HCV Elimination:
Lessons Learned from the VA Experience

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Department of Veterans Affairs
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No disclosures to report
• Overview of VA structure and Hep C program
• Outreach to difficult to reach populations
• Treatment compliance
• Universal Hep C testing and System Strategies
Veterans Health Administration (VHA) Structure

- 8.9 million Veterans enrolled in VA care
  - 172 VA Medical Centers and >1,000 outpatient clinics
- Organized into 18 Veteran Integrated Service Networks (VISNs)
- Robust EMR >25 years
- One national drug formulary
  - All DAAs covered
    - No prior authorization
    - No restrictions for liver disease, AUD/SUD, re-treatment
    - $11 copay/month for some Veterans
VA National Viral Hepatitis Program

- Established 2001
- Population health framework
  - VA National Hepatitis C Clinical Case Registry
- Policies and Reports
- Education
  - Patient booklets, fact sheets
  - Provider trainings and toolkits
- Comprehensive website
  https://www.hepatitis.va.gov/
• Over 123,000 Veterans have been treated with oral HCV antivirals since their availability in January 2014

• ~21,000 Hep C patients in VA care remain to be treated
  ➢ ~10,000-12,000 HCV-infected Veterans awaiting treatment are not currently willing or able to initiate/complete HCV treatment

Source: CDW prepared by Population Health Services (10P4V)
Veterans starting HCV treatment

Number of Veterans

- Jan-Jun 2012: 1,948
- Jul-Dec 2012: 1,424
- Jan-Jun 2013: 1,222
- Jul-Dec 2013: 614
- Jan-Jun 2014: 2,549
- Jul-Dec 2014: 6,031
- Jan-Jun 2015: 15,270
- Jul-Dec 2015: 15,329
- Jan-Jun 2016: 22,819
- Jul-Dec 2016: 19,212
- Jan-Jun 2017: 14,589
- Jul-Dec 2017: 10,995
- Jan-Jun 2018: 8,786
- Jul-Dec 2018: 6,170
- Jan-Jun 2019: 4,942

Report date 10/3/2019, source: CDW
Range of Projected HCV Treatment Starts FY20-FY21

Estimated Number of Veterans Treated

Fiscal Year

2017 2018 2019 2020 2021

Pop Health - Belperio 8
Greater Proportion of Remaining HCV Viremic Veterans are Difficult to Engage in Care

**Patient Determinants:**
- Uninterested/declines treatment
- Inability to make contact by phone or mail
- Inability to adhere to therapy, medical appointments or treatment

**Psychosocial Determinants:**
- Homelessness
- Rurality
- Transportation
- Substance or alcohol abuse
- Mental health

Source: CDW prepared by Population Health Services (10P4V)
Extra Steps: Difficult to Reach Populations

- Care coordination, case management
- Patient navigators
- Peer support specialists
- Transportation
- Contingency management
- Collaborate with Housing and Urban Development programs

Community Outreach Teams
Reducing Stigma

• Incorporate HCV treatment within other clinics
  – Buprenorphine or methadone clinics
  – Mental Health Clinics
  – Primary Care

➢ Patients may be more willing to accept treatment in a setting where they are already comfortable

➢ HCV treatment with co-occurring substance use treatment can lead to improvements in care
  – greater adherence to medical appointments, medication instructions
  – increased rates of HCV treatment completion
  – improved health status
Action to Improve Access and Service Delivery

• Alternative care/treatment delivery modalities
  – Telehealth
  – Video teleconferencing
  – Electronic consults
  – Group appointments
  – Mobile van outreach
  – SCAN ECHO model

• Integrated, streamlined care
  – Social work, Case management
  – Psychiatry, Psychology, Substance Abuse services

Bring Care to Where the People Are
Hepatitis C Innovation Teams (HITs)

Assess how we deliver care now *(current state)*

Identify problems with care delivery *(problem statement)*

Propose & test solutions *(future state & tests of change)*

Measure change in care *(monitoring and evaluation)*

Assess improvements

- **Lean model**: redesign care based on local processes and desired clinical outcomes
- **Disseminate best practices** that produce measurable improvements in HCV care
- **Multidisciplinary**, regional teams led by a HIT Coordinator(s); leadership support
- **Focused working groups** to address system needs
- Monthly virtual meetings to share best practices, develop solutions, share strategies
- Identify **low performers** and pair them with strong practices
- **Building community** among providers
## Gap Analysis/Solutions: Example

