



Epidemiology of hepatitis B in Ireland

Trends up to Q1 2024

April 2024





Acknowledgements

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- Health Advisors
- All other clinical staff involved in the provision of hepatitis data

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Hepatitis B in Ireland in 2023: key points

- The notification rate for acute cases (recent infections) of hepatitis B was low in Ireland in 2023, 0.3 per 100,000 population (14 cases) similar to EU/EEA overall in 2022 [ECDC hepatitis B AER 2022](#)
- Most cases of hepatitis B in Ireland are chronically infected at diagnosis: In 2023: 97% chronic, 2% acute, 1% not possible to establish acute/chronic status
- 16% increase in notification rate (2023 v 2022) for chronic cases (11.1 per 100,000 population v 9.5 per 100,000 population)
- The relatively high hepatitis B notification rates in Ireland in 2022 and 2023 should be interpreted with caution. Chronic cases may have been infected for years or decades before diagnosis
- Country of birth data (available for 54% of chronic cases in 2023) show 2% born in Ireland, 37% in eastern or central Europe, 30% in sub-Saharan Africa and 26% in Asia
- In 2015 the World Health Organization (WHO) published a global health sector strategy on viral hepatitis, with the aim of eliminating viral hepatitis as a public health threat by 2030
- Ireland is likely to have achieved some of the WHO 2030 targets, but hepatitis B prevention and mitigation measures are not being monitored in some settings, making it difficult to demonstrate this



Public health implications and recommendations

- Hepatitis B is a vaccine preventable disease
- Notification data indicate that **infant and childhood vaccination programmes are working**
 - Hepatitis B surface antigen testing is offered to all pregnant women, and it is recommended that babies born to positive mothers are given HBIG and their first vaccine dose within 24 hours of birth. Hepatitis B has been included in the childhood immunisation schedule since October 2008
 - There have been no notifications of hepatitis B in children under 16 years, who were born in Ireland, in the past five years
 - However, hepatitis B can be asymptomatic for long periods of time and may not be detected. **There is a need to monitor antenatal testing for hepatitis B nationally and to monitor the follow up of infants born to hepatitis B surface antigen positive mothers** to ensure that they receive HBIG and hepatitis B vaccine at birth, receive subsequent vaccine doses and are tested for hepatitis B infection
- **Vaccination uptake in adult risk groups** is not available currently in Ireland - **monitoring would help identify risk groups with lower uptake rates**
 - Immunity due to vaccination or past infection is likely to be relatively high in people who inject drugs, as both vaccination and testing for hepatitis B have been recommended for decades in this population group. Injecting drug use is rarely reported as a risk factor in notified cases
 - The most common risk factor reported for acute cases of hepatitis B in Ireland is sexual exposure, both heterosexual and sex between men. [Self-reported data](#) for gay and bisexual men, and other men who have sex with men (gbMSM) and ongoing case detections in at-risk heterosexuals indicate that vaccine uptake is sub-optimal in those with sexual risk factors
 - A new HSE communications campaign aiming to raise awareness of the risk of acquiring hepatitis B sexually, and promote vaccination, is currently underway
- Most **chronic cases of hepatitis B** in Ireland are **in migrants coming from an endemic country**. For these cases, **linkage to care** and, if clinically appropriate, **antiviral treatment** to suppress viral replication and reduce the risk of disease progression, **are key interventions**
- **Household and sexual contacts of acute and chronic cases should be vaccinated**, and infection control advice provided, **to prevent onward transmission of infection**



Hepatitis B virus





Hepatitis B virus (HBV) (1)

- Hepatitis B is a viral infection, which causes inflammation of the liver
- It is caused by a small DNA virus, which can persist in a stable form in the nucleus of infected host cells (cccDNA), making cure of chronic infection difficult
- Transmitted through contact with semen, blood or other body fluids from an infected person
- **Most common modes of transmission:** from mother to baby during birth and delivery, unprotected sex & sharing needles, syringes and other equipment when injecting drugs
- **Less common modes of transmission:** sharing tooters or straws when snorting cocaine, unscreened blood or blood products (very rare in Ireland), accidental needlestick/blood exposure in healthcare or other settings, household/close contact particularly in early childhood, sharing razors or toothbrushes
- 50-100 times more infectious than HIV
- Incubation period (time from infection to onset symptoms) is 1 to 6 months (average 2-3 months)
- **Vaccine preventable** – universal infant vaccination introduced in Ireland in 2008. Vaccination is also recommended for high-risk groups: <https://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/chapter9.pdf>

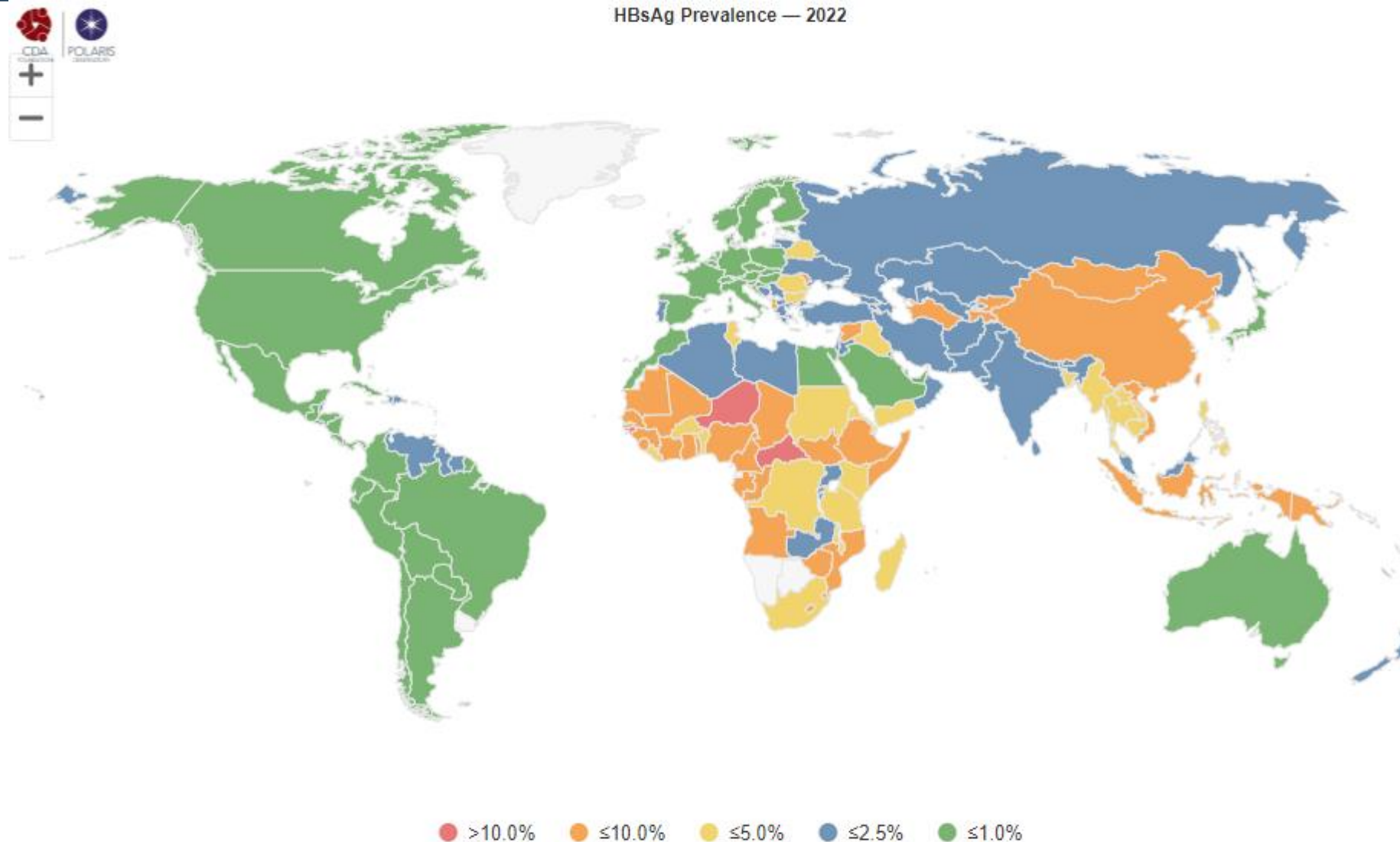


Hepatitis B virus (HBV) (2)

- **Acute cases (new infection, within past 6 months):** <10% children and 30-50% adults develop symptoms when first infected
- Symptoms include; jaundice, dark urine, pale stool, nausea, vomiting, abdominal discomfort, joint pain, fever, anorexia, fatigue
- Severe acute hepatitis can lead to liver failure, but this is very rare, and most people recover from acute illness without complications
- **Chronic (long-term infection)** develops in 80-90% of those infected with hepatitis B as infants, 30-50% of children <6 years and <10% of those infected as adults
- Chronic infection can lead to chronic liver disease, cirrhosis, liver cancer and liver failure, usually over 20-30+ years
- World Health Organization ([WHO](#)) estimate that over 250 million people are chronically infected worldwide
- **Long term viral suppression** is possible with treatment using nucleoside reverse transcriptase inhibitors (e.g. tenofovir disoproxil fumarate (TDF), entecavir (ETV), tenofovir alafenamide (TAF) or tenofovir in combination with lamivudine/emtricitabine) [EASL 2017 clinical practice guidelines hepatitis B](#), [WHO Chronic hepatitis B guidelines 2024](#), [AASLD chronic hepatitis B guidelines](#)
- Antiviral treatment can slow the advance of liver fibrosis/cirrhosis and improve long term survival, but lifelong treatment is usually required



Worldwide prevalence of hepatitis B





Hepatitis B surface antigen prevalence in Ireland (serological marker for viraemic/current infection)

General population, including risk groups:

- **Residual sera, 2003:** estimated HBsAg prevalence (current infection) of **0.1%**
- **Census data & published hepatitis B prevalence data, 2022:** estimated HBsAg prevalence of **0.3-0.5%**
- [Emergency department screening](#), mid 2016 to mid 2023: HBsAg prevalence **0.3%**

Antenatal testing females:

- Rotunda Hospital [annual report](#), 2022: HBsAg prevalence in 2022 **0.5%**
- Coombe Hospital [annual report](#), 2022: annual HBsAg prevalence range between 2016 and 2022 **0.2-0.4%**

New blood donors:

New donors tested 1997-2022: HBsAg prevalence **0.009%** (*personal communication: Irish Blood Transfusion Service*)

People who inject drugs (PWID) and people in prison

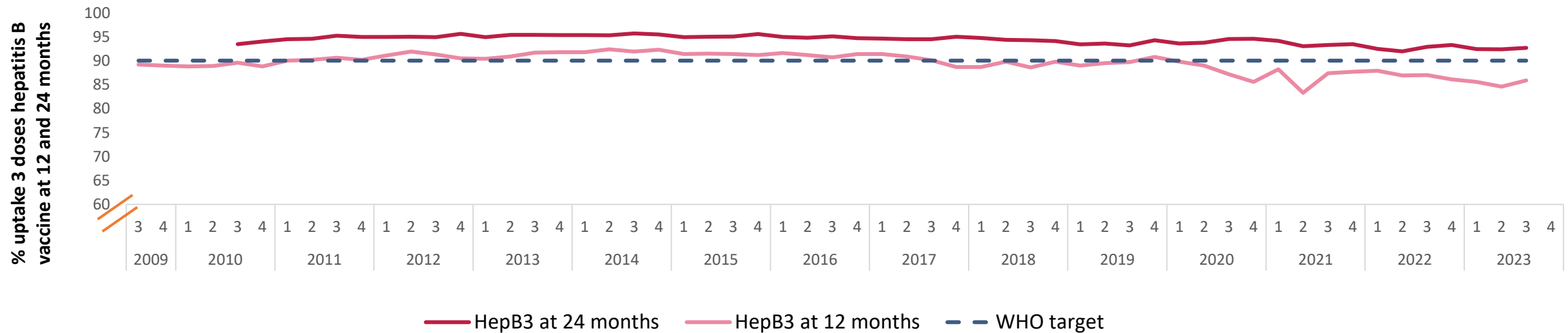
- Studies of PWID (mostly heroin users) in Ireland, 1992-2002: HBsAg prevalence **1-5%**
- [Prison study](#), 2011: **0.3%** of people in prison who were screened were HBsAg positive

