Hepatitis C Epidemic in the Veterans Administration
Approach to Screening, Linkage to Care and Treatment

Ayse Aytaman, MD
Chief of Gastroenterology and Hepatology
VA New York Harbor HCS Brooklyn
Co-Lead VISN 3 HCV Team
Director VISN 3 Liver Cancer Team
DISCLOSURES

I have no disclosures.
Hepatitis C in The VHA

• March 17 1999 amidst concerns that veterans might have increased incidence of HCV, VA did a one day screening of all veterans for HCV undergoing any blood test nationwide.

• Results revealed a higher incidence of HCV in veterans than the general population 6.6% vs 1.7%. (Disclosure, comparative screening data are not available from the general population).
March 17 1999
One Day Screening for HCV

- 60% of veterans between 45-60 years of age.
- Majority were from Vietnam era (63%)
  - Post Vietnam 19%
  - Korean war 5%
  - Post-Korean war 4%
  - WWII 4%
  - Other 5%
In 2001 VA funded the National Hepatitis C Program within the Office of Public Health.

VA also became part of National Viral Hepatitis Action Plan.

2002 VA funded 5 centers to evaluate, improve hepatitis C screening, testing, clinical care and education:

- West Haven
- Minneapolis
- Portland
- San Francisco
- Seattle
National VA Hepatitis C Program

• Creation of nationwide VA Hepatitis C Registry
• Identification of hepatitis C leads by facility
• Creation of HCRCs
• Development of educational programs nationwide,
• Educational tools for provider and patients
• Creation of VA Viral Hepatitis Website
• Creation of integrated models of care for patients living with chronic HCV infection, including integrated mental health and substance abuse treatment

EDUCATE,
IMPROVE ACCESS,
SCREEN, IDENTIFY,
LINKAGE TO CARE,
TREAT
HCRC Tools

• Creation of pocket cards for HCV
• Creation of educational tools for HCV for provider and patients.
• HCV counseling guidance documents and seminars for providers.
• Vaccination guidance documents
• Treatment guidance documents

• HCRCs get specialized in:
  – Co-infection: San Francisco
  – Advanced liver disease and HCC: West Haven VA
  – HCV Tx: Minneapolis
  – Epidemiology: Seattle
VHA HCV Timelines

- **2002**: HCV Risk Screening clinical reminder
- **2004**: Hepatitis C Case Registry
- **2009**: HCVerify Project to ensure those with positive antibody tests had HCV RNA testing (REFLEX TESTING)
- **2009**: Directive that requires HCV RNA reflex testing for positive HCV antibody testing
- **2014**: VA NCP Guidelines align with CDC, USPSTF to recommend one-time HCV testing for those born between 1945-1965 (with continued risk-based testing for everyone else)
VHA HCV Timelines Cont.

• 2014: VISN HCV Innovation Teams (HIT) focus on increasing testing and treatment

• 2014: National Network Director Performance Measure on HCV testing for 1945-1965 birth cohort

• 2014: 1945-1965 Birth Cohort Testing clinical reminder
VISN 3 Hepatitis C Program

- VISN team created in 2002
- Co-leads: Late Dr. Edmund Bini (Manhattan VA)
  - Dr. Norbert Bräu (Bronx VA)
  - Dr. Ayse Aytaman (Brooklyn VA)
  - Dr. Lesa Plitnick (VISN Pharmacy Benefits) (2014)

- **Risk based HCV screening reminder** established in EMR.

- **Reflex testing** established in 2005
  - (If HCV Ab ELISA is positive HCV RNA to be done automatically)
Hepatitis C Clinical Reminder: Risk Based Screening
Hepatitis C Clinical Reminder: Birth Cohort Testing (2014)
Creation of a Multi-Disciplinary Liver Team in Brooklyn

• A multi-disciplinary team was created **1997**
  – First multidisciplinary team of this detailed membership
  – It actually started in 1993 but became better organized in 1997

• Team included:
  – Hepatology/GI attending
  – Hepatology NP
  – Liver PharmD
  – Liver psychology (case coordination to mental health)
  – Social work

• Educational materials with team logo
• Support groups
• Specialty clinics initially called “Hepatitis C Clinic”
  changed to “Liver Clinic”
Why a Liver Psychology Team

Veterans with HCV have significantly higher rates of MH comorbidities:
Out of 293 patients being evaluated in Portland VA hepatology clinic:

SEEK AND YE SHALL FIND:

93% had current or past hx of 1 psychiatric disorder
81% depression
62% PTSD
58% any substance use disorder
20% bipolar disorder
17% other psychiatric disorders
35% had BDI-2 score >19 (moderate to severe depression)
21% AUDIT-C scores indicating current heavy ETOH use

Hauser et al Clin Infec Dis.2005
At the Time of Team Creation 1997

- Hep C Ab positive patients
  - 54.5% have any alcohol code
  - 30.4% any cocaine code
  - 43.2% multiple addiction disorders
  - 26.3% no addiction disorders
- 8.1% reported as homeless

Highest need was in raising awareness and eliminating barriers working with mental health teams:

Hence Liver Psychology established in Liver clinics

Most veterans were not eligible for interferon based treatments due to mental health comorbidities
In 2012 recognizing that Liver cancer is one of the most rapidly increasing cause of cancer death nationally and in the VA, we initiated with a grant from VA Public Health creation of the nation’s first VISN (Veteran’s Integrated Network) wide team.

Liver cancer needs to be managed by multidisciplinary teams and treatments require highly specialized expertise, which is not available in every facility in our VISN.
Team Initiation

- Get “Buy In” from VISN Leadership:
  - Presentation to VISN COSs Council
- “Buy in” from members early.
  - Visit to every facility
- Even though the team is based strongly on telehealth face to face communication is crucial.
- Identify all key players in each facility who are part of the HCC care (diagnosis, treatment, care coordination, telehealth, IT), get their “Buy In” visiting every facility.
- Set up communication tools as soon as possible.
Stakeholder identification in each facility

- GI/Hepatology
- ID
- Primary care
- Oncologic Surgery
- Cancer registrars
- Radiology/interventional radiology
- Radiation Oncology
- Social Work
- Mental Health
- Telehealth coordinators
- Clinical Application Coordinators/IT
- Performance Improvement/system redesign
Creation of VISN Wide Liver Cancer team and SCAN ECHO Tumor Board

- **Nations first VISN wide virtual tumor board**
- This required:
  - VISN and facility leadership Buy-in
  - Creation of a team encompassing 6 VA facilities 5 with major university affiliations
  - Creation of a VISN wide network space and SharePoint
  - E-mail groups
  - Creation of Tumor Board templates
  - Creation of a web of telehealth clinics (**virtual SCAN ECHO**)  
    - Specialty Care Access Network-Extension for Community Healthcare Outcomes
  - Inter-facility agreements
  - Standardization of all Liver protocol imaging across VISN 3
  - Introduction of Eovist MRI to all facilities
  - Timeliness and quality measures
The patient is found by PC to have a liver lesion on sono. PC orders a contrast enhanced CT as suggested in the report and GI consult. CT abdomen with and without contrast is done. Patient comes to GI clinic. CT is not liver protocol and liver protocol triple phase is reordered. CT with liver protocol is done.

The patient comes back to GI clinic. GI puts in surgery and oncology consultations. The patient goes to oncology and a biopsy is recommended and arranged with IR. IR obtains biopsy. Patient comes back to oncology and obtains the biopsy results. DIAGNOSIS Sent to surgery.

The patient goes to surgery clinic. Told is not resectable due to portal HTN on imaging. Patient back to oncology/GI/Hepatology: IR consultation for TACE/RFA.

IR: TACE FIRST TREATMENT

Blue star denotes patient visits to the hospital
Lesion documented on imaging.

Alert to tumor tracker from PACS

Hepatic protocol imaging ordered via tracker or coordinator via phone.

REVIEW BY TUMOR BOARD:
DIAGNOSIS TREATMENT PLAN

Patient is seen by provider. Diagnosis and treatment plan discussed, treatment ordered. STAGING ADVANCED DIRECTIVES

The patient comes in for

FIRST TREATMENT:
Surgery or IR or Palliative care

Blue star denotes patient visits to the hospital
Utilization of Lean Tools

- Expedites progress
- Clarifies task allocations
- Makes timeline adherence easier
- Allows progress overview
- Especially useful in a system redesign project of this magnitude by breaking major tasks into smaller more doable projects.
Time from DX to TX

EVERY FACILITY ACHIEVED THE WITHIN 30 DAY GOAL EXCEPT ONE
Tumor Tracker

Pilot site for the HCC Tumor tracker developed by West Haven VA utilizing natural language processor:

Suspicious lesions will be pulled out on a daily basis from PACS system, reviewed and immediately presented to the tumor board to improve timeliness of care.
VISN 3 Liver Cancer Team
TEAM WAS CREATED BY HEAVY RELIANCE ON:

- TURKISH DELIGHTS
- CHOCOLATES
Changing Face of hepatitis C Therapy

- 1991: IFN 16%
- 1998: IFN/RBV 35%
- 2001: PEG IFN/RBV 44%
- 2011: Telaprevir 70%
- 2013: Boceprevir >90%
- 2014+: 3rd generation DAA >95%

IFN Free: 2nd generation DAA
Welcoming HCV Epidemic with Established Backbone of Liver Cancer Team: VISN 3 Hepatitis C Team

- The VISN 3 Liver Cancer team created the backbone of also VISN 3 Hepatitis C Team.

