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**Prevention, diagnosis and
treatment of blood borne
viruses in Wales:**

Hepatitis B, hepatitis C and HIV

**Annual report 2023
(Data to end 2022)**

About Public Health Wales

Public Health Wales exists to protect and improve health and wellbeing and reduce health inequalities for people in Wales. We work locally, nationally and internationally, with our partners and communities.

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Glossary of key abbreviations

ABUHB	Aneurin Bevan University Health Board
Anti-HBc	Hepatitis B core antibody
Anti-HCV	Hepatitis C virus antibody
Anti-HIV	Human Immunodeficiency Virus antibody
BBV	Blood Borne Virus
BCUHB	Betsi Cadwaladr University Health Board
CTMUHB	Cwm Taf Morgannwg University Health Board
C&VUHB	Cardiff & Vale University Health Board
DBST	Dried Blood Spot Test
DAA	Direct acting antivirals
EASR	European Age Standardised Rate
HBV	Hepatitis B virus
HBsAg	Hepatitis B virus surface antigen
HDUHB	Hywel Dda University Health Board
HIV	Human Immunodeficiency Virus
HRD	Harm Reduction Database Wales
LIMS	Laboratory Information Management System
MSM	Men who have sex with men
NSP	Needle and Syringe Programme
OST	Opioid substitution therapy
PCR	Polymerase chain reaction
POCT	Point of Care Test
PTHB	Powys Teaching Health Board
PWID	People who inject drugs
RNA	Ribonucleic acid
SBUHB	Swansea Bay University Health Board
UAM	Unlinked Anonymous Monitoring Survey
WHO	World Health Organisation
WNDSM	Welsh National Database for Substance Misuse

1 Executive summary

1.1 Purpose

This report provides information on the epidemiology, prevention and control of hepatitis B, hepatitis C and HIV in Wales to end of 2022. The report is aimed at policy makers, health service clinicians and planners, commissioners, criminal justice, third sector agencies and academia. This report is published alongside the Sexual Health in Wales Annual Report 2023 ([Sexual Health in Wales annual report 2023](#)).

1.2 Key findings and trends

1.2.1 Impact of COVID pandemic restrictions on screening, diagnosis and treatment 2020-2022

- Blood Borne Virus (BBV) screening, diagnosis and treatment rates fell during the COVID-19 pandemic, due to service access restrictions, laboratory capacity and staff redeployment. However, screening levels returned to pre-pandemic levels by the end of 2022
- Rates of treatment for people either newly diagnosed or living with HIV were maintained during this period. HCV treatment levels declined by 47% in 2020 and whilst recovering, remained lower than pre-pandemic levels in 2022

1.2.2 Hepatitis B (HBV)

- In the UK, overall prevalence of chronic hepatitis B infection is estimated at 0.3%, equating to around 180,000 people.¹ Vaccines offer around 98%-100% effectiveness against hepatitis B
- Estimating the prevalence, incidence and outcomes of acute and chronic hepatitis B in Wales, including amongst higher risk populations, will be a priority for CDSC in forthcoming years to support elimination goals

1.2.3 Hepatitis C (HCV)

- Amongst the general population in the UK in 2021, there were an estimated 92,900 people (76,000 to 116,800) living with chronic HCV infection, equating to a prevalence estimate of 0.17% (95% CrI 0.14% to 0.21%) in adults aged 16 and over² representing a decline of 47.2% in

¹ National Institute for Health and Care Excellence. 2023. Hepatitis B prevalence. <https://cks.nice.org.uk/topics/hepatitis-b/background-information/prevalence/>

² UK Health Securities Agency. Hepatitis C in the UK 2023 – Working to eliminate hepatitis C as a public health threat. [Hepatitis C in the UK 2023](#)

estimated prevalence since 2015, however, substantial variation between UK countries exists. Assuming the prevalence of HCV is similar in Wales to the rest of the UK, extrapolating this estimate to Wales would indicate 4,349 people (95% CrI 3,582 – 5,373) living with chronic HCV infection. Prevalence amongst specific high risk groups, including those who have ever, or currently, inject drugs is substantially higher than that of the general population and as such remains the focus for testing efforts

- The proportion of hepatitis C antibody (Anti-HCV) reactive cases among newly tested individuals has decreased by 1.4 percentage points, from 3 to 1.6% over the period 2015-2022, despite relatively stable testing levels
- A quarter of those (26.6%) with an anti-HCV reactive result recorded since 2015 have not received a follow up HCV-RNA test
- The proportion of individuals with a HCV-RNA positive result following an anti-HCV reactive test has decreased substantially from 61.5% in 2015 to 28.8% in 2022. This decrease may reflect: improved uptake of treatment; more effective treatment; and increased testing, including the introduction of regular routine opt-out testing within substance misuse and prison settings
- Coverage of NSP remains sub-optimal, compared to the 100% target, and as such requires substantial upscaling in order to prevent BBV transmission amongst people who inject drugs

1.2.4 Human Immunodeficiency Virus (HIV)

- There were 60 new diagnoses of HIV for those living in Wales in 2021, 69% less than in 2015 (196 new cases), this includes Welsh residents accessing services in England
- The incidence of HIV has been declining in Wales since 2017, with a rate of 1.9 per 100,000 population in 2021, and is lower than the rate in England and Northern Ireland (4.8 and 4.0 respectively). No equivalent rate is available for Scotland for this period
- Where route of likely transmission was reported, between 2017 and 2020, the majority of cases reported transmission via sex between men. However, in 2021, the majority of cases reported transmission via heterosexual contact
- The prevalence of individuals living with HIV per 100,000 population was 69.7 per 100,000 population in 2021, lower than that of England (161.7 per 100,000 population) but slightly higher than the rate in Northern Ireland (68.0 per 100,000 population)
- The majority of diagnoses of HIV occurs within sexual health clinics, with prisons, substance misuse and allied health services accounting for less than one per cent of diagnoses, a consistent trend over time

2 Data sources

A number of data sources have been utilised in the production of this report:

Laboratory Information Management Service

Laboratory Information Management System (LIMS) is a computerised information system into which laboratory staff key in requests from wards, theatres, A&E and clinics for pathology tests to be undertaken. Samples are fed through pathology analysers which are connected to the LIMS and which pass the measurements and the results data to LIMS via dedicated interfaces. Test results are then aligned to the patients' identity by LIMS ready for use by the clinicians and their team.

The LIMS data source includes all laboratory tests undertaken in NHS Wales laboratories and as such provides information on all population in Wales

Wales HCV Laboratory Database (HCV Registry)

The HCV Registry is a Public Health Wales database which combines all historical data from the laboratory systems in Wales as well as the new medical records after its implementation. This data source provides the ability to track the diagnostic pathway of individuals tested for Hepatitis C.

The HCV database is a subset of the LIMS data and as such provides information on all individuals in Wales with laboratory test results relating to hepatitis C.

Welsh Clinical Portal – HCV e-form

An electronic data system developed by DHCW with input from PHW and Health Boards, and used by health boards for the clinical management of hepatitis C infection and treatment. Adoption of this system up to 2021 has varied by Health Board, however, from 2022 is the sole source of HCV treatment utilised.

Harm Reduction Database Wales (HRD)

Public Health Wales implemented the national Harm Reduction Database Wales (HRD) in 2011. The HRD is a web-based modular tool for the recording of demographic, behavioural risk and outcome data on a range of harm reduction interventions, including Needle and Syringe Programmes (NSPs) and BBV screening in specialist substance misuse, community-based criminal justice and housing/homelessness settings. Only those individuals who are in contact with the above services will be represented on this database.

Survey of Prevalent HIV Infected cases (SOPHID)

Information from all people living with a diagnosed HIV infection and accessing care at NHS services in Wales are report to SOPHID, with England and Northern Ireland utilising the comparable HARS system. SOPHID data are used to plan services, monitor the quality of care received by patients and their clinical outcomes. More information about SOPHID is available on the [archived HPA site](#).

SystemOne

This is an electronic medical record used in all prisons in England and Wales since 2012 and offers a platform for health records to be shared between prisons, so that information can be accessed by all prison healthcare staff as required. This enables a mechanism for establishing prison population size as well as coverage and outcome of BBV screening and diagnosis.

Offender Management statistics

HM Prison and Probation Service and Ministry of Justice produce routine offender management statistics on stock and flow data including prison populations and probation caseloads in England and Wales. [Offender Management Statistics](#)

The Test and Post Scheme / The Doctors Lab (TDL)

The Test and Post scheme was introduced in Wales in 2020 as a pilot to support continued access to STI testing during the COVID-19 pandemic. The scheme utilises online ordering and postal delivery of testing kits for chlamydia, gonorrhoea, syphilis, HIV, hepatitis B and hepatitis C. Results are texted to individuals with signposting to for sexual health clinical treatment as required. Data including tests requested, completed samples and results are generated through The Doctors Lab (TDL)

Office for National Statistics

The Office for National Statistics (ONS) provides national and subnational mid-year population estimates for the UK and its constituent countries by administrative area, age and sex (including components of population change, median age and population density). Population statistics for gender, age and location of residence are based on 2021 mid-year figures³. Population estimates for Ethnicity are based on the 2011 ONS census⁴.

³ Office for National Statistics. Mid-2021 population estimates. [ONS mid-year population estimates](#)

⁴ Office for National Statistics. 2011 census - Ethnicity and National Identity in England and Wales: 2011. [Census 2011](#)

3 Aetiology and prevention interventions

3.1 Hepatitis B

Hepatitis B (HBV) is a potentially life threatening infection which affects the liver, causing both acute and chronic disease. The age of acquisition affects risk of developing chronic infection, with young infants being at highest risk. Around 95% of newly diagnosed chronic hepatitis B infection in the UK are amongst people originating from high prevalence countries with infection acquired in their country of origin, either at birth or in early childhood⁵ with the remaining proportion acquired through behavioural risk factors. The virus is transmitted by parenteral exposure to infected blood or body fluids with transmission predominantly occurring⁶:

- through unprotected vaginal or anal intercourse
- as a result of blood-to-blood contact through percutaneous exposure (e.g. sharing of needles and other equipment by people who inject drugs (PWID), 'needlestick' injuries)
- through perinatal transmission from mother to child

The main preventive method for HBV infection is vaccination. Babies are routinely vaccinated in the UK and additional doses are recommended for high risk groups:

- babies born to hepatitis B infected mothers
- those at occupational risk, for example healthcare workers
- those travelling to high-risk countries
- other individuals at high risk of exposure to the virus or complications of the disease including all current PWID, Men who have sex with men (MSM) and commercial sex workers, family contacts of an individual with chronic HBV infection, all sentenced prisoners and all new inmates entering prison

3.1.1 Childhood HBV immunisation

All babies in the UK born on or after 1 August 2017 are offered three doses of hepatitis B-containing vaccine as part of the NHS routine childhood immunisation programme. Wales has consistently achieved over 95% uptake of 6 in 1 immunisations⁷.

⁵ Hahne S, Ramsay M, Balogun K, Edmunds WJ, Mortimer P. 'Incidence and routes of transmission of hepatitis B virus in England and Wales, 1995-2000: implications for immunisation policy' *Journal of Clinical Virology* 2004: volume 29 issue 4, pages 211-20

⁶ UK Health Security Agency. Hepatitis B: the green book.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1052889/Greenbook-chapter-18-4Feb22.pdf

⁷ Public Health Wales. Immunisation and vaccines: COVER Annual Report 2019. <https://phw.nhs.wales/topics/immunisation-and-vaccines/cover-reports/cover-annual-report-2019/>

3.1.2 Immunisation of babies born to hepatitis B infected mothers

At year end 31st March 2022, uptake of three doses in children who were at risk of perinatal infection and reached their first birthday was 96.9%, uptake of four doses in children who reached their second birthday was 74.4% and uptake of four doses in children who had reached their fifth birthday was 65.9%.⁸

Table 1 Uptake of hepatitis B immunisation in children born to hepatitis B positive mothers reaching their 1st, 2nd and 5th birthdays 01/04/2021 to 31/03/2022 and resident in Wales on 31/03/2022

Area	1 year					2 years						5 years					
	Resident children (n)	Babies at risk of perinatal infection (n)	1 dose (%)	2 doses (%)	3 doses (%)	Resident children (n)	Babies at risk of perinatal infection (n)	1 dose (%)	2 doses (%)	3 doses (%)	4 doses (%)	Resident children (n)	Babies at risk of perinatal infection (n)	1 dose (%)	2 doses (%)	3 doses (%)	4 doses (%)
Aneurin Bevan UHB	5757	6	100.0	100.0	100.0	6154	12	100.0	100.0	100.0	83.3	6762	9	100.0	88.9	88.9	44.4
Betsi Cadwaladr UHB	6064	3	100.0	100.0	100.0	6354	5	100.0	100.0	100.0	100.0	7183	6	100.0	100.0	100.0	100.0
Cardiff and Vale UHB	4765	16	93.8	100.0	100.0	5008	15	100.0	100.0	100.0	73.3	5790	18	100.0	100.0	88.9	61.1
Cwm Taf Morgannwg UHB	4229	3	100.0	100.0	100.0	4410	1	100.0	100.0	100.0	100.0	5015	2	100.0	100.0	100.0	0.0
Hywel Dda UHB	3186	1	100.0	100.0	100.0	3343	0	0.0	0.0	0.0	0.0	3821	0	0.0	0.0	0.0	0.0
Powys TB	1052	0	0.0	0.0	0.0	1059	0	0.0	0.0	0.0	0.0	1231	0	0.0	0.0	0.0	0.0
Swansea Bay UHB	3315	3	100.0	100.0	100.0	3519	5	100.0	100.0	100.0	40.0	4009	9	100.0	100.0	100.0	88.9
Unknown	90	0	0.0	0.0	0.0	83	0	0.0	0.0	0.0	0.0	53	0	0.0	0.0	0.0	0.0
Wales	28458	32	96.9	100.0	100.0	29930	38	100.0	100.0	100.0	74.4	33864	44	100.0	97.7	93.2	65.9

Data reflects immunisations given and recorded on the Public Health Wales All Wales Neonatal Hepatitis B database of babies born to hepatitis B positive mothers.

