



DEPARTMENT OF VETERANS AFFAIRS  
**OFFICE OF INSPECTOR GENERAL**

*Office of Healthcare Inspections*

VETERANS HEALTH ADMINISTRATION

Lack of Care Coordination  
and Hepatocellular  
Carcinoma Surveillance of a  
Patient at the VA Eastern  
Colorado Health Care  
System in Aurora



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## Executive Summary

The VA Office of Inspector General (OIG) conducted a healthcare inspection at the VA Eastern Colorado Health Care System (facility) in Aurora to assess allegations that a lack of care coordination and a lack of [hepatocellular carcinoma](#) (HCC) surveillance led to a delay in a patient being diagnosed with HCC.<sup>1</sup> HCC is a common type of liver cancer that most often occurs when chronic liver disease, such as [cirrhosis](#) caused by [hepatitis C](#) infection, is present.<sup>2</sup>

HCC surveillance includes twice yearly imaging studies alternating between an [ultrasound](#) and a [computerized tomography](#) scan and a yearly [alpha-fetoprotein](#) (AFP) lab test. In addition, some patients require an [esophagogastroduodenoscopy](#) (EGD) for [varices](#) monitoring.

### Synopsis of Events

The patient, in their early sixties, had a history of multiple medical problems including hepatitis C, cirrhosis, history of alcohol abuse, [diabetes](#), and [high blood pressure](#). In 2017, the patient was seen at the PFC James Dunn VA Clinic in Pueblo, Colorado, by a primary care provider (provider 1) who entered a liver (hepatology) consult requesting the patient be evaluated and considered for hepatitis C treatment. The hepatology provider evaluated the patient for hepatitis C treatment and confirmed a cirrhosis diagnosis. Later that year, the hepatology provider started the patient on [elbasvir/grazoprevir](#) for hepatitis C.

In early 2018, the patient was considered cured of hepatitis C. In March 2018, the hepatology provider conducted a follow-up visit with the patient by telephone and documented in the patient's electronic health record detailed HCC surveillance recommendations and the need for a repeat EGD in July 2018 for [varices](#) monitoring. The patient's second primary care provider (provider 2) was included as an additional signer and signed the note approximately one month after it was written.<sup>3</sup>

In April 2018, the patient transferred care to the PFC Floyd K. Lindstrom Department of Veterans Affairs Clinic in Colorado Springs, Colorado, and was assigned to a new primary care provider (provider 3). Provider 3 followed the patient between April 2018 and February 2020.

At that time, the patient requested a change to a male provider and was reassigned to a fourth primary care provider (provider 4). Provider 4 saw the patient once, and soon afterwards left the

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<sup>1</sup> The underlined terms are hyperlinks to a glossary. To return from the glossary, press and hold the *alt* and *left arrow* keys together.

<sup>2</sup> Mayo Clinic, "hepatocellular carcinoma," accessed May 25, 2021, <https://www.mayoclinic.org/diseases-conditions/hepatocellular-carcinoma/cdc-20354552>.

<sup>3</sup> The OIG could not determine the exact date provider 1 left the facility but found the last documented acknowledgment by provider 1 in the patient's electronic health record was in August 2017. The OIG believes that provider 2 assumed responsibility for the patient's care after that date.

facility. In April 2020, a fifth primary care provider (provider 5) assumed responsibility for the patient's care and followed the patient until March 2021.

In spring 2021, the patient reported being hospitalized at a non-VA hospital in another state for intra-abdominal bleeding caused by a ruptured HCC.

## Healthcare Inspection Results

The OIG substantiated that a lack of care coordination occurred when the patient transferred between providers. The patient was assigned to five primary care providers from 2017 through 2021. The patient requested reassignment of primary care providers two times and, on both occasions, there was no documented evidence that communication occurred between the providers.<sup>4</sup> In March 2018, the hepatology provider documented detailed recommendations for HCC surveillance and an EGD for varices monitoring (March 2018 note). Provider 2 signed the March 2018 note acknowledging the recommendations. However, the OIG found no documented evidence that provider 2 ever spoke with or met the patient. In addition, when the patient relocated and was reassigned to provider 3 in April 2018, the OIG found no documented evidence of communication between provider 2 and provider 3 about the recommendations. Similarly, the OIG found no documented evidence of communication between provider 3 and provider 4 at the time of reassignment. The lack of care coordination and communication between provider 2 and provider 3 regarding the HCC surveillance recommendations contributed to the patient not receiving the recommended HCC surveillance or EGDs for varices monitoring.<sup>5</sup>

The OIG found that the patient's problem list was updated by the hepatology provider to include hepatitis C; however, for unclear reasons, cirrhosis was not added to the problem list.<sup>6</sup> Because cirrhosis was not included in the patient's problem list, the patient's primary care providers did not have the additional indication that HCC surveillance may be needed. Had the problem list included cirrhosis, or the primary care providers fully reviewed the patient's history, they may have initiated HCC surveillance, which could have led to an earlier HCC diagnosis and treatment.

Through interviews with facility leaders and providers, the OIG was told that, in general, the updating of patient problem lists was inconsistent. The OIG reviewed 456 patients who received

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<sup>4</sup> VHA Handbook 1101.10(1), *Patient Aligned Care Team (PACT) Handbook*, February 5, 2014, amended May 26, 2017.

<sup>5</sup> The OIG team did not speak with providers 1, 2, and 4 because they were no longer employed by VHA at the time of the inspection.

<sup>6</sup> VHA Handbook 1907.01, *Health Information Management and Health Records*, March 19, 2015, rescinded April 5, 2021; Facility Policy 136-15, *Health Information Management and Documentation*, April 10, 2014; Facility Policy 136-15, *Health Information Management and Documentation*, January 18, 2019. The two policies contain the same or similar language related to documentation. A patient's problem list contains both active and inactive medical diagnoses and is dependent on the patient's providers to be updated and accurate.

hepatitis C treatment at the facility and found that 96 percent of the patients had hepatitis C included in their problem list; however, for those diagnosed with cirrhosis, only 43 percent had cirrhosis included in their problem list.

The OIG substantiated that the patient did not receive the recommended HCC surveillance, which caused a delay in diagnosing the patient with HCC. In addition, primary care providers did not consult [Gastroenterology](#) Service staff regarding an EGD for varices monitoring. Provider 2 missed an opportunity to initiate HCC surveillance by not entering orders for an imaging study and alpha-fetoprotein lab tests after signing the March 2018 note that outlined the HCC surveillance recommendations. Provider 2 also failed to communicate the March 2018 note recommendations to provider 3. In addition, provider 3 failed to conduct a historical review of the patient's electronic health record and instead focused on current problems or problems identified by the patient. Provider 3's practice was to address current concerns and stated, "We review what we can, but we rely on the patients to give us information." In addition, the third provider could not remember whether the entire March 2018 note was reviewed or just the later addendum. The OIG asserts that it is a reasonable expectation that provider 3 should have reviewed both the previous annual primary care note and the entire March 2018 note, to include the June addendum. In addition, although a July 2018 EGD was discontinued because scheduling staff could not reach the patient, provider 3 did not follow up with the patient regarding the need for an EGD for varices monitoring. Ultimately, none of the primary care providers discussed the recommended HCC surveillance or varices monitoring with the patient or ordered related imaging studies, alpha-fetoprotein lab tests, or EGDs. As a result, the patient did not receive the recommended HCC surveillance or EGD for varices monitoring and, in spring 2021, the patient was hospitalized for an intra-abdominal bleed caused by a ruptured HCC.

