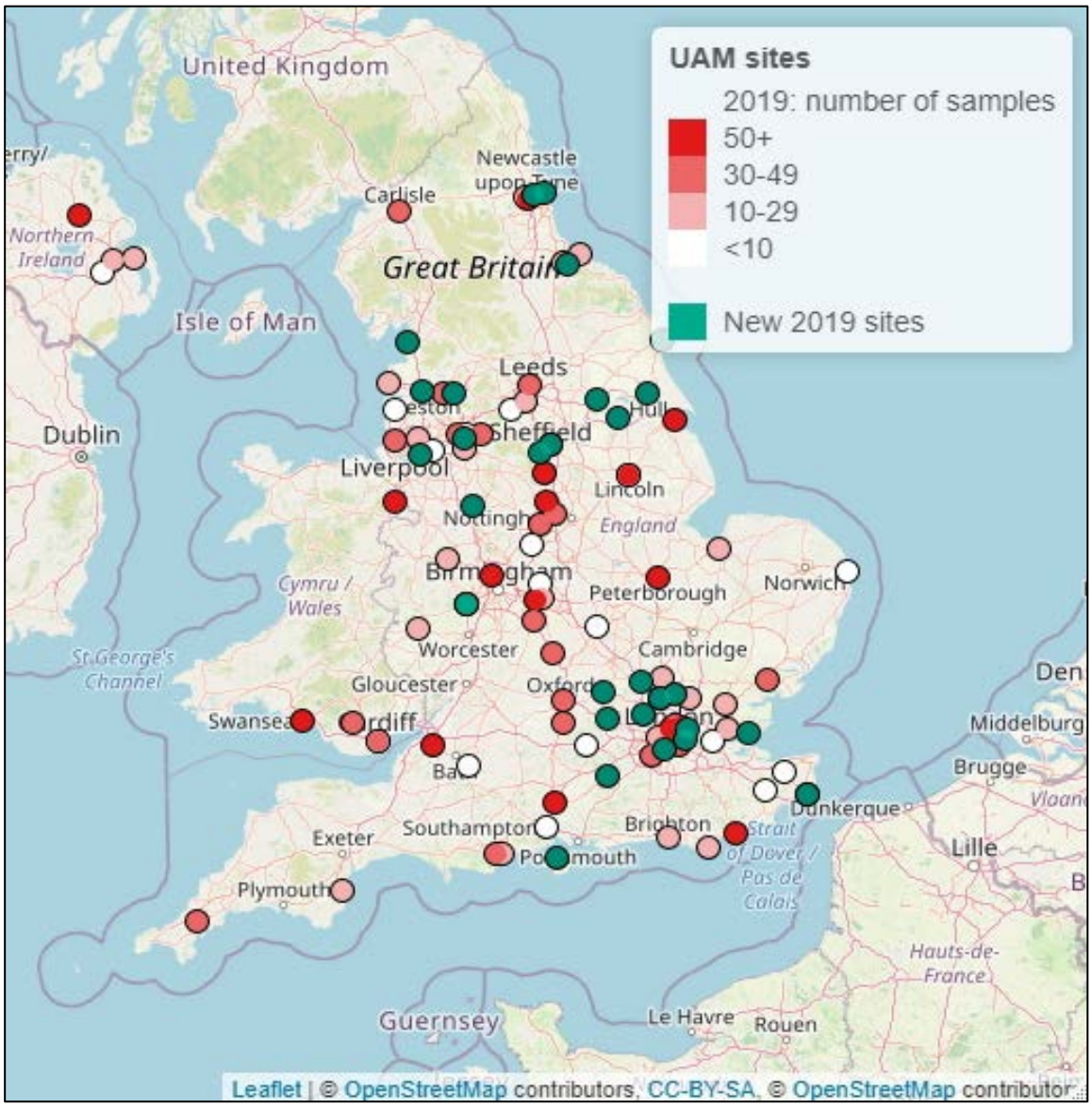
Throughout this report, data from the associated data tables are discussed and the trend over time is assessed. Where data are compared between years for significant changes in trend; age, gender and region are controlled for within the statistical analyses. This is discussed further in Appendix 2: Statistical notes.

Results

Demographics

In 2019, there were 3,258 participants recruited to the survey from 79 participating drug and alcohol services in England, Wales and Northern Ireland (Figure 1; Appendix 1), with a geographical distribution similar to previous survey years. In total, 71% (95% confidence interval (CI): 69%-72%) of participants were male, which is lower than the proportion male in 2010 (75%, 95%CI: 74%-77%) (Data Table 1; Statistical note a).

Figure 1. Map of drug and alcohol services participating in the 2019 UAM survey (see also Appendix 1)

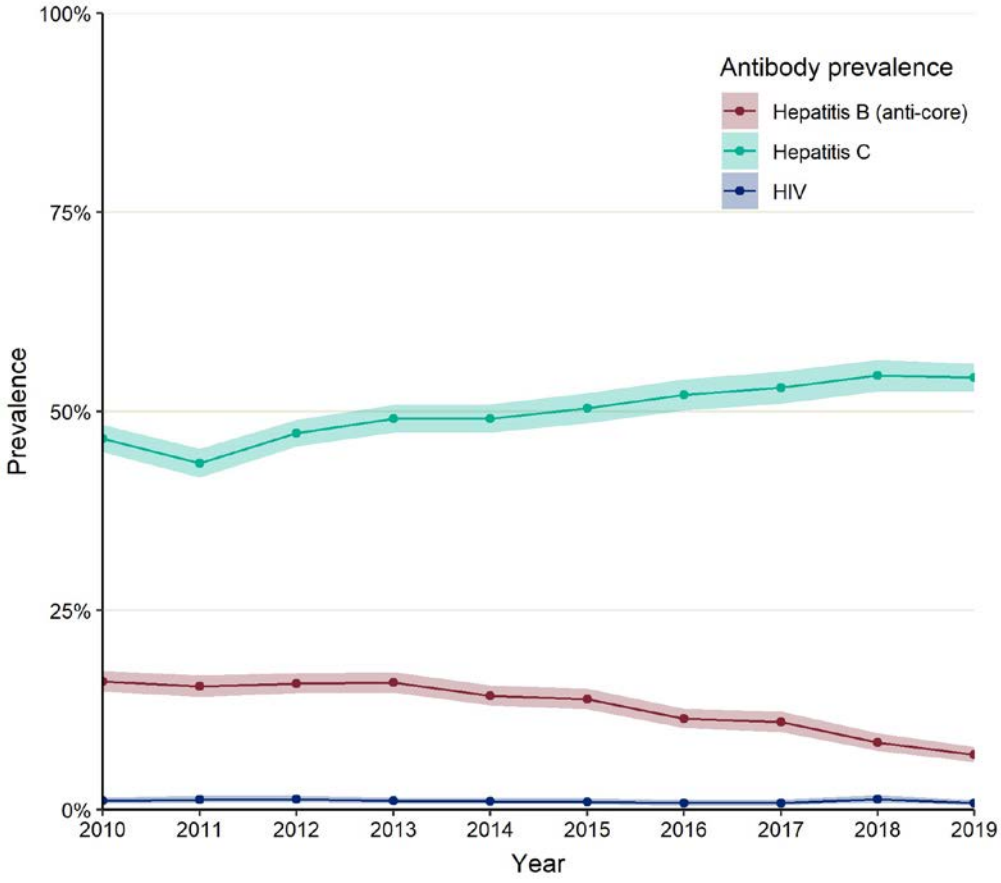


The median age of participants in the 2019 survey was 40 years (range: 16-71 years). An ageing cohort of PWID is evident from the UAM survey over time with the median age increasing from 35 years in 2010, and the proportion of individuals under 25 years of age decreasing from 11% (95%CI: 9.7%-12%) in 2010 to 2.4% (95%CI: 1.9%-3.0%) in 2019 (Data Table 1; Statistical note a). This is consistent with an ageing cohort of PWID observed in other data sources nationally [5, 6], and internationally [7]. The proportion of UAM survey participants who had injected in the last year was 65% (95%CI: 63%-67%) in 2019, which is a slight decrease from 71% (95%CI: 70%-73%) in 2010, but not significantly different after adjustment for age, gender and region (Data Table 1; Statistical note a).

Figure 2 shows the HIV, HBV (anti-HBc) and HCV antibody prevalence among PWID who took part in the UAM Survey across England, Wales and Northern Ireland between 2010 and 2019. Figures 3-5 show these prevalence figures for recent initiates to injecting drug use (those who first injected during the preceding three years), which is an indicator of recent transmission.