Source: DHCW, from Children and Young Persons Integrated System (CYPrIS), 2023⁹

3.1.3 Immunisation of service users engaged with substance misuse services

Hepatitis B vaccination status of, and vaccination provision to, those engaged with specialist substance misuse services indicate low levels of completion and coverage within services. For the majority of services, vaccination is not provided on site or referral is recorded as 'refused'.

3.1.4 Immunisation of people in prison

Hepatitis B vaccination provision to people in prison is recommended in line with NICE guidance¹⁰. Data from 2017 indicated vaccination coverage rates of 55.1% (95% CI 53.5–56.8) for first dose and 39.6% (95% CI 38.0–41.2) for full course across all prisons¹¹. However, due to substantial disruption due to the COVID-19 pandemic, routine data collection has not yet been re-established. Future reports will aim to include coverage of first dose and course completion by prison in Wales.

⁸ Public Health Wales <https://phw.nhs.wales/topics/immunisation-and-vaccines/cover-national-childhood-immunisation-uptake-data/cover-archive-folder/annual-reports/vaccine-uptake-in-children-in-wales-cover-annual-report-2022/>

⁹ Public Health Wales Vaccine Uptake in Children in Wales. COVER Annual Report 2022, Data for the year ending 31st March 2022 [cover report Feb 95 \[WP\] \(nhs.wales\)](https://phw.nhs.wales/cover-report-feb-95-wp/)

¹⁰ NICE. Physical health of people in prison; 2016. Available from: <https://www.nice.org.uk/guidance/qs156>

¹¹ Perrett SE, Cottrell S & Shankar AG. Hepatitis B vaccine coverage in short and long stay prisons in Wales, UK 2013–2017 and the impact of the global vaccine shortage. Vaccine, 2019. 37(35) 4872–4876

3.2 Hepatitis C

Hepatitis C is an inflammation of the liver which is caused by the hepatitis C virus (HCV). HCV can cause both acute and chronic hepatitis, ranging in severity from a mild illness to a serious lifelong illness, which may include liver cirrhosis and cancer. Acute HCV infections are usually asymptomatic. Around 30% (15-45%) of those infected spontaneously clear the virus within 6 months of infection without any treatment. The remaining 70% (55-85%) of persons will develop chronic HCV infection. Of those with chronic HCV infection, the risk of cirrhosis ranges from 15% to 30% within 20 years.

There is no vaccination to prevent hepatitis C infection. As such, harm reduction interventions including needle and syringe programmes (NSP) and regular routine opt-out testing for blood borne virus (BBV) infection are essential for prevention.

3.2.1 Preventing BBV infections amongst people who inject drugs (PWID) through effective needle and syringe programmes

Injecting drug use, current or previous, accounts for the majority of new and ongoing hepatitis C infection in the UK¹². Needle and Syringe Programme (NSP) services provide sterile injecting equipment and related paraphernalia, including foil as an alternative to injecting, as well as harm reduction information, advice and referral to specialist treatment services. NSPs are the first line service to prevent infections by enabling the use of sterile injecting equipment at every injecting event in line with best practice guidance.^{13,14} Detailed NSP activity data across Wales are available annually:

<https://phw.nhs.wales/publications/publications1/needle-and-syringe-programme-activity-in-wales-annual-report-2021-22/>

Coverage Rates

The term 'coverage rate' refers to the proportion of injecting events where sterile injecting equipment is used. Guidance recommends a coverage rate of just over 100% to account for 'mis-hits' and accidental droppage/contamination. A crude coverage estimate was calculated using the median number of syringes provided to PWID injecting opioids and/or stimulants and reporting injecting daily. Assuming that each individual PWID injects once per day, it would be expected that they would collect 365 syringes per year.

¹² UK Health Security Agency, Produced in collaboration with Public Health Agency Northern Ireland, Public Health Scotland, Public Health Wales [Hepatitis C in the UK 2023](#)

¹³ Welsh Government. Substance Misuse Treatment Framework (SMTF) Service Framework for Needle and Syringe Programmes in Wales. 2011 NICE. Needle and syringe programmes

¹⁴ NICE public health guidance 52. London: NICE; 2014, <http://www.nice.org.uk/Guidance/PH52>

The median number of syringes provided to this PWID population was 82 per person in 2021-22. This approximates a coverage rate of 22 per cent clearly representing substantial sub-optimal provision of NSP services.

3.2.2 Human Immunodeficiency Virus (HIV)

HIV is an infection that attacks the body's immune system. The HIV virus destroys the CD4 cells, weakening a person's immunity against opportunistic infections, such as tuberculosis and fungal infections, severe bacterial infections and some cancers. People diagnosed with HIV should be offered, and initiated on, antiretroviral treatment (ART) as soon as possible following diagnosis. If ART is taken consistently, this treatment also prevents HIV transmission to others. HIV may be transmitted through direct contact with certain body fluids from a person with HIV who has a detectable viral load. Routes of transmission include unprotected anal or vaginal sex, sharing of injecting equipment and, less common, transmission from mother to baby.

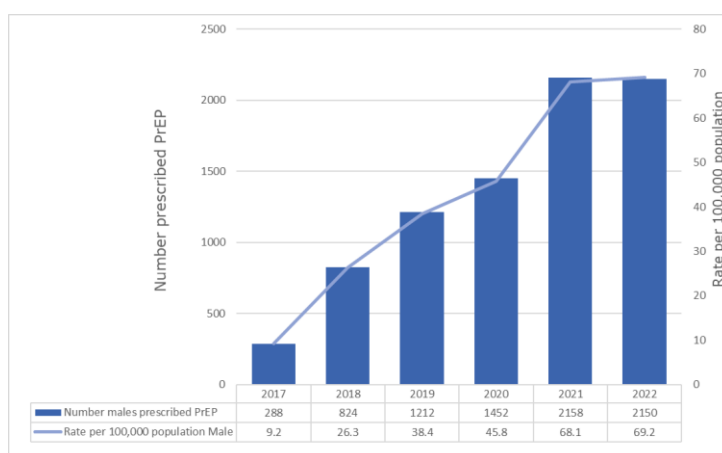
Pre-exposure prophylaxis (PrEP) is medicine taken to prevent getting HIV and is highly effective when taken as prescribed. Pre-exposure prophylaxis (PrEP) for HIV was introduced in Wales in July of 2017. PrEP reduces the risk of contracting HIV through sex by 99% when taken as prescribed¹⁵. The increase in the use of PrEP, due to widening accessibility, coincides with the downward trajectory of new HIV cases in the UK¹⁶.

Since 2017:

- A total of 3,256 individuals have been prescribed PrEP in Wales
- The rate per 100,000 population (males) prescribed PrEP in Wales has increased more than 7 fold in the last 6 years since introduction to 69.2 per 100,000 population (males) in 2022 as shown in Figure 1
- Cardiff and Vale UHB have consistently provided the majority of PrEP over the past five years (Table 3), and in the last year accounted for 44% (193.5 per 100,000 population)
- Overall, the majority of individuals were male (99%), within 25-34 age group (38%) (Figure 2) and of White ethnicity (69%). Ethnicity was not recorded for 28% of individuals
- The majority of individuals prescribed PrEP were men who have sex with men (MSM; 81%)

¹⁵ CDC (2022) HIV Basics: Prep Effectiveness. <https://www.cdc.gov/hiv/basics/prep/prep-effectiveness.html>

¹⁶ UK Health Security Agency (2022) HIV: Annual Data Tables. <https://www.gov.uk/government/statistics/hiv-annual-data-tables>



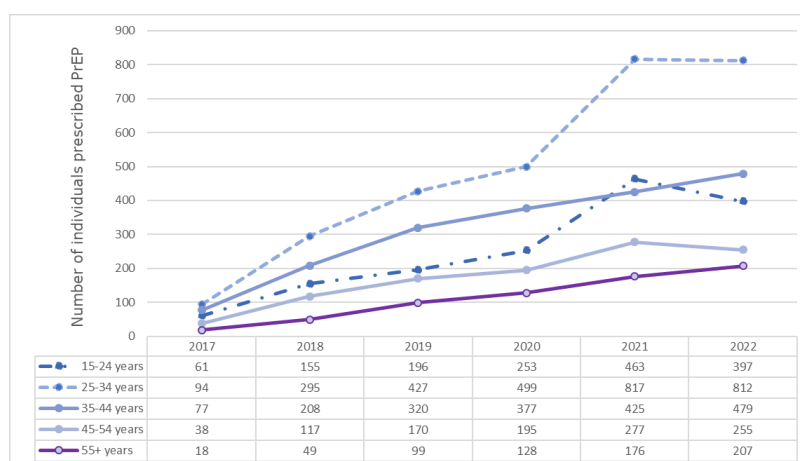
Source: SWS, 2023

Figure 1 Number and rate per 100,000 population (male) prescribed PrEP in sexual health clinics, by year 2017 to 2022 N.B. Individuals may be present in multiple years where a prescription is active over more than one financial year

Table 2 Number and rate per 100,000 population (males) in Wales prescribed PrEP and the by Health Board clinic attendance¹⁷ and year, 2017 to 2022

Health Board of clinic attendance	2017		2018		2019		2020		2021		2022	
	n	rate	n	rate	n	rate	n	rate	n	rate	n	rate
Aneurin Bevan UHB	75	12.8	159	26.9	233	39.2	218	36.4	264	44.1	358	60.9
Betsi Cadwaladr UHB	47	6.8	148	21.2	192	27.4	197	28.0	246	35.0	320	46.6
Cardiff & Vale UHB	95	19.3	254	51.2	439	87.7	709	140.5	1278	253.3	952	193.5
Cwm Taf Morgannwg UHB	19	4.3	68	15.3	76	16.9	47	10.4	62	13.8	100	22.6
Hywel Dda UHB	10	2.6	44	11.4	54	13.9	49	12.6	30	7.7	42	11.0
Swansea Bay UHB	42	10.8	151	38.8	218	55.9	232	59.3	278	71.1	378	99.5
Wales	288	9.2	824	26.3	1,212	38.4	1,452	45.8	2,158	68.1	2,150	69.2

Source: SWS, 2023



Source: SWS, 2023

Figure 2 Number of individuals prescribed PrEP, by age group, 2017 to 2022, Wales N.B. Individuals may be present in multiple years where a prescription is active over more than one financial year

¹⁷ Where health board area of residence is not clearly reported, the Health Board of clinic attendance is used as a proxy.

4 Screening and diagnosis

4.1 Hepatitis B in Wales

4.1.1 Anti-HBc tests and positivity

Total antibody to hepatitis B core antigen (anti-HBc) appears at the onset of symptoms of acute hepatitis B, and persists for life. Reactivity shows evidence of previous or ongoing infection with hepatitis B virus in an undefined time frame. People who have immunity to hepatitis B from a vaccine do not develop anti-HBc. Reactivity of individuals new to testing for anti-HBc in Wales remains relatively stable at 5 per 100 person years (Table 3). The highest proportion of reactive individuals are recorded in Cardiff and Vale UHB (Table 4) and amongst the 40-59 year age group (Table 5).

