Hepatitis C Screening in the Birth Cohort (1945-1965)

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In partial fulfillment of the requirements for the Doctor of Nursing Practice
Executive Summary

Hepatitis C is one of the most common blood borne pathogens in the United States. It is an insidious infection that frequently remains asymptomatic in its host, causing damage years after initial contact. The negative health effects of an undiagnosed hepatitis C infection often include liver cirrhosis and hepatocellular carcinoma. Individuals born in years 1945-1965 have a higher prevalence of hepatitis C than any other cohort. In an effort to reduce this prevalence and the associated negative health outcomes, the Centers for Disease Control and prevention (CDC) has recommended that every person born during this time period be screened for hepatitis C.

In order for this effort to be successful, a rapid uptake and widespread use of this recommendation needs to occur. Negative health sequela often do not manifest until later in life with the peak age being around 60. As such, identifying the infection earlier in this birth cohort will be advantageous in preventing negative health outcomes, premature mortality and reducing healthcare costs. Evidence surrounding prior screening efforts and recommendations suggest that there is often a significant lag in time between recommendations and provider/patient uptake. A prolonged period of acceptance will undermine the purpose of the recommendation.

One way to increase screening frequency is to tie hepatitis C screening to other common preventative screenings such as colonoscopy. Screening colonoscopies are an age based screening starting at age 50. Coincidentally, this age aligns perfectly with the birth cohort of 1945-1965 making it an opportune time to screen for hepatitis C.

For the purposes of this project, the primary objective was to create a program that increased frequency of screening for hepatitis C by offering to screen patients for hepatitis C at the time of screening colonoscopy. Additionally, the program was implemented in a way that will allow for screenings to take place after the termination of the project. Finally, dissemination of the results of this project is an important part of creating momentum in the effort the increase screenings.

Utilizing a local endoscopy center, a willing provider and the endoscopy staff were invited to participate in a 5 week program to screen for hepatitis C when seeing patients of the appropriate age. The number of new screenings was compared to baseline screening frequency to determine the efficacy of the intervention. The simple program design allowed the endoscopy center to tailor the program to their needs and continued screening. Dissemination of project results was accomplished by submission of application for a poster presentation at local Snowbird CME conference.

Efforts to increase screening for hepatitis C are needed to avoid unnecessary morbidity and mortality amongst the 1945-1965 birth cohort. Coupling hepatitis C screening with colonoscopy screening is a promising strategy to accomplish an increase while adhering to CDC recommendations.

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Acknowledgements

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Problem Statement

All individuals born during the time period of 1945-1965 are at higher risk for having an occult hepatitis C infection than individuals born at any other time period (Huffman & Mounsey, 2014). The CDC (2012) has recently announced its recommendation that every person born in this time period receive a one-time screening for Hepatitis C. This recommendation however, does not suggest ways for a provider to begin to implement this new guideline into their practice, nor is any specific arena of care suggested. Additionally, new recommendations typically take several years before they are widely incorporated into practice and accepted by the public (AHRQ, 2011). The intention of the recommendation to screen this cohort of individuals relies upon a large majority of the cohort being screened in order to reduce the incidence of hepatitis C and associated healthcare costs. A lag in acceptance of the recommendation to screen may undermine the purpose of the recommendation.

Clinical Significance

In the U.S. 1.6% or 4.1 million of the population are infected with HCV. A majority of those, approximately 75%, are chronically infected (Huffman & Mounsey, 2014). According to the Centers for Disease Control (2012), of those who are infected with the virus, 65-75% are unaware of their infection and have few if any signs or symptoms that the virus is present. The silent nature of the disease increases the danger of the virus to those that are infected as well as those who are not.

The CDC also cites that individuals of the targeted birth cohort account for 75% of chronic HCV infections, comprise 73% of HCV related mortality, and are at greatest risk for hepatocellular carcinoma and other HCV related liver disease (Smith et al., 2012). The importance of a more rapid adoption of the birth cohort screening recommendation cannot be
understated. As this group ages the more likely it is that they will experience HCV related health problems and earlier mortality. If the recommendation to screen all birth cohort individuals is successful at identifying those with HCV at an early and treatable stage, it may reduce the incidence of HCV in the population. The true impact of screening on HCV transmission is not well studied or documented, but it is assumed that screening and subsequent treatment can reduce transmission of the virus (Smith et al., 2012).

