

DEPARTMENT OF VETERANS AFFAIRS

OFFICE OF INSPECTOR GENERAL

Office of Healthcare Inspections

VETERANS HEALTH ADMINISTRATION

Delays in Diagnosis and Treatment and Concerns of Medical Management and Transfer of Patients at the Fayetteville VA Medical Center

North Carolina



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Executive Summary

The VA Office of Inspector General (OIG) conducted a healthcare inspection to determine the validity of allegations regarding a delay in the diagnosis and treatment of a patient's (Patient A) leukemia at the Fayetteville VA Medical Center (facility) in North Carolina.

The OIG identified additional concerns related to

- Patient A's medical management and inter-facility transfer,
- A second patient's (Patient B) hospital admission and inter-facility transfer,
- Leadership and quality management oversight,
- Oversight of resuscitation efforts,
- Ongoing professional practice evaluations (OPPE) for solo practitioners, and
- Inter-facility transfer data and evaluation.

The OIG determined that a primary care provider (PCP)1 failed to take action on Patient A's abnormal laboratory results and pathologists' recommendations. PCP 1 reported not taking action because the main components of the blood test were within normal limits, but acknowledged this was an oversight. From early 2014 through summer 2016, PCP 1 was responsible for the patient's overall healthcare management including routine visits and laboratory testing. During this period, Patient A had abnormal blood test results prompting the facility's pathologists to recommend follow-up testing and hematology consultation. PCP 1 did not acknowledge or act on any of the abnormal blood test results or the pathologists' recommendations. As a result, Patient A was not afforded the opportunity for earlier evaluation and potential treatment.

The OIG was unable to determine whether there was a delay in diagnosing and treating Patient A for leukemia by the hematologist, as it is unknown if the results of a bone marrow biopsy completed earlier in 2018 would have yielded a definitive diagnosis and afforded the patient viable treatment options. In early 2018, the facility hematologist met with Patient A and ordered tests to determine the cause of the abnormal blood test results. A review of medical literature suggested that when blood abnormalities with monocytosis are present for greater than three months, a bone marrow biopsy should be considered to evaluate for chronic myelomonocytic

¹ Health; Johns Hopkins Medicine Online, *Pathologist*. A pathologist is a physician who examines bodies, body tissues, and is responsible for performing lab tests. https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/the-pathologist. (The website was accessed on October 29, 2019.)

² American Society of Hematology, *What is Hematology?* Hematology is "the study of blood in health and disease." A hematologist is a medical doctor who applies this specialized knowledge to treat patients with blood conditions. https://hematology.org/Patients/Blood-Disorders.aspx. (The website was accessed on October 29, 2019.)

leukemia (CMML) or related blood cancer cells or both.³ The hematologist chose to continue monitoring Patient A's symptoms and laboratory results throughout 2018, rather than conduct a bone marrow biopsy earlier that year, due to the negative results from tests commonly used in diagnosing many blood-related cancers. In late 2018, the hematologist performed a bone marrow biopsy; the biopsy results indicated the likely diagnosis of CMML.

Following the bone marrow biopsy, the hematologist referred Patient A to Community Care for diagnostic confirmation and treatment recommendations. The OIG determined that the facility's Community Care staff did not comply with Veterans Health Administration policy in processing the consult and scheduling the patient's Community Care appointment. The Chief, Community Care acknowledged that facility staff were responsible for contacting Patient A to schedule the appointment but could not provide an explanation for why this did not occur.

In early 2019, Patient A was admitted to the facility's Intensive Care Unit (ICU) for treatment of pneumonia. Three days later, the patient developed a gastrointestinal bleed. Facility providers initiated an inter-facility transfer to evaluate the source of bleeding. While awaiting transfer to the community hospital, the patient became unresponsive, a code blue was called, and resuscitation was initiated. The patient did not respond to the resuscitative efforts and expired on hospital day 4. The OIG determined that Patient A's transfer from the facility to a community hospital was delayed, and that a hospitalist (Hospitalist 3) failed to expedite the inter-facility transfer by initiating the hospital's emergent transfer protocol. Hospitalist 3 reported being unaware of the emergent transfer protocol within the facility's transfer policy. The OIG was unable to verify if Hospitalist 3 had received training on the inter-facility transfer process, as the facility did not have or maintain transfer training documentation.

Patient B was admitted to the facility after presenting to the facility's Urgent Care Center with intermittent chest pain. During the review of Patient B's episode of care, the OIG found the

³ Patnaik, Mrinal M. et.al. *Chronic Myelomonocytic Leukemia: Focus on Clinical Practice*, Mayo Clinic Proceedings, Volume 91, Issue 2, 259-272. https://www.mayoclinicproceedings.org/article/S0025-6196(15)00934-9/pdf. (The website was accessed on November 25, 2019.) Merriam-Webster. *Definition of monocytosis*. Monocytosis is an abnormal increase in the number of monocytes circulating in the blood. https://www.merriam-webster.com/medical/monocytosis. (The website was accessed on October 31, 2019.) Leukemia & Lymphoma Society, *Chronic Myeloid Leukemia Diagnosis*. A bone marrow biopsy is a test conducted to examine bone marrow cells to find abnormalities. https://www.lls.org/leukemia/chronic-myeloid-leukemia/diagnosis. (The website was accessed on December 1, 2019.) National Cancer Institute, *Chronic Myelomonocytic Leukemia*. CMML is a slow developing type of cancer "in which too many myelomonocytes (a type of white blood cell) are in the bone marrow, crowding out other normal blood cells, such as other white blood cells, red blood cells, and platelets." https://www.cancer.gov/publications/dictionaries/cancer-terms/def/cmml. (The website was accessed on October 24, 2019.)

⁴ University of California, San Diego Department of Medicine, *What is a hospitalist?* Within the context of this report, a hospitalist is a physician whose primary professional focus is the general medical care of hospitalized patients. https://medschool.ucsd.edu/som/obgyn/divisions/Pages/Hospitalist.aspx. (The website was accessed on March 4, 2019.)

facility did not have a comprehensive process or policy that accurately reflected hospital or ICU admission criteria. The current policy did not align with the facility's practice or capabilities in light of the operating room suspension and reduction of specialty services in 2015, and decreased ICU capacity from eight to two beds in 2016. Further, the OIG found that facility physicians and physician leaders lacked a shared understanding and agreement on the type of patients the facility could effectively and safely manage. The Chief of Medicine stated that facility leaders and providers had ongoing discussions regarding the facility's capabilities, but later acknowledged that "getting really sick patients out is a challenge." The former Chief of Staff agreed that the policy did not align with the facility's practice or capabilities and explained the policy was updated in preparation for the re-opening of the operating rooms and the ICU expansion.⁵

The OIG determined the Administrative Officer of the Day's (AOD) response to the 911 emergency medical services (EMS) dispatch call delayed Patient B's inter-facility transfer. An inter-facility community hospital transfer was later arranged, the patient was transported, arrived in cardiac arrest at the receiving hospital, and expired that day. The OIG was unable to conclude whether the delay impacted Patient B's outcome. The EMS dispatcher canceled the ambulance after the facility's AOD repeatedly informed the dispatcher that the 911 call violated inter-facility transfer rules. The Chief, Health Administration Service reported not completing a fact-finding review of the AOD's actions because the former Chief of Staff indicated there would be a clinical review of Patient B's transfer delay. The former Chief of Staff reported directing the Chiefs of Medicine and Health Administration Services to review departmental inter-facility transfer processes and re-educate the hospitalists and AODs on the process of calling 911 from the medical unit.

The OIG identified deficiencies in the facility's response to the events surrounding both patients' deaths. Despite recognizing there were system issues with the inter-facility transfer of inpatients with emergency medical conditions, facility leaders did not initiate a comprehensive analysis of the transfer process. The OIG determined that although the Critical Care Committee reviewed the code blue events, the OIG found the reviews to be insufficient. Committee leaders reported not being empowered to formalize recommendations or enforce actions. The OIG found the facility did not have stable executive leaders to ensure resolution of identified system issues.

The OIG determined that the hematologist's privilege-specific competency as evaluated through the OPPE process was not completed by a provider with similar training and privileges. The Chief of Medicine reported being unaware of OPPE evaluation requirements for solo practitioners. The former Chief of Staff acknowledged awareness of these requirements, reported the facility had arranged for another Veterans Health Administration medical center to complete the evaluations, and was unaware that the process had not been followed.

⁵ The former Chief of Staff, in place at the time of the patients' events, retired in summer 2019.

The OIG determined facility leaders failed to collect, monitor, or evaluate inter-facility transfer data. The Chiefs of Quality and Safety and Health Administration Service reported that the facility did not collect, monitor or evaluate inter-facility transfer data to review transfer efficiency or identify system improvements. The Chief, Quality and Safety thought that Health Administration Service was responsible for the data collection and did not know why the data had not been collected.

The OIG made 12 recommendations to the Facility Director related to abnormal laboratory results, institutional disclosure, Community Care consults, inter-facility transfer delays, policy updates, staff training, committee oversight, OPPE, and inter-facility data collection and analysis.

Comments

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

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Inspections

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Abbreviations

AOD Administrative Officer of the Day

CBC complete blood count

CMML chronic myelomonocytic leukemia

ECG electrocardiogram

EHR electronic health record

EMS emergency medical services

FPPE focused professional practice evaluation

GI gastrointestinal

ICU Intensive Care Unit

MDS myelodysplastic syndrome
OIG Office of Inspector General

OPPE ongoing professional practice evaluation

PCP primary care provider
UCC Urgent Care Center

VHA Veterans Health Administration

VISN Veterans Integrated Service Network



Introduction

The VA Office of Inspector General (OIG) conducted a healthcare inspection to determine the validity of allegations regarding a delay in the diagnosis and treatment of a patient's (Patient A) leukemia at the Fayetteville VA Medical Center (facility) in North Carolina.

Background

The facility is part of Veterans Integrated Service Network (VISN) 6, and has six community based outpatient clinics (located in Brunswick, Goldsboro, Hamlet, Jacksonville, Robeson County, and Sanford), two health care centers (located in Fayetteville and Wilmington), and an urgent care center (UCC) located on the facility's main campus in Fayetteville. The facility is a general medicine, surgery, and mental health facility. From October 1, 2017, through September 30, 2018, the facility served 75,112 patients and had a total of 129 hospital operating beds, including 60 inpatient beds and 69 community living center beds. The Veterans Health Administration (VHA) classifies the facility as Level 1c–mid complexity.²

In October 2015, the facility began an operating room construction project, which suspended all operative surgical capabilities. In November 2015, the Fayetteville Health Care Center became operational and began providing outpatient care, as well as some of the services and procedures no longer provided at the facility to include basic ambulatory surgeries and cystoscopies. In August 2016, a construction project began in the facility's Intensive Care Unit (ICU), which decreased bed capacity from six to two beds. As of November 2019, facility leaders and managers anticipated the operating rooms and the ICU to become operational in February 2020.

¹ VHA Directive 1229(1), *Planning and Operating Outpatient Sites of Care*, July 7, 2017, amended October 4, 2019, defines a community based outpatient clinic as an outpatient clinic that provides primary and mental health services and may include specialty or subspecialty services. A health care center is a clinic that provides primary and mental health care, "on site specialty services, and performs ambulatory surgery and/or invasive procedures, which may require moderate sedation or general anesthesia." VHA Directive 1101.05(2), *Emergency Services*, September 2, 2016. "An Urgent Care Center (UCC) provides acute medical care for patients without a scheduled appointment who are in need of immediate attention for an acute medical or mental health illness and/or minor injuries."

² The VHA Facility Complexity Model categorizes medical facilities 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 administratively complex. Level 3 facilities are the least complex. VHA Office of Productivity, Efficiency and Staffing. (The website was accessed on May 29, 2019, and is an internal VA website not publicly accessible.)

Executive Leadership

The facility's executive leadership team included the Director, Chief of Staff, Associate Director for Patient Care Services, Associate Director for Operations, and Assistant Director.³ However, only two of the executive leaders, the Associate Director for Patient Care Services and the Assistant Director, were in their positions during the identified patients' events. The Associate Director for Patient Care Services was appointed in September 2016, and the Assistant Director, a newly created position for the facility, was appointed in January 2019. Prior to the current Director's appointment in June 2019, the facility had four directors (two interim and two permanent) in less than two years. The former Chief of Staff, in place at the time of the patients' events, retired in summer 2019. At the time of the OIG's inspection, the Associate Director of Operations and the Chief of Staff positions were vacant and filled by acting or interim appointees.

Inter-Facility Transfer

An inter-facility transfer is "the movement of a patient from one medical institution to another to provide access to clinically required services or specific provider types." VHA policy acknowledges that these transfers are often necessary but also "exposes the patient to risks, while in some cases, failing to transfer a patient may be equally risky."

Leukemia

"Leukemia is a cancer of the early blood-forming cells," most often found in white blood cells. The type of leukemia and treatment is determined by whether it is acute (fast growing) or chronic (slower growing), and from what cells it develops.⁶

Chronic Myelomonocytic Leukemia

Chronic myelomonocytic leukemia (CMML) is a slow developing type of cancer "in which too many myelomonocytes (a type of white blood cell) are in the bone marrow, crowding out other normal blood cells, such as other white blood cells, red blood cells, and platelets." CMML is

³ Facility, *Leadership Team*. https://www.fayettevillenc.va.gov/about/leadership.asp. (The website was accessed on December 10, 2019.)

⁴ Facility Policy 136-27, Patient Transfer Coordination, January 29, 2015.

⁵ VHA Directive 1094, *Inter-Facility Transfer Policy*, January 11, 2017.

⁶ American Cancer Society, *Leukemia*. https://www.cancer.org/cancer/leukemia.html. (The website was accessed on October 28, 2019.)

⁷ National Cancer Institute, *Chronic Myelomonocytic Leukemia*, https://www.cancer.gov/publications/dictionaries/cancer-terms/def/cmml. (The website was accessed on October 24, 2019.)

diagnosed over a period of time using repeated tests showing abnormal blood counts. Stem cell transplant (often referred to as bone marrow transplant) is the only known cure for CMML. When stem cell transplant is not an option, the goal is to relieve symptoms while limiting complications and reducing side effects. Supportive care "such as blood transfusions, blood cell growth factors, and antibiotics to treat infections" is used to extend the lives of patients with CMML.

