

Unlinked anonymous monitoring (UAM) survey of HIV and viral hepatitis among people who inject drugs (PWID) 2022 report

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Introduction

The aim of the Unlinked Anonymous Monitoring (UAM) Survey is to monitor the prevalence and incidence of HIV, hepatitis B virus (HBV) and hepatitis C virus (HCV) infection and associated risk behaviours among people who inject drugs (PWID). People who have ever injected psychoactive drugs, such as heroin, crack cocaine and amphetamines, are recruited through specialist drug and alcohol agencies across England, Wales, and Northern Ireland (see the <u>Methods</u> section for more details).

Recruitment to the UAM Survey was heavily impacted during 2020 by the coronavirus (COVID-19) pandemic which caused significant disruption to services aimed at PWID, such as needle and syringe programmes (NSP), drug treatment and testing for HIV and viral hepatitis (<u>1</u>). Furthermore, services limited face-to-face appointments to clients experiencing more chaotic lifestyles (<u>2</u>). This resulted in, not only a lower number of survey participants, but a change in the geographic, demographic and risk profiles of those taking part in the survey in 2020. More detail on the impact of the COVID-19 pandemic on recruitment to the 2020 UAM Survey can be found in last year's report (<u>3</u>).

The COVID-19 pandemic has continued to impact recruitment to the UAM Survey in 2021, although to a lesser extent. Anecdotal evidence shows drug agencies continued to have reduced capacity to see clients face to face, with many offering a mixture of in person and remote services ($\underline{4}$, $\underline{5}$). Although a larger sample of PWID was recruited to the survey in 2021, with a similar risk profile to that seen previous to 2020, there remained significant differences in the geographical distribution of services participating, with disproportionate increases in sampling from the East Midlands and South East when compared to that seen prior to 2020 (Appendix 1).

Throughout this report, trend data presented in the UAM Survey annual data tables are discussed and interpreted. These data tables are available on the UK Health Security Agency's (UKHSA) GOV.UK website (6). Within these tables UAM Survey data for 2012 to 2021 are presented for England, Wales and Northern Ireland combined, as well as by each country and the regions of England separately. UAM Survey data for 2020 and 2021 have been combined for some sub-groups (for example, recent initiates to injecting) and most geographies (except for England), where participant numbers during these years were too small for them to be presented separately. Where data is compared between years for significant changes in trend, age, gender, and region are controlled for within the statistical analyses. This is discussed further in <u>Appendix 3</u>.

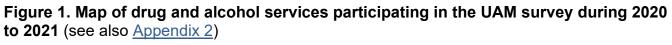
Methods

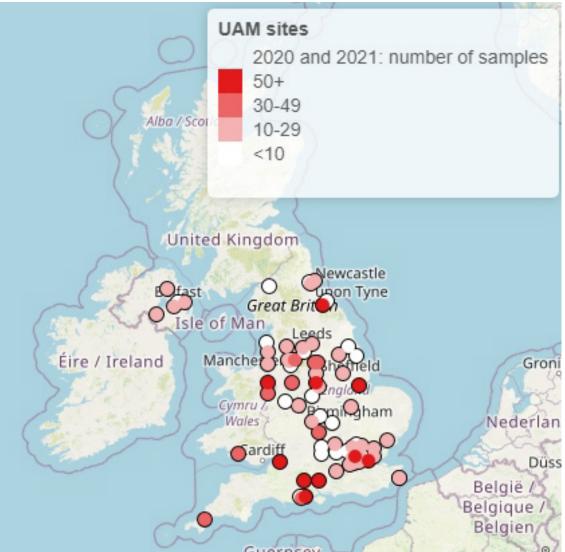
The UAM Survey is an annual, cross-sectional, bio-behavioural survey that recruits PWID through specialist agencies within England, Wales, and Northern Ireland. These agencies provide a range of services to individuals who inject psychoactive drugs, from medical treatment to needle and syringe programmes 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 dried blood spot (DBS) sample that is tested for infection with or exposure to HIV, HBV, and HCV. Behavioural and limited demographic information is collected through a brief anonymous self-completed questionnaire. 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 questionnaire data is linked to the specimen but unlinked from any client identifying information. No personal identifiers are collected; the questionnaire and specimen testing are anonymous. The UAM Survey is co-ordinated by UKHSA, with support from Public Health Wales and the Public Health Agency for Northern Ireland.

In 2020 and 2021, the UAM Survey methodology was adapted to facilitate recruitment during the COVID-19 pandemic. From June 2020, in addition to providing a DBS sample and completing the UAM behavioural questionnaire, participants were asked to complete a brief enhanced COVID-19 questionnaire. PWID recruited from centres who had not yet completed risk assessments for carrying out DBS sample collection, were asked at minimum to complete both questionnaires to participate.

Results

In 2021, recruitment to the UAM Survey continued to be impacted by the ongoing COVID-19 pandemic, with the number of drug and alcohol services facilitating recruitment (n=77) and the number of participants (n=1,525) higher than in 2020 (n=64 and n=955 respectively) but lower than pre-pandemic levels (<u>Appendix 2</u>, <u>Figure 1</u>). The geographical distribution of services participating in 2021 also differed from that seen prior to 2020, with proportionally fewer centres participating in the North West, South East, West Midlands and East of England (<u>Appendix 2</u>, <u>Figure 1</u>). This smaller sample size and change in geographic distribution should be considered when interpreting trends in UAM Survey data.





Demographics

In 2021, 74% (95% confidence interval (CI): 72% to 76%) of participants were male, which is comparable to that seen in 2012 (74%, 95% CI: 73% to 76%) (Data Table 1; <u>Statistical note a</u>).

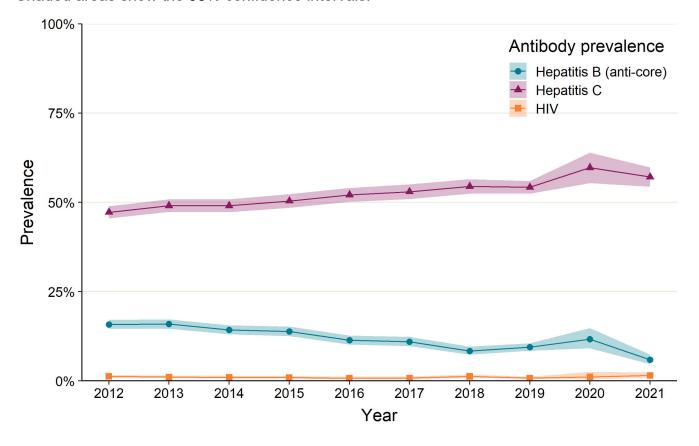
The median age of participants in the 2021 survey was 42 years (range: 18 to 70 years; interquartile range (IQR): 35 to 48 years). An ageing cohort of PWID is evident from the UAM Survey over time ($\underline{7}$) with the median age increasing from 36 years in 2012 (range: 13 to 69 years; IQR: 30 to 42 years), and the proportion of individuals under 25 years of age decreasing to 2.6% (95% CI: 1.9% to 3.6%) in 2021 from 8.8% (95% CI: 7.9% to 9.8) in 2012 (Data Table 1; <u>Statistical note a</u>). This is consistent with an ageing cohort of PWID observed in other data sources, nationally and internationally ($\underline{8}$, $\underline{9}$).

The proportion of UAM Survey participants who had injected in the past year continues to decline, with 60% (95% CI: 57% to 63%) reporting injecting in the past year in 2021, a decrease from 71% (95% CI: 70% to 73%) in 2012 (Data Table 1; <u>Statistical note a</u>).

Blood-borne viruses

Figure 2 shows HIV, HBV (anti-HBc) and HCV (anti-HCV) prevalence among PWID who took part in the UAM Survey across England, Wales, and Northern Ireland between 2012 and 2021. Figures 3 to 5 show blood-borne virus prevalence for recent initiates to injecting drug use (those who first injected during the preceding 3 years), which is a proxy for recent transmission. Figure 6 shows the prevalence of chronic HCV infection (anti-HCV and HCV RNA positive) among anti-HCV positive PWID over the period 2012 to 2021.

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, 2012 to 2021 Shaded areas show the 95% confidence intervals.



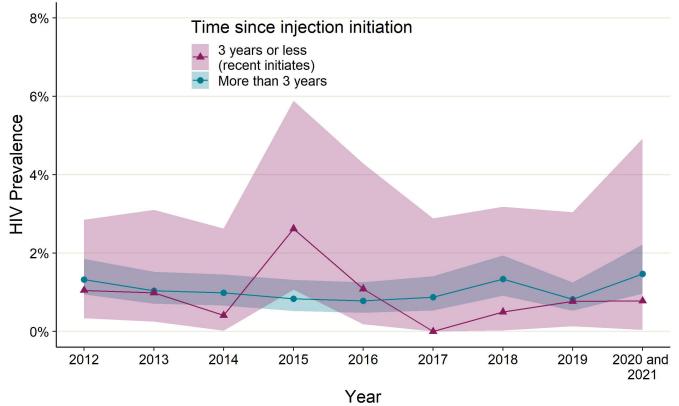
HIV

The prevalence of antibodies to HIV among UAM Survey participants across England, Wales and Northern Ireland has remained low over the past decade and was 1.5% (95% CI: 0.93% to 2.3%) in 2021; this is not significantly different from 2012 (Figure 2; Data Table 2; Statistical note b). HIV prevalence across 2020 and 2021 varied significantly between nations and across geographical regions in England and was higher in London and Northern Ireland than in the rest of England and Wales (Data Table 13 and 23, <u>Statistical note b</u>). The increase in prevalence in Northern Ireland is reflective of an ongoing outbreak of HIV and HCV in the country (10).