International Protection Applicants (IPA)

- National Reception Centre, Baleskin (*personal communication: HSE Social Inclusion*)
 - 2016-2018: of almost 3,000 IPAs screened: **3%** HBsAg positive
 - 2022: of almost 1,600 IPAs screened: **3%** HBsAg positive

Hepatitis B vaccination and hepatitis B (3 dose) immunisation uptake at 12 and 24 months of age in Ireland, Q3 2009 – Q3 2023

- The hepatitis B vaccine was added to the primary childhood immunisation schedule in Ireland in October 2008 for children born from 1st July 2008
- It is included as part of the 6 in 1 vaccine and it is recommended that it be administered at 2, 4 and 6 months of age
- The average 3 dose immunisation uptake, at 24 months of age, between Q3 2010 and Q4 2022 was 94.4%, **exceeding the WHO target**
- The 2023 uptake figures were slightly lower; average uptake reported for Q1 - Q3 2023 was 92.5%



- Hepatitis B vaccine is available free of charge in public sexual health or GUM clinics, addiction treatment settings, prisons, migrant screening settings and through occupational health departments in healthcare settings
- No data are available on uptake rates in adult risk groups who are recommended for vaccination <https://www.rcpi.ie/Healthcare-Leadership/NIAC/Immunisation-Guidelines-for-Ireland>



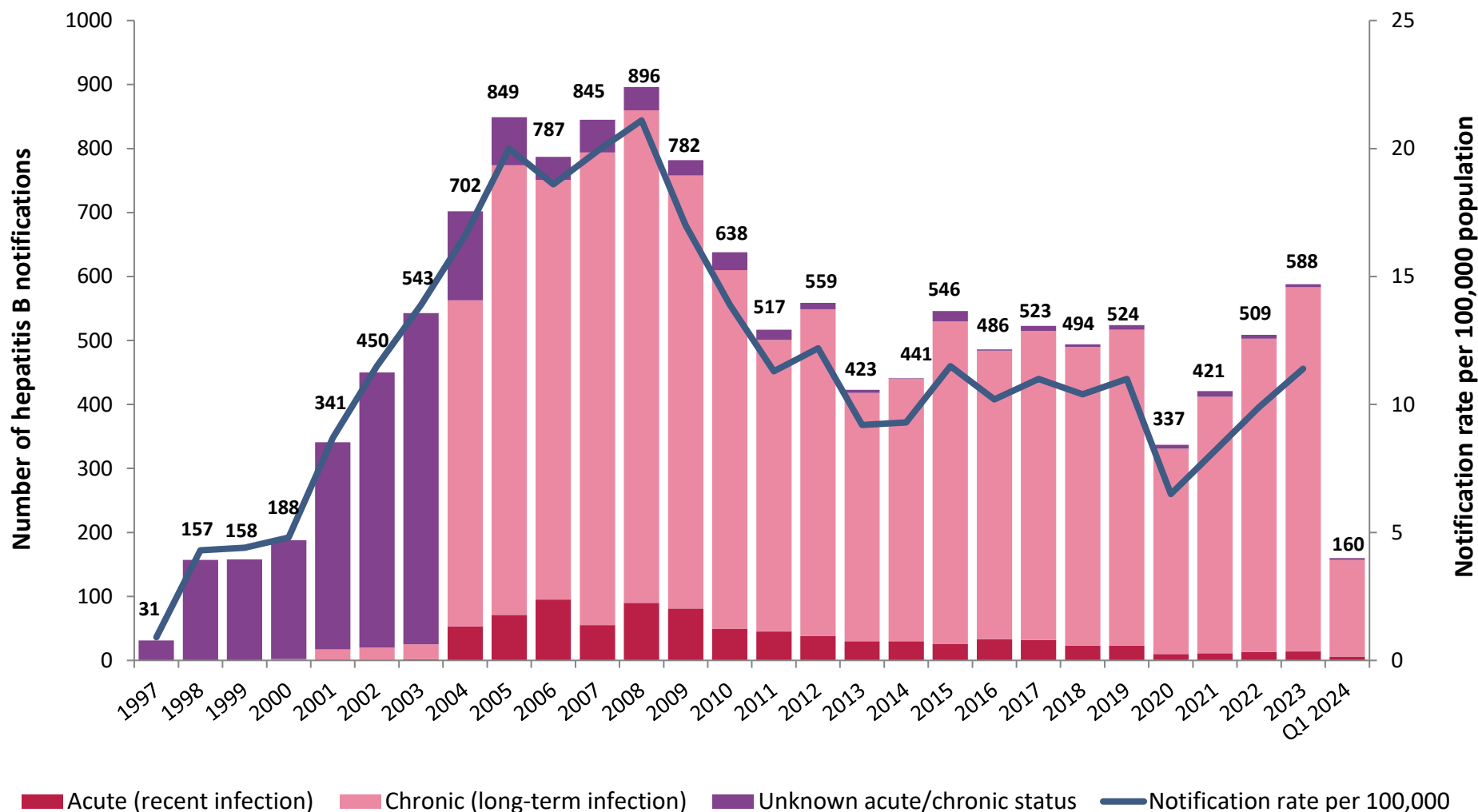
Hepatitis B notifications in Ireland





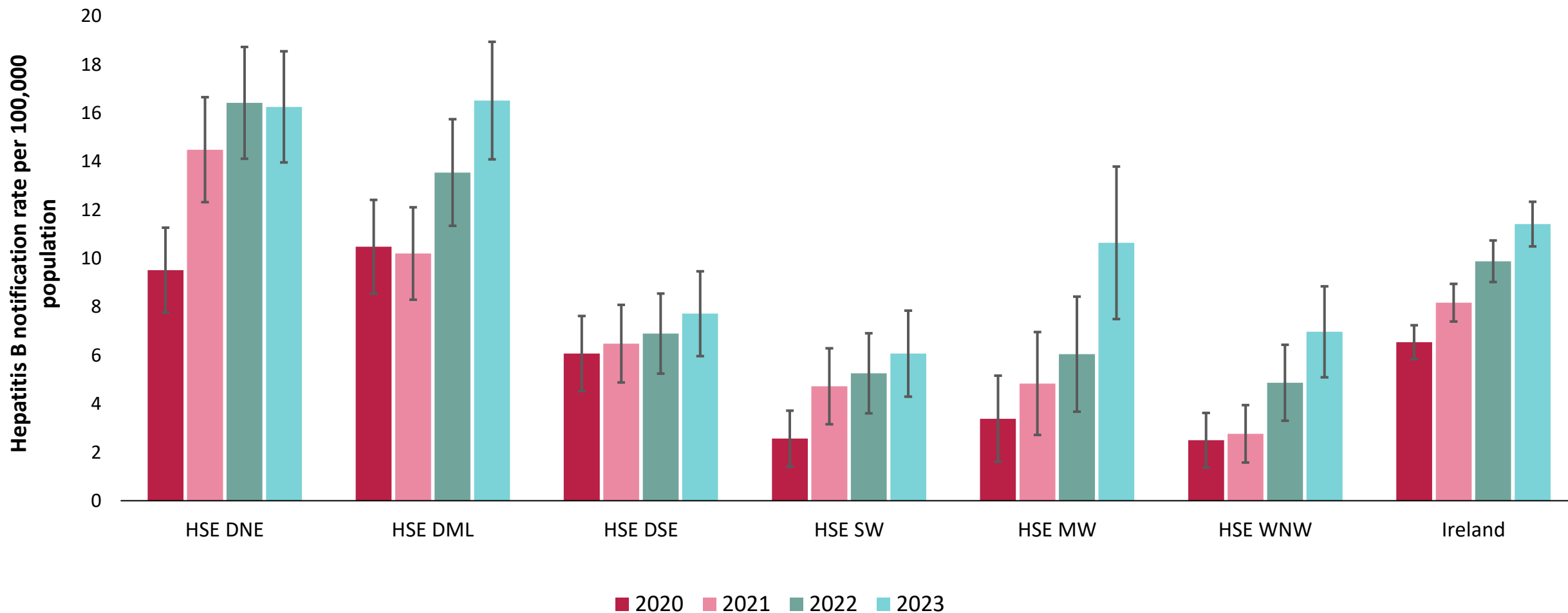
Number of hepatitis B notifications in Ireland, by acute chronic status, 1997- Q1 2024 & notification rate per 100,000 population, 1997-2023

- Hepatitis B notifications were impacted by reduced case ascertainment in 2020 and 2021 during the COVID-19 pandemic
- Notifications increased by 21% in 2022 (509, 9.9/100,000 population) and by 16% in 2023 (588, 11.4/100,000 population)
- Notifications in Q1 2024 increased by 5% compared to Q1 2023
- 96% of hepatitis B notifications between 2019 and 2023 were chronic cases (long-term infections), 3% were acute cases (new infections) and status was not known for 1%
- Hepatitis B has been notifiable since 1981. The average number of annual notifications 1982-1996 was 29 and the median number was 20





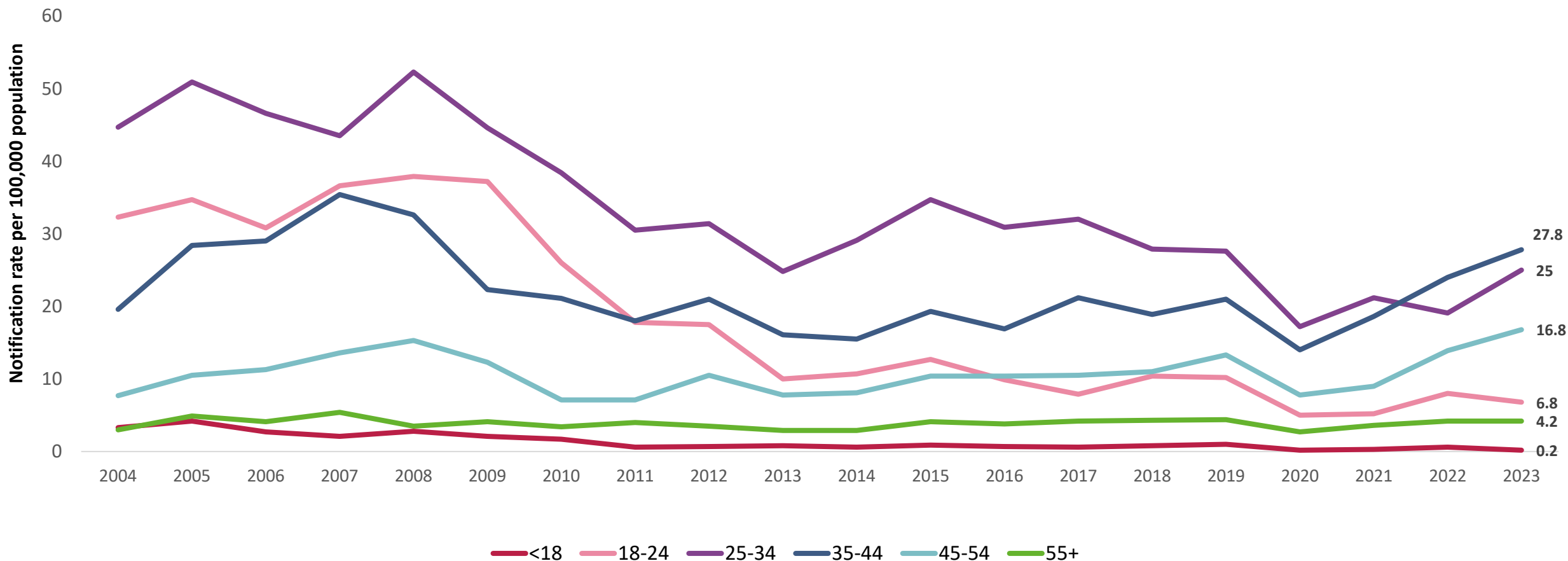
Hepatitis B notification rates per 100,000 population, by HSE health region, 2020-2023