Table 3 Number and proportion of individuals tested and reactive for anti-HBc in Wales by year, 2015-2022

Year of specimen collection	Unique individuals tested	Unique individuals testing positive	% of unique individuals tested with at least one positive result	Unique individuals with first positive result	unique individuals with first recorded test	unique individuals with first recorded test returning a positive result	% of newly tested individuals returning positive test
2015	20115	1065	5.3%	1014	19019	1007	5.3%
2016	20714	1088	5.3%	912	17761	895	5.0%
2017	21857	1207	5.5%	976	17878	959	5.4%
2018	23127	1146	5.0%	866	18309	851	4.7%
2019	23555	1164	4.9%	865	18167	834	4.6%
2020	14238	696	4.9%	482	10524	470	4.5%
2021	18634	815	4.4%	606	13676	581	4.3%
2022	21098	1036	4.9%	835	16100	815	5.1%

Source: LIMS, 2023

Table 4 Number and proportion of individuals tested and reactive for anti-HBc by Health Board of residence, 2022

Health Board	Unique individuals tested	Unique individuals testing positive	% of unique individuals tested with at least one positive result	Unique individuals with first positive result	unique individuals with first recorded test	unique individuals with first recorded test returning a positive result	% of newly tested individuals returning positive test
Aneurin Bevan UHB	2700	86	3.2%	53	1924	50	2.6%
Betsi Cadwaladr UHB	1960	88	4.5%	77	1551	77	5.0%
Cardiff & Vale UHB	3773	286	7.6%	239	2900	233	8.0%
Cwm Taf Morgannwg UHB	2040	55	2.7%	42	1505	38	2.5%
Hywel Dda UHB	1823	44	2.4%	29	1338	29	2.2%
Powys Teaching HB	298	12	4.0%	11	235	10	4.3%
Swansea Bay UHB	2379	91	3.8%	67	1688	65	3.9%
Unknown	5942	366	6.2%	309	4784	305	6.4%
Outside Wales	229	8	3.5%	8	175	8	4.6%

Source: LIMS, 2023

Table 5 Number and proportion of individuals tested and reactive for anti-HBc in Wales by age group, 2022

Age Group	Unique individuals tested	Unique individuals testing positive	% of unique individuals tested with at least one positive result	Unique individuals with first positive result	unique individuals with first recorded test	unique individuals with first recorded test returning a positive result	% of newly tested individuals returning positive test
Under 5	137	-	-	-	-	-	-
5-19	1199	12	1.0%	12	1108	10	0.9%
20 - 39	9759	370	3.8%	302	7474	299	4.0%
40 - 59	5703	422	7.4%	335	4135	333	8.1%
60 +	4335	227	5.2%	177	3239	164	5.1%
NA	14	-	-	-	-	-	-

Source: LIMS, 2023

4.1.2 HBsAg tests and positivity

Hepatitis B surface antigen (HBsAg) can be detected in people with acute or chronic hepatitis B infection. The presence of HBsAg indicates that a person is infectious, except when it might be transiently positive within 30 days of a dose of hepatitis B vaccine. Chronic hepatitis B is defined as persistence of hepatitis B surface antigen (HBsAg) for 6 months or more after acute infection with hepatitis B virus (HBV).¹⁸ Repeat testing may be required as part of clinical diagnoses or routine screening for higher risk populations.

Whilst testing for HBsAg has increased year on year with exception of 2020 and 2021 probably due to COVID-19 pandemic restrictions, when controlling for repeated testing, the number of individuals screened for the first time within year has decreased by 24.4% between 2015 and 2022.

The proportion of individuals with a first HBsAg positive test result increased by 0.15% (from 0.65% 2015 to 0.80% in 2022), Table 6.¹⁹ The highest proportion of HBsAg positive individuals are resident in Cardiff and Vale UHB (Table 7) and within the 40-59 year age group (Table 8). Future analysis will be undertaken to classify the proportion of acute and chronic cases as well as the demographic and risk factors associated with chronic hepatitis B infection.

Table 6 Summary of hepatitis b surface antigen (HBsAg) testing in Wales, by year of specimen collection, 2015-2022

Year of specimen collection	Unique individuals tested	Unique individuals testing positive	% of unique individuals tested with at least one positive result	Unique individuals with first positive result	Unique individuals with first recorded test	Unique individuals with first recorded test returning a positive result	% of newly tested individuals returning positive test
2015	77024	705	0.9%	480	72211	463	0.6%
2016	78876	786	1.0%	399	66387	368	0.6%
2017	81465	930	1.1%	427	63178	397	0.6%
2018	83488	1010	1.2%	410	60145	369	0.6%
2019	86853	1084	1.3%	407	59681	358	0.6%
2020	66548	855	1.3%	298	41454	246	0.6%
2021	77630	989	1.3%	356	47859	295	0.6%
2022	84025	1204	1.4%	540	53667	434	0.8%

Source: Laboratory Information Management System, 2023

¹⁸ National Institute for Health and Care Excellence. Hepatitis B (chronic): diagnosis and management. Clinical guideline [CG165]. 2017. Available at: <https://www.nice.org.uk/guidance/cg165>

¹⁹ UKHSA estimates that the number of people with chronic hepatitis B in England is ~206,000 (95% CI 157,000 to 274,000), equivalent to a prevalence estimate of 0.45% (95% CI 0.35% to 0.60%). UKHSA Hepatitis B in the UK 2023. <https://www.gov.uk/government/publications/hepatitis-b-in-england>

Table 7 Summary of hepatitis b surface antigen (HBsAg) testing, by health board of residence, 2022

Health Board	Unique individuals tested	Unique individuals testing positive	% of unique individuals tested with at least one positive result	Unique individuals with first positive result	unique individuals with first recorded test	unique individuals with first recorded test returning a positive result	% of newly tested individuals returning positive test
Aneurin Bevan UHB	14535	108	0.74%	40	8698	31	0.36%
Betsi Cadwaladr UHB	14149	112	0.8%	79	9046	52	0.6%
Cardiff & Vale UHB	14486	421	2.9%	104	8728	90	1.0%
Cwm Taf Morgannwg UHB	11273	124	1.1%	44	6710	28	0.4%
Hywel Dda UHB	7906	80	1.0%	28	5039	18	0.4%
Powys Teaching HB	1262	5	0.4%	< 5	812	< 5	-
Swansea Bay UHB	9196	163	1.8%	61	5643	44	0.8%
Unknown	10666	191	1.8%	179	8301	167	2.0%
Outside Wales	877	8	0.9%	<5	690	< 5	-

Source: Laboratory Information Management System, 2023

Table 8 Summary of hepatitis b surface antigen (HBsAg) testing, by age group, 2022

Age Group	Unique individuals tested	Unique individuals testing positive	% of unique individuals tested with at least one	Unique individuals with first positive result	Unique individuals with first recorded test	Unique individuals with first recorded test	% of newly tested individuals returning
Under 5	538	Under 5	-	Under 5	519	Under 5	-
5 - 19	4191	39	0.9%	24	3823	23	0.6%
20 - 39	46601	483	1.0%	223	27236	189	0.7%
40 - 59	17999	518	2.9%	200	11524	170	1.5%
60 +	14781	168	1.1%	88	10503	47	0.4%
Unknown age	69	-	-	-	-	-	-

Source: Laboratory Information Management System, 2023

4.2 Hepatitis C (HCV)

Screening for active HCV infection is a two-step process. Identification for serological markers of anti-HCV reactivity indicate evidence of past exposure to the HCV virus. Reactive anti-HCV samples are then tested for presence of viraemia (HCV-RNA), and if positive, the patient is diagnosed with active infection requiring treatment.

At an all-Wales level, venepuncture remains the most common method for screening for HCV, accounting for 88% of all tests in 2022 (Table 9). However, increased use of dried blood spot and point of care testing for high risk groups and for those whom venous-access is challenging is appropriate and recommended.

In 2020, there was a 33% reduction in anti-HCV testing and a 41% reduction in HCV-RNA testing compared to 2019, likely due to COVID-19 pandemic (Tables 9 and 10). However, testing rates for anti-HCV exceeded pre-pandemic testing levels in 2022. Testing rates vary substantially by Health Board (Figure 3).

Table 9 Number of anti-HCV and HCV-RNA tests by type of test, 2015 to 2022

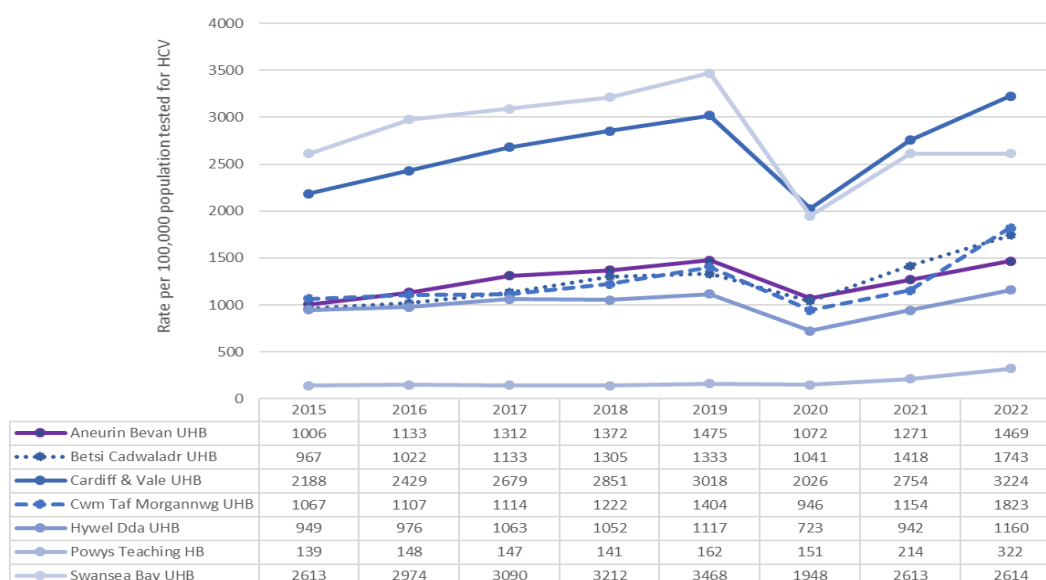
Year	Venepuncture	Dry Blood Spot	Point of Care	Total Anti-HCV tests	Total HCV-RNA tests
2015	48,224	2,677	0	50,901	3,595
2016	50,410	4,089	0	54,499	5,392
2017	54,219	5,458	0	59,677	5,525
2018	60,867	5,382	379	66,628	4,283
2019	63,110	7,702	1,352	72,164	4,998
2020	45,268	2,944	204	48,416	2,931
2021	55,316	5,145	1,387	61,848	3,201
2022	63,127	6,817	5,292	75,236	3,930

Source: Laboratory Information Management System, 2023

Table 10 Number of tests and individuals tested for anti-HCV, and percentage change, by year, 2015 to 2022

Year	Total Tests Conducted	% Change Since Previous Year	Total Individuals Tested	% Change Since Previous Year
2015	54,496	-	42,968	-
2016	59,891	9.9%	46,030	7.1%
2017	65,202	8.9%	50,129	8.9%
2018	70,911	8.8%	53,663	7.0%
2019	77,162	8.8%	57,706	7.5%
2020	51,347	-33.5%	38,965	-32.5%
2021	65,049	26.7%	49,966	28.2%
2022	79,166	21.7%	59,505	19.1%

Source: Laboratory Information Management System, 2023



Source: Laboratory Information Management System, 2023

Figure 3 Rate per 100,000 population tested for HCV (anti-HCV or HCV-RNA) by Health Board of residence and year, 2015 to 2021

The median age of individuals tested in 2022 was 42 (IQR: 29), and 52% were male, 40% were female. Trends in both age and sex profile are consistent with previous years, with testing highest amongst those aged 25-34 years.

4.2.1 Anti-HCV reactivity

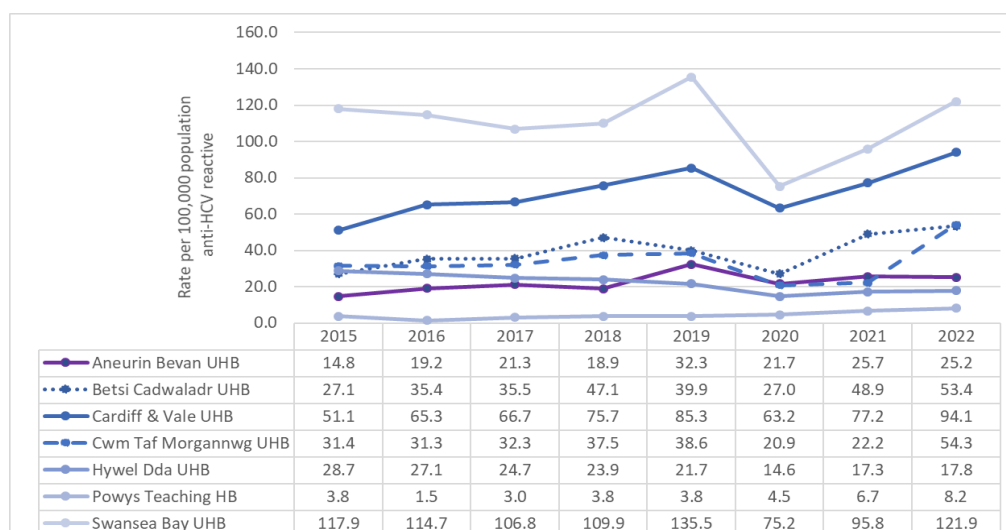
Repeat testing amongst groups at higher risk and already identified as anti-HCV reactive may account for the relatively stable annual prevalence of 3% reactive tests by year. The proportion of hepatitis C antibody (Anti-HCV) reactive cases among newly tested individuals has decreased by 1.4 percentage points, from 3 to 1.6% over the period 2015-2022, despite relatively stable testing levels (Table 11).

There is substantial variation in rate of anti-HCV reactivity per 100,000 population by Health Board of residence (Figure 4). The highest number of anti-HCV reactive individuals are aged 35-44 years (Table 12). In previous years there has been a relatively consistent 2:1 male to female ratio within this cohort, however, in more recent years the proportion of males has increased, and in 2022, males accounted for 65% of anti-HCV reactive individuals and females 25% (10% did not have sex recorded).