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 fluctuated between 0.0% and 2.6% over the last decade and was 0.78% (95% CI: 0.02% to 4.3%) across 2020 and 2021 (Figure 3; Data Table 24; <u>Statistical note b</u>).

Figure 3. Prevalence of anti-HIV among participants in the UAM Survey of PWID by time since first injecting: England, Wales, and Northern Ireland, 2012 to 2021

Shaded area shows 95% confidence interval.



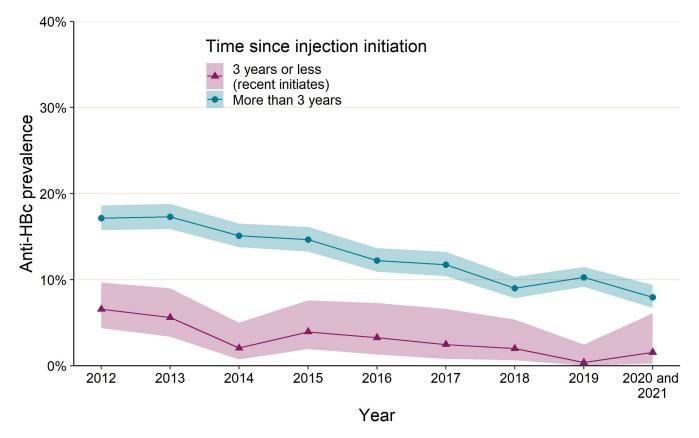
Hepatitis B virus

The prevalence of antibodies to the HBV core antigen (anti-HBc), a marker of ever infection with HBV, has declined to 5.9% (95% CI: 4.7% to 7.3%) in 2021 from 16% (95% CI: 15% to 17%) in 2012 (Figure 2; Data Table 3; Statistical note c). In Northern Ireland, anti-HBc prevalence across 2020 and 2021 was 0.78% (95% CI: 0.02% to 4.3%; Data Table 23) and was 7.8% (95% CI: 2.6% to 17%; Data Table 22) in Wales. Anti-HBc prevalence in England in 2021 was 6.3% (95% CI: 4.9% to 7.8%; Data Table 12).

The prevalence of anti-HBc among recent initiates to injecting drug use across England, Wales and Northern Ireland was 1.6% (95% CI: 0.19% to 5.5%) in 2020 and 2021 a decline from 6.6% (95% CI: 4.3% to 9.5%) in 2012 (Figure 4; Data Table 24; <u>Statistical note c</u>).

Figure 4. Prevalence of anti-HBc among participants in the UAM Survey of PWID by time since first injecting: England, Wales, and Northern Ireland, 2012 to 2021

Shaded area shows 95% confidence interval.



DBS samples positive for anti-HBc are also tested for HBV surface antigen (HBsAg), a marker of current HBV infection. Across 2020 and 2021, the proportion of people with antibodies to HBc who were HBsAg positive was 4.0% (95% CI: 1.3% to 9.0%), which is similar to the proportion in 2012 (Data Table 3; <u>Statistical note c</u>).

Hepatitis C virus

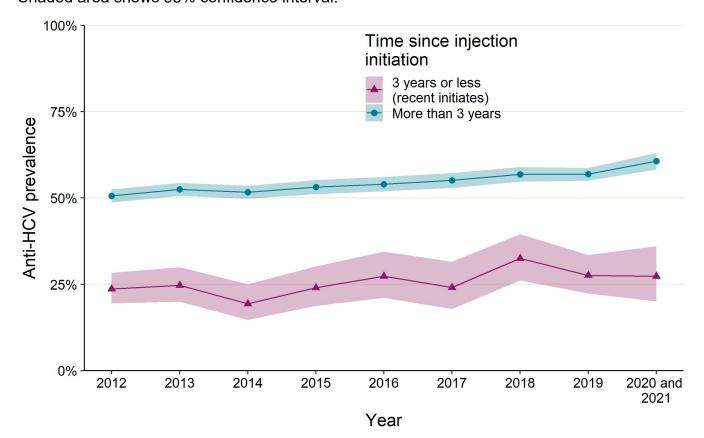
The prevalence of antibodies to HCV (anti-HCV), indicating ever infection with HCV, was 57% (95% CI: 54% to 60%) among UAM Survey participants across England, Wales and Northern Ireland in 2021; this is statistically higher than the anti-HCV prevalence of 47% (95% CI: 46% to 49%) seen in 2012 (Figure 2; Data Table 4; <u>Statistical note d</u>).

Anti-HCV prevalence has increased significantly in Northern Ireland over the past 10 years, with 57% (95% CI: 48% to 66%) of participants with antibodies to HCV across 2020 and 2021 compared with 34% (95% CI: 27% to 42%) in 2012 (Data Table 23; <u>Statistical note d</u>). The sharp increase in anti-HCV prevalence in Northern Ireland in 2020 and 2021 is likely reflective of an ongoing outbreak of HIV and HCV in the country (<u>10</u>). UKHSA have worked alongside the Public Health Agency of Northern Ireland to support case finding and outbreak monitoring, through whole genome sequencing and phylogenetics. HCV antibody prevalence has also increased significantly over the last decade among participants recruited in Wales; increasing to

48% (95% CI: 36% to 61%) across 2020 and 2021 from 33% (95% CI: 27% to 39%) in 2012 (Data Table 22; <u>Statistical note d</u>). In England, the prevalence of anti-HCV was 57% (95% CI: 54% to 60%) in 2021 which is comparable to that seen in 2012 (Data Table 12; <u>Statistical note d</u>).

Overall, the prevalence of anti-HCV among the recent initiates to injecting taking part in the survey was 27% (95% CI: 20% to 36%) across 2020 and 2021, similar to the proportion in 2012 (<u>Figure 5</u>; Data Table 24; <u>Statistical note d</u>), suggesting that new infections continue.

Figure 5. Prevalence of anti-HCV among participants in the UAM Survey of PWID by time since first injecting: England, Wales, and Northern Ireland, 2012 to 2021 Shaded area shows 95% confidence interval.



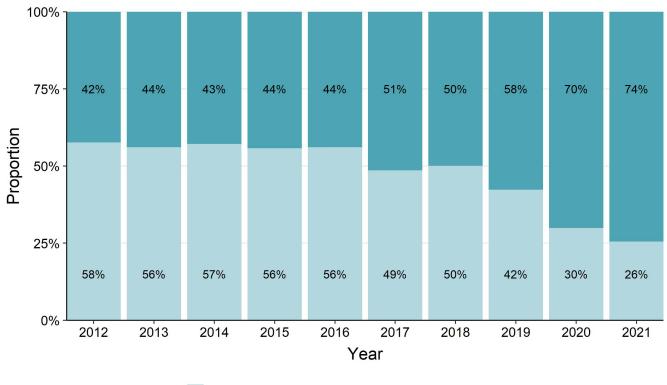
Presence of HCV ribonucleic acid (RNA) among those with anti-HCV is an indicator of chronic HCV infection. Among those anti-HCV positive, the prevalence of HCV RNA was 26% (95% CI: 22% to 29%) in 2021, a significant decrease from 58% (95% CI: 55% to 60%) in 2012 (Figure 6, Data Table 4; Statistical note e). This decrease remained significant after adjusting for injecting in the past year, ever being homeless and ever being in prison, in addition to gender, age and region. The decline in chronic HCV infection seen from 2017 onwards corresponds with the scale-up of direct acting antiviral treatment against HCV among PWID since 2015 (<u>11</u>).

However, this decrease is not equitable across regions (Data Tables 12 to 23). Although data indicates a recent increase in HCV RNA prevalence among PWID participating in Northern Ireland across 2020 and 2021, with prevalence rising to 49% (95% CI: 37% to 62%) from 28% (95% CI: 13% to 47%) in 2019, this increase became non-significant when adjusting for age and

gender (Data Table 23; <u>Statistical note e</u>). Even though this rise is statistically non-significant, it could be reflective of an ongoing HCV outbreak in the country (<u>10</u>).

Among recent initiates to injecting taking part in the survey, there was no change in chronic HCV infection over time; with HCV RNA prevalence at 42% (95% CI: 25% to 61%) across 2020 and 2021 (Data Table 24; <u>Statistical note e</u>), suggesting ongoing primary infection.