Treatment for advanced liver disease increases healthcare costs and reduces quality of life for those who have suffered liver damage due to occult hepatitis C. The astronomical cost associated with treatment of hepatocellular carcinoma, fibrosis, and liver transplant far outweigh the added cost of screening the birth cohort (Rein et al, 2011). Lifespan, physical ability, and financial stability may all be significantly reduced by an occult hepatitis C infection (El Khoury, Vietri & Prajapati, 2012).

**Objectives**

The purpose of this project is to increase screening for hepatitis C among birth cohort individuals as recommended by the CDC.

- Develop a program that includes screening for HCV at the time of colonoscopy screening.
- Based on the success of the program, provide a way for the program to continue beyond the endpoint of the project.
- To provide a dissemination of the project details, results, and associated data.
Review of Literature

An estimated 17,000 new cases of hepatitis C virus infection (HCV) occur in the United States each year (Smith et al, 2012). The strong incidence of HCV in the U.S. speaks to the necessity for an increase in screening and treatment modalities. The CDC recently identified a birth cohort of individuals born in years 1945-1965 as being at higher risk for having undiagnosed HCV. With a prevalence of 3.25%, a prevalence that is five times higher than adults born in other years, individuals of the birth cohort account for nearly three fourths of all chronic HCV infections in the U.S. (Smith et al, 2012).

The undiagnosed/untreated individuals of the targeted birth cohort face health consequences that can profoundly affect their ability to live productive and enjoyable lifestyles. According to the CDC 15-20% of untreated HCV infections will develop cirrhosis of the liver and 5% will die from HCV related liver disease. (Smith et al, 2012). Currently, HCV accounts for approximately 50% of new diagnoses of hepatocellular carcinoma (HCC) (Smith et al., 2012). The strong propensity of HCV related liver disease among the birth cohort is expected to create a large number of quality of life issues for those cases left unidentified. Increased medical costs of hospitalizations, lost time from work, medications, liver transplants and other costs, are all identified as major contributions to the overall quality of life losses for an individual with HCV (Rein et al, 2012). A 2012 study cites an average of $10,000 dollars lost per patient due to productivity losses caused by illness related to untreated HCV and direct healthcare costs averaging $23,000 per year (El Khoury, Vietri & Prajapati, 2012). The patients in the aforementioned study also had higher emergency department utilization rates and saw outpatient physicians 50% more often than the study’s control group.
As with any blood borne pathogen, the spread of HCV is a concern. Although a 2010 study predicts that the peak incidence of HCV occurred in 2001, we still see a large number of incident cases each year as shown in CDC data mentioned above (Davis, Alter, El-Serag, Poynard & Jennings, 2010). One of the benefits of screening is the ability to educate patients about the spread of disease. The possibility of an individual with undiagnosed HCV to spread the disease to a partner or loved one is readily apparent when compared to a patient who has been diagnosed and has received guidance.

**Barriers to Screening**

Despite recommendations, and existing evidence that supports screening of the target birth cohort, rates of screening are low. A recent study performed in a large health system found that only 11.9% of 444,594 patients in that system who should have been screened were actually screened (Linas, Hu, Barter, & Horberg, 2014). In order to increase screening, barriers that exist to screening among providers and patients must be identified. A study performed to identify barriers amongst providers to screening for hepatitis C based on the CDC’s 1998 Risk based screening revealed that providers were less likely to screen patients when they were unsure of how their treatment would be covered financially (Jewett et al, 2014). The authors also cited that providers were more likely to adopt a recommendation that required less knowledge and skill acquisition (Jewett et al, 2014). Other barriers to screening the birth cohort are likely to exist among providers and are an area where further research is likely needed. Other studies have identified lack of knowledge, lack of insurance, possible need for referral and social stigma as factors that may be barriers for patients to accept screening for HCV (Sears, Cohen, Ackerman, Ma, & Song, 2013). The recommendation from the CDC provides rationale for screening the
HEPATITIS C SCREENING

birth cohort and a preferred method of testing, but does not suggest ways to implement screening into practice. It is assumed that this too may be a barrier to screening.

The CDC’s 2012 recommendation to screen the targeted birth cohort is relatively new. As such, hard data about provider utilization is difficult to find and existing scholarly documents about the subject are few. However, it is known that with past research and recommendations, uptake by providers is slow to take hold on a widespread basis (Agency for Healthcare Research and Quality, 2011). The small amount of data that is available indicates low utilization rates in primary care. A recently published study performed in New York addressed the adherence of providers to a similar Hepatitis C screening program and found that only 36% of the providers were adherent to the screening protocol (Southern et al., 2014). More information is needed on the subject and will likely increase in availability as the recommendation is reaching the 2 year mark since its inception.