Prior OIG Reports

The OIG published two reports pertaining to the facility with the same or similar topics in 2016 and 2018.

The OIG report, Comprehensive Healthcare Inspection Program Review of the Fayetteville VA Medical Center, Fayetteville, North Carolina, was published in 2018 and included one recommendation related to ongoing professional practice evaluations (OPPE), two recommendations related to inter-facility transfers, and one recommendation related to patient safety. ¹⁰ As of July 30, 2019, these recommendations were closed.

The OIG report, *Surgical Service Concerns Fayetteville Medical Center, Fayetteville, North Carolina*, published in 2016, included one recommendation related to conducting peer reviews for quality management purposes.¹¹ As of January 19, 2018, this recommendation was closed.

Allegations and Related Concerns

On May 9, 2019, the OIG received a complaint alleging delays in diagnosing and treating Patient A's leukemia. The OIG reviewed Patient A's electronic health record (EHR) and determined that further review was warranted. The OIG identified additional concerns related to the medical management of Patient A's gastrointestinal (GI) bleed and coordination of the inter-facility transfer.

On May 22, 2019, the OIG opened a healthcare inspection. During the inspection, the OIG team identified additional concerns related to a second patient's (Patient B) hospital admission and

⁸ Leukemia & Lymphoma Society, *Chronic Myelomonocytic Leukemia Diagnosis*. https://www.lls.org/leukemia/chronic-myelomonocytic-leukemia/diagnosis. (The website was accessed on June 17, 2019.)

⁹ American Cancer Society, *General Approach to Treatment of Chronic Myelomonocytic Leukemia*, October 25, 2017. https://www.cancer.org/cancer/chronic-myelomonocytic-leukemia/treating/general-approach.html. (The website was accessed on October 28, 2019.)

¹⁰ VA Office of Inspector General, *Comprehensive Healthcare Inspection Program Review of the Fayetteville VA Medical Center, North Carolina, Report No. 17-01856-135, March 28, 2018.*

¹¹ VA Office of Inspector General, *Surgical Service Concerns Fayetteville VA Medical Center, Fayetteville, North Carolina*, Report No. 15-00084-370, September 30, 2016.

inter-facility transfer, leadership and quality management oversight, OPPE, and transfer data and evaluation.

Scope and Methodology

The OIG initiated a healthcare inspection on May 22, 2019, and conducted site visits July 30-August 1, and October 8–9, 2019. The OIG team interviewed the Facility Director (appointed June 2019); Acting Chief of Staff; Associate Director, Patient Care Services; Chiefs of Pathology, Medicine, Health Administration Service, Community Care, and Quality and Safety; relevant providers and clinical staff; the facility's Patient Safety Manager, Risk Manager, ICU Nurse Manager, Administrative Officers of the Day (AOD), and other relevant staff. The OIG interviewed the former Chief of Staff in place at the time of the patients' events.

The OIG team reviewed Patient A's and Patient B's EHR during time periods relevant to the OIG's inspection. ¹³ The OIG also reviewed relevant VHA and facility policies and procedures, nursing staff training records, provider privileging records, Community Care data, email communication, an emergency medical services (EMS) dispatch recording, relevant administrative reports and committee meeting minutes.

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.

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.

¹² VHA Directive 1232(2); VHA Office of Community Care, *Veteran Community Care Eligibility Fact Sheet.* Community care includes Non-VA Care Coordination, Choice, and Department of Defense Care. Patients are eligible for community care if they need a service not available at a VA medical facility. https://www.va.gov/COMMUNITYCARE/docs/pubfiles/factsheets/VA-FS_CC-Eligibility.pdf. (The website was accessed on August 30, 2019.)

¹³ The OIG team chose to delineate patients alphabetically and providers numerically and by specialty.

Patient Case Summaries

Patient A

Patient A, in their 60s, received care at the facility from 2006 until the patient's death in 2019.¹⁴ The patient had multiple medical problems including <u>diabetes</u>, high blood pressure, <u>dyslipidemia</u>, ongoing tobacco use, <u>glaucoma</u>, and <u>degenerative</u> joint disease with knee pain.

In summer 2014, Patient A completed laboratory testing including a complete blood count (CBC), ordered by the patient's primary care provider (PCP) 1. The CBC reported elevated monocytes, a type of white blood cell. The laboratory supervisor reviewed the results and documented "Monocytosis and immature granulocytes confirmed. Concur with results." Two pathologists, Pathologist 1 and Pathologist 2 reviewed the CBC noting abnormalities and documented "Monocytosis, shift to the left, immature granulocytes, rare dysplastic PMNs [polymorphonuclears] and giant platelets. Cannot rule out MDS [Myelodysplastic Syndrome] or Chronic Myelomonocytic Leukemia [CMML]. Recommend flow cytometry/bone marrow biopsy." Five days later, PCP 1 documented the portions of the CBC results that were normal, specifically the hemoglobin and hematocrit but did not comment on either the abnormal monocytosis or the pathologists' recommendations.

In spring 2015, Patient A completed another CBC test. Pathologist 2 documented agreement with the supervisor's review that noted "monocytosis and immature granulocytes confirmed" and "close follow-up indicated to rule out possible MDS or <u>myeloproliferative disorder</u>." The hemoglobin was within normal range, hematocrit was low, and the <u>platelet</u> count was normal.

Two days after Patient A completed the CBC test, PCP 1 met with the patient for a scheduled follow-up appointment and documented a review of the vital signs and laboratory results. The OIG team did not find EHR documentation that PCP 1 had noted the pathologist's recommendations or discussed the test results and recommendations with the patient. In late summer 2015, Patient A completed a repeat CBC test. The laboratory supervisor confirmed immature granulocytes. A different pathologist, Pathologist 3, documented agreement and noted, "[c]lose clinical follow-up indicated." PCP 1 documented the normal hemoglobin and low hematocrit but did not comment on the pathologist's findings.

A CBC was performed in spring 2016, as part of Patient A's scheduled six-month follow-up visit. Pathologist 3 again confirmed monocytosis with immature granulocytes and recommended a hematology-oncology consult to rule out MDS/myeloproliferative.neoplasm. PCP 1 noted a normal hemoglobin result. There was no documentation in the EHR that PCP 1 acknowledged or acted upon the pathologist's recommendation.

¹⁴ The OIG uses the singular form of their (they or them) to protect the patient's privacy.

In fall 2016, Patient A saw a new provider, PCP 2, for follow-up of medical problems. PCP 2 noted the spring 2016 laboratory results; however, no comment was made regarding the monocytosis. PCP 2 documented that labs and medications were reviewed, the patient was counseled to stop smoking, and follow-up appointments and laboratory tests were ordered.

In spring 2017, PCP 2 saw Patient A and ordered laboratory tests and a chest x-ray as part of a preoperative evaluation for a right knee joint replacement by a non-VA orthopedist. The patient's chest x-ray a few weeks later, did not show any acute pulmonary disease. The CBC noted a low hemoglobin and platelet count. The patient was notified by mail of abnormal blood test results, which indicated <u>anemia</u>. Immature granulocytes were noted, and Pathologist 3 again recommended a hematology-oncology consultation.

In summer 2017, PCP 2 saw the patient and ordered a CBC to recheck the hemoglobin and platelet count, as well as a special blood test, a <u>serum protein electrophoresis</u>, to evaluate for abnormal proteins and hematologic problems. The EHR noted that the platelet count was normal.

A few weeks later, PCP 2 placed an outpatient hematology-oncology consult at another VA facility to evaluate Patient A's anemia as well as the result of the serum immunoelectrophoresis test. PCP 2 called the patient and discussed laboratory results and a plan for a hematology consult. A provider from the requested VA facility completed an e-consult (electronic consult), eleven days after the consult was placed, indicated that the results were not consistent with myeloma or other type of lymphoid malignancy, that no further workup was recommended at that time, and to repeat the test in a year.

In late 2017, PCP 2 requested a second hematology-oncology consultation for evaluation of the patient's ongoing thrombocytopenia (low platelets). The consult was completed by the facility hematologist/oncologist (hematologist).

Approximately two weeks later, the hematologist met with Patient A and noted that the CBC results demonstrated a <u>leukocytosis</u> (an elevated white blood cell count) with monocytosis and immature white blood cells, low platelets, and anemia. The hematologist ordered additional tests, including a flow cytometry which was negative for neoplastic (cancerous) leukocytes and <u>BCR - ABL FISH</u>, and ruled out chronic myeloid leukemia. The following month, the hematologist ordered an <u>ultrasound</u> of the abdomen which indicated a fatty liver, kidney cysts, and a spleen that was borderline enlarged. Laboratory tests for hepatitis (viral infections of the liver) and vitamin deficiencies were unremarkable. The hematologist reassessed the patient in spring 2018, attributing the abnormalities of the CBC results including leukocytosis, low platelets, and anemia to the patient's multiple disease processes and ordered additional tests.

In early summer 2018, PCP 2 consulted <u>gastroenterology</u> for Patient A's complaint of <u>anorexia</u> and reflux. In late summer 2018, the <u>gastroenterologist</u> performed an <u>esophagogastroduodenoscopy</u>, a procedure using a special light and endoscope to evaluate and biopsy the patient's stomach. <u>Gastritis</u> and reflux were noted; however, no malignancies were noted.

In late fall 2018, the hematologist noted a "persistent and progressive leukocytosis with monocytosis" and recommended that the patient have a bone marrow biopsy to rule out a myeloproliferative disorder.

In late 2018, the hematologist performed a <u>bone marrow aspirate and biopsy</u> for evaluation of the leukocytosis with monocytosis. That same month, the hematologist explained the likely diagnosis and treatment of CMML with the patient and family member during an outpatient clinic visit. The hematologist ordered a routine Community Care Hematology-Oncology consult (Community Care consult) to confirm the diagnosis and for further treatment recommendations.

The month following the bone marrow aspiration, Patient A presented to the facility's UCC with complaints of weight loss, a two-week history of a <u>nonproductive cough</u>, shortness of breath, and <u>epigastric</u> burning. The UCC physician noted the patient had been seen at a community UCC the preceding week and treatment included antibiotics. Patient A complained of not being better and was fatigued, had no appetite, could not keep anything down, and had diarrhea. The patient's vital signs were normal. The UCC physician documented the chest x-ray showed pneumonia. The white blood cell count was elevated and the platelet count was low. The patient was given antibiotics and admitted to the ICU for <u>sepsis</u> and pneumonia (hospital day 1).

While in the ICU, <u>Hospitalist</u> 1 evaluated Patient A, continued antibiotics and ordered additional tests. A <u>computed tomography scan</u> of the chest showed a right lung nodule (lump) and enlarged <u>lymph nodes</u> suspicious for <u>metastatic</u> disease. An ultrasound of the abdomen demonstrated multiple liver masses. The computed tomography scan of the abdomen also noted nodules in the liver and near the <u>adrenal gland</u>.

On hospital day 2, Hospitalist 1 consulted the hematologist. The hematologist reviewed the EHR and opined that the liver <u>lesions</u>, lung lesions, and abnormal lymph nodes were not common in CMML and further diagnostic evaluation for other malignancies was warranted.

On hospital day 4, at 2:41 a.m., Patient A vomited blood. Hospitalist 2 evaluated the patient, ordered laboratory tests and intravenous fluids, and documented consideration of consulting the gastroenterology service in the morning. Hospitalist 2 reevaluated the patient at 4:55 a.m., after the patient vomited blood again.

Patient A's heart rate increased, blood pressure decreased, and the patient received a blood transfusion. Hospitalist 2 initiated plans to transfer the patient to a higher level of care and spoke to the hospitalist and gastroenterologist at the community hospital. At 6:22 a.m., the community hospital accepted the patient; however, the inter-facility transfer was pending bed availability.

¹⁵ The facility did not have the capability to perform endoscopy procedures. Hospitalist 2 ordered an inter-facility transfer consult to a facility with this capability.

The nursing staff documentation noted that at 11:14 a.m., Hospitalist 3 was aware that Patient A's blood pressure had decreased further, ordered additional fluids, and assessed the patient at 12:00 p.m. At 1:00 p.m., nursing staff documented that the patient had three large bloody stools, was short of breath, and had low urine output. Fluids were continued and follow-up blood tests were ordered. At 2:28 p.m., the nurse documented Hospitalist 3 was at the bedside, and the patient was short of breath with an increased respiratory rate.

At 2:30 p.m., Hospitalist 3 noted that Patient A had developed significant respiratory distress and had decreased blood pressure. The patient was to be transported to the community hospital and EMS arrived for the transport at 3:15 p.m. The patient's heart rate became slow and the blood pressure further declined. At 3:25 p.m., the patient was unresponsive, a <u>code blue</u> was called, and <u>resuscitation</u> was initiated. Patient A did not respond to the resuscitative efforts and expired at 3:53 p.m.

Patient B

Patient B, who was in their 80s, presented to the facility's UCC in early 2019, at 10:40 a.m., complaining of a three-day history of shortness of breath, difficulty breathing when walking short distances, intermittent chest pain, weakness, and light headedness.

The patient's past medical history was notable for high blood pressure and a previously diagnosed <u>pulmonary embolism</u>, for which the patient was taking an <u>anticoagulant</u> medication. In fall 2018, the patient was diagnosed with a <u>subdural hematoma</u> after a fall and the anticoagulant medication was discontinued.

When Patient B presented to the UCC in 2019, the UCC nurse noted the patient's chest pain was 2 (on a pain scale of 1-10, with 10 being the most severe), without signs of distress. The initial vital signs noted normal temperature, elevated pulse, and low blood pressure. The UCC physician assessed the patient urgently due to the abnormal vital signs and diagnosed the patient with <u>supraventricular tachycardia</u>. The UCC physician documented that Patient B denied a history of cardiac disease or abnormal heart rhythm, and reported intermittent chest pain but none upon arrival to the UCC. The UCC physician noted that the first <u>electrocardiogram (ECG)</u> at 10:45 a.m., demonstrated supraventricular tachycardia, and <u>T wave inversion</u>.

At 11:07 a.m., Patient B was treated with intravenous <u>adenosine</u>, a medication used to bring the heart back into a normal rhythm. Following administration of adenosine, the patient's heart rate converted back to a normal <u>sinus rhythm</u>, blood pressure improved, and the patient denied complaints of chest pain.