Figure 2. Prevalence of antibodies to HIV, HBV core antigen and HCV among participants in the UAM Survey of PWID: England, Wales and Northern Ireland, 2010-2019

Shaded area shows 95% confidence interval.



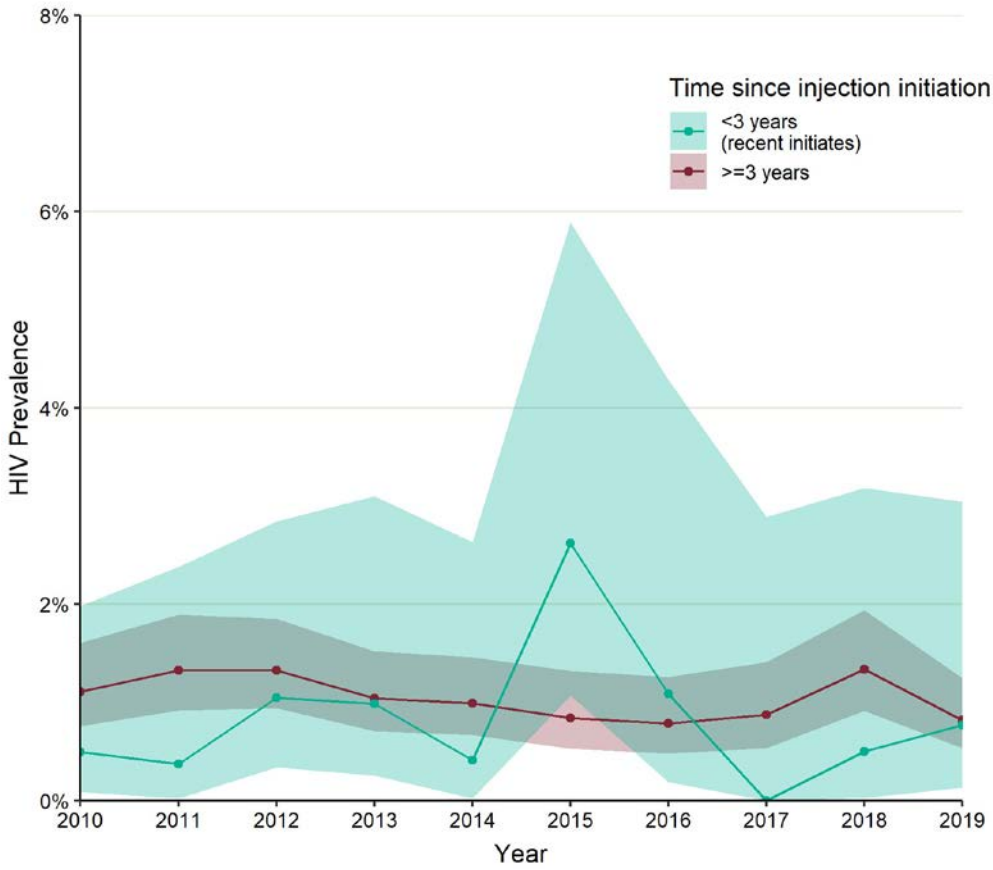
HIV prevalence

The prevalence of antibodies to HIV was 0.82% (95%CI: 0.53%-1.2%) in 2019; this is not significantly different from that found in 2010 when the prevalence was 1.1% (95%CI: 0.74%-1.5%) (Figure 2; Data Table 2; Statistical note b). Between 2010 and 2019, prevalence varied between 0.77% and 1.3%. The HIV prevalence in Wales was 0.93% (95%CI: 0.11%-3.3%; Data Table 22) and in Northern Ireland was 0.90% (95%CI: 0.02%-4.9%; Data Table 23) in 2019. In England, the HIV prevalence was 0.80% (95%CI: 0.51%-1.2%; Data Table 12) in 2019, with the prevalence higher in London (3.5%, 95%CI: 2.0%-5.7%; Data Table 13) than in the rest of the country.

The HIV prevalence among recent initiates to injecting drug use is an indicator of recent transmission. The prevalence of HIV among the recent initiates taking part in the survey across England, Wales and Northern Ireland fluctuated between 0.0% and 2.6% over the last decade and was 0.77% (95%CI: 0.09%-2.7%) in 2019 (Figure 3; Data Table 24; Statistical note b).

Figure 3. Prevalence of anti-HIV among participants in the UAM Survey of PWID by time since first injecting: England, Wales and Northern Ireland, 2010-2019

Shaded area shows 95% confidence interval.



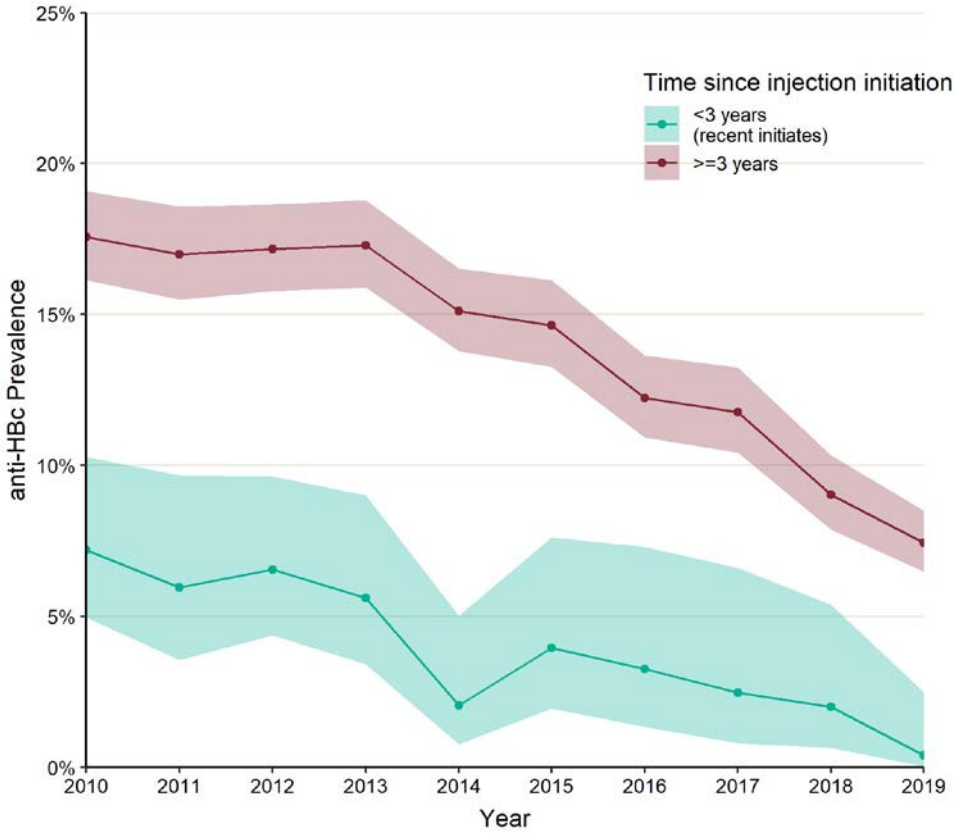
Hepatitis B prevalence

The prevalence of antibodies to the HBV core antigen (anti-HBc, a marker of past or current infection with HBV) among the survey participants across England, Wales and Northern Ireland was lower in 2019 (6.9%, 95%CI: 6.0%-7.8%) than in 2010 (16%, 95%CI: 15%-17%) (Figure 2; Data Table 3; Statistical note c). By country, anti-HBc prevalence in 2019 was as follows: Northern Ireland, 0.0% (95%CI: 0.0%-3.4%; Data Table 23), Wales, 4.8% (95%CI: 2.3%-8.6%; Data Table 22) and England, 7.3% (95%CI: 6.3%-8.3%; Data Table 12).

The prevalence of anti-HBc among the recent initiates to injecting drug use taking part in the survey across England, Wales and Northern Ireland was 0.39% (95%CI: 0.01%-2.1%) in 2019; this is lower than in 2010 when anti-HBc prevalence in this group was highest (7.2%, 95%CI: 4.9%-10%) (Figure 4; Data Table 24; Statistical note c).

Figure 4. Prevalence of anti-HBc among participants in the UAM Survey of PWID by time since first injecting: England, Wales and Northern Ireland, 2010-2019

Shaded area shows 95% confidence interval.



DBS samples positive for anti-HBc are also tested for HBV surface antigen (HBsAg), a marker of current infection. However, at the time of this publication, HBsAg testing of 2019 samples was incomplete and thus, data on levels of current HBV infection are not presented here.