- Veterans, who were not eligible for interferon based treatments with significant mental health comorbidities, were now all eligible for hepatitis C antiviral therapy with direct acting antiviral treatments.
VA Public Health Organizing VHA
For the HCV AVT in the New Era

- Nationwide face to face education/system redesign meeting with key HCV team members from every VISN

- Brainstorming sessions how to expand access with available manpower

- Creation of High Impact teams (HIT Teams)

- Funding of VISN HCV coordinators

- VISN HCV Dashboards, best practices with weekly V-tel/ Lync meetings for close communication and sharing of best practices
VA Cascade of HCV Care

Step 1: Number estimated with HCV infection
- detectable HCV RNA or genotype + estimated additional cases if RNA testing were performed on those with positive HCV antibody results without RNA testing + estimated additional cases if all unscreened Veterans were screened.

Step 2: Number diagnosed with HCV
- detectable HCV RNA or genotype

Step 3: Number linked to HCV care
- Veterans entered into the HCV CCR and with HCV entered on his/her problem list

Step 4: Number receiving antiviral treatment
- Received HCV antiviral medications from VHA at any time

Step 5: Number achieving SVR
- Veterans with an undetectable HCV RNA on at least one test 12 weeks or more after the end of treatment
Cascade of HCV care within VA relative to US estimates: 2013

Percent of total estimated HCV-infected population

- **Diagnosed with HCV**: 77%
- **Linked to HCV care**: 69%
- **Treated with HCV antivirals**: 17% (VHA 2013), 16% (National U.S.)
- **SVR**: 7% (VHA 2013), 9% (National U.S.)


Maier M et al. AJPH (2015)
Diagnosed with HCV
Linked to HCV care
Treated with HCV antivirals
SVR

VHA 2013
VHA 2014

77% 80%
69% 72%
17% 19%
7% 10%

Percent of estimated with HCV infection

Comparison of VA Cascade of HCV Care in 2013 and 2014

## Cascade of HCV care within VA: 2014

<table>
<thead>
<tr>
<th>Step</th>
<th>Total</th>
<th>Percentage of Total</th>
<th>Percentage of prior step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Estimated with HCV Infection</td>
<td>224,658</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Step 2: Diagnosed with HCV infection</td>
<td>180,489</td>
<td>80.3%</td>
<td>80.3%</td>
</tr>
<tr>
<td>Step 3: Linked to HCV care</td>
<td>160,794</td>
<td>72.0%</td>
<td>89.7%</td>
</tr>
<tr>
<td>Step 4: Treated with HCV antivirals</td>
<td>43,544</td>
<td>19.4%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Step 5: SVR achieved</td>
<td>22,159</td>
<td>9.9%</td>
<td>50.9%</td>
</tr>
</tbody>
</table>
Based on observed VA HCV prevalence in sex and race/ethnicity strata, testing of all 920,687 who still need HCV testing would at the upper estimate identify 28,865 additional cases of HCV in Veterans in VA care.
National HCV Birth Cohort Screening Rates 2012 – 2014

Source: CDW prepared by Population Health Services, Oct 2015
HCV Treatment Starts per Week: FY15

Weekly Uptake of HCV Antiviral Regimens in VA in 2015

Source: Population Health Services HCV Clinical Case Registry
## HCV Treatment in FY15: Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Veterans starting HCV treatment in FY15</td>
<td>30,293</td>
</tr>
<tr>
<td>Proportion treated with evidence of Advanced Liver Disease</td>
<td>36%</td>
</tr>
<tr>
<td>Veterans starting HCV treatment through Choice</td>
<td>643</td>
</tr>
</tbody>
</table>

Total Veterans started in ALL TIME through 12/31/2014 = 44,380

Source: PopHealth HCV:CCR Oct 2015
How were we able to increase our capacity so fast so efficiently?

