



**Department of Veterans Affairs  
Office of Inspector General**

**Office of Healthcare Inspections**

**Report No. 14-02077-01**

**Combined Assessment Program  
Review of the  
Tennessee Valley Healthcare System  
Nashville, Tennessee**

**October 16, 2014**

**Washington, DC 20420**

**To Report Suspected Wrongdoing in VA Programs and Operations**

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## Glossary

CAP	Combined Assessment Program
CLC	community living center
CVT	clinical video telehealth
ED	emergency department
EHR	electronic health record
EOC	environment of care
facility	Tennessee Valley Healthcare System
FY	fiscal year
MEC	Medical Executive Committee
MH	mental health
MRI	magnetic resonance imaging
NA	not applicable
NM	not met
OIG	Office of Inspector General
PACU	post-anesthesia care unit
PRC	Peer Review Committee
QM	quality management
SDS	same day surgery
tPA	tissue plasminogen activator
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network

## Table of Contents

	Page
<b>Executive Summary</b> .....	i
<b>Objectives and Scope</b> .....	1
Objectives .....	1
Scope.....	1
<b>Reported Accomplishments</b> .....	2
<b>Results and Recommendations</b> .....	3
QM .....	3
EOC .....	6
Medication Management.....	9
Coordination of Care.....	10
Acute Ischemic Stroke Care .....	11
CLC Resident Independence and Dignity .....	13
MRI Safety .....	15
<b>Appendixes</b>	
A. Facility Profile .....	16
B. Strategic Analytics for Improvement and Learning .....	17
C. VISN Director Comments .....	20
D. Facility Director Comments .....	21
E. OIG Contact and Staff Acknowledgments .....	29
F. Report Distribution .....	30
G. Endnotes .....	31

## Executive Summary

**Review Purpose:** The purpose of the review was to evaluate selected health care facility operations, focusing on patient care quality and the environment of care, and to provide crime awareness briefings. We conducted the review the week of August 11, 2014.

**Review Results:** The review covered seven activities. We made no recommendations in the following activity:

- Magnetic Resonance Imaging Safety

The facility's reported accomplishments were its Telephone Care Program and the use of telemedicine.

**Recommendations:** We made recommendations in the following six activities:

*Quality Management:* Ensure actions from peer reviews are consistently completed and reported to the Peer Review Committee. Consistently report Focused Professional Practice Evaluation results for newly hired licensed independent practitioners to the Medical Executive Board. Ensure Cardiopulmonary Resuscitation Review Committee code reviews include screening for clinical issues prior to the event that may have contributed to the code. Require the Surgical Work Group to meet monthly. Ensure the Morbidity and Mortality Committee reviews all surgical deaths with identified problems or opportunities for improvement. Keep the critical incident tracking and notification system's recipient list current.

*Environment of Care:* Require Environment of Care Board minutes to reflect sufficient discussion of deficiencies, corrective actions taken, and tracking of actions to closure. Ensure that the surveillance monitoring systems on the locked mental health units at the York campus are functional and that regular inspections are documented. Secure chemicals stored on the dialysis unit at the Nashville campus at all times. Ensure the negative pressure control systems in the post-anesthesia care unit isolation rooms at both campuses are functional. Post a laser warning sign on the door in the eye clinic laser room at the York campus.

*Medication Management:* Complete and document patient discharge instructions.

*Coordination of Care:* Ensure patients receive ordered aftercare services and/or items within the ordered/expected timeframe.

*Acute Ischemic Stroke Care:* Develop an acute ischemic stroke policy that addresses all required items, and fully implement the policy. Complete and document National Institutes of Health stroke scales for each stroke patient. Post stroke guidelines on the intensive care and inpatient medical units. Screen patients for difficulty swallowing prior to oral intake. Provide printed stroke education to patients upon discharge. Collect and

report to the Veterans Health Administration the percent of eligible patients given tissue plasminogen activator, the percent of patients with stroke symptoms who had the stroke scale completed, and the percent of patients screened for difficulty swallowing before oral intake.

*Community Living Center Resident Independence and Dignity:* Ensure employees who perform restorative nursing services receive training on and competency assessment for range of motion and resident transfers.

## Comments

The Veterans Integrated Service Network and Facility Directors agreed with the Combined Assessment Program review findings and recommendations and provided acceptable improvement plans. (See Appendixes C and D, pages 20–28, for the full text of the Directors' comments.) We consider recommendation 20 closed. We will follow up on the planned actions for the open recommendations until they are completed.