Implementing Screening into Practice

Surprisingly little has been published since the inception of the CDC’s birth cohort screening recommendations. A few pertinent studies were discovered amongst the existing research, however. A 2014 study involving mostly high risk and underserved patients discovered that community based educational interventions increased the desire to be screened for HCV and also improved overall knowledge about HCV and transmission (Norton et al., 2014). The value of patient education can be applied across socioeconomic and class boundaries to overcome the knowledge barrier to screening.

A study that focused on reminding providers to order screening tests in primary care by adding reminder stickers to the patient charts showed significant increases in screening among the birth cohort and for risk based screenings (Litwin et al, 2011). Reminders increase the odds
that a screening will be offered. When providers are willing to implement screening, but have difficulty remembering to order screenings it represents a barrier to screening with a simple solution.

In another interesting study the authors identify that the age range of the birth cohort aligns well with that of recommended ages for colonoscopy screening. In their study they enrolled 342 patients to receive HCV screening at the time of colonoscopy over a 3-month period (Sears, Cohen, Ackerman, Ma, & Song, 2013). Positive HCV antibody screens were only present in 1.2% of these patients, which may seem small. However, finding 4 patients over a 3-month time period in one practice is substantial given that the birth cohort represents such a widespread population. The authors also note that those individuals who are having a screening colonoscopy are more likely to be insured, thereby eliminating a significant financial barrier (Sears, Cohen, Ackerman, Ma, & Song, 2013). This provides an important insight about public health initiatives; that actions of primary care such as preventative screenings do not need to originate nor occur in a primary care environment to be successful. This study was performed in the secondary care environment of a gastroenterology practice, yet it ties together primary care and secondary care, an occurrence that many might argue is largely absent, yet necessary in American medical culture. As it pertains to HCV screening, the study shows that many solutions are needed to ensure that each member of the birth cohort is screened, this being only one method. For the purposes of this project, it provides a proof of concept that combining screenings is a plausible way to expand screening efforts and is generally well accepted by patients.
Theoretical Framework

The diffusion of innovation theory is most often used to explain or identify ways in which new products are adopted by an organization or society. In terms of medicine, diffusion theory is often utilized as a way to examine the process by which new research or interventions have been or will be adopted into practice.

Diffusion theory is centered on the idea of different levels of adoption of an innovation. The theory’s developer E.M. Rogers, described 5 types of adopters: Innovators, early adopters, early majority, late majority and laggards (Rogers, 2003). Adoption of an innovation is largely influenced by the attributes of the innovation. Rogers provides 5 categories of innovation attributes: Relative advantage, compatibility, complexity, trialability and observability (Rogers, 2003). Each category has varying degrees of influence on the adopter dependent upon the innovation and the environment. Rogers relates that relative advantage, complexity, and compatibility account for a majority of variance in adoption decisions (Rogers, 2003).

For the purpose of this project it is desirable to have successful diffusion of hepatitis C screening through early adoption by care providers and patients. When looking at the attributes of the innovation, which is to include HCV screening at the time of colonoscopy, the relative advantages are easy to identify. Providers can use colonoscopy as a built in self reminder to screen for HCV because they occur within the same age range. The patient is able to get more than one preventative service taken care of at once. The innovation has only mild complexity involved. Finally, the innovation is compatible with any arena of care where adult patients are cared for.

The attributes of the described intervention are the key to successful adoption. Upon analysis of the attributes, it can be assumed that adoption will take place. The speed of adoption
is largely dependent on compatibility of the intervention with the environment and providers.
Implementation and Evaluation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Implementation</th>
<th>Evaluation</th>
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</table>
| 1. Increase hepatitis C (HCV) screening among patients born between 1945 and 1965 through a HCV screening program by linking HSV screening to the screening colonoscopy test. | 1. Support was enlisted from a local endoscopy center.  
2. Patients of the appropriate age were offered screening and provided with educational materials. | 1. Compared baseline and post-intervention HCV screening frequencies (i.e. number of new screenings compared to patients already screened). |
| 2. Implement HCV screening program that can be sustained after project completion | 1. Obtained staff opinion about the screening process and their desire to continue screenings. | 1. Received positive feedback from staff members who expressed a desire to continue testing and possible expansion to other sites. |
| 3. Provide dissemination to peers through professional poster or podium presentation. | 1. Identified potential conferences available for presentation.  