■ The highest notification rates were in HSE Dublin and North East and HSE Dublin and Midlands



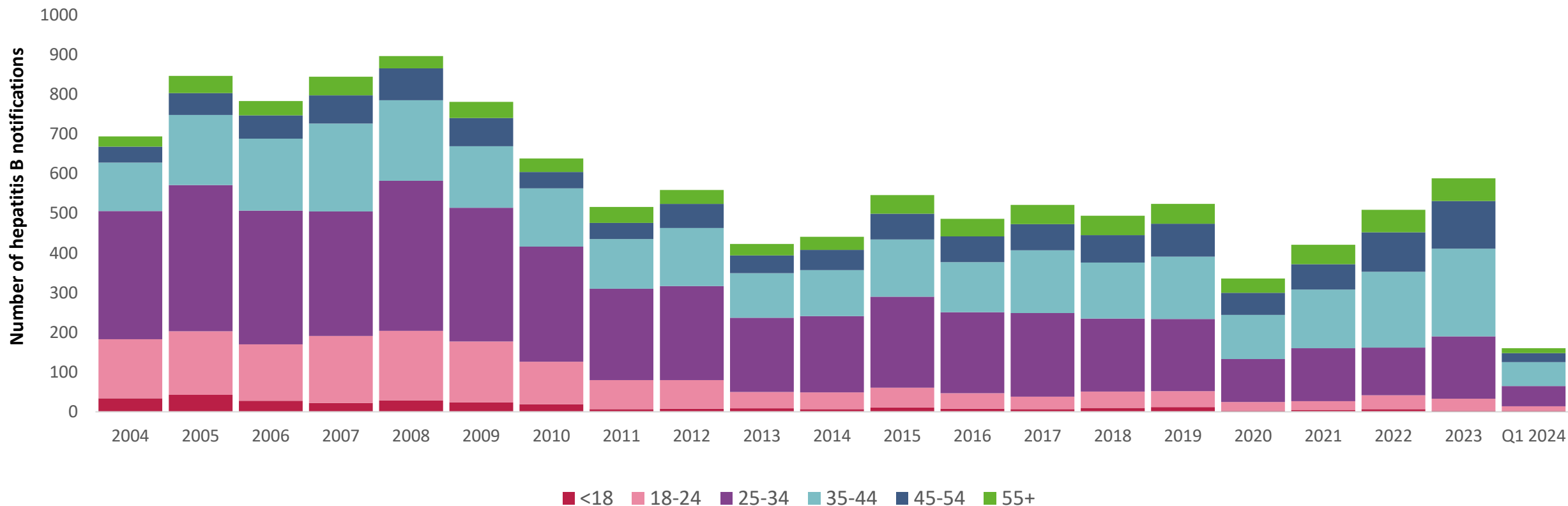
Trends in age specific notification rates per 100,000 population for hepatitis B in Ireland, 2004 – 2023



- Since 2012, the highest hepatitis B notification rates have been in 25-44 year olds
- Notification rates in children have decreased since hepatitis B was added to the childhood immunisation schedule in October 2008



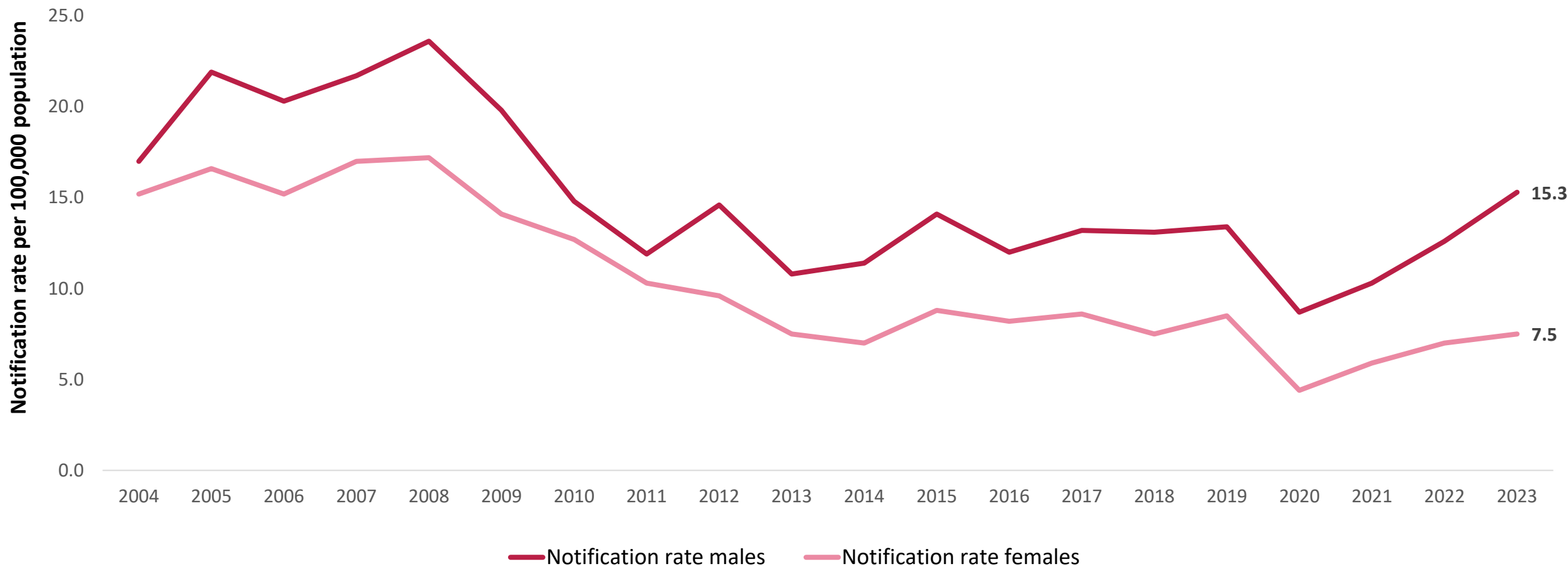
Number of hepatitis B notifications by age group (years) in Ireland, 2004 – Q1 2024



- The age profile for hepatitis B notifications has gradually increased over time
- More than two thirds of hepatitis B cases were 35 years or older in 2022 & 2023 compared to 27% in 2004
- 2019-2023, 29 cases of hepatitis B were notified in children aged <18 years
 - Where country of birth was reported, three of these cases were born in Ireland



Trends in sex specific notification rates per 100,000 population for hepatitis B in Ireland, 2004 – 2023



■ Hepatitis B notification rates are higher in males

■ In 2023, two thirds of notified cases were in males (389 males, 196 females, sex not reported for 3 cases)





Acute hepatitis B

Recent infection (within past 6 months)





Summary of **acute** hepatitis B in Ireland, 2007- Q1 2024

2007-2023

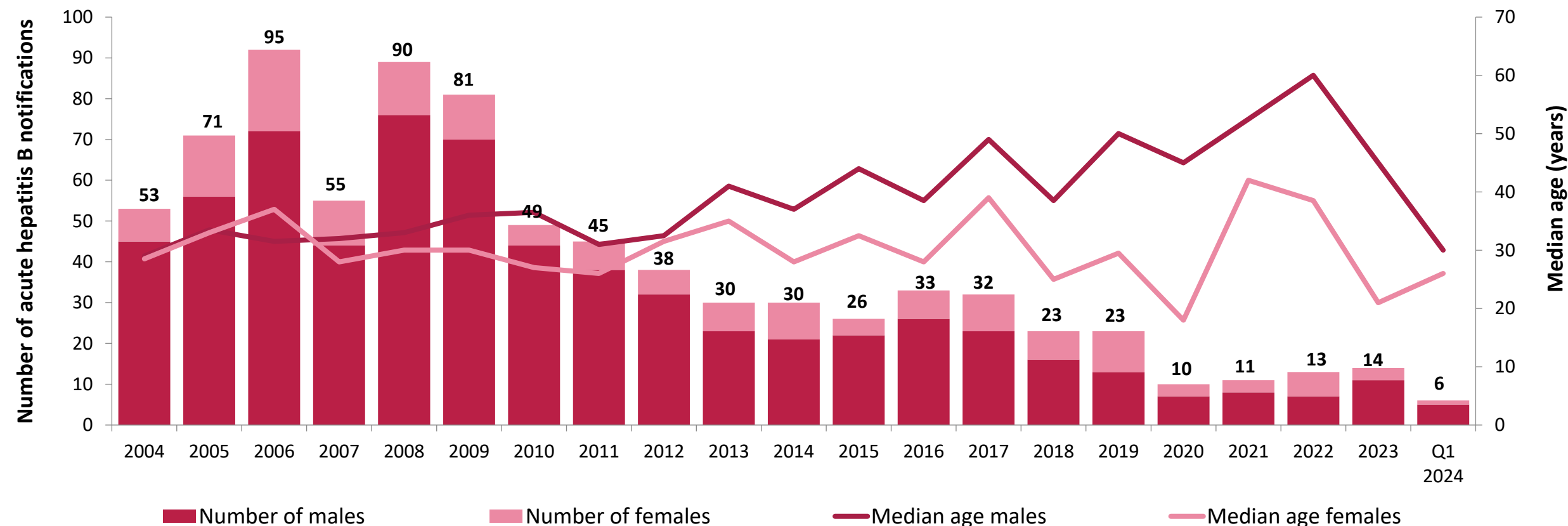
- 6% of hepatitis B cases notified 2007-2023 were acute cases when diagnosed (infected within the previous 6 months)
- There were 603 acute hepatitis B notifications in this time period (average annual number of acute cases was 35)
- Decrease in average annual acute hepatitis B notifications over time:
 - 2007-2011: 64
 - 2012-2017: 32
 - 2018-2023: 16
- 80% of acute cases notified 2007-2023 were male (M:F = 4:1)
- The annual median age at notification fluctuated, but there was a gradually increasing trend: 29 years in 2007, 39 years in 2023
- The median age for male acute cases was higher than that for female acute cases (36 years compared to 30 years)
- Where risk factor data were available, 74% of acute cases notified 2007 to 2023 were sexually acquired
- Sexual orientation was reported for 94% of sexually acquired cases; 55% heterosexual, 45% gay, bisexual, and other men who have sex with men (gbMSM)
- Where country of birth was reported, 70% of acute cases were born in Ireland, 10% in eastern or central Europe, 6% in Asia, 5% in western Europe, 5% in sub-Saharan Africa, 3% in Latin America and 1% in other regions

2023 and Q1 2024

- 14 acute cases of hepatitis B were notified in 2023 (0.3 per 100,000 population); 11 males & 3 females, the median age was 45 years for males and 21 years for females, 77% of cases were sexually acquired
- 6 acute cases of hepatitis B were notified in the first quarter of 2024; 5 males and 1 female, the age profile for the male cases was younger than usually seen (median 30 years)



Trends in **acute** hepatitis B notifications, by sex and median age, 2004 – Q1 2024, in Ireland

