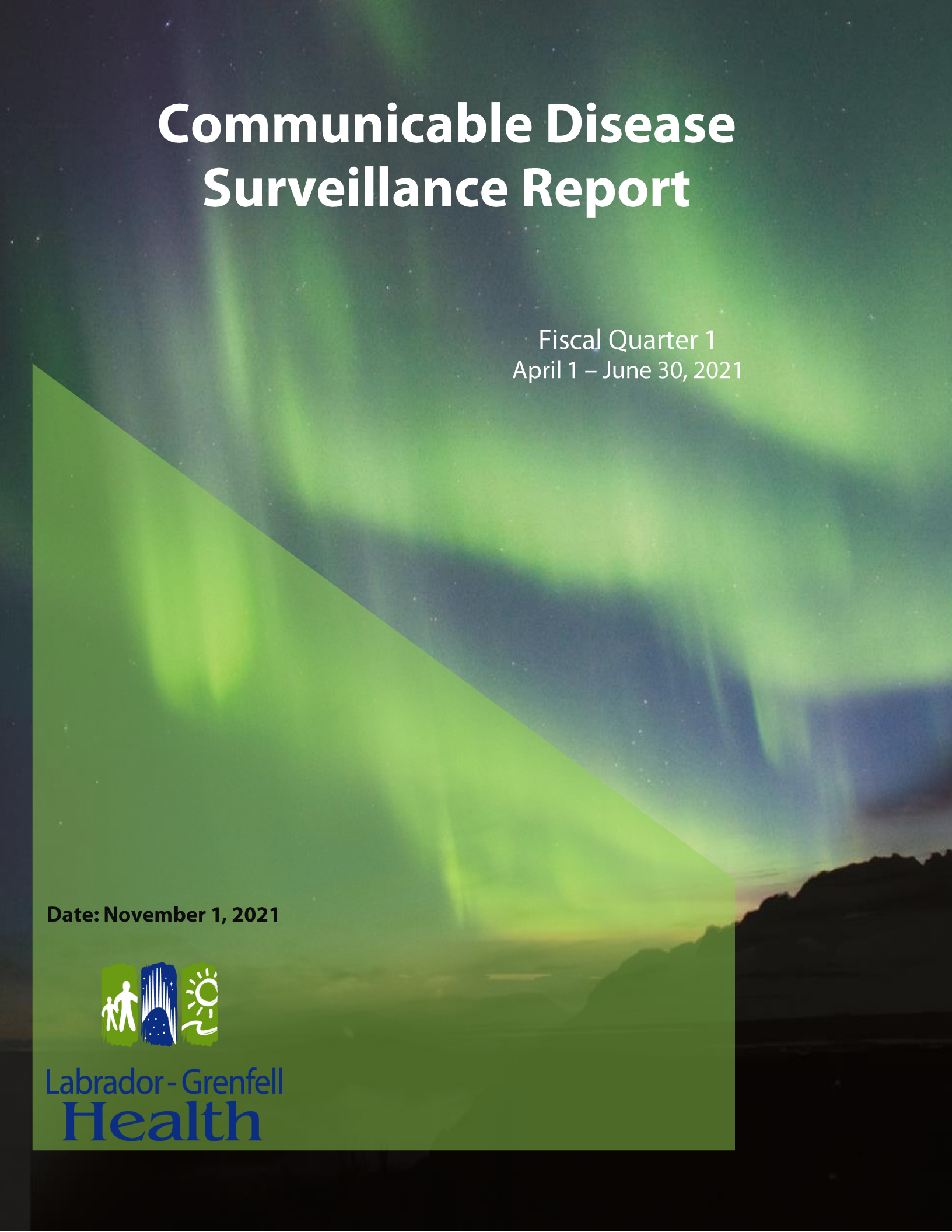


Communicable Disease Surveillance Report

Fiscal Quarter 1
April 1 – June 30, 2021

Date: November 1, 2021

Labrador-Grenfell Health

Communicable Disease Surveillance Report

Disclaimer

The purpose of this report is to provide an overview of reportable communicable disease activity within the Labrador-Grenfell Health (LGH) Regional Health Authority. This activity is represented by case counts. The text of any disease that has exceeded the upper threshold during this quarter (calculated based on the previous 5 years) is coloured red.

Please note that due to continuous reporting, as well as potential delays in reporting, data is subject to change.

Diseases that Exceeded Threshold

LGH flags diseases that exceed an upper threshold. This is calculated using the 3rd quartile + 1.5 * interquartile range for each quarter, over the previous 5 calendar years. This may mean increased activity of this disease during this period.

During this quarter, one disease exceeded the upper threshold: Syphilis (noninfectious).

Disease Counts

Table 1. Enteric, Food, and Waterborne Diseases

	Current Quarter	YTD	YTD 2020	5-Year Historical Median	Upper Threshold
Amoebiasis	0	0	0	0.0	0.0
Botulism	0	0	0	0.0	0.0
Campylobacteriosis	0	1	0	0.8	4.8
Cryptosporidiosis	0	0	0	0.3	1.1
Cyclosporiasis	0	0	2	0.0	0.6
Cytomegalovirus	0	4	3	0.8	3.2
Giardiasis	1	1	1	0.8	1.9
Hepatitis A	0	1	1	0.0	0.9
Listeriosis	0	0	0	0.0	0.0
Salmonellosis	0	2	2	2.5	8.8
Shigellosis	0	0	0	0.0	0.0
Typhoid/Paratyphoid Fever	0	0	0	0.0	0.0
Verotoxigenic Escherichia coli	0	0	0	0.5	1.4
Yersiniosis	0	0	0	0.0	0.0

Table 2. Diseases Transmitted by Direct Contact and Respiratory Route

	Current Quarter	YTD	YTD 2020	5-Year Historical Median	Upper Threshold
COVID-19	6	8	6		
Creutzfeldt-Jakob Disease (CJD)	0	0	0	0.0	0.0
Group B Streptococcal Disease, Neonatal	0	0	0	0.0	0.3
Influenza Virus of a Novel Strain	0	0	0	0.0	0.0
Invasive Group A Streptococcal Disease	0	1	1	0.5	2.6
Invasive Haemophilus Influenza non-type B	0	1	0	0.5	1.1
Invasive Meningococcal Disease (IMD)	0	0	0	0.3	0.6
Invasive Pneumococcal Disease (IPD)	0	2	1	0.8	1.8
Legionelloisis	0	0	0	0.0	0.0
Meningitis, Bacterial (excl Hib, IMD, IPD)	0	0	0	0.0	0.0
Meningitis, Viral	0	0	0	0.0	0.0
Nontuberculosis Mycobacterial Disease	0	0	0	0.0	0.0
Severe Respiratory Illness, Unknown Origin	0	0	0	0.0	0.0
Tuberculosis, Non-respiratory	0	0	0	0.3	1.6
Tuberculosis, Respiratory	1	4	5	2.5	8.4
Tuberculosis (all)	1	4	5	2.5	9.4

Table 3. Sexually Transmitted and Blood Borne Infections (STBBIs)

	Current Quarter	YTD	YTD 2020	5-Year Historical Median	Upper Threshold
Chlamydia	59	111	96	42.8	63.8
Gonorrhea	0	1	0	0.5	1.7
Hepatitis C	0	2	8	2.5	7.6
HIV Infection	0	0	0	0.0	0.6
Syphilis, Infectious	0	0	0	0.0	0.6
Syphilis, Noninfectious	1	1	0	0.0	0.3

Table 4. Vectorborne and Other Zoonotic Diseases

	Current Quarter	YTD	YTD 2020	5-Year Historical Median	Upper Threshold
Lyme Disease	0	0	0	0.0	0.0
Malaria	0	0	0	0.0	0.0
Q Fever	0	0	0	0.0	0.0
Rabies	0	0	0	0.0	0.0
Toxoplasmosis	0	0	0	0.0	0.0
Trichinellosis	0	0	0	0.0	0.0
West Nile Virus	0	0	0	0.0	0.0

Table 5. Vaccine Preventable Diseases

	Current Quarter	YTD	YTD 2020	5-Year Historical Median	Upper Threshold
Congenital Rubella Syndrome	0	0	0	0.0	0.0
Hepatitis B	0	0	0	0.3	0.4
Invasive Haemophilus Influenza type B (Hib)	0	0	1	0.0	0.6
Measles	0	0	0	0.0	0.0
Mumps	0	0	0	0.0	0.0
Pertussis	0	0	0	0.0	0.0
Rubella	0	0	0	0.0	0.0
Tetanus	0	0	0	0.0	0.0
Varicella/Chickenpox	1	1	6	3.0	16.4

