Trends in the prevention, diagnosis and treatment of blood borne viruses in Wales:

Hepatitis B, hepatitis C and HIV

Annual report 2024

(Data to end 2023)

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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Purpose

This report provides information on the epidemiology, prevention and control of hepatitis B, hepatitis C and HIV in Wales to end of 2023. The report is aimed at policy makers, health service clinicians and planners, commissioners, criminal justice, third sector agencies and academia.

Glossary of key abbreviations

Anti-HBc	Hepatitis B Core Antibody
Anti-HCV	Hepatitis C Virus Antibody
Anti-HIV	Human Immunodeficiency Virus Antibody
BBV	Blood Borne Virus
DBST	Dried Blood Spot Test
EASR	European Age Standardised Rate
HBV	Hepatitis B Virus
HBsAg	Hepatitis B Virus Surface Antigen
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
PCR	Polymerase Chain Reaction
POCT	Point of Care Test
PWID	People who Inject Drugs
RNA	Ribonucleic Acid
SWS	Sexual Health in Wales Surveillance Scheme
WHO	World Health Organisation
WNDSM	Welsh National Database for Substance Misuse

The data found in this report has been collected from a number of sources, including:

- NHS Wales laboratory Information Management system (LIMS)
- Harm Reduction Database (HRD)
- Sexual Health in Wales Surveillance Scheme (SWS)

Where required, population data has been sourced from the ONS's mid-year population estimates 2022.

A full description of all data sources can be found at the end of this report, in Appendix A.

1 Executive summary

1.1 Key findings and trends

1.1.1 Recovery from COVID-19 pandemic restrictions

- Blood Borne Virus (BBV) screening and diagnosis rates fell during the COVID-19 pandemic, due to service access restrictions, laboratory capacity and staff redeployment. Screening levels have since recovered and continued to increase in 2023, exceeding pre-pandemic levels for hepatitis C virus (HCV) and hepatitis B virus (HBV) and HIV for the first time
- Rates of treatment for people either newly diagnosed with HIV or living with HIV were maintained during this period. HCV treatment levels declined by 47% in 2020 and whilst recovering, remain lower than pre-pandemic levels in 2023.

1.1.2 WHO and UNAIDS elimination indicators

- Wales is making good progress to meet the World Health Organisation target of eliminating hepatitis B and hepatitis C as a significant public health threat by 2030, and UNAIDS 95:95:95 targets for HIV, however, there remains work to be done. Progress to elimination targets is outlined in Appendix B and includes collaborative modelling efforts with the other UK nations.

1.1.3 Hepatitis B (HBV)

- New diagnoses of hepatitis B increased slightly in the past year. There were 261 new diagnoses of chronic hepatitis B and 13 new diagnoses of acute hepatitis B in Wales in 2023, compared to 249 and 9, respectively, in 2022
- Where sex was known, males represented 38% of the individuals screened. However, they accounted for 61% of newly diagnosed chronic HBV infections
- While screening was most common among individuals between 30-39 years of age, positivity was highest within the 40-49 years age group
- Aneurin Bevan University Health Board had the highest proportion of individuals screened with a positive result in 2023 while Powys Teaching Health Board had the lowest
- Uptake of vaccinations in babies born to HBV positive mothers has increased in 2022-23 compared to 2021-22. 100% of children at risk of perinatal infection and who reached their first birthday received three doses, 76.7% of those reaching their second birthday received four doses, and 85.7% of those reaching their fifth birthday received four doses. Routine data collection of HBV vaccination status in substance misuse services and prisons remains incomplete

1.1.4 Hepatitis C (HCV)

- Presence of hepatitis C antibody is an indication of past exposure to the virus. The proportion of hepatitis C antibody (anti-HCV) reactive cases among newly tested individuals has decreased by 0.8 percentage points, from 2.0% to 1.2% over the period 2015-2023, despite relatively stable testing levels
- Presence of HCV-RNA indicates active infection. The proportion of individuals with an HCV-RNA positive result following an anti-HCV reactive test has decreased substantially from 61.5% in 2015 to 23.9% in 2023. This decrease may reflect improved uptake of treatment, more effective treatment, and increased testing

and diagnosis, including routine opt-out BBV testing within substance misuse and prison settings
- Over a third (36.1%) of those with an anti-HCV reactive result recorded since 2015 have not received a follow up HCV-RNA test indicating that loss to follow-up remains a challenge
- There were 304 new diagnoses of HCV-RNA in Wales, compared to 324 in 2022
- The European Age Standardised Rate (EASR) of new hepatitis diagnoses has been highest in Swansea Bay University Health Board since 2015. However, this rate has fallen from 66.7 to 26.6 new cases per 100,000 population between 2015 to 2023
- Among individuals with a first diagnosis of HCV-RNA in 2022 or 2023, 58.7% initiated treatment, of whom 36.9% achieved a recorded sustained virologic response (SVR), indicating clearance of the virus

1.1.5 Hepatitis B and C related mortality

- Between 2015 and 2023 there has been a reduction in deaths associated with HBV and HCV in Wales.
- Highest mortality rates associated with these viruses are observed in males and those aged 55 and over
- Small number of deaths, particularly for HBV, necessitates caution when interpreting trends, and limits further analyses

1.1.6 Human immunodeficiency virus (HIV)

- There were 101 new diagnoses of HIV for those living in Wales in 2022, the latest validated data available. This was 48% 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 2018 from a rate of 4.7 per 100,000 population to a rate of 1.9 in 2022. This is lower than the rate in England and Scotland (6.7 and 6.0 respectively). No equivalent data are available for Northern Ireland for this period
- Between 2018 and 2020, where route of likely transmission was reported, most cases reported transmission via sex between men. However, since 2021, the majority of cases have reported transmission via heterosexual sex
- In 2022, 75% of individuals living with HIV in Wales were male, consistent with previous years
- The prevalence of individuals living with HIV per 100,000 population was 80.7 per 100,000 population in 2022, lower than that of England and Scotland (165.3 and 95.8 per 100,000 population respectively)
- CD4 cells are a type of white blood cell that help fight infection. In newly diagnosed HIV, a CD4 count of less than 350 indicated late diagnosis and a count of less than 250 indicated a very late diagnosis. Where CD4 data were available, 42% of new diagnoses were considered a late diagnosis. However, CD4 data was only available for 54% of diagnoses

2 Aetiology

2.1 Hepatitis B (HBV)

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 childhood[1] 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 occurring[2]:

- 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

2.2 Hepatitis C (HCV)

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.

2.3 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 commonly, transmission from mother to baby.

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[1] 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

[2] 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

3 Prevention programmes

3.1 Hepatitis B vaccinations

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 at least 95% uptake of the 6 in 1 immunisation, with 95% uptake in one year old children in 2022-23.[3]

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 100%, uptake of four doses in children who reached their second birthday was 76.7% and uptake of four doses in children who had reached their fifth birthday was 85.7%, as shown in Table 1.

Table 1 - Uptake of hepatitis B immunisation in children born to hepatitis B positive mothers reaching their 1st, 2nd, and 5th birthdays 01/04/2022 to 31/03/2023 and resident in Wales on 31/03/2023.

	1 year					2 years						5 years					
Area	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	6089	4	100.0	100.0	100.0	5917	6	100.0	100.0	100.0	83.3	6847	6	100.0	100.0	100.0	83.3
Betsi Cadwaladr	6279	3	100.0	100.0	100.0	6215	3	100.0	100.0	100.0	100.0	7186	9	100.0	100.0	100.0	100.0
Cardiff & Vale	5126	7	100.0	100.0	100.0	4917	14	100.0	100.0	100.0	73.3	5658	22	100.0	95.5	95.5	72.7
Cwm Taf Morgannwg	4338	0	0.0	0.0	0.0	4329	3	100.0	100.0	100.0	100.0	4948	7	100.0	100.0	100.0	100.0
Hywel Dda	3184	2	100.0	100.0	100.0	3281	1	100.0	100.0	100.0	50.0	3779	1	100.0	100.0	100.0	100.0
Powys	1077	0	0.0	0.0	0.0	1063	0	0.0	0.0	0.0	0.0	1237	0	0.0	0.0	0.0	0.0
Swansea Bay	3495	6	100.0	100.0	100.0	3420	3	100.0	100.0	100.0	100.0	4134	4	100.0	100.0	100.0	100.0
Unknown	13	0	0.0	0.0	0.0	18	0	0.0	0.0	0.0	0.0	6	0	0.0	0.0	0.0	0.0
Wales	29601	22	100.0	100.0	100.0	29160	30	100.0	100.0	100.0	76.7	33795	49	100.0	97.7	93.0	85.7

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), 2023[4]

[3] Public Health Wales. Immunisation and vaccines: COVER Annual Report 2023. 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-2023

[4] Public Health Wales Vaccine Uptake in Children in Wales. COVER Annual Report 2023, Data for the year ending 31st March 2023 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-2023/

3.1.3 Immunisation of service users engaged with substance misuse services

According to the Harm Reduction Database Wales, Hepatitis B vaccination status of, and vaccination provision to, those engaged with specialist substance misuse services indicate very low levels of completion and coverage within services. Of the 6,574 individuals with a valid test result, 22 were recorded as having received the vaccination on site, 7 were referred to a third party, and 7 received the vaccination elsewhere. For the majority of services, vaccination is not provided on site or referral is recorded as 'refused', and caution should be used when interpreting these numbers.

3.1.4 Immunisation of people in prison

Hepatitis B vaccination provision to people in prison is recommended in line with NICE guidance.[5] 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 prisons.[6] 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.

3.2 Needle and syringe programmes (NSP)

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 most of the new and ongoing hepatitis C infection in the UK. 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.

During the COVID-19 pandemic, NSP services experienced substantial disruption. Subsequent data on NSP activity and the number of individual PWID accessing services indicate substantial changes in behaviour relating to injecting and access of sterile injecting equipment. Consequently, further work is required to understand the nature of the change in trends and no annual report of NSP activity will be published for 2023-24. Detailed NSP activity data across Wales for 2021-22 are available here: https://phw.nhs.wales/publications/publications1/needle-and-syringe-programme-activity-in-wales-annual-report-2021-22/

The term 'coverage rate' refers to the proportion of injecting events where sterile injecting equipment is used. NICE Guidance recommends a coverage rate of just over 100% to account for 'mishits' and accidental droppage/contamination. For 2023, a crude coverage estimate was calculated indicating that a mean number of 127 sterile syringes were provide per PWID injecting psychoactive drugs (opioids, stimulants etc) per year, a

[5] NICE. Physical health of people in prison; 2017. Available from: https://www.nice.org.uk/guidance/qs156
[6] 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

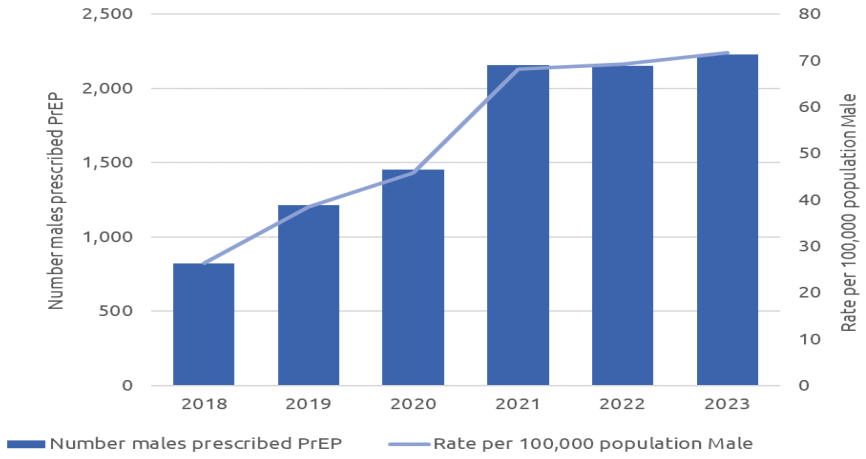
rate of 34.8% based on the assumption of one injection per day. It should be noted that the vast majority of PWID inject more than once per day.

3.3 Pre–Exposure prophylaxis for HIV

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 prescribed.[7] The increase in the use of PrEP, due to widening accessibility, coincides with the downward trajectory of new HIV cases in the UK.[8]

Since 2018:

- A total of 4,090 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 71.7 per 100,000 population (males) in 2023 as shown in Table 2
- Cardiff and Vale University Health Board has consistently provided the highest proportion of PrEP over the past five years (Table 2), and in the last year accounted for 44% (197.7 per 100,000 population)
- Overall, the majority of individuals were male (98%), within 25-34 age group (35%) (Figure 2) and of White ethnicity (52%). Ethnicity was not recorded for 17% of individuals
- The majority of individuals prescribed PrEP were MSM (84%)



Source: SWS, 2024

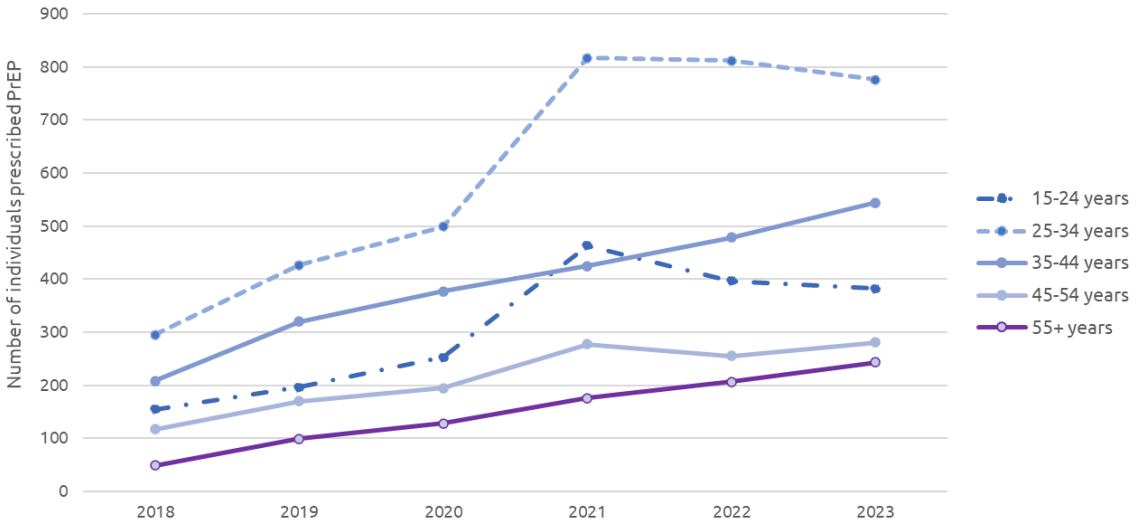
Figure 1 - Number and rate per 100,000 population (male) prescribed PrEP in sexual health clinics, by year 2018 to 2023[9]

[7] CDC (2024) HIV Basics: Prep Effectiveness. https://www.cdc.gov/hiv/prevention/prep.html
[8] UK Health Security Agency (2023) HIV: Annual Data Tables. https://www.gov.uk/government/statistics/hiv-annual-data-tables
[9] 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 by Health Board clinic attendance[10] and year, 2018 to 2023.

Health Board of clinic attendance	2018		2019		2020		2021		2022		2023	
	n	rate	n	rate	n	rate	n	rate	n	rate	n	rate
Aneurin Bevan	159	26.9	233	39.2	218	36.4	264	44.1	358	60.9	379	64.4
Betsi Cadwaladr	148	21.2	192	27.4	197	28.0	246	35.0	320	46.6	279	40.6
Cardiff & Vale	254	51.2	439	87.7	709	140.5	1,278	253.3	952	193.5	973	197.7
Cwm Taf Morgannwg	68	15.3	76	16.9	47	10.4	62	13.8	100	22.6	91	20.6
Hywel Dda	44	11.4	54	13.9	49	12.6	30	7.7	42	11.0	46	6.5
Swansea Bay	151	38.8	218	55.9	232	59.3	278	71.1	378	99.5	458	120.6
Wales	**824**	26.3	**1,212**	38.4	**1,452**	45.8	**2,158**	68.1	**2,150**	69.2	**2,226**	71.7

Source: SWS, 2024



Source: SWS, 2024

Figure 2 - Number of individuals prescribed PrEP, by age group, 2017 to 2023, Wales [11]

Table 3 - Individuals prescribed PrEP in Wales, by age group, 2017 to 2023.

	2018	2019	2020	2021	2022	2023
15-24 years	155	196	253	463	397	382
25-34 years	295	427	499	817	812	776
35-44 years	208	320	377	425	479	544
45-54 years	117	170	195	277	255	281
55+ years	49	99	128	176	207	243
Total	**824**	**1212**	**1452**	**2158**	**2150**	**2226**

Source: SWS, 2024

[10] Where health board area of residence is not clearly reported, the Health Board of clinic attendance is used as a proxy.
[11] N.B. Individuals may be present in multiple years where a prescription is active over more than one financial year.