Figure 6. Prevalence of chronic HCV (RNA-positive) among anti-HCV-positive participants in the UAM Survey of PWID: England, Wales, and Northern Ireland, 2012 to 2021



Chronic HCV infection (Antibody positive, RNA positive) Cleared HCV infection (Antibody positive, RNA negative)

Note: Retrospective analysis of HCV RNA (2011 to 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.

Injection site infections

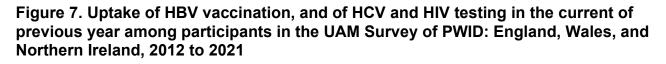
Injection site infections are common among PWID. In 2021, 30% (95% CI: 27% to 33%) of PWID in England, Wales and Northern Ireland who reported injecting drugs during the preceding year reported that they had experienced an abscess, sore or open wound at an injection site over that year. This is a significant decrease from 50% (95% CI: 47% to 52%) in 2017 (Data Table 10; <u>Statistical note f</u>), with a decrease seen over the last decade across all subgroups. Questions regarding symptoms of injection site infections have been updated since 2017 and as a result, data collected from 2017 onwards is not comparable to previously

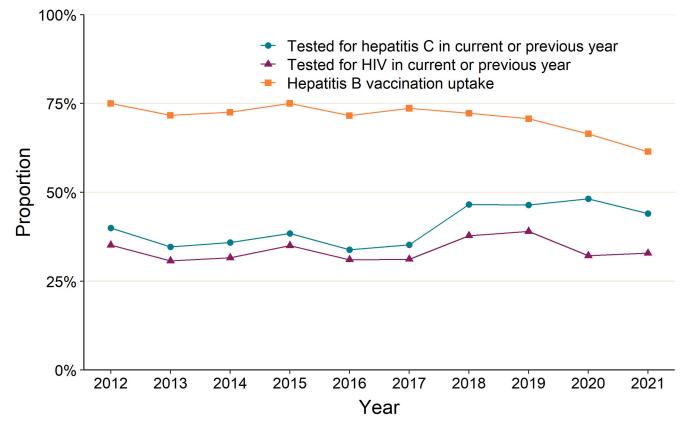
collected data. Data from previous years can be found in previous published tables and reports (5, 12, 13).

Uptake of interventions and services

HBV vaccination

The UAM Survey also facilitates monitoring of self-reported uptake of HBV vaccine (Figure 7; Data Table 7; Statistical note g). Uptake of at least one dose of HBV vaccine among survey participants has declined over the last decade (61% (95% CI: 59% to 64%) in 2021 versus 75% (95% CI: 73% to 76%) in 2012), across all age groups. Across 2020 and 2021, HBV vaccine uptake was particularly low in the under-25 age group (Data Table 7) and recent initiates to injecting (Data Table 24). A significant decline in reported HBV vaccine uptake was also noted in those 35 years and over in 2021, a group among whom uptake was historically high. HBV vaccine uptake has declined among individuals reporting homelessness in the past year or current homelessness, with 61% (357 out of 584, 95% CI: 57% to 65%; not included in data tables) in 2021 reporting vaccine uptake compared with 77% (796 out of 1,036, 95% CI: 74% to 79%) in 2012.





HIV testing

The self-reported uptake of voluntary confidential diagnostic testing (VCT) for HIV among UAM Survey participants has plateaued over the last 10 years. In 2021, 81% (95% CI: 79% to 83%) of PWID reported ever being tested for HIV, with 33% (95% CI: 30% to 35%) reporting being tested in the current or previous year. Equivalent figures for 2012 were 79% (95% CI: 78% to 81%) and 35% (95% CI: 34% to 37%) respectively (Data Table 8; <u>Statistical note h</u>).

When stratifying by nation, an increase in recent HIV testing can only been seen in Northern Ireland, with the proportion reporting a recent HIV test across 2020 and 2021 (46%, 95% CI: 37% to 55%) higher than in 2012 (31%, 95% CI: 24% to 39%) (Data Table 23; <u>Statistical note</u> <u>h</u>). Although reported recent HIV testing in England remained stable, recent HIV testing among participants recruited in Wales declined significantly in 2020 and 2021 compared to previous years (15% (95% CI: 8.1% to 24%) versus 40% (95% CI: 33% to 46%) in 2019) (Data Table 22; <u>Statistical note h</u>) (<u>14</u>). This is also true for the proportion reporting ever uptake of a HIV test in Wales, which declined significantly by 19% to 64% (95% CI: 53% to 74%) between 2019 and 2020 and 2021 combined.

Overall uptake of a diagnostic HIV test has remained stable over the past decade among individuals reporting homelessness in the past year or current homelessness, with 84% (472 out of 560, 95% CI: 81% to 87%) reporting ever testing in 2021 compared with 77% (796 out of 1029, 95% CI: 75% to 80%) (not included in data tables; <u>Statistical note h</u>). No change was seen in the proportion reporting uptake of a recent diagnostic HIV test, which was 38% (229 out of 596, 95% CI: 34% to 42%) in 2021.

The proportion of the participants across England, Wales, and Northern Ireland with antibodies to HIV, who reported that they were aware of their HIV infection was 81% (95% CI: 54% to 96%) in 2021 (Data Table 8; <u>Statistical note h</u>).

HCV testing

Similarly, there has been no change in the self-reported ever uptake of VCT for HCV by UAM Survey participants over the last decade, with 86% (95% CI: 84% to 88%) reporting ever being tested for HCV in 2021 (Data Table 9; <u>Statistical note i</u>). Although the proportion reporting ever testing for HCV has remained stable over the past decade in England and Northern Ireland, a decline in ever uptake of HCV testing can be seen in recent years among participants recruited in Wales (69% (95% CI: 59% to 79%) across 2020 and 2021 versus 89% (95% CI: 84% to 93%) for 2019) (Data Table 22; <u>Statistical note i</u>).

Overall, the proportion reporting being tested for HCV in the current or previous year increased to 43% (95% CI: 41% to 46%) in 2021 from 40% (95% CI: 38% to 42%) in 2012 (Data Table 9; <u>Statistical note i</u>). Since 2012, recent uptake of a HCV test has increased by 3% in England (43%, 95% CI: 40% to 46% in 2021) and 22% in Northern Ireland (58%, 95% CI: 49% to 67% across 2020 and 2021) (Data Table 12 and 23; <u>Statistical note i</u>). However, the proportion

reporting recent uptake of a HCV test in Wales has declined significantly in recent years (18% (95% CI: 11% to 28%) across 2020 and 2021 versus 46% (95% CI: 39% to 53%) in 2019) (Data Table 22; <u>Statistical note i</u>) (<u>14</u>).

Overall uptake of a diagnostic HCV test has increased among individuals reporting homelessness in the past year or current homelessness by 3% to 87% (502 out of 576, 95% CI: 84% to 90%) reporting ever testing in 2021 when compared with 2012 (not included in data tables; <u>Statistical note i</u>). The proportion reporting uptake of a recent diagnostic HCV test has also increased over the past decade, to 51% (303 out of 596, 95% CI: 47% to 55%) in 2021 from 44% (459 out of 1043, 95% CI: 41% to 47%) in 2012 (not included in data tables; <u>Statistical note i</u>).

The proportion of participants with chronic hepatitis (anti-HCV and HCV RNA positive), who reported that they were aware of their infection was 30% (95% CI: 23% to 38%) in 2021, which is significantly lower than in 2017 (51%, 95% CI: 47% to 56%) (Data Table 9; <u>Statistical note i</u>). As the opportunity to take part in the UAM Survey is offered to PWID alongside blood-borne virus testing in the vast majority of participating drug and alcohol services, even if respondents were unaware of their infection at the time of questionnaire completion, they would likely receive their results shortly after. This will be assessed in 2022, due to the addition of a new question to the UAM Survey Questionnaire.

Among recent initiates to injecting across 2020 and 2012, 68% (95% CI: 60% to 75%) reported ever uptake of a HCV test and 47% (95% CI: 39% to 56%) reported recent uptake of a HCV test, levels which are similar to those seen in 2012 (Data Table 24; <u>Statistical note i</u>).

HCV care and treatment

In 2021, among those with a treatment status available, 64% (179 out of 278, 95% CI: 58% to 70%; 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 had been offered and accepted treatment. This is a significant increase from 24% (163 out of 673, 95% CI: 21% to 28%) in 2012, and a large increase from in 2019 (39%, 261 out of 663, 95% CI 36% to 43%) (Statistical note j). This increase in HCV treatment uptake seen from 2017 onwards corresponds with the timing of the scale-up of direct acting antiviral treatment against HCV among PWID since 2015 (<u>11</u>).

Needle exchange use

The majority of PWID who participated in the UAM Survey in 2021 had ever accessed a needle exchange (89%, 95% CI: 88% to 91%). Although this proportion has remained relatively stable over the decade, this is a significant decrease from reported needle exchange use in 2012 after adjustment for gender, age, and region (92%, 95% CI: 91% to 93%) (Data Table 1; <u>Statistical note k</u>). During 2020 and 2021, similar proportions reported ever accessing a needle exchange across England, Wales, and Northern Ireland (<u>Statistical note k</u>).