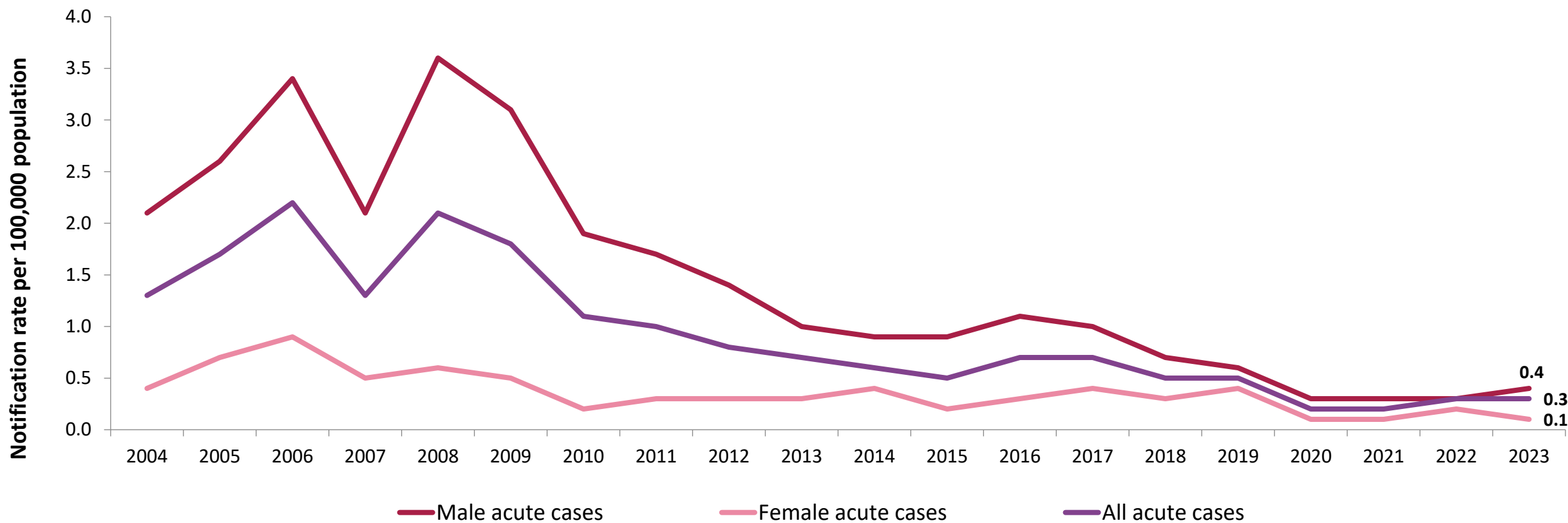


- The number of acute cases of hepatitis B notified annually has declined in recent years in Ireland
- 80% of acute cases notified 2004-2023 were males
- The median age for male acute cases was consistently higher than that for females





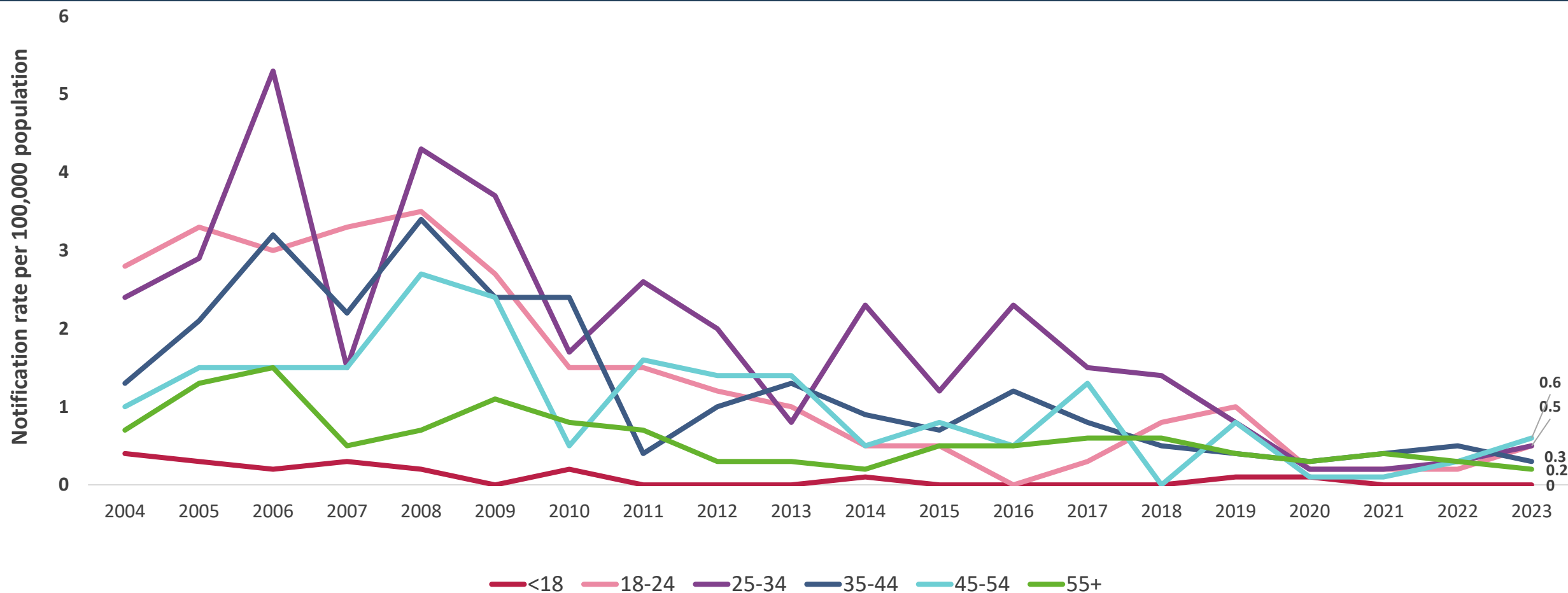
Trends in sex specific notification rates per 100,000 population for **acute** hepatitis B in Ireland, 2004 – 2023



- The notification rate for acute hepatitis B decreased in both males and females over the past 15 years and is currently very low in Ireland (0.3 per 100,000 population)
- Acute hepatitis B notification rates are higher in males than in females - very few female cases have been detected in recent years



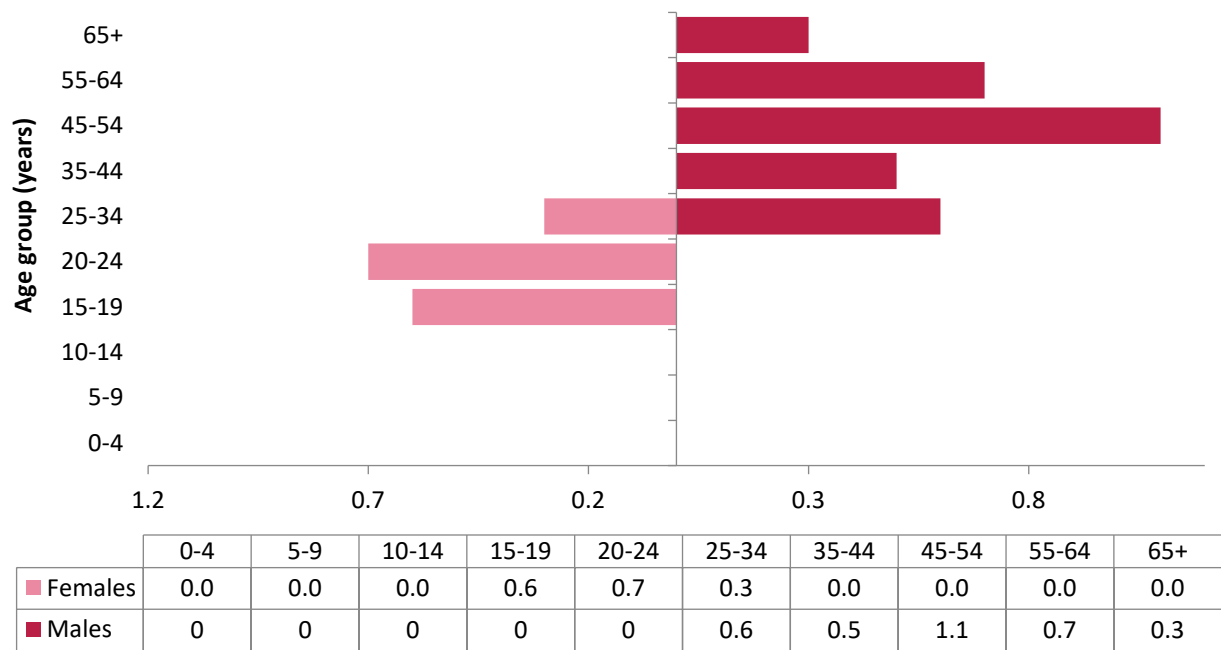
Trends in age specific notification rates per 100,000 population for **acute** cases of hepatitis B in Ireland, 2004 – 2023



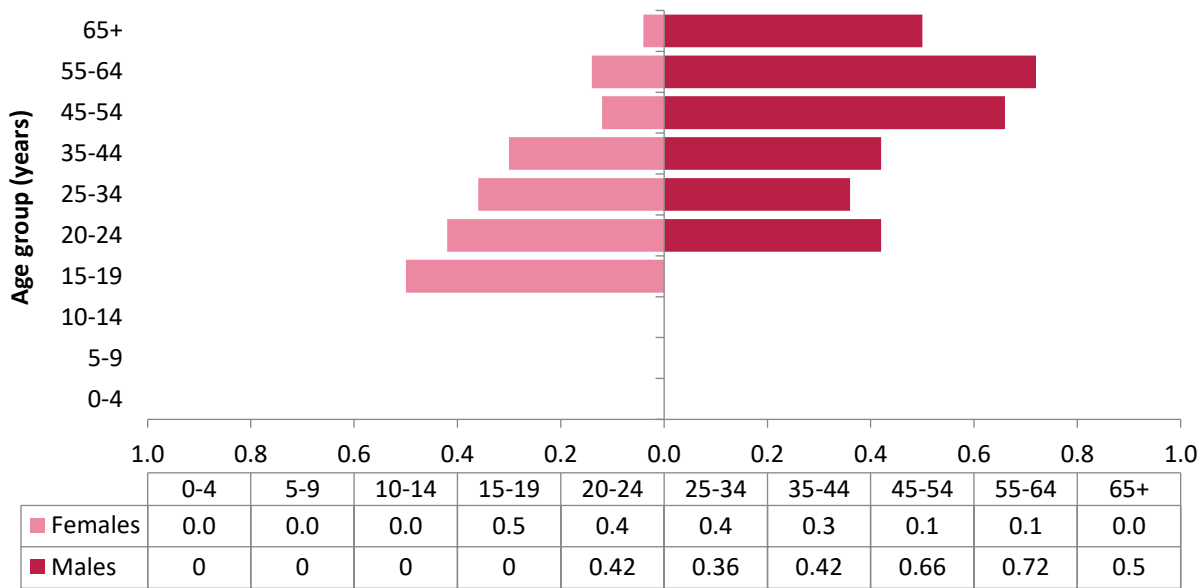
- Acute hepatitis B notification rates have decreased in all age groups over the past 15 years
- Acute cases are rarely reported in children, but are reported in low rates in all adult age groups