4 Screening and diagnosis

4.1 Hepatitis B (HBV)

4.1.1 Hepatitis B testing

Overview

Hepatitis B screening is predominately undertaken using a hepatitis B surface antigen test (HBsAg), with a positive result indicating that an individual is infected with either acute or chronic hepatitis, established by further and repeat testing.

In 2023, 85,390 unique people, without prior history of infection, were screened for hepatitis B using a surface antigen test (not including people tested in sexual health clinics[12]). This represents a rate of 2,750 people screened per 100,000 population and a 12% increase compared to the previous year. The number of unique people screened has increased year on year since 2015, excluding the COVID–19 pandemic, where screening declined slightly.

As shown in Table 4, of those people tested in 2023, 318 had a positive HBsAg result (0.37%) and were therefore infected with hepatitis B (chronic or acute). This proportion is consistent with the rate reported for 2022 (0.38%) and slightly higher than 2019, the last complete year prior to the pandemic (0.32%). Since 2015, the number of people with a positive result has decreased whilst the number of people screened has increased.

Table 4 - Unique people, without prior history of infection, screened for hepatitis B using HBV surface antigen and those testing positive, by year of specimen collection, 2015 to 2023.

Year of Test	People screened	People screened per 100,000 population	95% confidence intervals[a]	Unique people with positive result	Positivity (%)	95% confidence intervals[a]
2015[b]	67,446	2176	2160 - 2193	401	0.59	0.54 - 0.66
2016	68,613	2204	2188 - 2220	317	0.46	0.41 - 0.52
2017	71,373	2284	2267 - 2300	332	0.47	0.42 - 0.52
2018	73,623	2346	2329 - 2363	280	0.38	0.34 - 0.43
2019	75,998	2410	2394 - 2427	244	0.32	0.28 - 0.36
2020	60,941	1923	1908 - 1938	170	0.28	0.24 - 0.32
2021	71,421	2300	2283 - 2317	187	0.26	0.23 - 0.30
2022	76,169	2432	2415 - 2449	290	0.38	0.34 - 0.43
2023	85,390	2727	2709 - 2745	318	0.37	0.33 - 0.42

[a]Confidence intervals calculated using the Wilson method.

[b]A history of prior infection has been established using all testing data since 2013. Therefore, data on people tested and people testing positive in 2015 may be over reported.

Source: LIMS, 2024

[12] Due to testing in sexual health clinics is offered and recorded anonymously, therefore, the extent of any cross over between the two groups is unknown.

Screening by Health board

Whilst all health boards have reported an increase in people screened since 2015, there has been variation between rates of HBV screening across Wales (Table 5 and Figure 3). In 2023, the highest rates of screening were recorded in Cardiff and Vale UHB with a 2,969 people screened per 100,000 population with the lowest reported in Powys (1,004 people screened per 100,000 population). Screening rates in Powys may be underreported due to Welsh residents near the border accessing services within England and therefore not appearing within these data.

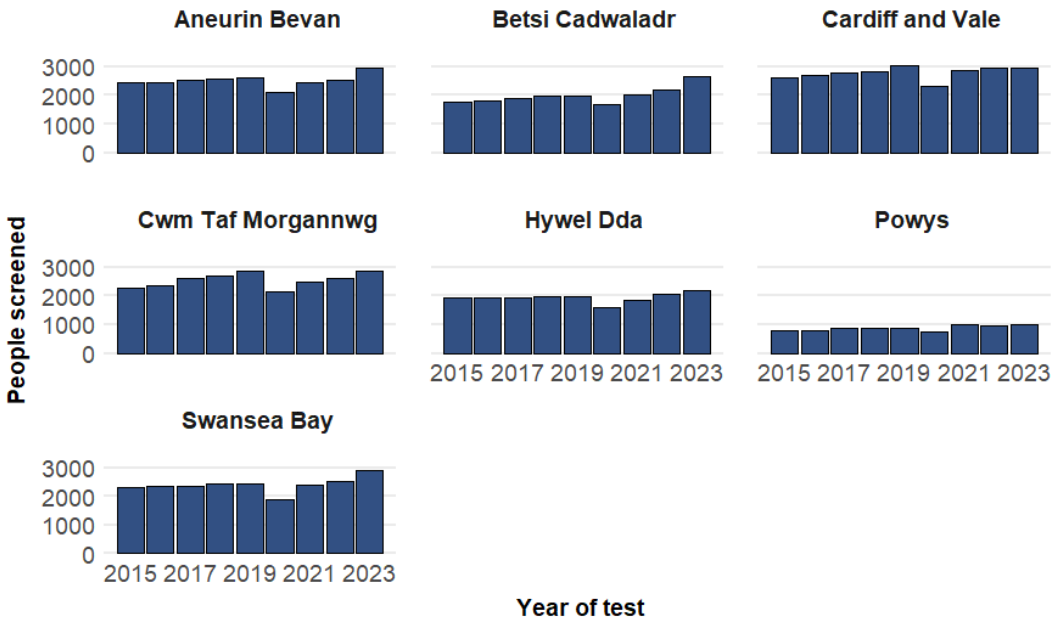
Table 5 - Unique people, without prior history of infection, screened for hepatitis B using HBV surface antigen (HBsAg) and those testing positive in 2023, by health board

Health Board	People screened	People screened per 100,000 population	95% confidence intervals[a]	Unique people with positive result	Positivity (%)	95% confidence intervals[a]
Aneurin Bevan	17,499	2959	2916 - 3002	113	0.65	0.54 - 0.78
Betsi Cadwaladr	18,394	2673	2635 - 2711	56	0.30	0.23 - 0.40
Cardiff and Vale	15,010	2969	2922 - 3016	77	0.51	0.41 - 0.64
Cwm Taf Morgannwg	12,830	2889	2841 - 2939	22	0.17	0.11 - 0.26
Hywel Dda	8,472	2200	2154 - 2247	14	0.17	0.10 - 0.28
Swansea Bay	11,137	2904	2852 - 2958	31	0.28	0.20 - 0.39
Outside Wales/Powys	2,289	NA	NA - NA	5	0.22	0.09 - 0.51
Unknown	11	NA	NA - NA	0	0.00	0.00 - 0.00

[a]Confidence intervals calculated using the Wilson method.

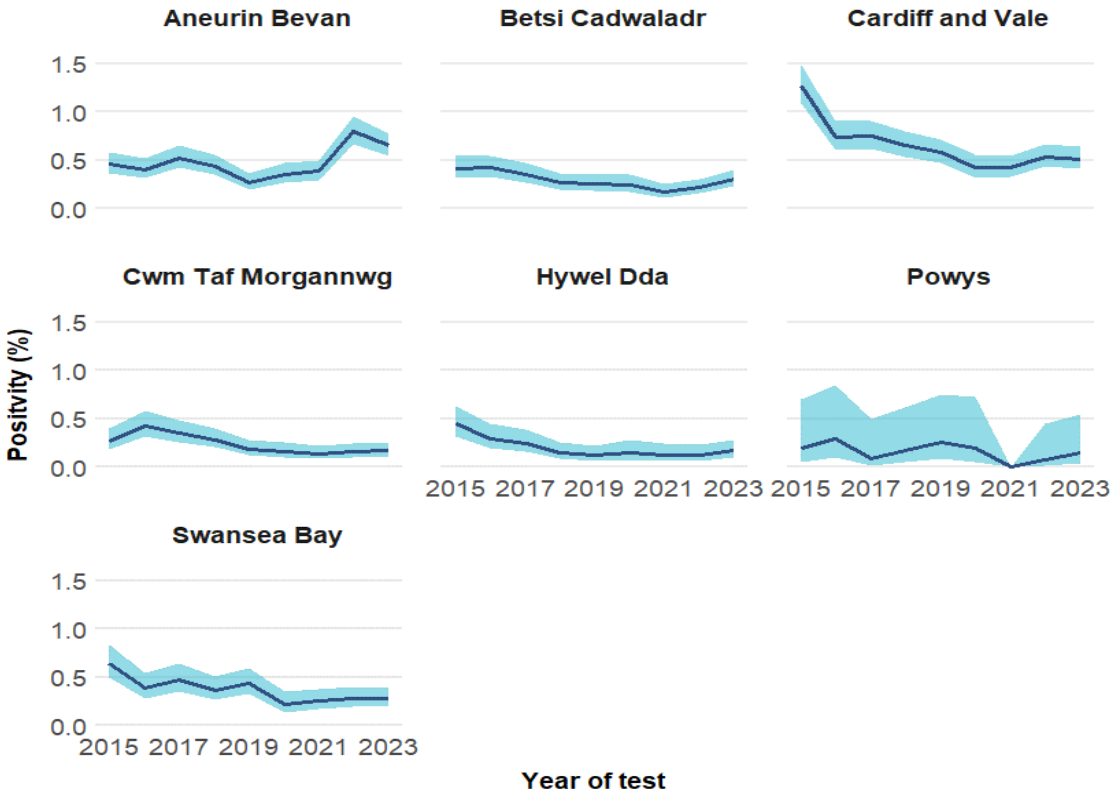
Source: LIMS, 2024

The highest proportion of HBsAg positive results was found in Aneurin Bevan UHB with 0.65% positivity (Figure 4). Although rates in Aneurin Bevan have fallen compared to the previous year, they are still higher than pre-pandemic levels. The lowest positivity was detected in Powys and Hywel Dda.



Source: LIMS, 2024

Figure 3 - Rate of unique people screened for hepatitis B surface antigen (HBsAg), per 100,000 population year of test and health board, 2015-2023.



Source: LIMS, 2024

Figure 4 - Positivity of hepatitis B screening using HBsAg testing, by health board and year of test, 2015 to 2023.

Screening by demographic group

The most common age group for people screened in 2023 were those aged 30-39, with 24,864 individuals screened, a rate of 6,348 per 100,000 population. People aged under 20 are not screened as frequently those over 20. The rate of people screened has increased in all age groups since 2015 (Table 6).

The most common age group amongst those with a positive HBsAg was the 30-39 age group, with 117 newly identified positives, 0.5% of those screened. This age group represents 36.8% of all positive results. Although there were a similar number of people tested in the 20-29 age group, there was significantly fewer positive results (n=39, 0.19% of people screened. There were 12 people with a positive result in the under 20s.

The rate of screening in females (3,275 people screened per 100,000 population) was higher than in males (2,128 people screened per 100,000 population), likely influenced by pre-natal screening programmes. However, more positive results were identified in males (165, 60.2%) leading to a significantly higher positivity than in females. There were 44 people where a sex was not reported.

Table 6 - Unique individuals, without prior history of infection, screened for hepatitis B using HCV surface antigen (HBsAg) and those testing positive in 2023, by age group and sex.

Demographic	People screened	People screened per 100,000 population	95% confidence intervals[a]	Unique people with positive result	Positivity (%)	95% confidence intervals[a]
Under 20	3,795	549	532 - 567	12	0.32	0.18 - 0.55
20 - 29	20,105	5395	5323 - 5468	39	0.19	0.14 - 0.27
30 - 39	24,864	6348	6272 - 6425	117	0.47	0.39 - 0.56
40 - 49	10,120	2823	2769 - 2878	76	0.75	0.60 - 0.94
50 - 59	9,335	2134	2091 - 2177	46	0.49	0.37 - 0.66
60 +	17,388	1976	1947 - 2005	28	0.16	0.11 - 0.23
Males	32,667	2128	2106 - 2151	165	0.51	0.43 - 0.59
Females	52,292	3275	3247 - 3303	109	0.21	0.17 - 0.25

[a]Confidence intervals calculated using the Wilson method.

Source: LIMS, 2024

Both the proportion and number of new cases identified was higher in males compared to females in almost all age groups, with the single exception of the 20-29 age group.

Table 7 - Unique females, without prior history of infection, screened for hepatitis B using a HBsAg test, by age group.

Age Group	People screened	People screened per 100,000 population	95% confidence intervals[a]	Unique people with positive result	Positivity (%)	95% confidence intervals[a]
20 - 29	15,467	8414	8288 - 8542	20	0.13	0.08 - 0.20
30 - 39	17,819	8852	8728 - 8977	44	0.25	0.18 - 0.33
40 - 49	4,452	2425	2356 - 2496	18	0.40	0.26 - 0.64
50 - 59	4,139	1840	1786 - 1897	11	0.27	0.15 - 0.48
60 +	8,079	1729	1692 - 1767	12	0.15	0.08 - 0.26

[a]Confidence intervals calculated using the Wilson method.

Source: LIMS, 2024

Table 8 - Unique males, without prior history of infection, screened for hepatitis B using a HBsAg test, by age group.

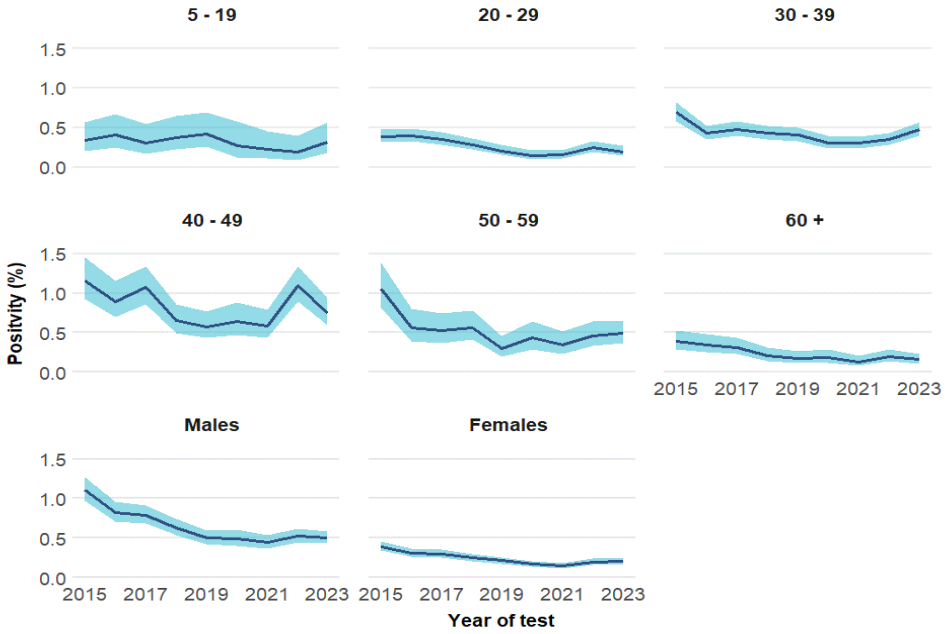
Age Group	People screened	People screened per 100,000 population	95% confidence intervals[a]	Unique people with positive result	Positivity (%)	95% confidence intervals[a]
20 - 29	4,467	2366	2298 - 2435	17	0.38	0.24 - 0.61
30 - 39	6,913	3631	3548 - 3716	53	0.77	0.59 - 1.00
40 - 49	5,605	3205	3123 - 3288	43	0.77	0.57 - 1.03
50 - 59	5,170	2432	2367 - 2498	29	0.56	0.39 - 0.80
60 +	9,301	2252	2208 - 2298	15	0.16	0.10 - 0.27

[a]Confidence intervals calculated using the Wilson method.

Source: LIMS, 2024

Source: LIMS, 2024

Figure 5 - Rate of unique people screened for hepatitis B surface antigen (HBsAg), per 100,000 population year of test and demographic group, 2015-2023.



Source: LIMS, 2024

Figure 6 - Positivity of hepatitis B screening using HBsAg testing, by health board and year of test, 2015-2023

4.1.2 Hepatitis B diagnosis

A positive HBsAg test indicates that someone has a current hepatis B infection, which may be an acute infection or a lifelong chronic condition. To establish if someone has acute or chronic HBV infection, an IgM antibody to hepatitis core antigen and total core antibody tests are performed. Alternativity, a second HBsAg positive result, at least 6 months after an initial test is also considered a marker for chronic hepatitis B infection.

Chronic Hepatitis B

In 2023, there were 327 individuals who were newly identified with hepatitis B infection using testing data found in datastore. Of these, 318 were detected though HBsAg screening. A further 9 were identified though other Hepatitis B testing, possibly representing people who were already aware of their status due to previous testing either being anonymously performed or undertaken in a non-NHS Wales laboratory (e.g., in another region of the UK).

Table 9 - Summary of newly identified hepatitis B cases in in Wales, by year of first indication of infection

Year	People screened	New infections (HBsAg only)	All new infections[a]	New chronic infections	Proportion of new infections(%)	Cases per 100,000 population	95% confidence intervals[b]	Unable to determine infection status
2015[c]	67,891	401	473	397	83.9	12.8	11.6 - 14.1	40
2016	68,980	317	327	236	72.2	7.6	6.7 - 8.6	74
2017	71,771	332	342	254	74.3	8.1	7.2 - 9.2	73
2018	73,986	280	281	211	75.1	6.7	5.9 - 7.7	61
2019	76,137	244	251	187	74.5	5.9	5.1 - 6.8	51
2020	61,055	170	171	121	70.8	3.8	3.2 - 4.6	41
2021	71,602	187	194	163	84.0	5.2	4.5 - 6.1	23
2022	76,394	290	294	249	84.7	8.0	7.0 - 9.0	36
2023	85,604	318	327	261	79.8	8.3	7.4 - 9.4	53

[a]Includes people newly identified as being infected as a result of any hepatitis B test, not only a surface antigen test.