Table 11 Number and proportion of anti-HCV reactive individuals, 2015-2022

Year	Unique individuals tested	Unique individuals testing reactive	% Unique individuals tested with at least one reactive result	Unique individuals with first reactive result	Unique individuals with first recorded test	Unique individuals with first recorded test returning a reactive result	% Newly tested individuals returning reactive test
2015	41,830	1,236	3.0%	1,236	41,830	1,236	3.0%
2016	44,658	1,377	3.1%	1,152	38,789	1,093	2.8%
2017	48,573	1,365	2.8%	1,053	39,969	969	2.4%
2018	52,343	1,515	2.9%	1,054	40,741	943	2.3%
2019	56,517	1,692	3.0%	1,017	42,393	864	2.0%
2020	38,092	1,092	2.9%	584	26,346	485	1.8%
2021	49,257	1,407	2.9%	677	34,182	562	1.6%
2022	58,774	1,767	3.0%	793	41,350	656	1.6%

Source: Laboratory Information Management System, 2023



Source: Laboratory Information Management System, 2023

Figure 4 Rate per 100,000 population anti-HCV reactive by Health Board of residence and year, 2015-2022

Table 12 Heat table of anti-HCV reactivity, by age group and year, 2015-2022

Age group	2015	2016	2017	2018	2019	2020	2021	2022
0-14	2.6%	3.2%	2.2%	3.5%	1.8%	1.7%	0.1%	0.9%
15-24	1.1%	1.1%	0.8%	0.6%	0.5%	0.7%	0.5%	0.5%
25-34	3.6%	3.6%	3.1%	2.8%	3.0%	2.7%	2.4%	2.0%
35-44	5.1%	5.6%	5.3%	5.7%	5.9%	5.4%	5.5%	5.6%
45-54	4.4%	4.5%	4.4%	4.2%	5.0%	4.7%	5.5%	5.8%
55-64	2.2%	2.2%	2.2%	2.7%	2.1%	2.7%	2.5%	3.0%
>64	0.7%	0.7%	0.4%	0.7%	0.6%	0.6%	0.5%	0.8%
Not recorded	7.9%	8.8%	8.2%	8.5%	9.4%	9.0%	12.5%	5.7%

Source: Laboratory Information Management System, 2023

Confirmatory reflex testing following anti-HCV positivity

Laboratory processes are in place to undertake confirmatory HCV-RNA testing on all anti-HCV reactive samples to confirm current infection and the requirement for treatment. However, data indicate that almost 27% of those with an anti-HCV reactive result have not received a follow up HCV-RNA test (Table 13) with

the majority of those resident in Cardiff & Vale UHB (Table 14). Further analysis is required to establish what proportion of these tests may be historic (prior to 2018 for dried blood spot testing), relate to point of care testing / pilot project tests or represent incomplete data.

Table 13 Individuals and proportion not receiving HCV-RNA confirmatory test following any previous reactive anti-HCV test by year 2015 to 2022

	Total anti-HCV reactive	No HCV- RNA Follow Up n	No HCV- RNA Follow Up Proportion %
Year	N		
2015	794	287	36.1%
2016	876	274	31.3%
2017	871	289	33.2%
2018	954	354	37.1%
2019	1262	483	38.3%
2020	775	260	33.5%
2021	1103	381	34.5%
2022	1427	379	26.6%

Source: Laboratory Information Management System, 2023

Table 14 Heat table - proportion anti-HCV reactive individuals not receiving HCV-RNA confirmatory test by health board and year, 2015 to 2022

	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
Aneurin Bevan UHB	29%	27%	23%	22%	24%	11%	24%	25%	23%
Betsi Cadwaladr UHB	16%	18%	20%	18%	24%	22%	32%	26%	22%
Cardiff & Vale UHB	36%	19%	26%	35%	40%	36%	37%	19%	31%
Cwm Taf Morgannwg UHB	22%	17%	25%	23%	29%	28%	13%	12%	21%
Hywel Dda UHB	24%	24%	23%	17%	30%	16%	18%	28%	23%
Powys Teaching HB	0%	50%	0%	0%	20%	0%	11%	27%	13%
Swansea Bay UHB	19%	20%	16%	20%	23%	19%	20%	24%	20%

Source: Laboratory Information Management System, 2023

4.2.2 HCV-RNA positivity

The proportion of individuals with a HCV-RNA positive result following an anti-HCV reactive test has decreased substantially from 61.5% in 2015 to 28.8% in 2022 (Table 15).

The number of newly positive HCV-RNA cases amongst those tested in Wales from 2015 to 2022 reduced by 33.5% (Table 16).

The HCV-RNA incidence rate, describing the number of newly diagnosed people per 100,000 population, has decreased from 37.8 to 11 per 100,000 population (Figure 5).

Since 2015, and excluding those resident outside of Wales, there have been 3,320 new HCV-RNA cases identified in Wales, with substantial geographic variation by health board area of residence (Table 17).

Age standardised rates of new cases per 100,000 population indicate varying trends over time within health board area of residence (Table 18), although caution should be used interpretation of 2020 and 2021 rates due to the impact of COVID restrictions on testing and diagnosis.

Table 15 Number and proportion of individuals with HCV-RNA positive results following anti-HCV reactive result and positivity (%) by year, 2015 to 2022

Year	Number anti-HCV reactive with follow up	anti-HCV reactive and HCV-RNA positive (n)	anti-HCV reactive and HCV-RNA positive (%)
2015	507	312	61.5%
2016	602	350	58.1%
2017	582	306	52.6%
2018	600	318	53.0%
2019	779	339	43.5%
2020	515	185	35.9%
2021	722	262	36.3%
2022	1048	302	28.8%

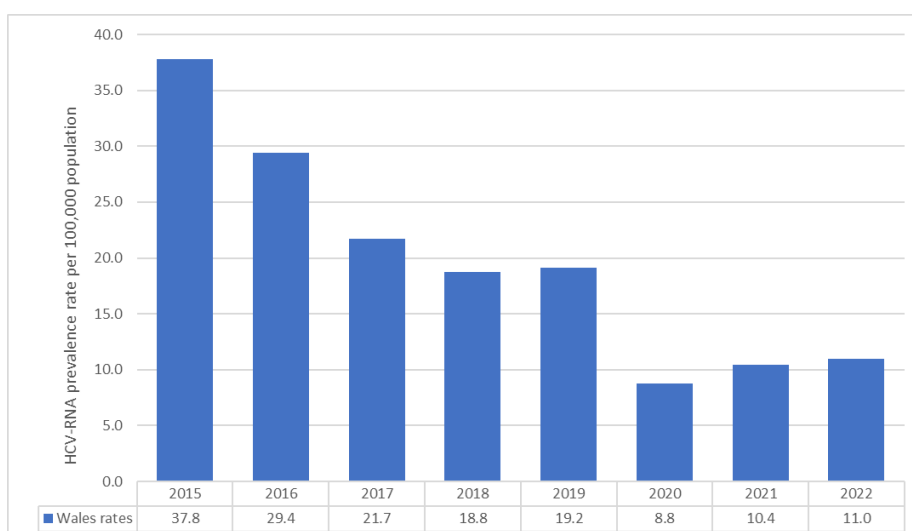
Source: Laboratory Information Management System, 2023

Table 16 HCV-RNA individuals tested and positivity by year, 2015 to 2022²⁰

Year	Unique individuals tested	Unique individuals testing positive	% Unique individuals tested with at least one positive result	Unique individuals with first positive result	Unique individuals with first recorded test	Unique individuals with first recorded test returning a positive result	% Newly tested individuals returning positive test
2015	2,488	1,170	47.0%	1,170	2,488	1,170	47.0%
2016	2,706	1,443	53.3%	926	1,814	915	50.4%
2017	3,026	1,265	41.8%	690	1,708	679	39.8%
2018	2,873	1,007	35.1%	603	1,587	589	37.1%
2019	3,317	1,005	30.3%	635	1,778	604	34.0%
2020	2,241	509	22.7%	294	1,127	279	24.8%
2021	2,388	618	25.9%	350	1,151	324	28.1%
2022	2,855	607	21.3%	367	1,448	342	23.6%

Source: Laboratory Information Management System, 2023

²⁰ All data within Table 16 is based upon testing and diagnoses only within period 01.01.2015 to 31.01.2022. Individuals included in this table may have received a first positive test prior to 2015 and have be represented in the year of first positive test within the period 2015-2022



Source: Laboratory Information Management System, 2023
 † based on Office for National Statistics, mid-year population estimates 2015-2021

Figure 5 HCV-RNA incidence rate²¹ per 100,000 population by year 2015-2022[†]

Table 17 New HCV-RNA cases by health board of residence, by year of first diagnosis, 2015-2022

	2015	2016	2017	2018	2019	2020	2021	2022
Aneurin Bevan UHB	73	64	80	56	64	31	45	38
Betsi Cadwaladr UHB	83	101	100	115	108	79	96	92
Cardiff & Vale UHB	101	125	113	118	122	50	74	66
Cwm Taf Morgannwg UHB	33	37	30	34	35	15	13	41
Hywel Dda UHB	51	38	25	31	29	15	21	15
Powys Teaching HB	<5	<5	<5	<5	<5	<5	<5	<5
Swansea Bay UHB	141	129	133	116	139	59	63	66

Source: Laboratory Information Management System, 2023

Table 18 Heat table of European Age Standardised Rate of new HCV-RNA cases per 100,000 individuals, by health board and year, 2015-2022

	2015	2016	2017	2018	2019	2020	2021	2022
Aneurin Bevan UHB	16.6	15.3	22.5	12.8	18.8	10.5	12.8	9.5
Betsi Cadwaladr UHB	18.4	23.8	25.5	25.5	27.5	18.6	26.3	23.0
Cardiff & Vale UHB	27.7	42.0	30.2	34.0	32.6	13.4	22.4	17.8
Cwm Taf Morgannwg UHB	16.3	14.8	13.4	12.4	13.3	8.5	6.4	17.2
Hywel Dda UHB	23.3	19.3	12.0	17.8	11.1	7.9	13.5	9.5
Powys Teaching HB	13.8	13.1	15.7	-	14.3	-	12.9	18.3
Swansea Bay UHB	65.2	50.4	55.1	42.2	53.5	27.2	29.9	26.1
Wales	18.0	21.2	20.1	18.2	21.2	9.8	13.8	12.7

Source: Laboratory Information Management System, 2023

²¹ Incidence rate calculated as new HCV-RNA positive cases in those with first HCV-RNA recorded test per 100,000 population by year in Wales

4.3 HIV

4.3.1 HIV Ag/Ab testing and positivity

The number of individuals tested for HIV increased annually between 2015 and 2019, but decreased by 35% in 2020 probably reflecting COVID-19 pandemic restrictions. Despite increases in 2021 and 2022, testing remains substantially lower than pre-pandemic levels (Tables 19 and 20) particularly amongst the 15-24 and 25-34 age groups (Figure 6).

Table 19 Total HIV Ag/Ab tests, individuals tested and positivity recorded by Welsh labs, by year, 2015-2022

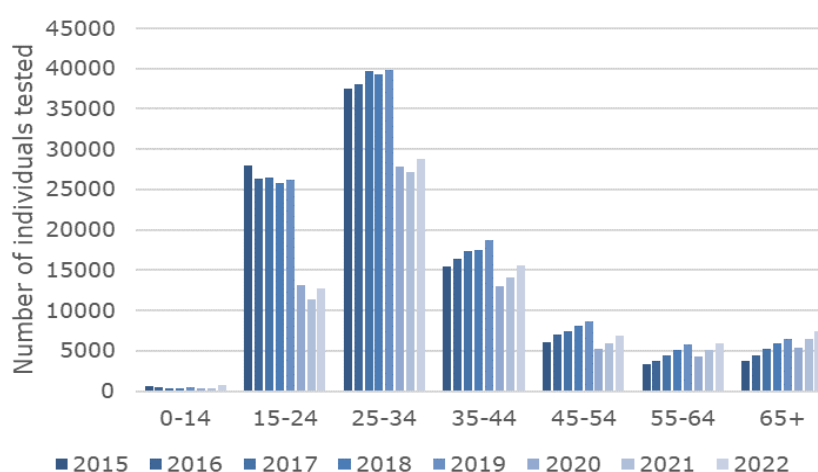
Year	Total tests	Individuals tested	Individuals positive	%
2015	107,545	94,919	1,126	1.2%
2016	109,612	96,691	1,013	1.0%
2017	115,901	101,562	849	0.8%
2018	117,212	102,495	793	0.8%
2019	121,902	106,162	742	0.7%
2020	78,409	69,398	552	0.8%
2021	81,449	70,765	490	0.7%
2022	91,512	77,554	668	0.9%

Source: Laboratory Information Management System, 2023

Table 20 Number of individuals tested for HIV Ag/Ab, by health board and year, 2015-2022

	2015	2016	2017	2018	2019	2020	2021	2022
Aneurin Bevan UHB	15,606	15,943	16,157	15,517	16,012	11,890	11,504	12,272
Betsi Cadwaladr UHB	16,518	16,731	16,982	18,324	20,707	13,946	13,254	14,643
Cardiff & Vale UHB	19,980	20,843	22,620	23,450	23,794	15,896	17,513	18,351
Cwm Taf Morgannwg UHB	12,358	12,660	13,611	12,676	13,633	8,181	8,168	9,967
Hywel Dda UHB	9,033	8,498	8,909	8,978	9,083	5,677	5,650	6,540
Powys Teaching HB	617	612	631	549	550	542	572	555
Swansea Bay UHB	14,778	14,788	15,298	16,315	16,817	9,047	8,695	10,331
Unknown	6,029	6,616	7,354	6,686	5,566	4,219	5,409	4,895

Source: Laboratory Information Management System, 2023



Source: Laboratory Information Management System, 2023

Figure 6 Number of individuals tested for HIV Ag/Ab, by age group and year

4.3.2 New diagnosis of HIV

In 2021, Wales had the lowest rate of HIV diagnosis in the UK, with a rate of 1.9 new diagnoses per 100,000 population Welsh residents (Table 21), with 60 new HIV diagnoses.²²

Most recently, new diagnoses are primarily in males; those aged 35-49; and those of White ethnicity (Table 22). Rates of new HIV diagnoses have decreased to a greater extent in males than females (Table 23) and amongst younger people aged 15-34, where PrEP provision and uptake is highest.

