HEPATITIS C SCREENING IN AT-RISK INDIVIDUALS IN PRIMARY CARE: A QUALITY IMPROVEMENT PROJECT

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2 BACKGROUND

- Hepatitis C is more prevalent than initially realized or appreciated in health care today
- Baby Boomers are more likely to have HCV than their other age counterparts and account for three-fourths of all chronic HCV infections among adults in the United States
  - Five times more likely to be infected
  - 2.7 to 3.9 million with only 50% aware

WHY IS THIS?

- Despite the CDC recommendation of screening individuals in this birth cohort with a one-time testing for HCV without prior determination of HCV risk.
- Individuals are not being screened.

  Rationale: Using a risk-based approach for screening may miss detection of a certain proportion of HCV infected persons in the birth cohort due to the lack of patient disclosure or knowledge regarding prior risk status.

SCREENING:

- **Gold Standard** to detect disease early so that it can be treated most effectively.
  - United States Preventive Task Force and the Center for Disease Control and Prevention recommend a one-time screening for those considered at risk. Centers for Medicare and Medicaid Services have included it on their core measures set.
  - Sends a clear message to the health care community, policy makers as well as the public advocating that screening is both prudent and essential.

WHY IS LACK OF SCREENING CONCERNING?

- Undiagnosed HCV can lead to increased morbidity and mortality and subsequently increased burden to the health care system.
  - HCV individuals are at greatest risk for developing hepatocellular cancer and other HCV liver disease such as cirrhosis and failure
  - Thus, deaths related to HCV have been on the rise and are expected to increase

When given appropriate care and treatment, HCV screening can reduce this risk by 70% for hepatocellular disease and 50% for all-cause mortality

PROBLEM STATEMENT:

- While research is being done in this area, to the knowledge of this author, there has not been a systematic review of the literature on HCV screening nor on interventions that have been effective in improving the screening for HCV.

- Addressing this gap can give a better understanding of how screening is being done in this elderly at-risk individual group allowing for the implementation of interventions according to the setting and professionals involved

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PRIMARY AIM

- To improve HCV screening rates at the Geriatric Center (GC) by increasing screening of at-risk individuals through provider/staff education
  - Risk factors:
    - 1945-1965 birth cohort
    - Past/current injection drug use
    - Received blood transfusions prior to 1992
    - Long term hemodialysis
    - Incarceration
    - Having had a tattoo
    - Participating in or having participated in at risk sexual behaviors

PROPOSED BENEFITS

- By following this proposal, promises of:
  - Improved patient health outcomes will be realized
  - Successful implementation of screening strategy for HCV
  - Subsequent linkages to care and treatment
**Increase in HCV screening following an intervention was addressed in eight of the fourteen studies.** Three studies focused on designing programs to potentially improve screening
BARRIERS

- Reasons for limited screening are variable in the literature
  - Lack of knowledge of the need for HCV screening
  - Lack of belief of the benefit of HCV screening
  - Following guidelines cost or time prohibitive

INTERVENTIONS

Two studies included opt-out screening
Five included an electronic medical record based best practice alert, while other studies included testing all the patients that were studied, offering the test to the patients studied (allowing them the ability to refuse), or basing the decision to screen based on the presence of risk factors.

One study compared three approaches including direct mailings, in person recruitment and an electronic based best practice alert to determine which intervention was most effective and determined that electronic based best practice alerts were most successful (Kruger et al., 2017).
INTERVENTIONS (CONT.)

One study used a comprehensive intervention looking at education of providers/patients, embedding best practice alerts in the electronic medical record and provided an “opt-out consent” to help improve HCV screening (Barbara J. Turner et al., 2015). This study credited a combination of their interventions as being effective.

Two additional studies used a survey approach and focus group approach to evaluate “values and preferences” regarding screening and support needs of those being screened respectively (Reipold et al., 2017; B. J. Turner et al., 2017).

A final study used an educational intervention to residents to evaluate the increase in HCV screening as compared to those who did not receive the education. It was determined that those receiving the educational intervention were more successful in increasing HCV screening than those who did not (Wong et al., 2017).

OUTCOMES

Overall few studies demonstrated significance in their findings however 12 of the 14 studies demonstrated an increase in HCV screening with four showing statistical significance in their findings (Federman et al., 2017; Hossain et al., 2017; Sidlow & Msaouel, 2015; Wong et al., 2017).

