Viral Hepatitis C in Williams County, Ohio

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Williams County Health Department

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Introduction

This epidemiologic report on hepatitis C virus (HCV) infections provides information about the virus and describes trends and distribution of infections in Williams County, Ohio. The report may be used to assist in education and planning for prevention and treatment efforts.

Hepatitis C is a liver disease caused by the bloodborne hepatitis C virus. Hepatitis stands for "inflammation of the liver". The common mode of transmission is through exposure to infected blood and humans are the only known source of exposure. This exposure can happen through injection drug use, unsafe health care (e.g. needle sticks), transfusion of unscreened blood products and to a lesser extent, unsafe sexual practices. The infection can cause both acute and chronic hepatitis. Acute hepatitis C is short-term illness that occurs within 6 months after exposure to the virus. If the virus remains in a person's body it becomes chronic hepatitis C infection. Chronic hepatitis C infection can last a lifetime and lead to serious livers problems (e.g. cirrhosis or liver cancer).

- Approximately 71 million people worldwide have chronic hepatitis C infection
- 1% of the United States population is infected with HCV
- Acute symptoms are often unrecognized or persons are asymptomatic
- 15 to 45% of infected persons spontaneously clear the virus
- Around 399,000 people die each year from hepatitis C infection
- 95% of persons with hepatitis C infection can be cured with antiviral medication
- There is no current vaccine
- HCV can survive outside the body at room temperature for up to 3 weeks
- Baby boomers and injection drug users are at higher risk of acquiring HCV

CDC 2017

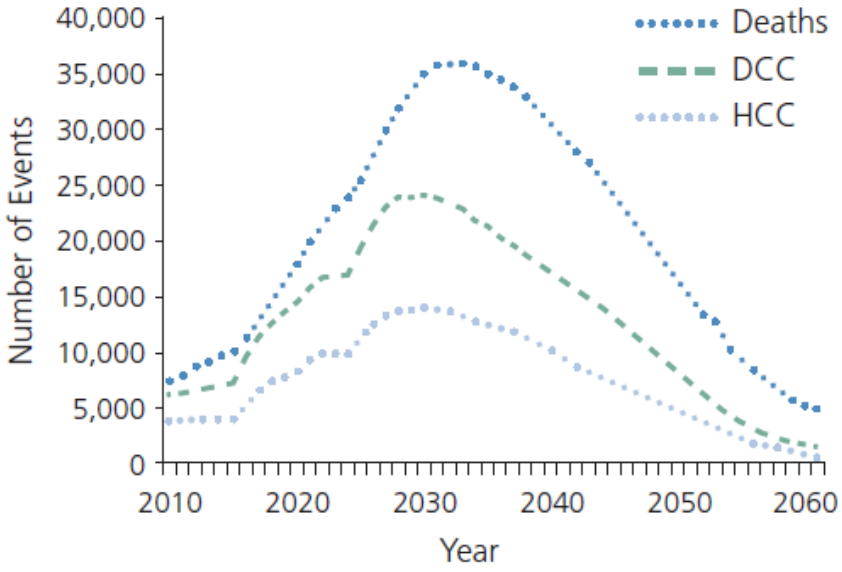
The majority of acute hepatitis C cases are asymptomatic, but some people may exhibit fever, fatigue, decreased appetite, nausea, vomiting, abdominal pain, dark urine, grey-colored feces, joint pain and jaundice (yellowing of skin and the whites of the eyes). Since many people experience no symptoms, diagnosis does not occur until the infection becomes chronic. The best practice is early detection and prevention methods.

Screening can be done by looking for anti-hepatitis C virus (HCV) antibodies with a serological test. If a test is positive, then a HCV ribonucleic acid (RNA) test should be done to confirm chronic infection.

Baby boomers (born between 1945 and 1965) are at increased risk of infection and make up nearly 75% of hepatitis C virus (HCV) infections in the United States (Yan et al., 2016). The increased risk in baby boomers is due to unsafe/uncontrolled healthcare practices that occurred before healthcare control measures became mandatory. Also, and prior to 1992, blood products had no mandatory screening and hepatitis could be contracted through HCV-positive blood products.