Implementation Process

- Upon arrival, the receptionist gave prospective patients a leaflet notifying them that hepatitis C screening will be offered to them.
- A CDC educational pamphlet was placed in admit folder to cue nurse to offer screening and provide education to the patient about hepatitis C screening.
- Nurse determined patient’s eligibility for screening based on age and prior screening status by self-report and chart review of prior screenings.
- If unscreened and desired screening, the nurse drew the necessary blood sample while inserting patient’s procedural IV line, negating the need for additional phlebotomy.
- Patient went on to colonoscopy or endoscopy as planned. Blood was then delivered to lab for analysis.
- Patients were notified of results by participating Nurse Practitioner who coordinated or provided further care in the event that screening results were positive.
Results

Results show that pairing the hepatitis C screening with colonoscopy has a positive effect on the number of individuals screened. Out of 128 unscreened members of the birth cohort 92 were screened when presenting for either colonoscopy or EGD. This is in comparison to 61 patients who had already received screening for hepatitis C. In addition to increasing the number of screenings done amongst this group, 5 patients were identified with positive test results and will go on to get further testing and treatment in primary care. Screenings increased 16.4% from baseline with 32.3% of patients screened prior to arrival compared to 48.7% screened by the program (see Table 1). 18% of patients declined screening. 2 patient blood samples were unsatisfactory for analysis, these patients were invited to return for repeat screenings, but were not part of the calculated results for screenings by the program.

An unintended finding of significance to this project is the referral source of those patients who arrived for their procedure without having been screened for hepatitis C. Patients were divided into two categories regarding their source of referral. Patients either came from a primary care environment or from an internal referral source within the gastroenterology department. At an astounding 79%, unscreened patients were overwhelmingly from a primary care environment with only 21% originating from an internal source (see Table 2). Of the 61 patients who were screened prior to arrival, 62% originated in a primary care environment and 38% from an internal source. It is also important to note that an overall majority of patients screened and unscreened were from a primary care environment with 74% being from primary care and 26% internal. 72% of primary care referrals were unscreened on arrival. 54% of internal referrals were unscreened on arrival. The fact that most of the patients involved came from a primary care environment naturally causes the number of unscreened patients from that...
environment to be higher. Recognizing this, it is not practical to say that one type of provider is more likely to provide screening than another based on these results. However, one can extrapolate that a large number of unscreened patients may still exist within primary care environments.

Table 1

*Screening Numbers and Percentages*

<table>
<thead>
<tr>
<th>Descriptor</th>
<th># Screened</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to arrival</td>
<td>61</td>
<td>32.3%</td>
</tr>
<tr>
<td>By screening program</td>
<td>92</td>
<td>48.7%</td>
</tr>
<tr>
<td>Declined Screening</td>
<td>34</td>
<td>18.0%</td>
</tr>
<tr>
<td>Unusable Blood Sample</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100%</td>
</tr>
</tbody>
</table>

Percentage increase from baseline: 16.4%

Table 2

*Referral Source of Patients*

<table>
<thead>
<tr>
<th>Descriptor</th>
<th># of Patients</th>
<th>%</th>
<th># of Unscreened</th>
<th>%</th>
<th># of Screened</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Care Referral</td>
<td>139</td>
<td>74%</td>
<td>101 (79%)</td>
<td>72.6%</td>
<td>38 (62%)</td>
<td>27.4%</td>
</tr>
<tr>
<td>Internal Referral</td>
<td>50</td>
<td>26%</td>
<td>27 (21%)</td>
<td>54%</td>
<td>23 (38%)</td>
<td>46%</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>100%</td>
<td>128</td>
<td>67.7%</td>
<td>61</td>
<td>32.2%</td>
</tr>
</tbody>
</table>
**Recommendations**

This screening project has the potential to expand screening efforts for HCV amongst the birth cohort 1945-1965. The involvement of nursing in the project has been favorable and could be a key element in increasing preventative screening for HCV amongst this group. This project was implemented in a single center involving only a small portion of the local population, however this type of screening process could be utilized at many other locations and could greatly increase overall screening efforts. Dissemination of this project to others will be a key part of continuance and expansion of screening efforts. The primary idea behind this project is to increase screening for HCV by attaching screening to other common screening and preventative services. This could easily be connected to other types of screening in primary care such as lipid screenings, mammography, or general health panels. It is my recommendation that providers use these results to create similar interventions in their own practices. Creating such an intervention would not require screening patients in an endoscopy setting. Even using the screening colonoscopy as a reminder for primary care providers to order screening for hepatitis C would likely be effective. Patients merely need to be offered screening and an understanding of their risk. Providers need only to make screening for hepatitis C among the birth cohort a habit in their practice.