The UCC physician documented the second ECG at 11:07 a.m. as normal sinus rhythm, a prolonged QTc and the T waves inverted in the inferior leads and leads v3–5. Both ECGs were read and confirmed the following day by a cardiologist who documented the first ECG to be abnormal with a junctional rhythm with a possible "inferior infarct," age indeterminate, as well as a T wave abnormality, and to consider anterior ischemia. The cardiologist documented the

second ECG showing the patient in normal rhythm and T wave abnormality with concern for ischemia.

A chest x-ray did not show acute cardiopulmonary disease. The abnormal laboratory tests included both a mildly elevated <u>creatinine</u>, a measure of kidney function, and an elevated <u>troponin</u> level, a blood test that can measure heart injury. The UCC physician opined that the minor elevation of the troponin was not due to an <u>acute coronary syndrome</u>, but was possibly due to demand ischemia or decreased renal function.

At approximately 1:49 p.m., Hospitalist 4 assessed Patient B in the UCC, placed a routine echocardiogram consult, and ordered a nuclear medicine test to evaluate for a pulmonary embolism. A cardiology consultation was requested for that day for the abnormal ECG and chest pain; however, a cardiology provider did not see the patient. Hospitalist 4 admitted Patient B to a medical unit with telemetry monitoring (hospital day 1). Hospitalist 4 documented not prescribing aspirin because of the patient's history of a subdural hematoma.

Hospitalist 4 also ordered troponin levels which were performed at 5:12 p.m. and 10:39 p.m., which had increased from when the patient was in the UCC. The OIG did not find documentation that the nursing staff or hospitalists were notified or aware of the elevated and increased troponin levels.

On hospital day 2 at 4:50 a.m., Patient B developed chest tightness, shortness of breath, light headedness, and became diaphoretic (sweaty) when out of bed walking to the bathroom. A rapid response was called at 4:57 a.m. and Hospitalist 3, the physician on duty, responded. Patient B developed low blood pressure and a slow heart rate. At 4:58 a.m., the ECG showed the patient in sinus rhythm, with new changes of <u>ST elevation</u>, and an <u>acute myocardial infarction</u>. Hospitalist 3 ordered a call to 911 EMS at 5:05 a.m., to facilitate an inter-facility transfer for emergent cardiac care. Hospitalist 3 documented that the direct lines to the cardiac catheterization laboratory at the community hospital and EMS were called.

At 5:24 a.m., Patient B was pulseless, a code blue was called, and the patient responded to resuscitation. Hospitalist 3 documented that "the waiting for EMS was extended beyond expected time of arrival." "Staff communicated the issue again with the AOD and EMS was called." ¹⁸

¹⁶ VA Health Services Research & Development Management eBrief no.66, March 2014. Rapid response is a medical emergency team to initiate early intervention and management during deterioration in patients, https://www.hsrd.research.va.gov/publications/management_briefs/default.cfm?ManagementBriefsMenu=eBrief-no76&eBriefTitle=Early+Warning+System+Scores. (The website was accessed on December 12, 2019.)

¹⁷ The facility does not have the capability (interventional cardiology, cardiac catherization laboratory, equipment) to treat a patient experiencing a cardiac emergency, such as an acute myocardial infarction.

¹⁸ VHA Directive 1096, *Administrative Officer of the Day*, December 5, 2019. The role of the AOD includes facilitation of patient transfers to and from the facility.

While awaiting EMS arrival, Patient B coded a second time, facility staff resumed cardiopulmonary resuscitation, and the patient regained cardiac function. EMS transferred the patient to the community hospital and the EMS report noted that while in transport, the patient became pulseless at 6:04 a.m., and was in cardiac arrest upon arrival at the community hospital's Emergency Department. Despite resuscitation efforts, Patient B expired at 6:30 a.m.

Inspection Results

While reviewing the original allegation regarding a delay in diagnosis and treatment of Patient A's leukemia, the OIG team found that between 2014 and 2016, PCP 1 repeatedly failed to follow pathology recommendations related to the patient's abnormal blood test results. In late 2016, Patient A was assigned a new PCP (PCP 2) who ordered a hematology-oncology consult in mid-2017 and late 2017. In early 2018, the facility hematologist met with Patient A and began evaluating and monitoring the patient's elevated blood test results. The OIG reviewed the actions taken by both PCP 1 and the hematologist.

1. Allegation: Delay in the Diagnosis and Treatment of Patient A's Leukemia

PCP 1 (2014-2016)

While the OIG determined that PCP 1 failed to take action on Patient A's abnormal laboratory results and pathologists' recommendations, the OIG was unable to determine whether PCP 1's failure delayed the patient's diagnosis and treatment.

VHA policy requires the ordering provider to "initiate appropriate clinical action and follow-up for any orders that they have placed." ¹⁹

From early 2014 through mid-2016, PCP 1 was the primary provider responsible for Patient A's overall healthcare management.²⁰ During this time, PCP 1 ordered the patient's laboratory tests and routinely saw the patient for ongoing care. Despite being the ordering provider, the OIG did not find EHR documentation that PCP 1 acknowledged or acted on any of the pathologists' recommendations for flow cytometry, bone marrow biopsy, close follow-up, or hematology-oncology consultation from summer 2014 through spring 2016 (see table 1).

¹⁹ VHA Directive 2009-019, *Ordering and Reporting Test Results*, March 24, 2009. This directive was in effect for patient events from 2013 through 2015 when it was rescinded and replaced by VHA Directive 1088, *Communicating Test Results to Providers and Patients*, October 7, 2015. Directive 1088 was in effect for the remaining timeframe of the events discussed in this report. The two directives contained the same or similar language concerning the ordering and reporting of test results.

²⁰ VHA Handbook 1101.10(1), *Patient Aligned Care Team (PACT) Handbook*, February 5, 2014. This handbook was due for recertification on or before the last day of February 2019, but has not been recertified.

Table 1. Laboratory Results Ordered by PCP 1

Date of Results	Laboratory Supervisor Review	Pathology Recommendations
Summer 2014	Monocytosis and immature granulocytes	"Cannot rule out MDS [Myelodysplastic Syndromes] or Chronic Myelomonocytic Leukemia [CMML]. Recommend flow cytometry/bone marrow biopsy."
Spring 2015	Monocytosis and immature granulocytes confirmed	"I agree. Close follow-up indicated to rule out possible MDS or <u>Myeloproliferative disorder</u> ."
Summer 2015	Monocytosis and immature granulocytes confirmed	"I agree. Close clinical follow-up indicated."
Spring 2016	Monocytosis and immature granulocytes confirmed	"I agree. Recommend hematology- oncology consult to rule out MDS/MPN [myeloproliferative neoplasms]."

Source: OIG summary of related pathologists' recommendations as documented in the EHR

When questioned by the OIG team why the repeated pathologists' recommendations had not been followed, PCP 1 recalled having a discussion with a hematologist about a hypothetical patient with similar laboratory results. PCP 1 recalled that the hematologist advised that follow-up was not needed if the CBC count, platelet count, and hemoglobin were all within normal limits. The PCP was unable to provide the name of the hematologist, and the OIG found no documentation in the EHR of this conversation. Throughout the interview, PCP 1 maintained the opinion that as long as the main components (white blood cell count, platelet count, and hemoglobin) of the CBC were within normal limits, a hematology referral or consult was not needed. At the end of the interview, however, PCP 1 acknowledged, "that was an oversight on my part. I should have [referred the patient to a hematologist for follow-up]."

In interviews with the OIG, the Acting Chief of Staff and the Chief of Medicine stated that they would have expected PCP 1 to have followed up on the pathologists' recommendations.²¹

The OIG determined that earlier testing (flow cytometry and bone marrow biopsy) and hematology consultation would have provided the opportunity for evaluation and potential treatment; however, because PCP 1 did not act on the pathologists' recommendations, Patient A was not afforded the opportunity. The OIG found that facility leaders were unaware of PCP 1's failure to initiate appropriate clinical action and follow-up on the pathologists' recommendations.

²¹ The Chief of Medicine is also the Facility UCC Director.

The OIG concluded this failure qualified as an adverse event.²² As of August 1, 2019, facility leaders had not disclosed the adverse event to the family or completed an institutional disclosure.²³

Hematologist

The OIG was unable to determine whether there was a delay in diagnosing and treating Patient A for leukemia by the hematologist, as it is unknown if the results of a bone marrow biopsy completed earlier in 2018 would have yielded a definitive diagnosis and afforded the patient with viable treatment options.

In early 2018, the facility hematologist completed a consult (ordered by PCP 2) to evaluate Patient A's ongoing elevated white blood cell and low blood platelet count. The hematologist met with the patient and ordered additional tests to rule out chronic myeloid leukemia and other blood cancers. A few weeks later, the hematologist met with the patient and noted the test results were negative. The hematologist continued to evaluate the patient for causes of monocytosis (abnormal increase in immune cells) and low platelet count until the bone marrow biopsy was performed in late 2018.

In late fall 2018, the hematologist documented that Patient A's CBC results "showed persistent and progressive leukocytosis [increased white blood cells] with monocytosis" and ordered a bone marrow biopsy to further evaluate a cause for the abnormal results. The hematologist completed the bone marrow aspiration and biopsy in late 2018. Later that month during a clinic visit the hematologist informed the patient that the bone marrow test results indicated a likely diagnosis of CMML (a type of blood cancer) and placed a hematology-oncology consult "to a tertiary care center [Community Care] for diagnostic confirmation and recommendations."

During the interview, the OIG team asked the hematologist if a review of Patient A's 2014 CBC results and the pathologists' recommendation for a bone marrow biopsy had been conducted. The hematologist reported that not all results and records were reviewed and added that trends of consistently elevated or low white blood cells are monitored when reviewing CBC results, as this may be indicative of cancer. The hematologist explained the decision not to conduct a bone marrow biopsy earlier and instead monitor the patients' symptoms and laboratory results throughout 2018, was due to the patient's negative results from the tests commonly used in diagnosing common blood-related cancers. When questioned directly about the high levels of

²² VHA Handbook 1050.01, *VHA National Safety Improvement Handbook*, March 4, 2011, defines adverse events as "untoward incidents, therapeutic misadventures, iatrogenic injuries, or other adverse occurrences directly associated with care or service provided within the jurisdiction of a medical facility, outpatient clinic, or other VHA facility."

²³ VHA Directive 1004.08, *Disclosure of Adverse Events To Patients*, October 31, 2018, defines an institutional disclosure of adverse events as "a formal process by which VA medical facility leaders together with clinicians and others, as appropriate, inform the patient or personal representative that an adverse event has occurred during the patient's care that resulted in, or is reasonably expected to result in, death or serious injury, and provide specific information about the patient's rights and recourse."

immature white blood cells and the possibility of these being present in CMML, the hematologist stated that CMML is not common, the diagnosis is "tricky," and requires clinical judgment. The hematologist explained that one cannot "practice defensive medicine" by conducting all available tests "to rule out everything." The hematologist acknowledged having had one additional patient with a CMML diagnosis over the course of the hematologist's two-year tenure at the facility.

A review of medical literature provided a diagnostic algorithm for the diagnosis of CMML. The algorithm suggested that if blood abnormalities with monocytosis are present for greater than three months, a bone marrow biopsy should be considered to evaluate for CMML or related blood cancer cells or both.²⁴

The OIG concluded that although it would have been appropriate for the hematologist to order a bone marrow biopsy earlier, it is not known if the results of a bone marrow biopsy completed earlier in 2018 would have yielded a definitive diagnosis and afforded Patient A with viable treatment options.

Additional Concern: Community Care

The OIG determined that the facility's Community Care staff did not comply with VHA policy in processing and responding to a consult request. The OIG concluded the facility failed to schedule Patient A's Community Care appointment.

VHA policy requires that "consults must be reviewed and scheduled (or first contact attempt made and recorded) within two business days of the consult creation."²⁵

The hematologist entered a Community Care consult in late 2018, with a clinically indicated date a few days later.²⁶ The OIG found no documentation that Community Care staff acted on the consult until weeks later, the date the patient expired.

The Chief, Community Care acknowledged that facility staff were responsible for contacting the patient to schedule the appointment and could not provide an explanation for why Patient A was not contacted or the appointment scheduled. The Chief, Community Care acknowledged ongoing challenges to meet the consult processing policy due to workload and staffing vacancies.

²⁴ Patnaik, Mrinal M. et.al. *Chronic Myelomonocytic Leukemia: Focus on Clinical Practice*, Mayo Clinic Proceedings, Volume 91, Issue 2, 259-272. https://www.mayoclinicproceedings.org/article/S0025-6196(15)00934-9/pdf. (The website was accessed on November 25, 2019.)

²⁵ DUSHOM Memorandum, Scheduling and Consult Policy Updates, June 5, 2017.

²⁶ VHA Consult SOP, July 26, 2018. Clinically indicated date is synonymous with patient indicated date defined as the date determined by the ordering provider to be clinically suitable for the patient to be evaluated for the condition(s) documented in the request.

Although the OIG was unable to determine that an earlier appointment with a Community Care provider would have led to a different outcome, the OIG found that the facility did not contact Patient A and schedule the Community Care appointment in accordance with VHA policy.

2. Concerns: Medical Management and Inter-Facility Transfer of Patient A

Medical Management

The OIG determined that facility providers evaluated and treated Patient A's presenting diagnosis of pneumonia, managed the onset of GI bleeding, and initiated an inter-facility transfer to evaluate the source of the bleeding.

In early 2019, Patient A presented to the facility's UCC with pneumonia and stable vital signs, had no symptoms of a GI bleed, and was admitted to the facility's ICU. According to facility providers, the patient's admission was appropriate based on the clinical presentation to the UCC.

Patient A first exhibited signs of a GI bleed after vomiting blood at approximately 2:41 a.m. on hospital day 4. Based on stable laboratory values and vital signs, Hospitalist 2 stated having initially believed that the patient could be managed at the facility; however, after an additional episode of vomiting blood, determined the patient required further evaluation. As the facility did not have the capability to perform <u>endoscopy</u> procedures, Hospitalist 2 ordered an inter-facility transfer consult at 5:01 a.m.

The OIG concluded that facility providers recognized the deterioration of Patient A's condition and that they did not have the capability to care for the patient, and appropriately initiated transfer to a medical facility that could manage the patient's care.

Inter-Facility Transfer Delay

The OIG determined that Patient A's transfer from the facility to a community hospital was delayed. Hospitalist 3 failed to expedite the inter-facility transfer by initiating the hospital's emergent transfer protocol when the patient's condition further deteriorated.