Improvement in the collection of ethnicity data is required to inform prevention approaches.

Table 21 Number and rate per 100,000 population new HIV diagnosis in the UK, by country and year, 2017-2021

	2017		2018		2019		2020		2021	
Country/ Region	New HIV diagnoses	Rate	New HIV diagnoses	Rate	New HIV diagnoses	Rate	New HIV diagnoses	Rate	New HIV diagnoses	Rate
England	4,301	7.7	4,221	7.5	4,017	7.1	2,673	4.7	2,692	4.8
Northern Ireland	83	4.4	79	4.2	63	3.3	68	3.6	76	4.0
Scotland	265	4.9	222	4.1	197	3.6	-	-	-	-
Wales	124	4.0	144	4.6	126	4.0	77	2.4	60	1.9
Total	4,773	7.2	4,666	7.0	4,403	6.6	2,818	4.2	2,828	4.2

Source: UKHSA, 2022

Table 22 Demographic profile of new HIV diagnoses in Wales by year, 2017-2021

	2017	2018	2019	2020	2021
All	124	144	126	77	60
Female	25	29	36	20	20
Male	99	115	90	57	40
0-14	<5	<5	<5	0	0
15-24	17	11	<10	<10	<5
25-34	35	42	41	25	15
35-49	39	61	45	27	24
50-64	25	23	29	14	17
65+	<10	<10	<10	<5	<5
White	85	93	64	35	28
Black African	13	12	10	7	5
Black Caribbean	0	0	0	0	<5
Other or mixed	10	13	10	9	6
Unknown	16	26	42	26	<20

Source: UKHSA, 2022

Table 23 New HIV diagnosis rate per 100,000 population in Wales, by sex and year, 2017-2021

	2017	2018	2019	2020	2021
All	4.0	4.6	4.0	2.4	1.9
Female	1.6	1.8	2.3	1.2	1.3
Male	6.4	7.6	5.8	3.6	2.6

Source: UKHSA, 2022

²² HIV data supplied by UKHSA includes Welsh residents accessing services in England

4.3.3 Late and very late diagnoses of HIV²³

Where available (23 of 60 cases (38%) in 2021), CD4 data for individuals with a new diagnosis of HIV is shown in Table 24. The proportion of new HIV cases with late diagnosis decreased in 2021, however, without complete CD4 data on all new diagnoses, any trend analysis should be treated with caution.

Table 24 Number of new HIV diagnoses in Wales, by CD4 and year, 2017-2021

	2017	2018	2019	2020	2021
Number with CD4 count within 91 days of diagnosis	79	85	75	34	23
Median CD4	330	390	300	348	424
Number with late diagnosis	39	35	41	17	10
% late (of those with a CD4)	49%	41%	55%	50%	43%

Source: UKHSA, 2022

4.3.4 Reported route of HIV transmission

Where route of likely transmission was reported (mean 70% completed), between 2017 and 2020, the majority of cases reported transmission via sex between men. However in 2021, the majority of cases reported transmission via heterosexual contact (Table 25).

Table 25 Number of new HIV diagnoses in Wales, by route of transmission and year, 2017-2021

Probable exposure category	2017	2018	2019	2020	2021
Sex between men	52	61	37	31	18
Heterosexual contact	43	42	29	19	24
Injecting drug use	<5	0	0	<5	0
Mother to child	0	<5	<5	0	0
Other	<5	<5	0	<5	0

Source: UKHSA, 2022

²³ Human immunodeficiency virus (HIV) attacks the body's immune system, specifically the white blood cells called CD4 cells. CD4 count can be used to indicate stage of infection with a count of less than 350 suggesting a late diagnosis of HIV and a count of less than 250 suggesting a very late diagnosis.

4.4 BBV testing and diagnosis in Prisons

Individuals in prison are considered an at-risk group for contracting BBVs due to social and health risk behaviours within community and prison environments.

4.4.1 Prison overview

There are 6 male only prisons in Wales, and no female prisons. HMP Cardiff and HMP Swansea are remand prisons with an approximate 50% turnover each month. Details of each prison can be seen in Table 26.

Table 26 Overview of Welsh prison category, function, capacity and location

Prison	Security category*	Function	Operational capacity	Location
HMP Berwyn	C	Training prison (sentenced adults and young men)	1,801	Berwyn
HMP & YOI Parc	B	Local convicted (sentenced adults, young adults and young offenders)	1,699	Bridgend
HMP Cardiff	B	Local remand prison	749	Cardiff
HMP Swansea	B	Local remand prison	396	Swansea
HMP Usk	C	Training prison (sentenced adults and young men)	484	Usk
HMP Prescoed	D	Open prison		

*security categories range from category A (maximum security) to category D (open prison)

The age range of individuals tested for BBVs in prisons likely reflects the age profile of those in the prison at the time as routine opt-out screening is standard procedure (Table 27).

Table 27 Age range and median age of individuals tested for BBVs, by prison, 2022

	Age range of individuals tested (median)
HMP Berwyn	18-102 (34)
HMP & YOI Parc	15-76 (34)
HMP Cardiff	18-65 (35)
HMP Swansea	18-56 (33.5)
HMP Usk	21-83 (47)
HMP Prescoed	20-90 (35)
All	15-102 (35)

Source: SystemOne, 2023

4.4.2 BBV testing in Welsh prisons

BBV testing increased in all prisons up to 2019, with decreases in 2020 probably due to COVID pandemic restrictions leading to substantial challenges and capacity constraints for healthcare services in prisons 2020 and 2021. The total number of tests conducted in each prison can be seen in Table 28 BBV testing approached or exceeded pre-pandemic levels in 2022.

Table 28 BBV tests conducted in by prison, type of BBV test and year, 2015-2022²⁴

Test	Requesting site	Tests conducted							
		2015	2016	2017	2018	2019	2020	2021	2022
Hepatitis B (HBsAg)	HMP Berwyn	-	-	265	631	1,005	483	1,113	1,441
	HMP Parc	406	890	1,479	984	1,293	484	211	638
	HMP Cardiff	238	891	1,331	391	1,453	568	718	321
	HMP Swansea	-	<5	161	182	302	50	43	58
	HMP Usk	71	260	73	268	371	116	232	168
	HMP Prescoed	96	115	203	324	424	216	279	243
	Total	811	2,158	3,512	2,780	4,848	1,917	2,596	2,869
Hepatitis C (Anti-HCV)	HMP Berwyn	-	-	266	632	1,005	462	1,109	1,400
	HMP Parc	407	895	1,485	988	1,293	482	206	641
	HMP Cardiff	240	901	1,352	400	1,442	561	712	318
	HMP Swansea	-	<5	163	182	270	48	41	58
	HMP Usk	71	260	73	268	371	117	234	170
	HMP Prescoed	98	115	204	324	425	216	280	243
	Total	816	2,175	3,543	2,794	4,806	1,886	2,582	2,830
Hepatitis C (HCV-RNA)	HMP Berwyn	-	-	26	41	150	154	227	274
	HMP Parc	51	65	84	66	126	67	56	267
	HMP Cardiff	57	135	160	151	219	87	88	123
	HMP Swansea	24	40	54	62	241	58	70	64
	HMP Usk	-	5	-	<5	8	5	<5	<5
	HMP Prescoed	<5	5	<5	9	20	8	18	5
	Total	136	250	325	333	764	379	462	735
HIV (Ag/Ab)	HMP Berwyn	-	-	265	631	1,034	524	1,135	1,431
	HMP Parc	406	893	1,473	984	1,285	480	208	634
	HMP Cardiff	237	890	1,326	371	1,436	559	716	320
	HMP Swansea	-	<5	161	182	296	49	41	54
	HMP Usk	71	260	73	267	369	111	223	160
	HMP Prescoed	96	115	203	324	418	210	276	238
	Total	810	2,160	3,501	2,759	4,838	1,933	2,599	2,837

Source: SystmOne, 2022

Testing coverage in Prisons increased up to 2019 and in 2021 showed substantial improvement post-COVID pandemic restrictions (Table 29)

Table 29 Testing coverage²⁵ across Welsh prisons, by prison and year, 2015-2021

Testing coverage % (number of admissions)							
	2015	2016	2017	2018	2019	2020	2021
HMP Berwyn	-	-	29.0 (1,001)	55.7 (1,206)	62.6 (17,77)	49.6 (1,336)	94.6 (1,353)
HMP Parc	18.9 (2,422)	41.2 (2,330)	61.2 (2,554)	46.8 (2,243)	65.2 (2,105)	33.6 (1,557)	20.3 (1,231)
HMP Cardiff	6.5 (4,519)	23.0 (4,446)	33.3 (4,448)	12.0 (4,182)	52.9 (2,786)	26.3 (2,197)	46.4 (1,561)
HMP Swansea	1.1 (2,140)	2.0 (2,090)	8.7 (2,463)	12.9 (1,891)	32.4 (1,459)	8.6 (1,113)	13.3 (832)
HMP Usk	32.7 (217)	115.7 (229)	36.0 (203)	131.4 (207)	198.9 (189)	69.1 (175)	99.2 (239)
HMP Prescoed	22.9 (442)	30.2 (398)	55.7 (368)	91.5 (364)	121.6 (357)	124.3 (177)	259.5 (111)
Total	9.7 (9,740)	25.4 (9,493)	34.7 (11,037)	30.4 (10,093)	60.4 (8,673)	33.6 (6,555)	54.3 (5,327)

*Full admissions data for 2022 is not yet available

Source: SystmOne and Offender Management Statistics, 2022

²⁴ Individuals were identified using patient ID and request location. Tests extracted from SystmOne were HBsAg, anti-HCV, HCV PCR and HIV Ag/Ab. Only those tested with a positive or negative result were included - tests with a result of "Not tested", "Insufficient to test", "Invalid", "Inhibitory" or "Result to follow" were excluded.

²⁵ Testing coverage can be inferred by comparing the number of tests completed by the number of new admissions in each prison. Coverage >100% indicates repeat testing of new admissions.

4.4.3 BBV reactivity / positivity among men in Welsh Prisons

HIV Ab/Ag and HBsAg

In every Welsh prison in every year 2015-2022, <1% of individuals tested for HBsAg and HIV Ag/Ab received a positive or reactive result.

Hepatitis C

The number of individuals receiving a reactive or positive results for hepatitis C can be seen in Table 31.

Anti-HCV reactivity has remained relatively stable between 2015 and 2022, ranging from 7.0% to 9.8%, substantially higher than the overall Wales prevalence (3%).

The number of individuals receiving an anti-HCV reactive result decreased by 28% between 2019 (pre-pandemic) and 2022, while the number of individuals tested decreased by 39%.

Overall the proportion of HCV-RNA positive tests (combined prison total) is at the lowest since 2015, consistent with overall Wales's trends. There was a 27% decrease in individuals receiving a positive HCV-RNA result between 2019 and 2022, with a 6% decrease in the number of individuals tested (Table 30).

Age of diagnosis

Combining 2018-2022 data, the median age of those receiving a positive or reactive BBV test result was lowest for those tested for HIV Ag/Ab (31 years) and highest for those tested for hepatitis C (anti-HCV and HCV RNA; 41 years).

Incidence of chronic HCV infection requiring treatment in Welsh prisons²⁶

Due to the mobility of individuals across the prison estate (England and Wales) and over time, alongside substantial variation in the duration of incarceration and low numbers of sero-conversion, robust incidence proportions and rates are not available.