In Focus: Hepatitis C

Hepatitis C Virus (HCV) is a bloodborne infectious disease which primarily affects the liver and is caused by an enveloped RNA virus of the Flaviviridae family. [1] Humans infected with HCV serve as the reservoir of infection with transmission occurring primarily by exposure to infected blood or blood products. [2,3,4] Risk factors for HCV infection include the sharing of used drug paraphernalia; reuse of inadequately sterilized medical, tattooing, or body piercing equipment; sharing of personal care items such as nail clippers and toothbrushes; sexual practices that involve exposure to blood (e.g., unprotected anal intercourse), immigration from or travel to a high HCV prevalence region; history of blood or blood product transfusion or organ transplant before 1992 in Canada; children born to a mother infected with HCV; and occupational exposure to HCV (e.g., needle stick injuries). [2,5]

The HCV incubation period can be anywhere from 2 weeks to 6 months, with 60% to 80% of individuals remaining asymptomatic during the acute phase of the illness. [2,4,5] In about 25-30% of those who are infected, the immune system successfully eliminates the infection within 6 months. [4,5] In about 70-75%, the infection persists and becomes chronic, leading to progressive liver fibrosis and, in 15-30% of chronically infected individuals, cirrhosis, which often presents many years after the initial infection (> 20 years). [4,5] A further 1-5% of those chronically infected will develop hepatocellular carcinoma [5]. Those that have eliminated HCV in the past remain at risk for re-infection. [6]

At present there is no approved HCV vaccine, however HCV infection can be cured with adequate detection, care, and treatment. [6,7] HCV testing is warranted for screening of those with identified risk factors for HCV infection, clients exhibiting signs or symptoms of either acute or chronic

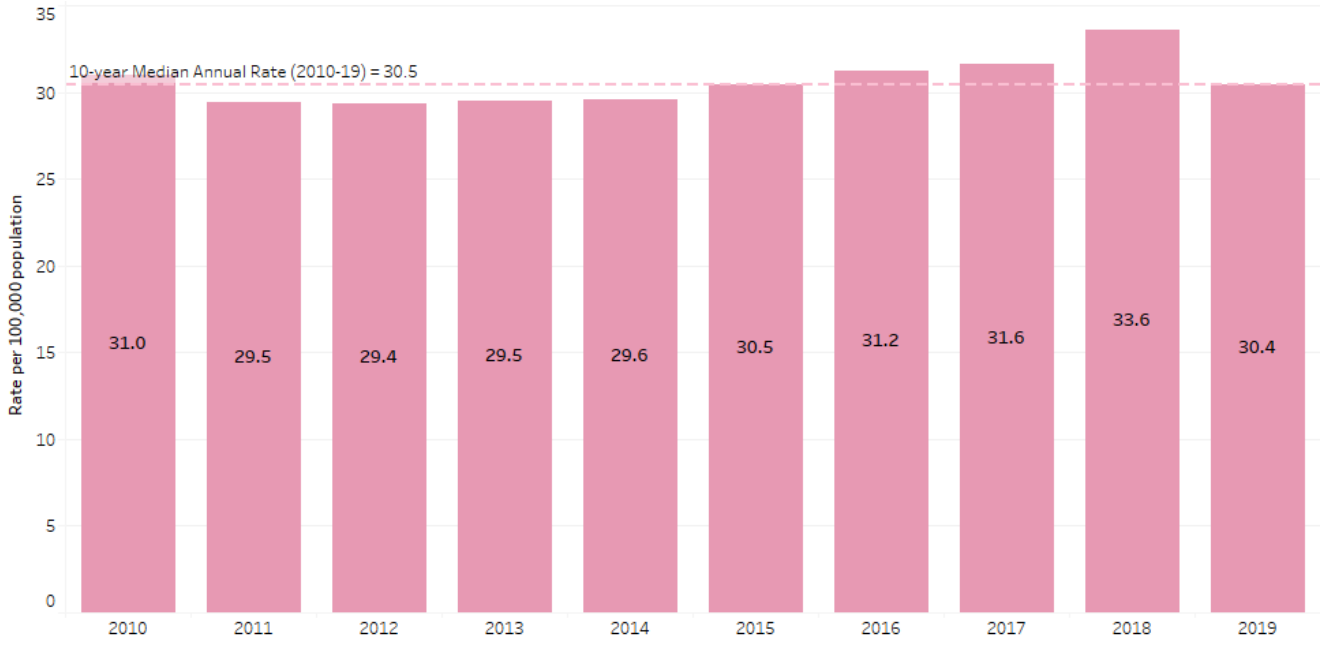
hepatitis, or those diagnosed with Hepatitis B Virus (HBV) or Human Immunodeficiency Virus (HIV). [5] For further information about the diagnostic approach and interpretation of HCV tests in Newfoundland and Labrador, as well as recommended follow-up with HCV-infected clients, please see Section 5 of the Newfoundland and Labrador Communicable Disease Control Manual. [8]

Epidemiology of Hepatitis C

HCV is prevalent in all areas of the world, with the World Health Organization (WHO) recently estimating that 58 million people are chronically infected with HCV worldwide and 1.5 million new HCV infections arise each year. [4]

The 10-year annual median rate of incident HCV infection in Canada from 2010 to 2019 is 30.5 cases per 100,000. [9] As can be seen in Figure 1, from 2009 to 2012, rates of Hepatitis C were declining annually and were relatively stable until 201, after which they rose to a peak of 33.6 cases per 100,000 in 2018, followed by a subsequent decline to slightly below the median annual rate into 2019. [9, 10]

Figure 1. Annual Rates of Incident Hepatitis C in Canada, 2010-2019.

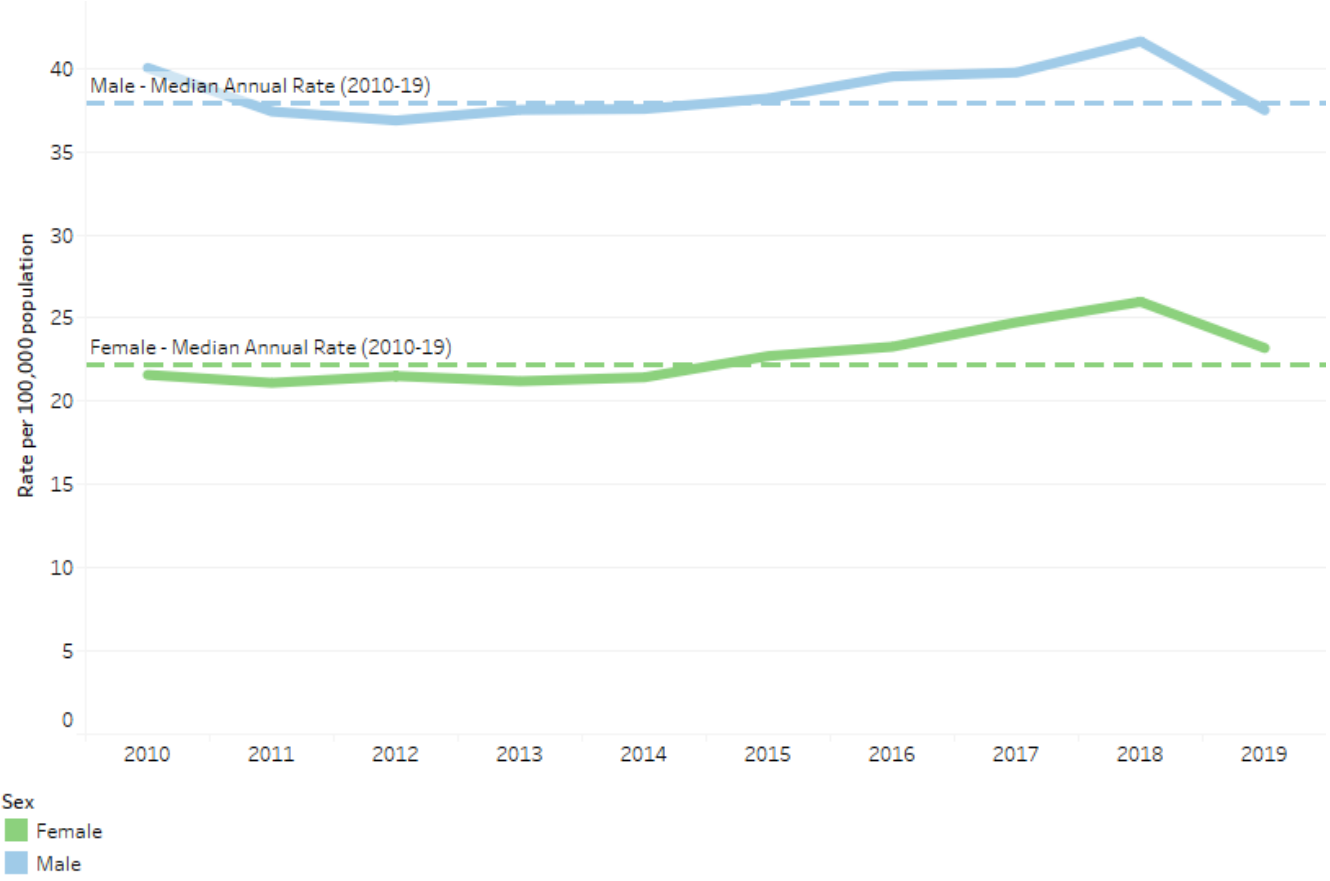


Note: The data used for data analysis and construction of this figure is from Notifiable Diseases Online. Hepatitis C: Reported Cases in Canada, 1991-2019 [Data file]. Ottawa: Public Health Agency of Canada [cited 2021 Jul 30]. Available from: https://diseases.canada.ca/notifiable/charts?c=pd.