VHA facilities are required to have a written policy "that ensures the safe, appropriate, orderly, and timely transfer of patients." Facility policy states that when required services are unavailable or outside the scope of the facility, the patient will be expeditiously transferred to another facility, and the physicians are responsible for expediting the transfer. The policy outlines the steps physicians are to follow, and lists six community hospitals to contact for an

²⁷ VHA Directive 1094, *Inter-Facility Transfer Policy*, January 11, 2017.

²⁸ Facility Policy 136-27, Patient Transfer Coordination, January 29, 2015.

emergent transfer (when a patient has an <u>emergency medical condition</u>) including preferred facilities for GI/vascular (blood vessel) cases. When delays or inter-facility transfer issues cannot be resolved, physicians were to notify the Chief of Staff to assist in the resolution.²⁹

EHR Review

Patient A's condition began deteriorating in the early morning on hospital day 4. Hospitalist 2 placed two routine inter-facility transfer consults, one to a neighboring VA medical facility at 5:01 a.m., and the second to a community hospital at 5:37 a.m.³⁰ Patient A was accepted at the community hospital at 6:24 a.m.; however, a bed was not immediately available. At 8:07 a.m., the end of shift, Hospitalist 2 documented a summary of the patient's status noting another episode of vomiting blood, the initiation of a second transfusion, and transfer from the facility's medical unit to the ICU. Hospitalist 2 also documented calling the community hospital's transfer center for "transportation ASAP [as soon as possible] and no bed available at step down [GI unit] and awaiting ICU attending call back." A review of Hospitalist 2 and night nursing staff EHR documentation demonstrated a high frequency of Hospitalist 2 attending to the patient at bedside, and a high level of monitoring, medical intervention, and involvement in the inter-facility transfer process.

After the transfer of care from Hospitalist 2 to Hospitalist 3, Patient A's condition further deteriorated. Nursing staff documented that at 11:14 a.m., Hospitalist 3 was aware that the patient's blood pressure had decreased further. At 1:00 p.m., nursing staff documented that the patient had three large bloody stools, was short of breath, and had low urine output. At 2:28 p.m., the nurse documented Hospitalist 3 was at the bedside, and that the patient was short of breath with increased respiratory respirations. At approximately 3:25 p.m., Patient A became unresponsive and hypotensive (low blood pressure); a code blue was called. After 35 minutes of resuscitation efforts, Patient A was pronounced dead at 3:53 p.m.

Nursing Staff

During OIG team interviews, nursing staff involved in Patient A's care relayed their concerns regarding the continued deterioration of the patient's condition throughout the morning and early afternoon of hospital day 4, and the lack of urgency taken to transfer the patient. Nursing staff stated that they had frequently informed Hospitalist 3 and the ICU nurse manager of Patient A's worsening condition, the urgent need for an inter-facility transfer, and questioned why community hospitals had not been contacted. The ICU nurse manager confirmed these reports and provided a similar account.

²⁹ Facility Policy 136-27.

³⁰ A VA hospitalist from the neighboring VA Medical Center reviewed the inter-facility transfer consult at 8:03 a.m., after Patient A had been accepted at the community hospital. Patient A's preference for the community hospital and acceptance were noted.

Hospitalists 2 and 3

During an interview, Hospitalist 2 explained having initially requested Patient A be transferred to the community hospital's step down unit (citing the ICU was always full). Hospitalist 2 obtained acceptance for transfer from both the community hospitalist and GI physician. While waiting for a bed confirmation, the patient vomited blood a third time, at which point Hospitalist 2 determined that the patient required a transfer to the community hospital's ICU. Hospitalist 2 contacted and explained the situation to the community hospital's ICU attending physician who accepted Patient A, pending bed availability, at approximately 8:00 a.m. Hospitalist 2 did not pursue other placements because approval and acceptance was obtained from both the GI and ICU physician at the community hospital and was confident the transfer was imminent.

Hospitalists 2 and 3 informed the OIG team that at approximately 8:00 a.m., they verbally exchanged information about Patient A's treatment, status, and inter-facility transfer plan. Hospitalist 3 assumed care of the patient at approximately 8:30 a.m.

Hospitalist 3 stated that initially Patient A was reasonably stable, but at about 10:00 a.m., the patient "started to crash." Hospitalist 3 reported the ICU nurse called to inform the hospitalist the patient had become hypertensive (high blood pressure) and "rhythm was going bad." Hospitalist 3 told the OIG team that there was nothing else they could do but wait for a bed to become available at the community hospital, and the closest VA medical center was nearly two hours away. When questioned why additional hospitals were not contacted for transfer as Patient A's status became increasingly emergent, Hospitalist 3 stated the facility did not have access to other hospitals in the area. When asked specifically about the hospitals listed on the facility emergent transfer protocol, Hospitalist 3 reported having not heard of this list and was not aware of these options.

Hospitalists and Physician Leaders

Other hospitalists informed the OIG team that they were aware of other community hospitals available to transfer patients. They reported that when a situation becomes urgent, it was the physician's responsibility to contact additional hospitals until a bed is secured. When asked to opine on why Hospitalist 3 did not request to transfer Patient A to other community hospitals, a hospitalist stated that Hospitalist 3 was new and did not want to place blame. All hospitalists interviewed consistently described the inter-facility transfer process to be cumbersome, time intensive, and inefficient. One hospitalist stated that a provider has to be aware of the patient's condition and determine whether to wait for a bed at one hospital or contact other hospitals to expedite the transfer.

During interviews with the Acting Chief of Staff and the Chief of Medicine, they confirmed that it is the hospitalist's responsibility to secure a patient's transfer by contacting other VA and community hospitals; and that when there are challenges, either the service chief or the Chief of Staff should be notified. The Chief of Medicine reported that Hospitalist 3 had been at the

facility for "a while" and should have known the transfer process. Additionally, the Chief of Medicine reported having informed the hospitalists about prioritizing community hospital transfers by medical condition, and had placed a poster with the information in the hospitalists' workroom. When asked specifically about the method of training hospitalists receive regarding the inter-facility transfer process, the Chief of Medicine described a formal method to train new doctors on all facility processes and an informal "buddy system" but was not aware of transfer related training documentation.

When asked why the hospitalist did not contact other community hospitals when Patient A's inter-facility transfer was delayed, the former Chief of Staff stated with certainty that hospitalists knew and would follow the facility protocol to contact other hospitals in the community to expedite the transfer. The former Chief of Staff stated that the hospitalists had been at the facility for years and were aware of the protocol.³¹

The OIG concluded that Hospitalist 3 did not request or pursue transfer of Patient A to other community hospitals or enlist assistance from either the Chief of Staff or Chief of Medicine. Hospitalist 3 reported being unaware of the options available or the process outlined in the facility's emergent transfer protocol within the Patient Transfer Coordination policy. ³² The OIG was unable to verify if Hospitalist 3 had received training on the inter-facility transfer process as the facility did not have or maintain transfer training documentation.

3. Concerns: Admission and Inter-Facility Transfer of Patient B

During the initial site visit, the OIG team asked facility staff if there were additional cases involving patient inter-facility transfer delays. Facility staff informed the OIG of concerns regarding a 911 EMS call to transfer an inpatient (Patient B) to a community hospital for a higher level of care. The OIG team reviewed Patient B's episode of care.

Admissions from the Facility's UCC

The OIG determined that facility UCC providers, hospitalists, and physician and facility leaders lacked a shared understanding and agreement on the types of patients the facility could effectively and safely manage. The facility did not have a comprehensive process or policy that accurately reflected hospital or ICU admission criteria or delineated what presenting medical conditions were appropriate for admission.

The OIG team asked the UCC provider and hospitalists involved in Patient B's episode of care, and the Chiefs of Cardiology and Medicine, their opinion regarding the appropriateness of the patient's admission from the UCC to the facility. The UCC provider and the Chiefs of

³¹ At the time of the interview, the former Chief of Staff did not have access to VHA records and was unable to review the patient's EHR.

³² Facility Policy 136-27.

Cardiology and Medicine uniformly reported the admission was appropriate and articulated justification (borderline troponin level, lack of pain or distress at admission) for their determination. The hospitalists provided a measured response and rather than giving a direct opinion on whether the patient's admission was appropriate, outlined the factors considered including the facility's limited resources and capabilities and the challenging inter-facility transfer process when weighing the decision to admit patients.

The OIG team interviewed additional UCC providers, hospitalists, and the Chief of Medicine and Acting Chief of Staff and queried how they determined what medical conditions the facility can safely and effectively manage. The hospitalists unilaterally described concerns regarding the inefficient inter-facility transfer process (calling multiple hospitals and providers, frequently checking status of bed availability to determine if alternative hospitals need to be sought, length of time from initiation to transfer, EMS transportation). These challenges, along with the absence of supportive specialty services and operative/surgical services, raised the hospitalists' concerns about and apprehension in admitting patients from the UCC who may require an inter-facility transfer. The hospitalists also shared receiving pressure from UCC providers and clinical leaders to admit patients to the facility, the dilemma in determining which patients they can manage, and at times, negotiating a patient's admission with UCC providers, specialty services, and physician leaders. One hospitalist summarized the ambiguity by stating, "...there is a fine line between patients we can handle, with the limited number of subspecialties we have here, and those we cannot."

The Chief of Medicine stated that facility leaders and providers had ongoing discussions regarding the facility's capabilities stating, "We know what we can handle and what we can't. We are very clear on that." The Chief of Medicine added that patients who are admitted to the facility from the UCC but "take a turn for the worse" are transferred to the ICU to stabilize before they transfer them to another facility. As an example, the Chief of Medicine said if a patient has an acute myocardial infarction, there is a hotline to call to get the patient transferred to a community hospital. However, the Chief of Medicine later acknowledged that "getting really sick patients out is a challenge. At times, I wish we could call 911 to get the patient out."

The Acting Chief of Staff expressed similar concerns to the hospitalists regarding the facility's endeavors to maintain care of patients without an operating room. The Acting Chief of Staff added, "I consider it a risk because you are required to transfer out when patients go south."

When interviewed, the former Chief of Staff acknowledged receiving pressure from the VISN and Facility Directors to increase the hospital census or convert the hospital to an ambulatory care center. The former Chief of Staff stated informing the directors that many of the patients in the UCC were not appropriate for admission because the facility lacked the supportive services to provide adequate care.

The OIG team reviewed the facility policy on admission to the ICU and found the policy did not align with the facility's practice or capabilities in light of the operating room suspension and

reduction of specialty services in 2015 and decreased ICU capacity in 2016.³³ Despite the significant changes, the facility's 2018 ICU admission policy did not incorporate these limitations. Specifically, the policy identified the ICU as having eight beds. Further, priority criteria for admission included medical conditions such as "known or suspected acute myocardial infarction" and "gastrointestinal [GI] bleeding," conditions the Chiefs of Medicine, Gastroenterology, and Cardiology acknowledged the facility could not currently manage.

When questioned why the facility had a policy that was inconsistent with practice and capabilities, the Chief of Medicine stated that the policy would be more meaningful with the completion of the ICU expansion targeted for November 2019. The former Chief of Staff acknowledged that the facility did not have the capabilities to provide care for some of the conditions listed in the ICU policy and explained that the policy was updated in 2018 in preparation for the re-opening of the operating rooms and the ICU expansion.

The OIG concluded that facility providers did not have a shared understanding of treatment capabilities and the related policy did not align with the facility's practice or capabilities.

Inter-Facility Transfer Delay

The OIG determined the AOD's response to the 911 EMS dispatcher call delayed Patient B's inter-facility transfer; however, the OIG was unable to conclude whether the delay impacted the patient outcome. The OIG also determined that facility leaders did not conduct a comprehensive review of the EMS 911 call cancellation.

VHA policy identifies AODs to be the central point of contact outside of normal duty hours for all administrative functions of the medical facility including facilitating the transfer of patients to and from the facility. The facility policy identifies the AOD to have responsibility "for the 24/7 administrative management of transfers out of and into the medical center."³⁴

The OIG team reviewed the EHR, EMS dispatcher recording, administrative reports, and interviewed staff who were knowledgeable about the patient's inter-facility transfer. On hospital day 2, Patient B suffered an acute myocardial infarction and nursing staff called 911 EMS following Hospitalist 3's request to initiate an emergent inter-facility transfer. The EMS dispatcher canceled the ambulance after the facility's AOD repeatedly informed the dispatcher that the 911 call violated inter-facility transfer rules. An inter-facility community hospital transfer was later arranged, Patient B was transported, arrived in cardiac arrest at the receiving hospital, and expired.

During the interview with the OIG, the Chief, Health Administration Service reported that the former Chief of Staff requested a review of the ambulance cancellation to include an AOD

³³ Facility Policy 11-40, Policy for Admission/Discharge/Care of Patients to Intensive Care Unit, October 30, 2018.

³⁴ Facility Policy 136-27.

statement regarding the 911 EMS call and cancellation. The Chief, Health Administration Service, reviewed the event and listened to the recording of the conversation between the EMS dispatcher and the AOD, and found that the EMS dispatcher had called the facility to notify them that the requested ambulance was en route, and would need an escort to Patient B's location. The Chief, Health Administration Service stated the AOD told the dispatcher that, "the [medical] floor made a mistake" and inaccurately educated the dispatcher about inter-facility transfer rules. The Chief, Health Administration Service described the AOD's communication with the EMS dispatcher as unprofessional.

The AOD's written statement indicated that the "...dispatcher called me and asked if the patient had a bed assignment or if anyone had excepted [accepted] the patient," and that the EMS dispatcher canceled the ambulance because the patient had not been accepted by the community hospital. Further, the statement cited inter-facility transfer rules and the facility medical unit violation made by the medical unit when calling 911.

After a review of the recorded conversation, the OIG found that the EMS dispatcher made several attempts to clarify the meaning of the AOD's repeated references to the facility's violation of inter-facility transfer rules. The EMS dispatcher finally stated they would cancel the ambulance and requested that the facility contact them again when they "get authorization or when you guys go through the process that you guys have to go through in order to allow the patient to be transported." Although the Chief, Health Administration Service was aware of differing accounts of the conversation between the AOD and EMS dispatcher, the discrepancy was not addressed.