By using mathematical modeling, Figure 1 gives future predictions for HCV-related morbidity and mortality including number of deaths, cirrhosis cases and liver cancer cases.

Figure 1: Future predictions on HCV-related morbidity and mortality. DCC (decompensated cirrhosis); HCC, hepatocellular carcinoma. Adopted from Ward, J. (2013)



National Statistics

There is an overall increase in the number of cases of acute hepatitis C seen nationally as reported by the Centers for Disease Control and Prevention (CDC). Figure 2 (CDC4.1) shows the reported number of acute hepatitis C cases in the United States from 2000 to 2015. The number of cases, while initially dropped in 2000, has steadily increased since 2009. Figure 3 (CDC 4.2) gives the incidence of acute hepatitis C, by age group in the United States from 2000 to 2015. In the early 2000's, the most cases occurred to individuals in the 40-49 year-old age group. In 2006, this group was passed by the 20-29 year-olds who have had the highest

incidence rate of Hepatitis C since. The 30-39 year-old group has retained its place at the group with the second highest incidence rate since the early 2000s.

Additionally, Figure 4 shows Hepatitis C reports by risk exposure and behavior. While the most number of confirmed cases of Hepatitis C is connected to injection drug use, the highest number of "missed" or undiagnosed cases are correlated to sexual contact. The figures were taken from the Centers for Disease Control and Prevention (CDC) (Figure number in each graph title represent figure number as would appear on the CDC website).

Figure 2: Number of Acute Hepatitis C Cases in United States, 2000-2015

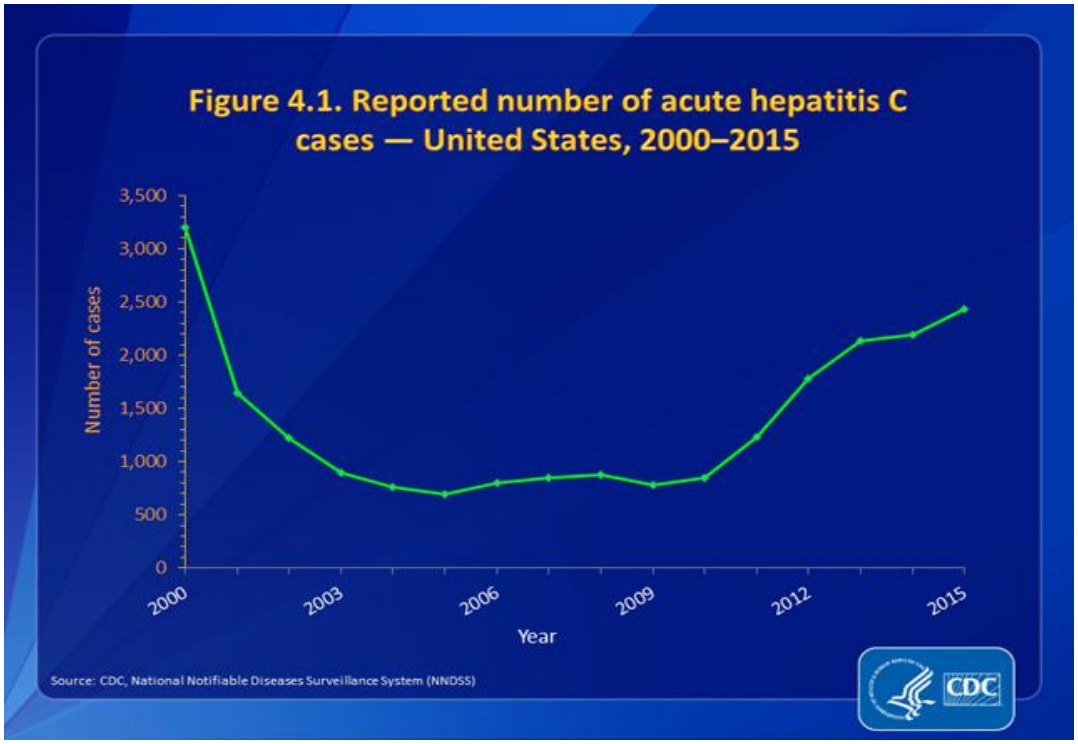


Figure 3: Incidence of Acute Hepatitis C Cases by Age Group in the United States, 2000-2015