The OIG found that primary care and hepatology providers at the facility did not follow general HCC surveillance recommendations. The OIG reviewed the electronic health records of 79 patients requiring HCC surveillance and found that 20 patients (25 percent) did not receive any imaging studies, and 29 patients (37 percent) did not receive any alpha-fetoprotein lab tests. Seven patients were diagnosed with HCC with one patient not receiving any HCC surveillance. In addition, 11 of the 54 patients (20 percent) that required EGDs for varices monitoring were either overdue for an EGD or had not had an EGD. Based on interviews, the OIG learned that the lack of HCC surveillance was not unique to the patient or to the facility. Leaders from the National Hepatic Innovation Team Collaborative explained that there were many reasons for the low compliance rate including the burden on primary care providers and patients.

The OIG made six recommendations to the Facility Director related to the coordination of care for patients transferring between primary care providers; developing and updating patient problem lists; educating primary care providers on the expectations for reviewing a patient's electronic health record when assuming care of an established patient; conducting a clinical review of the patient's care, as well as the care of the patient identified during the inspection who

did not receive HCC surveillance or varices monitoring, and determining if adverse events occurred; and ensuring that patients receive recommended HCC surveillance and EGDs for varices monitoring.

## **VA Comments and OIG Response**

The Veterans Integrated Service Network and Facility Directors concurred with the recommendations and provided an acceptable action plan (see appendixes A and B). The OIG will follow up on the planned actions until they are completed.



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## Abbreviations

AFP	alpha-fetoprotein
CT	computerized tomography
EGD	esophagogastroduodenoscopy
EHR	electronic health record
HCC	hepatocellular carcinoma
OIG	Office of Inspector General
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network



## Introduction

The VA Office of Inspector General (OIG) conducted a healthcare inspection at the VA Eastern Colorado Health Care System (facility) in Aurora to assess allegations that a lack of care coordination and a lack of [hepatocellular carcinoma](#) (HCC) surveillance led to a delay in a patient being diagnosed with HCC.<sup>1</sup>

## Background

The facility is part of Veterans Integrated Service Network (VISN) 19 and has 11 outpatient clinics.<sup>2</sup> The facility provides comprehensive healthcare through primary and specialty care, general medicine, surgery, and behavioral health. From October 1, 2019, through September 30, 2020, the facility served 96,260 patients and had a total of 205 operating beds, including 138 inpatient beds, 37 domiciliary beds, and 30 community living center beds. The Veterans Health Administration (VHA) classifies the facility as Level 1a—highest complexity.<sup>3</sup>

The PFC James Dunn VA Clinic (Pueblo Clinic) is 109 miles from the facility and offers primary care and blood drawing services.

The PFC Floyd K. Lindstrom Department of Veterans Affairs Clinic (Colorado Springs Clinic) is 67 miles from the facility and offers primary care, mental health, specialty and surgical services, pharmacy, and imaging.

## Hepatitis C

[Hepatitis C](#) is a viral blood-borne infection that has a high prevalence rate in veterans.<sup>4</sup> VHA's guidance on the screening of all adults (18–79 years old) for hepatitis C is consistent with the recommendations of the U.S. Preventative Service Task Force. Hepatitis C is usually curable through medication; however, if hepatitis C remains untreated, a person may experience complications including liver failure, [cirrhosis](#), and liver cancer.<sup>5</sup>

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<sup>1</sup> The underlined terms are hyperlinks to a glossary. To return from the glossary, press and hold the *alt* and *left arrow* keys together.

<sup>2</sup> The facility's outpatient clinics are located in Alamosa, Aurora, Burlington, Denver, Colorado Springs, Golden, Jewell, La Junta, Lamar, Pueblo, and Salida, Colorado.

<sup>3</sup> VHA Office of Productivity, Efficiency and Staffing. The VHA Facility Complexity Model categorizes each medical facility by complexity level based on patient population, clinical services offered, educational and research missions, and administrative complexity. Complexity Levels include 1a, 1b, 1c, 2, or 3. Level 1a facilities are considered the most complex; Level 3 facilities are the least complex.)

<sup>4</sup> VHA Directive 1300.01, *National Viral Hepatitis Program*, May 23, 2018.

<sup>5</sup> Mayo Clinic, "Hepatitis C," accessed May 25, 2021, <https://www.mayoclinic.org/diseases-conditions/hepatitis-c/symptoms-causes/syc-20354278>.

## Cirrhosis

Cirrhosis, also known as scarring of the liver, may occur through a wide range of diseases and conditions that can damage the liver including hepatitis C and chronic alcohol abuse.<sup>6</sup> When damage occurs, the liver tries to repair itself, which causes scar tissue to form. As cirrhosis progresses through the development of more and more scar tissue, the liver's ability to function decreases. The damage done cannot be undone, but damage may be limited through early diagnosis and treatment.

Complications from cirrhosis include portal [hypertension](#) and an increased risk of liver cancer. Portal hypertension occurs when there is an increase in pressure in the veins to the liver. The enlarged veins ([varices](#)) occur in the esophagus or stomach and may bleed. A screening [esophagogastroduodenoscopy](#) (EGD) is recommended to determine if the patient has varices and is at a high risk for bleeding.<sup>7</sup> Surveillance EGDs are recommended every 1–3 years to monitor for varices.

## HCC Surveillance

VHA follows the American Association for the Study of Liver Disease 2018 guidelines for HCC surveillance. The HCC guidelines recommend that all adults diagnosed with cirrhosis receive HCC surveillance “because it improves overall survival.” Surveillance includes an [ultrasound](#), with or without [alpha-fetoprotein](#) (AFP) lab tests, every six months. Contrast enhanced [computerized tomography](#) (CT) scans and [magnetic resonance imaging](#) are reserved for diagnostic purposes and should not be used for surveillance except when a quality ultrasound cannot be obtained.

## Allegations and Related Concerns

On March 31, 2021, the OIG received a confidential complaint alleging

- a lack of care coordination between primary care providers occurred when a patient's care was transferred from one primary care provider to another primary care provider, and
- a lack of HCC surveillance occurred resulting in a delayed diagnosis of hepatocellular carcinoma.

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<sup>6</sup> Mayo Clinic, “cirrhosis,” accessed May 25, 2021, <https://www.mayoclinic.org/diseases-conditions/cirrhosis/symptoms-causes/syc-20351487>.

<sup>7</sup> Jakab, Sofia Simona, MD, and Garcia-Tsao, Guadalupe, MD, “Screening and Surveillance of Varices in Patients with Cirrhosis,” *Clinical Gastroenterology and Hepatology* 17(1), (January 2019).

While reviewing the patient's care the OIG team identified additional concerns related to facility patients who received hepatitis C treatment and were diagnosed with cirrhosis, including a lack of

- cirrhosis diagnosis being included in the patients' problem lists,
- HCC surveillance, and
- varices monitoring.