Hepatitis C prevalence

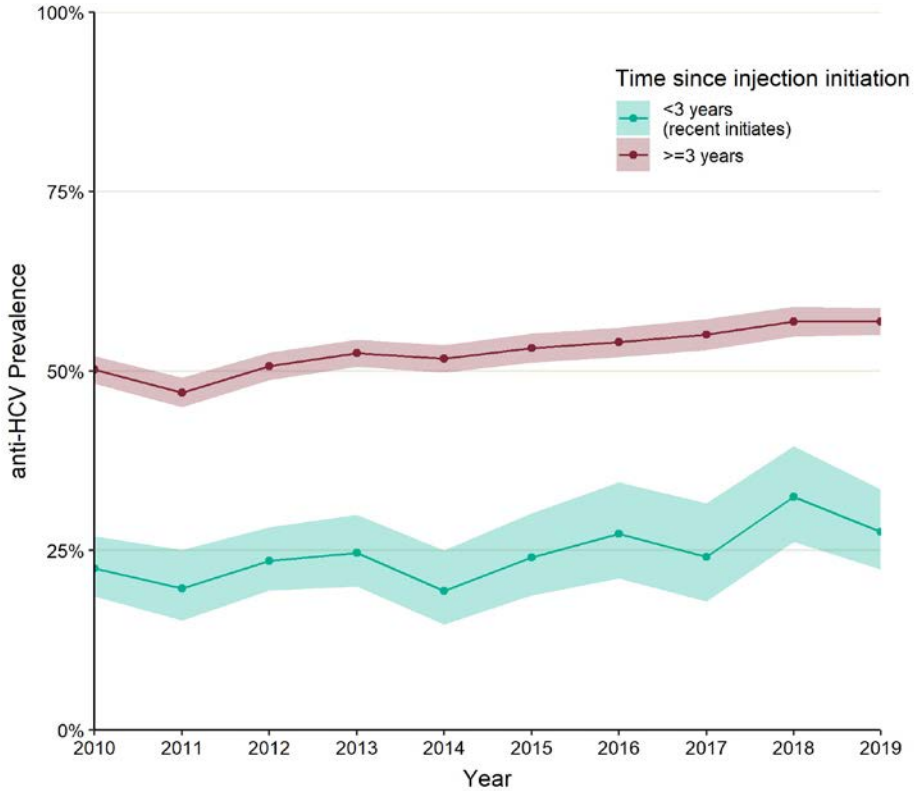
HCV antibody prevalence

The prevalence of antibodies to the HCV (anti-HCV), indicating ever having been infected with HCV, among the survey participants across England, Wales and Northern Ireland was 54% (95%CI: 52%-56%) in 2019; this is not statistically different than the anti-HCV prevalence of 47% (95%CI: 45%-48%) seen in 2010 (Figure 2; Data Table 4; Statistical note d). However, levels of ever infection with HCV documented during the last decade are lower than those in the early 1990s, when prevalence was over 60% [4]. By country, anti-HCV prevalence in 2019 was as follows: Northern Ireland, 29% (95%CI: 21%-38%; Data Table 23), Wales, 58% (95%CI: 51%-65%; Data Table 22) and England, 55% (95%CI: 53%-57%; Data Table 12). Although anti-HCV prevalence has stayed relatively stable in England and Northern Ireland over the last decade, prevalence in Wales has increased significantly from 26% (95%CI: 20%-33%; Data Table 22) in 2010.

The prevalence of anti-HCV among the recent initiates taking part in the survey across England, Wales and Northern Ireland was 28% (95%CI: 22%-33%) in 2019. This is not significantly different than the proportion reported in 2010 (23%, 95%CI: 19%-27%) (Figure 5; Data Table 24; Statistical note c).

Figure 5. Prevalence of anti-HCV among participants in the UAM Survey of PWID by time since first injecting: England, Wales and Northern Ireland, 2010-2019

Shaded area shows 95% confidence interval.

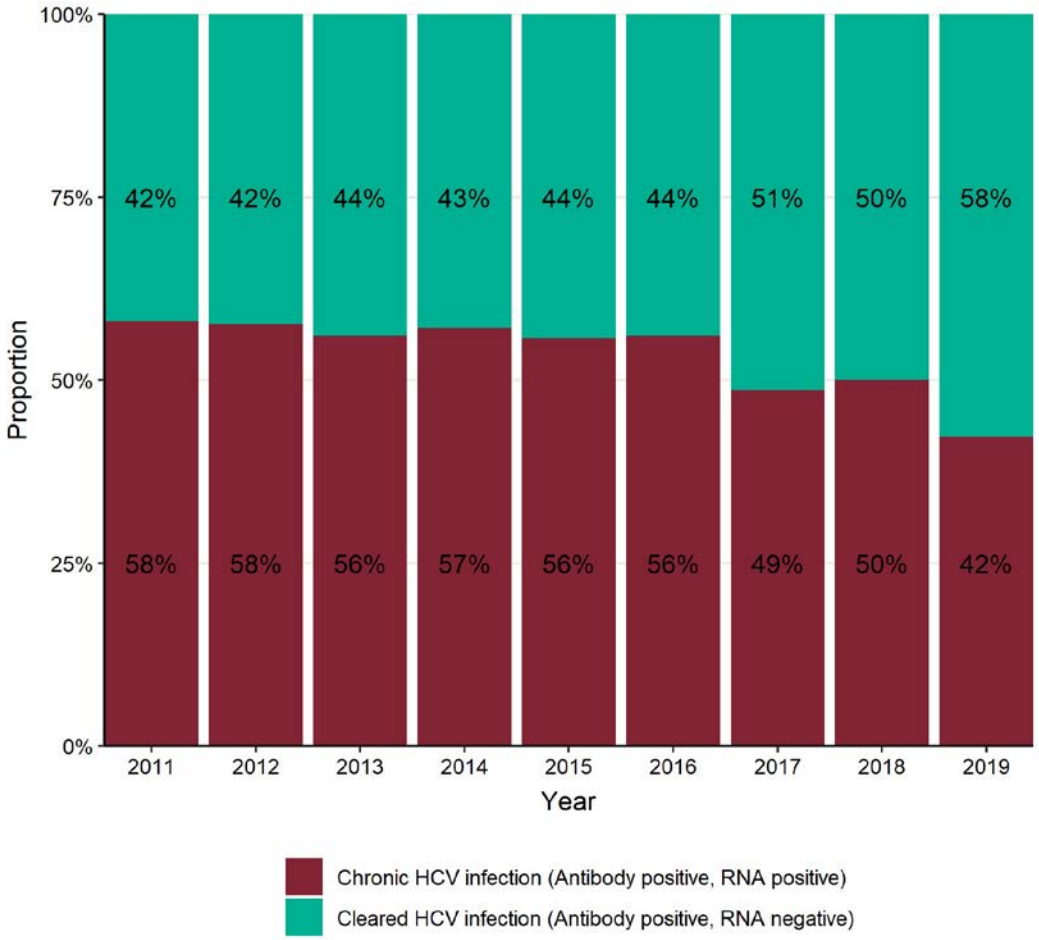


Chronic HCV prevalence (anti-HCV-positive, RNA-positive)

The prevalence of HCV RNA, an indicator of chronic HCV infection, has been measured since 2011. Among those with anti-HCV, the prevalence of HCV RNA was 42% (95%CI: 40%-45%) in 2019, which is a decrease from 58% (95%CI: 55%-61%) in 2011 (Data Table 4; Statistical note e). The decline in viraemic prevalence (i.e. chronic HCV infection) seen from 2017 onwards corresponds with the timing of the scale-up of direct acting antiviral treatment against HCV among PWID since 2015 [4]. However, this decrease is not equitable across regions in England, Wales and Northern Ireland (Data Tables 12-23).

Among recent initiates, there was no change in chronic HCV infection over time; the prevalence of HCV RNA was 62% (95%CI: 50%-74%) in 2019 and 59% (95%CI: 43%-73%) in 2011 (Data Table 24; Statistical note e).