**DNP Essentials**

This project addresses several of the essentials for the Doctor of Nursing Practice degree. The following is a discussion of those essentials and their relationship to this project.

**Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking**
Quality improvement in healthcare is a key component of doctoral nursing practice. This project is an example of quality improvement in healthcare through leadership. Quality improvement through leadership requires the DNP to recognize deficits in healthcare and then develop workable solutions to those deficits. The implementation of a hepatitis C screening program represents leadership through improvement and involvement at the practice level while also representing a possible solution at a system-wide level.

**Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice**

Nursing practice is guided by the use of evidence based interventions and guidelines. The very basis of this project is a CDC guideline that is formed from voluminous evidence based and scientific study. Furthermore, the concept of coupling the hepatitis C screening with colonoscopy was derived from an existing peer reviewed study that provided proof of concept for the project. The scientific underpinnings of this project are anchored in the latest scientific evidence and guidelines.

**Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes**

Improved patient health outcomes are only obtainable through interprofessional collaboration. This health improvement project depended upon collaboration from other disciplines and other professionals. General nursing staff, laboratory staff, administrative staff, nursing leadership, and other providers all contributed and collaborated to make screenings go smoothly and to provide needed follow up care when needed. Facilitation of this collaboration between professionals has helped to improve patient and population health outcomes through patient identification and treatment of hepatitis C.
Essential VII: Clinical Prevention and Population Health for Improving the Nation’s Health

Promotion of population health through the prevention and treatment of disease is a key part of improving healthcare and population health. The aim of this project is focused on population health and prevention. Screening the 1945-1965 birth cohort is necessary to prevent future complications of hepatitis C amongst this population as well as decrease the spread of hepatitis C in the general population. This screening project aimed to increase the number of screenings in this population and identify infected individuals sooner thereby saving them from future complications and reducing spread of disease.

Essential VIII: Advanced Nursing Practice

Advanced nursing practice has many facets which all influence the quality of patient care given and improve patient health outcomes. A key facet is that of patient education. A relatively simple, but very important aspect of this project was to provide educational materials to prospective patients. Education of this group has led to increased interest in being screened and will likely promote others to be screened. The project also utilized evidence based practices to improve the health of the community and this population. Advanced practice nursing depends upon evidence based practices and increasing health literacy amongst the population.

Conclusion

Screening for HCV for the entirety of birth cohort 1945-1965 is a task that requires many different solutions. It can only be accomplished through cooperation of providers of all types in many arenas of care. Although, primary care providers are expected to provide these types of preventative screenings in general, it is only through encouraging participation of other providers to screen that large numbers of the population can be screened.
Utilizing the screening colonoscopy as an opportunity to screen for HCV opens up one more avenue in which screening can be accomplished and it exposes providers of care outside the realm of primary care to the possibilities of providing necessary preventative services in their everyday care of patients.

This project should serve as an encouragement to others to develop unique ways to incorporate preventative services into their care of patients in all arenas of care. It is important that providers of healthcare attempt to improve the way that we care for our patients. There are many opportunities to do this in daily care, this project is an attempt to do so and in so doing improve upon existing recommendations for care.
References


Hepatitis C Testing
All individuals born in years 1945-1965 (age 50-70) should be tested for hepatitis C at least once. Your nurse will ask you about testing today.
If you are not offered testing today please feel free to ask for more information.

Hepatitis C Testing
All individuals born in years 1945-1965 (age 50-70) should be tested for hepatitis C at least once. Your nurse will ask you about testing today.
If you are not offered testing today please feel free to ask for more information.
Appendix B: Patient Handout

**Hepatitis C**

**Why Baby Boomers Should Get Tested**

**Why should baby boomers get tested for Hepatitis C?**

While anyone can get Hepatitis C, more than 75% of adults infected are baby boomers, people born from 1945 through 1965. Most people with Hepatitis C don’t know they are infected.

