Michigan’s HCV GHOST Highlighted at CDC and NASTAD

As we’ve mentioned in previous iterations of the newsletter, Michigan’s Laboratory has been one of the first in the country to begin piloting in-house HCV molecular surveillance or HCV Global Health Outbreak and Surveillance Technology (GHOST).

Recently MDHHS Epi and Lab partners have presented our progress at a CDC technical assistance meeting and at the National Alliance of State and Territorial AIDS Directors (NASTAD) Viral Hepatitis Annual Meeting. We’re encouraged not only by the volume of specimens we’ve been able to process, but the collaboration between lab and surveillance that emphasizes applied public health epidemiology. As the technology continues to mature and more specimens are processed, we hope to better utilize GHOST for “intelligent network disruption” particularly among HCV transmission networks among persons who inject drugs. We thank CSTE, APHL, and CDC for their funding and technical support during this project and our laboratory for continuing their culture of innovation.

Old Staff in New Roles, New Staff in Old Roles

As you may have heard, Chardé Fisher has transitioned from her role as Viral Hepatitis Prevention Coordinator to a more broad Health Educator role within the MDHHS Communicable Disease Division.

While with the hepatitis unit Chardé oversaw the Viral Hepatitis Prevention Workgroup, developed a webinar series aimed at preventing health care associated viral hepatitis infections, established the statewide Viral Hepatitis Resource Guide and the Hepatitis C Screening and Linkage to Care Toolkit. Her last day with the Viral Hepatitis Unit was October 13th.

Chardé will remain in the Communicable Disease Division assisting with various outreach activities including trainings, brochure development, website content, social media and conference planning.

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In order to obtain a more accurate Hepatitis C virus (HCV) prevalence estimate in Michigan and understand characteristics associated with mortality among those diagnosed with Hepatitis C, the Viral Hepatitis staff collaborated with Vital Records to match HCV data to death records. Of the 101,525 cases reported for Hepatitis C from 2004-2015 there were 20,883 deaths (20.6%).

When comparing the age at death among those reported for HCV with the age at death among the general population, those reported for HCV died approximately 20 years earlier than the Michigan population as a whole. The largest proportion of cases reported for HCV died between 55-64 years of age (39.7%), while the majority of Michigan residents died at age 85 or older during the same time period. Looking at HCV deaths by year of birth, the majority of deaths occurred among the baby boomer population.

Another interesting finding is the time between HCV referral in MDSS and death date listed on the death certificate. As shown in the graph below, among those with dates of death listed, 44.1% died within the first two years of initial referral. This may indicate that HCV infections are not being diagnosed until the patient is suffering from significant health issues. HCV, sometimes referred to as the silent epidemic, is often asymptomatic for many years. Once symptoms manifest, it can be a marker for significant liver damage. MDHHS continues to promote HCV screening and linkage to care and treatment, particularly among the Baby-Boomer birth cohort, to reduce HCV-related morbidity and mortality.
We have recently conducted an analysis of hospitalization data related to HBV, HCV, and HIV infections in Michigan between 2005 and 2014. The Michigan Hospitalization Database is provided to MDHHS by the Michigan Health and Hospital Association each year. This data can help identify population trends related to inpatient hospital stays.

In years 2005 through 2014 a total 246,739 Michigan residents were identified to be hospitalized for conditions consistent with ICD-9/ICD-10 codes denoting HBV, HCV, and/or HIV. HCV-related hospitalizations made up 71 percent of admissions, while 16 percent were HIV-related from 2005-2014. Overall, the number of annual HBV and HIV hospitalizations remained relatively stable, while HCV saw a 40 percent increase in hospitalizations during the study period.