The Chief, Health Administration Service, reported telling the former Chief of Staff that "this is a re-training issue." In follow-up, the Assistant Chief, Health Administration Service sent a two-page email five days after the event to all AODs entitled, "REVIEW AND ACTION:

Discrepancies on the AOD log, Reports and Other Items" but did not follow-up with the AODs to ensure comprehension and compliance. During the interview with the OIG team, the AOD involved in Patient B's transfer denied having received education or other information after the event. The Chief, Health Administration Service, reported to the OIG team that because the AODs receive a lot of email communication, staff may not recall the email. The Chief, Health Administration Service also indicated that no changes to the emergency inter-facility transfer process had been made after the event, and believed that inpatient clinical staff would follow the current inter-facility transfer process of initiating a call to the AOD to facilitate a transfer.

Despite stating, "this [event] was a patient concern; a delay in care and caused poor outcomes," the Chief, Health Administration Service did not complete a fact-finding and reported this was "because it involved more than the AODs." The Chief, Health Administration Service stated that the former Chief of Staff indicated there would be a clinical review of the event; however, was not provided any information from a review, leaving the impression that no follow-up from

health administration services was required. During the fall 2019, the facility initiated a peer review to evaluate the care of Patient B.³⁵

The former Chief of Staff did not recall whether a formal review of the incident was completed but reported requesting the Chiefs of Medicine and Health Administration Service to review their processes because the cancellation was significant. The former Chief of Staff reported being confident that these managers reviewed the process and re-educated the AODs and hospitalists on the process of calling 911 from the medical unit.

The OIG determined that the Chief, Health Administration Service did not address the AOD's differing account of the EMS dispatcher conversation, effectively re-educate the AODs, and ensure that the AODs were competent to manage the inter-facility transfer of patients in an emergency situation.

4. Concerns: Leadership and Quality Management Oversight

The OIG acknowledged that facility leaders completed a peer review of Patient A and initiated a peer review for Patient B one week prior to the OIG's second site visit; however, the OIG identified deficiencies in the facility's response to the events surrounding the patients' deaths.

According to The Joint Commission, "leaders provide for the effective functioning of the hospital with a focus on safety and quality." The Medical Executive Board is the facility's medical oversight committee with responsibilities that include: review credentialing and privileging processes, ensure compliance with VHA and external standards, receive and act on medical staff committee's reports and recommendations, and determine the need for further action on system issues.³⁷

The goal of VHA's Patient Safety Program is to prevent harm to patients by staff reporting adverse events and the review of those events. This is accomplished by establishing trust in the VHA patient safety system, identifying underlying causes of the events, and implementing the changes needed to reduce the likelihood of recurrence.³⁸ Facility policy requires every employee

³⁵ VHA Directive 1190, *Peer Review for Quality Management*, November 21, 2018. "A Peer Review for Quality Management is a critical review of care performed by a peer conducted in accordance with all applicable laws, regulations, current VHA policies and this directive." Peer reviews, conducted for quality management purposes, are confidential reviews pursuant to 38 U.S.C. 8 5705.

³⁶ The Joint Commission "LD 03.01.01. Leaders create and maintain a culture of safety and quality throughout the hospital." https://e-dition.jcrinc.com/MainContent.aspx. (The website was accessed on September 21, 2019.)

³⁷Bylaws and Rules of Medical Staff of Veterans Health Administration (VHA) Department of Veterans Affairs Medical Center, Fayetteville, NC, July 15, 2015. Medical Executive Board serves as the Executive Committee of the Medical Staff, Bylaws and Rules of Medical Staff of Veterans Health Administration (VHA) Department of Veterans Affairs Medical Center, Fayetteville, NC, July 15, 2015.; VHA Directive 1190.

³⁸ VHA Handbook 1050.01.

to report adverse events. Once reported, the patient safety manager is responsible for processing the report, and determining what further actions are necessary.³⁹

Facility leaders were made aware of the identified events through morning report communication and Critical Care Committee and Medical Executive Board reports. Several leaders indicated that a root cause analysis or other interdisciplinary review would be initiated to review and resolve the inter-facility transfer issues. ⁴⁰ The Patient Safety Manager reported having no discussion about a root cause analysis for Patient A's event and did not think a root cause analysis was warranted for Patient B's event. The former Chief of Staff reported not giving guidance for a peer review or institutional disclosure at the time of the event because the "provider was not negligent" and the patient's outcome was not impacted. The Facility Director, appointed in June 2019, reported that an expectation for the facility's Patient Safety Program would include the Patient Safety Manager reporting and resolving patient safety related concerns.

During both OIG site visits, staff described the transfer process as problematic and wanted "to get clear direction on transfers for emergency cases." The Chief of Medicine indicated that the conversation with EMS was a breakdown, and the cancellation of the ambulance was a system issue.

At the conclusion of the second visit, the OIG expressed concern to the executive leadership that the facility could not expedite the transfer of inpatients with an emergency medical condition that is beyond the facility's capability to treat.

The OIG team requested that the executive leadership immediately address this patient safety issue and provide the OIG with a plan for and verification of staff training on the facility's inpatient emergent inter-facility transfer process within 10 days. On October 17, 2019, facility leaders developed a training plan and initiated education on the ST Elevation Myocardial Infarction hotline process for inpatient emergent transfers outlined in the Patient Transfer Coordination policy.

The OIG acknowledged that the facility identified there were system issues with the inter-facility transfer of inpatients with emergency medical conditions, however the facility did not initiate a comprehensive analysis of the transfer process. The OIG found the facility did not have stable executive leaders to ensure resolution of identified system issues.

³⁹ Facility Memorandum MCM 11-22, Patient Safety Improvement Program, September 13, 2016.

⁴⁰ VHA Handbook 1050.01, "RCA [root cause analysis] is a process for identifying the basic or contributing factors that underlies variation in performance associated with adverse events or close calls."

Oversight of Resuscitation Efforts—Code Blue Events

The OIG determined that although the Critical Care Committee reviewed the code blue events, the OIG found the reviews to be insufficient.

VHA policy requires the facility Cardiopulmonary Resuscitative Committee ensure the review of each resuscitative episode of care including: (1) identification of errors or deficiencies in technique or procedures; (2) equipment availability or malfunction of equipment; and (3) clinical or patient care issues that may have contributed to the occurrence of a cardiopulmonary event. Additionally, the facility quality manager is required to be a member of the Cardiopulmonary Resuscitative Committee, and is responsible for addressing delays in initiating cardiopulmonary resuscitation in-house and problems in obtaining the assistance of EMS or use of the 911 call system.

The facility policy designates the Critical Care Committee to have oversight of patient care and performance measurement of resuscitation, to monitor compliance with established policies and procedures related to cardiopulmonary resuscitation in critical care situations and provide monthly reports to the Medical Executive Board. The committee is responsible for a systemic review of individual and aggregate code blue events to include: (1) identifying problems, (2) analyzing trends, (3) benchmarking for identified opportunities, (4) recommending actions for problems identified, and (5) ensuring actions are implemented.

The facility has a code blue subcommittee that reviews and evaluates each code blue event to ensure the necessary equipment was available, proper technique utilized, standards of care followed, and if clinical issues may have contributed to the cardiopulmonary arrest. The subcommittee then presents the findings to the Critical Care Committee for action and disposition.

The OIG reviewed two months of 2019 code blue documentation and committee meeting minutes, and found that both the subcommittee and Critical Care Committee reviewed Patient A and Patient B code events. Committee leaders recognized their responsibility to coordinate tracking and follow-up on the issues identified. Committee leaders reported not being empowered to formalize recommendations or enforce actions due to past experiences when reports and recommendations were highly scrutinized by the governing body. The OIG concluded that although the Critical Care Committee reviewed the identified events, the OIG found the reviews to be insufficient.

OPPE for Solo Practitioners

The OIG determined that the hematologist's privilege-specific competency as evaluated through the OPPE process was not completed by a provider with similar training and privileges.

⁴¹VHA Directive 1177, Cardiopulmonary Resuscitation, August 28, 2018.

Professional Practice Evaluations

VHA has defined procedures for the clinical privileging "of all health care professionals who are permitted by law and the facility to practice independently." Privileging refers to granting a provider's request to independently perform specific medical, surgical, or other patient care services that are within the scope of the provider's license and clinical competence.⁴² Clinical privileges need to be specific and based on the individual's clinical competence.⁴³

Focused professional practice evaluation (FPPE) refers to the evaluation of a provider's specific competence. FPPE occurs at the time of initial appointment and prior to granting new or additional privileges. OPPE refers to the ongoing monitoring of providers to confirm the quality of care delivered and to ensure patient safety.⁴⁴

VHA requires "that each privileged provider have the patient care and medical knowledge components of the FPPE and OPPE performed by another provider with similar training and privileges" with the purpose being "to have another provider with similar training and privileges evaluate the privilege-specific competence of the practitioner and document evidence of competently performing the requested privileges of the facility."

The OIG team reviewed all nine of the OPPE privilege-specific competency evaluations for the hematologist conducted between October 2018 and June 2019, and found that a similarly trained and privileged provider did not complete the evaluations. Eight of the nine evaluations were completed by physicians of unrelated specialties (four by a cardiologist, one by a hospitalist, one by a neurologist, and two by a UCC physician) and one by a nurse practitioner.

During interviews, the OIG team asked the Chief of Medicine about the facility's process for conducting OPPE reviews for solo practitioners. The Chief of Medicine stated that when there is only one provider within a specialty, clinical leaders request any other provider within any specialty to conduct the review. The Chief of Medicine said that having the evaluation conducted by a provider with similar training and privileges was favorable; however, the Chief of Medicine added that the evaluations are largely chart reviews, and that any provider could review the patient's EHR to note if items, such as the cause of an illness, was documented. During a subsequent interview, the Chief of Medicine reported being unaware of OPPE evaluation requirements for solo practitioners and added this was the facility's practice.

The former Chief of Staff was aware of VHA's requirements regarding the OPPE practice evaluations for solo practitioners and reported the facility had an arrangement with another VHA medical center to have a provider with similar training and privileges complete these evaluations.

⁴² VHA Handbook 1100.19, *Credentialing and Privileging*, October 15, 2012. This handbook was scheduled for recertification on or before the last working day of October 2017, but has not been recertified.

⁴³ VHA Handbook 1100.19.

⁴⁴ VHA Handbook 1100.19.

⁴⁵ DUSHOM Memorandum, Requirements for Peer Review of Solo Practitioners, August 29, 2016.

The former Chief of Staff was unaware that the facility's hematologist practice evaluations were not completed by a provider with similar qualifications.

The hematologist's competency as evaluated through the OPPE process was not performed by another provider with similar training and privileges. As a result, the OIG determined the hematologist continued to deliver care without a thorough evaluation of clinical practice.

Inter-Facility Transfer Data and Evaluation

The OIG determined that facility leaders failed to collect, monitor, or evaluate inter-facility transfer data as part of VHA's quality management program.

VHA requires the facility chief of staff ensure "all transfers are monitored and evaluated as part of VHA's quality management program." Facility policy indicates that efficiency assessments, which track the timing of all transfer process components from initiation to completion, "are utilized to determine efficiency of transfers with performance thresholds tracked which consider clinical appropriateness of timing and transfer turnaround." ⁴⁷

The OIG team requested information about the collection and evaluation of the facility's inter-facility transfer data and the incorporation of the data into the facility's quality management program. The Chiefs of Quality and Safety and Health Administration Service reported that the facility did not collect, monitor, or evaluate inter-facility transfer data to review transfer efficiency or identify system improvements. Each confirmed that the only transfer data documented was in the form of a log of incoming and outgoing transfers recorded on an excel spreadsheet (provided to the OIG team on-site), which was used to inform leadership how many patients were transferred into and out of the facility each day. When questioned specifically about the efficiency assessments noted in the facility transfer policy, the Chief, Quality and Safety acknowledged the facility did not collect the data and did not recall the data ever being formally collected. The Chief, Quality and Safety had emailed various services to see if the data was collected without being aware and was informed that they do not have or track transfer data. The Chief, Quality and Safety thought that Health Administration Service was responsible for the data collection and did not know why the data had not been collected.

The OIG concluded that the absence of inter-facility transfer data limited the ability for leaders to analyze and identify transfer system issues.

Conclusion

The OIG determined that PCP 1 failed to take action on Patient A's abnormal laboratory results and pathologists' recommendations; however, the OIG was unable to determine whether PCP 1's

⁴⁶ VHA Directive 1094.

⁴⁷ Facility Policy 136-27.

failure delayed Patient A's diagnosis and treatment. The OIG also determined that earlier testing and hematology consultation would have afforded the patient the opportunity for evaluation and potential treatment. The failure to initiate appropriate clinical action and follow-up on the pathologists' recommendations qualified as an adverse event that may warrant an institutional disclosure.

Although it would have been appropriate for the hematologist to order a bone marrow biopsy earlier, it is not known if the results would have yielded a definitive diagnosis and afforded Patient A with viable treatment options.

Community Care staff did not comply with VHA policy in processing and responding to a consult request. The OIG found that the facility did not contact Patient A and schedule the Community Care appointment in accordance with VHA policy.

Facility providers evaluated and treated Patient A's presenting diagnosis of pneumonia, managed the onset of GI bleeding, and initiated an inter-facility transfer to evaluate the source of bleeding. However, Patient A's transfer from the facility to a community hospital was delayed. Hospitalist 3 failed to expedite the inter-facility transfer by initiating the hospital's emergent transfer protocol when Patient A's condition further deteriorated.

The OIG determined that facility UCC providers, hospitalists, and physician and facility leaders lacked a shared understanding and agreement on the type of patients the facility could effectively and safely manage. In addition, the facility did not have a comprehensive process or policy that accurately reflected hospital or ICU admission criteria or delineated what presenting medical conditions were appropriate for admission. The current policy did not align with the facility's practice or capabilities in light of the operating room suspension and reduction of specialty services in 2015 and decreased ICU capacity from eight to two beds in 2016.

The OIG determined that the AOD's response to the EMS 911 dispatcher call caused a delay in Patient B's transfer but was unable to conclude whether the delay impacted the patient outcome. The facility did not conduct a comprehensive review of the 911 call and ensure the AODs were competent to facilitate the inter-facility transfer of patients in an emergency situation.

The OIG acknowledged that although facility leaders completed a peer review of Patient A and initiated a peer review for Patient B, the OIG identified deficiencies in the facility's response to the events surrounding the patients' deaths. Despite the facility's awareness of system issues with the inter-facility transfer of inpatients with emergency medical conditions, the facility did not initiate a comprehensive analysis of the process. Also, while the Critical Care Committee, which is responsible for evaluating code blue events, reviewed both events, the OIG found the reviews to be insufficient.

