# Annual Epidemiological Report

October 2018

## Hepatitis B in Ireland, 2017

### Key Facts

Number of cases, 2017: 532

Crude notification rate, 2017: 11.2/100,000 population

The number of notifications of hepatitis B increased by 9% in 2017 compared to 2016 (n=487). The vast majority of hepatitis B cases notified in Ireland are chronically infected, most of whom have migrated to Ireland from hepatitis B endemic countries. There were 31 acute cases (recent infections) notified in 2017. Most acute cases of hepatitis B in Ireland are sexually acquired.

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# Background

Hepatitis B is a vaccine preventable disease caused by the hepatitis B virus. It is transmitted through percutaneous or mucocutaneous contact with the blood or body fluids of an infected person. Symptoms of acute infection include anorexia, abdominal discomfort, nausea and vomiting, often followed by jaundice. Symptoms are frequently milder and jaundice is less likely in children. Acute infection is usually asymptomatic in infants. After acute infection, the risk of developing chronic hepatitis B declines with increasing age.[1] Approximately 90% of infants infected at birth will develop chronic infection, compared to 20-50% of children infected between the ages of one and five years. Only 1-10% of those infected as older children or adults will develop chronic hepatitis B. An estimated 15-25% of those who develop chronic infection with die prematurely of cirrhosis of the liver or hepatocellular carcinoma.

The prevalence of hepatitis B in the general population in Ireland is low (less than 1%). This is similar to other northern European countries (0.1-0.7%).[2] Most cases occur in defined risk groups; such as people with multiple sexual partners, sexual or household contacts of known cases, people who inject drugs (PWID) and people who were born in countries with intermediate (2-7%) or high (≥8%) hepatitis B endemicity.

# Methods

The figures presented in this report are based on data extracted from the Computerised Infectious Disease Reporting (CIDR) System on 9th October 2018. These figures may differ from those published previously due to ongoing updating of the notification data on CIDR. Notification rates are expressed per 100,000 population and are calculated using the 2016 census.

# Epidemiology

## Number of notifications and notification rates

There were 532 notifications of hepatitis B in 2017 (11.2/100,000 population). This was an increase of 9% compared to 2016 (n=487, 10.2/100,000 population), but was similar to the numbers reported for 2015. Hepatitis B notifications more than halved between 2008 (n=898, 21.2/100,000 population) and 2013 (n=423, 9.2/100,000 population), but recent trends indicate that the notification rate has stabilised and that this decline is not continuing (figure 1).

Notification rates for each HSE area for the past four years are shown in figure 2. The highest notification rate in 2017 was in HSE E (20/100,000 population, n=343, 65% of notifications).

All cases were laboratory confirmed. Eighty seven percent (n=465) of the 532 notifications contained information on acute/chronic status. Of these, 93% (n=434, 9.1/100,000 population) of cases were chronically infected (long-term infection) and 7% (n=31, 0.7/100,000 population) were acutely infected (recent infection). Both acute and chronic cases of hepatitis B are notifiable in Ireland.