- Baby boomers are five times more likely to have Hepatitis C.
- Liver disease, liver cancer, and deaths from Hepatitis C are on the rise.
- The longer people live with Hepatitis C, the more likely they are to develop serious, life-threatening liver disease.
- Getting tested can help people learn if they are infected and get them into lifesaving care and treatment.
- Treatments are available that can eliminate the virus from the body and prevent liver damage, cirrhosis, and even liver cancer.

**CDC recommends that anyone born from 1945 through 1965 get tested for Hepatitis C.**

**Why do baby boomers have such high rates of Hepatitis C?**

The reason that baby boomers have high rates of Hepatitis C is not completely understood. Most boomers are believed to have become infected in the 1970s and 1980s when rates of Hepatitis C were the highest. Since people with Hepatitis C can live for decades without symptoms, many baby boomers are unknowingly living with an infection they got many years ago.

Hepatitis C is primarily spread through contact with blood from an infected person. Many baby boomers could have gotten infected from contaminated blood and blood products before widespread screening of the blood supply began in 1992 and universal precautions were adopted. Others may have become infected from injecting drugs, even if only once in the past. Still, many baby boomers do not know how or when they were infected.

**What should baby boomers know about Hepatitis C?**

Hepatitis C is a serious liver disease that results from infection with the Hepatitis C virus. Some people who get infected with Hepatitis C are able to clear, or get rid of, the virus, but most people who get infected develop a chronic, or lifelong, infection. Over time, chronic Hepatitis C can cause serious health problems including liver damage, cirrhosis, liver cancer and even death. In fact, Hepatitis C is a leading cause of liver cancer and the leading cause of liver transplants.

People with Hepatitis C:

- Often have no symptoms
- Can live with an infection for decades without feeling sick
- Can be successfully treated with medications

[Continued on next page]
How would someone know they have Hepatitis C?

The only way to know if someone has Hepatitis C is to get tested. Doctors use a blood test, called a Hepatitis C Antibody Test, to find out if a person has ever been infected with Hepatitis C. The Hepatitis C Antibody Test looks for antibodies to the Hepatitis C virus. Antibodies are chemicals released into the bloodstream when someone gets infected.

Hepatitis C Antibody Test results

When getting tested for Hepatitis C, ask when and how test results will be shared. The test results usually take anywhere from a few days to a few weeks to come back.

Non-reactive or a negative Hepatitis C Antibody Test

- A non-reactive, or negative, antibody test means that a person does not have Hepatitis C.
- However, if a person has been recently exposed to the Hepatitis C virus, he or she will need to be tested again.

Reactive or a positive Hepatitis C Antibody Test

- A reactive, or positive, antibody test means that Hepatitis C antibodies were found in the blood and a person has been infected with the Hepatitis C virus at some point in time.
- A reactive antibody test does not necessarily mean a person still has Hepatitis C.
- Once people have been infected, they will always have antibodies in their blood. This is true even if they have cleared the Hepatitis C virus.
- A reactive antibody test requires an additional, follow-up test to determine if a person is currently infected with Hepatitis C.

For more information

Talk to a health professional, call the health department, or visit www.cdc.gov/knowmorehepatitis.
Appendix C: Proposal Defense

3/29/2015

Hepatitis C Screening in the Birth Cohort (1945-1965)
Eric Fillmore
In partial fulfillment of the requirements for
the Doctor of Nursing Practice degree

Clinical Significance
- According to the CDC, a majority of infected patients are unaware of their infection.
- Three fourths of the infected are members of the targeted birth cohort (Smith et al., 2013).
- Untreated HCV can lead to significant hepatic disease and mortality (Smith et al., 2013).
- Healthcare costs associated with HCV induced liver disease are much higher than the cost of screening (Smith et al., 2013).
- The negative effects of HCV could be greatly reduced by screening and treatment (Smith et al., 2013; Smith et al., 2013).

Background
- 1965: The incidence of Hepatitis C Virus (HCV) began to rise (Smith et al., 2013).
- 1998: CDC institutes risk based screening (Smith et al., 2013).
- 2004-Present: Incidence has been stable.
- Prevalence remains high.
- 2012: CDC Adds birth cohort screening recommendation (Smith et al., 2013).
- Current: 3.9 Million Americans infected with HCV, 1.6% of population (Smith et al., 2013).