## Scope and Methodology

The OIG initiated the inspection on May 25, 2021, and conducted a virtual site visit from June 17 through July 14, 2021. The OIG team reviewed the patient's care from November 24, 2017, through March 23, 2021, for lack of care coordination and lack of HCC surveillance. The OIG team also reviewed the electronic health records (EHRs) of 456 patients at the facility who received hepatitis C treatment from January 1, 2018, through May 31, 2021, to determine if the patients received HCC surveillance, that their problem lists included hepatitis C and cirrhosis, if applicable, and that they received an EGD.

The OIG interviewed the complainant, facility leaders, and providers and staff who were knowledgeable about the patient and the allegations and concerns under discussion.<sup>8</sup>

The OIG team reviewed relevant VHA, VISN, and facility policies and procedures related to Hepatology and Primary Care; peer reviews; Patient Advocate Reports; patient hand-off communication; and the organizational chart.

In the absence of current VA or VHA policy, the OIG considered previous guidance to be in effect until superseded by an updated or recertified directive, handbook, or other policy document on the same or similar issue(s).

The OIG substantiates an allegation when the available evidence indicates that the alleged event or action more likely than not took place. The OIG does not substantiate an allegation when the available evidence indicates that the alleged event or action more likely than not did not take place. The OIG is unable to determine whether an alleged event or action took place when there is insufficient evidence.

Oversight authority to review the programs and operations of VA medical facilities is authorized by the Inspector General Act of 1978, Pub. L. No. 95-452, 92 Stat. 1101, as amended (codified at

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<sup>8</sup> The OIG interviewed the complainant; Facility Chief and Deputy Chief of Staff; Chief of Quality, Safety, and Value; hepatology providers; primary care providers and staff; the Risk Manager, Patient Advocate, Rural Hepatitis C and Hepatic Innovation Team Coordinators; and representatives from the national Hepatic Innovation Team (HIT) Collaborative. At the time of the inspection, three of the patient's five primary care providers no longer worked for VHA. As such, the OIG did not interview those providers.

5 U.S.C. App. 3). The OIG reviews available evidence to determine whether reported concerns or allegations are valid within a specified scope and methodology of a healthcare inspection and, if so, to make recommendations to VA leaders on patient care issues. Findings and recommendations do not define a standard of care or establish legal liability.

The OIG conducted the inspection in accordance with *Quality Standards for Inspection and Evaluation* published by the Council of the Inspectors General on Integrity and Efficiency.

## Patient Case Summary

The patient, in their early sixties, had a history of multiple medical problems including hepatitis C, cirrhosis, alcohol abuse, [diabetes](#), and [high blood pressure](#).<sup>9</sup> In late 2016, the patient presented to a non-VA hospital in Pueblo, Colorado, vomiting blood. The next day an EGD was done that showed a bleeding lesion. The lesion, thought to be caused by an underlying liver disease, was treated. The non-VA hospital transferred the patient to the facility's intensive care unit for further management the following day. A few days later, a repeat EGD showed changes consistent with chronic liver disease but no active bleeding. The next day the patient was discharged to home with plans for outpatient follow-up in the liver (hepatology) clinic.

In 2017, the patient was seen at the Pueblo Clinic by a primary care provider (provider 1) who entered a hepatology consult requesting the patient be evaluated and considered for hepatitis C treatment. In June 2017, the patient was found to be [anemic](#) with a [hemoglobin](#) of 10.6 grams per deciliter.<sup>10</sup> During a hepatology clinic appointment, the patient reported being diagnosed with hepatitis C in 1977 and was unsuccessfully treated in the 1990s.<sup>11</sup> The hepatology provider documented that a 2005 [biopsy](#) done at a non-VA hospital revealed cirrhosis. In August 2017, the hepatology provider communicated the [anemia](#) blood work result to provider 1 and recommended a [colonoscopy](#) and starting oral iron supplements. Approximately two weeks later, provider 1 started the patient on an oral iron supplement, which improved the patient's anemia. The patient declined a colonoscopy.

In September 2017, after completing additional tests and procedures, the hepatology provider started the patient on a 12-week treatment course of [elbasvir/grazoprevir](#) for hepatitis C. The patient completed treatment in November 2017.

In early 2018, a CT scan was done. A hepatologist documented reviewing the patient's recent CT scans and EGDs and noted not being concerned with the non-progressive [duodenal](#) wall

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<sup>9</sup> The OIG uses the singular form of they (their) in this instance for privacy purposes.

<sup>10</sup> Mayo Clinic, "low hemoglobin count," accessed September 29, 2021, <https://www.mayoclinic.org/symptoms/low-hemoglobin/basics/definition/sym-20050760>. For men, a hemoglobin of 13.5 grams per deciliter is considered low; for women it is 12 grams per deciliter.

<sup>11</sup> Although the patient reported being diagnosed with hepatitis C in 1977, hepatitis C testing was not available until 1990. The EHR shows that the patient was treated for hepatitis C in 2001.

thickening, and that the patient would need annual varices surveillance [EGD] in summer 2018.<sup>12</sup> The hepatologist's comments were included in the March Rural Hepatitis C Follow-Up Note (March 2018 note).

In February 2018, the patient's hepatitis C viral load was undetectable, and the patient was deemed cured of hepatitis C. In March 2018, the hepatology provider conducted a follow-up visit with the patient via a telephone call and documented (in the March 2018 note) detailed HCC surveillance recommendations identifying the primary care provider as responsible for the patient's HCC surveillance, and added hepatitis C, but not cirrhosis, to the patient's problem list. The patient's second primary care provider (provider 2) was included as an additional signer and signed the progress note approximately one month after the note was written.<sup>13</sup>

The patient transferred care from the Pueblo Clinic to the Colorado Springs Clinic and was reassigned to a third primary care provider (provider 3). In April 2018, the patient had an initial appointment with provider 3. In June 2018, provider 3 signed an addendum to the aforementioned March 2018 note regarding the need for repeat lab tests. From April 2018 through February 2020, the OIG found no documented evidence that provider 3 discussed HCC surveillance with the patient or ordered imaging studies or AFP lab tests. In June 2018, an EGD was cancelled after the patient did not respond to two scheduling attempts. No further EGDs were ordered for the patient.

In early 2020, the patient requested a change in providers and was reassigned to a fourth primary care provider (provider 4). Provider 4 saw the patient once in February 2020, and soon after was no longer employed at the facility. In spring 2020, a fifth primary care provider (provider 5) assumed responsibility for the patient's care until the patient relocated in March 2021. Neither provider 4 nor provider 5 ordered imaging studies, AFP lab tests, or an EGD.

In March 2021, the patient reported being hospitalized at a non-VA hospital in another state for an intra-abdominal bleed caused by a ruptured HCC. The patient was treated for HCC and was followed by both the [Oncology](#) and [Gastroenterology](#) Services at another VA medical center.

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<sup>12</sup> The early2018 note was an addendum to a Rural Hepatitis C Follow-Up Note. A letter was sent by the hepatology provider to the patient advising of the results of the CT scan and the need for an EGD in the summer.

<sup>13</sup> The OIG could not determine the exact date provider 1 left the facility but found the last documented acknowledgment by provider 1 in the patient's EHR was in August 2017. The OIG believes that provider 2 assumed responsibility for the patient's care after that date.