JOHN D. DAIGH, JR., M.D.  
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## Objectives and Scope

### Objectives

CAP reviews are one element of the OIG's efforts to ensure that our Nation's veterans receive high quality VA health care services. The objectives of the CAP review are to:

- Conduct recurring evaluations of selected health care facility operations, focusing on patient care quality and the EOC.
- Provide crime awareness briefings to increase employee understanding of the potential for program fraud and the requirement to refer suspected criminal activity to the OIG.

### Scope

The scope of the CAP review is limited. Serious issues that come to our attention that are outside the scope will be considered for further review separate from the CAP process and may be referred accordingly.

For this review, we examined selected clinical and administrative activities to determine whether facility performance met requirements related to patient care quality and the EOC. In performing the review, we inspected selected areas, conversed with managers and employees, and reviewed clinical and administrative records. The review covered the following seven activities:

- QM
- EOC
- Medication Management
- Coordination of Care
- Acute Ischemic Stroke Care
- CLC Resident Independence and Dignity
- MRI Safety

We have listed the general information reviewed for each of these activities. Some of the items listed may not have been applicable to this facility because of a difference in size, function, or frequency of occurrence.

The review covered facility operations for FY 2013 and FY 2014 through August 11, 2014, and was done in accordance with OIG standard operating procedures for CAP reviews. We also asked the facility to provide the status on the

recommendations we made in our previous CAP report (*Combined Assessment Program Review of the Tennessee Valley Healthcare System, Nashville, Tennessee, Report No. 12-02185-288, September 27, 2012*). We made a repeat recommendation in EOC.

During this review, we presented crime awareness briefings for 589 employees. These briefings covered procedures for reporting suspected criminal activity to the OIG and included case-specific examples illustrating procurement fraud, conflicts of interest, and bribery.

Additionally, we surveyed employees regarding patient safety and quality of care at the facility. An electronic survey was made available to all facility employees, and 698 responded. We shared summarized results with facility managers.

In this report, we make recommendations for improvement. Recommendations pertain to issues that are significant enough to be monitored by the OIG until corrective actions are implemented.

## Reported Accomplishments

### Telephone Care Program

In response to patient satisfaction surveys, facility employees worked diligently to improve access to care through the Telephone Care Program. In 2013, the facility Director chaired a workgroup to address telephone call waiting and call abandonment rates, and workgroup actions resulted in a dramatic decrease in both. The facility is now considered a national leader, and its VHA performance measures in telephone responsiveness currently meet and exceed target goals.

### Telemedicine

Facility clinical staff have been leaders in the implementation of non-face-to-face interventions of care through the telemedicine program. This includes care delivery coordinated through the Care Coordination Home Telehealth program, CVT brought into a patient's home, and electronic consults used for CVT for patients at other VA facilities. The facility has led VISN 9 in the number of patients using CVT services and electronic consults, with CVT growth increasing in FY 2014 from 969 patients to 5,346 patients.

## Results and Recommendations

### QM

The purpose of this review was to determine whether facility senior managers actively supported and appropriately responded to QM efforts and whether the facility met selected requirements within its QM program.<sup>a</sup>

We conversed with senior managers and key QM employees, and we evaluated meeting minutes, EHRs, and other relevant documents. The table below shows the areas reviewed for this topic. The areas marked as NM did not meet applicable requirements and needed improvement. Any items that did not apply to this facility are marked NA.

NM	Areas Reviewed	Findings
	<p>There was a senior-level committee/group responsible for QM/performance improvement that met regularly.</p> <ul style="list-style-type: none"> <li>• There was evidence that outlier data was acted upon.</li> <li>• There was evidence that QM, patient safety, and systems redesign were integrated.</li> </ul>	
X	<p>The protected peer review process met selected requirements:</p> <ul style="list-style-type: none"> <li>• The PRC was chaired by the Chief of Staff and included membership by applicable service chiefs.</li> <li>• Actions from individual peer reviews were completed and reported to the PRC.</li> <li>• The PRC submitted quarterly summary reports to the MEC.</li> <li>• Unusual findings or patterns were discussed at the MEC.</li> </ul>	<p>Six months of PRC meeting minutes reviewed:</p> <ul style="list-style-type: none"> <li>• Of the 28 actions expected to be completed, 20 were not reported to the PRC.</li> </ul>
X	<p>Focused Professional Practice Evaluations for newly hired licensed independent practitioners were initiated and completed, and results were reported to the MEC.</p>	<p>Seventeen profiles reviewed:</p> <ul style="list-style-type: none"> <li>• The results of six Focused Professional Practice Evaluations were not reported to the Medical Executive Board.</li> </ul>
NA	<p>Specific telemedicine services met selected requirements:</p> <ul style="list-style-type: none"> <li>• Services were properly approved.</li> <li>• Services were provided and/or received by appropriately privileged staff.</li> <li>• Professional practice evaluation information was available for review.</li> </ul>	