Acute hepatitis B rates by age and sex, 2023 and mean annual rates, 2019-2023



Acute hepatitis B notification rate per 100,000 population, 2023



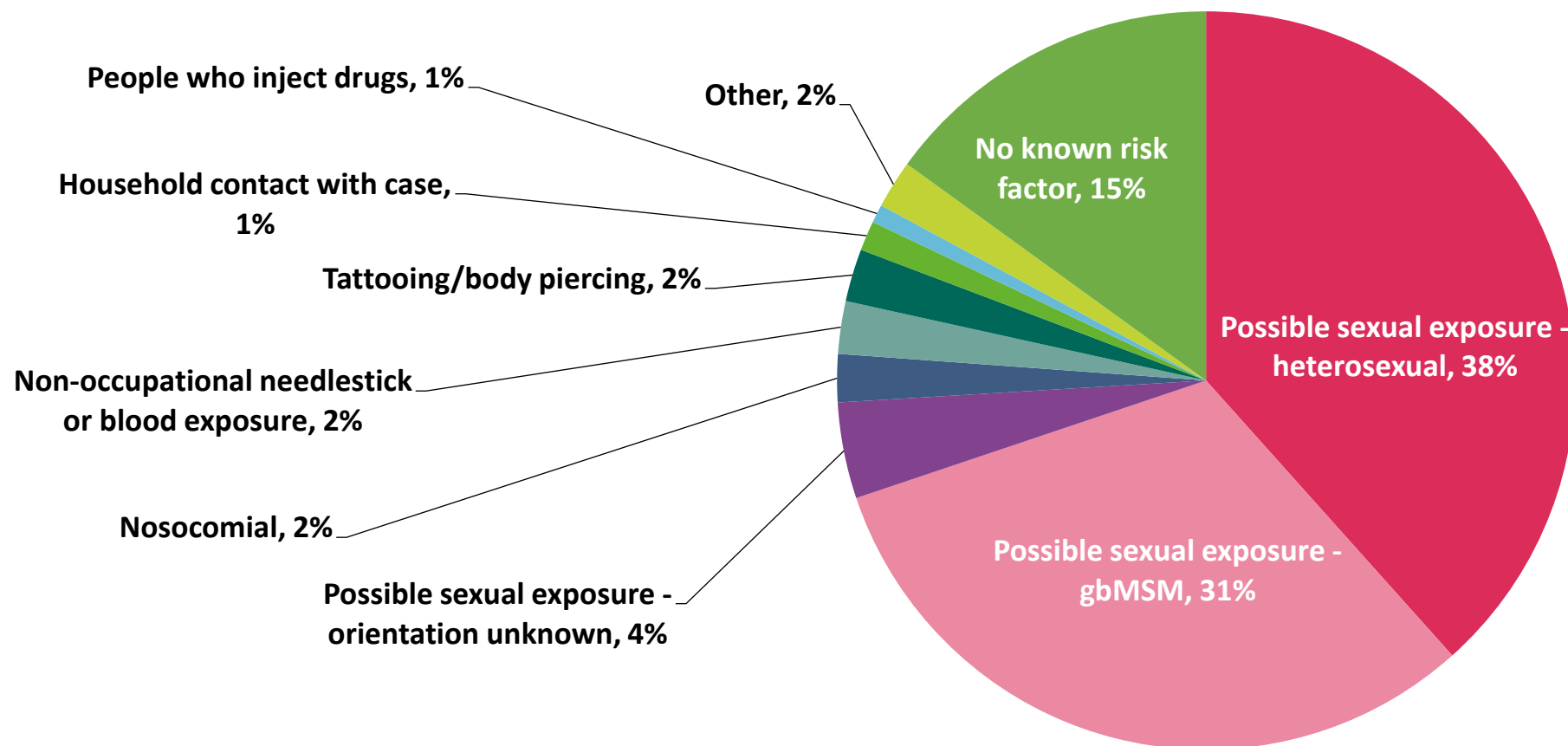
Mean annual notification rate for acute hepatitis B per 100,000 population, 2019-2023

- 14 acute cases of hepatitis B were notified in 2023 - similar to 2022 (13 cases), mean 2019-2023 (14 cases) & median 2019-2023 (13 cases)
- 79% acute cases were male in 2023 (11 males, 3 females) and 65% of cases notified 2019-2023 were male
- The median age for male acute cases in 2023 was higher than that for females: 45 compared to 21 years





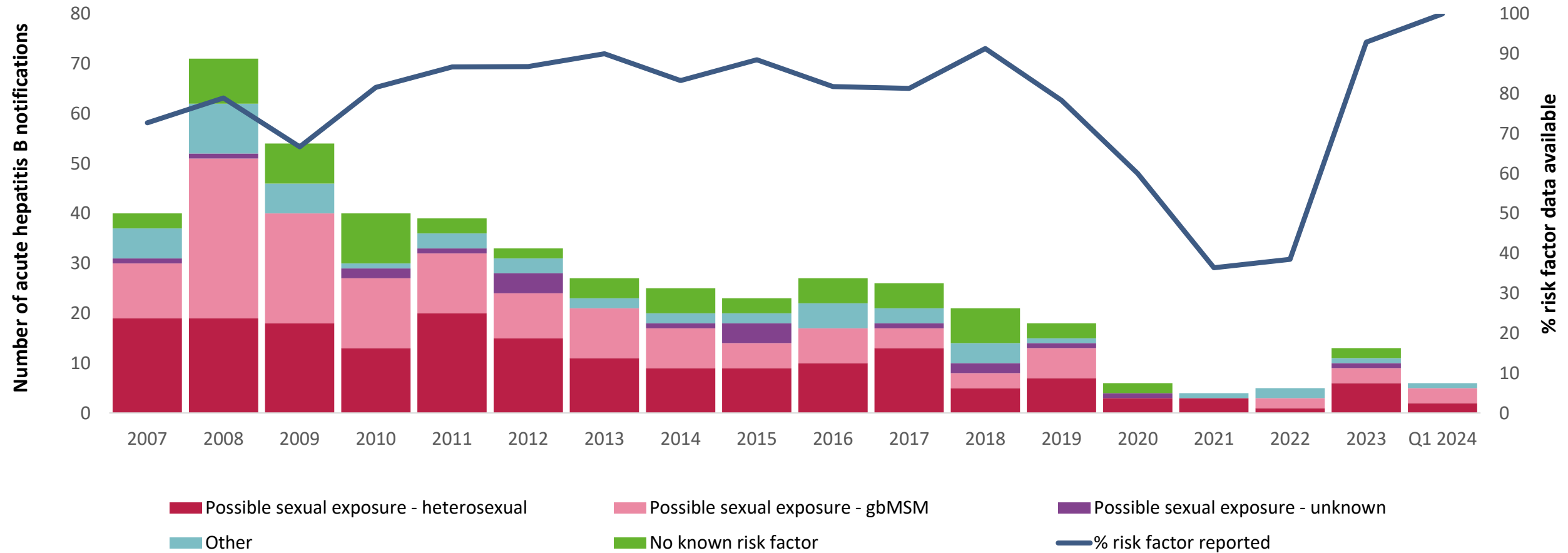
Risk factor/exposure for **acute** hepatitis B notifications in Ireland, 2007- 2023 (where data available - 78%, n=472)



- Where risk factor was reported, 74% of acute cases were sexually acquired (55% heterosexual, 45% gbMSM)
- No known risk factor refers to cases that were followed up by the Department of Public Health but for whom a risk factor was not identified.



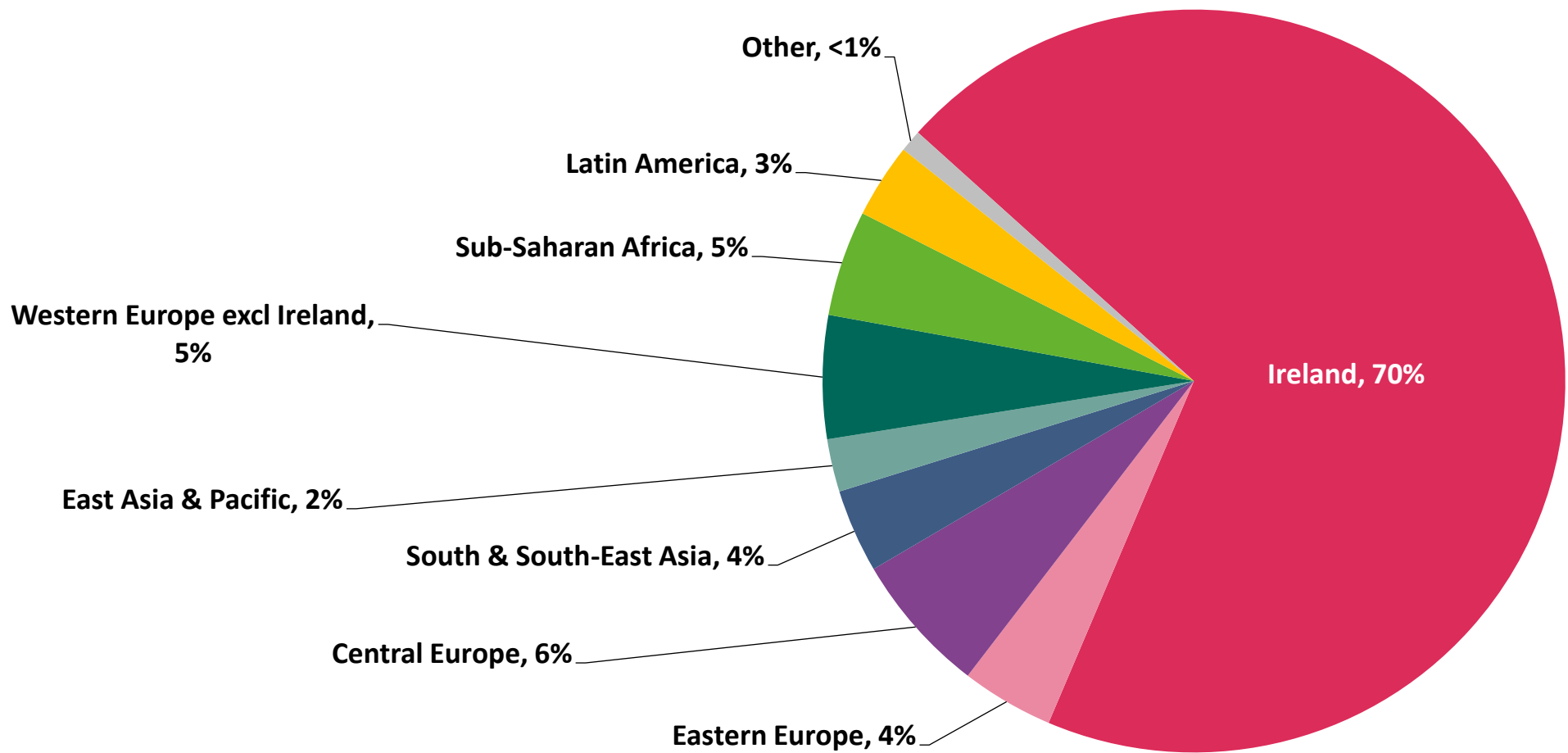
Trends in risk factor/exposure for **acute** hepatitis B notifications in Ireland, 2007- Q1 2024 (where data available - 78%, n=478)



- The number of acute hepatitis B notifications has been low in recent years and changes in the risk factor distribution should be interpreted with caution
- Risk factor data completeness for acute cases decreased during the COVID-19 pandemic – reported for 44% of acute cases 2020-2022
- No known risk factor refers to cases that were followed up by the Department of Public Health but for whom a risk factor was not identified



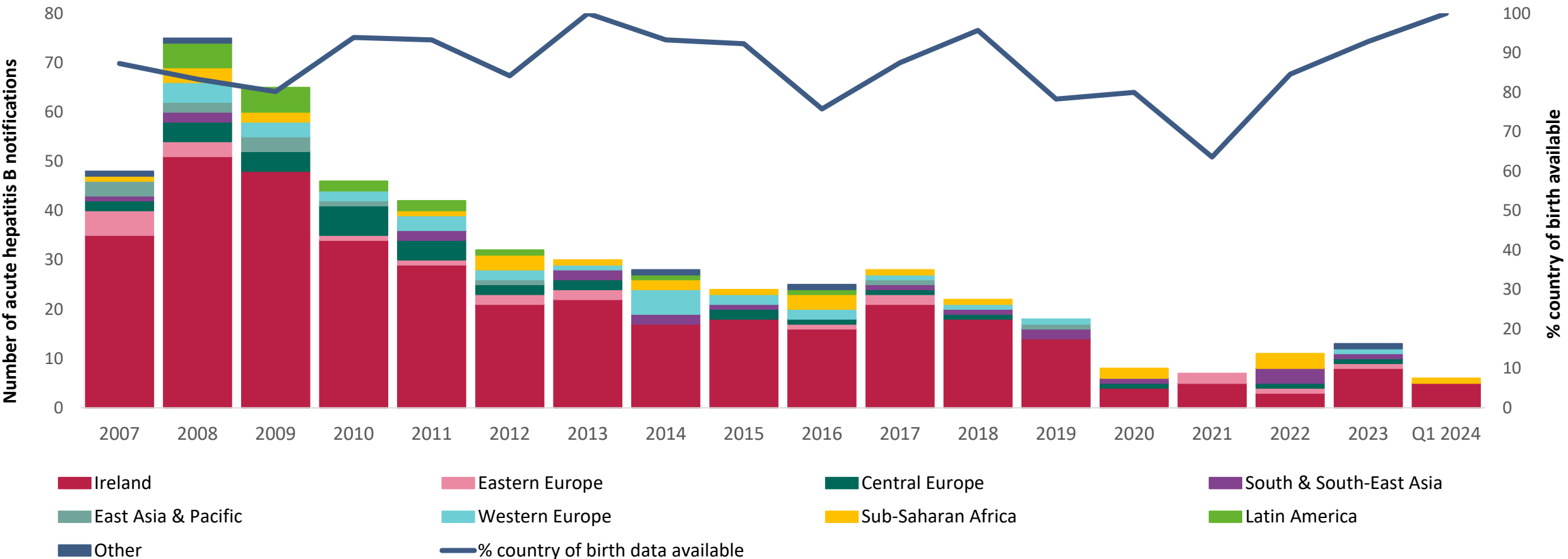
Country/region of birth for **acute** hepatitis B notifications in Ireland, 2007- 2023 (where data available 87%, n=522)