## Inspection Results

### 1. Care Coordination

Documentation contained within a patient's EHR facilitates communication and continuity of care amongst clinical staff. Documentation must include diagnoses, instructions, and planned follow-up care.<sup>14</sup>

#### **Allegation: Lack of Care Coordination**

The OIG substantiated that a lack of care coordination occurred when the patient transferred between primary care providers, and that the lack of care coordination contributed to the patient not receiving the recommended HCC surveillance or varices monitoring.

VHA requires that patients receive care that is coordinated so no lapses in care occur, relevant information is communicated between involved providers, and care is integrated to avoid missed opportunities and poor timing.<sup>15</sup> To complete a transfer of care from one provider to another provider, VHA requires a qualifying encounter (a scheduled appointment) to occur with the new provider.<sup>16</sup> "VHA considers this a 'warm handoff' from one PACT [Patient Aligned Care Team] team to the other and is ideal to optimally manage and coordinate health care for patients assigned to PACT." VISN policy, followed by the facility, allows patients to change providers because of a location change or for more complex reasons.<sup>17</sup> Allowing patients to change providers affords the patient an opportunity to engage "with a provider [the patients] are comfortable with and to make progress in their health goals."<sup>18</sup> The VISN requires providers ensure a smooth transition from one provider to another.<sup>19</sup>

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<sup>14</sup> VHA Handbook 1907.01, *Health Information Management and Health Records*, March 19, 2015, rescinded April 5, 2021; Facility Policy 136-15, *Health Information Management and Documentation*, April 10, 2014; Facility Policy 136-15, *Health Information Management and Documentation*, January 18, 2019. The two policies contain the same or similar language related to documentation.

<sup>15</sup> VHA Handbook 1101.10(1), *Patient Aligned Care Team (PACT) Handbook*, February 5, 2014, amended May 26, 2017.

<sup>16</sup> VHA Directive 1406, *Patient Centered Management Module (PCMM) for Primary Care*, June 20, 2017.

<sup>17</sup> VISN 19, *Primary Care Provider (PCP) Change Policy*. The VISN policy is undated and unsigned, but the OIG was told by the facility's Chief of Health Administration Services that the facility follows the VISN policy.

<sup>18</sup> VISN 19, *Primary Care Provider (PCP) Change Policy*.

<sup>19</sup> VISN 19, *Primary Care Provider (PCP) Change Policy*.

### *Provider 1*

The patient initially received outpatient care at the Pueblo Clinic and was seen by provider 1 once in May 2017.<sup>20</sup> During this appointment, provider 1 entered a hepatology consult requesting the patient be evaluated and considered for hepatitis C treatment.

### *Transition to Provider 2*

The OIG could not identify the exact date when the patient transitioned from provider 1 to provider 2.<sup>21</sup> In addition, the OIG found no documented evidence that provider 2 spoke with or met with the patient. However, when included as an additional signer on progress notes and secure messages, provider 2 signed the notes.<sup>22</sup>

The patient received hepatitis C treatment from September through November 2017. In March 2018, the hepatology provider documented that the patient completed hepatitis C treatment, reached an undetectable viral load, and that the patient's primary care provider would assume responsibility for the patient's HCC surveillance. The note included detailed HCC surveillance recommendations. Provider 2 was included as an additional signer and signed the note approximately one month after it was written. However, the OIG found no evidence that provider 2 discussed the surveillance recommendations with the patient or ordered imaging studies or lab tests.

### *Transition to Provider 3*

In late 2017, an EHR progress note stated that the patient requested a change of clinic location from the Pueblo Clinic to the Colorado Springs Clinic, and was reassigned from provider 2 to provider 3. The note instructed provider 3 to discuss the patient's care with provider 2, if appropriate. Provider 2 and provider 3 were included as additional signers to the progress note with provider 3 signing the note on the same day and provider 2 signing the note in April 2018. The OIG team found no documented evidence that provider 2 and provider 3 discussed the patient's care. Although the patient requested a transfer of care that resulted in a change of primary care provider, in accordance with VHA policy, provider 2 remained responsible for the patient's care until the initial appointment with provider 3 occurred in April 2018. During the patient's April 2018 appointment, provider 3 documented that the patient asked about being cured of hepatitis C. The patient's hepatitis C viral load was checked in July 2018 and remained undetectable. During an October 2018 follow-up appointment, provider 3 documented that the

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<sup>20</sup> Provider 1 no longer works for the facility. The OIG did not speak with this provider.

<sup>21</sup> The OIG could not determine when the first provider left the facility but found that the last acknowledgment by the provider within the patient's EHR occurred in August 2017.

<sup>22</sup> The OIG was told that provider 2 was a locum tenens (temporary) provider and was no longer employed at the facility. The OIG did not speak with this provider.

patient was “excited about hepatitis C cure.” The patient had two additional follow-up appointments with provider 3. The OIG found no documented evidence that provider 3 discussed the HCC surveillance recommendations with the patient or ordered imaging studies, AFP lab tests, or an EGD.

### *Transition to Provider 4*

In early 2020, an administrative note reflected that the patient requested a change of primary care provider and was reassigned to provider 4. The patient only met with provider 4 in February 2020.<sup>23</sup> The OIG found no documented evidence that provider 4 discussed the HCC surveillance recommendations with the patient or ordered imaging studies, AFP lab tests, or an EGD.

### *Transition to Provider 5*

In April 2020, provider 5 assumed care of the patient and provided care until the patient relocated to another VA medical center in March 2021.<sup>24</sup> In May 2020, provider 5 had a telephone visit with the patient. The OIG found no documented evidence that provider 5 addressed the HCC surveillance recommendations or ordered imaging studies, AFP lab tests, or an EGD during that appointment or subsequent appointments.

Between May 2017 and March 2021, the patient was assigned to five primary care providers. On two occasions the patient requested reassignment. The first occurred between December 2017 and April 2018 when the patient relocated from the Pueblo Clinic to the Colorado Springs Clinic, and the second occurred in February 2020 when the patient requested a different provider. The OIG team asserts that a patient-requested provider reassignment allows for communication between providers because both providers are informed of the reassignment and are currently employed at the facility. Although informal communication may have occurred between the providers, the OIG found no documented evidence of communication about the patient’s care between provider 2 and provider 3, or between provider 3 and provider 4. Of particular concern, provider 2 failed to communicate to provider 3 the HCC surveillance recommendations outlined in the March 2018 note and signed by provider 2, acknowledging receipt of the information, in April 2018. The OIG concluded that the lack of communication between the providers about the patient’s healthcare needs contributed to the absence of care coordination and the patient not receiving the recommended HCC surveillance or EGDs for varices monitoring.

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<sup>23</sup> The OIG was told that provider 4 left the facility after only a few months. The OIG did not speak with this provider.

<sup>24</sup> In March 2021, the patient reported moving from Colorado to another state and established care at a local VA medical center.

## **Related Concern: Incomplete Problem List Documentation**

The OIG found that primary care and hepatology providers at the facility did not maintain an accurate problem list for patients diagnosed with cirrhosis.

VHA and the facility require that providers develop a patient's problem list by the third visit or at the point the patient receives treatment, that the list is updated as necessary, and that the list include all known significant diagnoses.<sup>25</sup>

In 2017, the first provider referred the patient to the hepatology clinic for hepatitis C treatment. During the patient's June 2017 hepatology clinic appointment, the hepatology provider documented that the patient had a history of cirrhosis, and the diagnosis was confirmed through a liver CT scan. The hepatology provider updated the patient's problem list to include hepatitis C but did not add cirrhosis.