Drug treatment

In 2021, 74% (95% CI: 72% to 76%) of the survey participants reported current engagement with treatment for their drug use (prescription of a detox or maintenance medicine) which is similar to that seen in 2012 (Data Table 1; <u>Statistical note I</u>).

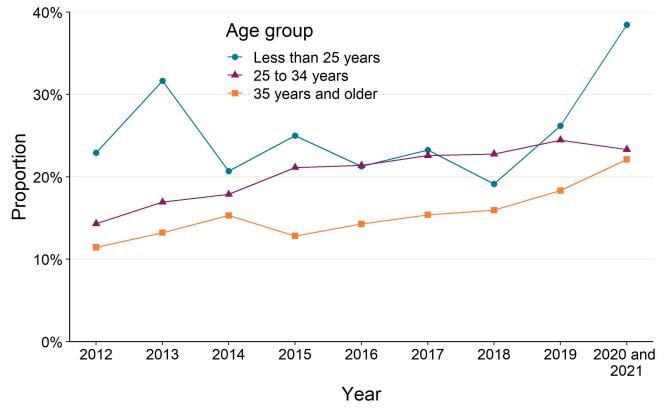
Injecting risk behaviour

Injecting equipment sharing

Sharing of injecting equipment is an important contributor to blood-borne virus transmission (<u>15</u>, <u>16</u>, <u>17</u>). The level of needle and syringe (direct) sharing reported by survey participants across England, Wales and Northern Ireland who had injected during the preceding month (4 weeks) was 22% (95% CI: 18% to 25%) in 2021, an increase from 14% (95% CI: 13% to 16%) in 2012 (Data Table 5; <u>Statistical note m</u>). Sharing of needles, syringes, and other injecting paraphernalia such as filters and spoons (direct and indirect sharing) was reported by 40% (95% CI: 36% to 44%) of people who had injected in the past month in 2021, a proportion which has increased since 2012 (34%, 95% CI: 32% to 36%) (Data Table 6; <u>Statistical note n</u>). These increases in sharing remained significant after adjusting for homelessness and ever being in prison, in addition to gender, age and region.

Between 2012 and 2021, direct sharing was consistently higher among female than male participants (Data Table 5; <u>Statistical note n</u>). Over the last 10 years, levels of direct sharing in both the 25 to 34 years age group and 35 years and over age group have increased significantly (<u>Figure 8</u>; Data Table 5; <u>Statistical note n</u>). Direct sharing has also increased among individuals reporting homelessness in the past year or current homelessness, with 23% (70 out of 310; 95% CI: 18% to 28%) in 2021 reporting sharing needles and syringes compared with 16% (105 out of 643; 95% CI: 14% to 19%) in 2012 (not in the data tables; <u>Statistical note n</u>).





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 (<u>18</u>). The proportion of people who reported injecting into their groin in the past month was 39% (95% CI: 35% to 43%) in 2021, similar to that seen in 2012 (Data Table 1; <u>Statistical note o</u>).

Number of 'missed hits'

Having to insert a needle multiple times before accessing a vein (achieving a 'hit') can increase the risk of developing injection site infections (<u>19</u>). In 2021, just over one half of participants who injected in the past year (58%, 472 out of 816, CI: 54% to 61%; not included in data tables) reported that they needed to insert the needle more than once before getting a 'hit', and 19% (156 out of 816, 95% CI: 16% to 22%) reported that it took 4 or more attempts before achieving a 'hit'. The proportion of PWID reporting that they needed to insert the needle more than once before getting a 'hit' has not changed since 2017 (<u>Statistical note p</u>).

Sexual risk behaviour

PWID are also at risk of acquiring and transmitting blood-borne viruses, particularly HIV, through sexual transmission (<u>20</u>). In 2021, 56% (95% CI: 53% to 58%) of the UAM Survey

participants reported having anal or vaginal sex during the preceding year, which is a decrease from 74% (95% CI: 72% to 75%) in 2012 (Data Table 11; <u>Statistical note q</u>).

Of those who reported sex in the preceding year, 37% (95% CI: 34% to 41%) reported having had 2 or more sexual partners during that time and, of these, only 17% (95% CI: 13% to 22%) reported always using condoms for anal or vaginal sex (Data Table 11).

Environmental risk factors

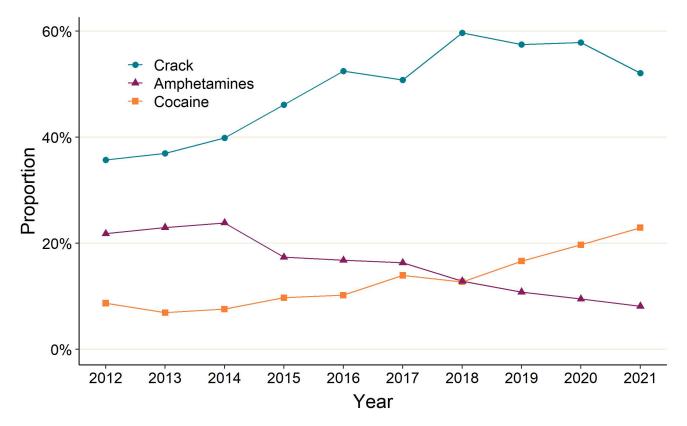
Homelessness and imprisonment have been associated with increased risk of HCV (<u>21-24</u>) and bacterial infections (<u>22</u>, <u>24</u>) and recent release from prison has been associated with overdosing (<u>25</u>). Just under two-thirds (60%, 95% CI: 57% to 63%) of the UAM Survey participants in 2021 reported ever being in prison, which is a decrease from 73% (95% CI: 71% to 74%) in 2012 (Data Table 1; <u>Statistical note r</u>). The proportion of participants who reported being currently homeless or having been homeless during the past year has increased to 42% (95% CI: 39% to 45%) in 2021 from 32% (95% CI: 30% to 34%) in 2012 (Data Table 1; <u>Statistical note r</u>).

Drug trends

Heroin remained the most commonly injected drug in 2021, reported by 90% (568 out of 628, 95% CI: 88% to 93%; not included in data tables) of those who had injected in the preceding month. Injection of crack remained high in 2021, at 52% (95% CI: 48% to 56%) among those who had injected in the preceding month. This is much higher than the proportion reporting crack injection in 2012 (36%, 95% CI: 33% to 38%), but not statistically different to 2018 when crack injection was at its highest (60%, 95% CI: 57% to 62%) (Data Table 1; Figure 9; Statistical note s).

There was also a significant increase in the injection of other forms of cocaine among those who had injected in the preceding month (23% (95% CI: 20% to 26%) in 2021 versus 8.7% (95% CI: 7.4% to 10%) in 2012) (Data Table 1; Figure 9; Statistical note s). This increase was particularly marked in Northern Ireland, where reported injection of other forms of cocaine in the past month has increased significantly from 5.9% (1 out of 17, 95% CI: 0.15% to 29%) in 2018 to 58% (41 out of 71, 95% CI: 45% to 69%) across 2020 and 2021 (not in data tables; Statistical note s). Overall, injection of amphetamines in the past month decreased in 2021 (8.1%, 95% CI: 6.1% to 11%) compared to 2012 (22%, 95% CI: 20% to 24%) (Data Table 1; Figure 9; Statistical note s).

Figure 9. Levels of crack, amphetamines and cocaine use among the participants in the UAM Survey of PWID who had injected during the preceding 4 weeks: England, Wales, and Northern Ireland, 2012 to 2021



Non-fatal overdose and naloxone use

In 2020, drug misuse deaths in England and Wales reached their highest level at 79.5 deaths per million people following a steep rise since 2012, attributable to rises in deaths associated with heroin and cocaine (26). Among the 2021 UAM Survey participants who reported injecting during the preceding year, 26% (95% CI: 23% to 29%) reported a non-fatal overdose in the preceding year, an increase from 16% (95% CI: 15% to 18%) in 2013 when data for non-fatal overdose was first collected (Data Table 25; <u>Statistical note t</u>). This increase was significant across all age groups (Data Table 25; <u>Statistical note t</u>).

Across 2020 and 2021, self-reported non-fatal overdose in the past year was highest among PWID who had never been in drug treatment (40%, 95% CI: 29% to 51%) (Data Table 25; <u>Statistical note t</u>).

In 2021, 77% (95% CI: 74% to 80%) of participants reported carrying naloxone, which is a large increase from 54% (95% CI: 52% to 56%) in 2017 (Data Table 25; <u>Statistical note t</u>). Two-thirds (67%, 95% CI: 59% to 74%) of those who reported overdosing in the preceding year reported having had naloxone administered, an increase from 46% (95% CI: 39% to 52%) in 2013 (Data Table 25; <u>Statistical note t</u>).

