

**Bureau of Infectious Disease and Laboratory Sciences**

**Hepatitis B Virus Infection 2022 Surveillance Report, November 2022**

**Suggested citation:**

Massachusetts Department of Public Health (MDPH), Bureau of Infectious Disease and Laboratory Sciences. *Hepatitis B Virus Infection 2022 Surveillance Report.* https://www.mass.gov/ lists/infectious-disease- data-reports-and-requests. Published November 2022. Accessed [date].

**Bureau of Infectious Disease and Laboratory Sciences**

Massachusetts State Public Health State Laboratory 305 South Street

Jamaica Plain, MA 02130

#### To speak to the on-call epidemiologist

Tel: (617) 983-6800

#### Questions about infectious disease reporting

Tel: (617) 983-6801

#### Requests for additional data

https://[www.mass.gov/infectious-disease-surveillance-reporting-and-control](http://www.mass.gov/infectious-disease-surveillance-reporting-and-control)

#### Acknowledgments

This report was prepared by the following MDPH staff: Esther Rei, MPH

Lindsay Bouton, MSc

Elizabeth Mello, MS

**Massachusetts Department of Public Health Bureau of Infectious Disease and Laboratory Sciences**

Hepatitis B Virus (HBV) Infection Data Summary 2012-2021

**Table of Contents**

[Summary 1](#_bookmark0)

[Technical note 2](#_bookmark1)

Chronic HBV cases by year 4

Chronic HBV cases by race and year 6

Chronic HBV cases by ethnicity and year 7

Chronic HBV cases by country of birth and year 8

Chronic HBV cases by age group and year 10

Chronic HBV cases by county and year 11

Acute HBV cases by year 12

Acute HBV cases by race and year 13

Acute HBV cases by ethnicity and year 14

Acute HBV cases by country of birth and year 15

Acute HBV cases by age group and year 16

Acute HBV cases by county and year 17

Acute HBV cases by reported risk history and year **.....................** 18

Map: 2012-2021 chronic HBV cases by city/town (count) 19

Map: 2012-2021 chronic HBV cases by city/town (rate) 20

Map: 2021 chronic HBV cases by city/town (count) 21

Map: 2021 chronic HBV cases by city/town (rate) 22

Each year, between 1,100 and 2,000 cases of confirmed and probable chronic hepatitis B virus (HBV) infection are newly reported to the Massachusetts Department of Public Health (MDPH). Chronic cases are predominantly among non-Hispanic Asian and non-US-born persons (where demographic characteristics are known). The highest rates of newly reported cases are in the 30-39 year and the 40-49 year age groups. Suffolk, Norfolk, and Middlesex Counties have higher chronic HBV rates than the Massachusetts state average.

Between 10 and 60 cases of confirmed acute HBV infection are also reported each year. Acute cases are predominantly among non-Hispanic white, non-Hispanic, and US-born persons (where demographic characteristics are known). Injection drug use (IDU) is a significant risk factor for acquisition of acute HBV infection.

Please note that data from 2020 and 2021 were likely affected by the COVID-19 pandemic. Changes in healthcare seeking and testing behaviors and immigration may have contributed to a lower number of cases than expected.

**Rate calculation**

As of August 2022, the Bureau of Infectious Disease and Laboratory Sciences (BIDLS) calculates rates per 100,000 population using denominators estimated by the University of Massachusetts Donahue Institute using a modified Hamilton-Perry model (UMDI Oct 2016).1 Note that rates and trends calculated using previous methods cannot be compared to these. At the time of writing this report, 2020 was the latest year available. 2020 estimates were used for 2021.

1 Strate S, et al. Small Area Population Estimates for 2011 through 2020, report published Oct 2016. Available at: <http://pep.donahue-institute.org/>

**Case classification: Chronic HBV**

*Confirmed:*

* IgM antibodies to hepatitis B core antigen (IgM anti-HBc) negative AND a positive result on one of the following tests: hepatitis B surface antigen (HBsAg), hepatitis B e antigen (HBeAg), or nucleic acid test for hepatitis B virus DNA (including qualitative, quantitative and genotype testing), OR
* HBsAg positive or nucleic acid test for hepatitis B virus DNA (including qualitative, quantitative and genotype testing), or HBeAg positive two times at least 6 months apart (Any combination of these tests performed 6 months apart is acceptable.)