[b]Confidence intervals calculated using the Wilson method.

[c]A history of prior infection has been established using all testing data since 2013. Therefore, data on people tested and people testing positive in 2015 may be over reported.

Source: LIMS, 2024

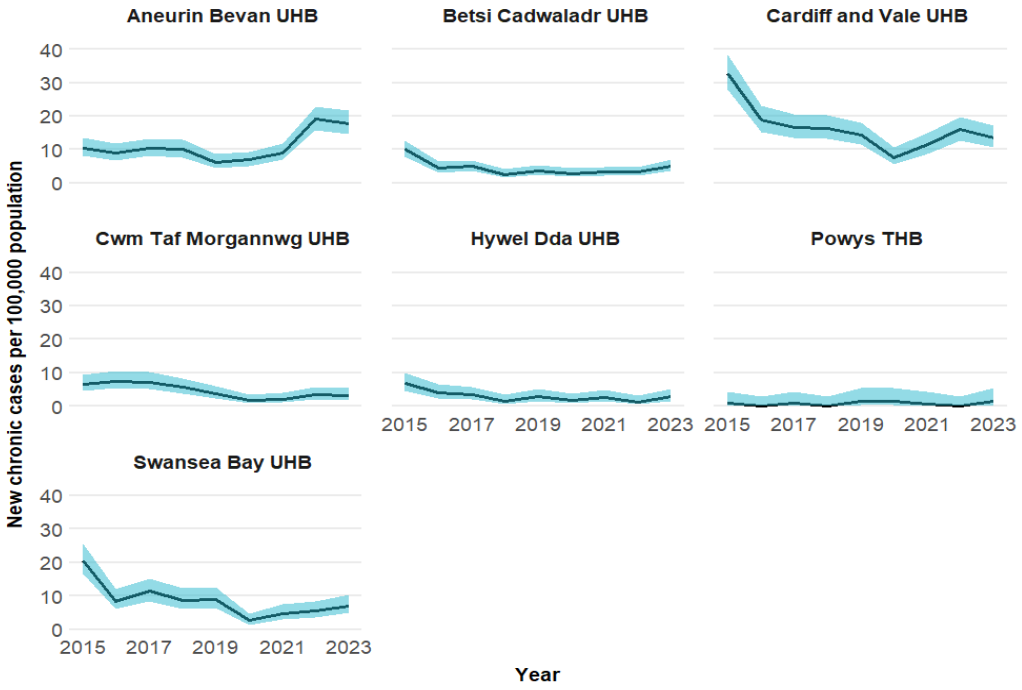
Table 10 – Summary of newly identified hepatitis B cases in in 2023, by health board

Health board	People screened	New infections (HBsAg only)	All new infections[a]	New chronic infections	Proportion of new infections(%)	Cases per 100,000 population	95% confidence intervals[b]	Unable to determine infection status
Aneurin Bevan	17,544	113	113	105	92.9	17.8	14.7 - 21.5	8
Betsi Cadwaladr	18,436	56	61	36	59.0	5.2	3.8 - 7.2	17
Cardiff and Vale	15,049	77	79	67	84.8	13.3	10.4 - 16.8	11
Cwm Taf Morgannwg	12,851	22	23	14	60.9	3.2	1.9 - 5.3	9
Hywel Dda	8,499	14	15	11	73.3	2.9	1.6 - 5.1	3
Swansea Bay	11,168	31	34	27	79.4	7.0	4.8 - 10.2	5
Outside Wales/Powys	2,302	5	7	4	57.1		NA - NA	2
Unknown	11	0	0	0			NA - NA	0

[a]Includes people newly identified as being infected as a result of any hepatitis B test, not only a surface antigen test.
[b]Confidence intervals calculated using the Wilson method.

Source: LIMS, 2024

Of the 327 identified, 80% (n = 261) had a chronic infection and 4% (n = 13) had an acute infection. An infection status could not be established for 53 (16%) individuals, either due to a lack of follow up testing or having results that requiring further interpretation.



Source: LIMS, 2024

Figure 7 - Rate of new chronic infections of hepatitis B identified, by health board and year of test, 2015-2023

Across Wales, the rate of new chronic HBV infections was 8.3 per 100,000 population in 2023, a comparable figure to the previous year (8.0 per 100,000 population) but significantly higher than reported in 2019 (5.9 per 100,000 population).

There is considerable variation between the rates of new chronic cases identified between health boards, with Aneurin Bevan (17.8 per 100,000 population) and Cardiff and Vale (13.6 per 100,000 population) substantially higher than other health boards (Table 10).

Further work is underway to establish the reasons for this variation, however, it is unlikely solely due to the increased testing within these health boards.

The highest rate of chronic cases identified was found in the 30-39 age group, with 26.8 new cases identified per 100,000 population, a trend mirrored in both males and females (Tables 11-13). High rates were also found in males aged 40-49 (20.6 new infections per 100,000 population). Rates in females in the same age group were lower (9.8 per 100,000).

Table 11 - Summary of newly identified hepatitis B cases in in 2023, by demographic group

Demogaphic	People screened	New infections (HBsAg only)	All new infections[a]	New chronic infections	Proportion of new infections(%)	Cases per 100,000 population	95% confidence intervals[b]	Unable to determine infection status
Under 20	3,807	12	12	8	66.7	1.2	0.6 - 2.3	3
20 - 29	20,136	39	42	34	81.0	9.1	6.5 - 12.7	7
30 - 39	24,907	117	126	105	83.3	26.8	22.1 - 32.4	20
40 - 49	10,152	76	79	68	86.1	19.0	15.0 - 24.0	9
50 - 59	9,368	46	50	36	72.0	8.2	5.9 - 11.4	11
60 +	17,453	28	30	17	56.7	1.9	1.2 - 3.1	7
Males	32,771	165	169	133	78.7	8.7	7.3 - 10.3	25
Females	52,401	109	114	86	75.4	5.4	4.4 - 6.7	26

[a]Includes people newly identified as being infected as a result of any hepatitis B test, not only a surface antigen test.

[b]Confidence intervals calculated using the Wilson method.

Source: LIMS, 2024

Table 12 - Summary of newly identified hepatitis B cases in females, in 2023, by age group

Demogaphic	People screened	New infections (HBsAg only)	All new infections[a]	New chronic infections	Proportion of new infections(%)	Cases per 100,000 population	95% confidence intervals[b]	Unable to determine infection status
20 - 29	15,488	20	22	15	68.2	8.2	4.9 - 13.5	6
30 - 39	17,842	44	49	39	79.6	19.4	14.2 - 26.5	10
40 - 49	4,465	18	19	18	94.7	9.8	6.2 - 15.5	1
50 - 59	4,155	11	13	8	61.5	3.6	1.8 - 7.0	5
60 +	8,108	12	13	9	69.2	1.9	1.0 - 3.7	4

[a]Includes people newly identified as being infected as a result of any hepatitis B test, not only a surface antigen test.

[b]Confidence intervals calculated using the Wilson method.

Source: LIMS, 2024

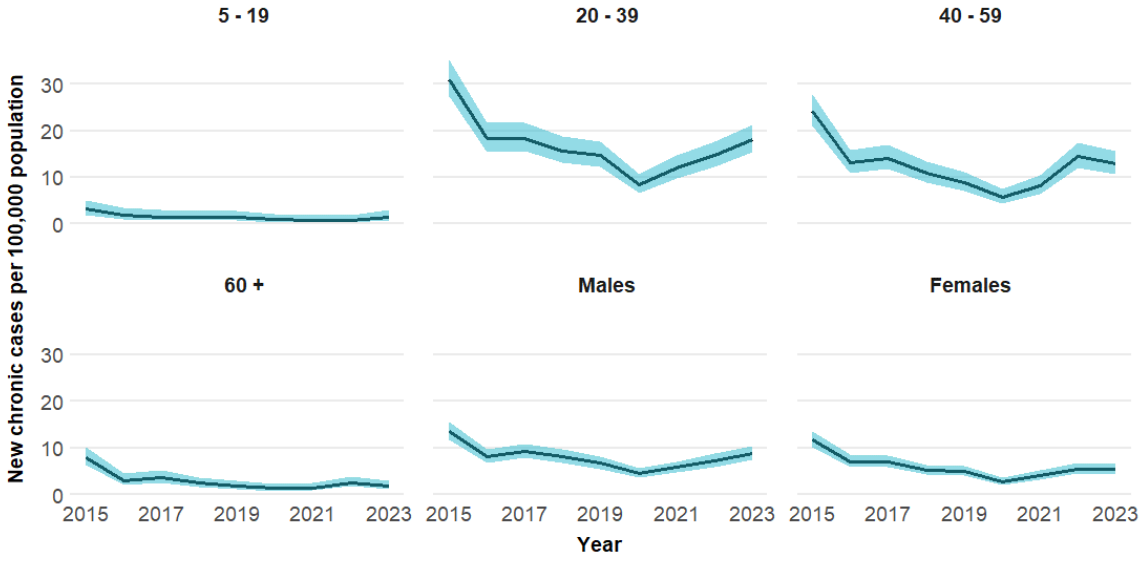
Table 13 - Summary of newly identified hepatitis B cases in males, in 2023, by age group

Demogaphic	People screened	New infections (HBsAg only)	All new infections[a]	New chronic infections	Proportion of new infections(%)	Cases per 100,000 population	95% confidence intervals[b]	Unable to determine infection status
20 - 29	4,476	17	18	18	100.0	9.5	6.0 - 15.1	0
30 - 39	6,933	53	57	46	80.7	24.2	18.1 - 32.2	10
40 - 49	5,624	43	45	36	80.0	20.6	14.9 - 28.5	7
50 - 59	5,187	29	31	22	71.0	10.3	6.8 - 15.7	6
60 +	9,337	15	16	7	43.8	1.7	0.8 - 3.5	3

[a]Includes people newly identified as being infected as a result of any hepatitis B test, not only a surface antigen test.

[b]Confidence intervals calculated using the Wilson method.

Source: LIMS, 2024



Source: LIMS, 2024

Figure 8 - Rate of new chronic infections of hepatitis B identified, by demographic group and year of test, 2015-2023.

Acute Hepatitis B

Acute hepatitis B infections are rare in Wales, with 52 acute cases recorded over the last 5 years, and 13 in 2023. Over this time, the highest rates were identified in Betsi Cadwaladr (2.1 per 100,000 population), Cardiff and Vale (2.2 per 100,000 population) and Cwm Taf (2.2 per 100,000 population). Of the 13 cases reported in 2023:

- 11 84% were males and 16% were female.
- 6 (46%) where aged 60 or over

Although ethnicity is an important consideration for hepatitis b, ethnicity data were not recorded to explore further.

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, there was an increase in both anti-HCV and HCV-RNA tests in 2023 compared to the previous year. Venepuncture remains the most common screening method for HCV, accounting for 79% of all tests in 2023 (Table 14). There was a notable increase in the number of dry blood spot tests in 2023, while point-of-care (POC) testing decreased from the previous year. The use of dried blood spot and POC testing for high-risk groups and for those whom venous access is challenging remains 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 restrictions (Tables 14 and 15). However, testing rates for anti-HCV exceeded pre-pandemic testing levels in 2022 and 2023, while HCV-RNA testing remains slightly lower. Testing rates vary substantially by Health Board (Figure 9 and Table 16).

Table 14 - Number of anti-HCV and HCV-RNA tests by type of test, 2015-2023

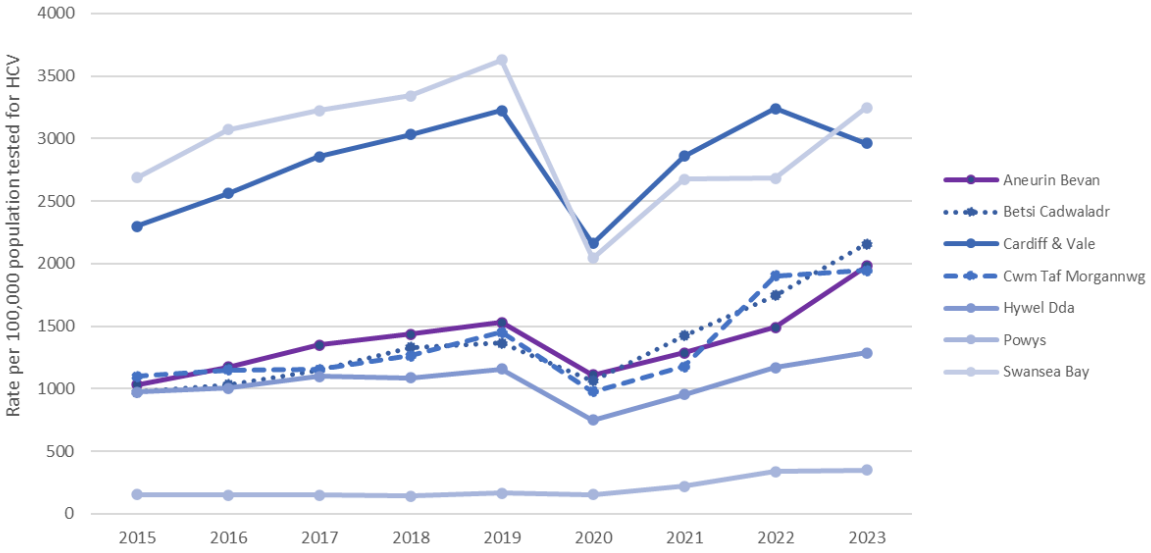
Year	Venepuncture	Dry Blood Spot	Point of Care	Total Anti-HCV tests	Total HCV-RNA tests
2015	48,224	2,677	0	50,901	3,595
2016	50,410	4,089	0	54,499	5,392
2017	54,219	5,458	0	59,677	5,525
2018	60,867	5,382	379	66,628	4,283
2019	63,110	7,702	1,352	72,165	4,998
2020	45,268	2,944	204	48,416	2,932
2021	55,316	5,145	1,388	61,850	3,204
2022	63,127	6,817	5,312	75,258	3,934
2023	69,564	12,157	2,180	83,901	4,699

Source: LIMS, 2024

Table 15 - Number of tests and individuals tested for HCV (anti-HCV or HCV-RNA), and percentage change, by year, 2015-2023.

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
2023	88,600	11.9	67,178	12.9

Source: LIMS, 2024



Source: LIMS, 2024

Figure 9 - Rate per 100,000 population tested for HCV (anti-HCV or HCV-RNA) by Health Board of residence and year, 2015-2023.

Table 16 - Rate per 100,000 population tested for HCV (anti-HCV or HCV-RNA) by Health Board of residence and year, 2015-2023.

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aneurin Bevan	1032	1175	1352	1439	1530	1110	1287	1492	1981
Betsi Cadwaladr	974	1033	1150	1330	1366	1065	1424	1746	2159
Cardiff & Vale	2300	2562	2856	3033	3226	2162	2861	3242	2963
Cwm Taf Morgannwg	1099	1149	1154	1262	1454	979	1177	1902	1946
Hywel Dda	973	1006	1098	1088	1160	752	953	1168	1289
Powys	156	149	150	144	164	154	220	338	351
Swansea Bay	2687	3073	3223	3342	3629	2044	2677	2685	3249

Source: LIMS, 2024

The median age of individuals tested in 2023 was 44 (IQR: 29), of which 58% were male and 41% 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

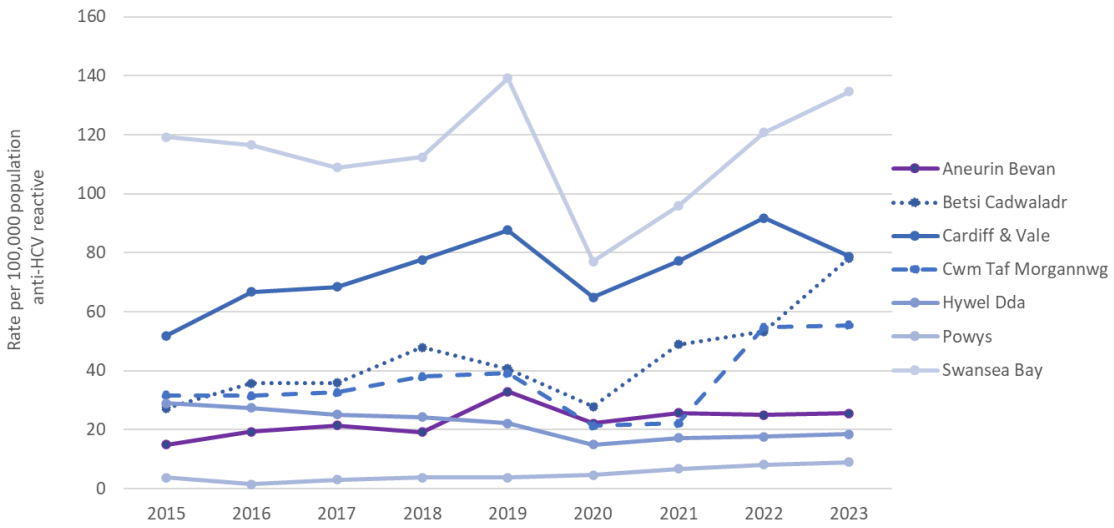
Repeat testing amongst groups at higher risk and already identified as anti-HCV reactive may account for the relatively stable annual prevalence of about 2.9% reactive tests by year. The proportion of hepatitis C antibody (anti-HCV) reactive cases among newly tested individuals has decreased by 0.8 percentage points, from 2.0% to 1.2% over the period 2015-2023, despite relatively stable testing levels (Table 17).