<table>
<thead>
<tr>
<th>Hurdle</th>
<th>Task</th>
<th>Hero</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeless Veterans evaluated with template need to be triaged to HPACT</td>
<td>1. Educate staff on how to refer to HPACT</td>
<td>Jennifer</td>
</tr>
<tr>
<td>Confirm Eligibility for VA care during outreach to complete HCV screening and enroll in care</td>
<td>Obtain tablets with SQUARE software downloaded.</td>
<td>Kellie</td>
</tr>
</tbody>
</table>
| Increase awareness about HCV testing and treatment for Homeless Veterans | 1. Collaborate with community  
2. Educate VA staff  
3. Outreach materials to community organizations | Jennifer  |
| Obtain Rapid HCV Point of care test kit                               | 1. Identify purchaser: Cost: $17.50 per test, $30 for control solution  
2. Policy for use: Lab Service  
3. Identify necessary training/and or certification | Chris  
Sean |
| Identify need for Provider protocols                                  | 1. HPACT template for HCV testing and treatment                      | Dr. Wong  |
### Tools Developed by VISN HITs

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<td>Document Type: Provider Education (5)</td>
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<td>Document Type: Strong Practices (34)</td>
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More than **104,617** Veterans have been CURED!

Sustained Virologic Response in Veterans in VHA Care Starting DAA Therapy in 2014 or Later for the Nation, by VISN and by Station

<table>
<thead>
<tr>
<th>Started Rx</th>
<th>Stopped Rx</th>
<th>≥ 12 Weeks of Available Post-Treatment Follow-Up</th>
<th>≥ 14 Weeks of Available Post-Treatment Follow-Up</th>
<th>No SVR</th>
<th>SVR12</th>
<th>SVR4-11</th>
</tr>
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<tbody>
<tr>
<td>122,060</td>
<td>121,035</td>
<td>119,163</td>
<td>118,842</td>
<td>3,152</td>
<td>104,617</td>
<td>4,156</td>
</tr>
</tbody>
</table>

* Included liver transplant patients: 670
* Excluded patients who died on treatment or within 12 weeks of stopping treatment: 1332

- 97% among those with SVR testing
- 88% among all patients starting treatment

What is happening to these patients?
Why are patients not completing treatment?
# Numbers into Knowledge... and Action

<table>
<thead>
<tr>
<th>HIT Collaborative HCV Goals FY19</th>
<th>National Rate</th>
<th>Data Source</th>
<th>Updated</th>
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<tbody>
<tr>
<td>Achieve 90% SVR in Veterans with chronic Hepatitis C (lagging measure)</td>
<td>75.2%</td>
<td>Population Health Services</td>
<td>12/28/2018</td>
</tr>
<tr>
<td>Increase (or sustain) Hepatitis C testing rate for birth cohort Veterans to 90% (leading measure)</td>
<td>84.8%</td>
<td>Population Health Services</td>
<td>12/31/2018</td>
</tr>
<tr>
<td>Treat 90% of viremic patients (leading measure)</td>
<td></td>
<td>Population Health Services</td>
<td>1/1/2019</td>
</tr>
<tr>
<td>Increase (or sustain) SVR12 testing rate for Veterans completing treatment to 90% (leading measure)</td>
<td>89.8%</td>
<td>Population Health Services</td>
<td>12/28/2018</td>
</tr>
</tbody>
</table>