Where country of birth was reported, 70% of acute hepatitis B notifications between 2007 and 2023 were born in Ireland



Trends in country/region of birth for **acute** hepatitis B notifications in Ireland, 2007- Q1 2024 (where data available 87%, n=528)



- The number of acute hepatitis B notifications has been low in recent years and annual changes in the region of birth distribution should be interpreted with caution
- The proportion of acute cases born in Ireland was 61.5% in 2023 and 83% in Q1 2024





Chronic hepatitis B

Long-term infection, HBsAg persistence for 6 months or more after infection with hepatitis B virus





Summary of **chronic** hepatitis B in Ireland, 2007 - 2023

2007-2023

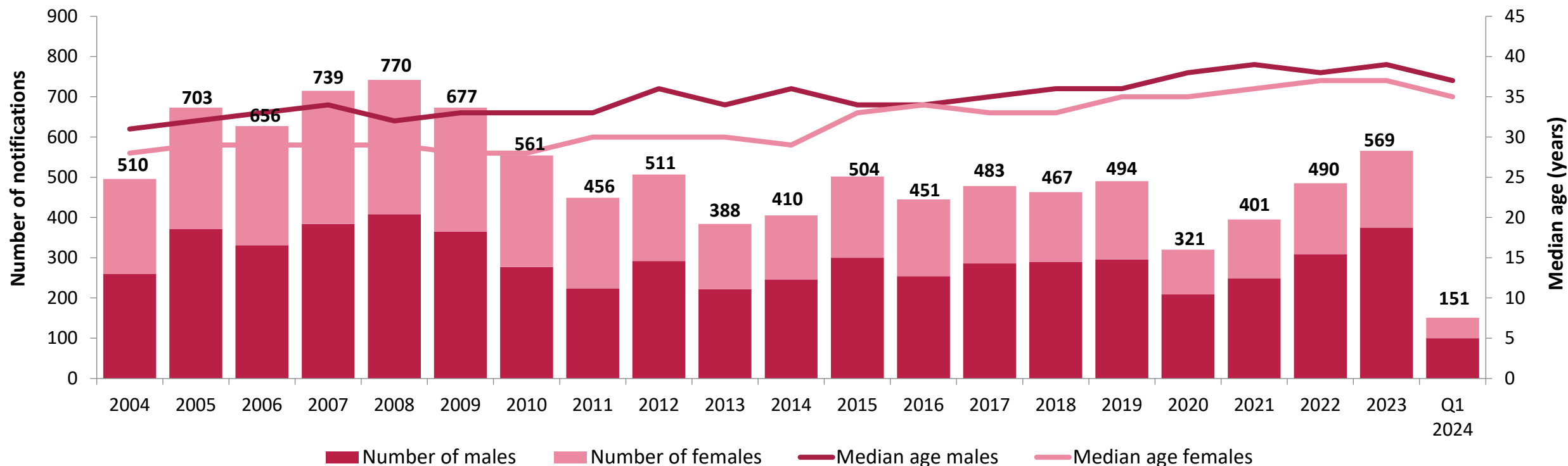
- 91% of hepatitis B cases notified 2007-2023 were chronically infected when notified (6% acute, 3% acute/chronic status not reported)
- 8,692 chronic cases were reported 2007-2023 (annual average: n=511)
- Notifications of chronic hepatitis B decreased during the COVID-19 pandemic in 2020 (n=321, 6.2/100,000 population) and 2021 (n=400, 7.8/100,000 population), returned to pre-pandemic levels in 2022 (n=490, 9.5/100,000 population) and increased further in 2023 (n=569, 11.4/100,000 population)
- 58% of chronic cases notified 2007-2023 were male
- The median age at notification has gradually increased over time from 32 years in 2007 to 38 years in 2023
- Country of birth was reported for just over half of chronic cases between 2007 and 2023 and reported data may not be representative of all chronic cases
- Where country of birth data was reported 7% of chronic cases notified between 2007 and 2023 were born in Ireland
- The proportion of cases born in Ireland was lower in more recent years; 4.5% between 2019 and 2023
- The majority of chronic cases were born and infected outside of Ireland, mostly in sub-Saharan Africa (25%), central Europe (23%), eastern Europe (12%), south/south-east Asia (14%) and east Asia (13%)

2023

- 569 chronic cases of hepatitis B were notified in 2023 (11 per 100,000 population)
- 66% of chronic cases in 2023 were male, the median age for male cases was 39 years and the median age for females was 37 years
- Country of birth was reported for 54% of cases, where data were reported 2% of chronic cases were born in Ireland
- The most common regions of birth were sub-Saharan Africa (30%), eastern Europe (22%), central Europe (15%), south/south-east Asia (18%) and east Asia (7%)



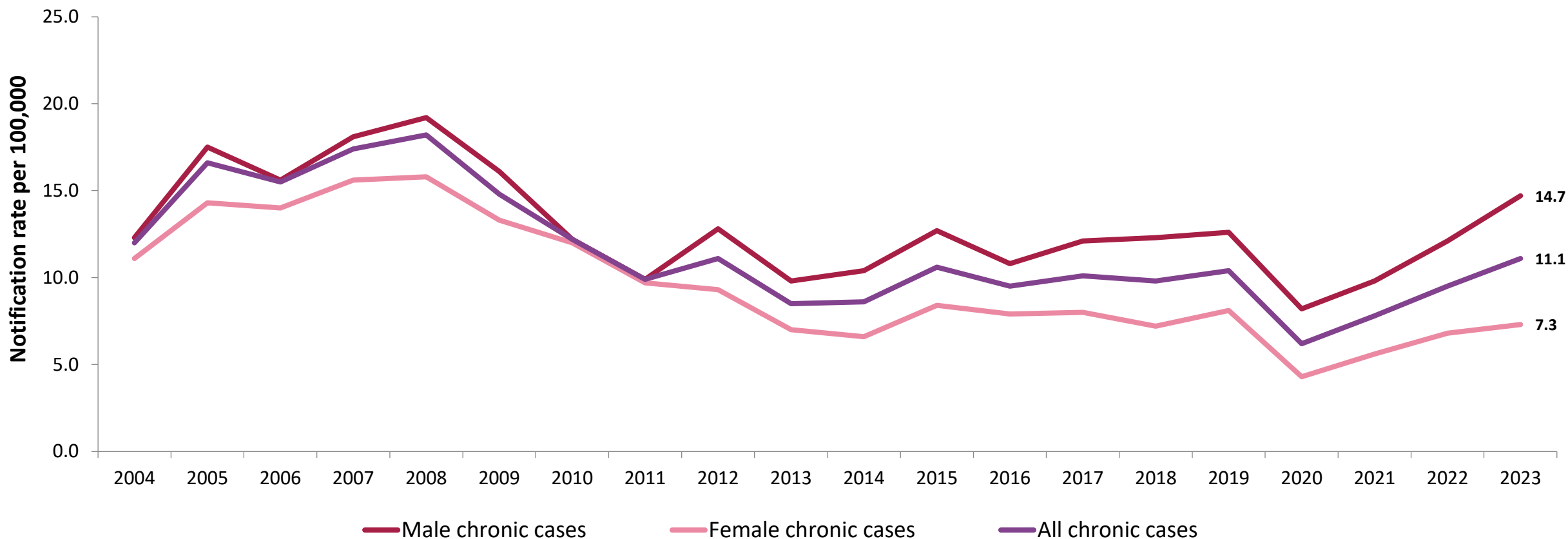
Trends in **chronic** hepatitis B notifications, by sex and median age, 2004 - Q1 2024, in Ireland



- The number of chronic cases of hepatitis B declined in 2020 and 2021
- This was most likely due to reduced case ascertainment and changes in migration, due to travel restrictions, during the COVID-19 pandemic
- Chronic hepatitis B notifications increased by 22% in 2022 compared to 2021, returning to pre-pandemic levels
- The number of chronic cases increased by a further 16% in 2023



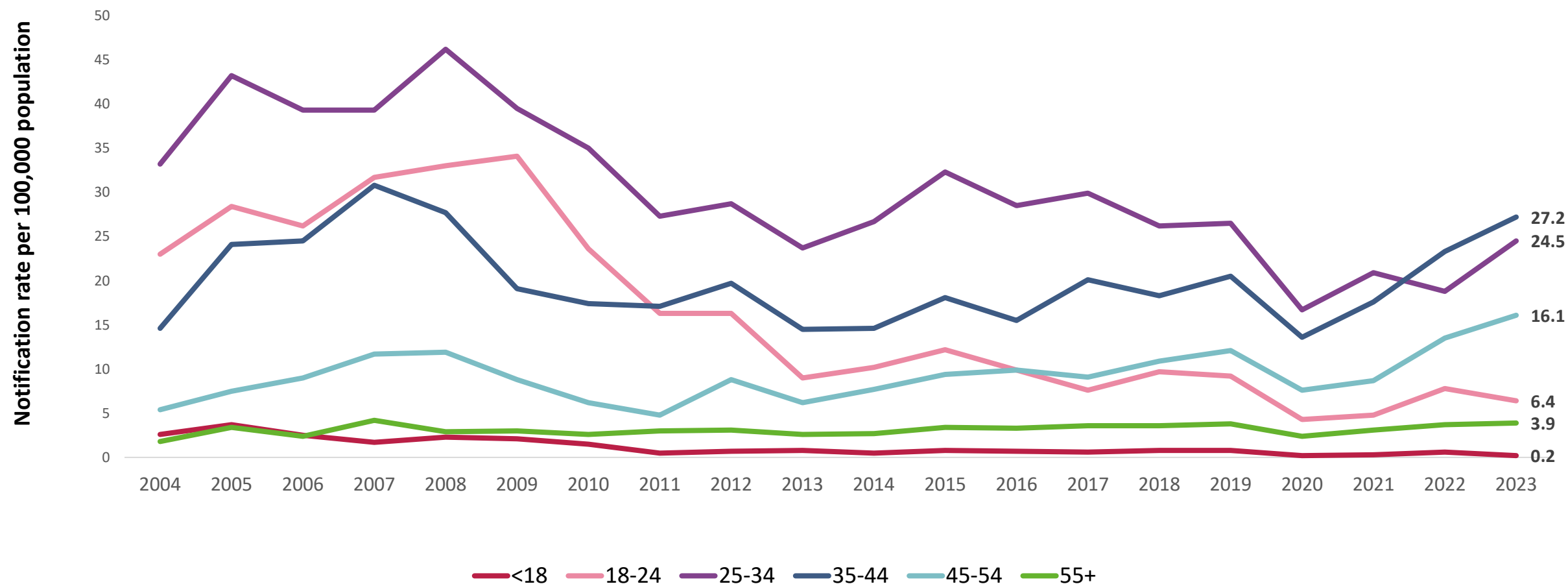
Trends in sex specific notification rates per 100,000 population for **chronic** hepatitis B in Ireland, 2004 – 2023