There is substantial variation in rate of anti-HCV reactivity per 100,000 population by Health Board of residence (Figure 10 and Table 18). In previous years, the highest number of anti-HCV reactive individuals were aged 35-44 years, however, the 45-54 years age group held the highest number of anti-HCV reactive individuals in 2022 and 2023 (Table 19). 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 2023, males accounted for 72.8% of anti-HCV reactive individuals and females 26.7% (0.5% did not have sex recorded).

Table 17 - Number and proportion of anti-HCV reactive individuals, 2015-2023

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	827	35,081	717	2.0
2016	44,658	1,377	3.1	863	34,845	717	2.1
2017	48,575	1,366	2.8	799	36,790	658	1.8
2018	52,343	1,515	2.9	828	38,022	643	1.7
2019	56,520	1,692	3.0	835	40,039	656	1.6
2020	38,093	1,093	2.9	482	24,973	371	1.5
2021	49,259	1,407	2.9	549	32,669	426	1.3
2022	58,781	1,771	3.0	693	39,950	550	1.4
2023	66,497	1,938	2.9	686	43,848	525	1.2

Source: LIMS, 2024



Source: LIMS, 2024

Figure 10 Rate per 100,000 population anti-HCV reactive by Health Board of residence and year, 2015-2023.

Table 18 - Rate per 100,000 population anti-HCV reactive by Health Board of residence and year, 2015-2023

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aneurin Bevan	14.9	19.3	21.5	19.2	32.9	22.1	25.7	25.0	25.5
Betsi Cadwaladr	27.3	35.8	35.9	47.9	40.7	27.8	48.9	53.3	78.2
Cardiff & Vale	51.9	66.7	68.4	77.6	87.7	64.9	77.2	91.8	78.7
Cwm Taf Morgannwg	31.6	31.5	32.6	38.0	39.2	21.2	22.2	54.7	55.4
Hywel Dda	29.0	27.4	25.1	24.3	22.2	14.9	17.3	17.7	18.4
Powys	3.8	1.5	3.0	3.8	3.8	4.5	6.7	8.2	9.0
Swansea Bay	119.2	116.5	108.9	112.5	139.2	77.1	95.8	120.7	134.6

Source: LIMS, 2024

Table 19 - Heat table of anti-HCV reactivity, by age group and year, 2015-2023 (darker blue indicates higher rates)

Age group	2015	2016	2017	2018	2019	2020	2021	2022	2023
0-14	2.6%	3.2%	2.2%	3.5%	1.8%	1.7%	0.1%	0.9%	0.5%
15-24	1.1%	1.1%	0.8%	0.6%	0.5%	0.7%	0.5%	0.5%	0.3%
25-34	3.6%	3.6%	3.1%	2.8%	3.0%	2.7%	2.4%	2.0%	1.9%
35-44	5.1%	5.6%	5.3%	5.7%	5.9%	5.4%	5.5%	5.6%	5.3%
45-54	4.4%	4.5%	4.4%	4.2%	5.0%	4.7%	5.5%	5.8%	5.9%
55-64	2.2%	2.2%	2.2%	2.7%	2.1%	2.7%	2.5%	3.0%	3.3%
>64	0.7%	0.7%	0.4%	0.7%	0.6%	0.6%	0.5%	0.8%	0.7%
Not recorded	7.9%	8.8%	8.2%	8.5%	9.4%	9.0%	12.5%	5.7%	4.7%

Source: LIMS, 2024

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 36% of those with an anti-HCV reactive result have not received a follow up HCV-RNA test in 2023 (Table 20) varying by health board and over time (Table 21). Further work is required to establish what proportion of these tests may be historic (prior to 2018 for dried blood spot testing), relate to POC testing / pilot project tests or represent incomplete data.

Table 20 - Individuals and proportion not receiving HCV-RNA confirmatory test following any previous reactive anti-HCV test by year 2015-2023.

Year	Total anti-HCV reactive N	No HCV-RNA Follow Up n	No HCV-RNA Follow Up Proportion %
2015	794	287	36.1
2016	876	275	31.4
2017	871	289	33.2
2018	954	354	37.1
2019	1262	482	38.2
2020	775	261	33.7
2021	1103	381	34.5
2022	1427	379	26.6
2023	1652	597	36.1

Source: LIMS, 2024

Table 21 - Heat table - proportion anti-HCV reactive individuals not receiving HCV-RNA confirmatory test by health board and year, 2015-2023 (darker blue indicates higher rates).

	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
Aneurin Bevan	29%	27%	23%	22%	24%	11%	24%	25%	30%	23%
Betsi Cadwaladr	16%	18%	20%	18%	24%	22%	32%	26%	38%	22%
Cardiff & Vale	36%	19%	26%	35%	40%	36%	37%	19%	27%	31%
Cwm Taf Morgannwg	22%	17%	25%	23%	29%	28%	13%	12%	23%	21%
Hywel Dda	24%	24%	23%	17%	30%	16%	18%	28%	44%	23%
Powys	0%	50%	0%	0%	20%	0%	11%	27%	25%	13%
Swansea Bay	19%	20%	16%	20%	23%	19%	20%	24%	29%	20%

Source: LIMS, 2024

4.2.2 HCV-RNA positivity

The proportion of individuals with an HCV-RNA positive result following an anti-HCV reactive test has decreased substantially from 61.5% in 2015 to 23.9% in 2023 (Table 22).

The number of newly positive HCV-RNA cases amongst those tested in Wales from 2015 to 2023 reduced by 37% (Table 23). The rate of newly diagnosed people per 100,000 population has decreased from 15.6 to 9.7 over the same period (Figure 11).

Since 2015, and excluding those residents outside of Wales, there have been 3,618 new HCV-RNA cases identified in Wales, with substantial geographic variation by health board area of residence (Table 24).

Age standardised rates of new cases per 100,000 population indicate varying trends over time within health board area of residence (Table 25), although caution should be used interpreting 2020 and 2021 rates due to the impact of COVID-19 restrictions on testing and diagnosis.

Table 22 - Number and proportion of individuals with HCV-RNA positive results following anti-HCV reactive result and positivity (%) by year, 2015-2023.

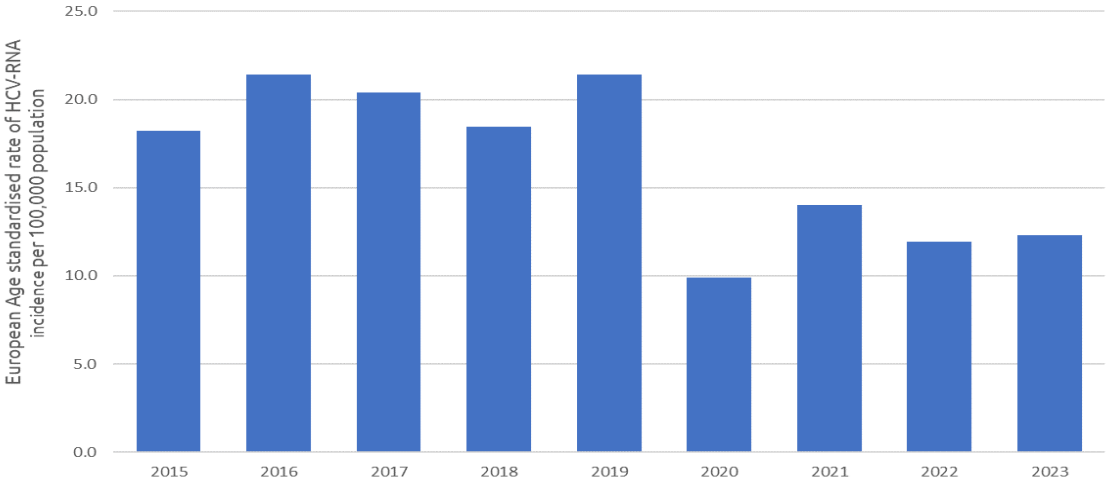
Year	Number anti-HCV reactive with follow up	anti-HCV reactive and HCV-RNA positive (n)	anti-HCV reactive and HCV-RNA positive (%)
2015	507	312	61.5
2016	601	350	58.2
2017	582	306	52.6
2018	600	318	53.0
2019	780	339	43.5
2020	514	184	35.8
2021	722	263	36.4
2022	1048	302	28.8
2023	1055	252	23.9

Source: LIMS, 2024

Table 23 - HCV-RNA individuals tested and positivity by year, 2015-2023

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	483	1,230	463	37.6
2016	2,704	1,442	53.3	496	1,097	486	44.3
2017	3,025	1,265	41.8	483	1,300	466	35.8
2018	2,873	1,007	35.1	469	1,278	453	35.4
2019	3,317	1,004	30.3	498	1,475	469	31.8
2020	2,243	509	22.7	249	1,016	234	23.0
2021	2,388	618	25.9	316	1,068	295	27.6
2022	2,857	606	21.2	324	1,330	301	22.6
2023	3,243	591	18.2	304	1,385	283	20.4

Source: LIMS, 2024



Source: LIMS, 2024

ɬ based on Office for National Statistics, mid-year population estimates 2015-2022

Figure 11 - HCV-RNA incidence rate[13] per 100,000 population by year 2015-2023ɬ.

Table 24 - Heat table of European Age Standardised Rate of new HCV-RNA cases per 100,000 individuals, by health board and year, 2015-2023 (darker blue indicates higher rates).

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aneurin Bevan	17.3	15.7	23.1	13.1	19.1	10.5	12.7	9.7	10.5
Betsi Cadwaladr	16.5	21.4	23.0	23.2	24.7	16.9	24.3	20.7	17.5
Cardiff & Vale	28.6	43.6	31.0	34.1	32.9	13.3	22.7	16.5	19.8
Cwm Taf Morgannwg	16.5	15.1	13.7	12.7	13.5	8.7	6.7	16.8	12.0
Hywel Dda	23.7	19.0	12.0	18.2	11.3	8.0	13.1	9.1	12.6
Powys	13.4	12.7	14.7	0.0	14.3	0.0	13.0	17.9	14.0
Swansea Bay	66.7	51.2	56.7	43.6	55.0	28.1	30.8	26.5	26.6
Wales	**18.2**	**21.4**	**20.4**	**18.5**	**21.4**	**9.9**	**14.0**	**11.9**	**12.3**

Source: LIMS, 2024

Table 25 - New HCV-RNA cases by health board of residence, by year of first diagnosis, 2015-2023

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aneurin Bevan	73	64	80	56	64	31	45	38	38
Betsi Cadwaladr	83	101	100	115	107	79	96	91	80
Cardiff & Vale	100	125	113	117	122	50	75	67	71
Cwm Taf Morgannwg	33	37	30	34	35	15	13	41	26
Hywel Dda	51	37	25	31	29	15	21	15	28
Powys	<5	<5	<5	<5	<5	<5	<5	<5	<5
Swansea Bay	141	128	133	116	138	59	63	66	59
Wales	483	496	483	469	498	249	316	324	304

Source: LIMS, 2024

[13] 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 Human Immunodeficiency Virus (HIV)

4.3.1 HIV Ag/Ab testing and positivity

The number of individuals tested for HIV within sexual health clinics, primary or secondary care increased annually between 2015 and 2019, with a decrease of 35% in 2020, probably reflecting COVID-19 pandemic restrictions. However, following introduction to the BBV and sexual health Test and Post (TAP) Scheme (see section 5.3) in 2021, in addition to the data shown in Table 26, the number of individuals tested for HIV Ag/Ab increased to exceed pre-pandemic levels.

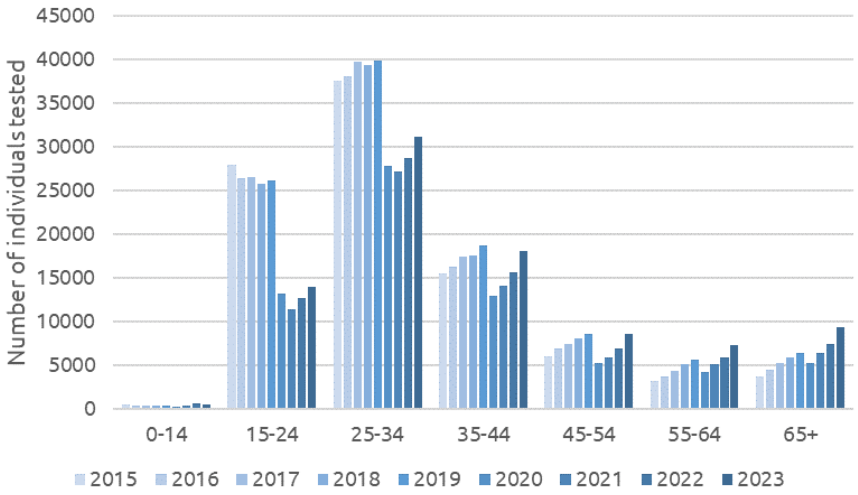
Data from the TAP scheme indicate a further 20,636, 23,743 and 24,195 individuals were tested in 2021, 2022 and 2023 respectively. In 2023, a total of 113,097 individuals in Wales were tested, the highest number since 2019.

Table 26 - Total HIV Ag/Ab tests undertaken in sexual health clinics, primary and secondary care, individuals tested, and positivity recorded by Welsh labs[14], by year, 2015-2023.

Year	Total tests	Individuals tested	Individuals positive	%
2015	107,545	94,921	1,126	1.2
2016	109,615	96,693	1,013	1.0
2017	115,901	101,562	849	0.8
2018	117,222	102,504	793	0.8
2019	121,903	106,163	742	0.7
2020	78,410	69,398	552	0.8
2021	81,505	70,705	491	0.7
2022	91,566	76,628	670	0.9
2023	103,826	88,902	737	0.8

Source: LIMS, 2024

The majority of individuals tested are within the 15-24 and 25-34 age groups (Figure 12).



Source: LIMS, 2024

Figure 12 - Number of individuals tested for HIV Ag/Ab within sexual health clinics, primary and secondary care, by age group and year.

[14] May include repeat testing on individuals who have previously tested positive.

Table 27 - Number of individuals tested for HIV Ag/Ab within sexual health clinics, primary and secondary care, by health board and year, 2015-2023.

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aneurin Bevan	15,606	15,943	16,157	15,519	16,012	11,890	11,502	12,199	15,121
Betsi Cadwaladr	16,521	16,732	16,982	18,325	20,707	13,946	13,248	14,534	18,770
Cardiff & Vale	19,982	20,843	22,620	23,451	23,794	15,896	17,493	18,040	18,511
Cwm Taf Morgannwg	12,358	12,661	13,611	12,676	13,634	8,181	8,161	9,921	11,239
Hywel Dda	9,033	8,498	8,909	8,978	9,083	5,677	5,656	6,512	6,926
Powys	617	612	631	549	550	542	572	554	537
Swansea Bay	14,778	14,788	15,298	16,319	16,817	9,047	8,700	10,266	13,883
Unknown	6,026	6,616	7,354	6,687	5,566	4,219	5,373	4,602	3,915

Source: LIMS, 2024

4.3.2 New diagnosis of HIV

In 2022, the latest validated data available, the rate of HIV diagnosis in the UK increased in Wales from 1.9 per 100,000 population Welsh residents in 2021 to 3.3 in 2022 (Table 28). This is an increase of 66 new diagnoses in 2021 to 101 in 2022 (Table 28). [15]

Consistent with recent years, new diagnoses are primarily in males; those aged 35-49; and those of White ethnicity (Table 29). Rates of new HIV diagnoses have decreased to a greater extent in males than females (Table 30) 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 targeted prevention approaches.

Table 28 - Number and rate per 100,000 population new HIV diagnosis in the UK, by country and year, 2018-2022

	2018		2019		2020		2021		2022	
Country/ Region	New HIV diagnoses	Rate	New HIV diagnoses	Rate	New HIV diagnoses	Rate	New HIV diagnoses	Rate	New HIV diagnoses	Rate
England	4,187	7.5	3,864	6.9	3,026	5.4	3,118	5.5	3,805	6.7
Northern Ireland	79	4.2	61	3.2	67	3.5	75	3.9	-	
Scotland	224	4.1	207	3.8	157	2.9	124	2.3	126	2.3
Wales	149	4.7	124	3.9	75	2.4	66	1.9	101	3.3
Total	4,639	7.0	4,256	6.4	3,325	5.0	3,383	5.0	4,032	6.0

Source: UKHSA, 2023

[15] HIV data supplied by UKHSA includes Welsh residents accessing services in England.