Impact of the COVID-19 pandemic

PWID are particularly vulnerable to SARS-CoV-2 infection, owing to a high prevalence of underlying health conditions and lifestyle risk factors (<u>27-30</u>). To better understand the impact of the COVID-19 pandemic on PWID, an enhanced COVID-19 questionnaire was introduced as an add on to the UAM Survey in June 2020 (see <u>Methods</u> section) and continued until the end of December 2021. Data from the UAM enhanced COVID-19 questionnaire is not presented in the accompanying data tables.

Overall, there were 1,712 UAM Survey participants who completed an enhanced COVID-19 questionnaire across 2020 and 2021, with 29% (n=498) participating in 2020 and 71% (n=1,214) in 2021. In 2021, 56% (633 out of 1,132, 95% CI: 53% to 59%) of UAM Survey respondents completing the enhanced questionnaire reported ever being tested for SARS-CoV-2 infection, which is a significant increase from 21% (87 out of 415, 95% CI: 17% to 25%) in 2020 (Statistical note u). However, there was little change in the proportion reporting testing positive for their last test between these 2 years (5.4% (31 out of 573, 95% CI: 3.7% to 7.6%) in 2021 versus 4.0% (3 out of 76, 95% CI: 0.82% to 11%) in 2020) (Statistical note u). In 2021, 13% (132 out of 1,035, 95% CI: 11% to 15%) reported developing common symptoms of COVID-19, including a high temperature or a new continuous cough, at any point across 2020 to 2021, with 8.3% (10 out of 120, 95% CI: 4.1% to 15%) of this group reporting that they attended hospital for these symptoms. This represents no change from in 2020 (Statistical note \underline{u}).

In December 2020, the first COVID-19 vaccine was approved for use in the UK by the Medicines and Healthcare Products Regulatory Agency (MHRA) (<u>31</u>) and a national vaccination programme was rolled out shortly after, with the priority given to healthcare workers, those of older age groups and those clinically vulnerable. People were not prioritised for vaccination based on their drug use or injecting behaviour, but many PWID would have been vaccinated early on due to age, homelessness and/or co-morbidities. Data for COVID-19 vaccination uptake among PWID was collected in 2021 through an additional question on the UAM COVID-19 questionnaire. Overall, 45% (491 out of 1,088, 95% CI: 42% to 48%) reported ever being vaccinated for COVID-19, with 46% (218 out of 472, 95% CI: 42% to 51%) reporting receiving one dose and 52% (245 out of 472, 95% CI: 47% to 56%) reporting receiving 2 doses of the vaccine. It is important to note that people who participated in the UAM Survey earlier in the year will have had less time to have been vaccinated and at the time the question on vaccination was added, no third doses were being considered.

A subset of PWID completing the UAM Survey COVID-19 questionnaire reported an increase in substance use in 2021 compared to 2019; 19% (144 out of 741, 95% CI: 17% to 22%) reported injecting drugs more frequently, 22% (188 out of 874, 95% CI: 19% to 24%) smoking drugs more frequently and 22% (144 out of 656, 95% CI: 19% to 25%) drinking alcohol more frequently in 2021. Over a quarter (26%, 208 out of 809, 95% CI: 23% to 29%) of participants in 2021 reported their primary drug or drug combination had changed when compared to 2019.

Data from the UAM Survey COVID-19 questionnaire indicates that access to essential services for PWID in England and Northern Ireland continued to be affected by the COVID-19 pandemic in 2021. In 2021, 21% (204 out of 950, 95% CI: 19% to 24%) of survey participants reported that drug and alcohol services were more difficult to access during 2021 than in 2019. When comparing this to 2020, the proportion of survey participants reporting drug and alcohol services were more difficult to access in 2020 than 2019 was significantly higher (34%, 112 out of 333, 95% CI: 29% to 39%), indicating fewer people in 2021 reported accessing services was more difficult than did in 2020 (Statistical note u). During 2021,16% (134 out of 822, 95% CI: 14% to 19%) reported difficulties accessing HIV and/or hepatitis testing, which is similar to that seen in 2020 (Statistical note u).

In 2021, survey participants reported greater difficulties than 2019 in accessing; equipment for safely using and/or injecting drugs (15%, 118 out of 770, 95% CI: 13% to 18%), substitute drug treatment (16%, 139 out of 892, 95% CI: 13% to 18%), naloxone (7.7%, 66 out of 855, 95% CI: 6.0% to 9.7%) and other medicines and healthcare (36%, 329 out of 920, 95% CI: 33% to 39%). The proportion reporting increased difficulty accessing equipment for injecting or drug use, substitute drug treatment, naloxone and other medicines and healthcare for 2021, when compared to 2019, was similar to that seen in 2020, with no significant difference noted between years (Statistical note u). The majority (92%, 883 out of 956, 95% CI: 90 to 94%) of respondents reported improved access to soap and water for handwashing in 2021 compared to 2019, which is similar to that seen in 2020 (88%, 302 out 344, 95% CI: 84% to 91%) (Statistical note u). Overall, 6.5% (22 out of 340, 95% CI: 4.1% to 9.6%) of participating PWID reported some form of HCV treatment disruption during 2021, either missed doses or treatment not being available; this is comparable to 8.9% (14 out of 157, 95% CI: 5.0% to 15%) in 2020.

Conclusions

Recruitment to the UAM Survey continued to be challenging in 2021 due to restrictions, social distancing, and changes in service provision for PWID as a result of the COVID-19 pandemic. Although a greater number of participants were recruited to the survey in 2021 compared to 2020, the sample size is still lower than that seen prior to 2020, and there is a potential for the generalisability of the findings to be limited by changes in the geographic distribution of those recruited. Nevertheless, the UAM Survey continues to provide essential information on infections and other injection-related harms among the population of people injecting drugs across England, Wales, and Northern Ireland.

The proportion of PWID ever exposed to HBV (anti-HBc) has declined over the past decade and the proportion with a current HBV infection (HBsAg) has remained low, similar to levels seen in 2012. The explanation for the decline in anti-HBc is unclear but could reflect a decline in exposure to HBV over time, as a result of HBV vaccination uptake, and/or harm reduction interventions. Anti-HBc titres could also be waning with time after resolution of HBV (32, 33). Of concern, in 2021, HBV vaccine uptake among UAM Survey participants was the lowest in the last decade, with a drop in uptake across all age groups. Urgent action is required to encourage and improve uptake of all 3 HBV vaccine doses in this at-risk population, particularly among individuals experiencing homelessness and recent initiates to injecting, to keep high levels of population immunity. Strategies for improving vaccine uptake should be implemented as a matter of urgency (2).

The prevalence of HIV across England, Wales and Northern Ireland has remained relatively low and stable across the last decade. However, in 2020 and 2021, a notable increase can be seen in HIV prevalence among UAM Survey participants recruited in Northern Ireland. This increase is likely reflective of an ongoing outbreak of HIV in the country, which is thought to be driven by an increase in stimulant injection, namely powder cocaine (10). There is also an ongoing outbreak linked to stimulant injection in Scotland (34) and other countries in Europe (35 to 37). In addition to ensuring access to harm reduction services, it is important for HIV testing to be offered to people currently injecting in line with current guidelines to ensure no increases in cases occur across England and Wales (38, 39). UAM data shows that there has been no improvement in HIV testing uptake over time, except in Northern Ireland as a result of the ongoing outbreak. Overall, in 2021, 1 in 5 PWID had never been tested for HIV and only a third had tested recently.

In 2021, HCV remained the most common infection among PWID across England, Wales, and Northern Ireland. Although the proportion ever infected (anti-HCV) increased over the past decade, the proportion of UAM Survey participants with chronic HCV infection (anti-HCV positive and HCV RNA positive) decreased significantly in recent years. The relative decline in chronic infection corresponds with the timing of the scale-up of direct acting antiviral treatment for HCV among PWID and likely reflects the impact of treatment and viral clearance in this group, as well as increased recent testing in some nations. This is supported by UAM data for

self-reported HCV treatment uptake, which has increased significantly across the last decade. Although declines in chronic HCV prevalence can be seen among PWID overall, this decrease is not equitable across all nations and subgroups. No decline was seen in chronic HCV among UAM participants in Northern Ireland, due to an ongoing HCV outbreak. Further expansion of HCV testing and referral to care and treatment are required to reach the World Health Organization goal of elimination of viral hepatitis by 2030 (<u>40</u>), with strategies such as education, counselling, and linkage to services to reduce the risk of subsequent reinfection (<u>41</u>).

Reported injecting risk behaviour has not improved over the last decade. Sharing of injecting equipment, including needles and syringes, has remained high, alongside groin injection and injection of crack and other forms of cocaine. Just less than 1 in 3 of those who injected during the preceding year reported an abscess, sore or open wound at an injection site, although this is high, levels have declined from those seen in previous years. A range of easily accessible services for all PWID, including NSP offering low dead space equipment and low threshold wound care services, needs to be provided to reduce blood-borne virus transmission and prevent bacterial infections (2, 42, 43).