Figure 6. Prevalence of chronic HCV (RNA-positive) among anti-HCV-positive participants in the UAM Survey of PWID: England, Wales and Northern Ireland, 2011-2019



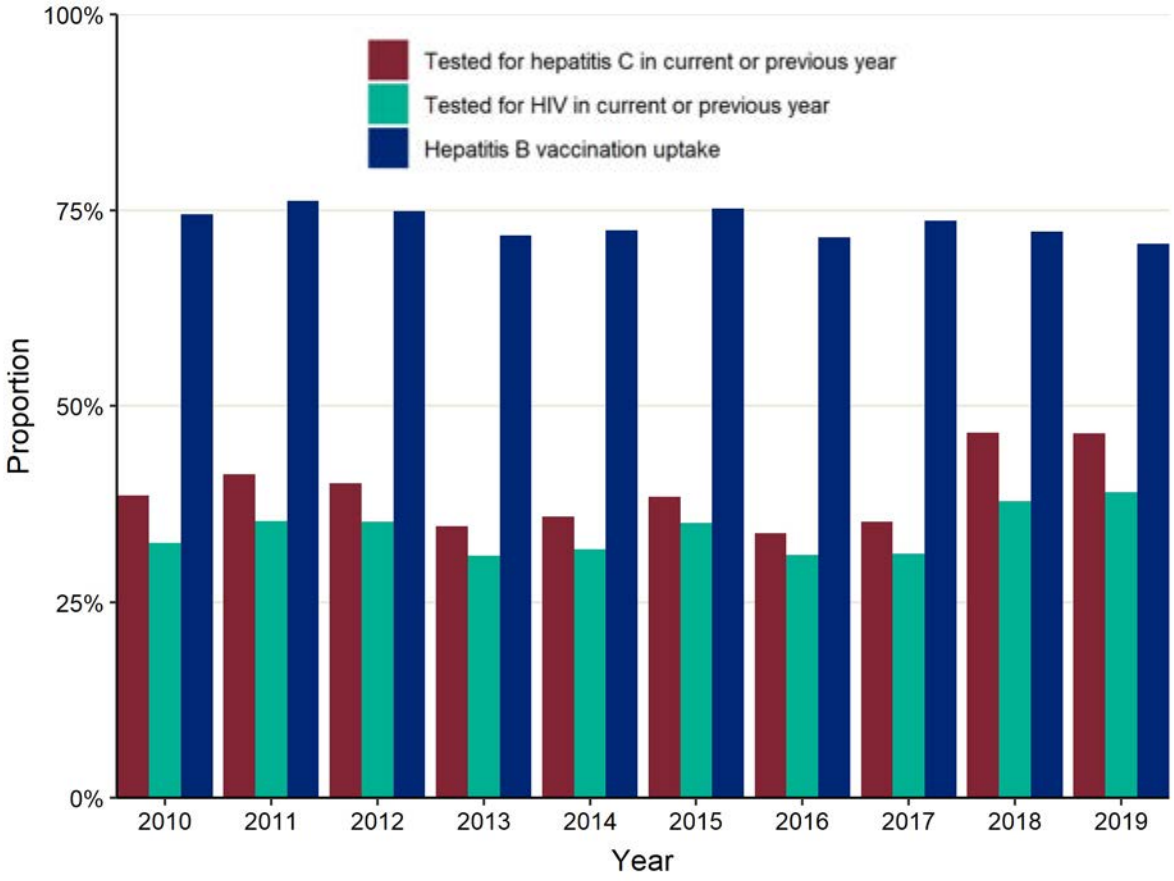
Retrospective analysis of HCV RNA (2011-2016) was performed as part of the EPIToPE study, funded by the National Institute for Health Research (NIHR) Programme Grants for Applied Research programme (Grant Reference Number RP-PG-0616-20008). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

Uptake of hepatitis B vaccination, blood-borne virus testing, and awareness of infection

HBV vaccination uptake

The survey also monitors, through self-reports, the uptake of HBV vaccine (Figure 7; Data Table 7; Statistical note f). Uptake of at least one dose of HBV vaccine among the survey participants has plateaued over the decade, if not slightly declined (71%, 95%CI: 69%-72% in 2019 vs. 74%, 95%CI: 73%-76% in 2010). In 2019, HBV vaccine uptake was particularly low in the under-25 age group at 57% (95%CI: 45%-69%), which is a drop from 76% (95%CI: 70%-81%) in 2011 when vaccine uptake was at its highest. Vaccine uptake also decreased in the 25-34 years age group from 79% (95%CI: 77%-82%) in 2011 to 66% (95%CI: 62%-70%) in 2019. Among recent initiates to injecting, 49% (95%CI: 43%-55%) of participants reported being vaccinated for HBV, which is a drop from 67% (95%CI: 61%-73%) in 2011 (Data Table 24).

Figure 7. Uptake of HBV vaccination, and of HCV and HIV testing in the current of previous year among participants in the UAM Survey of PWID: England, Wales and Northern Ireland, 2010-2019



HIV testing uptake and awareness of infection

The self-reported uptake of voluntary confidential diagnostic testing (VCT) for HIV among the survey participants across England, Wales and Northern Ireland has increased significantly since 2010; with the proportion reporting ever being tested for HIV rising from 76% (95%CI: 74%-77%) in 2010 to 81% (95%CI: 80%-83%) in 2019, and the proportion reporting being tested in the current or previous year increasing from 33% (95%CI: 31%-34%) in 2010 to 39% (95%CI: 37%-41%) in 2019 (Figure 7; Data Table 8; Statistical note g). The proportion of the participants with antibodies to HIV, who reported that they were aware of their HIV infection was 100% (95%CI: 85%-100%) for the first time in 2019 (Data Table 8; Statistical note g).

HCV testing uptake and awareness of infection

There has also been a significant increase over the past decade in the self-reported uptake of VCT for HCV by survey participants. The proportion of survey participants ever tested increased from 82% (95%CI: 81%-84%) in 2010 to 87% (95%CI: 85%-88%) in 2019, and the proportion tested in the current or previous year increased from 39% (95%CI: 37%-40%) in 2010 to 46% (95%CI: 45%-48%) in 2019 (Figure 7; Data Table 9; Statistical note h). Of those answering the question, the proportion of the participants with chronic hepatitis (anti-HCV and HCV RNA positive), who reported that they were aware of their infection was 30% (95%CI: 27%-34%) in 2019. This is a drop from the previous two years, in which awareness was 51% (95%CI: 46%-56%) and 47% (95%CI: 43%-52%) in 2017 and 2018 respectively.

Among recent initiates to injecting, 69% (95%CI: 63%-74%) reported ever uptake of VCT for HCV in 2019 and 44% (95%CI: 38%-50%) reported uptake of VCT for HCV in the current or previous year. These levels of testing uptake are similar to those in 2010, when 66% (95%CI: 61%-71%) reported ever uptake of VCT for HCV and 39% (95%CI: 34%-44%) reported recent uptake (Data Table 24).

Uptake of hepatitis C care and treatment

In 2019 among those with treatment status available, 39% (261/663, 95% CI 36%-43%; not included in data tables) of those anti-HCV positive and aware of ever having HCV infection had seen a specialist nurse or doctor (hepatologist) for their HCV and been offered and accepted treatment. This is an increase from 20% (94/466, 95% CI 17%-24%) in 2011, when the question was first asked in the UAM survey.

Symptoms of an infection at an injection site

Injection site infections are common among PWID. In 2019, 38% (95%CI: 36%-40%) of PWID in England, Wales and Northern Ireland who had injected during the preceding year reported that they had experienced an abscess, sore or open wound at an injection site during the preceding year. This is a significant decrease from 54% (95%CI: 51%-56%) in 2018 (Data Table 10; Statistical note i). More females (45%, 95%CI: 41%-50%) than males (35%, 95%CI: 32%-37%) reported symptoms of an injection site infection. Questions regarding symptoms of injection site infections have been updated since 2017 and as a result, data collected from 2017 onwards are not comparable to previously collected data. Data from previous years can be found online.[2]