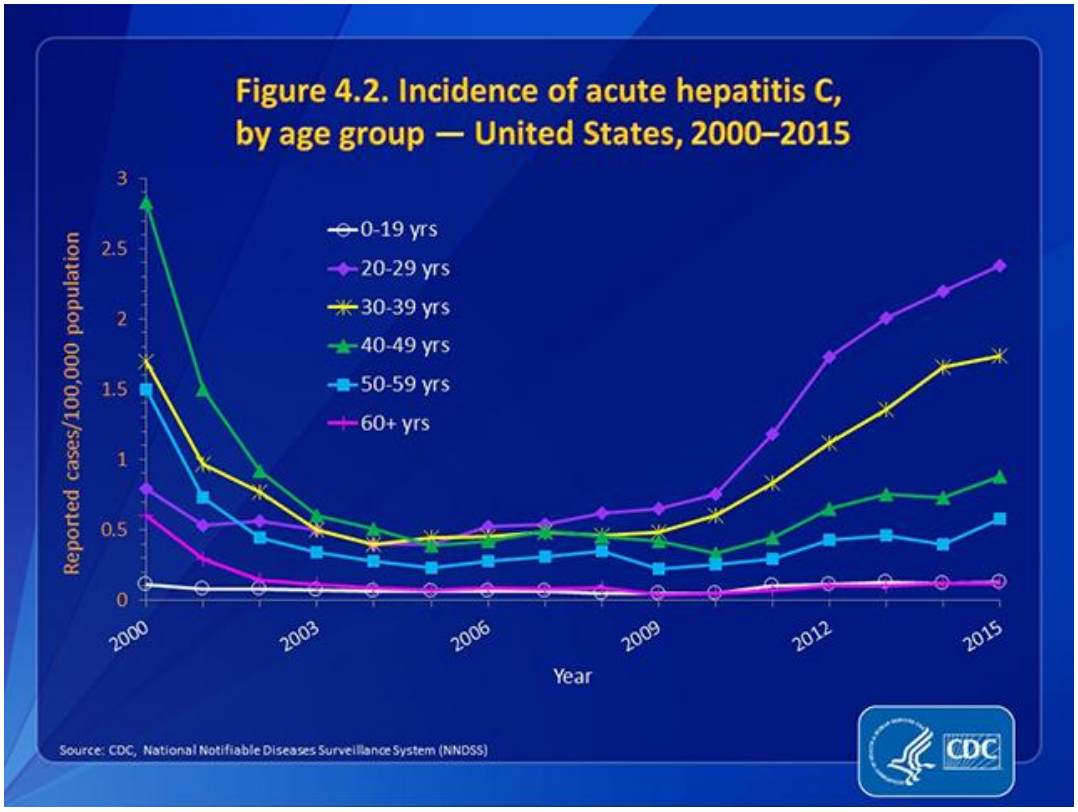
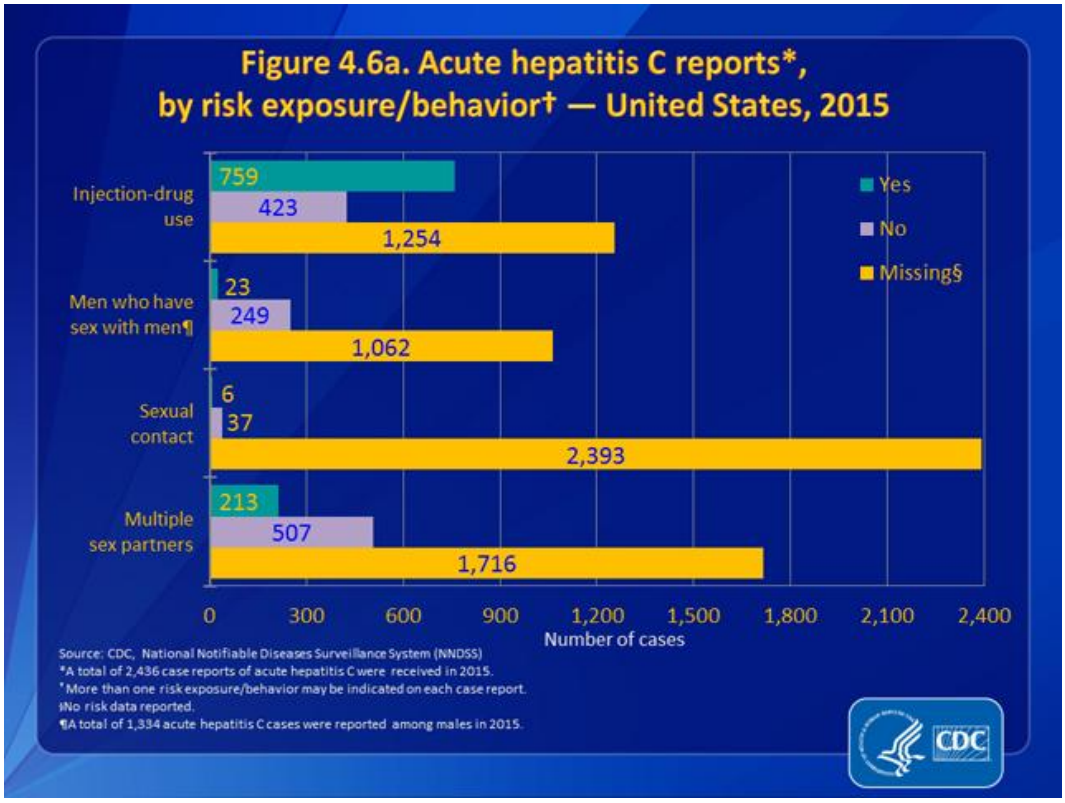


