

Effective Hepatitis C Screening In High Risk Populations

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Introduction

It is estimated that 71 million people worldwide (3.5 million in the United States) are currently infected with the hepatitis C virus (HCV).⁴ Of the total HCV disease burden, 15-45% with acute infections clear the HCV virus on their own within six months without treatment, meanwhile the majority go on to develop chronic HCV.⁶ Of those with chronic HCV, 15-30% will develop cirrhosis within 20 years, leading to an estimated 339,000 global deaths secondary to the complications related to the progression of HCV (hepatocellular carcinoma, liver failure, etc).^{4,6}

In recognition of the large "at risk" and undiagnosed chronic HCV baby boomer population, the United States Preventive Services Task Force (USPSTF) recommends one-time screening for all adults born between 1945-1965, as well as among other high risk populations.² This presents an opportunity for primary care physicians to identify, diagnose and treat those atrisk for chronic HCV infection. This is especially important as these initiatives have demonstrated significant success in decreasing the health and economic burden of chronic HCV disease.¹

Purpose

The purpose of our study was to demonstrate how various quality improvement initiatives activated in selected Jefferson Northeast family medicine teaching offices have enabled effective HCV screening. Given the cost effectiveness of screening and early treatment versus treatment of the disease in the later stages of progression,⁸ we hope to encourage other primary care offices to implement quality initiatives to encourage appropriate HCV screening. This is especially important for the baby boomer generation, as well as for high risk individuals with a history for and/or current IV drug abuse or other high risk behaviors.

Method

A retrospective observational study was conducted using data from two local primary care offices affiliated with Jefferson Northeast from January of 2017 to September of 2017. Selected offices implemented various methods to increase screening for HCV in those born between 1945 and 1965.

The quality improvement initiatives encouraged providers as well as staff, including office managers, receptionists, medical assistants and nurses, to improve office screening of HCV. These methods included an IT-generated daily report sent to the office manager notifying which patients on the daily schedule met recommendations for HCV screening. A bright red "banner" was then inserted within the electronic medical record (EMR). This ensured a team-based approach for HCV screening.

Additionally, staff was encouraged to pre-order HCV testing upon identification of an "at-risk" individual. The physician could then simply authorize the order, facilitating the process. All of the tests ordered between January of 2017 and September of 2017 were reviewed and compared with the number of patients seen within that time period who were born between the recommended screening interval of 1945 to 1965.

Screening Results

*Figure #1	
Total Number of Patients Seen	824
Total Number of Patients Tested	520
*Figure #2	
Positive Test Results	54
Negative Test Results	466

Figure #1 Number of Patients Screened vs Patients Not Screened

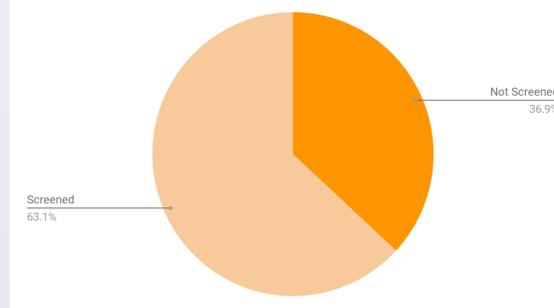
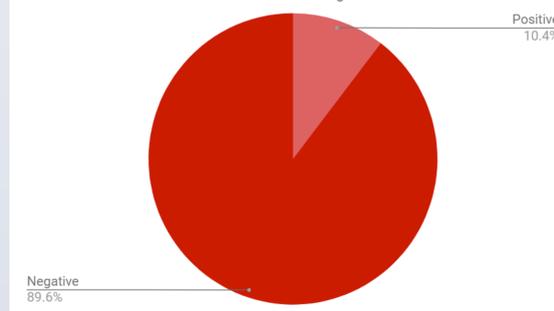


Figure #2 Number Tested Positive vs Number Tested Negative



Conclusion

It is estimated that one in every 33 United States baby boomers are infected with HCV.^{4,8} However, in our study of a largely lower to middle socioeconomic population residing in the family medicine practice study communities, approximately one in nine patients had a positive HCV screening test (figure #2). This higher ratio of HCV screening results likely represented a population at greater risk due to recreational activities known to spread HCV infection.

Given the high risk of infection as well as the high cost of delayed identification and treatment of chronic HCV infection, effective screening and early treatment is paramount to ensure timely and cost effective care.

Discussion

Chronic HCV infection represents a heavy societal and economic burden. A National Institutes of Health (NIH) study estimated the cost of death from chronic liver disease from 2010-2019 to be \$10.7 billion in direct medical expenditures. They also estimated the indirect societal cost to be \$21.3-\$54.2 billion. This included loss of work productivity and reduction in health related quality of life.⁹ A 2012 study determined the cost of HCV screening tests were approximately \$200-\$700 per person. This included initial and confirmatory testing, as well as RNA testing and genotyping.³ The low cost of screening as well as high specificity (97%) and sensitivity (99%) of the test versus the burden of later diagnosis of the disease is startling.⁵

It is clear that effective screening and early treatment for HCV is cost effective. The burden now lies in finding efficient methods to increase screening of these high risk patients. Our study revealed that by using the methods implemented at these Jefferson Northeast family practice offices, 63% of the population recommended to be screened was able to have the appropriate testing performed. Reasons for not having testing performed were not studied, but could include patients opting out of testing entirely, choosing to have testing done at a later date and/or simply physician and staff oversight despite prompts.

In addition to continued encouragement to be mindful of alert banners in the EMR, there may be additional ways to further improve the number of patients being screened. Examples include designating a specific person within the practice to be primarily responsible for monitoring for patients that require screening or possibly displaying educational material in waiting rooms prompting those that would qualify for testing to inquire about it. With the implementation of various quality improvement projects, our family medicine offices are screening effectively and therefore contributing to significant decreases in cost, morbidity and mortality for those exposed to HCV.

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