NM	Areas Reviewed (continued)	Findings
	<p>Observation bed use met selected requirements:</p> <ul style="list-style-type: none"> <li>• Local policy included necessary elements.</li> <li>• Data regarding appropriateness of observation bed usage was gathered.</li> <li>• If conversions to acute admissions were consistently 30 percent or more, observation criteria and utilization were reassessed timely.</li> </ul>	
	<p>Staff performed continuing stay reviews on at least 75 percent of patients in acute beds.</p>	
X	<p>The process to review resuscitation events met selected requirements:</p> <ul style="list-style-type: none"> <li>• An interdisciplinary committee was responsible for reviewing episodes of care where resuscitation was attempted.</li> <li>• Resuscitation event reviews included screening for clinical issues prior to events that may have contributed to the occurrence of the code.</li> <li>• Data were collected that measured performance in responding to events.</li> </ul>	<p>Twelve months of Cardiopulmonary Resuscitation Review Committee meeting minutes reviewed:</p> <ul style="list-style-type: none"> <li>• There was no evidence that code reviews included screening for clinical issues prior to events that may have contributed to the occurrence of the code.</li> </ul>
X	<p>The surgical review process met selected requirements:</p> <ul style="list-style-type: none"> <li>• An interdisciplinary committee with appropriate leadership and clinical membership met monthly to review surgical processes and outcomes.</li> <li>• Surgical deaths with identified problems or opportunities for improvement were reviewed.</li> <li>• Additional data elements were routinely reviewed.</li> </ul>	<ul style="list-style-type: none"> <li>• The Surgical Quality Work Group only met 2 times over the past 6 months.</li> </ul> <p>Several surgical deaths that occurred from January through June 2013 had identified problems or opportunities for improvement:</p> <ul style="list-style-type: none"> <li>• There was no evidence that the Morbidity and Mortality Committee reviewed one of these deaths.</li> </ul>
X	<p>Critical incidents reporting processes were appropriate.</p>	<ul style="list-style-type: none"> <li>• The recipient list for the automatic e-mail notification was not current.</li> </ul>
	<p>The process to review the quality of entries in the EHR met selected requirements:</p> <ul style="list-style-type: none"> <li>• A committee was responsible to review EHR quality.</li> <li>• Data were collected and analyzed at least quarterly.</li> <li>• Reviews included data from most services and program areas.</li> </ul>	
	<p>The policy for scanning non-VA care documents met selected requirements.</p>	

NM	Areas Reviewed (continued)	Findings
	The process to review blood/transfusions usage met selected requirements: <ul style="list-style-type: none"> <li>• A committee with appropriate clinical membership met at least quarterly to review blood/transfusions usage.</li> <li>• Additional data elements were routinely reviewed.</li> </ul>	
	Overall, if significant issues were identified, actions were taken and evaluated for effectiveness.	
	Overall, senior managers were involved in performance improvement over the past 12 months.	
	Overall, the facility had a comprehensive, effective QM/performance improvement program over the past 12 months.	
	The facility met any additional elements required by VHA or local policy.	

**Recommendations**

1. We recommended that processes be strengthened to ensure that actions from peer reviews are consistently completed and reported to the Peer Review Committee.
2. We recommended that processes be strengthened to ensure that results of Focused Professional Practice Evaluations for newly hired licensed independent practitioners are consistently reported to the Medical Executive Board.
3. We recommended that processes be strengthened to ensure that Cardiopulmonary Resuscitation Review Committee code reviews include screening for clinical issues prior to the event that may have contributed to the occurrence of the code.
4. We recommended that the Surgical Quality Work Group meet monthly.
5. We recommended that processes be strengthened to ensure that all surgical deaths with identified problems or opportunities for improvement are reviewed by the Morbidity and Mortality Committee.
6. We recommended that processes be strengthened to ensure that the critical incident tracking and notification system’s recipient list is current.