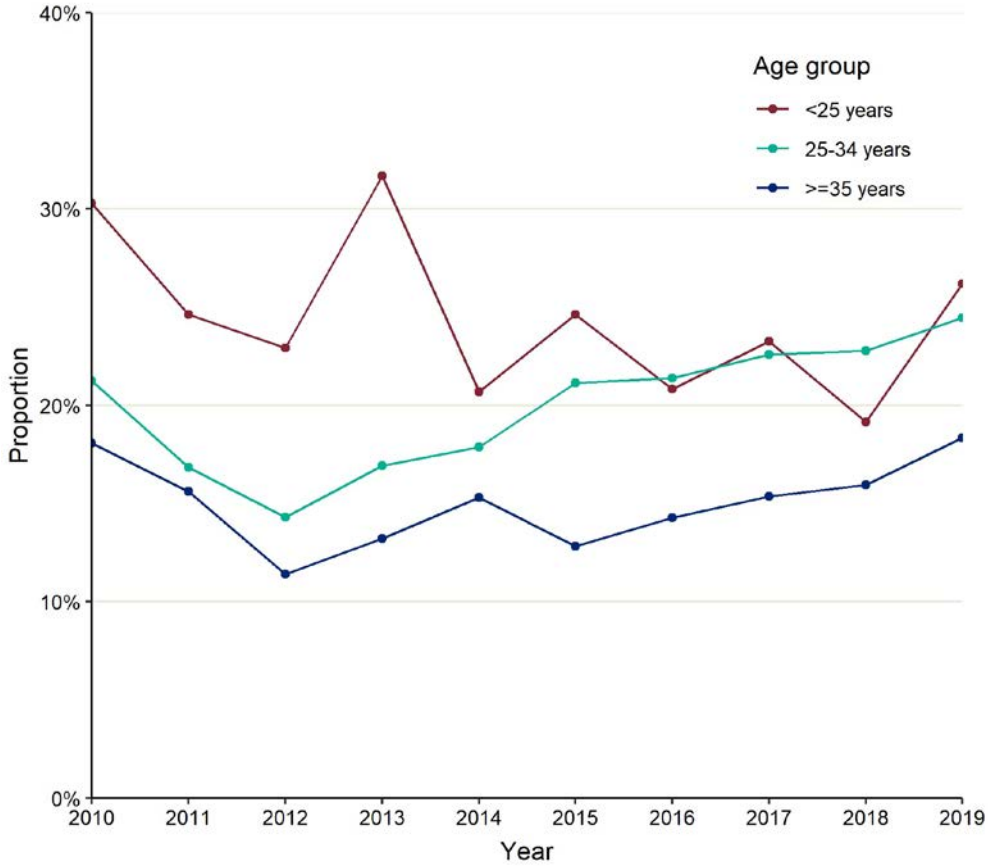
Injecting risk behaviour

Needle and syringe sharing

Sharing of equipment used for injecting drug use is an important contributor to blood-borne virus transmission, including HIV, HBV and HCV [8-10]. The level of needle and syringe (direct) sharing reported by survey participants across England, Wales and Northern Ireland who had injected during the preceding four weeks was 20% (95%CI: 18%-23%) in 2019; similar to levels seen in 2010 (21%, 95%CI: 19%-23%), and an increase from 14% (95%CI: 13%-16%) in 2012 when reported sharing levels were lowest (Data Table 5; Statistical note j). Sharing of needles, syringes and other injecting paraphernalia such as filters and spoons (direct and indirect sharing) was reported by 37% (95%CI: 34%-39%), a proportion which has remained relatively stable since 2010 (39%, 95%CI: 37%-41%). Direct sharing of needles and syringes was reported by 23% (95%CI: 17%-31%) of recent initiates, which is not significantly different from levels reported in 2010 (21%, 95%CI: 16%-27%) (Data Table 24).

Throughout the period 2010-2019, direct sharing was consistently higher among female than male participants; in 2019, 25% (95%CI: 21%-30%) of females reported direct sharing compared to 19% (95%CI: 16%-21%) of males (Data Table 5). Levels of direct sharing in the 25-34 years age-group increased in recent years: from 14% (95%CI: 12%-17%) in 2012 when reported sharing levels were at their lowest to 24% (95% CI 20%-29%) in 2019, and in the ≥35 years age group from 12% (95%CI: 9.4%-14%) in 2012 to 18% (95%CI: 16%-21%) (Figure 8).

Figure 8. Levels of needle and syringe sharing by age group among the participants in the UAM Survey of PWID who had injected during the preceding four weeks: England, Wales and Northern Ireland, 2010-2019



Injection into the groin

Injecting into the groin has been associated with a number of complications, including damage to the femoral vein and artery, injecting site infections and vascular problems [11, 12]. The proportion of current PWID who reported injecting into their groin in the last month was 36% (95%CI: 34%-39%) in 2019; this has remained relatively stable since 2010 (34%, 95%CI: 31%-36%) (Data Table 1; Statistical note k). By country, the proportion reporting injecting into their groin in the last month was as follows: England, 35% (95%CI: 33%-38%; Data Table 12), Wales, 44% (95%CI: 36%-53%; Data Table 22) and Northern Ireland, 52% (95%CI: 30%-74%; Data Table 23).

Number of "missed hits"

In 2017/2018 a new question was added to the UAM Survey to monitor the number of times an individual inserted a needle before accessing a vein (achieving a "hit") the last time they injected. Missed hits resulting in subcutaneous injecting are associated with symptoms of an injection site infection [13]. In 2019, more than half of participants who injected in the last year (59%, 1,178/1,982, 95%CI: 57%-62%; not included in data tables) reported that they needed to insert the needle more than once before getting a "hit", and 23% (455/1,982, 95%CI: 21%-25%) reported that it took four or more attempts before achieving a "hit".

Sexual risk behaviour

PWID are also at risk of acquiring and transmitting blood borne viruses, particularly HIV, through sexual transmission [14]. In 2019, 60% (95%CI: 59%-62%) of the participants reported having anal or vaginal sex during the preceding year, which is a decrease from 75% (95%CI: 73%-76%) in 2010 (Data Table 11; Statistical note l). Sex in the last year was more commonly reported by female (71%, 640/906, 95%CI: 68%-74%) than male survey participants (56%, 1,222/2,175, 95%CI: 54%-58%) in 2019 (not included in data tables). Of the survey participants who report sex in the preceding year, 40% (95%CI: 37%-42%) reported having had two or more sexual partners during that time and, of these, only 23% (95%CI: 19%-26%) reported always using condoms for anal or vaginal sex (Data Table 11). Reporting sex with two or more partners in the last year was more common among male (43%, 499/1,174, 95%CI: 40%-45%) than female (34%, 209/614, 95%CI: 30%-38%) survey participants in 2019 (not included in data tables). Among those with two or more sexual partners in the last year, 24% (95%CI: 18%-31%) of females and 22% (95%CI: 18%-27%) of males reported always using a condom (Data Table 11).

Environmental risk factors

Homelessness and imprisonment have been associated with increased risk of HCV [15, 16] and bacterial infections [17,18] and recent release from prison has been associated with overdosing [19]. Two-thirds (66%, 95%CI: 64%-68%) of the UAM survey participants in 2019 reported ever being in prison, which is a decrease from 70% (95%CI: 68%-71%) in 2010 (Data Table 1; Statistical note m). The proportion of participants who reported being currently homeless or having been homeless during the last year has increased from 28% (95%CI: 26%-29%) in 2010 to 42% (95%CI: 41%-44%) in 2019 (Data Table 1; Statistical note m).