**Figure 1. Number of hepatitis B notifications in Ireland by acute/chronic status, 1997-2017**

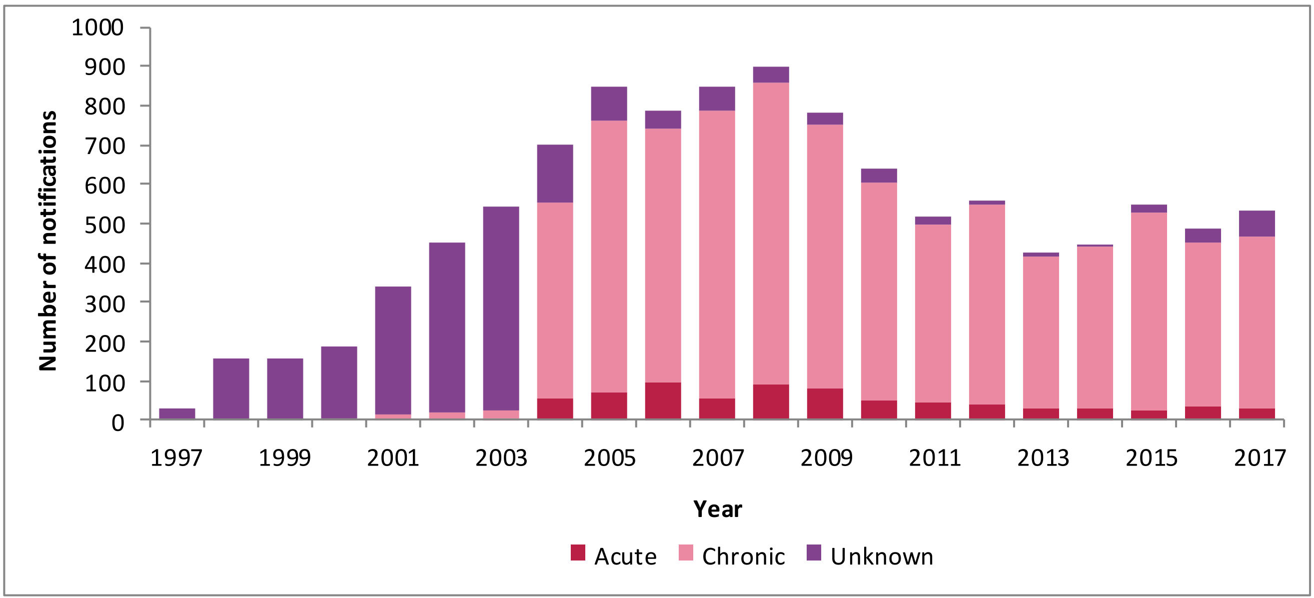
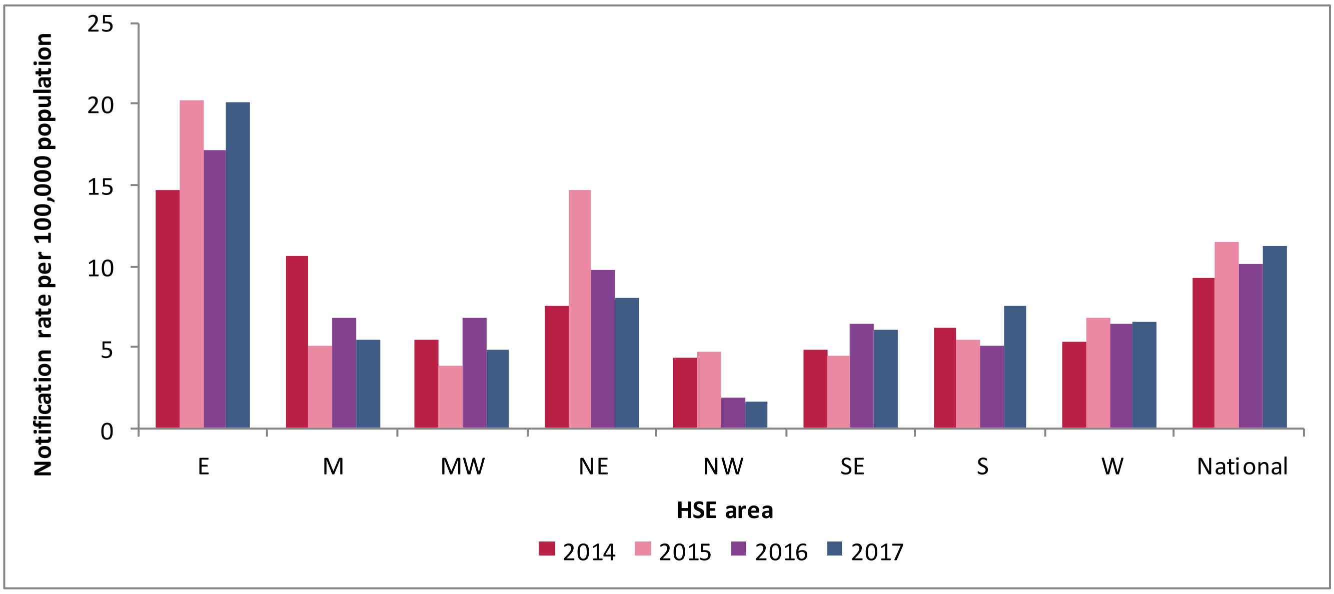



**Figure 2. Hepatitis B notification rates/100,000 population by HSE area in Ireland, 2014-2017**



## Acute cases (recent infections)

The number of acute cases of hepatitis B notified in Ireland has been low in recent years and continued in the same vein in 2017 with 31 cases notified compared to 32 cases in 2016 (figure 3). Seventy one percent (n=22) of acute cases in 2017 were male. Cases ranged in age from 22 to 70 years. The overall median age at notification was 41 years. Male cases were older on average, with a median age of 47.5 years compared to 39 years for females. The median age of male acute cases of hepatitis B has increased in recent years (figure 3). The age and sex distribution of acute cases notified in 2017 is shown in figure 4.