Table 29 - Demographic profile of new HIV diagnoses in Wales by year, 2018-2022

	2018	2019	2020	2021	2022
All	149	124	75	66	101
Female	30	37	18	20	34
Male	119	87	57	46	66
0-14	<5	<5	0	-	-
15-24	12	<10	<10	<10	<10
25-34	43	42	28	16	23
35-49	63	45	24	26	48
50-64	24	27	12	18	22
65+	<10	<10	<5	<5	<5
White	98	59	45	30	54
Black African	13	11	<10	<10	24
Black Caribbean	0	0	0	<5	0
Other or mixed	15	11	12	<10	<10
Unknown	23	43	<20	<20	<20

Source: UKHSA, 2023

Table 30 - New HIV diagnosis rate per 100,000 population in Wales, by sex and year, 2018-2022 (darker blue indicates higher rates).

	2018	2019	2020	2021	2022
All	4.8	4.0	2.4	2.1	3.2
Female	1.9	2.4	1.1	1.3	2.1
Male	7.9	5.7	3.7	3.0	4.3

Source: UKHSA, 2023

4.3.3 Late and very late diagnoses of HIV[16]

Where available (55 of 101 cases (54%) in 2022), CD4 data for individuals with a new diagnosis of HIV is shown in Table 31. The proportion of new HIV cases with late diagnosis increased in 2022, however, without complete CD4 data on all new diagnoses, any trend analysis should be treated with caution.

Table 31 - Number of new HIV diagnoses in Wales, by CD4 and year, 2018-2022

	2018	2019	2020	2021	2022
Number with CD4 count within 91 days of diagnosis	86	75	32	25	55
Median CD4	390	300	348	424	380
Number with late diagnosis	35	41	16	11	23
% late (of those with a CD4)	41%	55%	50%	44%	42%

Source: UKHSA, 2023

[16] 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.

4.3.4 Reported route of HIV transmission

Where route of likely transmission was reported (mean 76% completed), between 2017 and 2020, most cases reported transmission via sex between men. However, in 2021 and 2022, most cases reported transmission via heterosexual contact (Table 32).

Table 32 - Number of new HIV diagnoses in Wales, by route of transmission and year, 2018-2022

Probable exposure category	2018	2019	2020	2021	2022
Sex between men	69	40	38	23	32
Heterosexual contact	46	31	17	27	42
Injecting drug use	0	<5	<5	<5	<5
Mother to child	<5	<5	0	0	0
Other	<5	0	<5	0	<5

Source: UKHSA, 2023

5 BBV Screening, testing and diagnosis programmes

5.1 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.

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 33.

Table 33 - 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 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 34).

Table 34 - Age range and median age of individuals tested for BBVs, by prison, 2023.

	Age range of individuals tested (median)
HMP Berwyn	13-100 (34)
HMP Parc	16-91 (33)
HMP Cardiff	18-69 (36)
HMP Swansea	18-60 (36)
HMP Usk	16-78 (44)
HMP Prescoed	20-97 (33)
All	13-100 (34)

Source: SystmOne, 2023

5.1.1 BBV testing

BBV testing increased in all prisons up to 2019, with decreases in 2020 probably due to COVID-19 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 35 BBV testing approached pre-pandemic levels in 2022 and exceeded pre-pandemic levels in 2023.

Testing coverage in prisons increased up to 2019 and in 2022 showed substantial improvement post-COVID-19 pandemic restrictions (Table 36).

Table 35 - BBV tests conducted by prison, type of BBV test and year, 2015-2023[17]

		Tests conducted								
Test	**Requesting site**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
	HMP Berwyn	0	0	265	631	1,005	483	1,113	1,441	4,092
	HMP Parc	406	890	1,479	984	1,293	484	211	638	774
	HMP Cardiff	238	891	1,331	391	1,453	568	718	321	228
	HMP Swansea	0	<5	161	182	302	50	43	58	68
	HMP Usk	71	260	73	268	371	116	232	168	198
Hepatitis B surface antigen	HMP Prescoed	96	115	203	324	424	216	279	243	305
	Total	**811**	**2,158**	**3,512**	**2,780**	**4,848**	**1,917**	**2,596**	**2,869**	**5,665**
	HMP Berwyn	0	0	266	632	1,005	462	1,109	1,400	4,065
	HMP Parc	407	895	1,485	988	1,293	482	206	641	780
	HMP Cardiff	240	901	1,352	400	1,442	561	712	318	226
	HMP Swansea	0	<5	163	182	270	48	41	58	67
	HMP Usk	71	260	73	268	371	117	234	170	198
Hepatitis C antibody	HMP Prescoed	98	115	204	324	425	216	280	243	305
	Total	**816**	**2,175**	**3,543**	**2,794**	**4,806**	**1,886**	**2,582**	**2,830**	**5,641**
	HMP Berwyn	0	0	26	41	150	154	227	274	657
	HMP Parc	51	65	84	66	126	67	56	267	103
	HMP Cardiff	57	135	160	151	219	87	88	123	70
	HMP Swansea	24	40	54	62	241	58	70	64	64
	HMP Usk	0	5	0	<5	8	5	<5	<5	<5
Hepatitis C PCR	HMP Prescoed	<5	5	<5	9	20	8	18	5	15
	Total	**136**	**250**	**325**	**333**	**764**	**379**	**462**	**735**	**911**
	HMP Berwyn	0	0	265	631	1,034	524	1,135	1,431	4,064
	HMP Parc	406	893	1,473	984	1,285	480	208	634	772
	HMP Cardiff	237	890	1,326	371	1,436	559	716	320	224
	HMP Swansea	0	<5	161	182	296	49	41	54	68
	HMP Usk	71	260	73	267	369	111	223	160	192
	HMP Prescoed	96	115	203	324	418	210	276	238	287
HIV Ag/Ab	**Total**	**810**	**2,160**	**3,501**	**2,759**	**4,838**	**1,933**	**2,599**	**2,837**	**5,607**

Source: SystmOne, 2023

Table 36 - Testing coverage[18] across Welsh prisons, by prison and year, 2015-2022

	Testing coverage % (number of admissions)															
	2015		2016		2017		2018		2019		2020		2021		2022	
HMP Berwyn	-		-		26.9	(1080)	54.1	(1243)	62.6	(1777)	49.6	(1336)	69.0	(1856)	86.3	(1879)
HMP Parc	20.0	(2287)	43.8	(2191)	64.1	(2439)	45.6	(2303)	65.2	(2105)	33.6	(1557)	15.3	(1631)	37.0	(1967)
HMP Cardiff	8.1	(3605)	29.6	(3464)	42.9	(3454)	16.5	(3047)	52.9	(2786)	26.3	(2197)	33.9	(2133)	17.9	(2244)
HMP Swansea	1.4	(1664)	2.6	(1611)	11.6	(1851)	16.7	(1459)	32.4	(1459)	8.5	(1127)	10.2	(1084)	9.1	(1278)
HMP Usk	30.0	(237)	114.2	(232)	35.8	(204)	125.3	(217)	198.9	(189)	145.8	(83)	134.7	(176)	108.2	(158)
HMP Prescoed	23.6	(428)	30.0	(400)	55.9	(367)	91.5	(364)	121.6	(357)	86.3	(255)	91.1	(316)	83.1	(296)
Total	11.5	(8221)	30.5	(7898)	40.8	(9395)	35.6	(8633)	60.4	(8673)	33.6	(6555)	40.2	(7196)	42.0	(7822)

*Full admissions data for 2023 is not yet available

Source: SystmOne and Offender Management Statistics, 2023

[17] 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.

[18] 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.

5.1.2 BBV positivity in Welsh prisons

Hepatitis B (HBsAg) and HIV Ag/Ab

In every Welsh prison in every year 2015-2023, <1% of individuals tested for HBsAg, and HIV Ag/Ab received a positive or reactive result.

Hepatitis C

Anti-HCV reactivity has remained relatively stable between 2015 and 2023, ranging from 7.0% to 9.8%, substantially higher than the overall Wales prevalence of 3% (Table 37). The number of individuals receiving an anti-HCV reactive result increased by 1% between 2019 (pre-pandemic) and 2023, while the number of individuals tested increased by 15%.

Overall, the proportion of HCV-RNA positive tests (combined prison total) is at the lowest since 2015, consistent with overall Wales trends. There was a 54% decrease in individuals receiving a positive HCV-RNA result between 2019 and 2023, with an 8% increase in the number of individuals tested (Table 37). Combining 2018-2023 data, the median age of those receiving a positive or reactive BBV test result was lowest for those tested for HBsAg (34 years) and highest for those tested for hepatitis C (anti-HCV and HCV RNA; 40 years).

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 seroconversion, robust incidence proportions and rates are not available.

Table 37 – Anti-HCV reactivity and HCV-RNA positivity of individuals tested in Welsh prisons, by test, prison, and year, 2015-2023.

		2015			2016			2017			2018			2019			2020			2021			2022			2023		
		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	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	264	**7.0%**	3,793
	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	58	**7.8%**	743
	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	40	**19.7%**	203
	HMP Swansea	-			<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	8	**12.3%**	65
	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	<5	**0.5%**	192
	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	7	**2.4%**	294
	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**	378	**7.1%**	**5,290**
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	76	**16.0%**	474
	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	26	**18.3%**	82
	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	17	**30.4%**	56
	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	17	**31.5%**	54
	HMP Usk	-			<5	**60.0%**	5		-		0	**0.0%**	<5	<5	**25.0%**	<5	0	**0.0%**	<5	<5	**33.3%**	<5	0	**0.0%**	<5	0	**0.0%**	<5
	HMP Prescoed	<5	**50.0%**	<5	<5	**66.7%**	<5	<5	**100.0%**	**100.0%**	<5	**11.1%**	9	<5	**7.1%**	14	<5	**14.3%**	7	<5	**6.7%**	15	0	**0.0%**	5	0	**0.0%**	12
	Total	78	**65.5%**	**119**	139	**65.0%**	**214**	159	**54.1%**	**54.1%**	**294**	151	**48.6%**	**311**	193	**30.7%**	**628**	98	**28.8%**	**340**	116	**29.3%**	**396**	141	**23.8%**	**593**	125	**18.4%**	**680**

Source: SystmOne, 2023

5.2 Substance misuse and allied services

5.2.1 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.[19,20] 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 38.

Table 38 - Number of individuals receiving a BBV test by virus type, health board of residence[21], and year along with proportion of change on previous year, 2021-2023.

	HIV			HBV			HCV		
	2022	2023	Change (%)	2022	2023	Change (%)	2022	2023	Change (%)
Aneurin Bevan	632	797	26 ↑	632	802	27 ↑	632	806	28 ↑
Betsi Cadwaladr	271	843	211 ↑	273	845	210 ↑	290	866	199 ↑
Cardiff & Vale	1031	1211	17 ↑	1032	1218	18 ↑	1053	1233	17 ↑
Cwm Taf Morgannwg	280	702	151 ↑	283	734	159 ↑	306	771	152 ↑
Hywel Dda	140	155	11 ↑	140	156	11 ↑	140	156	11 ↑
Powys	239	263	10 ↑	239	264	10 ↑	239	264	10 ↑
Swansea Bay	702	1934	175 ↑	705	1941	175 ↑	722	2499	246 ↑
Wales**	**3289**	**5886**	79 ↑	**3376**	**6564**	80 ↑	**3298**	**5939**	94 ↑

**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 HRD, 2024

BBV screening coverage within Substance Misuse Services (KPI6[23])

In 2022-23, there were a total of 13,288 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 16.4%, up from 13.5% in 2021-22 with substantial geographic variation by Health Board of residence (Table 39).

[19] Welsh Government. 2017. Welsh Health Circular WHC/2017/048
[20] 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.
[21] 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 39 - Testing coverage by Local Authority and Substance Misuse Area Planning Board 2022-23

	No. of current clients on WNDSM	No. of new clients on WNDSM	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)	566	151	651	163	25.0%	111	17.1%
Swansea (1)	808	456	1,079	372	34.5%	322	29.8%
Western Bay	**1,374**	**607**	**1,730**	**535**	**30.9%**	**433**	**25.0%**
Cardiff and Vale							
Cardiff	2,023	493	2,391	611	25.6%	447	18.7%
Vale of Glamorgan	411	224	610	221	36.2%	182	29.8%
Cardiff and Vale	**2,434**	**717**	**3,001**	**832**	**27.7%**	**629**	**21.0%**
Cwm Taf Morgannwg							
Bridgend (1)	510	292	760	84	11.1%	72	9.5%
Merthyr	479	69	489	30	6.1%	30	6.1%
RCT	1,476	345	1,616	192	11.9%	156	9.7%
Cwm Taf Morgannwg	**2,465**	**706**	**2,865**	**306**	**10.7%**	**258**	**9.0%**
Dyfed							
Carmarthenshire	504	61	391	50	12.8%	49	12.5%
Ceredigion	275	27	289	42	14.5%	41	14.2%
Pembrokeshire	332	25	235	51	21.7%	48	20.4%
Dyfed	**1,111**	**113**	**915**	**143**	**15.6%**	**138**	**15.1%**
Gwent							
Blaenau Gwent	341	7	340	74	21.8%	65	19.1%
Caerphilly	647	76	704	132	18.8%	128	18.2%
Monmouthshire	346	1	346	78	22.5%	67	19.4%
Newport	792	13	785	124	15.8%	118	15.0%
Torfaen	281	0	274	78	28.5%	75	27.4%
Gwent	**2,407**	**97**	**2,449**	**486**	**19.8%**	**453**	**18.5%**
North Wales							
Conwy	425	14	415	27	6.5%	27	6.5%
Denbighshire	364	9	348	37	10.6%	36	10.3%
Flintshire	542	27	557	27	4.8%	26	4.7%
Gwynedd	562	12	470	63	13.4%	63	13.4%
Wrexham	620	37	639	55	8.6%	55	8.6%
Ynys Mon	395	39	321	36	11.2%	36	11.2%
North Wales	**2,908**	**138**	**2,750**	**245**	**8.9%**	**243**	**8.8%**
Powys							
Powys	589	2	549	197	35.9%	187	34.1%
Powys	**589**	**2**	**549**	**197**	**35.9%**	**187**	**34.1%**
WALES TOTAL	**13,288**	**2,380**	**14,259**	**2,744**	**19.2%**	**2,341**	**16.4%**

(1) The agencies within these areas are in the process of transitioning to the WCCIS system. This has impacted on their ability to submit data.

(a) Number of clients in treatment on the WNDSM as at 1st April 2022

(b) Number of clients assessed on the WNDSM but not yet commenced treatment as at 1st April 2022

(c) = a + b - h

(d) Number of clients showing on the harm reduction database with a last_test_date or last_declined_test_date between April 2022 and March 2023

(e) = d / c * 100

(f) Number of clients showing on the harm reduction database where the last_test_date_any_result is between April 2022 and March 2023

(g) = f / c * 100

(h) Number of clients showing on the harm reduction database where the further_testing_required field is blank

(i) = h / c *100

(j) Number of clients showing on the harm reduction database where the last_declined_test_date is between April 2022 and March 2023

(k) = j / d *100

Source: WNDSM, DCHW, 2023

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

HIV Ab/Ag and HBsAg

Across Wales in every year 2016-2023, <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 2019-2023, the proportion anti-HCV reactivity was 13.2% (Table 40) with substantial geographic variation in health board area of residence.

Table 40 - HCV screening outcomes of SMS clients by health board of residence, type of test and year, 2019-2023

Health Board	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	2395	254	10.6	237	93.3	108	45.6
Betsi Cadwaladr	1740	356	20.5	310	87.1	156	50.3
Cardiff and Vale	3062	329	10.7	238	72.3	101	42.4
Cwm Taf Morgannwg	1605	146	9.1	117	80.1	55	47.0
Hywel Dda	767	25	3.3	9	36.0	‡	‡
Powys	738	10	1.4	5	50.0	‡	‡
Swansea Bay	2893	636	22.0	588	92.5	219	37.2
Wales	**13,028**	**1,716**	**13.2**	**1,467**	**85.5**	**629**	**42.9**

*with valid test result recorded on HRD

‡ not recorded due to small numbers (under 5)

Source HRD, 2024

Amongst those at highest risk of HCV infection and transmission, people who inject drugs (PWID), anti-HCV rates are over twice as high (Table 41).

Table 41 - 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, 2019-2023.