Alongside overdose deaths (<u>26</u>, <u>44</u>), reports of non-fatal overdose have been increasing since 2013, with increases seen across all age groups and among recent initiates to injecting. These increases coincide with an increase in naloxone use and carriage and may be a result of people not dying as a result of their overdose. Over two-thirds of those who reported overdosing in the previous year were administered naloxone; carriage of naloxone also continued to increase in 2021. Local areas should ensure the ready accessibility of their commissioned opioid substitution treatment (OST), NSP 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 issues are all known to be at higher risk (<u>44</u> to <u>49</u>). 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 (<u>45</u>).

Chronic prevalence remains high in younger age groups and among recent initiates to injecting, suggesting ongoing new infections. This combined with increased sharing of injecting equipment and low reported NSP provision suggests there needs to be renewed investment and focus on harm reduction if we're to achieve Hepatitis C and HIV elimination goals ($\underline{2}, \underline{4}$). Strategies should be developed to better engage these groups in testing and treatment services.

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. This is especially poignant in the era of COVID-19, with data from the UAM Survey highlighting that the pandemic has had a significant impact on PWID. In 2021, over half self-reported ever infection with SARS-CoV-2, with just under half reporting ever being vaccinated for COVID-19, indicating more can be done to encourage vaccination uptake in this group. Participants also indicated their injecting practices, drug

preference and frequency of use changed and PWID continued to report issues accessing essential services such as NSP, drug treatment, naloxone and blood-borne virus testing in 2021. The impact of these public health interventions to prevent HIV and viral hepatitis infection through injecting drug use have been shown to be dependent on their coverage (50). Continued monitoring is needed to understand the impact of COVID-19 on national HIV and viral hepatitis elimination efforts, and the impact on health inequalities among PWID.

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Appendix 1. Changes to recruitment and representativeness in 2019 to 2021

Table 1. Geographic distribution of UAM Survey participants and centres in 2021
compared to 2019 and 2020

	Number of participants					Number of centres						
Region	2019		2020		2021		2019		2020		2021	
	n	%	n	%	n	%	n	%	n	%	n	%
East of England	256	7.9	96	10	71	4.7	13	11	6	9.4	7	9.1
London	456	14	191	20	181	12	16	14	8	13	11	14
South East	418	13	78	8.2	209	14	17	15	9	14	10	13
South West	264	8.1	111	12	214	14	8	7.0	3	4.7	6	7.8
West Midlands	312	9.6	46	4.8	39	2.6	11	9.6	6	9.4	5	6.5
North West	393	12	59	6.2	99	6.5	16	14	7	11	8	10
Yorkshire and Humber	355	11	84	8.8	97	6.4	10	8.7	8	13	5	6.5
East Midlands	320	9.8	94	9.8	332	22	8	7.0	8	13	11	14
North East	146	4.5	168	18	77	5.1	7	6.1	5	7.8	6	7.8
Wales	219	6.7	2	0.21	95	6.2	5	4.3	1	1.6	2	2.6
Northern Ireland	119	3.7	26	2.7	111	7.3	4	3.5	3	4.7	6	7.8
Total	3,258	100	955	100	1525	100	115	100	64	100	77	100

Note: The geographic distribution was significantly different in 2021 when compared with 2019 and 2020 (Pearson's X2 test p<0.001).

Appendix 2. Participating centres in 2020 and 2021

North East

Gateshead Needle Exchange, Change Grow Live Newcastle Change Grow Live North East Hepatitis C Trust North Tyneside Recovery Partnership Redcar We Are With You South Tyneside Recovery Partnership

North West

Blackpool Horizon Carlisle NHS Unity Cumbria Hepatitis C Trust East Lancashire Change Grow Live Halton Change Grow Live, Widnes and Runcorn Liverpool We Are With You Manchester Change Grow Live, Bradnor Manchester Change Grow Live, Carnarvon Salford Achieve Recovery Service Southport, Ambition Sefton Tameside Change Grow Live Trafford Achieve

Yorkshire and Humber

Bridlington East Riding Partnership Calderdale Recovery Steps Leeds Forward Grimsby We Are With You Huddersfield CHART Kirklees, Change Grow Live Hull East Riding Partnership Rotherham Change Grow Live Scunthorpe We Are With You Yorkshire Hepatitis C Trust

London

Battersea Westminster Drug and Alcohol Wellbeing Service Bromley, Change Grow Live Camden and Islington NHS Kensington and Chelsea Turning Point Kingston Wellbeing Service Lewisham New Direction, Change Grow Live Lambeth Consortium, SLAM Greenwich Aspire, Change Grow Live Hammersmith and Fulham Turning Point Harrow Road Turning Point Islington Better Lives, Candi Newham Change Grow Live Redbridge Westminster Drug Project Tooting Westminster Drug and Alcohol Wellbeing Service Walthamstow Change Grow Live

East Midlands

Boston We Are With You Buxton, New Mills and Glossop, Derbyshire NHS Corby Substance to Solution, Change Grow Live Chesterfield, Derbyshire NHS Derby City, Derbyshire NHS Ilkeston, Derbyshire NHS Leicester Hepatitis C Trust Lincoln We Are With You Northampton Substance to Solution, Change Grow Live Nottingham Health Shop Ripley, Derbyshire NHS Swadlincote, Derbyshire NHS Wellingborough Substance to Solution, Change Grow Live

West Midlands

Herefordshire Turning Point Leamington Spa Change Grow Live Leominster We Are With You Rugby Change Grow Live Stoke-on-Trent Alcohol and Drug Services Telford STARS Walsall Change Grow Live, The Beacon

East of England

Chelmsford, Essex STARS Colchester, Essex STARS Basildon, Essex STARS Harlow, Essex STARS Hatfield Spectrum, Change Grow Live Hertford Change Grow Live Peterborough Aspire, Change Grow Live Thurrock, Inclusion Visions Watford, Change Grow Live

South East

Aldershot Inclusion Aylesbury Inclusion Banbury Turning Point Didcot Turning Point Dover Forward East Kent Hepatitis C Trust Hampshire Inclusion Isle of Wight Inclusion Oxford Turning Point Southampton Change Grow Live West Kent Hepatitis C Trust Wycombe Inclusion

South West

Bournemouth BEAT Addaction Bristol Drugs Project Cornwall Addaction Dorset Reach Poole Essential Drug and Alcohol Services Salisbury Turning Point Yeovil Turning Point

Northern Ireland

Armagh St Luke's Hospital Community Addictions Unit Ballymena Railway Community Addiction Service Belfast Substitute Prescribing Team Belfast Drug Outreach Team Belfast Inclusion Downshire and Lisburn, South Eastern Trust Newtownards Community Addiction Team

Wales

North Wales NSP and Harm Reduction Service Swansea Barod

Appendix 3. Statistical notes

Introductory note

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

a) Demographics

The adjusted odds ratio for 2021 versus 2012 was 0.74 (95% CI: 0.64 to 0.85), indicating a significant difference in the proportion of male participants between these 2 years, despite the proportions appearing to be equivalent. When comparing the proportion of participants under 25 years of age in 2021 versus 2012, the adjusted odds ratio was 0.25 (95% CI: 0.18 to 0.35), indicating a significant decrease in the proportion aged under 25 years between these 2 years. The decline in the proportion reporting injecting drugs in the past year between 2021 and 2012 was significant, with an adjusted odds ratio of 0.77 (95% CI: 0.67 to 0.89).

b) HIV prevalence

The adjusted odds ratio for 2021 versus 2012 was 1.52 (95% CI: 0.87 to 2.65), indicating no significant change in the HIV prevalence among PWID between these 2 years. Across 2020 and 2021, HIV prevalence was significantly higher among those recruited in London when compared with those recruited outside of London, with the adjusted odds ratio of 9.70 (95% CI: 3.67 to 25.62).

When comparing HIV prevalence among recent initiates in 2020 and 2021 combined versus 2012 the adjusted odds ratio was 0.51 (95% CI: 0.05 to 4.73), indicating no significant change in prevalence between these 2 periods.

c) Hepatitis B prevalence

The adjusted odds ratio for 2021 versus 2012 was 0.19 (95% CI: 0.15 to 0.25), indicating a significant decrease in ever HBV infection (anti-HBc) among PWID during this period. However, there was no significant change in the prevalence of current HBV infection between 2020 and 2021 combined versus 2012, with the adjusted odds ratio of 0.86 (95% CI: 0.32 to 2.34).

Among recent initiates, the adjusted odds ratio across 2020 and 2021 versus 2012 was 0.20 (95% CI: 0.05 to 0.90), indicating a significant decrease in ever exposure to HBV (anti-HBc) between these 2 years.

d) Hepatitis C antibody prevalence

The adjusted odds ratio for 2021 versus 2012 was 1.26 (95% CI: 1.09 to 1.44), indicating an increase in HCV antibody prevalence among PWID in England, Wales and Northern Ireland between these 2 years.

When stratifying by nation, the adjusted odds ratio was 1.02 (95% CI: 0.88 to 1.17) when comparing 2021 versus 2012 for England, 1.85 (95% CI: 1.04 to 3.29) when comparing 2020 and 2021 combined versus 2012 for Wales and 2.91 (95% CI: 1.79 to 4.73) when comparing 2020 and 2021 combined versus 2012 for Northern Ireland. This indicates a significant increase in HCV antibody prevalence in Wales and Northern Ireland between these 2 periods, however no change in HCV antibody prevalence among PWID in England.