Although cirrhosis was mentioned in multiple progress notes, the OIG found that between July 2017 and March 2021, none of the patient's primary care or hepatology providers updated the problem list to include cirrhosis.

The OIG obtained the following information through interviews with facility staff and leaders. For unclear reasons, cirrhosis had not historically been included on patients' problem lists, including the aforementioned patient. Had cirrhosis been included on the problem list, it may have been an indication to primary care providers to consider HCC surveillance. Facility leaders expect a problem list to be current, useful, accurate, and complete. However, facility leaders recognized that the problem list was not being updated as it should, that all providers should update the problem list, and that primary care providers are the "custodians" of the problem list.

The OIG team reviewed the EHRs of 456 patients at the facility who received hepatitis C treatment to determine if the diagnoses of hepatitis C and cirrhosis, if applicable, were included in their respective problem lists. The OIG team found that 96 percent of the patients had hepatitis C included in the problem list; however, only 43 percent of the patients diagnosed with cirrhosis had cirrhosis included in the problem list.

The OIG concluded that primary care and hepatology providers at the facility followed VHA and facility requirements to update the patients' problem lists to include hepatitis C; however, these same providers failed to comply with policy when a patient was diagnosed with cirrhosis. Because cirrhosis was not included in the patient's problem list, the patient's primary care providers were missing an indication that HCC surveillance might have been needed. Had the patient's problem list included cirrhosis, the primary care providers may have initiated HCC surveillance, which may have led to an earlier HCC diagnosis and treatment.

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<sup>25</sup> VHA Handbook 1907.01. Facility Policy 136-15. A patient's problem list contains both active and inactive medical diagnoses and is dependent on the patient's providers to be updated and accurate.

## 2. HCC Surveillance and Varices Monitoring

Patients with cirrhosis are at the highest risk for developing HCC and varices. HCC surveillance and varices monitoring allows for early detection, diagnosis, and treatment. For patients diagnosed with cirrhosis, hepatology providers at the facility recommend the following for HCC surveillance and varices monitoring:

- twice a year abdominal imaging to include a [three-phase liver CT scan](#) (magnetic resonance imaging for patients with a history of renal disease), alternating with abdominal ultrasound;
- once a year AFP lab test; and
- a Gastroenterology Service consult for a repeat EGD per Gastroenterology recommendations.

### **Allegation: Lack of HCC Surveillance and Varices Monitoring for the Patient**

The OIG substantiated that a lack of HCC surveillance by some of the patient's primary care providers caused a delay in diagnosing the patient with HCC. In addition, providers did not consult Gastroenterology Service staff for repeat EGDs for varices monitoring. As previously mentioned, VHA follows the American Association for the Study of Liver Disease 2018 guidelines for the HCC surveillance of patients.<sup>26</sup>

In March 2018, the patient's hepatology provider documented HCC surveillance recommendations for the patient's primary care provider to follow, which included

- abdominal imaging, twice a year, to include a three-phase liver CT scan alternating with an abdominal ultrasound; and
- an annual AFP lab test.

An additional recommendation was made for the primary care provider to consult Gastroenterology Service staff for a repeat EGD for varices monitoring.

The progress note included the date and findings of the patient's last CT scan and EGD and stated that the patient was due for the next imaging study and an EGD in July 2018. Provider 2 was included as an additional signer and signed the progress note approximately one month after it was written. Based on the recommended HCC surveillance and repeat EGD for varices monitoring, the OIG calculated that between July 2018 and March 2021, the patient should have

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<sup>26</sup> The U.S. Preventive Services Task Force has not issued recommendations for HCC surveillance.

received six imaging studies, two AFP lab tests, and one EGD.<sup>27</sup> The OIG team found no documented evidence that the patient's primary care providers ordered, or that the patient received, the recommended imaging studies or lab tests.

The OIG identified that provider 2 missed an opportunity to initiate the HCC surveillance by not entering orders for the imaging study due in July 2018 or for the AFP lab tests. Although the patient transferred to provider 3, the OIG was told that if provider 2 had entered the orders provider 3 would have received the results and may have continued with the HCC surveillance. For varices monitoring, an EGD had been ordered by a Gastroenterology Service provider for July 2018, but was cancelled because scheduling staff could not reach the patient. The OIG found that no further orders were entered for an EGD.

Provider 3 told the OIG team that information on the recommendations were "lost on transfer." Although provider 2 failed to communicate the recommendations to provider 3, the OIG asserts that provider 3 was still responsible for reviewing the patient's EHR and providing appropriate care.

Through interviews, the OIG was told the following information. Facility leaders have an unwritten expectation that primary care providers conduct a thorough historical review of the patient's EHR starting with the most recent annual note and any subsequent notes in order to gain an understanding of the patient's past and current medical problems. However, provider 3 and provider 5 did not conduct historical reviews of the patient's EHR, but instead focused on current issues and problems identified by the patient. Provider 3's practice was to address current concerns and stated, "We review what we can, but we rely on the patients to give us information."

As previously noted, the hepatology provider documented recommendations regarding HCC surveillance and a repeat EGD for varices monitoring in March 2018. Provider 3 assumed care of the patient 55 days after the initial recommendations. In June 2018, provider 3 was added as an additional signer and signed an addendum to the March 2018 note. During an interview, provider 3 could not remember whether the entire March 2018 note was reviewed or just the June addendum, but could recall that the hepatologist was not concerned with the finding of the January 2018 CT scan.

Based on OIG medical experts' opinions, the OIG asserts that it is a reasonable expectation that provider 3 should have reviewed (1) the previous annual primary care note from May 2017, (2) the March 2018 note either prior to or after seeing the patient in April 2018, and (3) the entire March 2018 note when signing the June addendum. The OIG asserts that providers 4 and 5 did not carry the same responsibility to have reviewed the March 2018 note. Instead, it would be a

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<sup>27</sup> Imaging studies should have been completed in July 2018, January and July 2019, January and July 2020, and January 2021. AFP lab tests should have been completed in 2019 and 2020. An EGD was due in July 2018 and the results would have determined when the next EGD would be needed.

reasonable expectation for them to have reviewed the primary care note written prior to taking over the patient's care, which did not contain information about the need for HCC surveillance or varices monitoring.

The OIG concluded that provider 2 missed an opportunity to initiate HCC surveillance recommendations by not entering orders for an imaging study due in July 2018 or for the AFP lab tests. Although the patient was reassigned, provider 3 would have received the results and may have continued with the HCC surveillance. Provider 3 failed to review the patient's recent medical history, which provided information about the patient's hepatitis C diagnosis, treatment, and the need for HCC surveillance and a repeat EGD for varices monitoring. As a result, the patient did not receive the recommended HCC surveillance or repeat EGDs for varices monitoring. In the spring of 2021, the patient was hospitalized at a non-VA hospital for an intra-abdominal bleed caused by a ruptured HCC.