- The notification rate for chronic hepatitis B decreased during the COVID-19 pandemic in 2020 and 2021, returned to pre-pandemic levels in 2022 and increased further in 2023
- The annual chronic hepatitis B notification rate is usually higher in males compared to females



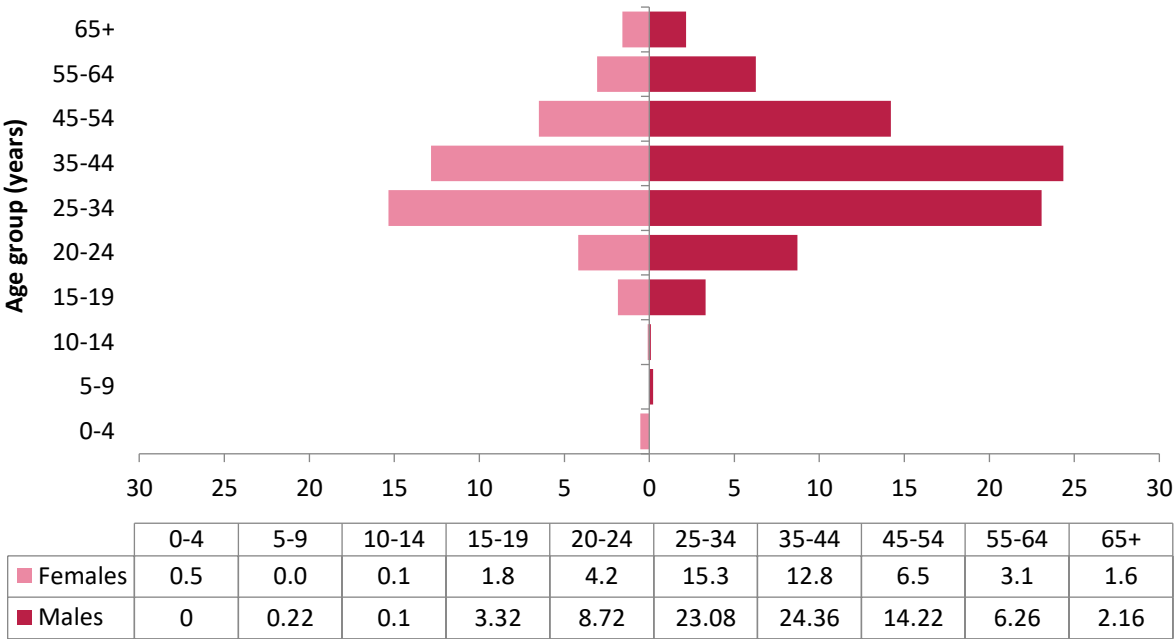
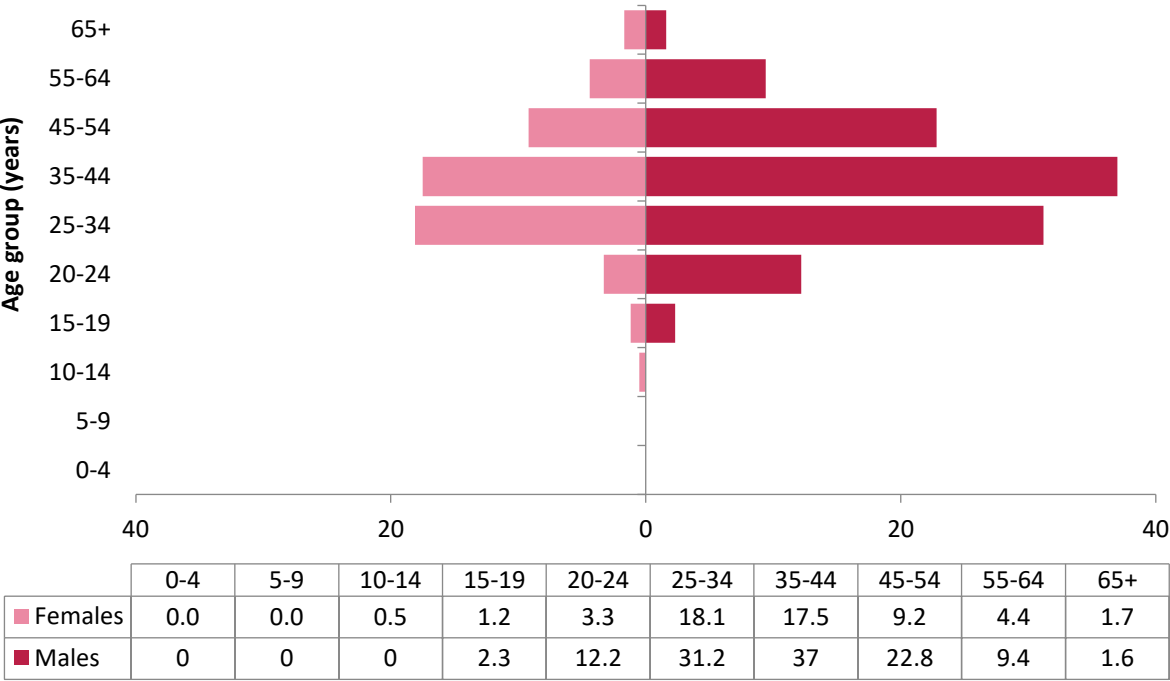
Trends in age specific notification rates per 100,000 population for chronic hepatitis B in Ireland, 2004 – 2023



- Chronic hepatitis B notification rates are highest in adults aged between 25 and 44 years
- Notifications of chronic hepatitis B in children are rare



Chronic hepatitis B rates by age and sex, 2023 and mean annual rates, 2019-2023

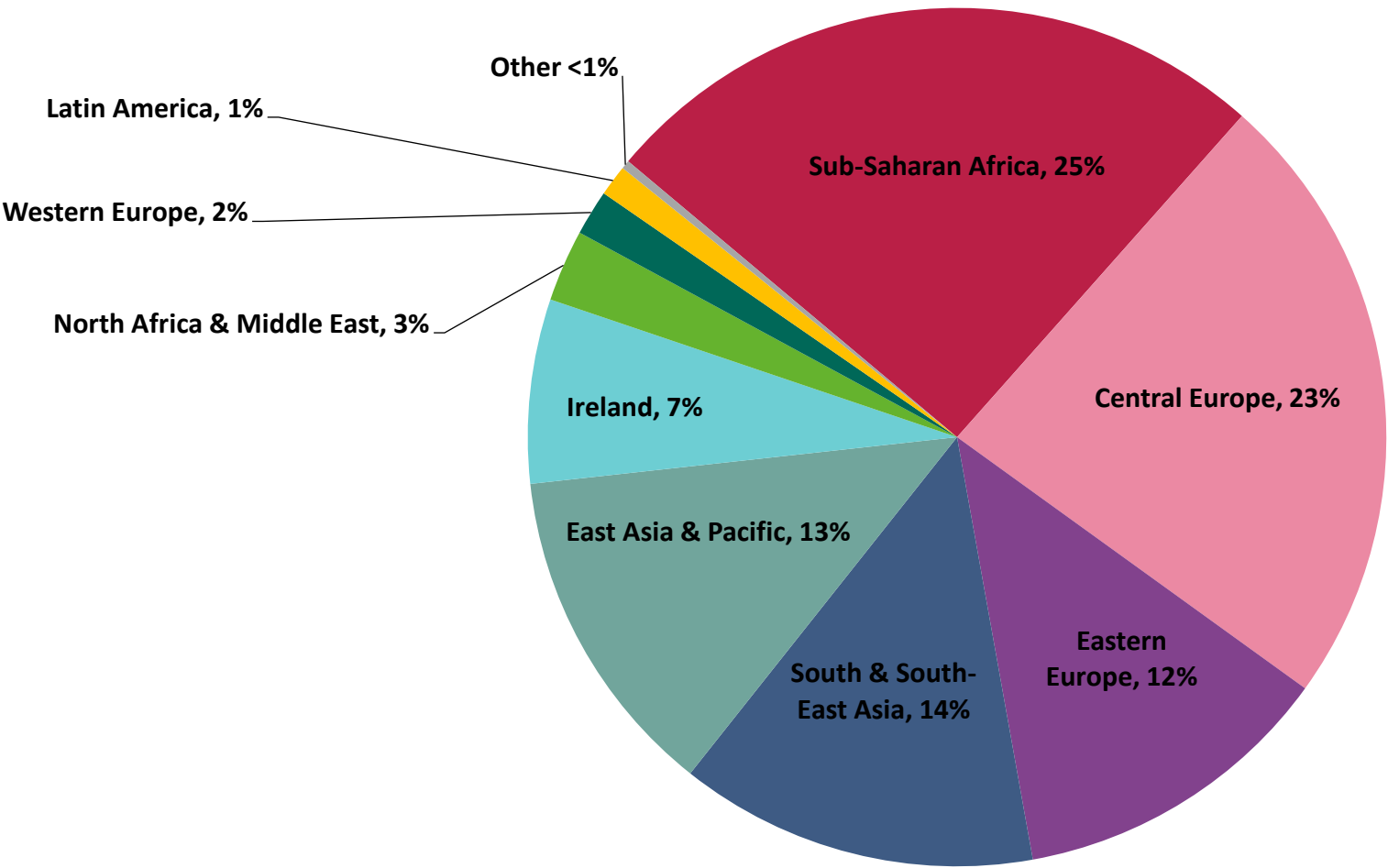


- 569 chronic cases of hepatitis B were notified in 2023, this was a 16% increase compared to 2022 (n=490)
- 66% of chronic cases were male in 2023 (375 males, 191 females, 3 unknown), this was similar to other recent years - 64% of cases notified 2019-2023 were male
- On average, male chronic cases in 2023 were slightly older than female cases - median age 39 years for males and 37 for females





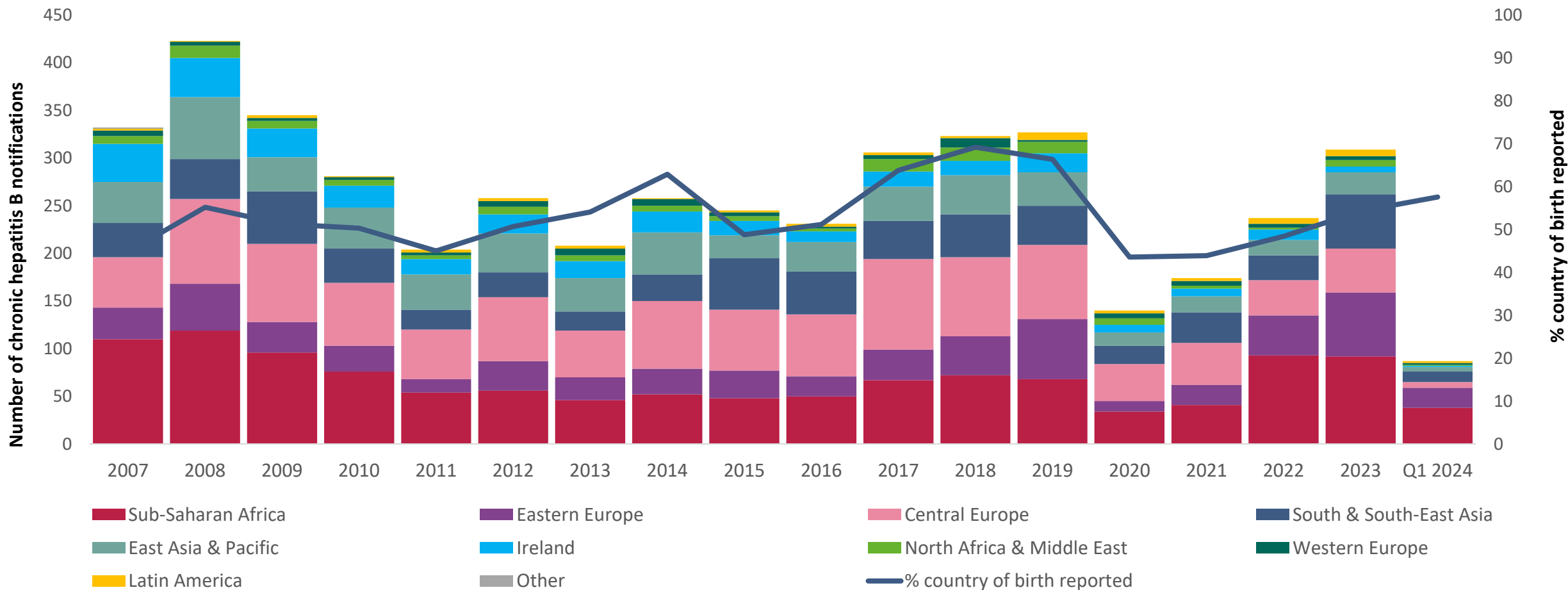
Country/region of birth for **chronic** hepatitis B notifications in Ireland, 2007- 2023 (where data available - 53%, n=4,615)