## EOC

The purpose of this review was to determine whether the facility maintained a clean and safe health care environment in accordance with applicable requirements and whether the facility met selected requirements in SDS, the PACU, and the eye clinic.<sup>b</sup>

At the Nashville campus, we inspected the locked MH, SDS, dialysis, and medical intensive care units; the PACU; one inpatient medical surgical unit; the ED; and the cardiology and eye clinics. At the York campus, we inspected the locked MH, medical intensive care, medical/surgical/telemetry, and the CLC West and South/West units; the PACU; the ED; and the chemotherapy and eye clinics. Additionally, we reviewed relevant documents, conversed with key employees and managers, and reviewed 32 employee training records (6 SDS, 20 PACU, and 6 eye clinic). The table below shows the areas reviewed for this topic. The areas marked as NM did not meet applicable requirements and needed improvement. Any items that did not apply to this facility are marked NA.

NM	Areas Reviewed for General EOC	Findings
X	EOC Committee minutes reflected sufficient detail regarding identified deficiencies, corrective actions taken, and tracking of corrective actions to closure.	Six months of EOC Board meeting minutes reviewed: <ul style="list-style-type: none"> <li>• Minutes did not reflect sufficient discussion of deficiencies, corrective actions taken, and tracking of actions to closure. This was a repeat finding from the previous CAP review.</li> </ul>
	An infection prevention risk assessment was conducted, and actions were implemented to address high-risk areas.	
	Infection Prevention/Control Committee minutes documented discussion of identified problem areas and follow-up on implemented actions and included analysis of surveillance activities and data.	
	Fire safety requirements were met.	
	Environmental safety requirements were met.	
	Infection prevention requirements were met.	
	Medication safety and security requirements were met.	
	Auditory privacy requirements were met.	
X	The facility complied with any additional elements required by VHA, local policy, or other regulatory standards.	Local policy requires surveillance systems to be functional. The Joint Commission requires chemicals and solutions to be appropriately stored to minimize or eliminate safety and security risks. <ul style="list-style-type: none"> <li>• At the York campus, the surveillance monitoring systems were not functional at the north hall of locked MH unit 7A and at the east and west halls of locked MH unit 7B.</li> <li>• At the Nashville campus, a cart on the dialysis unit had unsecured dialysis chemicals.</li> </ul>

NM	Areas Reviewed for SDS and the PACU	Findings
	Designated SDS and PACU employees received blood borne pathogens training during the past 12 months.	
NA	Designated SDS employees received medical laser safety training with the frequency required by local policy.	
	Fire safety requirements in SDS and on the PACU were met.	
	Environmental safety requirements in SDS and on the PACU were met.	
NA	SDS medical laser safety requirements were met.	
	Infection prevention requirements in SDS and on the PACU were met.	
	Medication safety and security requirements in SDS and on the PACU were met.	
	Auditory privacy requirements in SDS and on the PACU were met.	
X	The facility complied with any additional elements required by VHA, local policy, or other regulatory standards.	<p>The Centers for Disease Control and Prevention requires that facilities maintain a continuous negative air pressure system in rooms designated for airborne isolation.</p> <ul style="list-style-type: none"> <li>At both campuses, the negative pressure control systems were not functional in the PACU isolation rooms</li> </ul>
<b>Areas Reviewed for Eye Clinic</b>		
	Designated eye clinic employees received laser safety training with the frequency required by local policy.	
	Environmental safety requirements in the eye clinic were met.	
	Infection prevention requirements in the eye clinic were met.	
	Medication safety and security requirements in the eye clinic were met.	
X	Laser safety requirements in the eye clinic were met.	<ul style="list-style-type: none"> <li>At the York campus, there was no laser warning sign posted on the door in the eye clinic laser room.</li> </ul>
	The facility complied with any additional elements required by VHA, local policy, or other regulatory standards.	

**Recommendations**

7. We recommended that processes be strengthened to ensure that Environment of Care Board minutes reflect sufficient discussion of deficiencies, corrective actions taken, and tracking of actions to closure.

- 8.** We recommended that processes be strengthened to ensure that the surveillance monitoring systems on the locked mental health units at the York campus are functional and that regular inspections are documented.
- 9.** We recommended that processes be strengthened to ensure that chemicals stored on the dialysis unit at the Nashville campus are secured at all times and that compliance be monitored.
- 10.** We recommended that processes be strengthened to ensure that the negative pressure control systems in the post-anesthesia care unit isolation rooms at both campuses are functional and that compliance be monitored.
- 11.** We recommended that a laser warning sign be posted on the door in the eye clinic laser room at the York campus and that compliance be monitored.