The highest average annual rates of Hepatitis C infection in Canada from 2012 to 2016 were observed in Saskatchewan, Yukon Territory, and British Columbia, while the lowest average rates were seen in Nunavut, Quebec, and Newfoundland and Labrador. [11] However, from 2014 to 2018, annual rates of HCV infection in Newfoundland and Labrador increased from 24.2 cases per 100,000 in 2014 to 49.8 cases per 100,000 in 2018, resulting in the province having the third highest rate in Canada. [12] The annual rate of HCV infection in Newfoundland and Labrador stood at 42.8 per 100,000 in 2019, a decrease from the previous year but still the fourth highest in Canada. [10]

In Canada, annual rates of HCV infection were higher in males than females every year from 2010 to 2019, with an annual median rate of 37.9 cases per 100,000 in males and 22.2 cases per 100,000 in females (see Figure 2). [9]

Figure 2. Annual Rates of Incident Cases of Hepatitis C Infections in Canada, by Gender, 2010-2019.



Note: 1. The solid line represents the annual rate while the dashed line represents the median rate for the years 2010 to 2019. 2. The data used for data analysis and construction of this figure is from Notifiable Diseases Online. Hepatitis C: Reported Cases in Canada, 1991-2019 [Data file]. Ottawa: Public Health Agency of Canada [cited 2021 Jul 30]. Available from: https://diseases.canada.ca/notifiable/charts?c=pd.

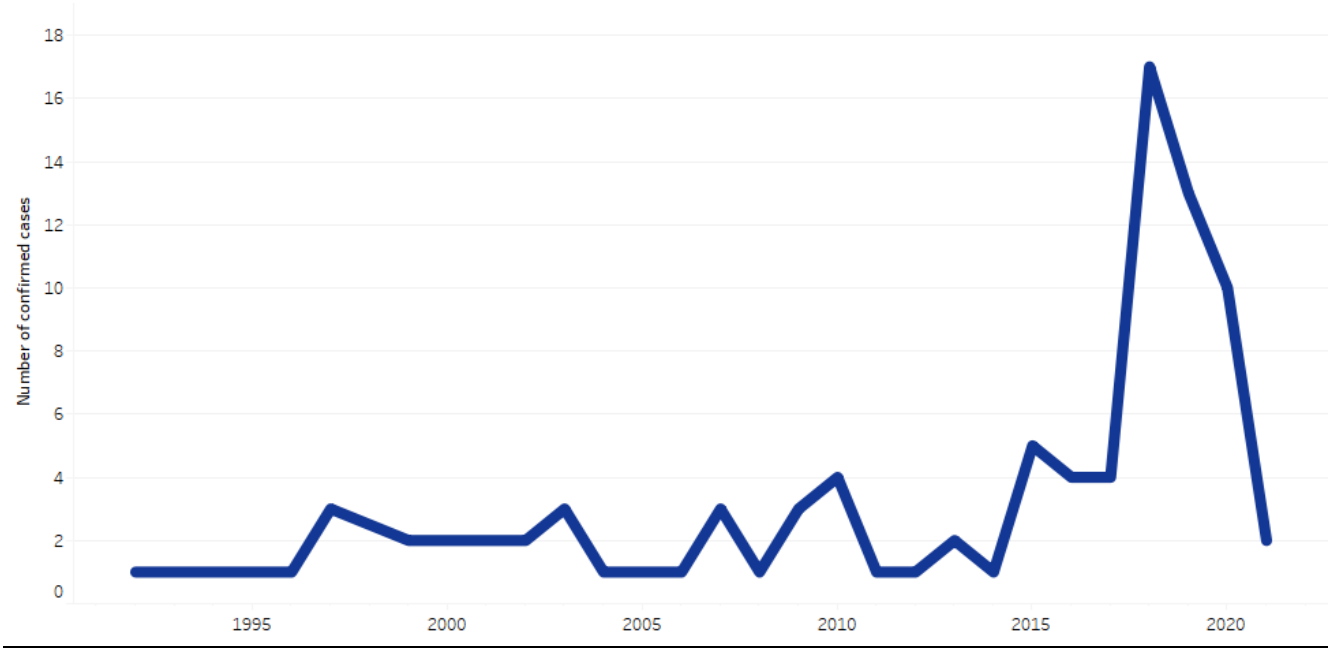
Between 2010 and 2019, the highest median annual rate of HCV infection in Canada was among those aged 30 to 39 years old (48.1 cases per 100,000), followed by the 25 to 29-year-old (47.7 cases per 100,000) and 40 to 59-year-old (41.4 cases per 100,000) age groups. [9] There are some notable differences in age group distribution for females and males. For males, the highest median annual rate of HCV infection was among 40- to 59-year-olds (57.7 cases per 100,000). [9] Among females, the highest median annual rate was in 25- to 29-year-olds (44.6 cases per 100,000). [9] In 2019, the highest HCV infection rate for both males (64.2 cases per 100,000) and females (52.7 cases per 100,000) was in the 25 to 29-year-old age group. [9]

Over the course of the past decade, a rate shift in HCV infection rates in Canada from older to younger age groups is apparent. For the early part of the decade, from 2010 to 2013, the highest annual HCV infection rates were in the 40- to 59-year age group, while from 2014 to 2019, the highest annual HCV infection rates were in the 25- to 29- year age group. [9]

Epidemiology of Hepatitis C in the LGH Region

The annual number of incident HCV infections reported in the LGH region was relatively low from 1992 to 2017 despite some year-to-year variability (see Figure 3). [13] However, in 2018, case numbers increased dramatically, reaching a high of 17 reported cases, which exceeded the median annual case number of 1 for the previous ten years (2008-2017). [13] This 2017 peak in case counts quickly dropped in subsequent years, and, so far in 2021, only 2 cases of HCV infection have been reported in the LGH region. [13]

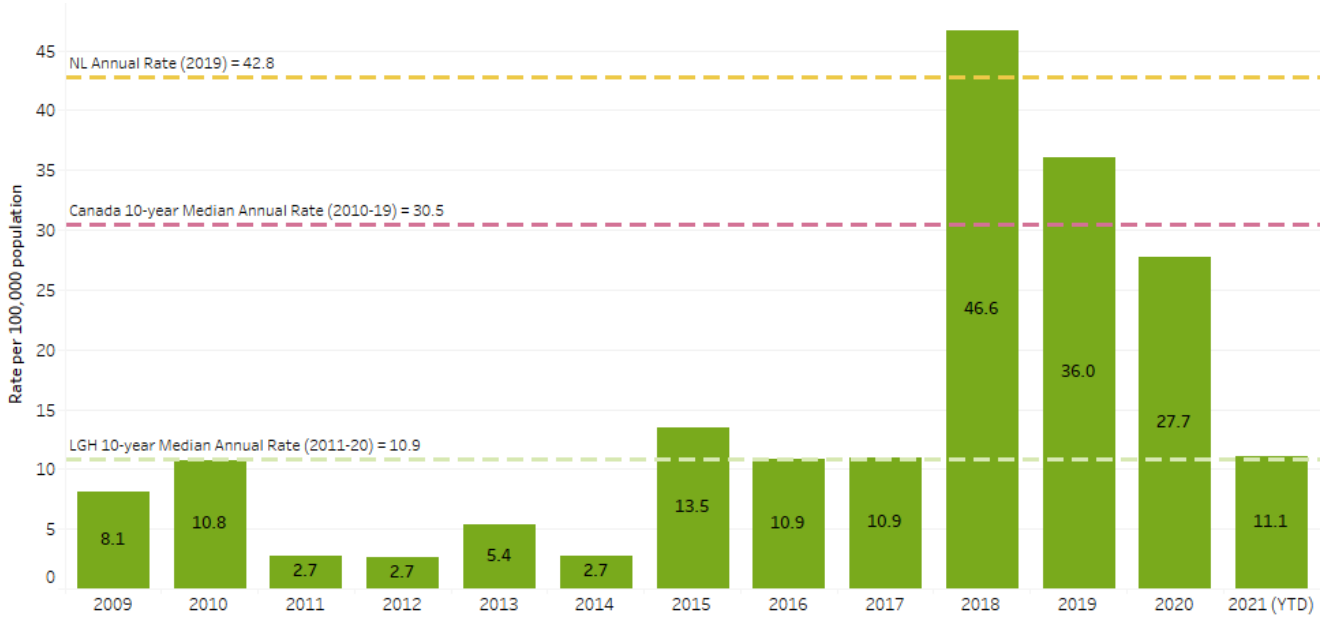
Figure 3. Annual Case Counts of Incident Hepatitis C Infection in the LGH Region, 1992-2021 (YTD).



Note: The data source for this figure is Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].