Needle exchange use and drug treatment uptake

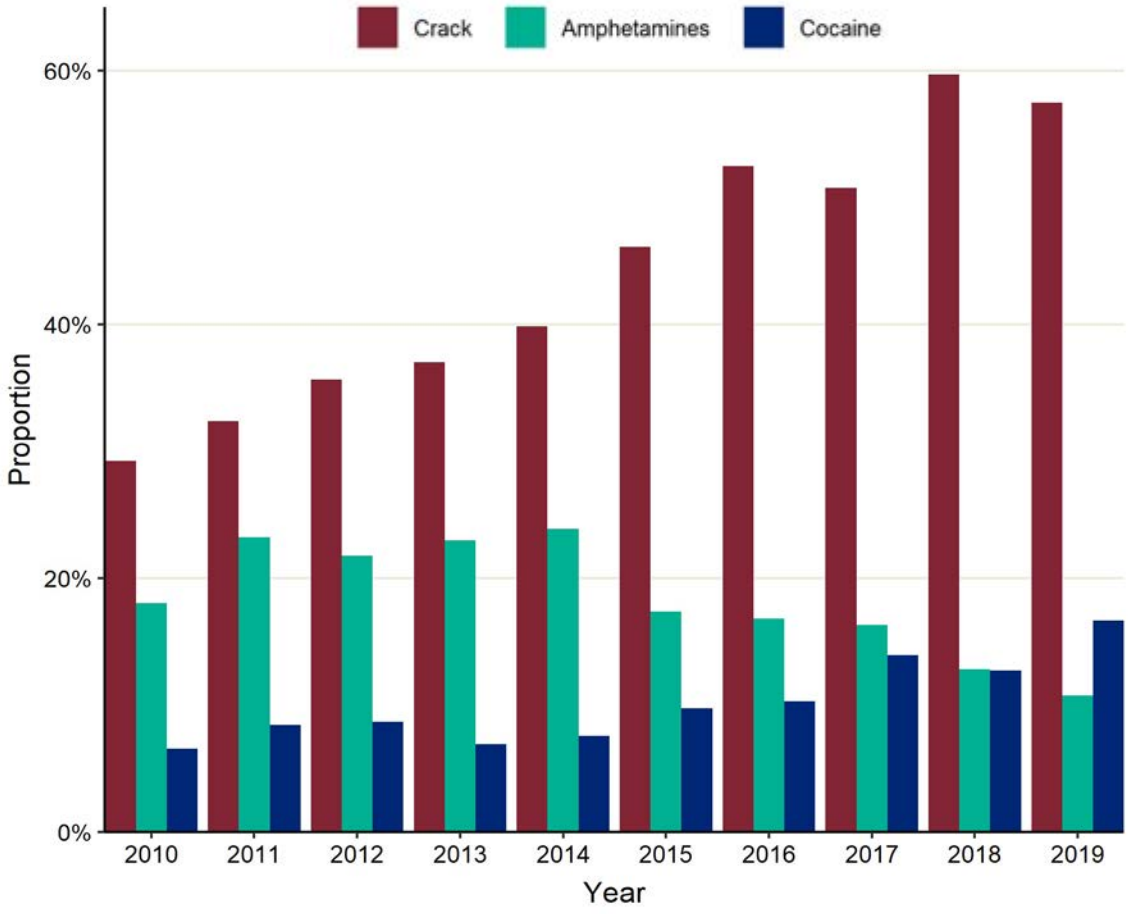
The majority of PWID who participated in the UAM survey in 2019 had ever accessed a needle exchange (90%, 95%CI: 89%-91%), a proportion which has remained relatively stable over the last decade (Data Table 1). In 2019, 78% (95%CI: 76%-79%) of the survey participants reported current engagement with treatment for their drug use, i.e. uptake of a detox or maintenance medicine, an increase from that seen in 2010 (73%, 95%CI: 72%-75%) (Data Table 1; Statistical note n).

Drug trends

Heroin remained the most commonly injected drug in 2019 as reported by 93% (1,352/1,456, 95%CI: 91%-94%; not included in data tables) of those who had injected in the preceding four weeks. Injection of crack remained high in 2019, at 57% (95%CI: 55%-60%) among those who had injected in the preceding four weeks. This is comparable to 60% (95%CI: 57%-62%) injecting crack in 2018, but much higher than 29% (95%CI: 27%-31%) in 2010 (Data Table 1; Figure 9; Statistical note o). Crack injection in the last month among recent initiates remained high in 2019 at 49% (95%CI: 40%-57%) of those who had injected in the preceding four weeks, up from 22% (95%CI: 17%-27%) in 2010 (Data Table 24).

There was also an increase in the injection of other forms of cocaine (17%, 95%CI: 15%-19% in 2019 vs. 6.6%, 95%CI: 5.4%-7.8% in 2010) among those who had injected in the preceding four weeks (Data Table 1; Figure 9; Statistical note o). Injection of amphetamine in the last month decreased in 2019 (11%, 95%CI: 9.2%-12%) compared to 2010 (18%, 95%CI: 16%-20%) (Data Table 1; Figure 9; Statistical note o).

Figure 9. Levels of crack, amphetamines and cocaine use among the participants in the UAM Survey of PWID who had injected during the preceding four weeks: England, Wales and Northern Ireland, 2010-2019



Non-fatal overdose and naloxone use

Drug misuse deaths registered in England and Wales increased significantly between 2012 and 2018, with deaths involving heroin more than doubling to reach the highest number since records began [20]. Through the UAM Survey, data are available to monitor trends in self-reported non-fatal overdose among PWID as well as the carriage and use of the antidote to opioid overdose, naloxone. Among the 2019 UAM Survey participants who reported injecting during the preceding 12 months, 20% (95%CI: 18%-22%) reported overdosing in the preceding year compared to 16% (95%CI: 14%-17%) in 2013 when these data were first collected (Data Table 25; Statistical note p). Overdose reporting between 2013 and 2019 increased in all age groups: from 23% (95%CI: 16%-30%) to 41% (95%CI: 28%-55%) in those under 25 years, from 15% (95%CI: 12%-17%) to 23% (95%CI: 19%-27%) in those 25-34 years and from 15% (95%CI: 13%-17%) to 18% (95%CI: 16%-20%) in those 35 years and over. In 2019, self-reported overdose in the last year was lowest among those who were currently in treatment for their drug use, those being prescribed a detox or maintenance drug medicine (18%, 95%CI: 16%-20%). Self-reported overdose was 24% (95%CI: 19%-29%) among PWID who had previously been, but were not currently in, treatment and was highest among those who had never been in treatment (30%, 95%CI: 23%-38%).

In 2019, among current injectors, 65% (95%CI: 63%-67%) reported carrying naloxone, which is an increase from 54% (95%CI: 52%-56%) in 2017. Just over half (56%, 95%CI: 50%-61%) of those who reported overdosing in the preceding year reported having had naloxone administered, an increase from 44% (95%CI: 38%-50%) in 2013.

Conclusion

In conclusion, data from the UAM Survey of PWID, which is targeted at people who inject psychoactive drugs, indicate that there is an ageing cohort of PWID. The proportion of UAM participants positive for anti-HBc has declined. The explanation for the decline is unclear but could reflect a decline in exposure to HBV over time, as a result of sustained high uptake of HBV vaccination, and/or harm reduction interventions. Anti-HBc titres could also be waning with time after resolution of HBV [21, 22]. The prevalence of HIV remains stable and low. HCV remains the most common infection among this group. Although the prevalence of anti-HCV (indicating ever infection) has stayed high and stable since 2010, the proportion of UAM participants with anti-HCV who are HCV RNA positive has decreased from 58% in 2011 to 42% in 2019. The relative decline in HCV RNA compared to the increase in anti-HCV prevalence corresponds with the timing of the scale-up of direct acting antiviral treatment for HCV among PWID and could reflect an early impact of treatment and viral clearance in this group. Concurrent increases in testing have also been observed with the proportion of UAM participants who reported having a HCV test in the current or previous year reaching 46% in 2019. The proportion of those anti-HCV positive and aware of their infection who had seen a specialist nurse or physician for their HCV and had been offered and accepted treatment was 39% in 2019. Since 2010, HBV vaccine uptake has plateaued and was 71% in 2019; uptake was particularly low in the <25 age group.

Reported needle and syringe sharing has not improved over the last decade. Furthermore, direct sharing has increased in recent years among the 25-34 and ≥35-year age groups. A third of those who injected during the preceding year reported an abscess, sore or open wound at an injection site, and levels reported were lower in 2019 than in 2018. Injection of crack remained high in 2019. Reported homelessness during the last year has increased since 2010.

Recent initiates to injecting remain at risk of HIV, HBV and HCV. The level of HCV infection among the recent initiates to injecting participating in this survey are not suggestive of a decline in HCV transmission in recent years. Vaccination for HBV has declined in this group with only approximately half reporting vaccination in 2019.

Reports of non-fatal overdose have been increasing, as have overdose deaths since 2013 [23]. Just over half of those who reported overdosing in the previous year were administered naloxone. Naloxone carriage has increased in 2019 as compared to 2017. Local areas should ensure the ready accessibility of their commissioned opioid substitution treatment (OST), needle and syringe programmes and take-home naloxone to all who need them. Older PWID, those who inject multiple drugs, those with a recent overdose, and those with co-existing alcohol and mental health problems are all known to be at higher risk [23-30]. Additionally, those who have recently been released from prison, discharged from hospital or stopped treatment have a lower opioid tolerance and are key risk groups to identify and engage in harm reduction interventions and overdose prevention initiatives [28].

There is a need to improve awareness of HCV in this high-risk group, as ignorance of chronic infection was observed in 70% of the surveyed cohort. However, this figure should be interpreted with caution, as the causes are likely multifactorial and could be influenced by the sampling methods and geographical spread of participants in 2019. It will be important to monitor this trend in 2020 and onwards to determine whether this is a true and sustained decline. Expansion of HCV testing and referral to care, and uptake of treatment are required to reach the World Health Organization (WHO) goal of elimination of viral hepatitis by 2030 [31-33]. Services should aim to make testing for blood-borne viruses available for patients at first assessment and during follow up (28). A HCV RNA test is required for anti-HCV positive individuals who inject drugs and reflex testing of anti-HCV positive samples for the presence of HCV RNA should be recommended in line with current NICE guidelines [31], where laboratories automatically test samples positive for anti-HCV for the presence of HCV RNA, or refer the sample to a laboratory which can perform this test. When the risk is assessed as high, repeat testing is required up to twice a year [28,32].