The privilege-specific competence evaluations of the OPPE process for the facility's solo hematologist were not completed by a provider with similar training and privileges as required

by VHA. The hematologist continued to deliver care without a thorough evaluation of clinical practice.

The OIG determined the facility failed to collect, monitor, or evaluate inter-facility transfer data as part of VHA's quality management program.

Recommendations 1-12

- 1. The Fayetteville VA Medical Center Director ensures that ordering providers review, acknowledge, and document an action plan for abnormal laboratory results.
- 2. The Fayetteville VA Medical Center Director considers initiating an institutional disclosure for the failure of primary care provider 1's clinical action and follow-up for Patient A's abnormal test results and takes necessary actions.
- 3. The Fayetteville VA Medical Center Director ensures that facility Community Care staff process Community Care consults according to the Veterans Health Administration policy.
- 4. The Fayetteville VA Medical Center Director conducts a comprehensive review of Patient A's and Patient B's episode of care and takes action as indicated.
- 5. The Fayetteville VA Medical Center Director evaluates the facility's treating capabilities, delineates the medical conditions appropriate for admission, and updates the Policy for Admission/Discharge/Care of Patients to Intensive Care Unit.
- 6. The Fayetteville VA Medical Center Director conducts an analysis of the inter-facility transfer process for patients in emergency situations, and develops and implements strategies and actions for improvement.
- 7. The Fayetteville VA Medical Center Director updates the Patient Transfer Coordination policy to include the improvements from the transfer process analysis.
- 8. The Fayetteville VA Medical Center Director makes certain that facility staff are trained on the updated Patient Transfer Coordination policy and emergency inter-facility transfer process for inpatients and monitors the process, including timeliness of transfers.
- 9. The Fayetteville VA Medical Center Director reviews Patient B's emergency medical services' 911 call cancellation, considers initiating institutional disclosure, and takes appropriate action as indicated.
- 10. The Fayetteville VA Medical Center Director ensures the Critical Care Committee thoroughly evaluates code blue events, identifies related performance and system issues, makes recommendations, and ensures actions are implemented.
- 11. The Fayetteville VA Medical Center Director makes certain that solo practitioners have the privilege-specific competency components of their focused and ongoing professional practice

evaluations performed by another provider with similar training and privileges and monitors compliance.

12. The Fayetteville VA Medical Center Director ensures inter-facility patient data is collected, analyzed and incorporated into the facility's quality management program.

Appendix A: VISN Director Memorandum

Department of Veterans Affairs Memorandum

Date: March 23, 2020

From: Director, VA Mid-Atlantic Health Care Network (10N06)

Subj: Healthcare Inspection—Delays in Diagnosis and Treatment, and Concerns of Medical Management and Transfer of Patients at Fayetteville VA Medical Center in North Carolina

To: Director, Office of Healthcare Inspections (54HL09)

Director, GAO/OIG Accountability Liaison Office (VHA 10EG GOAL Action)

 I concur with the findings and recommendations of the Fayetteville VA Medical Center regarding the Healthcare Inspection - Delays in Diagnosis and Treatment, and Concerns of Medical Management and Transfer of Patients at the Fayetteville VA Medical Center.

(Original signed by:)

DEANNE M. SEEKINS, MBA, VHA-CM

VA Mid-Atlantic Health Care Network Director, VISN 6

Appendix B: Facility Director Memorandum

Department of Veterans Affairs Memorandum

Date: March 20, 2020

From: Director, Fayetteville VA Medical Center (565)

Subj: Healthcare Inspection—Delays in Diagnosis and Treatment, and Concerns of Medical Management and Transfer of Patients at Fayetteville VA Medical Center in North Carolina

To: Director, VA Mid-Atlantic Health Care Network (10N06)

- 1. The Executive Director for the Fayetteville VA Coastal Health Care System has reviewed the draft report and concurs with the findings.
- 2. A plan for corrective actions to include a timeline for completion and sustainment of improvements has been implemented.

(Original signed by:)

Daniel L. Dücker, MSS, M Ed

Executive Director

Fayetteville NC VA Coastal Health Care System

Facility Director Response

Recommendation 1

The Fayetteville VA Medical Center Director ensures that ordering providers review, acknowledge, and document an action plan for abnormal laboratory results.

Concur.

Target date for completion: June 30, 2020

Director Comments

As of March 19th, 2020, a presentation was developed highlighting the specific requirements for the proper reporting of all patient tests consistent with VHA Directive 1088 and local medical center memorandum 11-89. This presentation was created with an emphasis on abnormal test results. All credentialed providers within the Coastal Health Care System will review the policy for better understanding of the requirements by April 17th, 2020. At present, laboratory services are developing a report that will compile a list of abnormal laboratory results. From these, a retrospective randomized selection will be reviewed for appropriate follow-up. Results will be tracked and reported through the Medical Executive Board.

Recommendation 2

The Fayetteville VA Medical Center Director considers initiating an institutional disclosure for the failure of primary care provider 1's clinical action and follow-up for Patient A's abnormal test results and takes necessary actions.

Concur.

Target date for completion: June 30, 2020

Director Comments

The Chief of Staff elected to proceed with an institutional disclosure. The next of kin was contacted on separate distinctive dates however the next of kin declined to participate.

For follow-up to Patient A's abnormal test results; re-education of providers has been initiated to specifically address the notification requirements for abnormal laboratory results. At present, laboratory services are developing a report that will compile a list of abnormal laboratory results. From these a randomized selection will be reviewed for appropriate follow-up. Results will be tracked and reported through the Medical Executive Board. For the failure of the clinical actions of Provider 1, a secondary review of the episode of care has been scheduled to address all other clinical concerns. This review is scheduled to take place on 4/14/2020. Pending the outcome, a

comprehensive action plan will be used to track each of these recommendations to closure through the Medical Executive Board.

Recommendation 3

The Fayetteville VA Medical Center Director ensures that facility Community Care staff process Community Care consults according to the Veterans Health Administration policy.

Concur.

Target date for completion: June 30, 2020

Director Comments

Fayetteville VA Office of Care in the Community (CITC) has implemented several process improvements regarding tracking of Community Care Consults, that have resulted in positive improvements throughout the department. In December 2019 the team began meeting daily with the Facility Data Management Team to identify consults that may be at risk of delayed processing. Care in the Community follows the Deputy Under Secretary for Health for Operations and Management Scheduling and Consult Policy on consult management and the VHA Office of Community Care (OCC) Field Guidebook (FGB2.0) target that 90% of consults should be reviewed and moved to ACTIVE or SCHEDULED status within 7 days (Fayetteville NC is currently at 92% as of February 20, 2020).

The report "Pending High-Risk Consult by Date Ordered Report" is run daily and will capture all pending consults. Care in the Community Leadership will distribute High Risk consults greater than 2 days to respective approving officials daily to process within 24 to 48 hours. Low risks consults will be processed within 72 hours. This allows CITC to identify any consults pending > (greater than) 2 days and prevent consults from reaching the pending > 7 days list. This Daily report also allows Care in the Community team to identify any increases and decreases in consults being sent to Community Care. The results of these processes are tracked, trended and reported to the Administrative Council that meets monthly.

Recommendation 4

The Fayetteville VA Medical Center Director conducts a comprehensive review of Patient A and Patient B's episode of care and takes action as indicated.

Concur.

A clinical review was completed on both patients. Clinical review for Patient A was completed on 8/20/2019, as a result of a triggered occurrence screen due to patient's demise. A secondary review has been scheduled to review and address all other clinical concerns. This review is scheduled to take place on 4/14/2020. Patient B's clinical review was completed in 12/10/2019 as an assessment of the actions during the patient's episode of care. A secondary review has been scheduled to review and address all other clinical concerns. This review is scheduled to take place on 4/14/2020. Pending the outcome, a comprehensive action plan will be used to track each of these recommendations to closure through the Medical Executive Board.

Recommendation 5

The Fayetteville VA Medical Center Director evaluates the facility's treating capabilities, delineate the medical conditions appropriate for admission, and updates the Policy for Admission/Discharge/Care of Patients to Intensive Care Unit.

Concur.

Target date for completion: June 30, 2020

Director Comments

Fayetteville VA Intensive Care Unit capabilities are limited only to those requiring specialized medical care such as: acute ASTEMI Cardiac and acute Neurological Intervention services. Patient's arriving to the Urgent Care Center with a clinical presentation that exceeds our capabilities are referred to a tertiary care facility. At present our medical leadership is exploring utilization of TELEMEDICINE INTENSIVE CARE UNIT HUB. Policies consistent with these updated processes are being developed. Once completed credentialed hospitalist and ad hoc admitting providers within the Coastal Health Care system will review the policy for better understanding of Intensive Care Unit facility capabilities. Performance and systems issues will be reported monthly to the Critical Care Committee where recommendations of corrective actions are tracked and monitored.

Recommendation 6

The Fayetteville VA Medical Center Director conducts an analysis of the inter-facility transfer process for patients in emergency situations, develops and implements strategies and actions for improvement.

Concur.

During October 2019, facility training was completed for all disciplines involved with patient transfers, this included; Health Administration Service – Administrative Officers of the Day, Physicians and Nurses in the Urgent Care Center (UCC) and the inpatient units. Subsequent to that in November 2019 - The Executive Director met with Health Administration to discuss the additional elements to be presented during daily Leadership morning meetings. This includes a clinical summary presented by patient care services for patient events and/or transfers from our facility. Effective November 20, 2019, the Chief Health Administration reports the number of 911 ambulance transfers from the facility and identifies any unnecessary delays in transports. Strategies and actions for improvement now include a multi-disciplinary team that minimally include a physician, nurse, Health Administration representative and the Patient Flow Coordinator. This team will work to collect, analyze and report data concerning emergency inpatient transfers and communication process.

The results and analysis of these findings will be collected and reported at the facilities Medical Executive Board.

Recommendation 7

The Fayetteville VA Medical Center Director updates the Patient Transfer Coordination policy to include the improvements from the transfer process analysis.

Concur.

Target date for completion: June 30, 2020

Director Comments

The Patient Movement and Management policy was revised in February 28, 2020. Improvements from the analysis will be collected and reported to the Quality, Safety, Value (QSV) council. This reporting requirement has been added to the new Patient Movement and Management hospital memorandum 11-16.

Recommendation 8

The Fayetteville VA Medical Center Director makes certain that facility staff are trained on the updated Patient Transfer Coordination policy and emergency inter-facility transfer process for inpatients and monitors the process, including timeliness of transfers.

Concur.

Staff education on the updated Patient Movement and Management Policy and inter-facility transfer process dated February 28, 2020 will be completed by April 30, 2020. Validation of this training and adherence to the established transfer process will be incorporated into the routine mock code scenarios previously established by the facility. Data collection, analysis and opportunities for improvement to include timeliness of transfers are reported at the Critical Care Committee that meets monthly.

Recommendation 9

The Fayetteville VA Medical Center Director reviews Patient B's emergency medical services' 911 call cancellation, considers initiating institutional disclosure, and takes appropriate action as indicated.

Concur.

Target date for completion: June 30, 2020

Director Comments

Follow-up to emergency medical services' 911 call cancellation was completed by the Chief, Health Administration Services who met with all the Administrative Officer of the Day (AOD). This included a review of the actual 911 cancellation, Emergency Transfer Processing and the roles and responsibilities of the Administrative Officer of the Day on duty. The Administrative Officer of the Day were provided written documentation related to these processes. The then Interim Chief of Staff additionally sent out written communication that outlined the process and procedures to be followed in times of Emergency Transfer. As of October 25, 2019, all Administrative Officer of the Day have signed an attestation to confirm their understanding of these processes. Health Administration Service is developing competencies to be used for all new and current staff and to be used as an annual review.

For the institutional disclosure, the Chief of Staff agreed to proceed with the process however, the next of kin was contacted on separate distinctive dates without successful contact.

Recommendation 10

The Fayetteville VA Medical Center Director ensures the Critical Care Committee thoroughly evaluates code blue events, identifies related performance and system issues, makes recommendations and ensures actions are implemented.

Concur.

In November 2019, the Medical Center developed a subcommittee of the Critical Care Committee comprised of a multidisciplinary team that consist of the Chief of Anesthesia, Chief of Emergency Medicine, Nurse Manager of Intensive Care Unit, Post-Anesthesia Care Unit (PACU) staff Nurse, Clinical Pharmacist, and the Patient Safety Manager. This group reviews each cardiopulmonary event in accordance with standards set forth by the American Heart Association. Data for each event is used to evaluate system and team performance metrics to identify opportunities of improvement. Performance and system issues are then reported monthly to the Critical Care Committee where recommendations of corrective actions are tracked and monitored.

Recommendation 11

The Fayetteville VA Medical Center Director makes certain that solo practitioners have the privilege-specific competency components of their focused and ongoing professional practice evaluations performed by another provider with similar training and privileges and monitors compliance.

Concur.

Target date for completion: April 30, 2020

Director Comments

Clinical Service Chiefs have identified solo providers within their units. Ongoing Professional Practice Evaluation/Focused Professional Practice Evaluation (OPPE/FPPE) reviews for these will be completed by Department of Defense (DOD) providers who are like privileged within the Fayetteville VA Coastal Health Care System enterprise or like/similarly privileged VA providers from sister facilities within our network. This will be identified at Professional Standards Board (PSB) when initial authorization of privileges is presented, and compliance will be tracked by the credentials staff as well as the Chief of Staff office using tools such as the newly created Share Point. At this time, two solo providers have been identified and a Chief of Staff from a tertiary VA facility within our network has agreed to assist in this initiative. Data review for these providers is due at the end of March 2020.

Recommendation 12

The Fayetteville VA Medical Center Director ensures inter-facility patient data is collected, analyzed and incorporated into the facility's quality management program.

Concur.

Effective November 20, 2019, the Chief Health Administration reports the number of 911 ambulance transfers from the facility and identifies any unnecessary delays in transports. Strategies and actions for improvement now include a multi-disciplinary team that reports to the Medical Executive Board.