The 10-year median annual rate of incident HCV infection of the LGH Region for the past ten years (2011-2020) is 10.9 cases per 100,000 population, [13] which is well below the Canadian median annual rate of 30.5 cases per 100,000 population (2010-2019). [9] As shown in Figure 4, from 2009 to 2017, annual rates of HCV infection in the LGH region were usually below the Canadian median until a quadrupling of HCV rates in 2018 from the previous year. [9, 13]. This sudden rise in HCV rates was not sustained and subsequently fell after the 2018 peak. [13] So far, in 2021, the annual rate of HCV infection in the LGH region is slightly above the median annual rate for the previous ten years. [13]

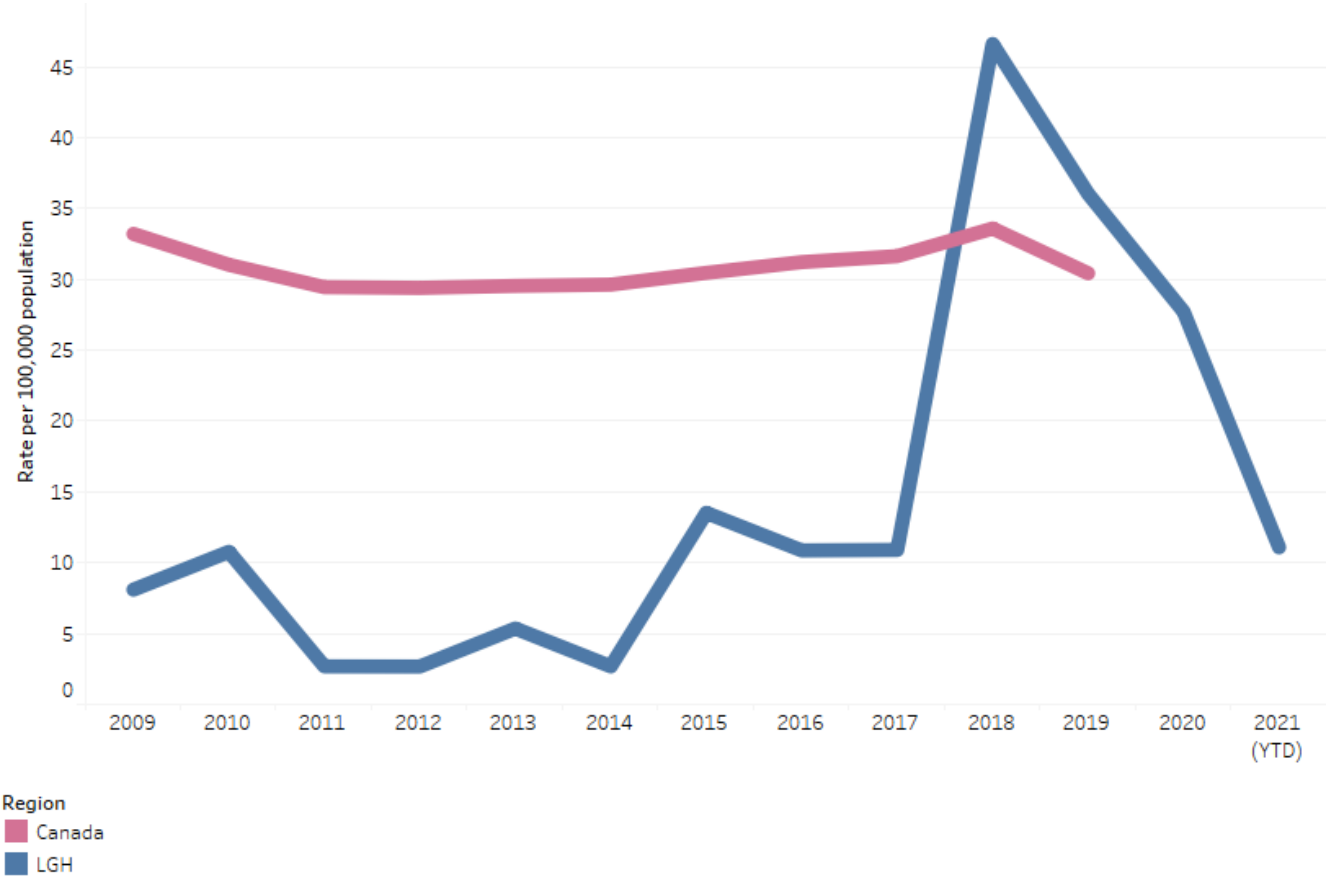
Figure 4. Annual Rates of Incident Hepatitis C in the LGH Region, 2009-2021 (YTD).



Note: 1. LGH rates are calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
2. LGH rates are calculated using denominators from Statistics Canada. Table 17-10-0134-01 Estimates of population (2016 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2018 boundaries) and peer groups. Ottawa: Statistics Canada; 2021 Aug 19 [cited 2021 Aug 30]. Available from: https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1710013401.
3. The Canadian 10-year median annual rate is calculated using data from Notifiable Diseases Online. Hepatitis C: Reported Cases in Canada, 1991-2019 [Data file]. Ottawa: Public Health Agency of Canada [cited 2021 Jul 30]. Available from: https://diseases.canada.ca/notifiable/charts?c=pd. The NL Annual Rate is from Public Health Agency of Canada. Hepatitis C in Canada: 2019 surveillance data; 2021 Jul 14 [cited 2021 Jul 29]. Available from: www.canada.ca/en/public-health/services/publications/diseases-conditions/hepatitis-c-2019-surveillance-data.html.

The trend in annual HCV infection rates for the LGH region bears some similarities to the trend at the national level. As Figure 5 shows, the rate of HCV infections increased in both Canada and LGH in the year 2018, although the increase over the previous year was much higher in the LGH region (327.5%) than at the national level (6.2%). [9, 13] Both jurisdictions also observed a rate decrease in 2019, although the magnitude of the decrease was much larger in the LGH region (40.5%) than at the national level (9.4%). [9, 13]

Figure 5. A Comparison of Annual Rates of Incident Hepatitis C Infection in LGH and Canada, 2009-2021 (YTD).



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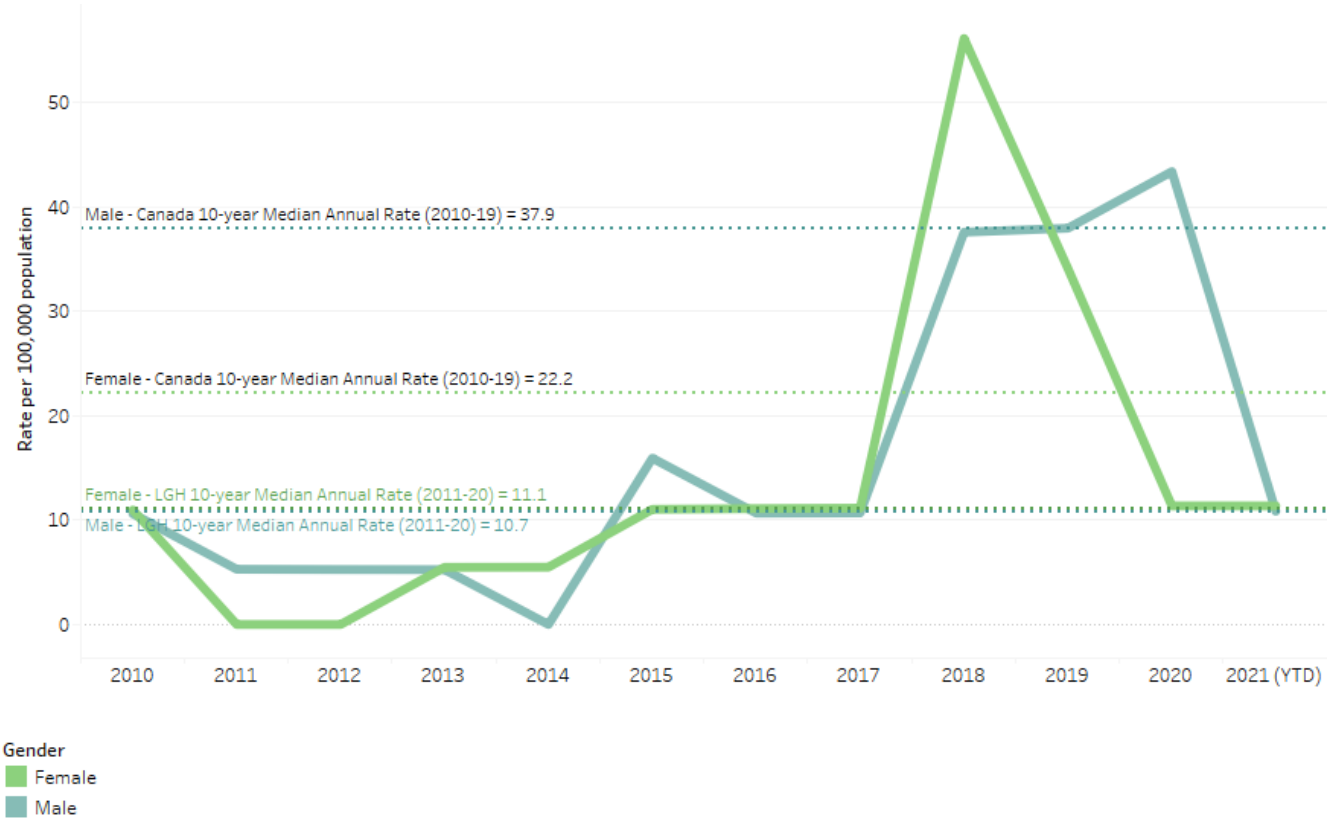
3. Canadian annual rates are from Notifiable Diseases Online. Hepatitis C: Reported Cases in Canada, 1991-2019 [Data file]. Ottawa: Public Health Agency of Canada [cited 2021 Jul 30]. Available from: https://diseases.canada.ca/notifiable/charts?c=pd.