Together, these findings indicate that individuals continue to be at risk through their injecting practices and that there is a need to maintain and strengthen public health interventions that aim to reduce injection-related risk behaviours. The impact of public health interventions which aim to prevent HIV and HCV infection through injecting drug use by reducing these risks, such as needle and syringe programmes [28, 33] and opioid substitution therapy [28] have been shown to be dependent on their coverage [34]. The provision of interventions that aim to reduce infections among PWID, including testing and vaccination programmes, should be regularly reviewed to ensure that the coverage of these is appropriate to local need.

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Appendix 1: Participating centres in 2019

England

North East

North East HepC Trust
Redcar Addaction
Gateshead Needle Exchange
Middlesbrough CGL
Newcastle CGL
North Tyneside Recovery Partnership
South Tyneside Recovery Partnership

North West

Achieve Salford Recovery Service
Addaction Liverpool
Manchester CGL Bradnor
Manchester CGL Carnarvon
Bootle Ambition
Southport Ambition
Blackpool Horizon
Halton CGL (Widnes and Runcorn)
St. Helen's Drug and Alcohol Integrated Service CGL
Tameside CGL
Preston CGL
Trafford Achieve
Carlisle NHS Unity
Blackburn CGL
Warrington Pathways to Recovery
East Lancashire CGL

Yorkshire and the Humber

Forward Leeds
Huddersfield CHART Kirklees CGL
Dewsbury CHART Kirklees CGL
Grimsby Addaction
Goole East Riding Partnership
Hull East Riding Partnership
Scunthorpe Addaction
Bridlington East Riding Partnership
Addaction Sheffield
Rotherham CGL

East Midlands

Ilkeston, Derbyshire NHS
Ripley, Derbyshire NHS
Swadlincote, Derbyshire NHS
Boston, Lincolnshire Addaction
Lincoln, Lincolnshire Addaction
Northamptonshire S2S CGL
Chesterfield, Derbyshire NHS
Derby City, Derbyshire NHS

West Midlands

Leamington Spa CGL
Nuneaton CGL
Walsall CGL, The Beacon
Rugby CGL
Coventry CGL
Stoke-on-Trent Alcohol and Drug Services
Kidderminster Swanswell Worcestershire
Redditch Swanswell Worcestershire
Worcester Swanswell Worcestershire
Telford Stars
Herefordshire Addaction

East of England

Kings Lynn CGL
Harlow, Essex Stars
Colchester, Essex Stars
Chelmsford, Essex Stars
Basildon, Essex Stars
Thurrock Inclusion Visions
Peterborough Aspire CGL
Great Yarmouth CGL
Luton CGL
Southend STARS
Hatfield Spectrum CGL
Stevenage Spectrum CGL
Watford CGL

London

Greenwich Aspire CGL
Camden and Islington NHS
Haringey The Grove Drug Treatment Service
Waltham Forest CGL
Newham CGL
Barnet WDP
Lewisham CGL, New Direction
Hackney Recovery Service
Wandsworth Community Drug and Alcohol Team
Westminster Drug and Alcohol Wellbeing Service
Hammersmith and Fulham Drug and Alcohol Wellbeing Service
Kingston Wellbeing Service
Islington Better Lives
Lambeth Consortium
Redbridge WDP

South East

Aylesbury, Buckinghamshire Inclusion
Wycombe, Buckinghamshire Inclusion
Dover Forward
Canterbury Forward Trust
Ashford Forward
Southampton HR Service, SHARP
Reading Inclusion, Iris
Kent HepC Trust
Hastings STAR CGL
Hampshire Inclusion Recovery
Eastbourne STAR CGL
Brighton Titration, Pavilions
Banbury Turning Point Oxfordshire Roads to Recovery
Oxford Turning Point Oxfordshire Roads to Recovery
Isle of Wight Inclusion
Aldershot Inclusion
Didcot Turning Point, Oxfordshire Roads to Recovery

South West

Bournemouth BEAT Addaction
Dorset Reach
Trowbridge WSMS
Torbay District Addictions Service
Poole NSP
Bristol Drug Project
Cornwall Addaction

Northern Ireland

Ballymena Railway Community Addiction Service
Belfast Substitute Prescribing Team
Newtownards Community Addiction Team
South Eastern Trust (Downshire and Lisburn)

Wales

Cardiff On Site Dispensing Service (DATT)
North Wales NSP and Harm Reduction Service
The Valleys
Cardiff and Vale Newlands
Swansea Barod

Appendix 2: Statistical notes

All analyses were adjusted for age, gender and region of recruitment (English NUTS Regions, Wales, Northern Ireland) in a multi-variable analysis, unless specified otherwise. For analyses on HIV prevalence, region of recruitment was specified as London vs. elsewhere to account for the small number of positive samples. Non-aggregated regional data were used in all other analyses. Results shown are for England, Wales and Northern Ireland combined, unless specified otherwise.

a) Demographics: Gender: The adjusted odds ratio for 2019 vs. 2010 was 0.63 (95%CI: 0.56-0.70), indicating a significant decrease in the proportion male between these two years. **Age**: The adjusted odds ratio for 2019 vs. 2010 was 0.19 (95%CI: 0.15-0.25), indicating a significant decrease in the proportion of participants under 25 years of age between these two years. **Injected in last year:** The adjusted odds ratio for 2019 vs. 2010 was 0.99 (95%CI: 0.88-1.1), indicating no change in the proportion reporting they had injected in the last year.

b) HIV prevalence: The adjusted odds ratio for 2019 vs. 2010 was 0.71 (95%CI: 0.42-1.2), indicating no significant change in the HIV prevalence between these two years. **Recent initiates:** HIV prevalence among the recent initiates fluctuated between 2010 and 2019, with an adjusted odds ratio of 1.1 (95%CI: 0.15-8.5) for 2019 vs. 2010, indicating no significant change in prevalence between these two years.

c) Hepatitis B core antigen antibody (anti-HBc) prevalence: The adjusted odds ratio for 2019 vs. 2010 was 0.21 (95%CI: 0.18-0.26), indicating a significant decrease in HBV in 2019 as compared to 2010. Prevalence was significantly lower than in 2010 from 2014 onwards. **Recent initiates:** The adjusted odds ratio for 2019 vs. 2010 was 0.04 (95%CI: 0.003-0.49), indicating a significant decrease in HBV among recent initiates between these two years.

d) Hepatitis C antibody prevalence: The adjusted odds ratio for 2019 vs. 2010 was 1.0 (95%CI: 0.92-1.1), indicating no change in HCV prevalence between these two years. **England:** The adjusted odds ratio for 2019 vs. 2010 was 0.95 (95%CI: 0.85-1.1), indicating no change in HCV prevalence in England between these two years. **Wales:** The adjusted odds ratio for 2019 vs. 2010 was 3.4 (95%CI: 2.1-5.4), indicating a significant increase in HCV prevalence in Wales over time. The prevalence in 2013-2018 was also significantly higher than in 2010. **Northern Ireland:** The adjusted odds ratio for 2019 vs. 2010 was 0.88 (95%CI: 0.51-1.5), indicating no change in HCV prevalence in Northern Ireland when comparing 2019 to 2010. **Recent initiates:** The adjusted odds ratio for 2019 vs. 2010 was 1.2 (95%CI: 0.78-1.7), indicating no change in the HCV prevalence among the recent initiates between these years.

e) Chronic hepatitis C prevalence (anti-HCV positive, RNA-positive): The adjusted odds ratio for 2019 vs. 2011 was 0.56 (95%CI: 0.48-0.0.66), indicating a significant decrease in HCV RNA prevalence among those antibody-positive between these years. No significant decrease was observed for years 2012-2016. HCV RNA prevalence was significantly lower than in 2010 from 2017 onwards. **Recent initiates:** The adjusted odds ratio for 2019 vs. 2011 was 1.1 (95%CI: 0.47-2.5), indicating no change in the HCV prevalence among the recent initiates between these years.

f) Hepatitis B vaccine uptake: The adjusted odds ratio for 2019 vs. 2010 was 0.88 (95%CI: 0.79-0.99), indicating a small but significant decrease in HBV vaccine uptake when comparing 2019 to 2010. **Recent initiates and under-25 and 25-34 age groups (2019 vs. 2011):** The adjusted odds ratios for 2019 vs. 2011 amongst the under-25 age group, 25-34 age group, and among recent initiates were 0.45 (95%CI: 0.26-0.78), 0.50 (95%CI: 0.40-0.62), and 0.49 (95%CI: 0.34-0.70) respectively, indicating significant decreases in reported vaccine uptake when comparing 2019 to 2011.

