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The Emerging Issue of Hepatitis C Virus in the United States and in West Virginia

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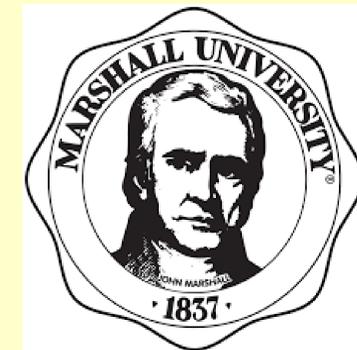
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The Emerging Issue of Hepatitis C Virus in the United States and in West Virginia



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ABSTRACT

Introduction:

Hepatitis C virus (HCV) is one of the most significant public health problems currently facing the U.S., especially in West Virginia. If it is undetected and left untreated, the likelihood of sustaining a treatment response decreases. While early identification has been identified as a critical focus in trying to obtain better health outcomes, new drug treatments appear promising, although somewhat expensive. West Virginia, a predominantly rural state, is beginning to face a mounting financial crisis due to HCV.

Purpose of the Study: The purpose of this study was to examine the effects of early identification and treatment for patients infected with HCV given the financial restraints in the healthcare delivery in the United States and in particular in West Virginia.

Methodology: The methodology for this qualitative study was a literature review. Seven electronic databases were utilized with a total of 50 scholarly articles being referenced for this research. Additionally, it was performed a semi-structured interview with an Infectious Disease physician.

Results: The literature review examined several studies that evaluated acute and chronic HCV identification process and implications for this population. Also, the semi-structured interview revealed more insight into HCV identification and treatment. The results demonstrated potential to increasing QALYs along with highlighting restrictions of current payment for procedures.

Discussion/Conclusion: The results of the literature review did suggest that early intervention programs are needed to decrease the incidence and prevalence of HCV. Several practical implications included the possibility of obtaining funding for early intervention programs through grants and the modification of legislation to benefit vulnerable populations. Improving testing, simplifying screening, and data collection through enhanced surveillance reporting, along with an expanded specialized clinical workforce would be of benefit and represent some cost savings.

Research Purposes:

The research goal was to analyze the earlier identification processes associated with HCV treatment to determine if decreased incidence and prevalence of the disease could be obtained through early identification programs.

Hypothesis:

The hypothesis was to determine if preventable health complications could be recognized through offering affordable alternatives such as needle exchange programs.

METHODS

The methodology for this study consisted of a qualitative literature review complemented with a semi-structured interview. Research articles and peer-reviewed literature were located using Marshall University's EbscoHost, CINAHL, ProQuest, and PubMed research databases.

A professional presentation was also utilized as a source of research for vital data that contributed to the literature review. The information gained from these articles, websites, and presentation were used as the sources of primary and secondary materials.

BACKGROUND

- As many as one-third of US Citizens are living at or below 200% of the federal poverty level, have struggled to afford the even modest prescription drug.
- Poverty in West Virginia is widespread: in 2013, the state ranked 41st in percentage of people who had incomes below the poverty line of \$23,834 for a family of four (Center for American Progress, 2018), a situation mostly unchanged for over 50 years (Gabriel, 2014).
- The HCV outbreak as an economical and societal issue, is rooted in poverty (Fischer, 2015).
- HCV remains a mostly undetected disease due to its lack of symptoms until it reaches its later stages.
- There is currently no vaccine for hepatitis C.
- Very Expensive new Medications are the current form of treatment (WHO, 2015).
- The quality-adjusted life year or Quality-Adjusted-Life-Year (QALY) is a generic measure of disease burden, including both the quality and the quantity of life lived. It is used in economic evaluation to assess the value for money of medical interventions. One QALY equates to one year in perfect health.

RESULTS

Table 1: Reported cases of acute HCV, West Virginia and the United States, 2011-2015 (per 100,000)

Source: CDC, 2015

	Rate 2011	Rate 2012	Rate 2013	Rate 2014	Rate 2015
West Virginia	2.5	3.0	3.1	3.4	3.4
United States	0.4	0.6	0.7	0.7	0.8

Table 2: Trends in Rates and Costs of Hospitalization in Adults in the Nationwide Inpatient Sample for HCV or advanced Liver Disease, 2004-2011

Source: Xu, Tong, and Leidner (2014)

Principal Diagnosis: Hepatitis C Infection	2004-05	2010-11
Number of Hospitalization	20,963	64,867
Rate per 100,000 people	4.76	13.81
Average per hospitalization charge	\$42,415	\$53,626

RESULTS

Early Identification of Hepatitis C Virus in USA and West Virginia

- 68% of newly diagnosed cases of HCV were due to Injectable Drug Users (IDUs). Although approximately 33% of US Citizens 18 to 30 years old were infected with HCV; older former IDU's typically had a much higher prevalence (about 70%-90%) of HCV, reflecting the increased risk of continued injection drug use (HHS, 2017)
- West Virginia consistently has reported over four times the national average of acute HCV cases, 3.4 per 100,000 in West Virginia compared to 0.8 in the U.S (CDC, 201b)

Hospitalization Costs Associated with Hepatitis C Virus+

- Inpatient acute hospitalization due to HCV has shown that diagnosis of HCV more than tripled from 20,963 in 2004-2005 to 64,867 in 2010-2011.
- The nationwide rate of those admissions per 100,000 people increased from 4.76 to 13.81 per 100,000 people, a relative percent change of 190% in 2004-2005 compared to 2010-2011.
- When combined the total nationwide charges or hospitalization with HCV as the principal diagnosis increased from \$0.9 billion during 2004-2005 to \$3.5 billion during 2010-2011.

Payment issues

- Treatment for all HCV-infected patients has proved to be a formidable hurdle; e.g., in 33 state Medicaid programs, the only patients who qualified for HCV treatments were the sickest – those whose infection has progressed to severe liver disease (Canary, Klevens, and Holmsberg, 2015).
- Medicare has a less restrictive standard than Medicaid and commercial payers and requires insurance companies that administer part D to cover medically necessary drugs approved by the FDA for recommended treatments.

West Virginia Responses to Hepatitis C Virus Epidemic

- West Virginia has implemented Syringe Access Programs (SAPs).
- These programs attempt to reduce the risk of spreading hepatitis by providing the public access to sterile syringe and needles to discourage the reuse and sharing of injection devises between drug partners during drug activity.
- On the other hand, in many states, including West Virginia, medications such as Harvoni requires prior authorization. The criteria for approval is long and specific. However, the approval criteria defeat the purpose of early intervention.

CONCLUSIONS AND PRACTICAL IMPLICATIONS

- Screening by birth cohort (Baby Boomers) and dangerous behavior (especially intravenous drug use) are critical approaches.
- Better treatment options in the form of all oral medications have been made available recently.
- While these medications have been shown to be useful on a societal basis, they are quite costly (and therefore difficult to obtain) on an individual basis.
- Improving testing and simplifying screening and data collection through enhanced surveillance reporting systems to adapt to changing health information technologies
- One practical implication is the need for support from the local community, state and federal governments, and healthcare providers to comply with strict adherence to safe and effective standards of care.

Thank-You
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