- Rapid reorganization
- Reevaluated our screening reminders (risk based and birth cohort), now set nationwide.
- Increased funding for lab for birth cohort screening related increase in reflex testing and HCV RNA
- HCV registry clean up with linkage of every HCV positive veteran to clinical teams by HCV registry coordinators
- Counseling, pretreatment evaluation
- Creation of tools (templates, order sets in CPRS for ease of evaluation)
- **Creation of “Mini Sabbatical Programs” for Primary care Pharm D, NP, PA for provider expansion.**
- Creation of VISN wide dashboards to identify the high risk patients in immediate need of care and targeting them preferentially
Guidance documents/Education

- Constant Updates to VA HCV Antiviral Therapy Guidance Documents
- Monthly education seminars
- SCAN ECHO Educational seminars monthly in addition to national ones for local VISN team.
- SCAN ECHO Program offers expert help constantly to providers on the field with questions:
  - Case presentations with detailed review of questions (evidence based)
  - Addition of didactic part to the programs increases the educational impact.
- Connected via VA outlook for rapid response to your questions with multiple experts at your fingertip.
HCV Infected Veterans in VA Care estimated to be awaiting HCV treatment: FY16

<table>
<thead>
<tr>
<th></th>
<th>Veterans with HCV viremia awaiting HCV antivirals as of 10/01/15*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>119,629</td>
</tr>
<tr>
<td>Non-ALD (FIB4&lt;3.25)</td>
<td>93,190</td>
</tr>
<tr>
<td>ALD (FIB4&gt;3.25)</td>
<td>26,439</td>
</tr>
</tbody>
</table>

*this is a fluid number as new patients will be entering the system (i.e. new transfers to VA, increase in new diagnoses as people are tested, retreatment) and existing patients will leave the system or die

ALD = advanced liver disease

Source: Report Rpt149, version 1.3, prepared by Population Health Group Staff using data extracted from CCR Development on 10/02/2015-18:42
VETERANS CHOICE PROGRAM

• Congress created this program initially for veterans:
  – who were living over 40 miles from the closest VA facility
  – If they had to wait for more than 30 days for care

• Program now being **expanded** to care that is not available in the VA due to funding cuts (hepatitis C).

• Bulk of HCV funding now is in Veteran’s CHOICE program.

• VA facilities will be able to treat the **advanced liver disease, complex, high risk** patients in house and refer the early stage fibrosis patients to community veterans CHOICE providers.
1) VA HCV provider evaluates the patient:
   1) Screening
   2) Reflex testing
   3) Linkage to care/ Counseling
   4) Pretreatment evaluation
   5) Recommendation of the treatment regimen
   6) Evaluation of drug-drug interactions
   7) HIPPAA consent form the patient for release of information

2) Creates a HCV CHOICE referral consult:

3) Consult is approved by VA and HealthNet (contract provider)

4) The patient opts in to CHOICE program

5) Given a local provider appointment
6) Patient is seen by the outside provider and is given a prescription for AVT.
7) Patient returns to VA pharmacy to get the medication filled.
8) VA pharm D reevaluates the patient and does also counseling on compliance.
9) Patient receives his medications via VA pharmacy.
10) Follow up by outside provider till treatment completion.
11) Returns back to the VA team.
12) VA pharmacy eventually gets reimbursed by the HealthNet.
Community providers will be seeing more and more veterans.

We are trying to create a quality provider network for our veterans.

This process might expand VA expertise to the providers in the community via close communication.
SUMMARY

• VHA is the leader in hepatitis C care nationwide.
• Our screening rates surpass the rest of the national numbers significantly thanks to electronic reminders.
• With the aid of our clinical care registry for hepatitis C we are able to identify the screen positive veterans immediately and link them to counseling /hepatology/ ID/ PC clinics.
• Antiviral therapy provider pool is expanded by very well trained pharm D, NP, PA and interested primacy care providers.
SUMMARY cont.

• Virtual telemedicine, SCAN ECHO/telehealth tools widely available in the VA system aid in spread of knowledge and bring the experts to the providers in rural areas with ease.

• We were able to treat last year over 30,000 veterans whereas in all prior years total number of veterans with any antiviral therapy was 44,000.
• Electronic clinical reminders with enhanced primary provider education can improve detection rates.
• Registry or dashboards are crucial in tracking the identified patients and for linkage to care and treatments.
• Reflex testing has improved timelines of diagnosis and is easy to set up by creating an order menu.
• With constantly evolving landscape of treatment options easy access to expert care is crucial in making the most effective and also cost efficient choices.
HEPATITIS C CURE
AND ELIMINATION
IN THE VERY NEAR FUTURE
IS A REALITY NOW.