g) Voluntary confidential testing (VCT) for HIV: Ever tested: The adjusted odds ratio for 2019 vs. 2010 was 1.2 (95%CI: 1.1-1.4), indicating a significant increase in the reported uptake of VCT for HIV when comparing 2019 to 2010. **Recently tested (current or previous year):** The adjusted odds ratio for 2019 vs. 2010 was 1.5 (95%CI: 1.4-1.7), indicating a significant increase in the reported uptake of a recent VCT for HIV when comparing 2019 to 2010. **Awareness of HIV infection:** The adjusted odds ratio for 2018 vs. 2010 was 3.3 (95%CI: 0.29-37), indicating no change in awareness of HIV when comparing 2018 to 2010; in 2019, HIV awareness was 100%.

h) Voluntary confidential testing (VCT) for hepatitis C: Ever tested: The adjusted odds ratio for 2019 vs. 2010 was 1.2 (95%CI: 1.1-1.4), indicating a significant increase in the reported uptake of VCT for HCV. **Ever tested, recent initiates:** Among recent initiates, the adjusted odds ratio for 2019 vs. 2010 was 1.1 (95%CI: 0.75-1.5), indicating no change in the reported uptake of VCT for HCV. **Recently tested (current or previous year):** The adjusted odds ratio for 2019 vs. 2010 was 1.6 (95%CI: 1.4-1.7), indicating a significant increase in the reported uptake of a recent VCT for HCV when comparing 2019 to 2010. **Recently tested (current or previous year), recent initiates:** The adjusted odds ratio for 2019 vs. 2010 was 1.3 (95%CI: 0.91-1.8), indicating no change in the reported uptake of a recent VCT for HCV when comparing 2019 to 2010. **Awareness of chronic HCV infection:** The adjusted odds ratio for 2019 vs. 2017 was 0.41 (95%CI: 0.32-0.54), indicating a significant decrease in awareness of chronic HCV infection when comparing 2019 to 2017.

i) Symptoms of an infection at an injecting site: The adjusted odds ratio for 2019 vs. 2017 was 0.58 (95%CI: 0.50-0.66), indicating a significant decrease in the proportion reporting symptoms of infection at an injecting site. **Gender:** The adjusted odds ratio for

females vs. males was 1.3 (95%CI: 1.2-1.5), indicating females were significantly more likely to report symptoms of infection at an injecting site than males.

j) Direct sharing (sharing of needles and syringes): The adjusted odds ratio for 2019 vs. 2010 was 1.1 (95%CI: 0.92-1.3), indicating no significant change in reported direct sharing in 2019 as compared to 2010. The adjusted odds ratio for 2019 vs. 2012 was 1.8 (95%CI: 1.5-2.2), indicating reported direct sharing was higher in 2019 as compared to 2012. **Recent initiates:** Among recent initiates, the adjusted odds ratio for 2019 vs. 2010 was 1.4 (95%CI: 0.84-2.4), indicating no change in direct sharing in 2019 as compared to 2010. Among recent initiates, the adjusted odds ratio for 2019 vs. 2012 was 1.5 (95%CI: 0.89-2.5), indicating no change in direct sharing in 2019 as compared to 2012. **Gender:** The adjusted odds ratio for females vs. males in 2019 was 1.4 (95%CI: 1.0-1.9), indicating significantly higher levels of direct sharing in females as compared to males. **Age group:** Among the 25-34 years age group, the adjusted odds ratio for 2019 vs. 2012 was 2.0 (95%CI: 1.4-2.7), and among the ≥35 years age group the adjusted odds ratio for 2019 vs. 2012 was 1.8 (95%CI: 1.4-2.3), indicating that direct sharing among these age groups was significantly higher in 2019 than in 2012. Among the <25 years age group, the adjusted odds ratio for 2019 vs. 2012 was 1.3 (95%CI: 0.60-2.9), indicating no significant change in 2019 as compared to 2012.

k) Injecting into the groin: The adjusted odds ratio for 2019 vs. 2010 was 1.1 (95% CI: 0.91-1.2), indicating that there was no change in the proportion of participants reporting injecting into their groin in the last year between these years.

l) Sex: The adjusted odds ratio for 2019 vs. 2010 was 0.72 (95%CI: 0.64-0.81), indicating that reported sex in the last year was lower in 2019 than in 2010. **Gender:** When comparing reported sex in the last year among males vs. females, the adjusted odd ratio for 2019 was 0.58 (95%CI: 0.49-0.69), indicating that sex in the last year was significantly less commonly reported by males than females. **Gender - number of partners:** The adjusted odds ratio for males vs. females reporting two more sexual partners in the past year was 1.6 (95%CI: 1.3-2.0), indicating that males were significantly more likely to report two or more sexual partners in the last year than females. **Gender - condom use:** The adjusted odds ratio for males vs. females reporting two more sexual partners in the past year and always using a condom was 0.86 (95%CI: 0.55-1.3), indicating there was no significant difference between males and females.

m) Environmental risk factors: Ever in prison: The adjusted odds ratio for 2019 vs. 2010 was 0.77 (95%CI: 0.69-0.87), indicating a decrease in the proportion of participants reporting ever been in prison between these two years. **Homeless in last year:** The adjusted odds ratio for 2019 vs. 2010 was 2.5 (95%CI: 2.2-2.7), indicating a significant increase in the proportion of participants reporting having been homeless in the last year between these two years.

n) Drug treatment uptake: The adjusted odds ratio for 2019 vs. 2010 was 1.1 (95%CI: 1.0-1.3), indicating a significant increase in the proportion of participants reporting being currently in treatment for drug use between these two years.

o) Stimulant drugs injected during preceding month: Crack: The adjusted odds ratio for crack injection for 2019 vs. 2010 was 3.9 (95%CI: 3.3-4.6), indicating that crack injection in the preceding month was higher in 2019 than in 2010. The adjusted odds ratio for crack injection for 2019 vs. 2018 was 0.98 (95%CI: 0.83-1.1), indicating that there was no change in crack injection between the two years. **Crack-recent initiates:** The adjusted odds ratio was 4.3 (95%CI: 2.6-6.9) for recent initiates when comparing 2019 to 2010, indicating crack injection was significantly higher in 2019 than in 2010. The adjusted odds ratio for crack injection among recent initiates for 2019 vs. 2018 was 0.74 (95%CI: 0.45-1.2), indicating that there was no change between the two years. **Cocaine:** the adjusted odds ratio for cocaine injection for 2019 vs. 2010 was 3.5 (95%CI: 2.8-4.5), indicating a significant increase in cocaine injection in the preceding month. **Amphetamine:** the adjusted odds ratio for amphetamine injection in the preceding month for 2019 vs. 2010 was 0.54 (95%CI: 0.43-0.67), indicating a significant decrease.

p) Overdose and naloxone: The adjusted odds ratio for 2019 vs. 2013 was 1.5 (95%CI: 1.2-1.7), indicating that reporting an overdosing in the last year was higher in 2019 than in 2013. **Age group:** The adjusted odds ratios for 2019 vs. 2013 amongst the under 25 age group, 25-34 age group, and 35 and older age groups were 2.7 (95%CI: 1.3-5.4), 1.7 (95%CI: 1.3-2.3), and 1.2 (95%CI: 1.0-1.5) respectively, indicating significant increases in reported overdosing in all three age groups. **Treatment:** in 2019, the adjusted odds was 1.4 (95%CI: 1.0-1.9) and 1.5 (95%CI: 1.0-2.2) for those previously prescribed treatment and never prescribed treatment respectively vs. those currently prescribed treatment, indicating that reported overdose was higher in those previously prescribed treatment or never prescribed treatment. **Naloxone administration:** The adjusted odds ratio for 2019 vs. 2013 was 1.7 (95%CI: 1.2-2.4), indicating that reported administration of naloxone after overdosing was higher in 2019 than in 2013. **Naloxone carriage:** The adjusted odds ratio for 2019 vs. 2017 was 1.5 (95%CI: 1.3-1.8), indicating that reported carriage of naloxone was higher in 2019 than in 2017.

About Public Health England

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Published October 2020
PHE gateway number: GW-1629

PHE supports the UN Sustainable Development Goals

SUSTAINABLE DEVELOPMENT GOALS