## VISN 1 Current Performance

<table>
<thead>
<tr>
<th></th>
<th>Birth Cohort Screening</th>
<th>Pts Currently Awaiting Tx</th>
<th>SVR12 Testing</th>
<th>SVR - Patients Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birth Cohort Screening</strong></td>
<td>81.76%</td>
<td></td>
<td></td>
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<tr>
<td><strong>Pts Currently Awaiting Tx</strong></td>
<td></td>
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<td></td>
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<tr>
<td>FIB-4 &lt;= 3.25</td>
<td>102</td>
<td>40</td>
<td>118</td>
<td>46</td>
</tr>
<tr>
<td>FIB-4 &gt; 3.25</td>
<td>17</td>
<td>10</td>
<td>27</td>
<td>21</td>
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<tr>
<td><strong>SVR12 Testing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>89.9%</td>
<td>7 in VISN</td>
<td>8 in VISN</td>
<td>3 in VISN</td>
<td>133</td>
</tr>
<tr>
<td>91.0%</td>
<td>6 in VISN</td>
<td>8 in VISN</td>
<td>5 in VISN</td>
<td>754</td>
</tr>
<tr>
<td>88.4%</td>
<td>63 in Nation</td>
<td>50 in Nation</td>
<td>209</td>
<td></td>
</tr>
<tr>
<td>93.5%</td>
<td>63 in Nation</td>
<td>50 in Nation</td>
<td>209</td>
<td></td>
</tr>
<tr>
<td>93.6%</td>
<td>86 in Nation</td>
<td>109 in Nation</td>
<td></td>
<td>238</td>
</tr>
<tr>
<td>92.6%</td>
<td>86 in Nation</td>
<td>109 in Nation</td>
<td></td>
<td>417</td>
</tr>
<tr>
<td>95.5%</td>
<td>5 in VISN</td>
<td>21 in Nation</td>
<td>209</td>
<td>238</td>
</tr>
<tr>
<td>94.1%</td>
<td>33 in Nation</td>
<td>21 in Nation</td>
<td>209</td>
<td>417</td>
</tr>
<tr>
<td><strong>SVR - Patients Cured</strong></td>
<td></td>
<td></td>
<td></td>
<td>678</td>
</tr>
<tr>
<td>133</td>
<td>133</td>
<td></td>
<td></td>
<td>246</td>
</tr>
</tbody>
</table>
MOBILE APP

• **Automated texting** to and from Annie allows Veterans to track and monitor their own health
• Clinicians can **create and assign automated protocols** and view graphed or individual Veteran responses
• ANNIE messages are **automated**

Hi! You are doing great! Keep it up. Only 1 month left!
Time for your HCV medication! Thanks, Annie.
Annie here! You have a HCV viral load test scheduled for 8 am Monday.
Keeping Patients Engaged

**Pre-treatment Assessment**
- Genotype, Baseline HCV RNA, Fibroscan or Fib-4/APRI

**Treatment Initiation**
- Establish treatment goals and duration; patient education, preferences, what to expect (SE, response)

**Follow-up**
- week 4 (others if needed)
- HCV RNA response; assess and address side effects and adherence

**Post-treatment assessment and follow-up**
- SVR results; recommendations for follow-up care; hepatocellular cancer screening

Electronically, Face to face, Video Telehealth
Face to face, Video Telehealth
Face to face, Video telehealth, or Telephone

Can be combined
Where do we go from here?
Universal HCV Testing
CDC  HCV TESTING RECOMMENDATIONS

1998
✓ Current/past injection drug users, including those who injected only once years earlier
✓ Received clotting factor concentrates produced before 1987
✓ Ever on long-term hemodialysis
✓ Persistently abnormal alanine aminotransferase levels
✓ HIV infection
✓ Prior recipients of transfusions or organ transplants

2012
✓ One-time screening with anti-HCV antibody testing for adults born from 1945 through 1965 regardless of risk

Expected in 2020
➢ Calling for universal HCV screening for all adults 18 and older at least once in their lifetime and for all pregnant women during each pregnancy
<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-time, routine, opt out HCV testing is recommended for all individuals aged 18 years and older.</td>
<td>I, B</td>
</tr>
<tr>
<td>One-time HCV testing should be performed for all persons less than 18 years old with behaviors, exposures, or conditions or circumstances associated with an increased risk of HCV infection (see below).</td>
<td>I, B</td>
</tr>
<tr>
<td>Periodic repeat HCV testing should be offered to all persons with behaviors, exposures, or conditions or circumstances associated with an increased risk of HCV exposure (see below).</td>
<td>IIa, C</td>
</tr>
<tr>
<td>Annual HCV testing is recommended for all persons who inject drugs and for HIV-infected men who have unprotected sex with men.</td>
<td>IIa, C</td>
</tr>
</tbody>
</table>
VHA policy recommends one-time HCV testing for those born between 1945-1965, and continue risk-based testing for everyone else –this has always included Vietnam Era Veterans.