Objectives
- Increase hepatitis C (HCV) screening among patients born between 1945 and 1965 through a HCV screening program by linking HCV screening to the screening colonoscopy test.
- Implement an HCV screening program that can be sustained after project completion.
- Provide dissemination to peers through professional poster or podium presentation.

Problem Statement
- As a public health initiative mass screening is needed to make an impact on the prevalence of HCV (Smith et al., 2013).
- The 2012 CDC recommendation did not include guidance that would promote a rapid uptake of the recommendation by providers or patients.
- Significant lag times undermine the purpose of test recommendations.
- Programs to increase screening in this birth cohort are largely absent in the literature and in Faul Lake CMO.

Theoretical Framework
Diffusion of Innovations Theory
Adapted from the works of T. Rogers.
Appendix C

3/29/2015

Literature Review

- The prevalence among the birth cohort is 5 times higher than adults born in other years (Monte, et al., 2013).
- The incidence of HCV during the decade of the 1980’s was 250,000 cases per year (Monte, et al., 2013).
- HCV accounts for approximately 50% of all new diagnoses of hepatocellular carcinoma (Monte, et al., 2013).
- Prevalence models suggest a 43% rate of cirrhosis by 2030 (Monte, et al., 2013).

Summary

- The overall goal of the project is to increase screening for HCV among the targeted birth cohort.
- Screening with colposcopy utilizes patients who are of the same age, are present for screening, and likely have insurance.
- Successful implementation of screening program will spread through diffusion of innovation. Providers and patients will hopefully become early adopters.
- Those who are positive for HCV will be able to obtain treatment and lower their risk for complications.

Continued

- A study in New York indicated that only 36% of providers utilized an HCV screening protocol (Monte, et al., 2013).
- The CDC’s 1998 recommendations had limited success amongst providers, a survey of the American College of Physicians indicated only 17% asked patients about risk factors (Monte, et al., 2013).
- Few attempts at implementing programs have been made. One study found that screening with colposcopy was a plausible way to screen the targeted birth cohort for HCV and to provide treatment when needed (Monte, et al., 2013).
- Emergence of interferon-free treatments are more effective at producing sustained viral response, but are more costly (Monte, et al., 2013).

Acknowledgements

Committee
- Project Chair: Suzanne Martin DNP
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- Former Program Director: Dianne Fuller DNP
- Executive Director MS & DNP programs, TBA

Content Expert
- Kelsa Lynch DNP

References

[List of references]

Implementation & Evaluation

- [Diagram of implementation and evaluation]

References

[List of references]
Appendix D: Poster

Hepatitis C Screening in the Birth Cohort (1945-1965)
Eric Fillmore RN BSN, DNP student

KEY FINDINGS
Offering hepatitis C screening tests to colonoscopy patients increases the number of patients who will accept testing for the hepatitis C virus. A majority of patients who had received no prior screening for hepatitis C were referred by a primary care provider.

PURPOSE
The primary purpose of this project was to initiate a program that would increase the number of screenings for hepatitis C among individuals born during years 1945-1965. Patients were offered screening at the time of colonoscopy.

A secondary purpose of this project was to disseminate positive results of screening to other nurse practitioners and primary care givers in order to encourage other providers to use similar methods to increase screenings for hepatitis C virus (HCV).

BACKGROUND
- The birth cohort (1945-1965) has a prevalence of HCV infection that is five times higher than any other group.
- Undiagnosed HCV can lead to a number of serious health problems, including liver cirrhosis and liver cancer.
- In 2012 the CDC released recommendations to screen every member of the birth cohort (1945-1965) one time.
- New recommendations usually take long periods of time before they become a mainstream intervention in today’s medical practices.
- Earlier diagnosis & treatment of HCV can reduce the negative health effects caused by the infection.

SETTING
The screening program took place in a medium sized endoscopy center belonging to a large academic health care system in Salt Lake City, Utah.

CONCLUSIONS
- Pairing the HCV screening test with colonoscopy effectively increases screening rates.
- A large number of unscreened individuals exists in primary care as well as in other areas of care.
- Similar interventions are needed in all areas of care in order to screen all of those who remain without screening.
- This is an opportunity for NPs and nursing to make a significant contribution to population health.
- This model can be easily adapted to suit other healthcare organizations.