The LGH region has some significant differences from national trends when compared by gender. At the national level, a gender gap is apparent in annual rates of incident HCV infection, with males showing consistently higher annual rates of HCV infection from 2010 to 2019 (see Figure 2). [9] In contrast, there was more year-to-year variability in the LGH region, with female rates exceeding male rates during some years, resulting in a smaller, reversed gender gap. [13] From 2011 to 2020, the median annual rate of incident HCV infection among females (11.1 cases per 100,000) was slightly higher than among males (10.7 cases per 100,000). [13] Also, although there was an increase in HCV infection rates for both males and females at both the national level and in the LGH region in 2018, the magnitude of this increase was significantly higher in the LGH region, particularly among females. [9, 13]

As shown in Figure 6, the 2010 to 2021 annual rates of incident HCV infection in the LGH region for both males and females were below the 10-year Canadian median annual rates (37.9 cases per 100,000 for males and 22.2 cases per 100,000 for females). [9, 13] The dramatic increase in the LGH region annual case rate in 2018 was driven by rate increases for both males (37.6 cases per 100,000)

and females (56.1 cases per 100,000); however, the magnitude of the rate increase was higher for females (404%) than for males (251%). [13] Also, in 2018, the female rate (56.1 cases per 100,000) was well above the Canadian 10-year median (22.2 cases per 100,000). [9, 13] Since 2018, female rates in the LGH region have declined to levels near those in the years prior the 2018 peak. [13] The year-to-date 2021 case rate for females (11.4 cases per 100,000) in the LGH region is still above pre-2017 rates but unchanged from 2020. [13] Among males, HCV infection rates in the LGH region increased further in 2020 (43.3 cases per 100,000), to a level above the Canadian 10-year median (37.9 cases per 100,000). [9, 13] So far, in 2021, the annual case rate among males in the LGH region (10.8 cases per 100,000) is lower than it's been since 2017. [13]

Figure 6. Annual Rates of Incident Hepatitis C Infection in the LGH Region, by Gender, 2010-2021 (YTD).



Note: 1. LGH gender rates are calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
2. LGH gender rates are calculated using denominators from Statistics Canada. Table 17-10-0134-01 Estimates of population (2016 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2018 boundaries) and peer groups. Ottawa: Statistics Canada; 2021 Aug 19 [cited 2021 Aug 30]. Available from: https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1710013401.
3. Canadian 10-year median annual rates are calculated using data from Notifiable Diseases Online. Hepatitis C: Reported Cases in Canada, 1991-2019 [Data file]. Ottawa: Public Health Agency of Canada [cited 2021 Jul 30]. Available from: https://diseases.canada.ca/notifiable/charts?c=pd.

The highest 10-year (2010-2019) median annual rate of incident HCV infection was found in the 30- to 39-year-old age group at the national level, whereas in the LGH region, the highest 10-year (2011-2020) median annual rate was found in the 20- to 24-year-old age group (41.8 cases per 100,000). [9,13] In LGH, the next highest was among 30- to 39-year-olds (20.9 cases per 100,000) and 40- to 59-year-olds (8.5 cases per 100,000). [13]

As shown in Table 6, most of the highest annual incident HCV infection rates for the past decade in the LGH region were among individuals between the ages of 20 and 39 years old, with the highest

rates occurring in 2018 and 2019. [13] In 2020, the highest rate of HCV infection was in the 40- to 59-year-old age group. [13]

Table 6. Rates of Incident Hepatitis C Infection in the LGH Region, by Age Group and Year, 2011-2021 (YTD).

	0 to 14	15 to 19	20 to 24	25 to 29	30 to 39	40 to 59	60+
2011	0.0	0.0	0.0	0.0	0.0	8.5	0.0
2012	0.0	0.0	0.0	0.0	0.0	8.5	0.0
2013	0.0	0.0	40.9	0.0	19.6	0.0	0.0
2014	0.0	0.0	41.8	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	40.8	17.3	13.9
2016	0.0	0.0	48.2	86.2	20.9	0.0	0.0
2017	0.0	43.7	49.8	0.0	42.6	0.0	0.0
2018	15.6	0.0	201.7	93.1	129.1	9.0	37.9
2019	0.0	45.8	49.3	199.8	109.5	18.4	0.0
2020	0.0	0.0	49.3	50.0	21.9	55.3	12.3
2021 (YTD)	0.0	0.0	0.0	99.9	0.0	18.4	0.0

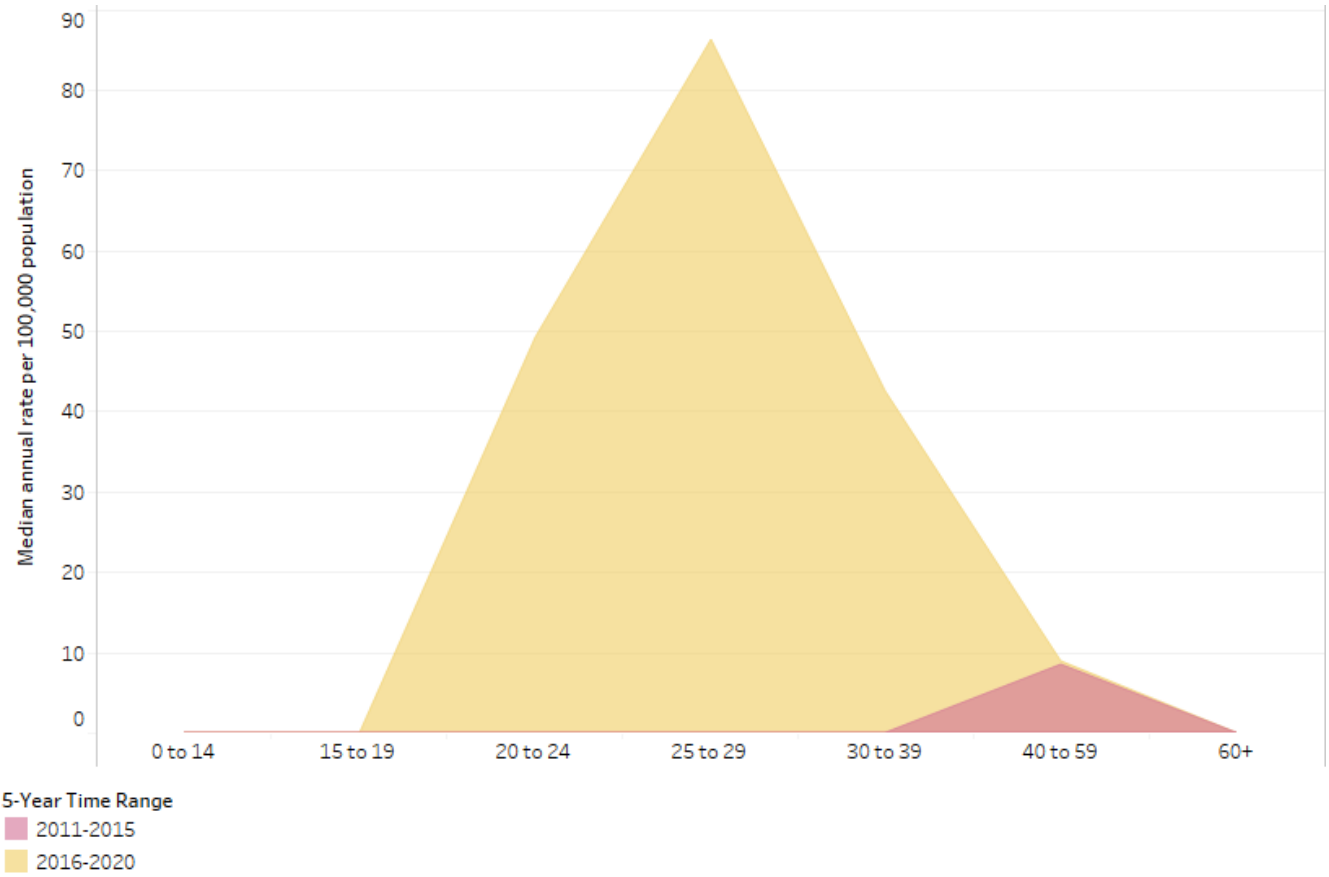
Rate per 100,000

0.0 201.7

Note: 1. Age group rates are calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
2. Age group rates are calculated using denominators from Statistics Canada. Table 17-10-0134-01 Estimates of population (2016 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2018 boundaries) and peer groups. Ottawa: Statistics Canada; 2021 Aug 19 [cited 2021 Aug 30]. Available from: https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1710013401.

