Changing Epidemiology of Hepatitis C in Illinois

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Background

• Hepatitis C (HCV) is one of few infectious diseases in the US with increasing morbidity and mortality, with 19,659 US deaths in 2014, even while HCV-related mortality is largely underreported.

• The estimated HCV prevalence in the US is 1-2% according to NHANES data2.

• Illinois tracks all confirmed HCV diagnoses through its National Electronic Disease Surveillance System (INEDSS).

• An understanding of HCV epidemiology in Illinois allows better targeting of resources and testing.

Methods

All confirmed or probable HCV cases for Illinois residents from 2009-2016 were extracted from INEDSS. Cases were stratified by birth cohort, race, incarceration status, and rural vs urban county of residence to determine associated risk for HCV.

Specific Aims

Characterize HCV epidemiology in Illinois by examining INEDSS data.

• How do reported case numbers compare to national prevalence?

• What geographic areas are most affected?

• What are the characteristics of persons with HCV?

• How have trends changed over the past eight years?

Results

• Average number of reported HCV cases per quarter in Illinois increased 16% since 2009, but 170% in incarcerated persons (Fig. 1A).

• In 2009-2016 HCV cases increased only in the population born after 1965 in both urban and rural counties (Fig. 1B).

• In urban counties the older cohort has much greater prevalence than the younger cohort (104 vs 39); in rural counties the prevalence in the two birth cohorts is similar (67 vs 61, Fig. 1C).

• However, a t-test showed the change in HCV prevalence was not significantly different between all rural and urban counties (Fig. 3).

Demographics

HCV prevalence3 stratified by race in Illinois mirrors national prevalence estimates by race from NHANES2, where blacks are disproportionately affected and Hispanics and 'other' races are less affected than average4 (Fig. 2).

Figure 2. HCV prevalence (cases per 100 person-years) varies with race (B = black, H = Hispanic, W = white, O = other), with weighted Illinois average shown (orange).

Geography

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• In urban counties the older cohort has much greater prevalence than the younger cohort (104 vs 39); in rural counties the prevalence in the two birth cohorts is similar (67 vs 61, Fig. 1C).

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Conclusions

• Illinois has seen a rise in the number of diagnosed HCV cases over the past eight years.

• Increased testing or prevalence in prisons and among the young explains most of this rise.

• Prevalence is increasing most rapidly in rural areas, possibly due to intravenous drug use4.

Limitations

INEDSS tracks all confirmed HCV diagnoses in Illinois, which depends on testing rate for each county and demographic group. Practice differences, access to care, and reporting anomalies rather than true incidence or prevalence of HCV may explain results and trends reported here.

References


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