- Country/region of birth was reported for just over half of chronic cases of hepatitis B notified between 2007 and 2023
- This lack of data completeness should be taken into consideration when interpreting the available country/region of birth data



Trends in country/region of birth for **chronic** hepatitis B notifications in Ireland, 2007- Q1 2024 (where data available - 53%, n=4,702)

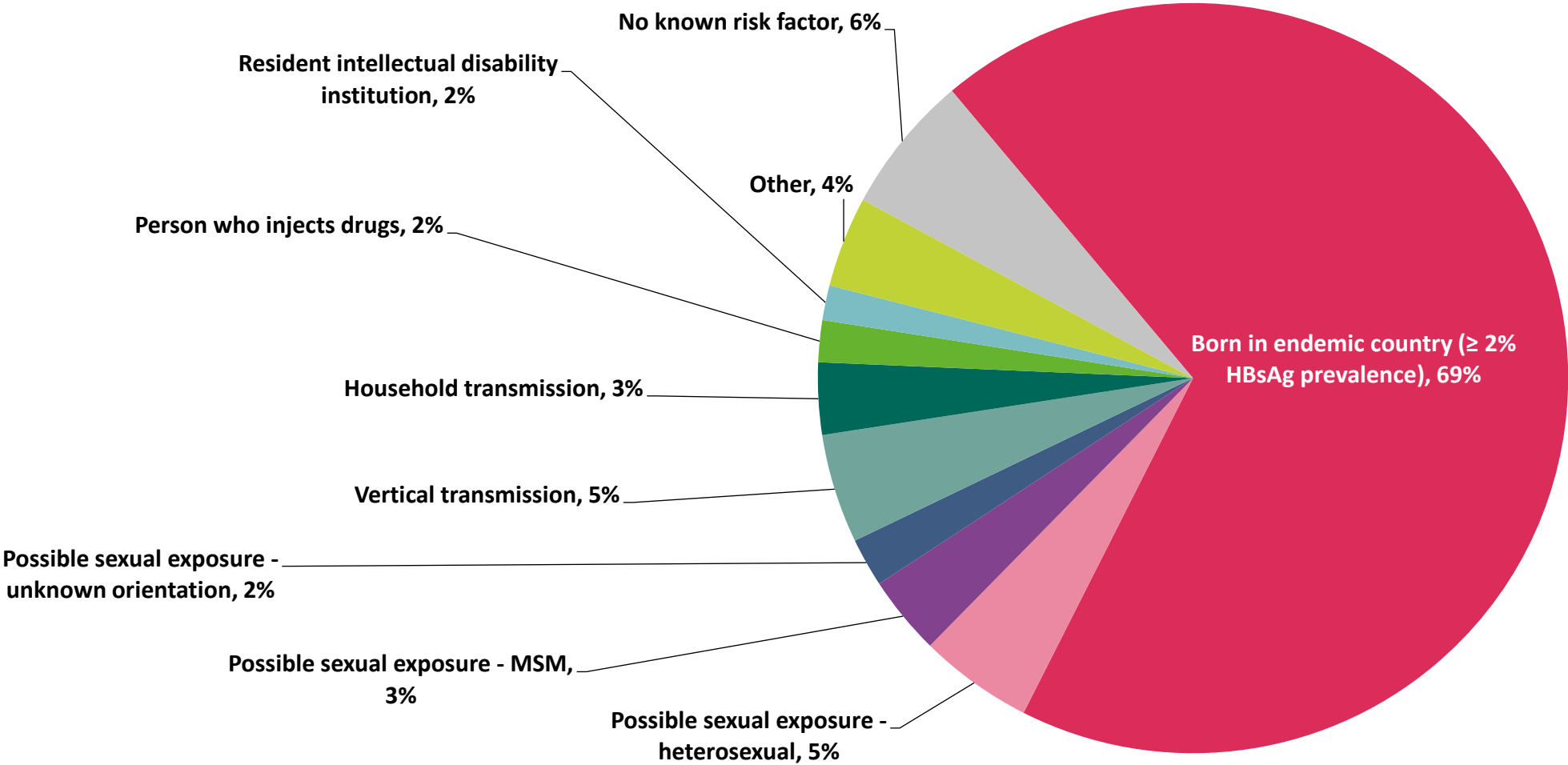


- Country/region of birth was reported for just over half of chronic cases of hepatitis B notified between 2007 and Q1 2024
- This lack of data completeness should be taken into consideration when interpreting the available country/region of birth data





Risk factor/exposure for **chronic** hepatitis B notifications in Ireland, 2007- 2023 (data available - 53%, n=4,596)

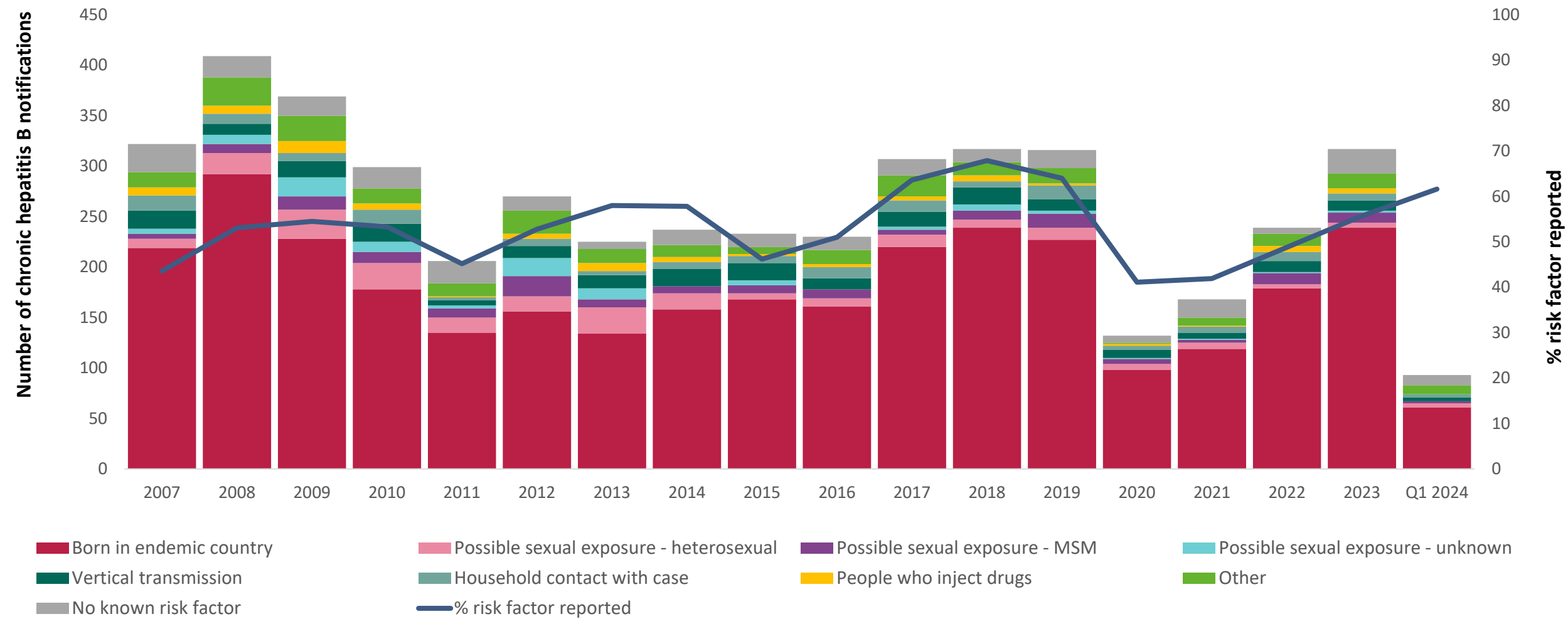


Note: information on risk factor/exposure and country of birth was not reported for a significant proportion of chronic hepatitis B cases – this should be taken into consideration when interpreting the reported data





Trends in risk factor/exposure for **chronic** hepatitis B notifications in Ireland, 2007- Q1 2024 (data available - 53%, n=4,689)



- Born in endemic country
- Vertical transmission
- No known risk factor
- Possible sexual exposure - heterosexual
- Household contact with case
- Possible sexual exposure - MSM
- Possible sexual exposure - unknown
- People who inject drugs
- Other
- % risk factor reported



Note: information on risk factor/exposure and country of birth was not reported for a significant proportion of chronic hepatitis B cases – this should be taken into consideration when interpreting the reported data



Resources for advice on preventing hepatitis B infection and accessing testing

HSE sexual health and wellbeing

- Provides **free** supports for preventing sexually transmitted infections (STIs) [including condoms](#) and [vaccinations](#)
- STI testing, including hepatitis B, is provided free of charge in [public sexual health or GUM clinics](#)
- [National free home STI testing](#), including hepatitis B for unvaccinated gbMSM, is also available from the HSE
- Resources for gbMSM are available at [Hepatitis B - Man2Man.ie](#)

HSE Social inclusion

- **HSE Addiction services**
 - Information on where to access [addiction support](#), including free screening for hepatitis B, hepatitis C and HIV and vaccination against hepatitis A and B
 - <https://drugs.ie/> provides information about drugs, advice on harm reduction and information on treatment
 - Bloodborne virus screening is available in a range of addiction treatment settings
- **HSE Intercultural health**
 - Health services include [voluntary communicable disease screening](#) for International Protection Applicants and Beneficiaries of Temporary Protection
 - Safetynet primary care <https://www.primarycaresafetynet.ie/> provides medical services, including infectious disease testing to those without access to healthcare, including homeless people, people who use drugs and migrants



Technical notes

1. Data are based on statutory notifications and were extracted from Computerised Infectious Disease Reporting (CIDR) system on 15th April 2024. Data are provisional and subject to ongoing review, validation and update. As a result, figures in this report may differ from previously published figures.
2. Only laboratory confirmed cases notified to CIDR are presented in these slides
3. Data are presented based on date of notification to the Health Protection Surveillance Centre (HPSC).
4. Population data were taken from Census 2006, 2011, 2016 and 2022 from the Central Statistics Office (CSO)
5. Rates per 100,000 population were calculated using the 2006 census for notifications 2004-2008, the 2011 census for notifications 2009-2013, the 2016 census for notifications 2014-2019 and the 2022 census for notifications 2020-2023.
6. The COVID-19 pandemic (2020 and 2021) impacted hepatitis surveillance data through reduced migration and potential reductions in case ascertainment and in transmission for acute infections.
7. The counties covered by each of the six HSE Health Regions are as follows:
 - HSEDNE: HSE Dublin and North-East - North Dublin, Meath, Louth, Cavan, and Monaghan
 - HSEDM: HSE Dublin and Midlands - Longford, Westmeath, Offaly, Laois, Kildare, West Wicklow, parts of South Dublin
 - HSEDSE: HSE Dublin and South-East - Tipperary South, Waterford, Kilkenny, Carlow, Wexford, East Wicklow, parts of South Dublin
 - HSEMW: HSE Mid-West - Limerick, Tipperary and Clare
 - HSESW: HSE South-West - Kerry and Cork
 - HSEWNW: HSE West and North-West - Donegal, Sligo, Leitrim, West Cavan, Roscommon, Mayo, and Galway