As shown in Figure 7, from 2011 to 2015, the highest median annual rate of incident HCV infection in the LGH region was in the 40- to 59-year-old age group (8.5 cases per 100,000), but from 2016 to 2020, the highest median annual rate of HCV infection shifted to the 20- to 24- year-old age group (86.2 cases per 100,000). [13] This is similar to the age demographic shift that was observed at the national level where the highest median rate of infection shifted from 40- to 59-year-olds in the early part of the decade (2010-2013) to 25- to 29-year-olds from 2014 onwards. [9]

Figure 7. Five-Year Median Annual Rates of Incident Hepatitis C Infection in the LGH Region, by Age Group, 2011-2015 versus 2016-2020.



Note: 1. Five-year median annual rates are calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
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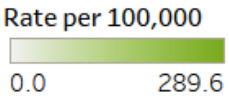
Table 7 shows annual rates of incident HCV infection in the LGH region, by gender and age group. Consistent with the peak in HCV infection case rates observed in 2018 and 2019, the highest annual rates of HCV infection, sorted by age group and gender, are clustered around 2018 and 2019 with the highest rates of infection in females between the ages of 15 and 39 years old and the highest rates of infection in males between the ages of 20 to 39 years old. [13]

Table 7: Annual Rates of Incident Hepatitis C in the LGH Region, by Gender and Age Group, 2011-2021 (YTD).

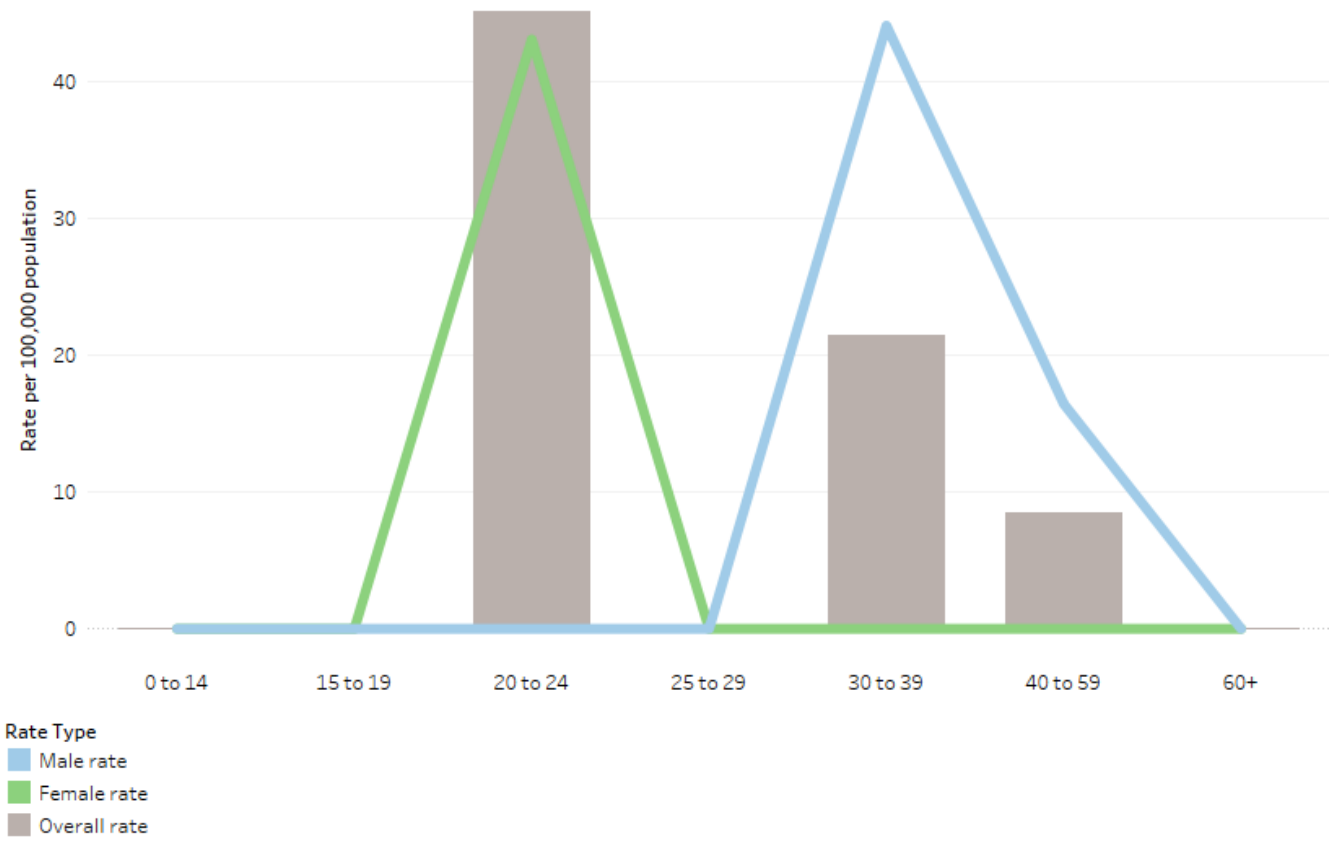
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 (YTD)
Female	0 to 14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15 to 19	0.0	0.0	0.0	0.0	0.0	0.0	92.6	91.2	0.0	96.3	0.0	0.0
	20 to 24	81.4	0.0	0.0	0.0	86.1	0.0	99.2	104.9	211.0	0.0	104.0	0.0
	25 to 29	83.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	191.2	103.5	0.0	207.0
	30 to 39	0.0	0.0	0.0	40.1	0.0	0.0	0.0	0.0	167.5	169.6	0.0	0.0
	40 to 59	0.0	0.0	0.0	0.0	0.0	17.9	0.0	0.0	0.0	0.0	19.0	0.0
	60+	0.0	0.0	0.0	0.0	0.0	27.9	0.0	0.0	50.8	0.0	0.0	0.0
Male	0 to 14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.6	0.0	0.0	0.0
	15 to 19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20 to 24	0.0	0.0	0.0	80.1	0.0	0.0	0.0	0.0	193.2	93.6	0.0	0.0
	25 to 29	80.9	0.0	0.0	0.0	0.0	0.0	85.8	0.0	0.0	289.6	96.5	0.0
	30 to 39	37.9	0.0	0.0	0.0	0.0	82.0	42.8	87.5	88.5	45.3	45.3	0.0
	40 to 59	0.0	16.4	16.4	0.0	0.0	16.8	0.0	0.0	17.5	35.8	89.4	35.8
	60+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	0.0	24.5	0.0



Note: 1. Age group and gender rates are calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
2. Age group and gender rates are calculated using denominators from Statistics Canada. Table 17-10-0134-01 Estimates of population (2016 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2018 boundaries) and peer groups. Ottawa: Statistics Canada; 2021 Aug 19 [cited 2021 Aug 30]. Available from: https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1710013401.

The highest median annual rate of incident HCV infection during the past decade (2011-2020) in the LGH region for males was among those aged 30 to 39 years old (44.0 cases per 100,000), while for females it was among those aged 20 to 24 years old (43.0 cases per 100,000). [13] See Figure 8 for details.