	2019 - 2023		
	Total screened for anti-HCV*	Reactive	% anti-HCV reactive
Aneurin Bevan	491	106	21.6
Betsi Cadwaladr	478	191	40.0
Cardiff & Vale	240	87	36.2
Cwm Taf Morgannwg	261	86	33.0
Hywel Dda	111	17	15.3
Powys	72	6	8.3
Swansea Bay	485	236	48.7
Wales	2,089	719	34.4

* with valid test result recorded on HRD

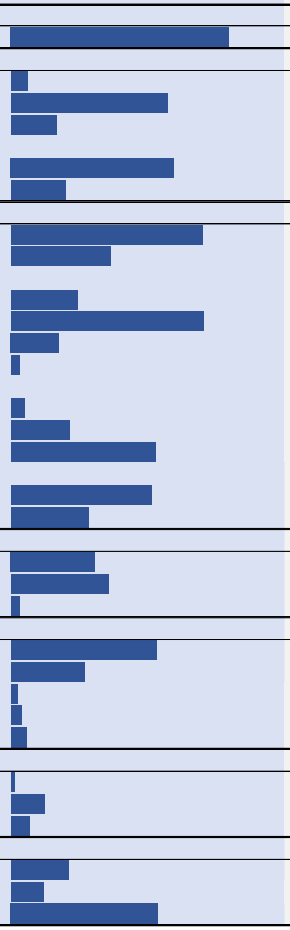
† Includes only individuals reporting injecting psychoactive substances (i.e. Opioids or Stimulants)

Source HRD, 2024

Table 42 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 13.

Table 42 - Proportion of individuals receiving HCV screening with substance misuse and allied services, proportion anti-HCV reactive by demographics and risk factors, 2023.

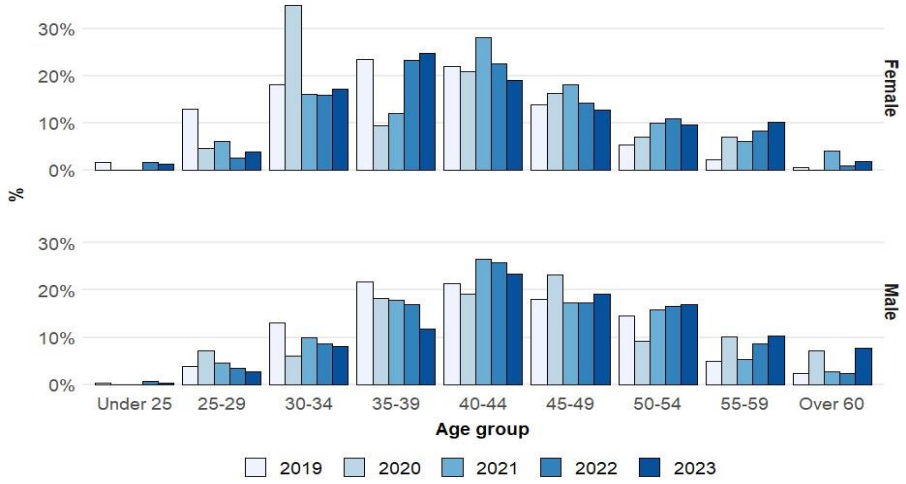
		Individuals screened for anti-HCV			Number and proportion anti-HCV reactive		
	Demographic / Risk factor group	N	Individuals (n)	Proportion of total (%)	Individuals screened with valid anti-HCV results	Individuals testing positive	% anti-HCV reactive
All clients screened		7072	7072	100	4577	577	12.6
Age	Under 25 years	7072	536	8	314	3	1.0
	25 - 49 years	7072	5073	72	3217	394	12.2
	50 years and over	7072	1463	21	1046	180	17.2
Gender	Male	7072	5299	75	3267	419	12.8
	Female	7072	1769	25	1308	158	12.1
Substance use	Ever used drugs*	2449	2151	87.8	1353	196	14.5
	Ever injected drugs*	2302	1051	45.7	603	157	26.0
Substances injected (in the last 12 months)	Injected Stimulants	906	275	30.4	158	39	24.7
	Injected Heroin	906	798	88.1	439	128	29.2
	Injected Stimulants and Heroin	906	200	22.1	110	33	30.0
	Injected IPEDs	906	35	3.9	20	1	5.0
Length of injecting career	New initiate (< 36 months)	906	58	6.4	37	5	13.5
	3 - 10 years	906	246	27.2	143	33	23.1
	>10 years	906	601	66.3	325	96	29.5
Frequency of injecting	Injects daily	906	583	64.3	328	107	32.6
	Does not inject daily	906	323	35.7	178	28	15.7
Prison	Ever been in Prison*	2114	817	38.6	462	94	20.3
	Ever used drugs in Prison	817	365	44.7	207	50	24.2
	Ever injected in Prison	817	33	4.0	11	2	18.2
Sexual History	Has sex in last 12 months*	1962	1308	66.7	822	99	12.0
	Had ≥ 2 partners in last 12 months	1308	438	33.5	246	39	15.9
	Men who have sex with men (MSM)	1308	40	3.1	24	1	4.2
	Exchanged money/drugs for sex	1308	65	5.0	38	7	18.4
	Received money/drugs for sex	1308	91	7.0	49	12	24.5
Other	Blood transfusion prior to 1991*	2036	34	1.7	22	5	22.7
	Ever assaulted involving blood contact*	1906	292	15.3	168	24	14.3
	Needlestick injury*	1899	158	8.3	90	18	20.0
Social economic profile	Non - Stable housing (inc NFA)	2092	547	26.1	339	60	17.7
	NFA	2092	311	14.9	191	34	17.8
	Unemployment	2145	1448	67.5	946	145	15.3



* 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 HRD, 2024



Source HRD, 2024

Figure 13 - Age and sex profile of anti-HCV reactive individuals engaged with substance misuse services in Wales by year, 2019-2023.

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 43, and the outcome of cases referred and accepted into clinical specialist services 2019-2023, where recorded on the HRD Wales, in Table 44.[22]

Table 43 - Initial outcomes following referral of HCV-RNA positive individuals into clinical specialist services, 2019-2023.

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	144	87	9	13	38
Betsi Cadwaladr	248	5	<5	0	242
Cardiff & Vale	95	59	13	25	<5
Cwm Taf Morgannwg	46	20	<5	<5	19
Hywel Dda	10	<5	0	<5	8
Powys	0	0	0	0	0
Swansea Bay	248	98	8	119	34
Wales	**791**	**270**	**37**	**163**	**344**

† 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 may not sum

Source HRD, 2024

[22] 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.

Table 44 - Treatment outcomes for individuals referred and accepted into clinical specialist services, 2018-2023.

	Referral accepted by patient and seen by clinician	Number requiring treatment	HCV treatment commenced	Treatment complete†
Aneurin Bevan	87	76	51	4
Betsi Cadwaladr	5	5	1	0
Cardiff & Vale	59	60	8	8
Cwm Taf Morgannwg	20	13	3	0
Hywel Dda	1	1	0	0
Powys	0	0	0	0
Swansea Bay	98	95	84	21
Wales	**240**	**134**	**97**	**43**

† Where recorded on the HRD

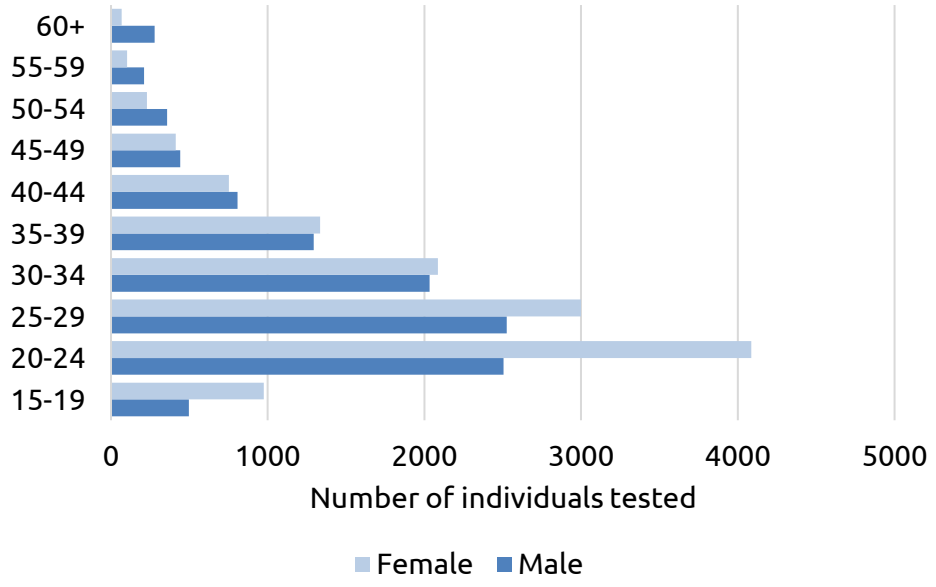
Source HRD, 2024

5.3 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 24,438 individuals in Wales were tested for BBVs (HBsAg, HIV Ab/Ag and anti-HCV) via the Test and Post Scheme in 2023. The age and gender profile can be seen in Figure 14. Females accounted for more tests (41% female and 32% male). The majority of tests were completed by younger people in the 20-24 years and 25-29 years age groups accounting for (27% and 23% respectively).

The Health Board of residence of individuals tested can be seen in Table 45, with the majority of individuals living within the Cardiff and Vale UHB area.



Source: Test and Post Scheme, 2024

Figure 14 - Number of individuals tested for any BBV via the Test and Post scheme, by age group and gender, 2023.

Table 45 - Number of individuals and the proportion tested for any BBV using the Test and Post scheme, by Health Board of residence, 2023.

	Number of individuals tested		
Health Board	**2021**	**2022**	**2023**
Aneurin Bevan UHB	1,918	2,929	3,035
Betsi Cadwaladr UHB	2,356	3,706	3,689
Cardiff & Vale UHB	1,439	2,195	2,244
Cwm Taf Morgannwg UHB	4,528	6,942	6,913
Hywel Dda UHB	1,661	2,582	2,704
Powys Teaching HB	391	665	708
Swansea Bay UHB	1,796	2,986	2,847
Unknown	6,896	2,075	2,298
Total	20,985	24,080	24,438

Source: Test and Post Scheme, 2024

Reactivity/positivity

541 (2.3%) received a reactive or positive result, shown in Table 46, 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 46 - Number of individuals receiving a positive or reactive result, by BBV, 2023

	2021		2022		2023	
BBV	**Tested**	**Positivity % (n)**	**Tested**	**Positivity % (n)**	**Tested**	**Positivity % (n)**
Hepatitis B (HBsAg)	20,149	0.9% (178)	23,160	1.1% (260)	23,397	1.5% (341)
Hepatitis C (anti-HCV & HCV-RNA)	23,053	0.3% (60)	23,029	0.2% (57)	23,446	0.2% (46)
HIV (Ag/Ab)	20,636	0.4% (88)	23,743	0.5% (125)	24,195	0.6% (154)

Source: Test and Post Scheme, 2024

The demographic profile of those recording reactive or positive BBV tests, by BBV is shown in Table 47:

- Hepatitis B (HBsAg), positivity was higher in: females; those aged above 60; and those resident in Cwm Taf Morgannwg UHB.
- Hepatitis C (anti-HCV or HCV-RNA), positivity/reactivity was higher in males; those 55-59; and those living in Powys Teaching HB.
- For HIV (Ag/Ab),[23] positivity was higher in males; those aged 15-19; and those living in Hywel Dda UHB.

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

Table 47 - Demographic profile of individuals with positive or reactive tests by BBV, 2023

	Hepatitis B	Hepatitis C	HIV
All	1.5%	0.2%	0.6%
Female	1.6%	0.2%	0.6%
Male	1.4%	0.3%	0.6%
10-14	0.0%	0.0%	0.0%
15-19	1.3%	0.1%	1.0%
20-24	1.4%	0.0%	0.6%
25-29	1.4%	0.1%	0.4%
30-34	1.5%	0.2%	0.8%
35-39	1.5%	0.3%	0.7%
40-44	1.4%	0.5%	0.4%
45-49	1.7%	0.6%	0.9%
50-54	1.8%	0.7%	0.7%
55-59	1.2%	0.9%	0.6%
60+	2.0%	0.3%	0.3%
Aneurin Bevan UHB	1.5%	0.1%	0.6%
Betsi Cadwaladr UHB	1.3%	0.2%	0.5%
Cwm Taf Morgannwg UHB	1.8%	0.2%	0.7%
Cardiff & Vale UHB	1.4%	0.2%	0.7%
Hywel Dda UHB	1.6%	0.3%	0.9%
Powys Teaching Board	1.2%	0.3%	0.3%
Swansea Bay UHB	1.5%	0.2%	0.6%

Source: Test and Post Scheme, 2024

Co-infections

Fifteen percent of those with any positive or reactive result were positive for HBsAg and HIV Ag/Ab (Table 48). It is not possible to establish whether BBV status was already known prior to testing.

Table 48 - Number and proportion of individuals with a positive or reactive result, by BBV and combination of BBVs, 2023

BBV	Number of individuals	Proportion
Hepatitis B (HBsAg) only	251	56%
Hepatitis C (anti-HCV or HCV-RNA) only	44	10%
HIV (Ag/Ab) only	65	15%
HIV (Ag/Ab) & Hepatitis B (HBsAg)	88	20%
Total individuals*	448	

*There were less than 5 HIV (Ag/Ab) and Hepatitis C (anti-HCV or HCV-RNA) co-infections which have not been included in this total

Source: Test and Post Scheme, 2024

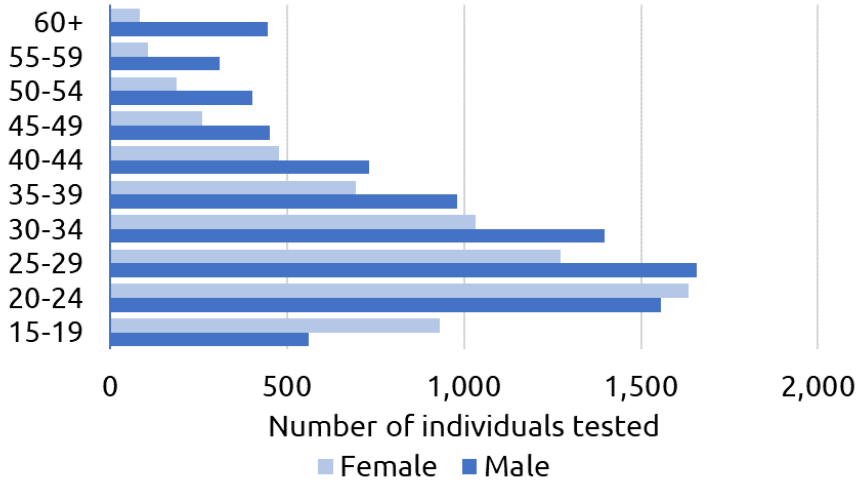
5.4 Sexual health clinical services

Individuals attending sexual health clinics (SHCs) may be offered a BBV test if symptomatic or at risk. A total of 15,290 individuals were tested for one or more BBV. In 2023:

- 14,986 (98%) tested for HIV
- 4,371 (29%) 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 15. The highest number of individuals attended SHCs in Aneurin Bevan UHB (Table 49).

Of the 4,371 individuals tested for both hepatitis B and hepatitis C in SHCs: 13 (0.3%) received a positive hepatitis B result and 7 (0.2%) received a positive hepatitis C result.



Source: SWS, 2024

Figure 15 - Number of individuals tested for any BBV at SHCs, by age group and gender, 2023.

Table 49 - Number of individuals and the proportion tested for any BBV in SHCs, by Health Board of clinic attendance, 2023.

	Number of individuals tested		
Health Board	**2021**	**2022**	**2023**
Aneurin Bevan	1,403	2,749	3,843
Betsi Cadwaladr	1,850	2,556	1,978
Cardiff & Vale	2,045	3,562	3,704
Cwm Taf Morgannwg	848	1,442	1,522
Hywel Dda	258	269	792
Powys Teaching HB	no SHC	no SHC	no SHC
Swansea Bay	1,632	2,085	3,451
Total	8,036	12,663	15,290

Source: SWS, 2024

6 Treatment

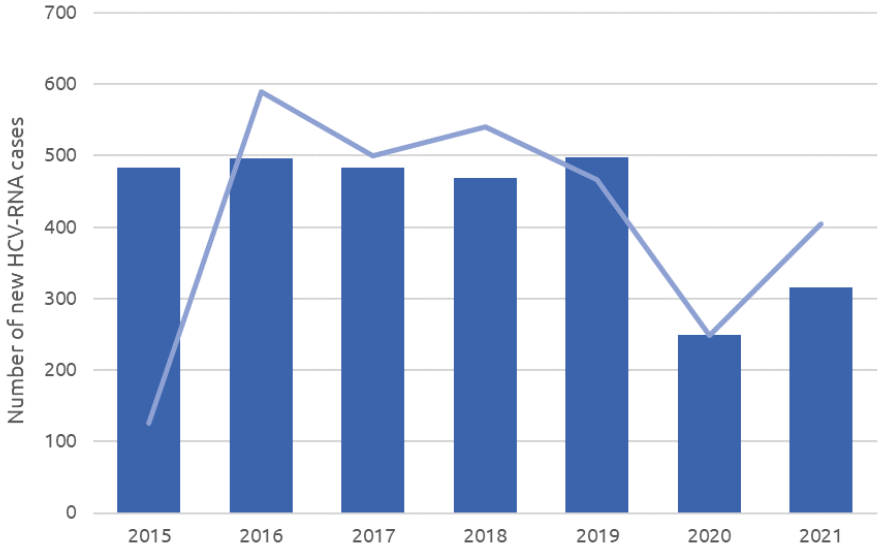
6.1 Hepatitis C (HCV)

6.1.1 Wales – all HCV-RNA positive cases

Prior to 2022, HCV treatment data was provided via non-standardised reports. From 2022, HCV treatment data has been collected electronically and collated centrally via the HCV e-form Welsh Clinical Portal, providing a more robust mechanism (see Appendix B for methodology and data quality issues).