Birth cohort testing began in VA

Population Health Service 10P4V; data as of 12/31/2018
HCV Testing – Clinical Strategies

1) Automated letters to untested birth cohort patients
   • Letter serves as a lab order

2) Clinical Reminder for Primary Care Providers in EMR
   – 2002–2013: risk-based screening
   – 2014–present: birth cohort AND risk based

3) Auto-reflex HCV RNA testing for HCV Ab+

4) Centralized labs

5) Performance Measure for Network Directors

6) Focus on at-risk groups by partnering with:
   – Mental Health and Substance Use providers
   – HUD-VASH (Veterans Affairs Supportive Housing)
   – Homeless stand-downs / testing events

---

Dear Veteran,

The [Redacted] Healthcare System wants to inform you about recent healthcare guidelines which recommend that individuals in your age group be screened for hepatitis C infection. Since there is no record of this blood test in your chart, we recommend that you be tested. Individuals who have hepatitis C often do not have any symptoms for many years but can still develop severe liver disease or even cancer. The VA now offers highly effective treatments for hepatitis C, with minimal side effects.

If you wish to be tested, simply bring this letter to the laboratory section during your next visit to the VA or tell the phlebotomist that you received a letter and desire a screening test for hepatitis C. Once testing is complete, you will receive a letter with test results or instructions for further evaluation if necessary.

Please call [Redacted] if you have any questions.

Lab Requisition: Hep C AB Total

****************************
Know your Population

- Map patient locations and resources available in the area
- Direct outreach: phone or letter
- Identify upcoming appointments
- Targeted multimedia campaigns
Multimedia marketing campaigns in high prevalence cities

New York Bronx, Baltimore, Philadelphia

Cleveland, Atlanta, Nashville, Birmingham

Bay Pines, Gainesville

Temple, Dallas, San Antonio, Houston, Denver

Los Angeles, Martinez, Palo Alto, Seattle
Be Ready for Action

- Opt-out HCV testing
- Offer same day HCV treatment starts
- System specific guidance, algorithms, templates
  - Standardized procedures/algorithms for evaluation, risk stratification, referral
- Consult templates with order sets
- Minimize office visits and tests
## Moving towards Elimination

<table>
<thead>
<tr>
<th>Issues/Obstacles</th>
<th>Strategies and Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>People unaware or uninterested</td>
<td>• Proactive identification and outreach with call or letter</td>
</tr>
<tr>
<td></td>
<td>• Multimedia campaigns</td>
</tr>
<tr>
<td></td>
<td>• Messaging in waiting rooms and public areas</td>
</tr>
<tr>
<td></td>
<td>• Clinical reminders and alerts for providers</td>
</tr>
<tr>
<td>Geography or transportation</td>
<td>• Map HCV patient location and resources</td>
</tr>
<tr>
<td></td>
<td>• Telehealth / virtual care / ECHO model</td>
</tr>
<tr>
<td></td>
<td>• Mobile outreach</td>
</tr>
<tr>
<td>Delivery of treatment</td>
<td>• System specific standardized procedures/algorithms</td>
</tr>
<tr>
<td></td>
<td>• Templates with order sets</td>
</tr>
<tr>
<td></td>
<td>• Same day service</td>
</tr>
<tr>
<td></td>
<td>• Integrate care with Mental health/Substance Use, Primary care</td>
</tr>
<tr>
<td>Capacity</td>
<td>• Open up prescribing and follow-up to other providers; NP, PA, PharmD, primary care</td>
</tr>
<tr>
<td></td>
<td>• Night/weekend clinics</td>
</tr>
<tr>
<td></td>
<td>• Group appointments</td>
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</tbody>
</table>
Build health center workforce capacity and expertise