Information on risk factor was available for 74% (n=23) of the acute cases notified in 2017. Of these, 70% (n=16) were likely to have been sexually acquired. Eleven were heterosexual (six females and five males), four were men who have sex with men (MSM) and sexual orientation was not reported for one. One additional case was infected through injecting drug use, one had travelled to an endemic country and one case reported tattooing as the most likely risk factor for infection. No risk factor was identified for four cases despite public health follow up.

Country of birth was specified for 90% (n=28) of acute cases. Almost three quarters (71%, n=20) were born in Ireland. Country of infection was reported for 77% (n=24), two thirds (n=16) of whom were infected in Ireland. The reason for testing was known for 90% (n=28) of cases and most were tested because they were symptomatic (n=24, 86%).

**Figure 3. Number of acute cases of hepatitis B notified in Ireland, by sex and median age, 2004-2017**

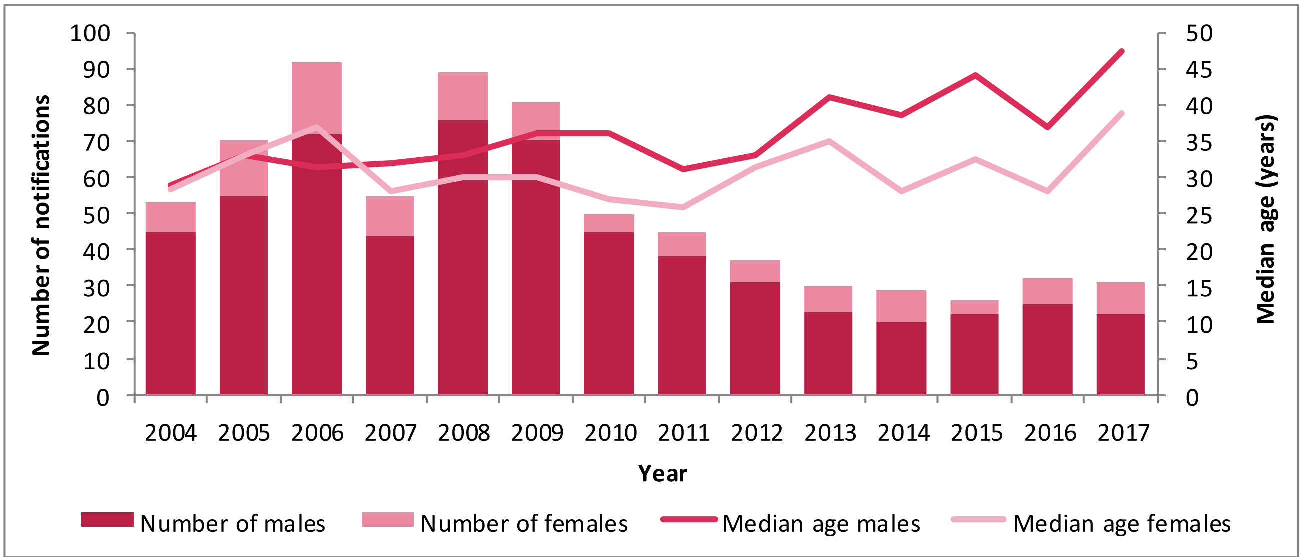
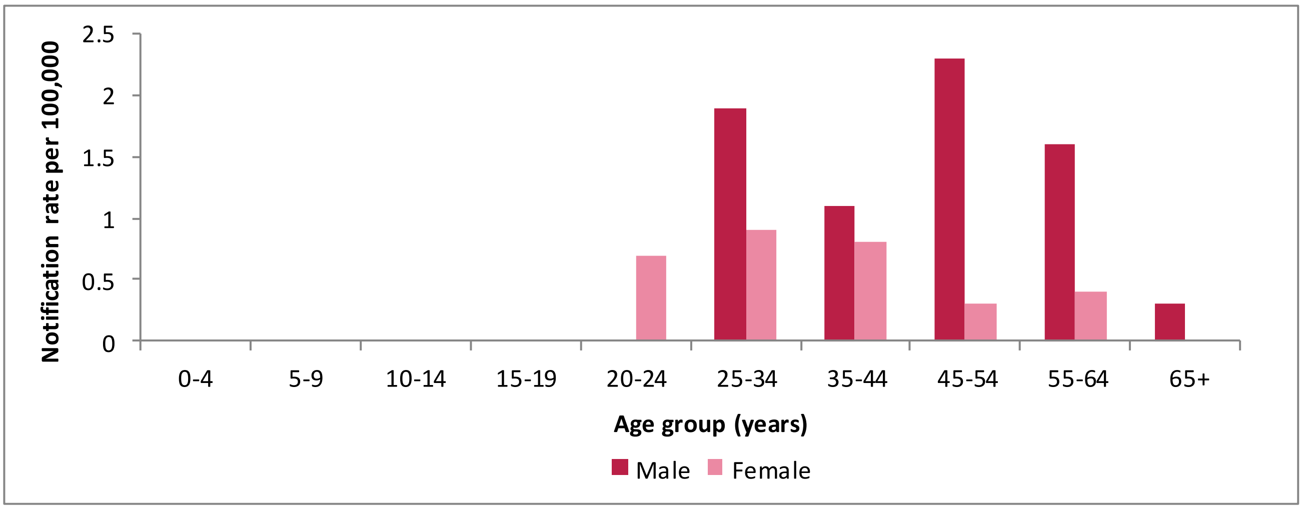