Figure 4: Acute Hepatitis C Reports by Risk Exposure/Behavior

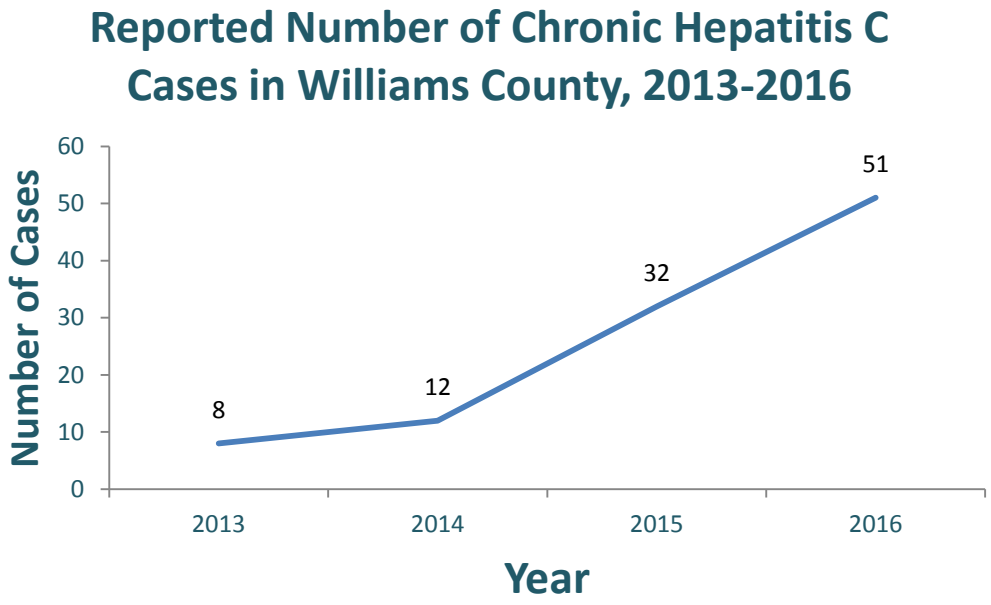


Williams County Statistics

The number of reported cases has followed national trends and increases from year-to-year. There was a large increase in number of cases from 2014 to 2015 and again from 2015 to 2016. There are more cases occurring in individuals aged 20 to 39 years old over individuals 52 and up, with an exception in 2013. There is little difference between genders.