*Probable*:

A case with a single HBsAg positive or HBV DNA positive (including qualitative, quantitative and genotype testing), or HBeAg positive lab result when no IgM anti-HBc results are available

**Case classification: Acute HBV**

Clinical Presentation: An acute illness with a discrete onset of symptoms consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain) **and** either a) jaundice or b) elevated serum alanine aminotransferase levels > 100 IU/L

*Confirmed:*

Clinically compatible case\* not known to have chronic hepatitis B and

1. HBsAg positive, AND
2. IgM antibody to hepatitis B core antigen (IgM anti– HBc) positive, if done

\* A documented negative hepatitis B surface antigen (HBsAg) laboratory test result within 6 months prior to a positive test (either HBsAg, Hepatitis B “e” antigen (HBeAg), or hepatitis B virus nucleic acid testing (HBV NAAT) including genotype) result does NOT require an acute clinical presentation to meet the surveillance case definition.

*Suspect:*

Positive IgM antibody to hepatitis B core antigen (IgM anti-HBc) that does not meet the clinical definition

Note that confirming a chronic HBV case can involve a significant time delay because of the requirement for two tests at least 6 months apart. Thus, it is expected that cases in the most recent year are more likely to be classified as “probable.” These cases may be recategorized as "confirmed" if additional tests are received.

The year in which a case is categorized is based upon the case’s “Event Date”, which can be calculated from the following case characteristic hierarchy and is dependent on availability of information: symptom onset date, specimen collection date, diagnosis date, or case creation date.

#### Massachusetts Department of Public Health

**Bureau of Infectious Disease and Laboratory Sciences**

### Number of confirmed and probable chronic HBV cases reported in MA by year, 2012-2021

**N=17,551**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| **CONFIRMED** | 1134 | 965 | 1111 | 1068 | 1070 | 880 | 739 | 573 | 322 | 271 |
| **PROBABLE** | 700 | 640 | 803 | 751 | 897 | 1114 | 1144 | 1168 | 871 | 1330 |
| **TOTAL CASES** | 1834 | 1605 | 1914 | 1819 | 1967 | 1994 | 1883 | 1741 | 1193 | 1601 |

**The surveillance case definition for chronic HBV requires two positive tests; for certain test types, these two tests must be taken at least 6 months apart. Reported cases are classified as "probable" following the initial test result and are re-classified as "confirmed" if additional test results are received. During the most recent year of data, 2021, some cases currently reported as probable may be eventually confirmed in future reports as additional information is obtained.**

**Data are current as of August 19, 2022 and are subject to change.** 4

Graphical user interface

Description automatically generated with medium confidence

5

### Number and percent of confirmed and probable chronic HBV cases reported in MA by race and year, 2012-2021

**N=17,551**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | | **2013** | | **2014** | | **2015** | | **2016** | | **2017** | | **2018** | | **2019** | | **2020** | | **2021** | |
| **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** |
| **Asian** | 760 | 41.4 | 640 | 39.9 | 693 | 36.2 | 679 | 37.3 | 656 | 33.4 | 763 | 38.3 | 573 | 30.4 | 448 | 25.7 | 306 | 25.6 | 328 | 20.5 |
| **Black** | 270 | 14.7 | 254 | 15.8 | 270 | 14.1 | 266 | 14.6 | 311 | 15.8 | 240 | 12.0 | 225 | 11.9 | 218 | 12.5 | 148 | 12.4 | 172 | 10.7 |
| **White** | 263 | 14.3 | 231 | 14.4 | 274 | 14.3 | 222 | 12.2 | 275 | 14.0 | 253 | 12.7 | 272 | 14.4 | 256 | 14.7 | 165 | 13.8 | 255 | 15.9 |
| **Other** | 182 | 9.9 | 176 | 11.0 | 247 | 12.9 | 210 | 11.5 | 266 | 13.5 | 250 | 12.5 | 240 | 12.7 | 238 | 13.7 | 140 | 11.7 | 164 | 10.2 |
| **Unknown** | 359 | 19.6 | 304 | 18.9 | 430 | 22.5 | 442 | 24.3 | 459 | 23.3 | 488 | 24.5 | 573 | 30.4 | 581 | 33.4 | 434 | 36.4 | 682 | 42.6 |
| **Total** | 1834 | 100.0 | 1605 | 100.0 | 1914 | 100.0 | 1819 | 100.0 | 1967 | 100.0 | 1994 | 100.0 | 1883 | 100.0 | 1741 | 100.0 | 1193 | 100.0 | 1601 | 100.0 |