**Figure 4. Age and sex-specific notification rates/100,000 population for acute cases of hepatitis B in Ireland, 2017**




## Chronic cases (long-term infections)

Chronic hepatitis B notification rates halved between 2008 and 2013, but have since stabilised. Figure 5 shows the number of chronic cases notified annually between 2004 and 2017. Of the 434 chronic cases notified in 2017, 58% (n=250) were male, 41% (n=178) were female and sex was not reported for 6 cases. Cases ranged in age from 1 to 79 years, with 90% (n=389) of chronic cases aged between 20 and 54 years when notified (figure 5). Male cases were slightly older than female cases with a median age at notification of 35 years compared to 33 for females (overall median: 35 years). The age and sex distribution of chronic cases notified in 2017 is shown in figure 6.

Although primary risk factor was reported for less than one fifth of chronic cases in 2017, data on country of birth or asylum seeker status was available for 71% (n=308). Of these, 83% (n=255) were either born in a hepatitis B endemic country (hepatitis B surface antigen prevalence ≥2%) or were asylum seekers. Most of these cases are likely to have been infected outside Ireland, but the actual mode of acquisition of infection is often not known. Where country of birth was reported (67%, n=289), the most common birth countries were in central or eastern Europe (41%, n=117), Asia (24%, n=70), sub-Saharan Africa (23%, n=66) and western Europe (7%, n=19). Of those born in western Europe, 14 were born in Ireland.

The reason for testing was known for 74% (n=319) of chronic cases. The main reasons were: routine health screening (21%, n=66), antenatal screening (19%, n=59), re-testing of known cases (not previously notified) (17%, n=55), asylum seeker screening (15%, n=47), STI screening (8%, n=25), experiencing symptoms (6%, n=18) and participation in the emergency department blood borne virus screening programme in St James's Hospital (4%, n=13).