### **Related Concern: Lack of HCC Surveillance and Varices Monitoring for Additional Patients**

Based on the identified failure to conduct HCC surveillance and varices monitoring, the OIG had concerns regarding whether the lack of HCC surveillance and varices monitoring was a systemic issue and not just an isolated event. As such, the OIG identified and reviewed 79 patients at the facility who had successfully completed hepatitis C treatment, were diagnosed with cirrhosis, and required HCC surveillance, and 54 patients at the facility who required varices monitoring.<sup>28</sup> HCC surveillance was conducted by either primary care providers or hepatology providers, with primary care providers responsible for 45 patients (57 percent) and hepatology providers responsible for 34 patients (43 percent). The OIG found the following results:

- Imaging Studies<sup>29</sup>
  - 59 patients (75 percent) received either all or some of the recommended imaging studies.
  - 20 patients (25 percent) received none of the recommended imaging studies.
- AFP Lab Test
  - 50 patients (63 percent) received either all or some of the recommended AFP lab tests.
  - 29 patients (37 percent) received none of the recommended AFP lab tests.

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<sup>28</sup> Between January 1, 2018, and May 31, 2021, 456 patients received hepatitis C treatment. The OIG conducted a review of those patients and identified 79 as needing HCC surveillance.

<sup>29</sup> The OIG team defined partial as the patient receiving at least one imaging or one AFP lab test.

In addition, the OIG team identified seven of the 79 patients were diagnosed with HCC. Six of the patients had received at least some imaging studies and AFP lab tests. One patient had received no HCC surveillance.

Of the 79 patients, 54 required EGDs for varices monitoring. Of those 54 patients, the OIG found that 43 patients (80 percent) received the recommended EGDs for varices monitoring; however, 11 patients (20 percent) were either overdue for an EGD or had not had an EGD.

Through interviews, the OIG was told that the lack of HCC surveillance was not unique to the patient or to the facility. Leaders from the National Hepatic Innovation Team (HIT) Collaborative explained some reasons for the low HCC surveillance rates across VHA, including (1) the burden on primary care providers to order and monitor twice a year imaging studies and annual AFP lab tests, (2) the burden on patients to attend multiple appointments, (3) scheduling challenges, and (4) confusion over who was responsible for the patients' HCC surveillance.<sup>30</sup>

The OIG team concluded that primary care providers and hepatology providers did not consistently follow the HCC surveillance recommendations and, as a result, some patients did not receive imaging studies and AFP lab tests. Seven patients were diagnosed with HCC and one of those patients did not receive any HCC surveillance. In addition, 11 patients required EGDs for varices monitoring and were either overdue or had none on file.

## Conclusion

The OIG substantiated that a lack of care coordination occurred when the patient transferred between primary care providers. Overall, the patient was assigned to five primary care providers from May 2017 through March 2021. The patient requested reassignment two times, and on both occasions, the OIG found no documented evidence that a discussion occurred between primary care providers regarding the patient's medical needs. While assigned to provider 2, the patient completed hepatitis C treatment. In March 2018, the hepatology provider documented detailed recommendations for HCC surveillance and an EGD for varices monitoring. Provider 2 signed the March 2018 note acknowledging the recommendations. However, when the patient was reassigned to provider 3, the OIG found no documented communication between provider 2 and provider 3 about the recommendations. The lack of care coordination contributed to the patient not receiving the recommended HCC surveillance or varices monitoring.

The OIG found that the patient's problem list was updated to include hepatitis C by the hepatology provider, but cirrhosis was not included. Through interviews, the OIG was told that, in general, the updating of patient problem lists was inconsistent. The OIG reviewed 456 patients

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<sup>30</sup> The HIT collaborative was established between 2014 and 2015 with the focus on getting veterans tested for hepatitis C and treated, if applicable. Once testing and treatment for hepatitis C was accomplished, the HIT collaborative changed their focus to looking at veterans that had developed cirrhosis from hepatitis C and monitoring those patients for liver cancer (HCC) and varices.

at the facility who received hepatitis C treatment and found that 96 percent of the patients had hepatitis C included in their problem list; however, for those diagnosed with cirrhosis, only 43 percent had cirrhosis included in their problem list. Because cirrhosis was not included in the aforementioned patient's problem list, the patient's primary care providers missed an indication that HCC surveillance might have been needed. Had the problem list included cirrhosis, the patient's primary care providers may have initiated HCC surveillance, which may have led to an earlier HCC diagnosis and treatment.

The OIG substantiated that the patient did not receive the recommended HCC surveillance, which caused a delay in diagnosing the patient with HCC. In addition, the primary care providers did not consult Gastroenterology Service staff regarding EGDs for varices monitoring. Provider 2 missed an opportunity to initiate HCC surveillance by not entering orders for an imaging study and AFP lab test after signing the March 2018 note that outlined the HCC surveillance recommendations. Provider 2 also failed to communicate the March 2018 note recommendations to provider 3. In addition, provider 3 failed to conduct a historical review of the patient's EHR and instead focused on current issues or problems identified by the patient. The OIG asserts that it is a reasonable expectation that provider 3 would have reviewed the patient's previous annual primary care note and the March 2018 note when assuming responsibility for the patient's care, and that the March 2018 note should have been reviewed when provider 3 was included as an additional signer to a June addendum. In addition, although a July 2018 EGD was discontinued because scheduling staff could not reach the patient, provider 3 did not follow up with the patient regarding the need for an EGD for varices monitoring. As a result, the patient did not receive the recommended HCC surveillance or EGDs for varices monitoring. Ultimately, in the spring of 2021, the patient was hospitalized for an intra-abdominal bleed caused by a ruptured HCC.

The OIG found that primary care and hepatology providers at the facility did not follow general HCC surveillance recommendations. Of the 79 patients requiring HCC surveillance, 20 patients did not receive any imaging studies and 29 patients did not receive any AFP lab tests. Seven patients were diagnosed with HCC, with one of the patients not receiving any HCC surveillance. In addition, 11 of the 54 patients who required EGDs for varices monitoring were either overdue for an EGD or had not had an EGD. Based on interviews, the OIG learned that the lack of HCC surveillance was not unique to the patient or to the facility. Leaders from the National HIT Collaborative explained that there were many reasons for the low compliance rate including the burden on primary care providers and patients.

## Recommendations 1–6

1. The VA Eastern Colorado Health Care System Director reviews the transition in care process for patients transferring between primary care providers to ensure continuous care that facilitates communication and avoids missed opportunities, and takes action as warranted.
2. The VA Eastern Colorado Health Care System Director ensures that providers develop and update patient problem lists as required and monitors compliance.
3. The VA Eastern Colorado Health Care System Director ensures that primary care providers are educated on the expectations of reviewing a patient’s electronic health record when assuming care of an established patient.
4. The VA Eastern Colorado Health Care System Director conducts a clinical review of the patient’s care by the primary care providers, determines if an adverse event occurred, and takes action as warranted.
5. The VA Eastern Colorado Health Care System Director conducts a clinical review of the patient identified during the inspection who did not receive hepatocellular carcinoma surveillance or varices monitoring, determines if an adverse event occurred, and takes action as warranted.
6. The VA Eastern Colorado Health Care System Director ensures that patients requiring hepatocellular carcinoma surveillance and varices monitoring receive the recommended imaging studies, lab tests, and esophagogastroduodenoscopies, and monitors compliance.