Among recent initiates to injecting, the adjusted odds ratio for 2020 and 2021 combined versus 2012 was 1.13 (95% CI: 0.70 to 1.83), indicating no change in the HCV antibody prevalence in this group between these years.

e) Chronic hepatitis C prevalence (anti-HCV positive, RNA-positive)

The adjusted odds ratio for 2021 versus 2012 was 0.28 (95% CI: 0.23 to 0.35), indicating a significant decrease in HCV RNA prevalence among antibody-positive PWID between these years. No significant decrease was observed for years 2012 to 2016. HCV RNA prevalence was significantly lower than in 2012 from 2017 onwards. After adjusting for injecting in the past year, ever being homeless, and ever being in prison, in addition to gender, age and region, the decline in HCV RNA prevalence among those antibody-positive remained significant (adjusted odds ratio for 2021 versus 2012: 0.30 (95% CI: 0.24 to 0.37).

When comparing HCV RNA prevalence among PWID in Northern Ireland for 2020 and 2021 combined to that seen in 2012 and 2019, the adjusted odds ratios were 1.41 (95% CI: 0.64 to 3.10) and 2.28 (95% CI: 0.87 to 5.99) respectively, indicating no change in HCV RNA prevalence in Northern Ireland between these years.

Among recent initiates, the adjusted odds ratio for 2020 and 2021 combined versus 2012 was 0.64 (95% CI: 0.25 to 1.63), indicating no change in HCV RNA prevalence among recent initiates to injecting between these years.

f) Symptoms of an infection at an injecting site

The adjusted odds ratio for 2021 versus 2017 was 0.45 (95% CI: 0.37 to 0.54), indicating a significant decrease in the proportion of PWID reporting symptoms of infection at an injecting site between these years.

g) Hepatitis B vaccine uptake

HBV vaccine uptake declined significantly when comparing 2021 to 2012, with the adjusted odds ratio of 0.54 (95% CI: 0.47 to 0.62).

The adjusted odds ratios for 2020 and 2021 combined versus 2012 among the under-25 age group and recent initiates to injecting were 0.20 (95% CI: 0.11 to 0.37) and 0.36 (95% CI: 0.24 to 0.54) respectively, indicating significant decreases in reported vaccine uptake between the 2 years in these groups. Among PWID aged 25 to 34 years and those aged 35 years or more, the adjusted odds ratios for 2021 versus 2012 was 0.30 (95% CI: 0.23 to 0.40) and 0.64 (95% CI: 0.54 to 0.75) respectively, indicating a significant decrease in reported vaccine uptake in both of these age groups between these 2 years.

When comparing HBV vaccine uptake in 2021 versus 2012 among those reporting current homelessness or homelessness in the past year the adjusted odds ratio was 0.44 (95% CI: 0.35 to 0.56), indicating a significant decrease in HBV vaccine uptake between these years.

h) Testing for HIV

The adjusted odds ratio for 2021 versus 2012 was 0.94 (95% CI: 0.80 to 1.11), indicating no significant change in the reported uptake of ever VCT for HIV among PWID when comparing these years. When comparing ever uptake of testing for HIV by nation, the adjusted odds ratios are as follows; 1.00 (95% CI: 0.84 to 1.19) for England for 2021 versus 2012, 0.33 (95% CI: 0.18 to 0.60) in Wales across 2020 and 2021 versus 2019 and 1.51 (95% CI: 0.70 to 3.24) in Northern Ireland across 2020 and 2021 versus 2012. This indicates no change in ever uptake of a HIV test between 2012 to 2021 for England, no change between 2012 and the combined years 2020 and 2021 for Northern Ireland and a decline in ever testing for HIV in Wales between 2019 and the combined years 2020 and 2021.

No significant change in the reported uptake of a recent HIV test (current or previous year) among PWID can be seen for 2021 versus 2012, with the adjusted odds ratio of 1.03 (95% CI: 0.90 to 1.19). When comparing recent HIV testing uptake by nation, the adjusted odds ratios are as follows; 0.99 (95% CI: 0.86 to 1.15) for England for 2021 versus 2012, 0.28 (95% CI: 0.15 to 0.55) in Wales across 2020 and 2021 versus 2019 and 1.79 (95% CI: 1.08 to 2.95) in Northern Ireland across 2020 and 2021 versus 2012. This indicates no change between 2012 to 2021 in England, an increase in recent HIV testing between 2012 and the combined years 2020 and

2021 for Northern Ireland and a decline in recent HIV testing for in Wales between 2019 and 2020 and 2021 combined.

Among individuals reporting homelessness in the past year or current homelessness, the adjusted odds ratio for ever and recent uptake of a HIV test for 2021 versus 2012 was 1.36 (95% CI: 1.03 to 1.79) and 1.05 (95% CI: 0.85 to 1.30) respectively, indicating no change in ever or recent uptake of a HIV test between these 2 years.

The adjusted odds ratio for the combined years 2020 and 2021 versus 2012 was 0.17 (95% CI: 0.02 to 1.27), indicating no change in awareness of HIV among HIV positive individuals between these periods.

i) Testing for hepatitis C

The adjusted odds ratio for 2021 versus 2012 was 0.89 (95% CI: 0.74 to 1.07), indicating no significant change in ever uptake HCV test among PWID when comparing these years. When comparing ever uptake of a HCV test by nation, the adjusted odds ratios are as follows; 0.98 (95% CI: 0.81 to 1.20) for England for 2021 versus 2012, 0.25 (95% CI: 0.13 to 0.49) for Wales across 2020 and 2021 versus 2019 and 0.96 (95% CI: 0.46 to 1.98) for Northern Ireland across 2020 and 2021 versus 2012. This indicates no change in ever testing for HCV between 2012 to 2021 in England, no change between 2012 and the combined years 2020 and 2021 for Northern Ireland and a decline in ever uptake of a HCV test for Wales between 2019 and the combined years 2020 and 2021.

The adjusted odds ratio for 2021 versus 2012 was 1.25 (95% CI: 1.10 to 1.43), indicating a significant increase in the reported uptake of a recent HCV test (current or previous year) between these 2 years. When comparing recent uptake of a HCV test by nation, the adjusted odds ratios are as follows; 1.22 (95% CI: 1.06 to 1.40) for England for 2021 versus 2012, 0.27 (95% CI: 0.15 to 0.49) for Wales across 2020 and 2021 versus 2019 and 2.45 (95% CI: 1.50 to 4.01) for Northern Ireland across 2020 and 2021 versus 2012. This indicates a significant increase in uptake of a recent HCV test between 2012 to 2021 in England, a significant increase is also seen between 2012 and the combined years 2020 and 2021 for Northern Ireland, with a significant decline in uptake of a recent HCV test in Wales between 2019 and 2020 and 2021 combined.

Among recent initiates to injecting, the adjusted odds ratio across 2020 and 2021 versus 2012 for ever uptake of a HCV test was 0.78 (95% CI: 0.51 to 1.20) and 1.07 (95% CI: 0.72 to 1.59) for recent uptake of a HCV test, indicating no change in testing in this group between these 2 years.

Among individuals reporting homelessness in the past year or current homelessness, the adjusted odds ratio for ever and recent uptake of a HCV test was 1.03 (95% CI: 0.75 to 1.40)

and 1.32 (95% CI: 1.07 to 1.63) respectively, indicating no change in ever uptake of a HCV test but a significant increase in uptake of recent HCV test between these 2 years.

The adjusted odds ratio for awareness of chronic HCV infection in 2021 versus 2017 was 0.37 (95% CI: 0.24 to 0.58), indicating a significant decrease in awareness when comparing 2021 to 2017.

j) Uptake of hepatitis C treatment

The adjusted odds ratio for 2021 versus 2012 was 5.06 (95% CI: 3.68 to 6.96), indicating a significant increase in the proportion of PWID reporting having seen a specialist nurse or doctor (hepatologist) for their HCV and been offered and accepted treatment (among those anti-HCV positive and aware of their infection).

k) Needle exchange use

The adjusted odds ratio for 2021 versus 2012 was 0.69 (95% CI: 0.56 to 0.86), indicating a significant decrease in the proportion of PWID reporting ever using a needle exchange between these 2 years. During 2020 and 2021, when comparing the proportion ever using a needle exchange across nations with England as baseline, the adjusted odds ratios were 1.24 (95% CI: 0.56 to 2.73) for Wales and 0.99 (95% CI: 0.54 to 1.81) for Northern Ireland. This indicates no significant difference in the proportion of PWID ever accessing a needle exchange between nations during 2020 and 2021.