Between 2015-2023, a total of 3,622 individuals have been diagnosed with chronic HCV infection requiring treatment, including those diagnosed with HM Prisons and specialist substance misuse and allied services.

A total of 3,519 individuals have initiated treatment since 2015 and will include individuals diagnosed prior to 2015. Figure 16 and Table 53 compare the number of newly diagnosed HCV-RNA cases requiring treatment by year and the number initiating treatment by year, prior to new data collection methodology (between 2015 and 2021).[24,25]



Source: LIMS, Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2024

Figure 16 - Number HCV-RNA diagnosed cases in year and number of individuals initiating HCV treatment in year, 2015-2021.

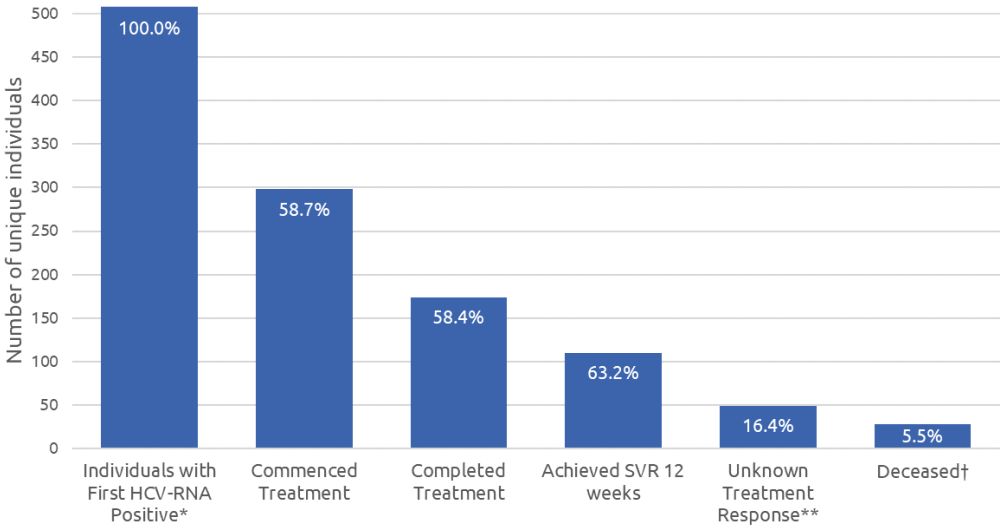
Table 50 - Number HCV-RNA diagnosed cases in year and number of individuals initiating HCV treatment in year, 2015-2021.

	2015	2016	2017	2018	2019	2020	2021
HCV-RNA positive in year	483	496	483	469	498	249	316
HCV treatments initiated in year	126	590	500	541	467	248	405

Source: LIMS, Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2024

[24] 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.
[25] N.B. May include individuals who are deceased or have relocated outside of Wales.

Figure 17 outlines the treatment pathway for individuals newly diagnosed in 2022 and 2023 and recorded in the HCV e-form Welsh Clinical Portal. These individuals have been matched between LIMS testing data and HCV e-form treatment data and therefore represent the same individuals diagnosed where identifiable information was available.



*Excludes patients missing NHS number and/or name and date of birth
**Percentage of individuals commencing treatment
†Percentage of individuals diagnosed where NHS number was available; matched with ONS data

Source: LIMS, HCV e-form Welsh Clinical Portal, ONS, 2024

Figure 17 - Treatment pathway for new HCV-RNA diagnosed cases in 2022 and 2023 (combined)

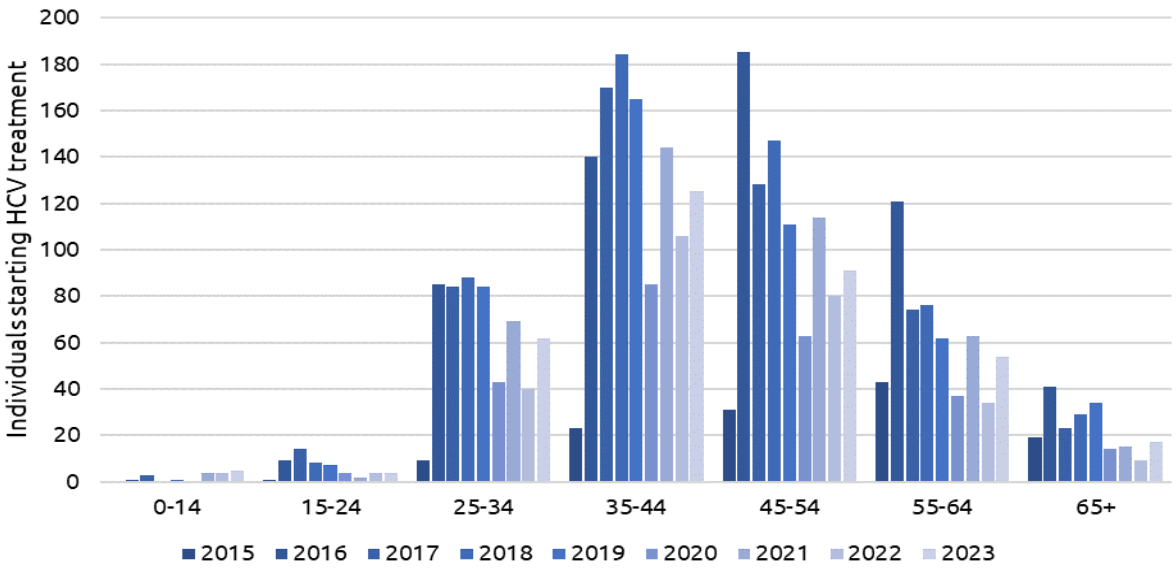
The number of individuals starting HCV treatment by health board of residence is shown in Table 54.[26] In addition to these, a total of 121 people are recorded as starting treatment within HM Prisons in Wales and 28 individuals resident in the Powys Teaching HB area[27] since 2015. Trends in age group of individuals starting treatment can be seen in Figure 18.[28]

Table 51 - Number of individuals starting HCV treatment by health board area of residence and year, 2015-2023.

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aneurin Bevan	11	96	125	70	34	14	133	29	60
Betsi Cadwaladr	24	113	105	116	113	48	22	55	82
Cardiff & Vale	41	93	100	178	140	91	95	68	72
Cwm Taf Morgannwg	15	61	36	66	44	19	12	<15	19
Hywel Dda	17	67	58	30	40	12	14	<5	7
Swansea Bay	18	54	28	75	91	57	97	95	91
Unknown	<5	101	48	<5	<5	<5	28	15	28
Wales	126	590	500	541	467	248	405	279	363

Source: Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2024

[26] Due to data quality issues and changes in data access this data may be subject to change – See Appendix B.
[27] Patients initiating HCV treatment and residing in Powys in are not included in Table 42 due to low numbers per year and risk of deductive disclosure.
[28] Age group was not available where date of birth was missing (<1%).



Source: Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2024

Figure 18 - Number of individuals starting HCV treatment by age group and year, 2015-2023.

6.1.2 HCV treatment initiation amongst those engaged with substance misuse services

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

A total of 629 HCV-RNA confirmed cases diagnosed within substance misuse services required HCV treatment initiation between 2019 and 2023, representing 37% of all confirmed cases in Wales requiring HCV treatment over this period.

Of these, 408 (65%) are recorded as commencing HCV treatment. Table 55 shows the profile of numbers and proportion starting treatment by Health Board area of residence.

Table 52 - 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, 2019-2023 (combined)

Health Board of residence	Number of individuals HCV-RNA Positive 2019-2023	Number starting HCV treatment†	Proportion % started treatment
Aneurin Bevan	108	40	37
Betsi Cadwaladr	156	69	44
Cardiff & Vale	101	76	75
Cwm Taf Morgannwg	55	13	24
Hywel Dda	‡	‡	67
Powys	‡	‡	100
Swansea Bay	219	176	80
Wales	**629**	**408**	**65**

†Where NHS numbers were available in both the HRD and e-form

‡ not recorded due to small numbers (under 5)

Source HRD Wales, Health Board clinical teams and HCV e-form, Welsh Clinical Portal, 2024

6.2 Human Immunodeficiency Virus (HIV)

6.2.1 People living with HIV

The prevalence of individuals living with HIV in Wales per 100,000 population was 80.7 per 100,000 population in 2022, lower than that of England and Scotland (165.3 and 95.8 per 100,000 population, respectively) as shown in Table 53. However, caution should be used when interpreting 2020 and 2021 rates due to the impact of COVID-19 restrictions on HIV data provision across the UK.

As of 2022, 2,527 people living with HIV per receiving treatment. The majority of individuals receiving treatment are male (74.7%); those aged 50-64; and those of White ethnicity (Table 54). The rate per 100,000 is consistently higher in males than females (Table 55).

Table 53 - Number and Rate per 100,000 population of people living with HIV in the UK, by country and year, 2018-2022.

	2018		2019		2020		2021		2022	
Country/Region	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	87,326	156.1	90,470	160.9	89,547	159.0	91,368	161.6	94,397	165.3
Northern Ireland	1,112	59.0	1,144	60.3	1,209	63.6	1,293	41.6	-	
Scotland	4,716	86.7	4,871	89.2	4,878	89.2	5,016	91.5	5,221	95.8
Wales	2,192	71.1	2,373	76.9	2,425	78.1	2,453	79.0	2,527	80.7
Total	95,346	143.7	98,858	148.3	98,059	146.8	100,130	149.3	102,145	151.1

Source: SOPHID and UKHSA, 2023

Table 54 - Demographic profile of those living with HIV and receiving treatment in Wales annually, 2018-2022.

	2018	2019	2020	2021	2022
Total	2,192	2,373	2,425	2,453	2,527
Female	505	540	553	556	588
Male	1,687	1,831	1,872	1,844	1,889
0-14	<5	7	6	-	-
15-24	52	56	49	36	33
25-34	321	331	326	296	273
35-49	900	961	961	947	957
50-64	760	838	884	943	1,003
65+	155	180	199	231	260
White	1,683	1,785	1,824	1,822	1,836
Black African	320	333	340	326	344
Black Carribean	6	9	7	8	9
Black Other	33	37	38	38	39
Asian	63	66	71	75	75
Other or mixed	59	64	62	59	69

Source: SOPHID and UKHSA, 2023

Table 55 - Rate per 100,000 of individuals living with HIV and resident in Wales, by year, 2018-2022.

	2018	2019	2020	2021	2022
Total	71.1	76.9	78.1	79.0	80.7
Female	32.1	34.3	34.9	35.1	36.8
Male	111.5	121.0	123.0	121.3	123.1

Source: SOPHID and UKHSA, 2023

7 Mortality

This section of the report details mortality data for Hepatitis B virus (HBV) and Hepatitis C virus (HCV) in Wales from 2015 to 2023.

7.1 Data Source and Limitations

HBV and HCV-related mortality data for Wales comes from the Office for National Statistics (ONS) Mortality Dataset for the years 2015 to 2023. Diagnoses are identified using ICD-10 codes (see Appendix D – Mortality ICD-10 codes and methods) associated with Hepatocellular Carcinoma (HCC) and End-Stage Liver Disease (ESLD). Due to the small number of deaths, figures are mostly presented for Wales as a whole.

7.2 HBV-related Deaths

Wales has had very low numbers of HBV-related deaths from 2015 to 2023, with 14 deaths recorded of which 86% (12) were in males and 64% (9) occurred in those aged 55 or over. Of all health boards, both Cardiff and Vale UHB and Hywel Dda UHB recorded the highest number of HBV-related deaths over the period (4; 29% each).

To aid interpretation, a three-year rolling average of HBV-related deaths is presented in Table 56. While the three-year rolling average shows a decline from 7 deaths between 2015-2017 to 3 in the most recent three-year period, caution is advised due to the small number of deaths reported overall.

Table 56 – Three-year rolling average of deaths relating to Hepatitis B Virus (HBV), 2015 to 2023

	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021	2020-2022	2021-2023
Number of deaths	7	5	6	4	4	3	3

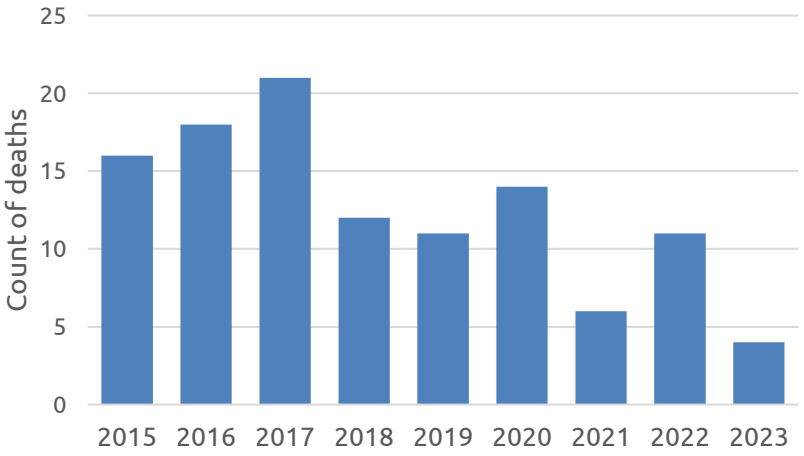
Source: ONS, 2023

7.2.1 HBV-related Mortality Rates

Consistent with death counts, the highest rates are among males (0.09 deaths per 100,000 population) and those aged 55 and over (0.1 deaths per 100,000 population). While Hywel Dda UHB exhibited the highest HBV-related death rate (0.12 deaths per 100,000 population), caution is advised when interpreting this finding due to the overall small number of deaths.

7.3 HCV-related Mortality

As shown in Figure 19, in total between 2015-2023 there have been 113 deaths, but there is a broadly decreasing trend over time with 16 deaths in 2015 and 4 in 2023. The majority of deaths within this period have been in males, 82% (93) and 66% (75) occurred in those aged 55 or over. Of all health boards, Betsi Cadwaladr UHB recorded the highest number of HCV-related deaths over the period (22; 20%).

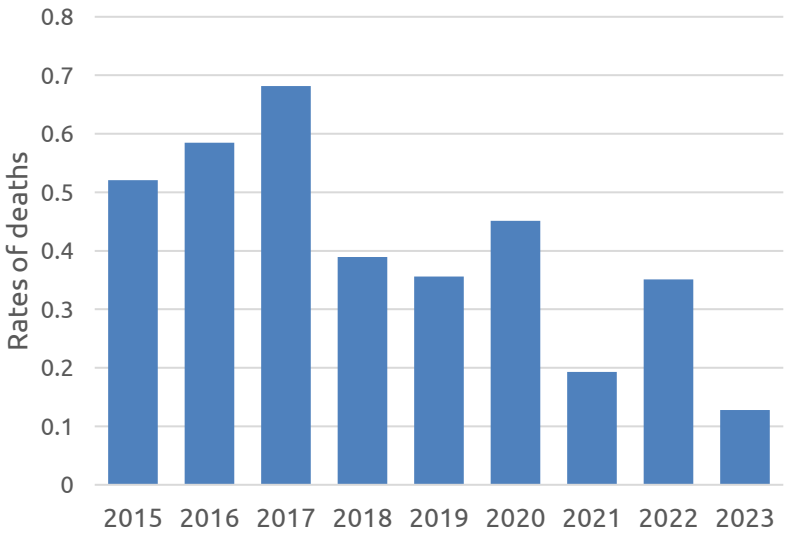


Source: ONS, 2023

Figure 19 – Hepatitis C Virus (HCV) related mortality count, by year, 2015 to 2023.

7.3.1 HCV-related Mortality Rates

Figure 20 presents the HCV-related death rate per 100,000 population in Wales from 2015 to 2023, standardised using ONS mid-year population estimates. While this figure suggests a decline, the small number of deaths makes interpretation challenging. Consistent with death counts, the highest rates are among males (0.68 deaths per 100,000 population) and those aged 55 and over (0.79 deaths per 100,000 population). While Powys THB exhibited the highest HCV-related death rate (0.75 deaths per 100,000 population), caution is advised when interpreting this finding due to the overall small number of deaths.



Source: ONS, 2023

Figure 20 – Hepatitis C Virus (HCV) related mortality rate, by year, 2015 to 2023.

7.3.2 Combined Mortality Rates

Data on combined mortality from the two diseases (HCV and HBV) shows a decline in Wales between 2015 and 2023. The rate fell from 0.59 deaths per 100,000 population in 2015 to 0.16 deaths per 100,000 population in 2023. It is important to note that further investigation is necessary due to the limitations of using combined mortality data.