## Appendix A: VISN Director Memorandum

### Department of Veterans Affairs Memorandum

Date: December 16, 2021

From: Director, Rocky Mountain Network (10N19)

Subj: Healthcare Inspection—Lack of Care Coordination and Hepatocellular Carcinoma Surveillance of a Patient at the VA Eastern Colorado Health Care System in Aurora

To: Director, Office of Healthcare Inspections (54HL08)  
Director, GAO/OIG Accountability Liaison office (VHA 10BGOAL Action)

1. I have reviewed the findings, recommendations, and action plan of the Eastern Colorado Health Care System. I am in agreeance with the above.

*(Original signed by:)*

Ralph T. Gigliotti, FACHE  
VISN 19, Network Director

## Appendix B: Facility Director Memorandum

### Department of Veterans Affairs Memorandum

Date: December 7, 2021

From: VA Eastern Colorado Health Care System (554/00)

Subj: Healthcare Inspection—Lack of Care Coordination and Hepatocellular Carcinoma Surveillance of a Patient at the VA Eastern Colorado Health Care System in Aurora

To: Network Director, VA Rocky Mountain Network (10N19)

1. We appreciate the opportunity to work with the Office of Inspector General as we continuously strive to improve the quality of healthcare for America's Veterans.
2. Please see the attached responses.
3. If you have any questions, please contact Chief, Quality Safety and Value Service or the VISN 19 Quality Management Specialist.

*(Original signed by:)*

Michael T. Kilmer  
Director

Attachment—Director's Responses

## Facility Director Response

### Recommendation 1

The VA Eastern Colorado Health Care System Director reviews the transition in care process for patients transferring from between primary care providers to ensure continuous care that facilitates communication and avoids missed opportunities, and takes action as warranted.

Concur.

Target date for completion: no later than (NLT) March 30, 2022.

### Director Comments

Bylaws and Rules of the Medical Staff and Medical Center Policy (MCP) 11-51 Patient Hand-off Communication addresses communications.

Actions: The Associate Chief of Staff (ACOS), Primary Care, ACOS, Medicine Service, and ACOS, Surgery Service will have on the agenda and communicate expectations on patient transfers through the following forums: discussion at the March 11, 2022 All Medical Staff meeting; ACOS - Section Chiefs meetings; and 1:1 provider supervisor/employee meetings. At least 90 percent (to allow for Family and Medical Leave Act (FMLA) leave, maternity/fraternity leave, etc.) of primary care and specialty providers will receive this information. Measurement of the communication will be via agenda/sign-in sheets and TEAMS [instant messaging tool] meetings attendance rosters. If providers are unable to attend, the communication will be provided by the section chiefs via email with confirmed read receipt. The confirmation proof will be compiled and sent to Quality Safety and Value Service representatives to forward to the VISN and OIG.

### Recommendation 2

The VA Eastern Colorado Health Care System Director ensures that providers develop and update patient problem lists as required and monitors compliance.

Concur.

Target date for completion: NLT March 30, 2022.

### Director Comments

Bylaws and Rules of the Medical Staff, page 76, The Joint Commission (TJC) E-dition RC.02.01.01 and MCP 136-15 4.c. address updating the problem list.

Actions: In this case, the specialist would be responsible for updating the problem list and modify during care and the course of the disease process. In addition, specialists may copy by adding the Primary Care Provider as an electronic recipient in progress notes where a new

diagnosis is identified to ensure continuity of care between the specialist and Primary Care as needed or for situational awareness. The Deputy Chiefs of Staff (DCOS) will communicate to all primary care and specialty providers the problem list responsibilities, to include perusal of problem lists in Joint Legacy View (JLV), at the All Medical Staff Meeting in March and email return receipt for those who cannot attend meetings in person. The confirmation proof will be compiled and sent to Quality Safety and Value Service representatives to forward to the VISN and OIG.

### **Recommendation 3**

The VA Eastern Colorado Health Care System Director ensures that primary care providers are educated on the expectations of reviewing a patient's electronic health record when assuming care of an established patient.

Concur.

Target date for completion: NLT March 30, 2022.

#### **Director Comments**

Bylaws and Rules of the Medical Staff addresses our commitment to zero harm. Reviewing the patient's record when assuming care can greatly aid in preventing harm.

Action: The DCOS will address the systems issue for this case. The recommendations were in a note that is not found under "gastroenterology" or in "hepatology". Instead, the note is several pages down under "rural". The DCOS will work through specialty providers and Informatics to determine a corrective action (e.g. templated note). This corrective action will be reported to the VISN and OIG.

### **Recommendation 4**

The VA Eastern Colorado Health Care System Director conduct a clinical review of the patient's care by the primary care providers, determines if an adverse event occurred, and takes action as warranted.

Concur.

Target date for completion: NLT March 30, 2022.

#### **Director Comments**

Clinical reviews are conducted via multiple routes. For example, per MCP 11-6 Professional Practice Evaluation, Peer Review for Quality Management, and Joint Patient Safety Reporting inquiries.

Actions: The ACOS, Primary Care, ACOS, Medicine Service, and ACOS, Surgery Service will ensure their respective section chiefs/supervisors evaluate employees on follow up care/surveillance activities. The specialty and primary care section chiefs/supervisors will also assess the performance of those directly involved in this case. The section chiefs will conduct random audits of five percent of hepatocellular carcinoma patients from fiscal year (FY) 22 quarter (Q)1 to FY22 Q2.

## **Recommendation 5**

The VA Eastern Colorado Health Care System Director conducts a clinical review of the patient identified during the inspection who did not receive hepatocellular carcinoma surveillance or varices monitoring, determines if an adverse event occurred, and takes action as warranted.

Concur.

Target date for completion: Peer Review Committee, September 17, 2021

The OIG considers this recommendation open to allow time for the submission of documentation to support closure.

## **Director Comments**

The Peer Review Committee reviewed this case in September 2021 in accordance with VHA Directive 1190.

Actions:

It was recognized internally that monitoring of patients with cirrhosis is on the fringe of Primary Care scope. In this case, the patient was Child-Pugh B and Model for End-Stage Liver Disease (MELD) score 10. Current guidelines would suggest routine follow up in Gastroenterology.

Further systems issues will be addressed via the Peer Review Committee and the DCOS. These actions will be reported to OIG via VISN.

## **Recommendation 6**

The VA Eastern Colorado Health Care System Director ensures that patients requiring hepatocellular carcinoma surveillance and varices monitoring receive the recommended imaging studies, lab tests, and esophagogastroduodenoscopies, and monitors compliance.

Concur.

Target date for completion: NLT June 30, 2022.

## Director Comments

Gastroenterology/Hepatology presently communicates with Primary Care when a hepatitis C and/or cirrhosis patient is discharged back to their service utilizing a Computerized Patient Record System (CPRS) template.

Due to the complexity, Gastroenterology/Hepatology/Oncology/Interventional Radiology manage all HCC patients (varices monitoring and serial lab or imaging tests).

Action:

1. By February 1, 2022, GI/Hepatology will collaborate with Primary Care to modify the current CPRS template used to discharge back or retain hepatitis C and/or cirrhosis patients to the Primary Care Service. The revised template will include the plan of care and surveillance recommendations. In addition, Medicine Service and Primary Care Service will consider the use of a service-level agreement regarding which patients are and are not appropriate for follow-up in Primary Care.
2. A prospective review of all GI/Hepatology patients who are treated for hepatitis C and/or cirrhosis and "handed off" to Primary Care using the revised template will be completed between February 15, 2022 through June 30, 2022. The review will assess if ongoing surveillance recommendations are initiated and/or completed as specified. May need to consider a database or registry type of tracking of this patient population to ensure testing and laboratory compliance depending on service level agreement scope.