### Number and percent of confirmed and probable chronic HBV cases reported in MA by ethnicity and year, 2012-2021

**N=17,551**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | | **2013** | | **2014** | | **2015** | | **2016** | | **2017** | | **2018** | | **2019** | | **2020** | | **2021** | |
| **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** |
| **Hispanic** | 114 | 6.2 | 104 | 6.5 | 131 | 6.8 | 92 | 5.1 | 105 | 5.3 | 92 | 4.6 | 86 | 4.6 | 68 | 3.9 | 45 | 3.8 | 72 | 4.5 |
| **Non-Hispanic** | 1112 | 60.6 | 1002 | 62.4 | 1148 | 60.0 | 1116 | 61.4 | 1218 | 61.9 | 1264 | 63.4 | 1090 | 57.9 | 950 | 54.6 | 634 | 53.1 | 756 | 47.2 |
| **Unknown** | 608 | 33.2 | 499 | 31.1 | 635 | 33.2 | 611 | 33.6 | 644 | 32.7 | 638 | 32.0 | 707 | 37.5 | 723 | 41.5 | 514 | 43.1 | 773 | 48.3 |
| **Total** | 1834 | 100.0 | 1605 | 100.0 | 1914 | 100.0 | 1819 | 100.0 | 1967 | 100.0 | 1994 | 100.0 | 1883 | 100.0 | 1741 | 100.0 | 1193 | 100.0 | 1601 | 100.0 |

### Number and percent of confirmed and probable chronic HBV cases reported in MA by country of birth and year, 2012-2021

**N=17,551**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | | **2013** | | **2014** | | **2015** | | **2016** | | **2017** | | **2018** | | **2019** | | **2020** | | **2021** | |
| **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** |
| **Born in US** | 174 | 9.5 | 172 | 10.7 | 142 | 7.4 | 117 | 6.4 | 130 | 6.6 | 126 | 6.3 | 50 | 2.7 | 30 | 1.7 | 12 | 1.0 | 6 | 0.4 |
| **Born outside US** | 845 | 46.1 | 766 | 47.7 | 779 | 40.7 | 714 | 39.3 | 760 | 38.6 | 653 | 32.7 | 217 | 11.5 | 178 | 10.2 | 81 | 6.8 | 34 | 2.1 |
| **Unknown** | 815 | 44.4 | 667 | 41.6 | 993 | 51.9 | 988 | 54.3 | 1077 | 54.8 | 1215 | 60.9 | 1616 | 85.8 | 1533 | 88.1 | 1100 | 92.2 | 1561 | 97.5 |
| **Total** | 1834 | 100.0 | 1605 | 100.0 | 1914 | 100.0 | 1819 | 100.0 | 1967 | 100.0 | 1994 | 100.0 | 1883 | 100.0 | 1741 | 100.0 | 1193 | 100.0 | 1601 | 100.0 |

**Massachusetts Department of Public Health Bureau of Infectious Disease and Laboratory Sciences**

**Confirmed and probable chronic HBV cases reported in MA that are known to have been born outside the US by country of birth, 2012-2021**

**N= 5,027**

Chart, pie chart

Description automatically generated

**Pie chart shows 10 countries with the highest number of reported cases.**

**Data are current as of August 19, 2022 and are subject to change.** 9

### Number and rate of confirmed and probable chronic HBV cases per 100,000 population reported in MA by age group and year, 2012-2021