Glossary

acute coronary syndrome. An acute coronary syndrome, myocardial infarction and heart attack are terms, "used to describe a range of conditions associated with sudden, reduced blood flow to the heart." The syndrome, often causing severe chest pain or discomfort, is a medical emergency that requires prompt diagnosis and care.¹

adenosine. A medication used to bring the heart back into a normal rhythm.²

adrenal glands. Located on top of each kidney, these glands make several hormones that regulate metabolism, salt and fluid balance, and response to stress. Adrenal nodules are growths on the adrenal glands and may be noncancerous or rarely, cancer.³

anemia. A lack of enough healthy red blood cells to carry adequate oxygen to the body's tissues.⁴

anorexia. A prolonged loss of appetite.⁵

anticoagulant. A blood thinning medication used to prevent blood clots.⁶

BCR-ABL FISH. A laboratory test used to examine blood to identify the presence of the BCR-ABL gene that is seen in chronic myeloid leukemia.⁷

blood cell growth factors. "Hormone-like substances that help bone marrow make new blood cells. These substances occur naturally in the body, but scientists have found ways to make large amounts of them in the lab. Patients can get these factors in larger doses than would be made by their own body."

https://mydoctor.kaiserpermanente.org/mas/mdo/presentation/stayinghealthy/topic.jsp?condition=Condition_Adrena <u>l_Nodules_-_Endocrinology.xml.</u> (The website was accessed on November 13, 2019.)

¹ Mayo Clinic, *Acute Coronary Syndrome*. https://www.mayoclinic.org/diseases-conditions/acute-coronary-syndrome/symptoms-causes/syc-20352136. (The website was accessed on November 14, 2019.)

² Cleveland Clinic Health Library, *Adenosine*. https://my.clevelandclinic.org/health/drugs/20887-adenosine-injection. (The website was accessed on November 4, 2019.)

³ Kaiser Permanente, Adrenal Nodules.

⁴ Mayo Clinic patient Care & Health Information, *Anemia*. https://www.mayoclinic.org/diseases-conditions/anemia/symptoms-causes/syc-20351360?p=1. (The website was accessed on October 31, 2019.)

⁵ Merriam-Webster, *Definition of anorexia*. https://www.merriam-webster.com/dictionary/anorexia#medicalDictionary. (The website was accessed on November 25, 2019.)

⁶ Veterans Health Library, *Using Blood Thinners (Anticoagulants)*. https://www.veteranshealthlibrary.va.gov/Search/142,40958 VA, (The website was accessed on January 8, 2020.)

⁷ Leukemia & Lymphoma Society, *Chronic Myeloid Leukemia Diagnosis*. https://www.lls.org/leukemia/chronic-myeloid-leukemia/diagnosis. (The website was accessed on December 1, 2019.)

⁸ American Cancer Society, *Growth Factors for Myelodysplastic Syndromes*. https://www.cancer.org/cancer/myelodysplastic-syndrome/treating/growth-factors.html. (The website was accessed on November 25, 2019.)

bone marrow aspirate and biopsy. Tests, typically performed at the same time, conducted to examine bone marrow cells to find abnormalities.⁹

cardiopulmonary resuscitation. "An emergency lifesaving procedure performed when the heart stops beating." ¹⁰

chronic myeloid leukemia. "A type of cancer that starts in certain blood-forming cells of the bone marrow." ¹¹

code blue (code). "A declaration of or a state of medical emergency and call for medical personnel and equipment to attempt to resuscitate a patient especially when in cardiac arrest or respiratory distress or failure." ¹²

complete blood count (CBC). "A blood test used to evaluate overall health and detect a wide range of disorders, including anemia, infection and leukemia." ¹³

computed tomography scan. A cross-sectional, three-dimensional image of an internal body part primarily used for diagnostic purposes.¹⁴

creatinine. A waste product produced by muscles and removed from the body by the kidneys. The creatinine blood test is used to assess kidney function.¹⁵

cystoscopy. A procedure "used to diagnose, monitor and treat conditions affecting the bladder and urethra." ¹⁶

⁹ Leukemia & Lymphoma Society, *Chronic Myeloid Leukemia Diagnosis*. https://www.lls.org/leukemia/chronic-myeloid-leukemia/diagnosis. (The website was accessed on December 1, 2019.)

¹⁰ American Heart Association, *CPR: Cardiopulmonary Resuscitation*. https://cpr.heart.org/en/resources/what-is-cpr. (The website was accessed on November 25, 2019.)

¹¹ American Cancer Society, *What is Chronic Myeloid Leukemia*? https://www.cancer.org/cancer/chronic-myeloid-leukemia/about/what-is-cml.html. (The website was accessed on November 6, 2019.)

¹² Merriam-Webster, *Definition of code blue*. <u>https://www.merriam-webster.com/medical/code%20blue</u>. (The website was accessed on November 26, 2019.)

¹³ Mayo Clinic Patient Care & Health Info, *Complete Blood Count*. https://www.mayoclinic.org/tests-procedures/complete-blood-count/about/pac-20384919. (The website was accessed on October 17, 2019.)

¹⁴ Merriam-Webster, *Definition of computed tomography scan*. https://www.merriam-webster.com/dictionary/CT%20scan#medicalDictionary. (The website was accessed on November 25, 2019.)

¹⁵ American Association for Clinical Chemistry, *Creatinine*. https://labtestsonline.org/tests/creatinine. (The website was accessed on November 4, 2019.)

¹⁶ Mayo Clinic, *Cystoscopy*. https://www.mayoclinic.org/tests-procedures/cystoscopy/about/pac-20393694?p=1. (The website was accessed on November 25, 2019.)

degenerative joint disease. "A common wear and tear disease that occurs when the cartilage that serves as a cushion in the joints deteriorates." ¹⁷

diabetes. A disease that occurs when the body cannot make or use insulin and blood glucose (also known as blood sugar) levels elevate.¹⁸

dysplastic. The abnormal growth or development of cells. 19

dyslipidemia. Also known as high cholesterol, an abnormal level of lipids, such as cholesterol and triglycerides, in the blood.²⁰

echocardiogram. A test that uses ultrasound waves to show the structure and movement of the heart muscle, how well the heart pumps, the thickness of the heart walls, and if the heart is enlarged. "It is one of the most useful, noninvasive tests as it provides information about the heart's general function."²¹

electrocardiogram (ECG or EKG). A test that measures the electrical activity of the heartbeat. With each beat, an electrical impulse (or "wave") travels through the heart. An electrocardiograph creates a tracing during the heartbeat. A normal heartbeat on ECG will show the timing of the top and lower chambers of the heart.²²

emergency medical condition. "A condition manifesting itself by acute symptoms of significant severity such that the absence of immediate medical attention could reasonably be expected to result in placing the health of the individual...in serious jeopardy." An example would be an acute myocardial infarction patient with ST elevation myocardial infarction who requires an immediate transfer to another hospital for interventional therapy.²³

¹⁷ American Academy of Physical Medicine and Rehabilitation, *Degenerative Joint Disease*. https://www.aapmr.org/about-physiatry/conditions-treatments/pain-neuromuscular-medicine-rehabilitation/degenerative-joint-disease. (The website was accessed on November 30, 2019.)

¹⁸ National Institute of Diabetes and Digestive and Kidney Diseases, *What is Diabetes?* https://www.niddk.nih.gov/health-information/diabetes/overview/what-is-diabetes. (The website was accessed on November 5, 2019.)

¹⁹ Merriam-Webster, *Definition of dysplastic*. https://www.merriam-webster.com/dictionary/dysplasia#medicalDictionary. (The website was accessed on November 25, 2019.)

²⁰ Johns Hopkins, *Dyslipidemia*. http://hopkinsdiabetesinfo.org/dyslipidemia/. (The website was accessed on November 5, 2019.)

²¹ Veterans Health Library, *Heart Failure: Assessing Your Heart*. https://www.veteranshealthlibrary.va.gov/Search/142,86179_VA. (The website was accessed on December 1, 2019.)

²² American Heart Association Website, *Electrocardiogram (ECG or EKG)*. https://www.heart.org/en/health-topics/heart-attack/diagnosing-a-heart-attack/electrocardiogram-ecg-or-ekg. (The website was accessed on November 4, 2019.)

²³ Facility Policy 136-27, Patient Transfer Coordination, January 29, 2015.

epigastric. The abdominal region lying below the ribs and above the umbilical region.²⁴

esophagogastroduodenoscopy (EGD). A test using an endoscope, a flexible tube with a light and camera on the end, to examine the lining of the esophagus, stomach, and first part of the small intestine.²⁵

fluorescence in situ hybridization (FISH). "A laboratory method used to look at genes or chromosomes in cells and tissues. Pieces of DNA that contain a fluorescent dye are made in the laboratory and added to a cell or tissue sample. When these pieces of DNA bind to certain genes or areas on chromosomes in the sample, they light up when viewed under a microscope with a special light. FISH can be used to identify where a specific gene is located on a chromosome, how many copies of the gene are present, and any chromosomal abnormalities. It is used to help diagnose diseases, such as cancer, and help plan treatment." ²⁶

flow cytometry. A laboratory test used to detect, identify, and count specific cells. It is used to identify various cell types unique to certain diseases, most commonly used in the diagnosis of blood-related cancers such as leukemia and lymphoma.²⁷

gastritis. Inflammation of the lining of the stomach. Gastritis may be caused by many things including alcohol, smoking, medications, infections, and stress.²⁸

gastroenterologist. A physician with dedicated training related to the management of diseases of the gastrointestinal tract and liver.²⁹

gastroenterology (GI). "The study of the normal function and diseases of the esophagus, stomach, small intestine, colon and rectum, pancreas, gallbladder, bile ducts, and liver." 30

giant platelets. Platelets that "have a diameter greater than 7 microns (larger than a normal red blood cell)....Giant platelets may fall outside the upper size threshold for platelets on

²⁴ Merriam-Webster, *Definition of epigastric*. https://www.merriam-webster.com/dictionary/epigastric#medicalDictionary. (The website was accessed on November 25, 2019.)

²⁵ MedlinePlus. *EGD-esophagogastroduodenoscopy*. https://medlineplus.gov/ency/article/003888.htm. (The website was accessed on November 13, 2019.)

²⁶ National Cancer Institute, *Fluorescence in Situ Hybridization*. https://www.cancer.gov/publications/dictionaries/cancer-terms/def/fluorescence-in-situ-hybridization. (The website was accessed on November 6, 2019.)

²⁷ American Association of Clinical Chemistry, *Flow Cytometry*. https://labtestsonline.org/flow-cytometry. (The website was accessed on October 31, 2019.)

²⁸ Johns Hopkins Medicine, *What is Gastritis?* https://www.hopkinsmedicine.org/health/conditions-and-diseases/gastritis. (The website was accessed on November 1, 2019.)

²⁹ American College of Gastroenterology, *Gastroenterologist*. https://gi.org/patients/gi-health-and-disease/what-is-a-gastroenterologist. (The website was accessed on November 25, 2019.)

³⁰ American College of Gastroenterology, *Gastroenterology*. https://gi.org/patients/gi-health-and-disease/what-is-a-gastroenterologist/. (The website was accessed on November 25, 2019.)

hematology analyzers. If sufficient numbers of giant platelets are present, the automated platelet count may be falsely decreased."³¹

glaucoma. "A group of eye conditions that damage the optic nerve, the health of which is vital for good vision. This damage is often caused by an abnormally high pressure..."³²

hematocrit. A test that measures the proportion of red blood cells which carry oxygen throughout the body. The presence of too few or too many red blood cells may be an indicator of certain diseases.³³

hematology/hematologist. "The study of blood in health and disease. It includes problems with the red blood cells, white blood cells, platelets, blood vessels, bone marrow, lymph nodes, spleen, and the proteins involved in bleeding and clotting (hemostasis and thrombosis). A hematologist is a medical doctor who applies this specialized knowledge to treat patients with blood conditions." ³⁴

hemoglobin. A test that "measures the total amount of oxygen-carrying protein in the blood, which generally reflects the number of red blood cells in the blood."³⁵

hospitalist. A physician "whose primary professional focus is the general medical care of hospitalized patients." ³⁶

immature granulocytes. "White blood cells that have not fully developed before being released from the bone marrow into the blood." The presence of these "in the blood may occur in various diseases, such as infection or a blood cancer..."³⁷

³¹ American Society of Hematology, *Giant Platelets*. https://imagebank.hematology.org/image/60931/giant-platelets?type=atlas. (The website was accessed on November 5, 2019.)

³² Mayo Clinic, *Glaucoma*. https://www.mayoclinic.org/diseases-conditions/glaucoma/symptoms-causes/syc-20372839?p=1. (The website was accessed on November 5, 2019.)

³³ Mayo Clinic, *Hematocrit*. https://www.mayoclinic.org/tests-procedures/hematocrit/about/pac-20384728?p=1. (The website was accessed on November 25, 2019.)

³⁴ American Society of Hematology, *What is Hematology?* https://hematology.org/Patients/Blood-Disorders.aspx. (The website was accessed on October 29, 2019.)

³⁵ American Association for Clinical Chemistry, *Hemoglobin*. https://labtestsonline.org/tests/complete-blood-count-cbc. (The website was accessed on October 31, 2019.)

³⁶ University of California, San Diego Department of Medicine, *What is a hospitalist*? http://hospitalmedicine.ucsd.edu/people/about.shtml. (The website was accessed on March 4, 2019.)

³⁷ American Association of Clinical Chemistry, *Immature Granulocyte*. https://labtestsonline.org/tests/complete-blood-count-cbc. (The website was accessed on October 31, 2019.)

immunoelectrophoresis. A laboratory test that measures proteins, known as immunoglobulins, in the blood. Immunoglobulins are proteins that function as antibodies, to fight infection; however, some may be abnormal and related to cancer.³⁸

inferior infarction. A coronary artery obstruction resulting in decreased flow to the inferior region of the myocardium.³⁹

intensive care unit (ICU). A section of a hospital where specialized medical equipment and services are provided for seriously ill or injured patients.⁴⁰

ischemia. A deficient supply of blood to a body part (such as the heart or brain) due to obstruction of arterial blood.⁴¹

junctional rhythm. A type of cardiac conduction disturbance that occurs when the electrical activation of the heart originates near or within the atrioventricular node, rather than from the sinoatrial node. Because the normal ventricular conduction system (His-Purkinje) is used, the QRS complex is frequently narrow.⁴²

junctional tachycardia. "A rare fast heart rate that starts in the area between the upper and lower chambers of the heart."

leukocytosis. An increase of white blood cells in the circulating blood.⁴⁴

lesion. An abnormal change of an organ or part due to injury or disease. 45

³⁸ MedlinePlus Medical Encyclopedia, *Immunoelectrophoresis*. https://medlineplus.gov/ency/article/003541.htm. (The website was accessed on November 26, 2019.)