Of the 12 studies that that reported an increase in screening, those who provided “opt-out screening” or mandatory screening showed the most improvement in their screening however those using an electronic medical record best practice alert were equally as effective.

Two studies combined education with their best practice alert which helped to improve their screening (Miller et al., 2016; Wong et al., 2017). Furthermore, using a more varied approach with education of patient/providers, best practice alerts utilization and opt-out consenting showed significant increases as well (Barbara J. Turner et al., 2015)
DISCUSSION

• Evaluating interventions that could be undertaken in order to improve HCV screening in an elderly at-risk population is imperative:
  • The studies showed a varied approach to improving screening for HCV in an elderly at-risk group of individuals however all except for two studies showed improved screening for HCV in these individuals.

DISCUSSION (CONT.)

• Showing most promise was the embedding of a best practice alert into the electronic medical record for improved screening.
• Combining this with an educational intervention of patients and providers showed even more promise.
• Opt-out screening or mandatory screening showed equal promise however these studies were done in acute care settings where this methodology might be more accepted than in an outpatient primary care clinic.
• Effort in two studies was placed on using tools to identify those at risk and then screening these individuals however these were not as effective.
METHODS: PRIMARY GOAL/PURPOSE OF PROJECT

• Improve the diagnosing of HCV by increasing screening rates of at-risk individuals using targeted educational interventions with geriatric providers and staff.

Primary Aims: Increase HCV screening of patients at risk by 50% over baseline within the first 3 months of the project

• Improve provider and staff HCV knowledge

METHODOLOGY (CONTINUED)

• Participants:
  • Adults who have risk factors and receive their primary care from the Geriatric Center located in a large midwestern city.
    • 2500 patients in the practice accounting for 7,659 visits in 2017.
    • At risk for HCV due to their age and other comorbidities
    • Primarily AA (80%) with 15% Caucasian and 5% Hispanic/Asian
    • Average Age: 78.2 men and 78.6 women
    • Common medical conditions: HTN, DM, CHF, Memory loss/Dementia, OA, gait issues and incontinence
    • Well-insured: Medicare plus 80% have a secondary insurance such as BC, MCD or private
CRITERIA FOR PARTICIPATION:

• Inclusion:
  • Risk factors:
    • 1945-1965 birth cohort
    • Past/current injection drug use
    • Received blood transfusions prior to 1992
    • Long term hemodialysis
    • Incarceration
    • Having had a tattoo
    • Participating in or having participated in at risk sexual behaviors

• Exclusion:
  • Previous testing for HCV
  • Liver cirrhosis/failure
  • Liver cancer (present or history)

METHODOLOGY (CONT.)

• Setting:
  • Geriatric Center providing Primary Care
  • Patient Centered Medical Home
  • Interdisciplinary in its approach for both clinical care, research, teaching and collaboration
  • Inclusive of Medicine, Nursing, Social Work, and Pharmacy
ORGANIZATIONAL ASSESSMENT

- Stakeholders:
  - Providers
  - Staff
  - Administration
  - Payors

STRENGTHS (+)
- Offering screening to all with RF-easier to quantify
- Education of staff/providers/patients
- Education provided at appropriate literacy level to improve compliance
- Support CDC/USPSTF guidelines

WEAKNESSES (-)
- Time to educate
- Screening not a priority
- Lack of provider time
- May screen and not appropriate for screening
- Provider fatigue

OPPORTUNITIES (+)
- Support/Develop public policy
- Improved screening leads to decreased costs related to morbidity and mortality

THREATS (-)
- Cost and savings
- Health care system resources to support HCV treatment
- Lack of providers to treat patients
LEWIN’S CHANGE MANAGEMENT THEORY

- Will be used to guide the planned change of the providers/staff in changing their knowledge and attitudes regarding understanding the importance of ordering HCV screening in at risk patients.
- **Assuring that these very important team members and stakeholders transition smoothly is imperative to the success of this proposed change.**

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**LEADING TO CHANGE....**

- **Unfreezing**
  - Educational session
  - Team approach: brainstorming the process change

- **Change**
  - Processes and structures in place to support change
  - Focus on the positive-patients and practice

- **Refreezing**
  - Development of policies/procedures to support the change.
  - Reward and support team members
PRE-POST EDUCATION DESIGN