**N=17,551**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Age in years** | **2012** | | **2013** | | **2014** | | **2015** | | **2016** | | **2017** | | **2018** | | **2019** | | **2020** | | **2021** | |
| **N** | **Rate** | **N** | **Rate** | **N** | **Rate** | **N** | **Rate** | **N** | **Rate** | **N** | **Rate** | **N** | **Rate** | **N** | **Rate** | **N** | **Rate** | **N** | **Rate** |
| **0 to 19** | 67 | 4.1 | 39 | 2.4 | 34 | 2.1 | 48 | 3.0 | 37 | 2.3 | 28 | 1.7 | 23 | 1.4 | 25 | 1.6 | 10 | 0.6 | 25 | 1.6 |
| **20 to 29** | 324 | 33.8 | 253 | 25.9 | 313 | 31.5 | 271 | 27.0 | 307 | 30.2 | 272 | 26.5 | 252 | 24.5 | 224 | 21.8 | 101 | 9.8 | 164 | 15.9 |
| **30 to 39** | 502 | 61.1 | 424 | 50.9 | 500 | 59.2 | 502 | 58.6 | 502 | 57.5 | 512 | 57.5 | 462 | 51.1 | 411 | 44.9 | 261 | 28.5 | 373 | 40.7 |
| **40 to 49** | 388 | 40.6 | 354 | 37.9 | 413 | 45.3 | 382 | 42.8 | 404 | 46.3 | 424 | 49.3 | 405 | 47.6 | 389 | 46.3 | 269 | 32.0 | 333 | 39.6 |
| **50 to 59** | 283 | 29.2 | 288 | 29.4 | 337 | 34.0 | 287 | 28.8 | 322 | 32.5 | 328 | 33.4 | 319 | 32.9 | 304 | 31.8 | 233 | 24.4 | 291 | 30.4 |
| **60+** | 262 | 19.4 | 246 | 17.7 | 307 | 21.4 | 320 | 21.7 | 383 | 25.3 | 427 | 27.5 | 421 | 26.4 | 383 | 23.4 | 316 | 19.3 | 408 | 25.0 |

**59 cases with missing age were excluded.**

**See Technical note (pg 2) for information about rate denominators.**

### Number and rate of confirmed and probable chronic HBV cases per 100,000 population reported in MA by county, 2012-2021