## Medication Management

The purpose of this review was to determine whether the appropriate clinical oversight and education were provided to patients discharged with orders for fluoroquinolone oral antibiotics.<sup>c</sup>

We reviewed relevant documents and conversed with key managers and employees. Additionally, we reviewed the EHRs of 33 randomly selected inpatients discharged on 1 of 3 selected oral antibiotics. The table below shows the areas reviewed for this topic. The area marked as NM did not meet applicable requirements and needed improvement. Any items that did not apply to this facility are marked NA.

NM	Areas Reviewed	Findings
	Clinicians conducted inpatient learning assessments within 24 hours of admission or earlier if required by local policy.	
	If learning barriers were identified as part of the learning assessment, medication counseling was adjusted to accommodate the barrier(s).	
	Patient renal function was considered in fluoroquinolone dosage and frequency.	
X	Providers completed discharge progress notes or discharge instructions, written instructions were provided to patients/caregivers, and EHR documentation reflected that the instructions were understood.	<ul style="list-style-type: none"> <li>• Nine EHRs (27 percent) did not contain documentation of discharge instructions.</li> </ul>
	Patients/caregivers were provided a written medication list at discharge, and the information was consistent with the dosage and frequency ordered.	
	Patients/caregivers were offered medication counseling, and this was documented in patient EHRs.	
	The facility established a process for patients/caregivers regarding whom to notify in the event of an adverse medication event.	
	The facility complied with any additional elements required by VHA or local policy.	

## Recommendation

**12.** We recommended that processes be strengthened to ensure that providers complete and document patient discharge instructions and that compliance be monitored.

## Coordination of Care

The purpose of this review was to evaluate discharge planning for patients with selected aftercare needs.<sup>d</sup>

We reviewed relevant documents and conversed with key employees. Additionally, we reviewed the EHRs of 31 randomly selected patients with specific diagnoses who were discharged from July 1, 2012, through June 30, 2013. The table below shows the areas reviewed for this topic. The area marked as NM did not meet applicable requirements and needed improvement. Any items that did not apply to this facility are marked NA.

NM	Areas Reviewed	Findings
	Patients' post-discharge needs were identified, and discharge planning addressed the identified needs.	
	Clinicians provided discharge instructions to patients and/or caregivers and validated their understanding.	
X	Patients received the ordered aftercare services and/or items within the ordered/expected timeframe.	<ul style="list-style-type: none"> <li>Five patients (16 percent) did not receive the services and/or items ordered for them within the ordered/expected timeframe.</li> </ul>
	Patients' and/or caregivers' knowledge and learning abilities were assessed during the inpatient stay.	
	The facility complied with any additional elements required by VHA or local policy.	

## Recommendation

**13.** We recommended that processes be strengthened to ensure that patients receive ordered aftercare services and/or items within the ordered/expected timeframe.

## Acute Ischemic Stroke Care

The purpose of this review was to determine whether the facility complied with selected requirements for the assessment and treatment of patients who had an acute ischemic stroke.<sup>e</sup> The Nashville campus is designated as a Primary Stroke Center, and the York campus is designated as a Supporting Stroke Facility.

We reviewed relevant documents and 35 EHRs (26 from the Nashville campus and 9 from the York campus) of randomly selected patients who experienced stroke symptoms. Additionally, we conversed with key employees. We also conducted onsite inspections of two EDs, two intensive care units, and two inpatient medical units—one at each campus. The table below shows the areas reviewed for this topic. The areas marked as NM did not meet applicable requirements and needed improvement. Any items that did not apply to this facility are marked NA.

NM	Areas Reviewed	Findings
X	The facility's stroke policy/plan/guideline addressed all required items.	<ul style="list-style-type: none"> <li>The facility did not have a policy in place that addressed the management of acute ischemic stroke.</li> </ul>
X	Clinicians completed the National Institutes of Health stroke scale for each patient within the expected timeframe.	<ul style="list-style-type: none"> <li>Eighteen of the 26 EHRs from the Nashville campus and all 9 EHRs from the York campus did not contain documented evidence of completed stroke scales.</li> </ul>
X	Clinicians provided medication (tPA) timely to halt the stroke and included all required steps, and tPA was in stock or available within 15 minutes.	<ul style="list-style-type: none"> <li>None of the three patients at the York campus who demonstrated acute ischemic stroke symptoms were considered for transfer to a primary stroke center for further care, possibly because the facility did not have an acute ischemic stroke policy. Since we recommended that the facility develop an acute ischemic stroke policy, we made no separate recommendation here.</li> </ul>
X	Stroke guidelines were posted in all areas where patients may present with stroke symptoms.	<ul style="list-style-type: none"> <li>No stroke guidelines were posted in two intensive care units and two inpatient medical units, one each at the Nashville and York campuses.</li> </ul>
X	Clinicians screened patients for difficulty swallowing prior to oral intake of food or medicine.	<ul style="list-style-type: none"> <li>Twelve of the 26 EHRs from the Nashville campus and 5 of the 9 EHRs from the York campus did not contain documentation that patients were screened for difficulty swallowing prior to oral intake of food or medicine.</li> </ul>
X	Clinicians provided printed stroke education to patients upon discharge.	<ul style="list-style-type: none"> <li>Five of the 22 applicable EHRs from the Nashville campus and 5 of 9 EHRs from the York campus did not contain documentation that stroke education was provided to the patient/caregiver.</li> </ul>