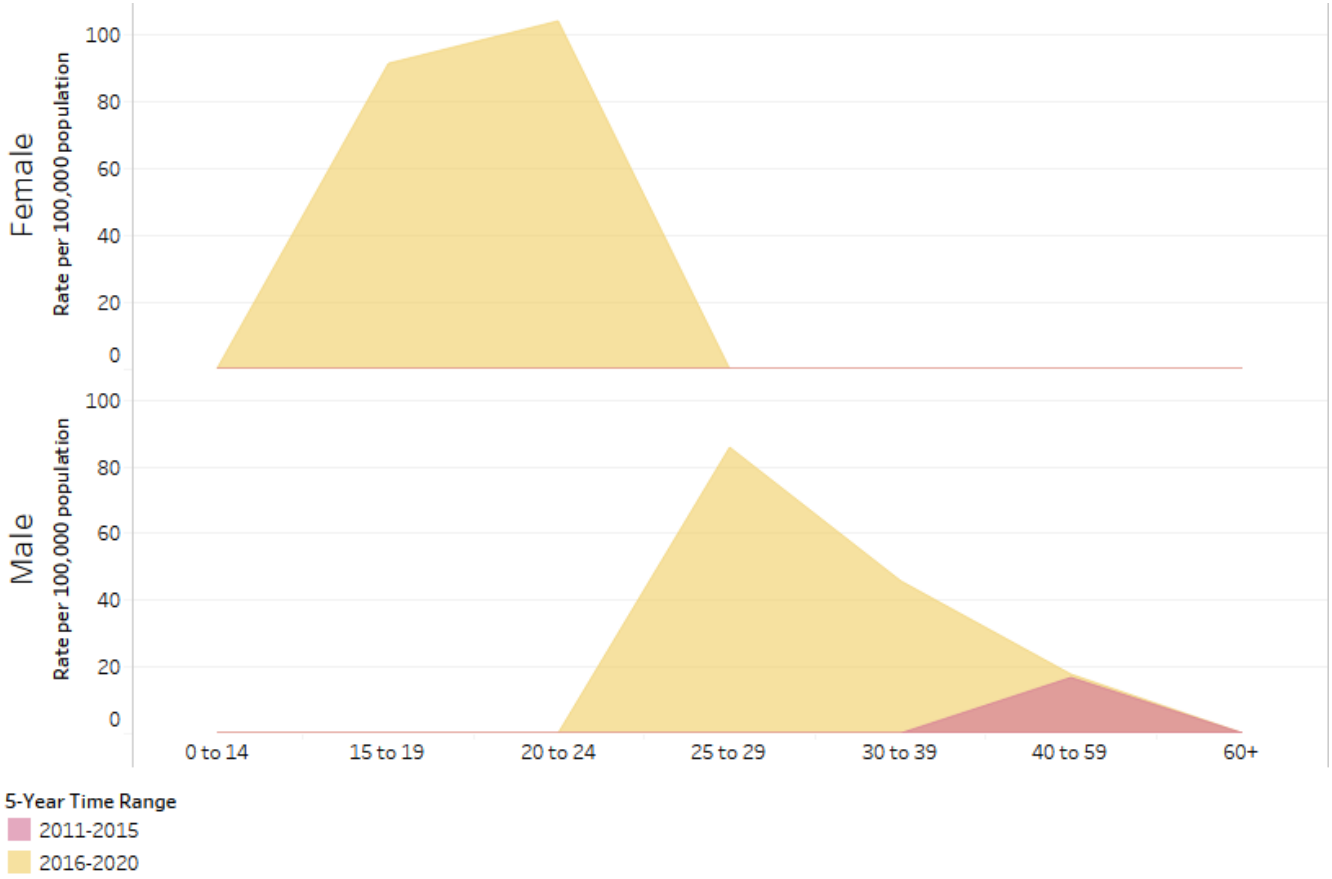
Figure 8. Median Annual Rate of Incident Hepatitis C in the LGH Region, by Age Group and Gender, 2011-2020.



Note: 1. Age group and gender rates are calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
2. Age group and gender rates are calculated using denominators from Statistics Canada. Table 17-10-0134-01 Estimates of population (2016 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2018 boundaries) and peer groups. Ottawa: Statistics Canada; 2021 Aug 19 [cited 2021 Aug 30]. Available from: https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1710013401.

When median annual rates are compared (see Figure 9), by age group and gender, for the periods of 2011 to 2015 and 2016 to 2020, there is a shift in the group with the highest rate of HCV infection in the LGH region. Between 2011 and 2015, the only group with a non-zero annual median rate of HCV infection is males between the ages of 40 and 59 (17.5 per 100,000). [13] However, from 2016 to 2020, the highest median annual rate of HCV infection is in younger age groups for both females and males. Among females, the highest median annual rate of HCV infection is in the 20- to 24-year-old age group (104.0 cases per 100,000). Among males, the highest median annual rate of HCV infection is in the 25- to 29-year-old age group (85.8 cases per 100,000). [13]

Figure 9. Five-Year Median Annual Rate of Hepatitis C Infection in the LGH Region, by Gender and Age, 2011-2015 vs 2016-2020.



Note: 1. The five-year median annual rate is calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
2. The five-year median annual rate is calculated using denominators from Statistics Canada. Table 17-10-0134-01 Estimates of population (2016 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2018 boundaries) and peer groups. Ottawa: Statistics Canada; 2021 Aug 19 [cited 2021 Aug 30]. Available from: https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1710013401.

HCV cases are not distributed equally across the LGH region. The highest 10-year (2011-2020) median annual rate of incident HCV infection is in Central Labrador at 20.8 cases per 100,000, while the lowest, at 0 cases per 100,000, is in the regions of Northern Labrador and Southern Labrador. [13] The remaining two regions, Labrador West and the Northern Peninsula, have median annual rates of 10.1 cases per 100,000 and 5.0 cases per 100,000, respectively. [13]

As the highlight table displaying annual rates of infection by region (Table 8) shows, rates were highest in the Central Labrador region in all years from 2013 to 2021, except 2015. [13] In 2015, the rate of HCV infection was highest in Labrador West. [13] Reported HCV infections are sporadic in Northern and Southern Labrador, with these regions reporting cases during only one year since 2011. [13]

Table 8. Annual Rates of Incident Hepatitis C Infection in the LGH Region, by PHC Zone, 2011-2021 (YTD).

	Central Labrador	Labrador West	Northern Labrador	Northern Peninsula	Southern Labrador
2011	0.0	10.1	0.0	0.0	0.0
2012	0.0	10.1	0.0	0.0	0.0
2013	10.6	0.0	0.0	9.9	0.0
2014	10.6	0.0	0.0	0.0	0.0
2015	21.1	30.4	0.0	0.0	0.0
2016	20.5	0.0	0.0	21.5	0.0
2017	41.1	0.0	0.0	0.0	0.0
2018	123.3	30.5	0.0	10.8	27.2
2019	92.5	20.3	0.0	21.5	0.0
2020	61.6	20.3	28.6	10.8	0.0
2021 (YTD)	41.1	0.0	0.0	0.0	0.0

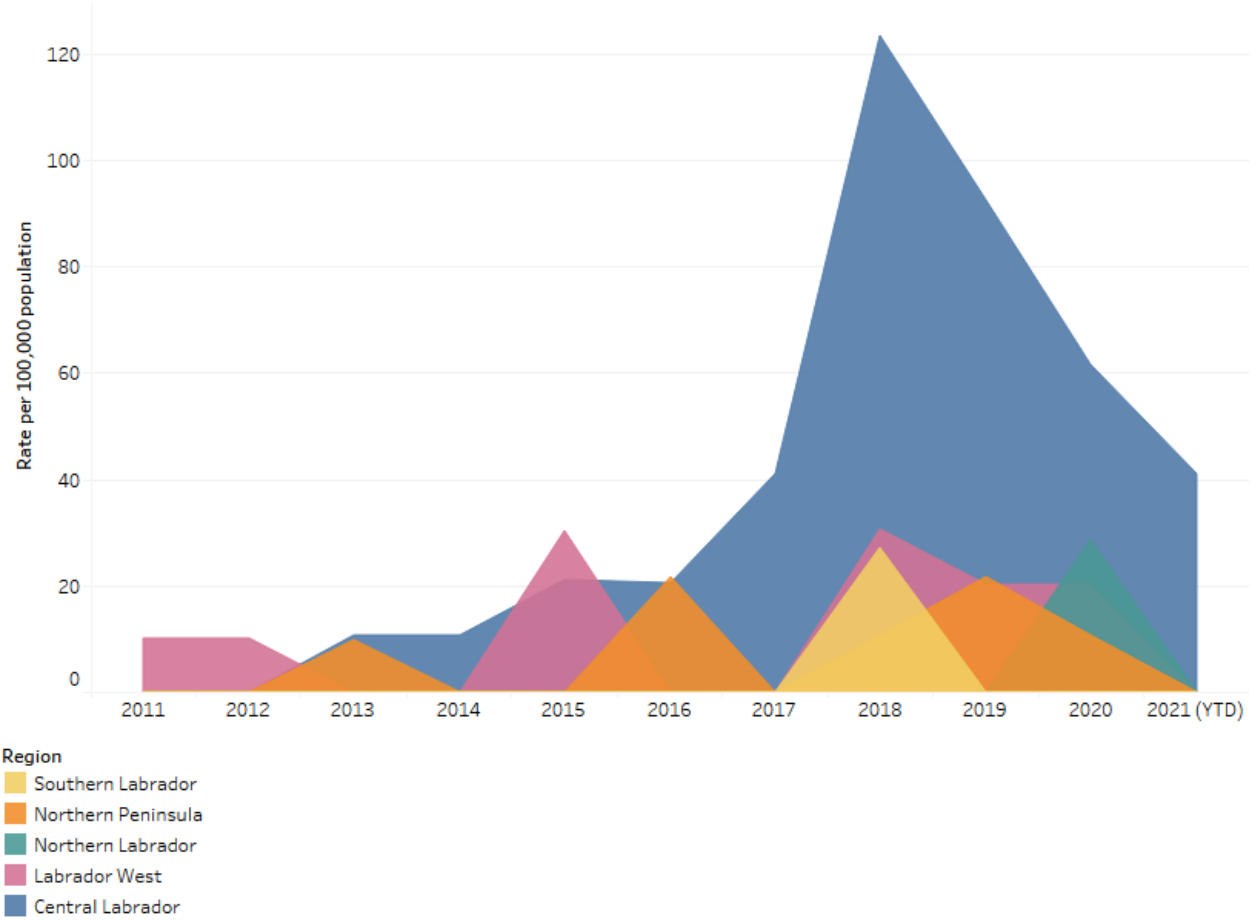
Rate per 100,000

0.0 123.3

Note: 1. PHC Zone rates are calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
2. PHC Zone rates are calculated using denominators from Statistics Canada. Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X201600 [Internet]. Ottawa: Statistics Canada; Nov 2017 [cited 2019 Dec 10]. Available from: www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E.