8 Appendices

8.1 Appendix A - 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 Registry 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.

Prior to 2021, figures relating to hepatitis C treatment were collected though a paper-based system in collaboration with local treatment teams. Further details can be found in Appendix 1.

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.

Sexual Health in Wales Surveillance Scheme (SWS)

The Sexual health in Wales Surveillance scheme (SWS) introduced in 2011, collates information from the electronic patient management systems currently used within sexual health clinics in Wales. SWS provides a Wales-wide dataset that includes BBV testing and diagnostic information for individuals utilising sexual health services along with some key demographic and behavioural data for those individuals such as sex, age, ethnicity, and local authority of residence.

SystmOne

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 2022 mid-year figures.[29] Population estimates for Ethnicity are based on the 2021 ONS census.[30]

[29] Office for National Statistics. Mid-2022 population estimates. ONS mid-year population estimates
[30] Office for National Statistics. 2021 census - Ethnicity, national identity and religion in the UK and non-UK born population: 2021. https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/ethnicity

8.2 Appendix B – WHO and UNAIDS elimination targets

The World Health Organization (WHO) and UNAIDS have set ambitious targets to combat viral hepatitis and HIV as public health threats by 2030. WHO aims to eliminate hepatitis B and C, while UNAIDS has a 95-95-95 target for HIV: 95% diagnosed, 95% on treatment, and 95% virally suppressed. The Welsh Government, in collaboration with health boards and partners, is committed to achieving these goals.

To evidence the progress towards Hepatitis B and C elimination, the WHO has set 20 indicators along with 3 indicators regarding hepatitis C in prisons set by Welsh Government and 2 additional mortality indicators. Of these, Wales has already a demonstrably achieved 11 (39%) and are yet to achieve six. (Table 57). For the remaining 8 indicators, reliable data are not currently available. Where practical, proxy measures have been established, however, this has not been possible for all indicators. Work on directly evidencing all indicators is underway, involving collaborative modelling efforts with the other UK nations and collaborations with other NHS Wales organisations.

Prevention of blood borne virus

Indicator A: 0% unsafe injections in healthcare setting

Wales has **met** this indicator. Data from the Medicines and Healthcare products Regulatory Agency (MHRA) states that 100% of all medical injections use sterile single use needles and syringes.

Indicator B: 100% blood donations safety

Wales has **met** this indicator. Details from the Welsh Blood Service indicate that, in addition to the self-completed risk assessment prior to donation. all blood donated as part of the Blood Donor Scheme are tested for hepatitis B, hepatitis C and HIV, and any positives are excluded.

Indicator C: Over 300 sterile needles and syringes per PWID per year

Wales has **not met** this indicator. Data from the Harm Reduction Database (HRD) indicates that Wales distributed 127 syringes per person who injects drugs (PWID) in 2022.[31] This is 42% of the 300-syringe per PWID target suggested by the WHO. **More details on the needle and syringe can be found in section 3.1 on page 11.**

Hepatitis B

Indicator D: Over 90% of infants with at least three doses of the hepatitis B vaccine

Wales has **met** this indicator. Data from Public health Wales's Vaccine Preventable Disease Programme annual COVER report indicates that 94.5% of infants reaching their first birthday in the 2022/23 financial year have been vaccinated against hepatitis B.[32]

[31] The last year data was available at time of publication.
[32] The full report can be found at 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-2023/

Table 57 – Summary of the Progress towards meeting the WHO and UNAIDS elimination targets for hepatitis B, hepatitis C and HIV

Target indicators		Target met	Type of target
Prevention of HBV, HCV and HIV			
A	0% unsafe injections	Yes	WHO
B	100% blood safety	Yes	WHO
C	300 needles/syringes/PWID/year	No	WHO
Hepatitis B – vaccination targets for prevention			
D	≥90% HepB3 vaccine coverage	Yes	WHO
E	≥90% coverage of those infants at risk with targeted HepB-birth dose	Yes	WHO
Hepatitis B – prevention of Mother to Child transmission			
F	≥90% coverage of maternal antenatal HBsAg testing	Evidence not yet available	
G	≥90% coverage with antivirals for those eligible	Evidence not yet available	
H	<0.1% HBsAg prevalence in children < 5 years	Yes	WHO
I	<2% mother to child HBV transmission rate	Yes	WHO
Prevalence, incidence, testing and treatment HBV and HCV			
J	≥90% of people with HBV diagnosed	No	Proxy
K	≥80% of people diagnosed with HBV and eligible for treatment are treated	No	Proxy
L	95% reduction in HBV incidence compared to 2015	No	WHO
M	Annual HCV incidence of ≤5/100,000 in general population	No	WHO
N	Annual HCV incidence ≤2/100 in people who inject drugs (PWID)	No	WHO
O	≥90% of people with HCV diagnosed	No	Proxy
P	≥80% of people diagnosed with HCV and eligible for treatment are tested	No	WHO
Q	80% reduction in HCV incidence compared to 2015	No	WHO
Prisons in Wales			
R	100% of the prison population being offered an HCV test	Evidence not yet available	
S	90% of all those having then been tested	No	Proxy
T	90% of those diagnosed with HCV having started treatment	Evidence not yet available	
Mortality indicators HBV and HCV			
U	65% reduction in HBV mortality compared to 2015	Yes	WHO
V	65% reduction in HCV related mortality compared to 2015	Yes	WHO
W	≤4 per 100, 000 population HBV mortality rate	Yes	WHO
X	≤2 per 100, 000 population HCV mortality rate	Yes	WHO
Y	Combined HBV/HCV mortality rate ≤6 per 100, 000 population	Yes	WHO
UNAIDS 95:95:95 targets for HIV			
HIV-A	95% of all people living with HIV to know their HIV status	Evidence not yet available	
HIV-B	95% of all people with diagnosed HIV infection to receive sustained antiretroviral therapy	Evidence not yet available	
HIV-C	95% of all people receiving antiretroviral therapy to have viral suppression by 2025	Evidence not yet available	

Indicator E: Over 90% of infants born to hepatitis B positive mothers are provided a hepatitis B vaccine dose within a day of birth.

Wales has **met** this indicator. Data from Public Health Wales's Vaccine Preventable Disease Programme's latest Neonatal Hepatitis B Immunisation Report, 2021 indicate that 100% of infants born to hepatitis B positive mothers received a dose of hepatitis B vaccine within a day of birth.[33]

Indicator F: Over 90% of mothers are tested for Hepatitis B surface Antigen (HBsAg)

Data are currently **not available** to evidence this indicator. Whilst all pregnant women are offered HBsAg testing, national data on all those offered, accepted, and declined testing is currently unavailable.

Indicator G: Over 90 % of pregnant women who are eligible for hepatitis B treatment or prophylaxis are provided antivirals.

Data are currently **not available** to evidence this indicator. Data on coverage with antivirals for those HBsAg-positive pregnant women eligible for prophylaxis or treatment are currently unavailable. Data from Public Health Wales's Vaccine Preventable Disease Programme's latest Neonatal Hepatitis B Immunisation Report indicate that 100% of hepatitis B exposed babies at high risk are being treated with Hepatitis B immunoglobulin (HBIG).

Indicator H: Less than 0.1% prevalence of hepatitis B surface antigen in children under 5

Wales has **met** this target. Over the last 5 years there have been 5 new infections identified in children under the age of 5 at the date of sample collection. More details on hepatitis B testing can be found in section 4.1 on page 15.

Indicator I: Less than 2% mother to child hepatitis B virus transmission rate

Wales has **met** this target. Data from Public Health Wales's Vaccine Preventable Disease Programme's latest Neonatal hepatitis B immunisation report stated that of the babies born to hepatitis B positive mothers and resident in Wales in 2020, 65% were serologically tested for hepatitis B surface antigen by 18 months of age. None of the babies tested were found to have acquired hepatitis B infection.

Indicator J: Over 90% of people with a hepatitis B infection have been diagnosed

Data are currently **not available** to directly evidence this indicator as an estimate of the prevalence of hepatitis B is required. As this is not currently known, a proxy indicator of the number of new infections identified has been used. Work is currently ongoing with other UK nations to provide a prevalence estimate though mathematical modelling.

It is likely that Wales has **not met** this proxy measure. In 2023, there were 318 individuals who received a positive hepatitis B surface antigen test for the first time. Further details of hepatitis B testing can be found in section 4.1 on page 15.

[33] Full report can be found at https://phw.nhs.wales/topics/immunisation-and-vaccines/neonatal-hepatitis-b-immunisation/

Indicator K: Over 80% of people diagnosed with hepatitis B and eligible for treatment are treated.

Data are currently **not available** to evidence this indicator. Treatment and treatment eligibility for hepatitis B is complex and therefore it has been difficult to establish a reliably proxy indicator. Work to provide evidence for this indicator is ongoing.

Indicator L: A 95% reduction in hepatitis B incidence compared to 2015

Data are currently **not available** to evidence this indicator. Most people newly identified as infected with hepatitis B have a chronic infection. A chronic infection is a lifelong condition and there are limited details on when a person was infected. Therefore, estimating hepatitis B incidence is difficult. Mathematical modelling work alongside other UK nations is ongoing.

In 2023 there were 13 acute infections reported. More details on hepatitis B testing can be found in section 4.1 on page 15.

Hepatitis C

Indicator M: Annual hepatitis C incidence of under 5 per 100,000 population in the general population.

Data are currently **not available** to directly evidence this indicator. Most people newly identified with hepatitis C have a chronic infection and there are limited details on when a person was infected. Therefore, estimating hepatitis C incidence is difficult. Mathematical modelling work alongside other UK nations is ongoing.

To indirectly evidence this indicator, a proxy measure of incidence has been defined as the number of people with a new positive HCV-RNA test.

Wales has **not** met this proxy indicator. In 2023, 303 people without prior history of infection had a positive PCR test. This is a European age standardised rate of 12.3 new cases identified per 100,000 population. More information on hepatitis C testing can be found in section 4.2 on page 25

Indicator N: Annual HCV incidence of under 2 per 100 in people who inject drugs (PWID).

Data are currently **not available** to directly evidence this indicator. Most people newly identified with hepatitis C have a chronic infection and there are limited details on when a person was infected. Therefore, estimating hepatitis C incidence is difficult. Mathematical modelling work alongside other UK nations is ongoing.

To indirectly evidence this indicator, a proxy measure of incidence within the PWID population has been defined as the number of people tested in substance misuse services, with a new positive PCR test. This is likely to be an overestimate as it will include people who use but do not inject drugs, who are at a lower risk of infection.

Wales has **not met** this proxy indicator. Between 2019 and 2023, 13,028 individuals received an anti-HCV test in substance misuse services. 1,467 of these were reactive and received a confirmatory HCV-RNA test, of which 629 returned a positive result. More details about testing in substance misuse services can be found in section 5.2 on page 38.

Indicator O: Over 90% of people with HCV have been diagnosed.

Data are currently not available for this indicator. To evidence this indicator, the prevalence of people infected with hepatitis C must be established. Mathematical modelling work alongside other UK nations to establish prevalence of hepatitis C is ongoing. As prevalence is not currently known, a proxy indicator of the number of new infections identified has been used.

It is likely that Wales has **not met** this proxy measure. Since 2015, a total of 3,622 individuals have received a positive HCV-RNA test for the first time. The yearly number of new positive HCV-RNA cases amongst those tested in Wales from 2015 to 2023 has reduced by 37%. Further details of hepatitis C testing can be found in section 4.2 on page 25.

Indicator P: Over 80% of people diagnosed with HCV and eligible for treatment are treated.

Wales has **not** met this indicator. Of the 508 people received their first HCV-RNA positive result since 2022, 298 (59%) were recorded as commencing treatment. For more information on hepatitis C treatments, please see section 6.1 on page 47.

Indicator Q: A 80% reduction in HCV incidence compared to 2015.

Wales has **not** met this indicator. In 2023, there were 303 individuals who received a positive hepatitis C HCV-RNA test for the first time. This is a 38% reduction compared to 2015. For more information on hepatitis C treatments, please see section 6.1 on page 47.

Blood borne virus testing in Prisons

Indicator R: 100% of the prison population being offered a hepatitis C test on at least an annual basis.

Data are currently **not available** to evidence this indicator. Further development work is ongoing to establish a robust system for evidencing the proportion of individuals tested in prisons in Wales using SystmOne, the clinical management system used in prisons in Wales.

Indicator S: Over 90% of the prison population accepting testing, then been tested.

Data are currently **not available** to evidence this indicator. Further development work is ongoing to establish a robust system for evidencing the proportion of individuals tested in prisons in Wales using SystmOne data.

In 2023, there were 5,665 Hepatitis B surface antigens tests completed and 5,641 hepatitis C antibody tests completed in Welsh prisons. Data on the number of admissions was not available at the time of publication. More details about BBV testing in Welsh prisons can be found in section 6.1 on page 47.

Indicator T: Over 90% of those who been diagnosed with hepatitis C in prisons having started treatment.

Data is currently **not available** to evidence this indicator, however, work is underway to develop routine reporting.

Mortality

Indicator U: A 65% reduction in hepatitis B related mortality compared to 2015.

Wales has **met** this indicator. Numbers of hepatitis B related mortality in Wales are low with 14 deaths reported since 2015. More details on hepatitis B mortality can be found in section 7 on page 52

Indicator V: A 65% reduction in hepatitis B related mortality compared to 2015.

Wales has **met** this indicator. There were 4 hepatitis C related deaths reported in 2023 compared to 16 in 2015, a reduction of 75%. More details on hepatitis B mortality can be found in section 7 on page 52

Indicator W: Less than 4 deaths per 100,000 population relating to hepatitis B.

Wales has **met** this target. In 2023, there were 0.03 deaths per 100,000 population relating to hepatitis B in Wales.

Indicator X: Less than 2 per 100,000 population relating to hepatitis C.

Wales has **met** this indicator. In 2023 there were 0.13 deaths per 100,000 population relating to hepatitis C in Wales.

Indicator Y: Less than 6 deaths per 100,000 population relating to either hepatitis C or B.

Wales has **met** this indicator. In 2023 there were 0.16 deaths per 100,000 population relating to either hepatitis C or hepatitis B in Wales.

UNAIDS HIV Targets

Following the success of the global 90-90-90 targets for HIV elimination, UNAIDS has expanded the global targets to 95-95-95 by 2025. The indicators of the UNAIDS targets are that i) 95% of people living with HIV know their HIV status, ii) 95% of people living with HIV who know their status are on treatment and iii) 95% of people living with HIV who are on treatment have a suppressed viral load. No data are available on the status of these indicators in Wales, but work is underway within the four nations of the United Kingdom to model estimates of these indicators in England, Northern Ireland, Scotland, and Wales.

However, this report covers trends in new HIV diagnoses in Wales, the number of people living with HIV and HIV treatment received by those living in Wales. In 2022 the rate of newly diagnosed HIV in Wales rose from 1.9 per 100,000 to 3.3 per 100,000. However, the number of individuals tested dropped by 35% during the Covid-19 pandemic and testing numbers have not fully recovered. In 2023 the number of individuals tested for HIV was 88,902, down by 6.3% since 2015.

Wales had the lowest prevalence of people living with HIV (80.7 per 100,000) of the four UK nations. Rates of new HIV diagnoses have decreased to a greater extent amongst younger people aged 15-34, where PrEP provision and uptake is highest. As per the most recent UKHSA report (2022), 2,527 individuals in Wales are receiving HIV treatment. Since 2018 4,090 individuals have been prescribed PrEP in Wales. Prescription of PrEP among males has increased to 71.7 per 100,000 since inception, an increase of more than 7-fold in six years.

8.3 Appendix C – 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 deduplicated 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 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.

8.4 Appendix D – Mortality ICD-10 codes and methods

The report utilises mortality data from the Office for National Statistics (ONS) Mortality Dataset for the years 2015 to 2023.

Record Selection:

- The ONS data provides one record per individual.
- Location data (LSOA code) was used to identify deaths occurring within Wales.

Case Identification:

- Cases of HBV or HCV-related mortality were identified based on ICD-10 code presence on the death certificate.
    - HBV: Codes used were "B160", "B161", "B162", "B169", "B181", "B180", alongside related text terms like "HEPATOCELLULAR CARCINOMA" or "HEPATITIS B".
    - HCV: Codes used were "B171" or "B182", alongside related text terms like "HEPATOCELLULAR CARCINOMA" or "HEPATITIS C".
- Additionally, codes for End-Stage Liver Disease (ESLD) were included in the search: "R18" or "I850" or "I983" or "K704" or "K720" or "K721" or "K729" or "K767".

Rate Calculations:

- Mortality rates are expressed per 100,000 population.
- ONS mid-year population estimates for Wales were used to calculate the general population rate for each year.
- When mortality data is further disaggregated by sex or age group, corresponding ONS mid-year population estimates for those breakdowns were used.