**Figure 5.** **Number of chronic cases of hepatitis B notified in Ireland, by sex and median age, 2004-2017**

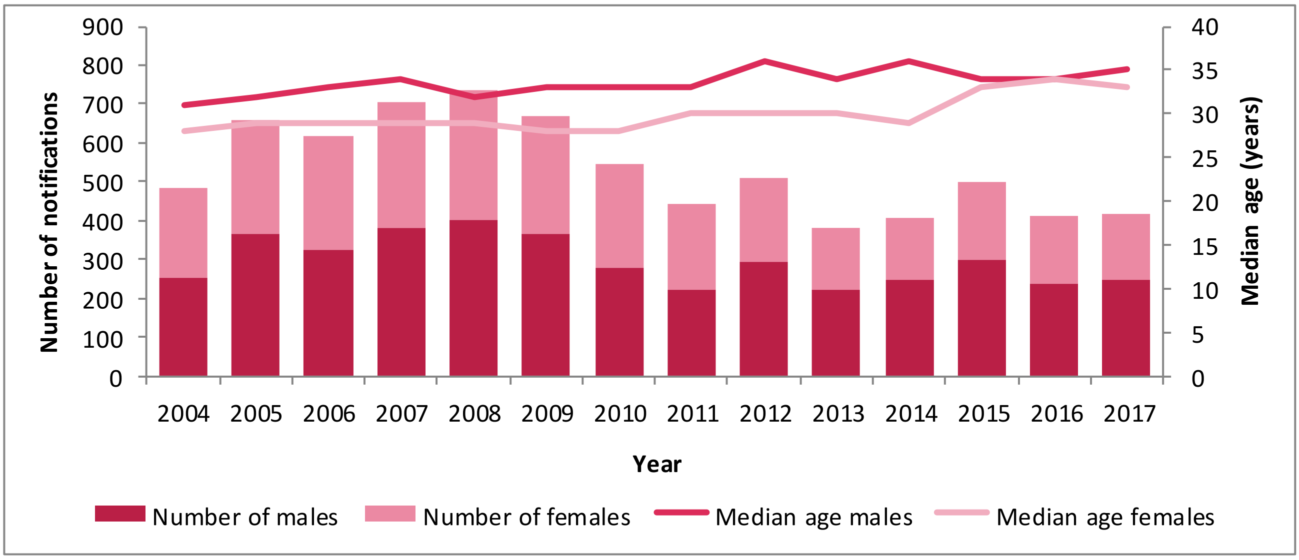
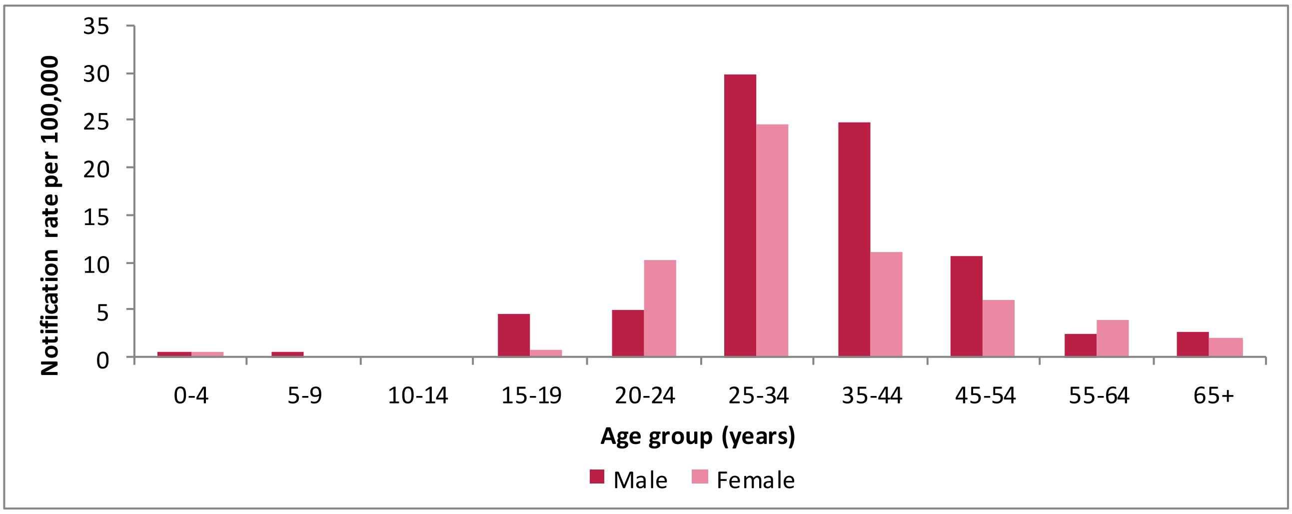