Pre-test survey tool:
• Developed and used to establish baseline HCV knowledge

Intervention:
• 30-minute educational session @ monthly continuing education meeting (content: importance of screening, RF, and consequences of not being screened)

Post-test Survey tool:
• Re-administered to determine HCV knowledge learned

Pre-Test/Post-Test for Hepatitis C Screening

1. People born from 1945 to 1965 are how many times more likely to have Hepatitis C (HCV)?
   a. 2 times
   b. 3 times
   c. 5 times
   d. Not any more likely than their other age counterparts

2. Over time, chronic Hepatitis C can cause serious health problems. Which of the following diseases are known to be associated with chronic HCV?
   a. Liver cirrhosis
   b. Liver failure
   c. Liver cancer
   d. All of the above

3. In the United States, HCV is the most common chronic viral infection that is spread through contact with blood.
   a. True
   b. False

4. Since 2006, the number of new HCV cases have been _____________.
   a. Increasing
   b. Decreasing
   c. Staying constant

5. The Centers for Disease Control and Prevention acknowledge all of the following risk factors for identifying those that need to be screened except:
   a. IV drug use either past or present
   b. Being born in the birth cohort of 1945-1965
   c. Having a tattoo or body piercing
   d. Being employed as a health care provider

6. Symptoms of those with chronic HCV infection may include:
   a. Fever/nasal congestion
   b. Abdominal pain in the right upper quadrant
   c. Often have no symptoms
   d. Jaundice or yellow coloring of the skin
7. The hepatitis C virus causes hepatitis C. The hepatitis C virus spreads through contact with an infected person’s blood. Contact can occur by which of the following:
   a. Sharing drug needles or other drug materials with an infected person
   b. Having contact with open sores of an infected person
   c. Having unprotected sex with an infected person
   d. All of the above

8. Screening for hepatitis C should be based on the presence of risk factors and addressed individually with each patient
   a. True
   b. False

9. Hepatitis C is treated with antiviral medicines that attack the virus and can cure the disease in most cases.
   a. True
   b. False

10. Once treated for Hepatitis C and cured
    a. Individuals will never become infected with HCV again
    b. Individuals will always have elevated liver enzymes
    c. Individuals will need to be monitored as they are at risk of becoming infected again
    d. Individuals will be offered a HCV vaccine to prevent them from getting the disease again

QI PROCESS CHANGE

- **Clinic Visits**
  - All clinic patients scheduled for a PCP visit were given an HCV Risk Factor Handout; patients circled their personal risks

- **Screening**
  - Patients with circled risk factors had conversations with their PCP who explained the need for Hepatitis C antibody serum draw

- **Positive Results**
  - Patients with a positive Hepatitis C antibody were informed by their PCP and were referred to GI for further evaluation & treatment
PDSA: WHERE ARE WE GOING?

• **AIM:** What are we trying to accomplish?
  • The specific aim of the team is to increase the percentage of RPGC patients with risk factors for HCV being screened for HCV by 50% over a baseline percentage determined prior to the start of the project. The quality improvement plan will take place over a three-month period.

• **Measures:** How will we know that a change has occurred:
  • The outcome of interest is the increase numbers of patients with risk factors for HCV being screened.
  • This will be determined by recording the numbers being screened/total number of patients 55 years and older in the clinic.

• **Current process:** What is the process for giving care to this type of patient?
  • Currently, patients are dependent upon their providers to be considered for screening with education and an evaluation of risk factors. It is unknown how many patients are being encouraged to have screening since the process is not structured.
DATA COLLECTION

• Percentage of patients being screened:
  • Number of patients at risk for HCV that are screened/total number of PCP patients aged 55 and older
  • Provider will offer/order HCV screening and use the code of Z11.59 which will enable tracking of the test from an IT perspective

• Pre-Post Test Results
  • Provider and Staff

DATA COLLECTION

• HCV Screening:
  • Number of at-risk RPGC patients who completed the screening/total number of RPGC seen during the same period
  • Provider will offer/order HCV screening and use the code of Z11.59 which will enable tracking of the test from an IT perspective
HCV Screening Pre and Post Intervention

- Total Patients: Pre Intervention: 2500, Post Intervention: 208
- Number Screened: Pre Intervention: 75, Post Intervention: 135
- Percentages: Pre Intervention: 3%, Post Intervention: 75%