²⁶ Incidence of chronic HCV infection is defined by a previous negative HCV-RNA test result followed by a positive HCV-RNA result within a specified time period (number of person-days at risk)

Table 30 Reactivity and positivity of individuals tested in Welsh prisons, by test, prison and year, 2015-2022

		2015		2016		2017		2018		2019		2020		2021		2022									
		n. pos	% pos	n. tested	n. pos	% pos	n. tested	n. pos	% pos	n. tested	n. pos	% pos	n. tested	n. pos	% pos	n. tested	n. pos	% pos	n. tested	n. pos	% pos	n. tested			
Hepatitis C (Anti-HCV)	HMP Berwyn	-	-	-	-	-	24	9.1%	264	50	8.2%	609	95	9.8%	971	44	9.7%	454	97	9.1%	1,066	106	7.7%	1,372	
	HMP Parc	31	7.8%	398	48	5.6%	855	114	7.8%	1,462	34	3.5%	964	52	4.2%	1,241	33	7.1%	467	16	8.0%	201	111	18.3%	608
	HMP Cardiff	43	18.1%	237	96	10.9%	882	166	12.9%	1,287	78	20.2%	387	176	12.9%	1,366	77	14.6%	529	78	12.0%	648	41	13.5%	303
	HMP Swansea	-	-	<5	<5	25.0%	<5	28	17.3%	162	17	9.7%	176	38	14.4%	263	15	32.6%	46	<5	7.3%	41	6	10.7%	56
	HMP Usk	0	0.0%	71	<5	1.6%	255	<5	1.4%	71	<5	1.2%	244	<5	0.7%	299	1	0.9%	115	<5	0.9%	225	<5	1.3%	158
	HMP Prescoed	5	5.1%	98	<5	0.9%	113	5	2.6%	196	5	1.7%	300	10	2.7%	376	6	3.0%	199	8	2.9%	276	<5	0.8%	240
	Total	79	9.8%	804	150	7.1%	2,109	338	9.8%	3,442	187	7.0%	2,680	373	8.3%	4,516	176	9.7%	1,810	204	8.3%	2,457	268	9.8%	2,737
Hepatitis C (HCV-RNA)	HMP Berwyn	-	-	-	-	-	10	45.5%	22	15	40.5%	37	19	14.6%	130	40	28.2%	142	56	28.0%	200	62	25.1%	247	
	HMP Parc	23	54.8%	42	29	61.7%	47	37	48.7%	76	18	27.7%	65	33	33.7%	98	12	20.7%	58	10	21.3%	47	35	19.1%	183
	HMP Cardiff	40	78.4%	51	82	68.3%	120	76	52.8%	144	85	61.2%	139	73	37.8%	193	29	38.2%	76	26	37.1%	70	27	27.3%	99
	HMP Swansea	13	59.1%	22	23	59.0%	39	35	68.6%	51	32	55.2%	58	66	34.9%	189	16	29.6%	54	22	36.1%	61	17	29.3%	58
	HMP Usk	-	-	<5	<5	60.0%	5	-	-	0	0.0%	<5	<5	25.0%	<5	0	0.0%	<5	<5	33.3%	<5	0	0.0%	<5	
	HMP Prescoed	<5	50.0%	<5	<5	66.7%	<5	<5	100.0%	<5	<5	11.1%	9	<5	7.1%	14	<5	14.3%	7	<5	6.7%	15	0	0.0%	5
	Total	78	65.5%	119	139	65.0%	214	159	54.1%	294	151	48.6%	311	193	30.7%	628	98	28.8%	340	116	29.3%	396	141	23.8%	593

Source: SystmOne, 2023

4.5 BBV testing and diagnoses in substance misuse and allied services

4.5.1 BBV screening overview

Routine opt-out BBV screening on at least an annual basis is recommended for all those in contact with substance misuse and allied services including supported housing and homelessness services and community-based criminal justice services.^{27,28} People who inject drugs (current or ever) represent those at highest risk of BBV infection. Previous annual reports are available here: [Publications - Public Health Wales \(nhs.wales\)](#)

BBV testing by substance misuse services was substantially disrupted by COVID-19 pandemic restrictions to services and laboratory testing capacity, however, progress has been made to recover to pre-pandemic levels. The number of BBV tests by BBV by health board area of residence is shown in Table 31.

Table 31 Number of individuals receiving a BBV test by virus type, health board of residence²⁹, and year along with proportion of change on previous year, 2021-2022

	HIV				HBV				HCV		
	2021	2022	Change		2021	2022	Change		2021	2022	Change
Aneurin Bevan UHB	572	632	10% ↑		573	632	10% ↑		577	632	10% ↑
Betsi Cadwaladr UHB	261	271	4% →		263	273	4% →		309	290	-6% ↓
Cardiff & Vale UHB	578	1031	78% ↑		582	1032	77% ↑		583	1053	81% ↑
Cwm Taf Morgannwg UHB	151	280	85% ↑		153	283	85% ↑		156	306	96% ↑
Hywel Dda UHB	53	140	164% ↑		53	140	164% ↑		53	140	164% ↑
Powys Teaching HB	251	239	-5% →		252	239	-5% →		252	239	-5% →
Swansea Bay UHB	179	702	292% ↑		179	705	294% ↑		187	722	286% ↑
Wales**	2043	3289	61% ↑		2053	3298	61% ↑		2115	3376	60% ↑

**An individual may have been tested in more than one health board area. The Wales total will be less than the sum of the health boards, and represents the total unique individuals tested in Wales

Source: Harm Reduction Database Wales, 2023

BBV screening coverage within Substance Misuse Services (KPI6²³)

In 2021-22, there were a total of 13,712 individuals in contact with substance misuse services and recorded on the Welsh National Database for Substance Misuse (WNDSM) and requiring routine BBV screening in Wales.

Testing coverage for Wales overall was 13.5%, down from 38.9% in 2019-20 with substantial geographic variation by Health Board of residence (Table 32). Analysis was not undertaken in 2020-21 due to COVID Pandemic restrictions.

²⁷ Welsh Government. 2017. [Welsh Health Circular WHC/2017/048](#)

²⁸ BBV screening data capture commenced in 2016, however, HCV-RNA confirmatory testing from a dried blood spot test was initiated in 2018. As such, data is routinely reported from this year on.

²⁹ **As an individual may have been tested in more than one health board area, the Wales total will be less than the sum of the health boards, but does represent the total unique individuals tested in Wales

Table 32 Testing coverage by Local Authority and Substance Misuse Area Planning Board 2021-22

	No. of current clients on WNDMS	No. of new clients on WNDMS	No. requiring HCV test	No. offered HCV test	% offered HCV test	No. HCV tested	% HCV tested
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
Western Bay							
Neath Port Talbot (1)	664	88	746	79	10.6%	72	9.7%
Swansea (1)	1,109	239	1,323	207	15.6%	166	12.5%
Western Bay	1,773	327	2,069	286	13.8%	238	11.5%
Cardiff and Vale							
Cardiff	1,890	105	1,976	508	25.7%	408	20.6%
Vale of Glamorgan	445	68	512	141	27.5%	128	25.0%
Cardiff and Vale	2,335	173	2,488	649	26.1%	536	21.5%
Cwm Taf Morgannwg							
Bridgend (1)	590	120	708	23	3.2%	19	2.7%
Merthyr	482	15	496	46	9.3%	30	6.0%
RCT	1,446	10	1,453	220	15.1%	106	7.3%
Cwm Taf Morgannwg	2,518	145	2,657	289	10.9%	155	5.8%
Dyfed							
Carmarthenshire	526	2	528	51	9.7%	49	9.3%
Ceredigion	256	2	256	17	6.6%	15	5.9%
Pembrokeshire	343	2	336	49	14.6%	48	14.3%
Dyfed	1,125	6	1,120	117	10.4%	112	10.0%
Gwent							
Blaenau Gwent	314	17	329	88	26.7%	73	22.2%
Caerphilly	654	12	662	120	18.1%	115	17.4%
Monmouthshire	333	0	333	63	18.9%	57	17.1%
Newport	801	1	798	178	22.3%	165	20.7%
Torfaen	290	0	289	57	19.7%	53	18.3%
Gwent	2,392	30	2,411	506	21.0%	463	19.2%
North Wales							
Conwy	467	60	527	67	12.7%	66	12.5%
Denbighshire	371	6	376	97	25.8%	97	25.8%
Flintshire	553	23	576	27	4.7%	27	4.7%
Gwynedd	602	8	610	41	6.7%	39	6.4%
Wrexham	613	13	626	42	6.7%	41	6.5%
Ynys Mon	411	7	411	47	11.4%	47	11.4%
North Wales	3,017	117	3,126	321	10.3%	317	10.1%
Powys							
Powys	552	10	557	165	29.6%	133	23.9%
Powys	552	10	557	165	29.6%	133	23.9%
WALES TOTAL	13,712	808	14,428	2,333	16.2%	1,954	13.5%

(1) The agencies within these areas are transitioning to the WCCIS system impacting on their ability to submit data.

(a) Number of clients in treatment on the WNDMS as at 1st April 2021

(b) Number of clients assessed on the WNDMS but not yet commenced treatment as at 1st April 2021

(c) = a + b - h

(d) Number of clients on the HRD with a last_test_date or last_declined_test_date between April 2021 and March 2022

(e) = d / c * 100

(f) Number of clients showing on the HRD where the last_test_date_any_result is between April 2021 and March 2022

(g) = f / c * 100

Source: WNDMS, DHCW, 2022

4.5.2 BBV reactivity / positivity among those engaged with substance misuse (SMS) and allied services

HIV Ab/Ag and HBsAg

Across Wales in every year 2016-2022, <1% of individuals tested for HBsAg and HIV Ag/Ab received a positive or reactive result.

HCV screening, anti-HCV reactivity and HCV-RNA positivity

Across all SMS and allied services in Wales 2018-2022, the proportion anti-HCV reactivity was 17.4% (Table 33) with substantial geographic variation in health board area of residence.

Table 33 HCV screening outcomes of SMS clients by health board of residence, type of test and year, 2018-2022

HealthBoard	Total screened for anti-HCV*	Total anti-HCV reactive	% Anti-HCV reactive	Total anti-HCV reactive receiving confirmatory PCR*	% anti-HCV reactive receiving confirmatory PCR	Total HCV PCR/RNA positive	% HCV PCR/RNA positive
Aneurin Bevan UHB	2239	260	11.6%	230	88.5%	113	49.1%
Betsi Cadwaladr UHB	1500	322	21.5%	228	70.8%	138	60.5%
Cardiff & Vale UHB	2406	314	13.1%	198	63.1%	98	49.5%
Cwm Taf Morgannwg UHB	1443	183	12.7%	120	65.6%	61	50.8%
Hywel Dda UHB	883	34	3.9%	8	23.5%	†	†
Powys Teaching HB	632	14	2.2%	6	42.9%	†	†
Swansea Bay UHB	1678	515	31%	436	84.7%	201	46.1%
Wales	9,246	1,612	17.4%	1,199	74.4%	603	50.3%

* with valid test result recorded on HRD

† not recorded due to small numbers (under 5)

Source: Harm Reduction Database Wales, 2023

Amongst those at highest risk of HCV infection and transmission, people who inject drugs (PWID), anti-HCV rates are twice as high (Table 34).

Table 34 Proportion of current and recent ex-PWID (injected in last 12 months) injecting psychoactive drugs, screened for hepatitis C antibodies and testing reactive by health board of residence, 2018-2022

	2018 - 2022		
	Total screened for anti-HCV*	Reactive	% anti-HCV reactive
Aneurin Bevan UHB	649	164	25.3
Betsi Cadwaladr UHB	734	286	39
Cardiff & Vale UHB	247	100	40.5
Cwm Taf Morgannwg UHB	400	148	37
Hywel Dda UHB	192	32	16.7
Powys Teaching HB	87	9	10.3
Swansea Bay UHB	534	276	51.7
Wales	2,483	861	34.7

* with valid test result recorded on HRD

† Includes only individuals reporting injecting psychoactive substances (i.e. Opioids or Stimulants)

Source: Harm Reduction Database Wales, 2023

Table 35 provides a profile of specific social and behavioural risk factors within the cohort of those screened with SMS and allied services. The age and sex distribution of anti-HCV reactive cases over time is shown in Figure 7.