Keeping in line with HCV epidemiological observations, approximately 60 percent of all HCV hospitalizations were male. As has been discussed frequently, Baby-Boomer populations are disproportionately infected with HCV. It is no surprise that this age cohort also is most frequently hospitalized with an HCV-related cause. Though HCV infections among young adults has been increasing, hospitalizations related to HCV in this age group have not grown substantially. Interestingly, as the baby boomer cohort aged from 2005 to 2014, so has the average age at hospital admission: from 51 years old in 2005 to 60 years old in 2014 (figure 1).

Figures 2 displays the trends in HCV, HBV and HIV hospitalizations rate per 100,000 in young adults. HCV hospitalizations have increased slightly over the study period, while HBV and HIV remain stable. While baby boomer continue to encompass the vast majority of HCV hospitalizations, it is important to note that the rate of increase in young adults from 2005-2014 (370% increase) is almost 8 times that of baby boomers (48%).

New Hepatitis B Vaccine

On November 9th, the Food and Drug Administration approved a new adult hepatitis B vaccine by Dynavax—HEPLISAV-B™ [Hepatitis B Vaccine, Recombinant (Adjuvanted)] for prevention of hepatitis B infection in adults ages 18 years and older. The vaccine is the first new hepatitis B vaccine in the United States in more than 25 years and is the only two-dose regimen for adults.

Hepatitis B is a contagious virus that can cause acute and chronic infection. Hepatitis B is spread when blood, semen, or other bodily fluids that are infected with hepatitis B enters the body of an individual who is not infected. Many individuals with hepatitis B are asymptomatic; however, some may experience symptoms such as fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay-colored stools, joint pain, and jaundice (the yellowing of the skin or eyes). Chronic hepatitis B infection can lead to liver disease. Hepatitis B infection can be prevented through effective vaccination.

HCV on the Radar in MI Community Health Centers

In recent months the Michigan Primary Care Association (MPCA) has demonstrated committed efforts to raising awareness of hepatitis C testing and linkage to care. Articles in the October 12 edition of their eUpdate highlighted the need to emphasize both birth cohort and risk-based HCV screening. MPCA noted studies that suggest over 90 percent of HCV transmission in developed countries, including the U.S., take place through needle sharing and injection drug use. The update was also conscious in addressing the stigma that often accompanies substance abuse, as well as challenges in access to care and HCV treatment availability. The update suggests that culture change is key component to turning the tide on the HCV epidemic.

Expansions in routine HCV testing, aligning with CDC recommendations, is on the MPCA agenda with hopes that it “can catch more people who are unaware of their status, link those people to care, and provide treatment. Routinization also helps to make HCV testing a matter of course, reducing stigma and encouraging people to get the care they need — without fear or shame.” One of MDHHS’s federal grants is related to expansion of HCV services in vulnerable and underserved populations. To that end, MDHHS is happy to provide technical assistance to any healthcare provider interested in improving their HCV workflows. This might include, encouraging expansion of HCV screening, assisting with the laboratory component of HCV testing, modifying an electronic medical record, helping to identify additional funding sources, or formalizing relationships to link patients to a provider for HCV treatment.

There are examples of successful expansion of HCV services throughout the state, but MPCA’s latest update highlighted the HCV progress of Cherry Health. Cherry Health has implemented a new workflow to normalize HCV testing and treatment. In this workflow, Cherry Health employs a dedicated primary care physician as well as a nurse to help serve the more than 400 patients they have identified as eligible for in-house treatment. The care team collaborates with a specialist and works to ensure that each prospective candidate is educated about the disease and their treatment options. During the first appointment, the primary care physician sets up a series of appointments for the next three months. Every four weeks the patient receives medication and a full lab work up to assess treatment. The patient can also access enabling services, such as transportation, to ensure they can make these appointments.

The hepatitis C screening process can also reveal other undetected conditions, such as HIV, hepatitis B, liver function, substance use disorders, cirrhosis, and high blood pressure. As a result, early screening not only reduces the risk of liver cancer (as a result of chronic hepatitis C infection), but also helps providers identify other opportunities to improve their patients’ health and save costs on long-term care. We hope to see more examples like this in the not too distant future!