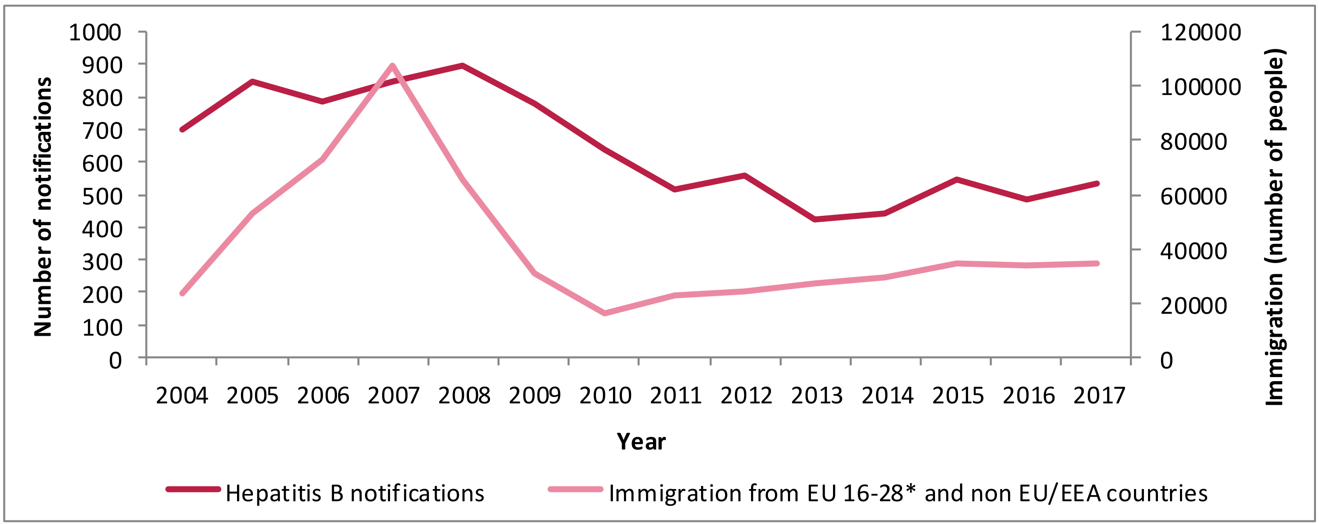

**Figure 6.** **Age and sex-specific notification rates/100,000 population for chronic cases of hepatitis B in Ireland, 2017**




## Immigration and hepatitis B notifications

Hepatitis B notifications are influenced by trends in immigration to Ireland. The large increase in the number of hepatitis B cases between 1997 and 2008 (figure 1) was mainly due to significant numbers of people migrating to Ireland from hepatitis B endemic countries. Figure 7 shows trends in hepatitis B (acute or chronic) notifications alongside immigration estimates from the Central Statistics Office.[3]

**Figure 7: Number of hepatitis B notifications in Ireland and estimated number of immigrants from EU16-28* & non EU/EEA countries (excluding Canada, United States and Australia), 2004-2017**




*Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Bulgaria, Romania and Croatia

## Co-infections

Co-infection with other bloodborne viruses, such as hepatitis C and HIV, can lead to more severe liver disease and an increased risk of liver cancer in people with hepatitis B infection. Four hepatitis B cases notified in 2017 were co-infected with hepatitis C (0.8%) and eight additional cases were co-infected with HIV (1.5%). Other sexually transmitted infections were also reported for ten cases.

## Discussion

Hepatitis B notifications increased by 9% in 2017 (n=532) compared to 2016, but remained at significantly lower levels compared to peak notification numbers in 2008 (n=899). The vast majority of hepatitis B notifications in Ireland are chronic cases, most of whom migrated to Ireland from hepatitis B endemic countries. The number of acute cases of hepatitis B notified in 2017 was similar to 2016 and remained relatively low. Most acute cases are sexually acquired in Ireland. There is a safe and effective vaccine for hepatitis B. Immunisation is recommended for those who change sex partner frequently, MSM, attendees at STI clinics and others at increased risk of infection or more severe disease. Universal hepatitis B vaccination was introduced in Ireland in 2008 as part of the primary vaccine programme for infants (https://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/chapter9.pdf).

## Further information available on HPSC website

http://www.hpsc.ie/a-z/hepatitis/hepatitisb/

http://www.hpsc.ie/a-z/hepatitis/hepatitisb/hepatitisbreports/

http://www.hpsc.ie/a-z/hepatitis/hepatitisb/slidesets/

## Acknowledgements

Sincere thanks are extended to all those who participated in the collection of data used in this report. This includes the notifying physicians, public health doctors, surveillance scientists, microbiologists, nurses, laboratory staff and administrative staff.

## Report prepared by:

**Niamh Murphy and Dr Lois O'Connor**

## References

1. American Public Health Association, Heyman DL, Editor. Control of Communicable Diseases Manual. 20th Edition. Washington: American Public Health Association, 2015.
2. European Centre for Disease Prevention and Control. Epidemiological assessment of hepatitis B and C among migrants in the EU/EEA. Stockholm: ECDC; 2016.
3. Central Statistics Office (2016) Immigrants (thousand) by country of origin. Accessed 10th October 2018. Available from: http://www.cso.ie/multiquicktables/quickTables.aspx?id=pea18_1