## Glossary

*To go back, press “alt” and “left arrow” keys.*

**alpha-fetoprotein.** A fetal blood protein that presents abnormally in adults with some forms of cancer (as of the liver).<sup>1</sup>

**anemia.** “A condition in which [a person] lack[s] enough healthy red blood cells to carry adequate oxygen to [the] body’s tissues.”<sup>2</sup>

**biopsy.** The removal and examination of tissue, cells, or fluids from the living body.<sup>3</sup>

**cirrhosis.** “A late stage of scarring (fibrosis) of the liver caused by many forms of liver diseases and conditions, such as hepatitis and chronic alcoholism.”<sup>4</sup>

**colonoscopy.** “An exam used to detect changes or abnormalities in the large intestine (colon) and rectum.”<sup>5</sup>

**computerized tomography.** “Combines a series of x-ray images taken from different angles [of the] body and uses computer processing to create cross-sectional images (slices) of the bones, blood vessels and soft tissues.”<sup>6</sup>

**diabetes.** “An impairment in the way the body regulates and uses sugar (glucose) as fuel.”<sup>7</sup>

**duodenal.** The first part of the small intestine.<sup>8</sup>

**elbasvir/grazoprevir (Zepatier).** A combination medication that is used with or without a third medication to treat chronic hepatitis C infection.<sup>9</sup>

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<sup>1</sup> Merriam-Webster.com Dictionary, “alpha-fetoprotein,” accessed June 1, 2021, <https://www.merriam-webster.com/dictionary/alpha-fetoprotein>.

<sup>2</sup> Mayo Clinic, “anemia,” accessed September 15, 2021, <https://www.mayoclinic.org/diseases-conditions/anemia/symptoms-causes/syc-20351360>.

<sup>3</sup> Merriam-Webster.com Dictionary, “biopsy,” accessed September 15, 2021, <https://www.merriam-webster.com/dictionary/biopsy>.

<sup>4</sup> Mayo Clinic, “cirrhosis,” accessed May 25, 2021, <https://www.mayoclinic.org/diseases-conditions/cirrhosis/symptoms-causes/syc-20351487>.

<sup>5</sup> Mayo Clinic, “colonoscopy,” accessed September 15, 2021, <https://www.mayoclinic.org/tests-procedures/colonoscopy/about/pac-20393569>.

<sup>6</sup> Mayo Clinic, “computerized tomography,” accessed June 1, 2021, <https://www.mayoclinic.org/tests-procedures/ct-scan/about/pac-20393675>.

<sup>7</sup> Mayo Clinic, “diabetes,” accessed September 15, 2021, <https://www.mayoclinic.org/diseases-conditions/type-2-diabetes/symptoms-causes/syc-20351193>.

<sup>8</sup> Merriam-Webster.com Dictionary, “duodenal,” accessed September 15, 2021, <https://www.merriam-webster.com/dictionary/duodenal>.

<sup>9</sup> Mayo Clinic, “Elbasvir/Grazoprevir,” accessed June 1, 2021, <https://www.mayoclinic.org/drugs-supplements/elbasvir-grazoprevir-oral-route/description/drg-20311292>.

**esophagogastroduodenoscopy.** A procedure that uses a camera attached to a long, flexible scope to examine, diagnose, and treat conditions that affect the upper digestive tract.<sup>10</sup>

**gastroenterology.** A branch of medicine concerned with the structure, functions, diseases, and pathology of the stomach and intestines.<sup>11</sup>

**hemoglobin.** A protein of red blood cells that contains iron and carries oxygen from the lungs to the tissues and carbon dioxide from the tissues to the lungs.<sup>12</sup>

**hepatitis C.** “A viral infection that causes liver inflammation, sometimes leading to serious liver damage.”<sup>13</sup>

**hepatocellular carcinoma.** A common type of liver cancer that most often occurs when chronic liver disease, such as cirrhosis caused by hepatitis C infection, is present.<sup>14</sup>

**high blood pressure (hypertension).** “A common condition in which the long-term force of the blood against...artery walls is high enough that it may eventually cause health problems, such as heart disease.”<sup>15</sup>

**magnetic resonance imaging.** “A medical imaging technique that uses a magnetic field and computer-generated radio waves to create detailed images of the organs and tissues in [the] body.”<sup>16</sup>

**oncology.** A branch of medicine concerned with the prevention, diagnosis, treatment, and study of cancer.<sup>17</sup>

**three-phase liver CT scan.** A series of x-ray images taken that includes “an early arterial phase, a late arterial phase and a portal venous phase.”<sup>18</sup>

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<sup>10</sup> Mayo Clinic, “Upper Endoscopy,” accessed September 8, 2021, <https://www.mayoclinic.org/tests-procedures/endoscopy/about/pac-20395197>.

<sup>11</sup> Merriam-Webster.com Dictionary, “gastroenterology,” accessed September 15, 2021, <https://www.merriam-webster.com/dictionary/gastroenterology>.

<sup>12</sup> Merriam-Webster.com Dictionary, “hemoglobin,” accessed September 15, 2021, <https://www.merriam-webster.com/dictionary/hemoglobin>.

<sup>13</sup> Mayo Clinic, “Hepatitis C,” accessed May 25, 2021, <https://www.mayoclinic.org/diseases-conditions/hepatitis-c/symptoms-causes/syc-20354278>.

<sup>14</sup> Mayo Clinic, “hepatocellular carcinoma,” accessed May 25, 2021, <https://www.mayoclinic.org/diseases-conditions/hepatocellular-carcinoma/cdc-20354552>.

<sup>15</sup> Mayo Clinic, “high blood pressure (hypertension),” accessed September 15, 2021, <https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/symptoms-causes/syc-20373410>.

<sup>16</sup> Mayo Clinic, “MRI,” accessed June 1, 2021, <https://www.mayoclinic.org/tests-procedures/mri/about/pac-20384768>.

<sup>17</sup> Merriam-Webster.com Dictionary, “oncology,” accessed September 15, 2021, <https://www.merriam-webster.com/dictionary/oncology>.

<sup>18</sup> A. Laghi et al., “Hepatocellular Carcinoma: Detection with Triple-Phase Multi-Detector Row Helical CT in Patients with Chronic Hepatitis,” *Radiology*, (February 2003), 543 – 549.

**ultrasound.** “An imaging method that uses high-frequency sound waves to produce images of structures within [a] body. ... for diagnosing and treating a variety of diseases and conditions.”<sup>19</sup>

**varices.** “Enlarged veins (varices) in the esophagus (esophageal varices) or the stomach (gastric varices) and lead to life threatening bleeding.”<sup>20</sup>

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<sup>19</sup> Mayo Clinic, “ultrasound,” accessed June 1, 2021, <https://www.mayoclinic.org/tests-procedures/ultrasound/about/pac-20395177>.

<sup>20</sup> Mayo Clinic, “cirrhosis,” accessed May 25, 2021, <https://www.mayoclinic.org/diseases-conditions/cirrhosis/symptoms-causes/syc-20351487>.

## OIG Contact and Staff Acknowledgments

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