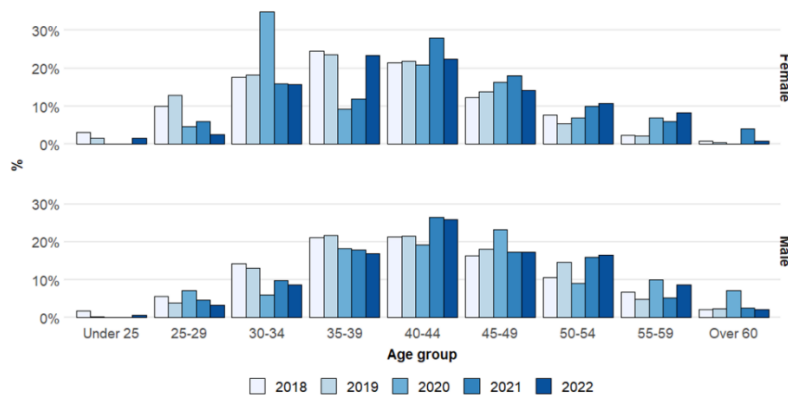
Table 35 Proportion of individuals receiving HCV screening with substance misuse and allied services, proportion anti-HCV reactive by demographics and risk factors, 2022

		Individuals screened for anti-HCV					Number and proportion anti-HCV reactive											
		N	Individuals (n)	Proportion of total (%)	0	25	50	75	100	Individuals screened with valid anti-HCV results	Individuals testing positive	% anti-HCV reactive	0	10	20	30	40	50
All clients screened		3381	3381	100%	<div><div></div></div>					2406	387	16.1%	<div><div></div></div>					
Age	Under 25 years	3381	189	5.6%	<div><div></div></div>					129	4	3.1%	<div><div></div></div>					
	25 - 49 years	3381	2493	73.7%	<div><div></div></div>					1782	286	16.0%	<div><div></div></div>					
	50 years and over	3381	699	20.7%	<div><div></div></div>					495	97	19.6%	<div><div></div></div>					
Gender	Male	3381	2348	69.4%	<div><div></div></div>					1677	267	15.9%	<div><div></div></div>					
	Female	3381	1029	30.4%	<div><div></div></div>					728	120	16.5%	<div><div></div></div>					
Substance use	Ever used drugs*	1699	1490	87.7%	<div><div></div></div>					969	148	15.3%	<div><div></div></div>					
	Ever injected drugs*	1625	753	46.3%	<div><div></div></div>					477	118	24.7%	<div><div></div></div>					
Substances injected (in last 12 months)	Injected Stimulants	656	198	30.2%	<div><div></div></div>					112	32	28.6%	<div><div></div></div>					
	Injected Heroin	656	557	84.9%	<div><div></div></div>					348	93	26.7%	<div><div></div></div>					
	Injected Stimulants and Heroin	656	144	22.0%	<div><div></div></div>					84	24	28.6%	<div><div></div></div>					
	Injected IPEDs	656	42	6.4%	<div><div></div></div>					32	1	3.1%	<div><div></div></div>					
Length of injecting career	New initiate (< 36 months)	581	67	11.5%	<div><div></div></div>					53	6	11.3%	<div><div></div></div>					
	3 - 10 years	581	157	27.0%	<div><div></div></div>					109	21	19.3%	<div><div></div></div>					
	>10 years	581	357	61.4%	<div><div></div></div>					233	54	23.2%	<div><div></div></div>					
Frequency of injecting	Injects daily	656	389	59.3%	<div><div></div></div>					236	73	30.9%	<div><div></div></div>					
	Does not inject daily	656	267	40.7%	<div><div></div></div>					177	32	18.1%	<div><div></div></div>					
Prison	Ever been in Prison*	1464	565	38.6%	<div><div></div></div>					364	79	21.7%	<div><div></div></div>					
	Ever used drugs in Prison	565	253	44.8%	<div><div></div></div>					161	41	25.5%	<div><div></div></div>					
	Ever injected in Prison	565	41	7.3%	<div><div></div></div>					23	7	30.4%	<div><div></div></div>					
Sexual History	Had sex in last 12 months*	1368	906	66.2%	<div><div></div></div>					582	73	12.5%	<div><div></div></div>					
	Had ≥ 2 partners in last 12 months	904	340	37.6%	<div><div></div></div>					233	34	14.6%	<div><div></div></div>					
	Men who have sex with men (MSM)	904	27	3.0%	<div><div></div></div>					16	2	12.5%	<div><div></div></div>					
	Exchanged money/drugs for sex	904	51	5.6%	<div><div></div></div>					36	7	19.4%	<div><div></div></div>					
	Recived money/drugs for sex	904	77	8.5%	<div><div></div></div>					46	13	28.3%	<div><div></div></div>					
Other	Blood transfusion prior to 1991*	1418	23	1.6%	<div><div></div></div>					19	3	15.8%	<div><div></div></div>					
	Ever assaulted involving blood contact *	1305	194	14.9%	<div><div></div></div>					132	29	22.0%	<div><div></div></div>					
	Needlestick injury*	1242	120	9.7%	<div><div></div></div>					76	21	27.6%	<div><div></div></div>					
Social economic profile	Non - Stable housing (inc NFA)	1377	406	29.5%	<div><div></div></div>					229	49	21.4%	<div><div></div></div>					
	NFA	1377	227	16.5%	<div><div></div></div>					138	28	20.3%	<div><div></div></div>					
	Unemployment	1438	934	65.0%	<div><div></div></div>					553	95	17.2%	<div><div></div></div>					

* refers to primary risk factor questions on the HRD

Due to variation between years, demographic and risk factor characteristics are reported in one year periods

Source: Harm Reduction Database Wales, 2023



Source: Harm Reduction Database Wales, 2023

Figure 7 Age and sex profile of anti-HCV reactive individuals engaged with substance misuse services in Wales by year, 2018-2022

Referral to clinical services and treatment outcomes

All HCV-RNA positive cases should be referred for clinical assessment and treatment. Initial outcomes following referral are shown in Table 36, and the outcome of cases referred and accepted into clinical specialist services 2018-2022, where recorded, in Table 37.³⁰

Table 36 Initial outcomes following referral of individuals tested for hepatitis C into clinical specialist services, 2018-2022

Health Board	Total individuals referred	Referral accepted by patient and seen by clinician	Referral declined by patient	Inappropriate referral†	Referral outcomes not known
Aneurin Bevan UHB	166	93	13	25	43
Betsi Cadwaladr UHB	176	9	6	3	160
Cardiff & Vale UHB	100	59	9	33	2
Cwm Taf Morgannwg UHB	89	62	5	12	14
Hywel Dda UHB	19	6	2	1	10
Powys Teaching HB	0	0	0	0	0
Swansea Bay UHB	187	11	8	159	11
Wales	737	240	43	231	240

† Includes individuals who require confirmatory PCR/RNA test in the community, individuals known to service and referred in previous years

*Individuals may be referred multiple times. Therefore health board and all Wales totals will may not sum

Source: Harm Reduction Database Wales, 2023

Table 37 Treatment outcomes for individuals referred and accepted into clinical specialist services, 2018-2022

	Referral accepted by patient and seen by clinician	Number requiring treatment	HCV treatment commenced	Treatment complete†
Aneurin Bevan UHB	93	75	45	12
Betsi Cadwaladr UHB	9	4	3	3
Cardiff & Vale UHB	59	39	31	21
Cwm Taf Morgannwg UHB	62	10	13	6
Hywel Dda UHB	6	2	1	0
Powys Teaching HB	0	0	0	0
Swansea Bay UHB	11	4	4	1
Wales	240	134	97	43

† Where recorded on the HRD

Source: Harm Reduction Database Wales, 2023

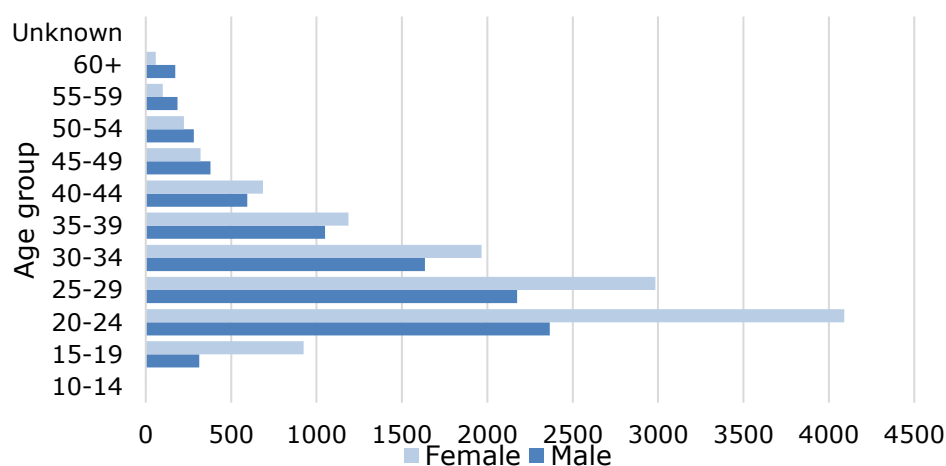
³⁰ Not all HCV clinical treatment teams record referral outcomes on the Harm reduction Database and as such the actual number of referrals resulting in HCV treatment pathway initiation may be higher.

4.6 BBV testing and diagnosis via the Test and Post Scheme and sexual health clinical services

4.6.1 Test and Post Scheme

Public Health Wales in collaboration with Welsh Government and Health Board sexual health services established a postal testing service for BBVs and sexually transmitted infections. People screened positive are referred to appropriate treatment services for confirmation. Data on BBV testing and reactivity are included here.

A total of 24,080 individuals in Wales were tested for BBVs (HBsAg, HIV Ab/Ag and anti-HCV) via the Test and Post Scheme in 2022. The age and gender profile can be seen in Figure 8. Females accounted for more tests, with a ratio of 3:2 female to male. The majority of tests were completed by younger people in the 20-24 and 25-29 years age groups accounting for (30% and 24% respectively).



Source: Test and post Scheme, 2023

Figure 8 Number of individuals tested for any BBV via the Test and Post scheme, by age group and gender, 2022

The Health Board of residence of individuals tested can be seen in Table 38, with the majority of individuals living within the Cardiff and Vale UHB area.

Table 38 Number of individuals and the proportion tested for any BBV using the Test and Post scheme, by Health Board of residence, 2022

Health Board	Number of individuals	
	tested	Proportion
Aneurin Bevan UHB	2,857	12%
Betsi Cadwaladr UHB	3,712	15%
Cardiff and Vale UHB	6,293	26%
Cwm Taf Morgannwg UHB	2,195	9%
Hywel Dda UHB	2,491	10%
Powys Teaching HB	650	3%
Swansea Bay UHB	2,916	12%
Unknown	2,966	12%

Source: Test and Post Scheme, 2022

Reactivity/positivity

383 (2%) received a reactive or positive result, shown in Table 39, with more individuals receiving a positive test for HBsAg. **N.B. It is not possible to identify those who were already aware of their HIV Ab/Ag positive and/or HBsAg status and retested.** Further development work is underway to distinguish new and existing HIV case status.

Table 39 Number of individuals receiving a positive or reactive result, by BBV, 2022

	BBV	Tested	Positivity % (n)
Hepatitis B (HBsAg)		23,160	1.1% (260)
Hepatitis C (anti-HCV & HCV-RNA)		23,029	0.2% (57)
HIV (Ag/Ab)		23,743	0.5% (125)

Source: Test and post Scheme, 2023

The demographic profile of those recording reactive or positive BBV tests, by BBV is shown in Table 40:

- hepatitis B (HBsAg), positivity was higher in: males; those aged 45-49; and those resident in Powys Teaching HB
- hepatitis C (anti-HCV or HCV-RNA), positivity/reactivity was higher in males; those over the age of 60; and those living in Swansea Bay UHB
- For HIV (Ag/Ab)³¹, positivity was higher in males; those aged 55-59; and those living in Aneurin Bevan and Cwm Taf Morgannwg UHB areas.

Table 40 Demographic profile of individuals with positive or reactive tests by BBV, 2022

	Hepatitis B	Hepatitis C	HIV
All	1.1%	0.2%	0.5%
Female	1.1%	0.2%	0.5%
Male	1.2%	0.3%	0.6%
10-14	0.0%	0.0%	0.0%
15-19	0.7%	0.2%	0.7%
20-24	0.9%	0.1%	0.5%
25-29	1.0%	0.1%	0.4%
30-34	1.5%	0.3%	0.4%
35-39	1.3%	0.7%	0.8%
40-44	1.1%	0.2%	0.9%
45-49	1.9%	0.4%	0.5%
50-54	0.9%	0.2%	0.4%
55-59	1.3%	1.0%	1.0%
60+	0.4%	1.6%	0.8%
ABUHB	1.4%	0.1%	0.6%
BCUHB	1.1%	0.3%	0.5%
CTMUHB	1.2%	0.1%	0.6%
CVUHB	1.0%	0.3%	0.5%
HDUHB	0.9%	0.2%	0.3%
PTB	2.0%	0.2%	0.5%
SBUHB	1.0%	0.4%	0.4%

Source: Test and post Scheme, 2023

³¹ N.B. It is not possible to identify those who were already aware of their HIV Ab/Ag positive status and retested.

Co-infections

Fifteen percent of those with any positive or reactive result were positive for HBsAg and HIV Ag/Ab (Table 41). It is not possible to establish whether BBV status was already known prior to testing.