Results

- 340 patients considered for screening
- 132 patients ineligible due to no risk factors
- 208 patients with risk factors eligible for screening (61.7%)
- 28 patients not screened
- 180 patients screened for HCV
- 135 patients had screening ordered (75%)
- 9 patients did not get screening done
- 6 referred to GI
- 126 patients completed screening (78%)
- 6 HCV (+) (4.7%)
- 120 HCV (-) (95.3%)
- 45 not screened
- 17 previously screened
- 12 previous HCV history
- 16 refused screening
DATA COLLECTION

• Pre-Posttest comparison of scores of providers/staff looking for improved knowledge

![Image of a test paper with a 100% score]

<table>
<thead>
<tr>
<th>Knowledge Improvement of Providers/Staff (N=14)</th>
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<tbody>
<tr>
<td>Pre-test</td>
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<tr>
<td>---------</td>
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<tr>
<td>Series 1</td>
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Series 1
PATIENT CHARACTERISTICS

- Of the 340 patients considered for screening:
  - Average age was 77
  - Standard deviation of 9.32
  - Range from 58-103 years

RISK FACTORS

- Birth cohort 1945-1965- 46.1% (157/340)
- Past/current injection drug use- 8% (28/340)
- Receiving blood transfusion prior to 1992- less than 1% (3/340)
- Long term hemodialysis – less than 1% (3/340)
- Incarceration – less than 1% (2/340)
- Having had a tattoo – 4% (14/340)
- Having participated or participating in at risk sexual behaviors – 7.9% (27/340)
PROJECT IMPACT

• Improved screening for HCV in at-risk patients
  • Bring more individuals to screening improving chances of those needing treatment to be treated
  • Increased quality of care of patients
  • Compliance with following EBP guidelines/meaningful use

• Bridge gap between policy and practice
  • Provide structured intervention to healthcare arena that can impact change
  • Work to embed Clinical Practice Alert into EMR for sustainability of practice change
  • Effectively show that the actions of a DNP led interprofessional group can have impact

DISCUSSION

• Primary goal was to increase HCV screening using a targeted educational intervention 50% over baseline
  • 70% was achieved
SUCCESS….

• Including provider and staff to improve knowledge was driving force

• Education was comprehensive discussion of the nature of HCV, course of the disease and consequences of not screening

SUCCESS (CONTINUED)

• Patients were drawn from a Primary Care Practice where there was already an established relationship with provider

• Risk Factor Screening Tool was used
  • Improved patient knowledge
  • Proactive discussion
**BARRIERS**

- Reasons for limited screening are variable in the literature
  - Lack of knowledge of the need for HCV screening - formalized education
  - Lack of belief of the benefit of HCV screening - formalized education
  - Following guidelines cost or time prohibitive – patient/staff approach

**STRENGTHS**

- Interdisciplinary
- Providers/staff included
- Educational session was comprehensive
- PCP practice
LIMITATIONS

• System issues (BPA)
• Convenience sample of high-risk individuals
• Primarily AA/increased age
• Questionable generalizability

• Educational impact-sustainability of information learned?

SUSTAINABILITY

• Important goal for any project to determine the amount of benefit that is realized overtly as well as subtly

• Primary Benefits:
  • Following EBP guidelines/meaningful use
  • Improved quality of care
  • Providing treatment to those HCV positive
SUSTAINABILITY (CONT.)

• Secondary Benefits
  • Advocating for improved quality of care, QOL and health of the community
    • A “win-win” from both health care system as well as the patient
    • For example, providing one time HCV screening would uncover 50% of HCV and bring these individuals to treatment
      • Avert up to 15 liver transplants
      • Avert up to 56 liver cancers
      • Add up to 950 Quality Life Adjusted Years per 100,000 persons


IMPLICATIONS FOR PRACTICE

• Screening program was feasible and effective using an educational intervention
• Confirmed findings that if you ask, 90% of individuals will consent for HCV testing
• Utilizing a “patient educational” tool was helpful with regards to risk factor discussion
IMPLICATIONS (CONT.)

• Future:
  • Re-evaluation of the process in February 2020 to assure sustainability of the change
  • Development of HCV Clinic to help with diagnosing and subsequent treatment of those found to be HCV positive

REFERENCES

REFERENCES (CONT.)


QUESTIONS?

Q&A