A case was considered for this report if it was confirmed or probable in the Ohio Disease Reporting System (ODRS) database. A chronic, confirmed case is one that does not have clinical symptoms, has no test conversion within the past 12 months and has a positive test for HCV, (nucleic acid test) NAT, or HCV antigen. Chronic, confirmed cases were highlighted because these cases have the most substantial impacts on a person's health and social burden. If left untreated, chronic hepatitis C can cause serious liver damage, co-infection and cost patients and the healthcare system additional money/resources.

Figure 5: Chronic Hepatitis C Cases



Ohio Disease Reporting System 2013-2016

Figure 6: Williams County Hepatitis C demographics

Year	Average age (years)	No. cases born between 1945-1965 (% of annual cases)	No. cases aged 20 to 39 years (% of annual cases)	Gender (Male/Female)
2013	48.6	3 (37.5%)	1 (12.5%)	5:3
2014	40.1	3 (25%)	5 (41.7%)	7:5
2015	39.9	9 (28.1%)	20 (62.5%)	17:15
2016	42.7	18 (35.2%)	24(47.1%)	29:22

Ohio Disease Reporting System 2013-2016

Conclusions

The following conclusions were developed based on the primary and secondary data used in this report to analyze Hepatitis C in Williams County.

Case Definition In 2012, the case definition for Hepatitis C changed per the CDC and this resulted in an increase of reports qualifying as Hepatitis C cases. A negative HCV antibody test within 6 months prior to a positive HCV RNA virus detection test would qualify a case even in the absence of symptoms. The case definition again changed in 2016, to a 12-month period. The increase in number of cases from 2014 to 2015 is most likely not a result of case definition change.

Baby Boomer Generation As described previously, the baby boomer generation has an increased risk of HCV due to the unsafe/uncontrolled healthcare practices and lack of blood product screening early in life. With this generation aging, they may be in the healthcare system more frequently and are being screened for hepatitis C at an increased rate. Nationwide campaigns are also encouraging baby boomers to seek a Hepatitis C screening with their healthcare provider.

Injection drug use Injection drug use is the most common route of transmission. Additionally, individuals infected with concurrent sexually transmitted infections have an increased risk of being infected with HCV. An analysis of behavioral risk assessments in conjunction with HCV case numbers would give a more appropriate look into whether there is a connection between factors.

Screening The Affordable Care Act (ACA) was signed in 2010 by President Obama. This policy gave many individuals additional resources to prevention screenings. A trickle down affect may be the reason more individuals were able to get screened due to a change in insurance coverage. Data on the rate of HCV testing to determine whether the increase in positive testing

is due to a true increase in the incidence of disease versus an increase in the number of individuals being tested is unavailable.

Case Reporting Healthcare providers and laboratories are mandated to report the existence of a case, a suspected case, or a positive laboratory result to the local health department by calling, faxing, or mailing a case report form or positive laboratory reports. Information is manually entered into the ODRS website or reported directly into ODRS from the healthcare facility. Since there are multiple avenues in which information is uploaded into the reporting system, case information may contain errors, is incomplete or not entered in a timely manner. Implications of manual data entry: a case to be entered into the system multiple times, a case status not changed after additional testing, or incident cases to be counted twice (during different years).

What can healthcare providers and public health departments do?

- Promote national campaigns that encourage screenings for at risk groups
- Conduct community awareness and education on Hepatitis C prevention.
- Conduct behavioral risk assessments as standards of care during medical appointments
- Link current cases with treatment options and recovery services
- Strengthen data systems through standardized data reporting that includes risk behavior and exposure data
- Integrate interventions with syringe services programs

Free online tool for risk assessment:
https://www2a.cdc.gov/hepatitis/RiskAssessment/start.html

Additional information on hepatitis C disease reporting in Ohio:
http://www.odh.ohio.gov/pdf/IDCM/hepc.pdf

References

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