Table 41 Number and proportion of individuals with a positive or reactive result, by BBV and combination of BBVs, 2022

	Number of BBV individuals	Proportion
Hepatitis B (HBsAg) only	202	53%
Hepatitis C (anti-HCV or HCV-RNA) only	56	15%
HIV (Ag/Ab) only	66	17%
HIV (Ag/Ab) & Hepatitis B (HBsAg)	58	15%

Source: Test and Post Scheme, 2023

4.6.2 Sexual Health Clinic

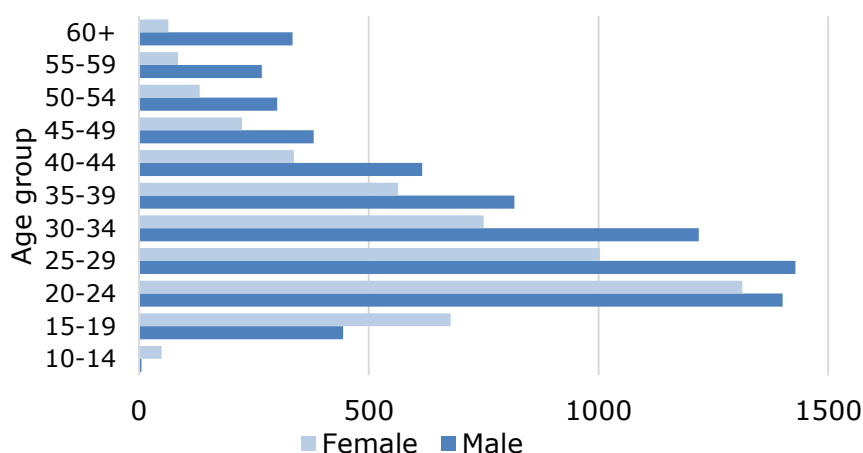
Individuals attending sexual health clinics (SHCs) may be offered a BBV test if symptomatic or at risk. A total of 12,452 individuals were tested for one or more BBV. In 2022:

- 12,111 (97%) tested for HIV,
- 3,859 (31%) tested for HBV (anti-HBc and HBsAg) and HCV (anti-HCV/HCV-RNA)

The age and gender profile of individuals tested within SHC is shown in Figure 9. The highest number of individuals attended SHCs in Cardiff and Vale UHB (Table 42).

Of the 3,859 individuals tested for both hepatitis B and hepatitis C in SHCs: 9 (0.2%) received a positive hepatitis B result and 6 (0.2%) received a positive hepatitis C result.

Figure 9 Number of individuals tested for any BBV at SHCs, by age group and gender, 2022



Source: SWS, 2023

Table 42 Number of individuals and the proportion tested for any BBV in SHCs, by Health Board of clinic attendance, 2022

Health Board	Number of individuals tested	Proportion
Aneurin Bevan UHB	2,749	22%
Betsi Cadwaladr UHB	2,540	20%
Cardiff and Vale UHB	3,562	29%
Cwm Taf Morgannwg UHB	1,262	10%
Hywel Dda UHB	268	2%
Powys Teaching HB	no SHC	
Swansea Bay UHB	2,071	17%

Source: SWS, 2023

5 Treatment

5.1 HIV

5.1.1 People living with HIV

The prevalence of individuals living with HIV in Wales per 100,000 population was 69.7 per 100,000 population in 2021, lower than that of England (161.7 per 100,000 population) but slightly higher than the rate in Northern Ireland (68.0 per 100,000 population) as shown in Table 43. However, caution should be used when interpreting 2020 and 2021 rates due to the impact of COVID restrictions on HIV data provision across the UK.

The majority of individual receiving treatment are: male; those aged 35-49; and those of White ethnicity (Table 44). The rate per 100,000 is consistently higher in males than females (Table 45).

Table 43 Number and Rate per 100,000 population of people living with HIV in the UK, by country and year, 2017-2021

Country/Region	2017		2018		2019		2020		2021	
	Number of individuals living with HIV	Rate	Number of individuals living with HIV	Rate	Number of individuals living with HIV	Rate	Number of individuals living with HIV	Rate	Number of individuals living with HIV	Rate
England	86,223	155.0	87,343	156.0	90,504	160.8	88,786	157.0	91,432	161.7
Northern Ireland	1,067	57.0	1,112	59.1	1,144	60.4	1,212	63.9	1,295	68.0
Scotland	4,591	84.6	4,723	86.9	4,878	89.3	-	-	-	-
Wales	2,097	67.1	2,192	69.8	2,373	75.3	2,424	76.5	2,163	69.7
Total	93,978	142.3	95,370	143.6	97,238	145.6	92,422	137.8	94,890	141.6

Source: SOPHID and UKHSA, 2022

Table 44 Demographic profile of those living with HIV in Wales, by year, 2017-2021

	2017	2018	2019	2020	2021
Total	2,097	2,192	2,373	2,424	2,163
Female	489	509	545	559	493
Male	1,608	1,683	1,826	1,865	1,617
0-14	<5	<5	7	6	0
15-24	<65	<55	<60	<50	33
25-34	313	321	331	328	257
35-49	880	898	958	957	852
50-64	702	761	840	885	821
65+	136	156	181	199	200
White	1,610	1,681	1,779	1,809	1,581
Black African	318	317	329	337	288
Black Caribbean	7	6	9	7	8
Black Other	33	36	41	42	38
Asian	54	63	64	65	57
Other or mixed	58	60	66	64	58

Source: SOPHID and UKHSA, 2022

Table 45 Rate per 100,000 of individuals living with HIV and resident in Wales, by year, 2017-2021

	2017	2018	2019	2020	2021
Total	67.1	69.8	75.3	76.5	69.7
Female	30.9	32.0	34.1	34.8	31.1
Male	104.4	111.0	117.5	119.3	106.4

Source: SOPHID and UKHSA, 2022

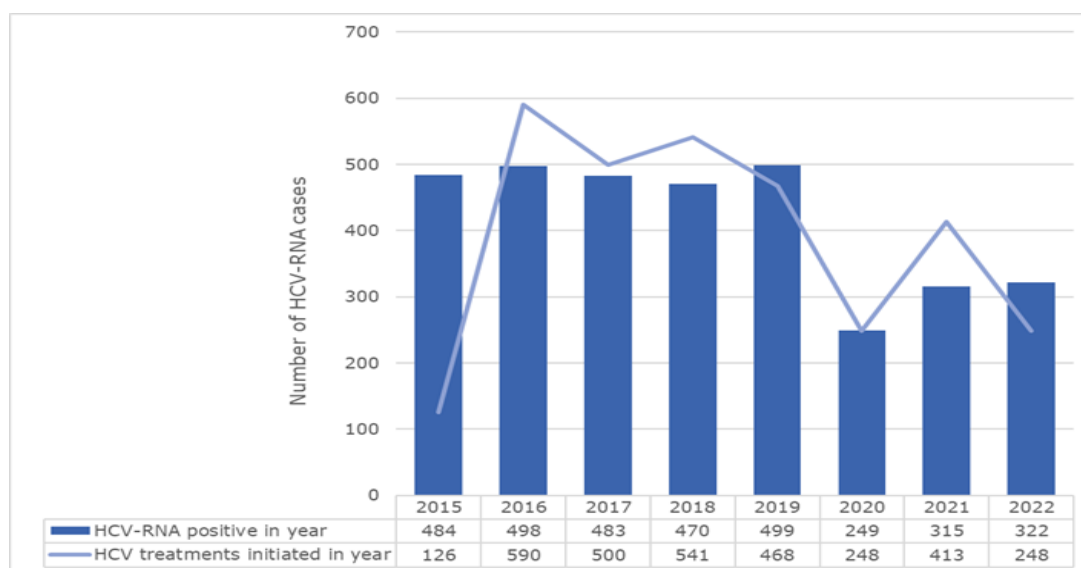
5.2 People receiving treatment for Hepatitis C

5.2.1 Wales – all HCV-RNA positive cases

Prior to 2022, HCV treatment data was provided at health board level. From 2022, HCV treatment data is drawn centrally via the HCV e-form Welsh Clinical Portal and as such may be subject to change over time (see Appendix A for methodology and data quality issues)

Since 2015, a total of 3320 individuals have been diagnosed with chronic HCV infection requiring treatment, including those diagnosed with HM Prisons and specialist substance misuse and allied services. Robust data are not currently available for those diagnosed and/or referred to treatment prior to 2015, however, 3,777 individuals have been referred to HCV treatment since 2015, including multiple referrals.

A total of 3,134 individuals have initiated treatment since 2015.³² Figure 10 shows the comparison of the number of newly diagnosed HCV-RNA cases requiring treatment in year and the number initiating treatment in year.³³



Source: LIMS, Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2023

Figure 10 Number HCV-RNA diagnosed cases in year and number of individuals initiating HCV treatment in year, 2015-2022

The number of individuals starting HCV treatment by health board of residence is shown in Table 46.³⁴ In addition to these a total of 10 people are recorded as starting treatment within HM Prisons in Wales and 25 individuals resident in the Powys Teaching HB area³⁵ over the 8 year period.

³² Of the 3134 initiating treatment, 2,843 individuals (91%) have at least one treatment start date with a further 291 having evidence of treatment but no recorded treatment start date

³³ N.B. The individuals initiating treatment in a given year should not be assumed to be the same individuals as those diagnosed HCV-RNA positive in that year. Individuals diagnosed prior to 2015 may be included within the treatment cohort.

³⁴ Due to data quality issues and changes in data access this data may be subject to change – See Appendix A

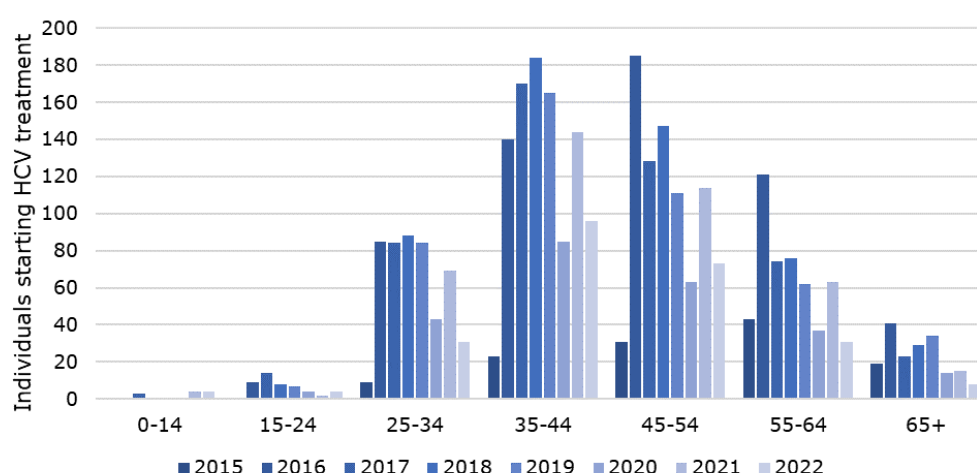
³⁵ Patients initiating HCV treatment are not included in table 42 due to low numbers per year and risk of deductive disclosure

Table 46 Number of individuals starting HCV treatment by health board area of residence and year, 2015-2022

	2015	2016	2017	2018	2019	2020	2021	2022
Aneurin Bevan UHB	11	96	125	70	34	14	133	11
Betsi Cadwaladr UHB	24	113	105	116	113	48	22	42
Cardiff & Vale UHB	41	93	100	178	140	91	95	81
Cwm Taf Morgannwg UHB	15	61	36	66	44	19	12	8
Hywel Dda UHB	17	67	58	30	40	12	14	1
Swansea Bay UHB	18	54	28	75	91	57	96	97
Unknown	0	101	48	2	0	0	29	7

Source: Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2023

Trends in age group of individuals starting treatment can be seen in Figure 11.³⁶



Source: Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2023

Figure 11 Number of individuals starting HCV treatment by age group and year, 2015-2022

5.2.2 HCV treatment initiation amongst those engaged with substance misuse services

Those individuals engaged with specialist substance misuse services and diagnosed HCV-RNA positive and referred to HCV treatment and represent a sub-set of the overall Wales treatment figures.

A total of 737 individuals have been referred to treatment services. Twenty individuals required further HCV-RNA confirmatory testing and the remaining 717 HCV-RNA confirmed cases required HCV treatment initiation, representing 21.6% of all confirmed cases in Wales requiring HCV treatment since 2015.

Of these 363 (51%) are recorded as commencing HCV treatment. Table 47 shows the profile of numbers and proportion starting treatment by Health Board area of residence.

³⁶ Age group was not available where date of birth was missing (1%).

Table 47 Number of individuals engaged with substance misuse and allied services HCV-RNA positive, and the number and proportion starting HCV treatment by health board area of residence and years, 2016-2022 (combined)

Health Board of residence	Number of individuals		Proportion % started treatment
	HCV-RNA Positive 2016-2022	Number starting HCV treatment	
Aneurin Bevan UHB	112	70	63%
Betsi Cadwaladr University HB	176	64	36%
Cardiff & Vale University HB	90	66	73%
Cwm Taf Morgannwg UHB	90	40	44%
Hywel Dda UHB	3	1	33%
Powys Teaching HB	2	0	0%
Swansea Bay UHB	217	110	51%
Unknown	27	12	44%
Total	717	363	51%

Source: Harm Reduction Database Wales, Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2023

6 Appendices

6.1 Appendix 1 – HCV treatment data methods and data quality issues

Prior to 2022, all health board Treatment records for patients in Wales were shared with PHW via Health Board excel lists and, for some health boards, submissions via the HCV electronic e-form via the Welsh Clinical Portal.

All records from both sources were then collated and de-duplicated by first name, second name and year of treatment start. Date of birth and NHS number were not consistently available and therefore could not be used for deduplication. Where individuals are listed but do not have a treatment start date, individuals are considered referred but not yet started treatment. Due to discrepancies in name entries for a unique individual, manual deduplication was necessary reduce artificial enhancement of the number of individuals treated each year. Therefore, human error may have impacted the figures presented.

Furthermore, from January 2022 onwards, only treatment records submitted on the electronic e-form are included in reporting. It is possible that the figure for 2022 is currently artificially low due to records being recorded locally but not on yet recorded via the HCV e-form. Figures will be updated retrospectively in future reports.