³⁹ NCBI Bookshelf, *Myocardial Infarction, Inferior*. https://www.ncbi.nlm.nih.gov/books/NBK470572/. (The website was accessed on November 14, 2019.)

⁴⁰ Merriam-Webster, *Definition of intensive care unit (ICU)*. https://www.merriam-webster.com/dictionary/intensive%20care%20unit. (The website was accessed on November 30, 2019.)

⁴¹ Merriam-Webster, *Definition of ischemia*. https://www.merriam-webster.com/dictionary/ischemia#medicalDictionary. (The website was accessed on November 25, 2019.)

⁴² Hafeez, Yamama, and Grossman, Shamai A., "Junctional Rhythm." StatPearls Publishing, January 2019. https://www.ncbi.nlm.nih.gov/books/NBK507715/. (The website was accessed on November 4, 2019.)

⁴³ Kaiser Permanente, *Junctional Tachycardia*. https://wa.kaiserpermanente.org/kbase/topic.jhtml?docId=te7177abc. (The website was accessed on November 30, 2019.)

⁴⁴ Merriam-Webster, *Definition of leukocytosis*. https://www.merriam-webster.com/dictionary/leukocytosis. (The website was accessed on November 26, 2019.)

⁴⁵ Merriam-Webster, *Definition of lesion*. https://www.merriam-webster.com/dictionary/lesion#other-words. (The website was accessed on December 2, 2019.)

lymphoid malignancy. A cancer of lymphocytes, cells required to generate an immune response.⁴⁶

lymph nodes. Small bean-shaped structures that are part of the body's immune system. "Lymph nodes filter substances that travel through the lymphatic fluid, and they contain lymphocytes (white blood cells) that help the body fight infection and disease."⁴⁷

metastatic. Cancer cells that have broken "away from where they first formed (primary cancer), travel through the blood or lymph system, and form new tumors (metastatic tumors) in other parts of the body. The metastatic tumor is the same type of cancer as the primary tumor."⁴⁸

monocyte. "A type of immune cell that is made in the bone marrow and travels through the blood to tissues in the body where it becomes a macrophage. Macrophages surround and kill microorganisms, ingest foreign material, remove dead cells, and boost immune responses." ⁴⁹

monocytosis. An abnormal increase in the number of monocytes circulating in the blood.⁵⁰

myelodysplastic syndromes (MDS). "Conditions that can occur when the blood-forming cells in the bone marrow become abnormal." The condition may lead to low numbers of one or more types of blood cells. MDS is considered a type of cancer."⁵¹

myeloma. Cancer of the plasma cells. Plasma cells are white blood cells that produce disease- and infection-fighting antibodies. Myeloma cells do not allow the normal production of antibodies, which leaves the body's immune system weakened and susceptible to infection.⁵²

⁴⁶ Dalla-Favera, Riccardo. "Lymphoid malignancies: many tumor types, many altered genes, many therapeutic challenges." *The Journal of Clinical Investigation*. 122, no. 10 (2012): 3396-3397. https://www.jci.org/articles/view/66307. (The website was accessed on November 26, 2019.)

⁴⁷ National Cancer Institute, *Lymph Nodes*. https://www.cancer.gov/publications/dictionaries/cancer-terms/def/lymph-node. (The website was accessed on November 26, 2019.)

⁴⁸ National Cancer Institute, *Metastatic Cancer*. https://www.cancer.gov/types/metastatic-cancer. (The website was accessed on November 26, 2019.)

⁴⁹ National Cancer Institute, *Monocyte*. https://www.cancer.gov/publications/dictionaries/cancer-terms/def/monocyte. (The website was accessed on June 17, 2019.)

⁵⁰ Merriam-Webster, *Definition of monocytosis*. https://www.merriam-webster.com/medical/monocytosis. (The website was accessed on October 31, 2019.)

⁵¹ American Cancer Society, *What Are Myelodysplastic Syndromes?* https://www.cancer.org/cancer/myelodysplastic-syndrome/about/what-is-mds.html. (The website was accessed on August 29, 2019.)

⁵² American Society of Hematology, *Myeloma*. https://www.hematology.org/Patients/Cancers/Myeloma.aspx. (The website was accessed on October 29, 2019.)

myeloproliferative disorders. Also known as **myeloproliferative neoplasms (MPN)**; "a group of rare illnesses that cause blood cells in the bone marrow, including red blood cells, white blood cells, and platelets, to grow and develop abnormally."⁵³

nonproductive cough. A cough that is dry and does not produce mucus.⁵⁴

oncology. A branch of medicine focused on the prevention, diagnosis, treatment, and study of cancer.⁵⁵

oxygen saturation (SpO₂). The amount of oxygen in the blood, or more specifically the extent to which hemoglobin, found in red blood cells, is saturated with oxygen. "Normal oxygen saturation is usually between 96 percent and 98 percent." ⁵⁶

polymorphonuclear (PMN). Immune cells that release enzymes during infections, allergic reactions, and asthma.⁵⁷

pathologist. A physician who examines bodies, body tissues and is responsible for performing lab tests. A pathologist assists other providers reach diagnoses.⁵⁸

physician assistant. "A person certified to provide basic medical services usually under the supervision of a licensed physician." ⁵⁹

platelets. "Special cell fragments that play an important role in normal blood clotting. A person who does not have enough platelets may be at an increased risk of excessive bleeding and bruising. The CBC [complete blood count] measures the number and size of platelets." 60

⁵³ Stanford Health Care, *Myeloproliferative Neoplasms*. https://stanfordhealthcare.org/medical-conditions/cancer/myeloproliferative-neoplasms.html. (The website was accessed on October 31, 2019.)

⁵⁴ University of Michigan Health System, *Nonproductive Coughs*. https://www.uofmhealth.org/health-library/cough. (This website was accessed on November 26, 2019.)

⁵⁵ Merriam-Webster, *Definition of oncology*. https://www.merriam-webster.com/dictionary/oncology. (The website was accessed on December 2, 2019.)

⁵⁶ Very Well Health, *Understanding Oxygen Saturation*. https://www.verywellhealth.com/oxygen-saturation-914796. (The website was accessed on March 20, 2019.)

⁵⁷ National Cancer Institute, *NCI Dictionary of Cancer Terms*. https://www.cancer.gov/publications/dictionaries/cancer-terms/def/pmn. (The website was accessed on November 20, 2019.)

⁵⁸ Health; Johns Hopkins Medicine Online, *Pathologist*. https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/the-pathologist. (The website was accessed on October 29, 2019.)

⁵⁹ Merriam-Webster, *Definition of physician assistant*. https://www.merriam-webster.com/dictionary/physician%20assistant. (The website was accessed on November 6, 2019.)

⁶⁰ American Association for Clinical Chemistry, *Platelets*. https://labtestsonline.org/tests/complete-blood-count-cbc. (The website was accessed on October 31, 2019.)

pulmonary embolism. A blood clot in the lung. It occurs when a clot in another part of the body moves through the bloodstream and becomes lodged in the blood vessels of the lung. ⁶¹

pulseless electrical activity. Situations in which the monitor shows electrical activity in the heart, but the patient has no palpable pulse.⁶²

QTc. "The QT interval on the ECG is measured from the beginning of the QRS complex to the end of the T wave (see ECG components). It represents the time it takes for the ventricles of the heart to depolarize and repolarize, or to contract and relax." QTc is a calculation that corrects for QT interval variation caused by variation in heart rate. 63

resuscitation. A medical act or intervention of reviving someone from unconsciousness or apparent death.⁶⁴

sepsis. "The body's overwhelming and life-threatening response to the infection that can lead to tissue damage, organ failure, and death." ⁶⁵

serum protein electrophoresis. A blood test used to identify and measure the presence of abnormal proteins, the absence of normal proteins and/or to detect various protein electrophoresis patterns associated with certain conditions and can be used to help diagnose various diseases.⁶⁶

sinus rhythm. "The rhythm of the heart produced by impulses from the sinus node." 67

ST elevation myocardial infarction. "A very serious type of heart attack during which one of the heart's major arteries (one of the arteries that supplies oxygen and nutrient-rich blood to the

⁶¹ Cleveland Clinic, *Pulmonary Embolism*. https://my.clevelandclinic.org/health/diseases/17400-pulmonary-embolism. (This website was accessed on November 4, 2019.)

⁶² ACLS Certification Institute, *What is Pulseless Electrical Activity (PEA)?* https://acls.com/free-resources/knowledge-base/pea-asystole/what-is-pulseless-electrical-activity-pea. (The website was accessed on March 13, 2019.)

 $^{^{63}}$ Cox, Natalie K. "The QT interval: How long is too long?" *Nursing Made Incredibly Easy!* March-April 2011, Volume 9 Issue 2, pages 17-21.

https://journals.lww.com/nursingmadeincrediblyeasy/Fulltext/2011/03000/The QT interval How long is too long _.5.aspx#pdf-link. (The website was accessed on November 26, 2019.)

⁶⁴ Merriam-Webster, *Definition of resuscitation*. https://www.merriam-webster.com/dictionary/resuscitation. (The website was accessed on November 30, 2019.)

⁶⁵ Sepsis Alliance. *What is Sepsis?* https://www.sepsis.org/sepsis-basics/what-is-sepsis/. (The website was accessed on October 30, 2019.)

⁶⁶ American Association for Clinical Chemistry. *Protein Electrophoresis, Immunofixation Electrophoresis*. https://labtestsonline.org/tests/protein-electrophoresis-immunofixation-electrophoresis. (The website was accessed on October 29, 2019.)

⁶⁷Merriam-Webster, *Definition of sinus rhythm*. https://www.merriam-webster.com/dictionary/sinus%20rhythm#medicalDictionary. (The website was accessed on February 28, 2019.)

heart muscle) is blocked. ST-segment elevation is an abnormality detected on the 12-lead ECG."68

stem cell transplant. A treatment where the patient receives high-dose chemotherapy, often along with radiation, to the entire body to kill bone marrow cells, including the abnormal ones. Once completed, the patient is given new, healthy blood-forming stem cells.⁶⁹

subdural hematoma. An occurrence of blood vessels rupturing between the brain and the outermost membrane covering the brain. The leaking blood forms a hematoma that presses on the brain tissue; an enlarging hematoma can cause a gradual loss of consciousness and potential death.⁷⁰

supraventricular tachycardia (SVT). An abnormally fast heart rate that begins in the upper chambers of the heart. With supraventricular tachycardia, abnormal electrical connections in the heart cause it to beat too fast.⁷¹

t-wave inversion. Abnormal detection of the T wave on an EKG tracing. The inversion may be the result of many cardiac and noncardiac conditions. The normal T wave is usually in the same direction as the QRS.⁷²

tachycardia. A heart rhythm disorder in which the heart beats faster than normal while at rest. "Tachycardia occurs when an abnormality in the heart produces electrical signals that quicken the heart rate."⁷³

telemetry. "A portable device that continuously monitors patient ECG, respiratory rate and/or oxygen saturations while automatically transmitting information to a central monitor." ⁷⁴

⁶⁸ ECG Medical Training, *What is a STEMI?* https://www.ecgmedicaltraining.com/what-is-a-stemi/. (The website was accessed on November 26, 2019.)

⁶⁹ American Cancer Society, *Stem Cell Transplant for Chronic Myelomonocytic Leukemia*. https://www.cancer.org/cancer/chronic-myelomonocytic-leukemia/treating/stem-cell-transplant.html. (The website was accessed on May 23, 2019.)

⁷⁰ Mayo Clinic. *Subdural Hematoma*. https://www.mayoclinic.org/diseases-conditions/intracranial-hematoma/symptoms-causes/syc-20356145. (The website was accessed on November 26, 2019.)

⁷¹ Kaiser Permanente, *Types of Supraventricular Tachycardia*. https://wa.kaiserpermanente.org/kbase/topic.jhtml?docId=te7177abc. (The website was accessed on November 30, 2019.)

⁷² ECG Learning Center, *T Wave Abnormalities*. https://ecg.utah.edu/lesson/11. (The website was accessed on November 14, 2019.)

⁷³ Mayo Clinic, *Tachycardia, Symptoms & Causes*. https://www.mayoclinic.org/diseases-conditions/tachycardia/symptoms-causes/syc-20355127. (The website was accessed on February 28, 2019.)

⁷⁴ Royal Children's Hospital Melbourne, Clinical Guidelines (Nursing), *Cardiac Telemetry*. https://www.rch.org.au/rchcpg/hospital_clinical_guideline_index/Cardiac_Telemetry/. (The website was accessed on November 30, 2019.)

thrombocytopenia. A low blood platelet count. "Thrombocytopenia often occurs as a result of a separate disorder such as leukemia or an immune system problem."⁷⁵

troponins. A group of proteins found in skeletal and heart muscle fibers. Troponin tests measure the level of cardiac-specific troponin in the blood to help detect heart injury. Most often, troponin tests are used to help determine if someone has suffered a heart attack.⁷⁶

ultrasound. An imaging method that uses high frequency sound waves to produce images of structures within the body. The images can provide valuable diagnostic and treatment information.⁷⁷

white blood cell. Cells that fight infections. A low white blood cell count could be caused by a medical condition, such as an autoimmune disorder, bone marrow problems or cancer. A high white blood cell count could indicate an infection or inflammation, an immune system disorder, or bone marrow disease.⁷⁸

⁷⁵ Mayo Clinic, *Thrombocytopenia*. https://www.mayoclinic.org/diseases-conditions/thrombocytopenia/symptoms-causes/syc-20378293?p=1. (The website was accessed on November 26, 2019.)

⁷⁶ American Association of Clinical Chemistry, *Troponin: Understand the Test & Your Results*. https://labtestsonline.org/tests/troponin. (The website was accessed on March 13, 2019.)

⁷⁷ Mayo Clinic, *Ultrasound*, https://www.mayoclinic.org/tests-procedures/ultrasound/about/pac-20395177?p=1. (The website was accessed on November 26, 2019.)

⁷⁸ Mayo Clinic, *Complete blood count (CBC)*. https://www.mayoclinic.org/tests-procedures/complete-blood-count/about/pac-20384919. (The website was accessed on October 17, 2019.)

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