**N=17,551**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | | **2013** | | **2014** | | **2015** | | **2016** | | **2017** | | **2018** | | **2019** | | **2020** | | **2021** | |
| **N** | **R** | **N** | **R** | **N** | **R** | **N** | **R** | **N** | **R** | **N** | **R** | **N** | **R** | **N** | **R** | **N** | **R** | **N** | **R** |
| **Berkshire County** | 8 | 6.1 | 9 | 6.9 | 11 | 8.5 | 6 | 4.7 | 11 | 8.6 | 15 | 11.8 | 20 | 15.7 | 22 | 17.4 | 14 | 11.1 | 17 | 13.4 |
| **Bristol County** | 65 | 11.8 | 56 | 10.1 | 63 | 11.3 | 72 | 12.8 | 72 | 12.8 | 105 | 18.6 | 79 | 13.9 | 81 | 14.2 | 57 | 10.0 | 87 | 15.2 |
| **Cape and Islands** | 23 | 9.5 | 21 | 8.6 | 16 | 6.6 | 15 | 6.1 | 26 | 10.6 | 24 | 9.8 | 25 | 10.2 | 27 | 11.0 | 20 | 8.1 | 34 | 13.9 |
| **Essex County** | 171 | 22.5 | 139 | 18.1 | 187 | 24.1 | 180 | 23.0 | 168 | 21.4 | 143 | 18.1 | 140 | 17.6 | 149 | 18.7 | 99 | 12.4 | 153 | 19.2 |
| **Franklin County** | 3 | 4.2 | 7 | 9.8 | 6 | 8.4 | 7 | 9.8 | 2 | 2.8 | 4 | 5.6 | 3 | 4.2 | 5 | 7.0 | 3 | 4.2 | 6 | 8.4 |
| **Hampden County** | 87 | 18.6 | 65 | 13.9 | 66 | 14.0 | 72 | 15.2 | 86 | 18.2 | 55 | 11.7 | 66 | 14.0 | 63 | 13.4 | 42 | 8.9 | 66 | 14.0 |
| **Hampshire County** | 12 | 7.5 | 10 | 6.2 | 12 | 7.4 | 13 | 8.0 | 16 | 9.8 | 12 | 7.3 | 17 | 10.4 | 10 | 6.1 | 9 | 5.5 | 15 | 9.1 |
| **Middlesex County** | 499 | 32.3 | 457 | 29.2 | 509 | 32.2 | 489 | 30.7 | 525 | 32.7 | 478 | 29.6 | 500 | 30.8 | 439 | 27.0 | 303 | 18.6 | 386 | 23.7 |
| **Norfolk County** | 249 | 36.4 | 202 | 29.2 | 267 | 38.4 | 253 | 36.2 | 305 | 43.4 | 395 | 55.9 | 278 | 39.1 | 245 | 34.2 | 228 | 31.9 | 238 | 33.3 |
| **Plymouth County** | 88 | 17.6 | 66 | 13.1 | 91 | 17.9 | 87 | 17.0 | 134 | 26.0 | 134 | 25.7 | 95 | 18.1 | 115 | 21.8 | 66 | 12.5 | 90 | 17.0 |
| **Suffolk County** | 374 | 49.8 | 351 | 46.0 | 410 | 53.0 | 397 | 50.6 | 373 | 46.8 | 411 | 51.0 | 408 | 50.4 | 364 | 44.8 | 234 | 28.8 | 275 | 33.9 |
| **Worcester County** | 159 | 19.7 | 146 | 17.9 | 145 | 17.7 | 160 | 19.4 | 167 | 20.2 | 151 | 18.1 | 185 | 22.1 | 156 | 18.6 | 105 | 12.5 | 166 | 19.8 |
| **All Massachusetts** | 1738 | 26.0 | 1529 | 22.7 | 1783 | 26.3 | 1751 | 25.6 | 1885 | 27.4 | 1927 | 27.9 | 1816 | 26.1 | 1676 | 24.1 | 1180 | 16.9 | 1533 | 22.0 |

### R= Rate

**733 cases with missing county were excluded.**

**See Technical note (pg 2) for information about rate denominators.**

**The Cape and Islands are comprised of Barnstable, Dukes, and Nantucket Counties.**

### Number of confirmed and suspect acute HBV cases reported in MA by year, 2012-2021

**N=1,438**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| **Acute confirmed** | 57 | 41 | 36 | 34 | 32 | 52 | 48 | 37 | 16 | 14 |
| **Acute suspect** | 60 | 80 | 102 | 90 | 115 | 120 | 144 | 143 | 104 | 113 |
| **Total cases** | 117 | 121 | 138 | 124 | 147 | 172 | 192 | 180 | 120 | 127 |

### Number of confirmed acute HBV cases reported in MA by race and year, 2012-2021

**N=367**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| **Asian** | 2 | 4 | 2 | 1 | 4 | 0 | 1 | 0 | 1 | 0 |
| **Black** | 5 | 5 | 3 | 3 | 5 | 7 | 8 | 5 | 3 | 4 |
| **White** | 42 | 24 | 23 | 21 | 14 | 25 | 31 | 24 | 7 | 7 |
| **Other** | 7 | 8 | 5 | 5 | 4 | 9 | 2 | 5 | 4 | 2 |
| **Unknown** | 1 | 0 | 3 | 4 | 5 | 11 | 6 | 3 | 1 | 1 |
| **Total** | 57 | 41 | 36 | 34 | 32 | 52 | 48 | 37 | 16 | 14 |

**Data are current as of August 19, 2022 and are subject to change.**

13

### Number of confirmed acute HBV cases reported in MA by ethnicity and year, 2012-2021

**N=367**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| **Hispanic** | 8 | 5 | 7 | 2 | 1 | 7 | 5 | 2 | 3 | 0 |
| **Non-Hispanic** | 35 | 29 | 24 | 27 | 25 | 29 | 34 | 30 | 12 | 11 |
| **Unknown** | 14 | 7 | 5 | 5 | 6 | 16 | 9 | 5 | 1 | 3 |
| **Total** | 57 | 41 | 36 | 34 | 32 | 52 | 48 | 37 | 16 | 14 |