<table>
<thead>
<tr>
<th>Detail</th>
<th></th>
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</thead>
</table>
| **Shared Medical Appointments** | • Focus on less complicated patients in a group setting  
  • Group visit of 4-8 patients who will be starting treatment  
  • Patients seen 2-4 times on treatment, based on duration of therapy, clinical need | |
| **Electronic (e)-consults** | • Generate reports to identify patients needing treatment  
  • Chart review to determine candidacy  
  • Provide recommendations for HCV therapy initiation through electronic consult | |
| **HCV Telehealth** | • Video or telephone follow-up appointments by mid-level providers  
  • Use ECHO model to train providers to provide HCV care at their site (include mid-levels) | |
| **Rural Care** | • Reach patients located in rural areas that would make travel to medical center clinics a barrier to accessing care  
  • Once a month, provider visits community clinics to initiate treatment; follow-up with CVT or TH | |
| **HCV Process Map** | • Flow map providing criteria of HCV patients that can be treated by PharmD  
  • Develop site specific inclusion and exclusion criteria | |
| **Regional Specialist** | • Clinician with HCV expertise in the region provides mentoring/education for other providers (NP, PA, PharmD, MD)  
  • Spoke and hub model of training / resource for HCV related questions | |
Engaging Pharmacists in the Provision of HCV Care

• HCV Testing
  – Active identification and outreach to patients who require testing

• Identification of HCV patients as treatment candidates
  – Report/lists of HCV viremic patients to discuss/evaluate for treatment
  – E-consults to specialists

• Co-management / Treatment
  – Increase capacity

Increased awareness of HCV in community
-Improved linkage to care
-Increase treatment rates

-Flexibility for patients
-Greater access
-Cost Avoidance: reduced drug costs from optimization of regimens; reduced drug-drug interactions; facilitation of timely medication refills; closely monitored adherence

Population Health Beidenio
VA HCV Cascade of Care Advancements

- **Chronic HCV (estimated)**: 187,518 (100%)
  - 2014: 172,886 (92%)
  - 2015: 164,920 (88%)
  - 2016: 132,866 (71%)
  - 2017: 117,050 (68%)

- **Diagnosed with chronic HCV†**:
  - 2014: 92%
  - 2015: 95%
  - 2016: 81%
  - 2017: 88%
  - 2018: 117,050 (68%)

- **Linked to HCV care‡**: 132,866 (71%)
  - 2014: 92%
  - 2015: 95%
  - 2016: 81%
  - 2017: 88%
  - 2018: 117,050 (68%)

- **Treated with HCV antivirals◊**:
  - 2014: 92%
  - 2015: 95%
  - 2016: 81%
  - 2017: 88%
  - 2018: 117,050 (68%)

- **Achieved SVR●**:
  - 2014: 92%
  - 2015: 95%
  - 2016: 81%
  - 2017: 88%
  - 2018: 117,050 (68%)

*Estimated from diagnosed+ratio of prevalence in birth cohort strata in those tested in prior two years applied to those still untested;
†Diagnosed with chronic HCV defined as ever had a detectable HCV RNA or genotype.
‡Linked to HCV care required an outpatient visit in the year, entry in the VHA’s HCV registry and HCV entered on the patient’s medical record problem list.
◊Treated with HCV antivirals defined as ever received HCV antivirals from VHA as of 31 December of the year.
●Achieved SVR defined as undetectable HCV RNA on all tests after end of treatment including at least one test at least 12 weeks after the end of treatment.

Population Health Service 10P4V; data as of 12/31/2018
Key Drivers of Success

**Accessibility to Drugs**
- Drug availability
- $$ to pay for drug
- Remove restrictions

**Finding Patients**
- Data to identify
- Outreach and engagement
- Testing

**Streamline Treatment**
- Training and education
- Algorithms
- Integrate care
- Peer Support

**Capacity**
- Midlevel providers
- Virtual Care Technology
- Electronic Consults

**Share Best Practices**
Whose woods these are I think I know. His house is in the village though; He will not see me stopping here To watch his woods fill up with snow.

My little horse must think it queer To stop without a farmhouse near Between the woods and frozen lake The darkest evening of the year.

He gives his harness bells a shake To ask if there is some mistake. The only other sound’s the sweep Of easy wind and downy flake.

The woods are lovely, dark and deep, But I have promises to keep, And miles to go before I sleep, And miles to go before I sleep.
Special Thank You to all of our Veterans and dedicated Staff

➢ Thank You for choosing VA