ACKNOWLEDGEMENTS
Committee Chair: Suzanne Martin, DNP, NP-C
Content Experts: Katrina Lynch, DNP, FNP & Karin Stetson, MD, FNP
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Appendix E: Poster Abstract Submission

HEPATITIS C SCREENING IN THE BIRTH COHORT (1945-1965)

Author: Eric Fillmore RN, BSN, DNP student.

**Background:** Hepatitis C is one of the most common blood borne pathogens in the United States. It is an insidious infection that frequently remains asymptomatic in its host, causing damage years after initial contact. The negative health effects of an undiagnosed hepatitis C infection often include liver cirrhosis and hepatocellular carcinoma. Individuals born in years 1945-1965 have a higher prevalence of hepatitis C than any other cohort. In an effort to reduce the associated negative health outcomes, the Centers for Disease Control and prevention (CDC) has recommended that every person born during this time period be screened for hepatitis C. Negative health sequela often do not manifest until later in life with the peak age being around 60. Identifying the infection earlier in this birth cohort will be advantageous in preventing negative health outcomes, premature mortality and reducing healthcare costs. Evidence surrounding prior screening efforts and recommendations suggest that there is often a significant lag in time between recommendations and provider/patient uptake. A prolonged period of acceptance will undermine the purpose of the recommendation.

**Purpose:** Creation of a program that would augment the number of screenings for hepatitis C performed among the birth cohort.

**Methods:** Screening colonoscopies are an age based screening starting at age 50. Coincidentally, this age aligns perfectly with the birth cohort of 1945-1965 making it an opportune time to screen for hepatitis C. Birth cohort patients presenting for screening colonoscopy or diagnostic endoscopy were offered screening for hepatitis C upon admit to endoscopy center and provided education about CDC recommendations and hepatitis C. Baseline screening rates were compared to the number of new screenings to identify efficacy of the intervention.

**Results:** A 17% increase in screening rates was attained. 5.4% of patients screened tested positive. Of all birth cohort members presenting for procedure, 68% were unscreened and 79% of those patients were from a primary care environment.

**Conclusions:** Pairing screenings for Hepatitis C with screening colonoscopy is an effective method to increase the number of screenings performed among the birth cohort. A large number of unscreened individuals still exist making an opportunity for other providers to use this method or similar methods to increase screenings in their own practices.
Dear Mr. Fillmore,

Thank you for your interest in and submission for the Poster Session at the Snowbird conference slated for August 5-8, 2015. Your abstract entitled: "Hepatitis C Screening in the Birth Cohort (1945-1965)" has been received and is being considered for peer review. You will be notified by July 1, 2015 with further information regarding the time and other specifics for your presentation.

Please contact me at any time if you have questions, or concerns. David

David Winmill, DNP, ANP-BC, CDE, BC-ADM
Appendix F: IRB

INSTITUTIONAL REVIEW BOARD
THE UNIVERSITY OF UTAH
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IRB: IRB_00077966

PI: Eric Fillmore

Title: Hepatitis C Screening in the Birth Cohort (1945-1965)

Thank you for submitting your request for approval of this project. The IRB has administratively reviewed your application and has determined on 12/4/2014 that your project does NOT meet the definitions of Human Subjects Research according to Federal regulations. Therefore, IRB oversight is not required or necessary for your project.

DETERMINATION JUSTIFICATION:

This project does not meet the DHHS definition of Human Subjects Research because it is not a systematic investigation designed to develop or contribute to generalizable knowledge. The activities described constitute a Quality Improvement project; the objective of which is to determine whether offering hepatitis C screening at the time of screening colonoscopy is an effective method to increase the number of screenings for hepatitis C among the specified birth cohort of individuals born during the years 1945-1965 (per CDC guidelines). Increasing the uptake of HCV screening in this particular birth cohort may result in early identification and treatment of asymptomatic HCV and thereby reduce population morbidity and mortality as well as reducing overall healthcare costs related to HCV infection.

This project does not meet the FDA definition of Human Subjects Research because it does not involve a drug, device, or any other article regulated by the FDA.

This determination of non-human subjects research only applies to the project as submitted to the IRB. Since this determination is not an approval, it does not expire or need renewal. Remember that all research involving human subjects must be approved or exempted by the IRB before the research is conducted.

If you have questions about this, please contact our office at 581-3655 and we will be happy to assist you. Thank you again for submitting your proposal.

Click IRB_00077966 to view the application.

Please take a moment to complete our customer service survey. We appreciate your opinions and feedback.