### Number of confirmed acute HBV cases reported in MA by country of birth and year, 2012-2021

**N=367**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| **Born in US** | 26 | 23 | 20 | 17 | 11 | 16 | 15 | 5 | 4 | 2 |
| **Born outside US** | 9 | 11 | 5 | 5 | 8 | 6 | 5 | 4 | 1 | 2 |
| **Unknown** | 22 | 7 | 11 | 12 | 13 | 30 | 28 | 28 | 11 | 10 |
| **Total** | 57 | 41 | 36 | 34 | 32 | 52 | 48 | 37 | 16 | 14 |

### Number of confirmed acute HBV cases reported in MA by age group and year, 2012-2021

**N=367**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Age in years** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| **0 to 19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **20 to 29** | 5 | 3 | 5 | 4 | 3 | 6 | 9 | 5 | 0 | 2 |
| **30 to 39** | 13 | 10 | 12 | 10 | 13 | 18 | 9 | 6 | 3 | 3 |
| **40 to 49** | 17 | 10 | 10 | 4 | 7 | 17 | 19 | 18 | 9 | 4 |
| **50 to 59** | 13 | 12 | 7 | 11 | 5 | 8 | 6 | 6 | 2 | 2 |
| **60+** | 9 | 6 | 2 | 5 | 4 | 3 | 5 | 2 | 2 | 3 |
| **Total** | 57 | 41 | 36 | 34 | 32 | 52 | 48 | 37 | 16 | 14 |

### Number of confirmed acute HBV cases reported in MA by county and year, 2012-2021

**N=367**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| **Berkshire County** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Bristol County** | 16 | 3 | 0 | 2 | 0 | 18 | 6 | 4 | 0 | 1 |
| **Cape and Islands** | 5 | 1 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 1 |
| **Essex County** | 6 | 2 | 6 | 3 | 8 | 3 | 3 | 8 | 0 | 0 |
| **Franklin County** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Hampden County** | 2 | 1 | 0 | 1 | 0 | 3 | 2 | 0 | 3 | 2 |
| **Hampshire County** | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| **Middlesex County** | 7 | 9 | 8 | 11 | 8 | 7 | 9 | 9 | 6 | 4 |
| **Norfolk County** | 1 | 1 | 4 | 3 | 7 | 2 | 0 | 1 | 1 | 0 |
| **Plymouth County** | 3 | 3 | 3 | 1 | 3 | 7 | 4 | 3 | 0 | 1 |
| **Suffolk County** | 14 | 14 | 6 | 10 | 3 | 7 | 12 | 7 | 5 | 4 |
| **Worcester County** | 3 | 6 | 7 | 2 | 2 | 3 | 8 | 5 | 1 | 0 |
| **Unknown** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | 57 | 41 | 36 | 34 | 32 | 52 | 48 | 37 | 16 | 14 |

**The Cape and Islands are comprised of Barnstable, Dukes, and Nantucket Counties.**

### Number of confirmed acute HBV cases reported by risk factor and year, 2012-2021

**N=367**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Risk Factor** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |
| **Injection drug use ever** | 7 | 5 | 10 | 7 | 10 | 21 | 20 | 18 | 4 | 3 |
| **Other risk factors, excluding IDU** | 3 | 2 | 1 | 3 | 2 | 4 | 2 | 2 | 0 | 0 |
| **Unknown or no risk factors reported** | 47 | 34 | 25 | 24 | 20 | 27 | 26 | 17 | 12 | 11 |
| **Total** | 57 | 41 | 36 | 34 | 32 | 52 | 48 | 37 | 16 | 14 |

**Data are current as of August 19, 2022 and are subject to change.** 18

**Other risk factors include being a sexual contact of a case, and/ or incarcerated**

Map

Description automatically generated

Map

Description automatically generatedMap

Description automatically generated

Map

Description automatically generated

Map

Description automatically generated