I) Drug treatment uptake

The adjusted odds ratio for 2021 versus 2012 was 1.08 (95% CI: 0.93 to 1.25), indicating no change in the proportion of participants reporting current treatment for drug use between these 2 years.

m) Direct sharing (sharing of needles and syringes)

The adjusted odds ratio for 2021 versus 2012 was 2.00 (95% CI: 1.56 to 2.56), indicating an increase in reported direct sharing in 2021 as compared to 2012. After adjusting for injecting in the past year, homelessness, and ever being in prison, in addition to gender, age and region, the increase in sharing of needles and syringes remained significant (adjusted odds ratio for 2021 versus 2012: 1.90 (95% CI: 1.47 to 2.44)).

Among recent initiates to injecting, the adjusted odds ratio for the combined years 2020 and 2021 versus 2012 was 2.11 (95% CI: 1.16 to 3.85), indicating an increase in direct sharing between these 2 years.

The adjusted odds ratio for females versus males for 2021 was 0.61 (95% CI: 0.39 to 0.94), indicating levels of direct sharing were significantly higher among females than males in 2021.

Among the under 25 years age group, the adjusted odds ratio for the 2020 and 2021 combined versus 2012 was 2.03 (95% CI: 0.82 to 5.01) indicating no change in sharing among this group between these 2 years. Among those aged 25 to 34 and those \geq 35 years of age, the adjusted odds ratio for the period 2021 versus 2012 was 1.75 (95% CI: 1.10 to 2.81) and 1.92 (95% CI: 1.39 to 2.65) respectively, indicating that direct sharing among these age groups was significantly higher in 2021 than in 2012.

Among those reporting current homelessness or homelessness in the past year, the adjusted odds ratio for 2012 versus 2021 was 1.84 (95% CI: 1.28 to 2.65), indicating an increase in direct sharing between these 2 years in this group.

n) Direct and indirect sharing (sharing of needles, syringes and other injecting equipment)

The adjusted odds ratio for 2021 versus 2012 was 1.46 (95% CI: 1.20 to 1.77), indicating an increase in reported sharing of needles, syringes and other injecting equipment in 2021 as compared to 2012. After adjusting for injecting in the last year, homelessness, and ever being in prison, in addition to gender, age and region, the increase in sharing of needles, syringes and other injecting equipment remained significant (adjusted odds ratio for 2021 versus 2012: 1.35 (95% CI: 1.10 to 1.65)).

o) Injecting into the groin

The adjusted odds ratio for reporting injecting into the groin in the past month in 2021 versus 2012 was 1.09 (95% CI: 0.90 to 1.32), indicating that there was no significant change in the proportion of participants reporting injecting into their groin in the past month between these years.

p) Missed hits

The adjusted odds ratio for missed hits in 2021 versus 2017 was 0.96 (95% CI: 0.83 to 1.10), indicating that there was no significant change in the proportion of participants injecting in the last year reporting needing to insert the needle more than once before getting a 'hit'.

q) Sex

The adjusted odds ratio for reporting sex in the past year in 2021 versus 2012 was 0.60 (95% CI: 0.52 to 0.69), indicating that reported sex in the past year among PWID was significantly lower in 2021 than in 2012.

r) Environmental risk factors

The adjusted odds ratio for imprisonment in 2021 versus 2012 was 0.50 (95% CI: 0.43 to 0.57), indicating a decrease between 2021 and 2012 in the proportion of participants reporting ever being in prison or young offender's institution.

The proportion reporting homelessness in the past year increased significantly when comparing 2021 versus 2012, with the adjusted odds ratio of 2.02 (95% CI: 1.76 to 2.32).

s) Stimulant drugs injected during preceding month

The adjusted odds ratio for crack injection for 2021 versus 2012 was 2.56 (95% CI: 2.08 to 3.16), indicating that the proportion reporting crack injection in the preceding month was higher in 2021 than in 2012. The adjusted odds ratio for reporting crack injection in 2021 versus 2018, when crack injection was at its highest, was 0.90 (95% CI: 0.73 to 1.11), indicating that the proportion reporting crack injection in the preceding month has not changed between 2018 and 2021.

The adjusted odds ratio for cocaine injection for 2021 versus 2012 was 3.99 (95% CI: 3.03 to 5.26), indicating a significant increase in cocaine injection in the preceding month between these 2 years. In Northern Ireland, the adjusted odds ratio for cocaine injection for the combined years 2020 and 2021 versus 2018 was 26.34 (95% CI: 3.22 to 215.59), indicating a large and significant increase in cocaine injection in the country between these years.

The adjusted odds ratio for amphetamine injection in the preceding month for 2021 versus 2012 was 0.31 (95% CI: 0.22 to 0.43), indicating a significant decrease between these 2 years.

t) Overdose and naloxone among those who injected during the preceding year

The adjusted odds ratio for 2021 versus 2012 was 1.96 (95% CI: 1.59 to 2.41), indicating that the proportion of PWID who injected in the past year reporting a non-fatal overdose in the preceding year was higher in 2021 than in 2013.

In the under 25 age group, the adjusted odds ratio for reporting a non-fatal overdose for 2020 and 2021 combined versus 2013 was 4.56 (95% CI: 2.00 to 10.38). The adjusted odds ratio for reporting a non-fatal overdose in 2021 versus 2013 amongst the 25 to 34 years age group and 35 years and older age groups were 1.90 (95% CI: 1.29 to 2.80) and 1.73 (95% CI: 1.34 to 2.25) respectively. This indicates a significant increase in reporting a non-fatal overdose in the preceding year in all 3 age groups between these years.

Across 2020 and 2021, the adjusted odds for reporting a non-fatal overdose in the past year was 1.89 (95% CI: 1.22 to 2.93) and 1.59 (95% CI: 0.92 to 2.76) for those previously prescribed drug treatment and never prescribed drug treatment respectively versus those currently prescribed drug treatment. This indicates that the proportion reporting non-fatal overdose in the past year was higher in those previously prescribed treatment than those currently prescribed drug treatment, but there was no difference in reported overdose between those currently prescribed drug treatment versus those who have never been prescribed drug treatment.

The adjusted odds ratio for naloxone administration in 2021 versus 2013 was 1.97 (95% CI: 1.28 to 3.04), indicating that reported administration of naloxone after overdosing in the previous year was higher in 2021 than in 2013.

The adjusted odds ratio for naloxone carriage in 2021 versus 2017 was 2.64 (95% CI: 2.16 to 3.22), indicating that reported carriage of naloxone was higher in 2021 than in 2017.

u) COVID-19 data

The adjusted odds ratio for ever testing for COVID-19 in 2021 versus 2020 was 6.26 (95% CI: 4.56 to 8.60), indicating that the proportion ever tested in 2021 was significantly higher than in 2020. The adjusted odds ratio for self-reporting a positive result for their last COVID-19 test in 2021 versus 2020 was 2.02 (95% CI: 0.51 to 7.99), indicating no change in test positivity between these 2 years.

When comparing the proportion reporting COVID-19 symptoms in 2021 versus 2020, the adjusted odds ratio was 1.22 (95% CI: 0.80 to 1.86), indicating no change in the proportion reporting COVID-19 symptoms between 2020 and 2021. The adjusted odd ratio for reporting attending hospital due to COVID-19 symptoms in 2021 versus 2020 is 0.32 (95% CI: 0.08 to 1.27), indicating similar proportions during these 2 years.

The adjusted odds ratio for the proportion of survey participants in 2021 versus 2020 who reported drug and alcohol services were more difficult to access when compared to 2019 was 0.70 (95% CI: 0.50 to 0.97), indicating significantly fewer people reported accessing services in 2021 was more difficult than 2019 than did in 2020.

The adjusted odds ratio for the proportion of survey participants in 2021 versus 2020 who reported HIV or HCV testing services were more difficult to access when compared to 2019 was 0.79 (95% CI: 0.53 to 1.17), indicating no change between these 2 years.

The adjusted odds ratio for the proportion of survey participants in 2021 versus 2020 who reported access to medicine, drug treatment, naloxone or injecting equipment was more difficult when compared to 2019 was 0.81 (95% CI: 0.59 to 1.12), 0.76 (95% CI: 0.52 to 1.11), 1.05 (95% CI: 0.63 to 1.77) and 0.91 (95% CI: 0.60 to 1.40) respectively, indicating no change in the proportion reporting difficulties in access between these 2 years.

The adjusted odds ratio for the proportion of survey participants in 2021 versus 2020 who reported accessing hand washing facilities was either easier or the same as in 2019 was 1.55 (95% CI: 0.95 to 2.52), indicating no change between these 2 years. In 2021 the proportion of people reporting disruption to their HCV treatment was similar to that seen in 2020, with an adjusted odds ratio of 1.01 (95% CI: 0.43 to 2.37).

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Prepared by: Claire Edmundson, Sara Croxford, Jacquelyn Njoroge, Samreen Ijaz, Ross Harris, Kavirthana Krishnamoorthy, John Poh, Debbie Mou, Monica Desai

For queries relating to this document, please contact: Blood Safety, Hepatitis, Sexually Transmitted Infections (STI) and HIV Division, UK Health Security Agency, 61 Colindale Avenue, London NW9 5EQ Email: <u>UAMPWIDSurvey@ukhsa.gov.uk</u>

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