The increase in incident HCV rates, from baseline, during the years 2018 to 2020 corresponds to an increase in cases in the Central Labrador region during the same period. [13] This is best illustrated in Figure 10, where the dramatic uptick in case rates is prominent in the Central Labrador Region.

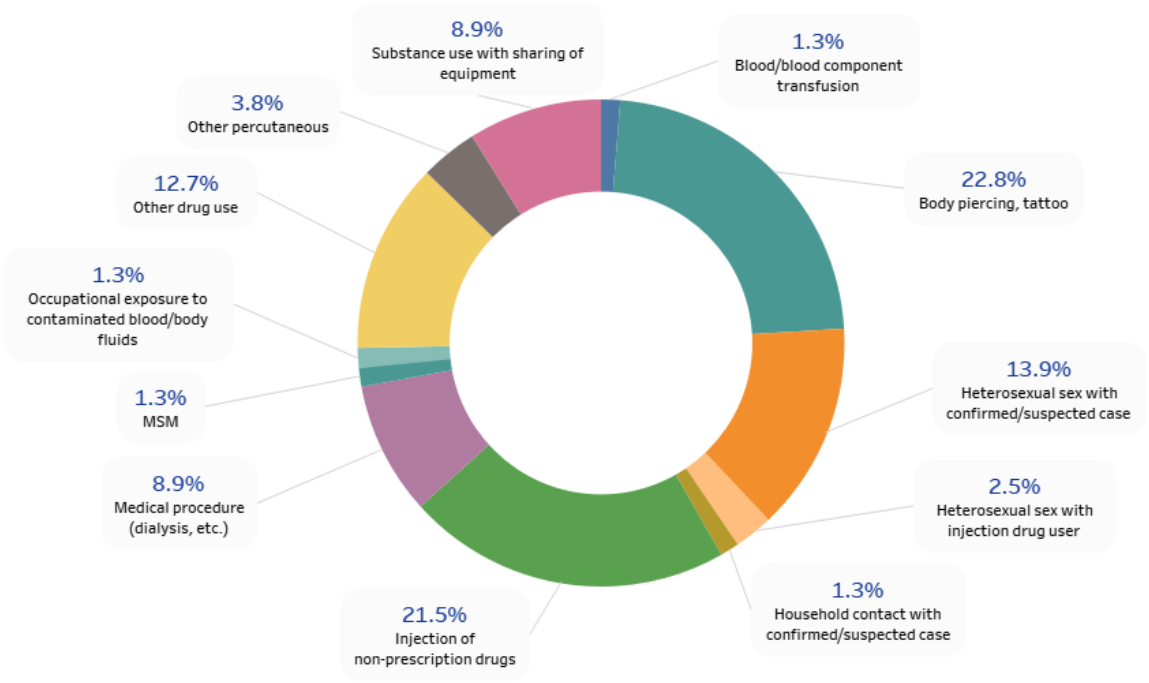
Figure 10. Annual Rates of Incident Hepatitis C Infection in the LGH Region, by PHC Zone, 2011-2021 (YTD)



Note: 1. PHC Zone rates are calculated using numerators from the Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].
2. PHC Zone rates are calculated using denominators from Statistics Canada. Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X201600 [Internet]. Ottawa: Statistics Canada; Nov 2017 [cited 2019 Dec 10]. Available from: www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E.

For 42.6% of incident HCV cases in the LGH region between 2015 and 2021 (YTD), information about risk factors is not available. [13] For the remainder of the cases, the frequency of reporting of risk factors is provided in Figure 11. The most frequently reported risk factor is a history of percutaneous exposure via body piercing and tattoos (22.8%), followed by injection drug use (21.5%), heterosexual sex (type of intercourse unspecified) with a suspected/confirmed case (13.9%), and other (non-injection) drug use (12.7%). [13] When drug use, both injection and non-injection, is taken together, it is the most frequently reported risk factor in the LGH region.

Figure 11. Risk Factors Identified in Incident Hepatitis C Cases in the LGH Region, 2015 to 2021 (YTD).



Note: Data used to construct this figure is from Communicable Disease Control Reporting System, LGH terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].

Summary of the Epidemiology of Hepatitis C in the LGH Region

From 2009 to 2017, despite year-to-year variation, annual rates of HCV infection in the LGH region were consistently below the Canadian median annual rate (2010-2019). However, in 2018, there was a sharp increase in the rate of HCV infection in the region, more than quadrupling from the previous year. This increase was driven by increased rates of infection among 20- to 39-year-olds in both males and females, located primarily in the Central Labrador region. The most common identified risk factors among cases who were diagnosed with HCV in the LGH region since 2015 were drug use (both injection and non-injection), percutaneous exposure via tattoos and piercing, and heterosexual sex with a confirmed/suspected case.

Conclusion

Hepatitis C is a significant public health concern at the global, national, and regional levels. Recent increases in incident case rates of this preventable and treatable bloodborne infectious disease in the LGH region are concerning.

The Canadian Network on Hepatitis C (CanHepC) released a *Blueprint to Inform Hepatitis C Elimination Efforts in Canada* in 2019 [14] with clear targets for Canada to reach by 2030, which include

1) 80% decrease in new hepatitis C infections
2) 90% of people living with hepatitis C will be diagnosed
3) 90% of people living with hepatitis C will have initiated hepatitis C treatment

Following the blueprint set by CanHepC to meet these targets will involve significant improvement of HCV prevention strategies, HCV testing and diagnosis, and HCV care and treatment programs for those in the LGH region. Intervention planning should take the geographical, age distribution, and gender of recent incident cases into consideration. In the LGH region, recent case rate increases

have been primarily concentrated in the Central Labrador area and among younger age groups, suggesting that these populations may benefit most from public health and harm reduction interventions. In addition, the most frequently identified exposure risk factors in LGH are a history of drug use (injection and other routes) and a history of body piercing and tattooing, suggesting that interventions to reduce the risk of contracting HCV could also be targeted toward these specific populations and those who provide services to them (i.e., body tattooing and piercing service providers).

Continued monitoring of the changing epidemiology of HCV infection in the LGH region is essential to assist in identifying populations which are disproportionately affected and to tailor interventions to those who are most at risk. It may also serve as an indicator of progress toward the goal of eliminating HCV infection in the region.

Technical Notes

Data Sources

Communicable Disease Control Reporting System, Labrador-Grenfell Health terminal. Labrador City, NL: Labrador-Grenfell Health [cited 2021 Jul 27].

Notifiable Diseases Online. Hepatitis C: Reported Cases in Canada, 1991-2019 [Data file]. Ottawa: Public Health Agency of Canada [cited 2021 Jul 30]. Available from: https://diseases.canada.ca/notifiable/charts?c=pd

Statistics Canada. Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X201600 [Internet]. Ottawa: Statistics Canada; Nov 2017 [cited 2019 Dec 10]. Available from: www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E

Statistics Canada. Table 17-10-0134-01 Estimates of population (2016 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2018 boundaries) and peer groups. Ottawa: Statistics Canada; 2021 Aug 19 [cited 2021 Aug 30]. Available from: https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1710013401

Definitions

5-Year Historical Median: Middle value of quarterly counts over the previous 5 calendar years.

YTD: Year-to-Date

Upper threshold: Calculated using the 3rd quartile + 1.5 * interquartile range for each quarter, over the previous 5 calendar years.

Central Labrador: Region located in the Lake Melville area, which includes the communities of Happy Valley-Goose Bay, North West River, Sheshatshiu, and Mud Lake.

Labrador West: Region located in the western region of Labrador, which includes the communities of Labrador City, Wabush, and Churchill Falls.

Northern Labrador: Region located in northern region of Labrador, which includes the communities of Rigolet, Postville, Makkovik, Hopedale, Nain, and Natuashish.

Northern Peninsula: Region stretching north from Bartlett's Harbour on the western side and Englee on the eastern side, up to the northernmost reaches of the Northern Peninsula of Newfoundland, which includes communities such as St. Anthony, Roddickton, and Flower's Cove.

Southern Labrador: Region spanning the southern coast and straits of Labrador, which includes all communities from Cartwright to L'anse-au-Clair.

Note

This report was prepared by Krista Baker, Public Health Information Management Analyst, Labrador-Grenfell Health.

Data analysis was performed using Microsoft Excel and Tableau computer software.

Any questions about this report should be directed to CDCintake@lghealth.ca

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