NM	Areas Reviewed (continued)	Findings
NA	The facility provided training to staff involved in assessing and treating stroke patients.	
X	The facility collected and reported required data related to stroke care.	<ul style="list-style-type: none"> <li>• There was no evidence that the following data were collected and/or reported to VHA:               <ul style="list-style-type: none"> <li>○ Percent of eligible patients given tPA</li> <li>○ Percent of patients with stroke symptoms who had the stroke scale completed</li> <li>○ Percent of patients screened for difficulty swallowing before oral intake</li> </ul> </li> </ul>
	The facility complied with any additional elements required by VHA or local policy.	

**Recommendations**

14. We recommended that the facility develop an acute ischemic stroke policy that addresses all required items, that the policy be fully implemented, and that compliance be monitored.

15. We recommended that processes be strengthened to ensure that clinicians complete and document National Institutes of Health stroke scales for each stroke patient and that compliance be monitored.

16. We recommended that stroke guidelines be posted on the intensive care and inpatient medical units.

17. We recommended that processes be strengthened to ensure that clinicians screen patients for difficulty swallowing prior to oral intake.

18. We recommended that processes be strengthened to ensure that clinicians provide printed stroke education to patients upon discharge and that compliance be monitored.

19. We recommended that the facility collect and report to VHA the percent of eligible patients given tissue plasminogen activator, the percent of patients with stroke symptoms who had the stroke scale completed, and the percent of patients screened for difficulty swallowing before oral intake.

## CLC Resident Independence and Dignity

The purpose of this review was to determine whether the facility provided CLC restorative nursing services and complied with selected nutritional management and dining service requirements to assist CLC residents in maintaining their optimal level of functioning, independence, and dignity.<sup>f</sup>

We reviewed 13 EHRs of residents (10 residents receiving restorative nursing services and 3 residents not receiving restorative nursing services but candidates for services). We also observed 4 residents during 2 meal periods, reviewed 10 employee training/competency records and other relevant documents, and conversed with key employees. The table below shows the areas reviewed for this topic. The area marked as NM did not meet applicable requirements and needed improvement. Any items that did not apply to this facility are marked NA.

NM	Areas Reviewed	Findings
	The facility offered restorative nursing services.	
	Facility staff completed and documented restorative nursing services, including active and passive range of motion, bed mobility, transfer, and walking activities, according to clinician orders and residents' care plans.	
	Resident progress towards restorative nursing goals was documented, and interventions were modified as needed to promote the resident's accomplishment of goals.	
	When restorative nursing services were care planned but were not provided or were discontinued, reasons were documented in the EHR.	
	If residents were discharged from physical therapy, occupational therapy, or kinesiotherapy, there was hand-off communication between Physical Medicine and Rehabilitation Service and the CLC to ensure that restorative nursing services occurred.	
X	Training and competency assessment were completed for staff who performed restorative nursing services.	<ul style="list-style-type: none"> <li>Three employee training/competency records did not contain evidence of completed training and competency assessment for range of motion and resident transfers.</li> </ul>
	The facility complied with any additional elements required by VHA or local policy.	
	<b>Areas Reviewed for Assistive Eating Devices and Dining Service</b>	
	Care planned/ordered assistive eating devices were provided to residents at meal times.	
	Required activities were performed during resident meal periods.	

NM	Areas Reviewed for Assistive Eating Devices and Dining Service (continued)	Findings
	The facility complied with any additional elements required by VHA or local policy.	

**Recommendation**

**20.** We recommended that processes be strengthened to ensure that employees who perform restorative nursing services receive training on and competency assessment for range of motion and resident transfers.

## MRI Safety

The purpose of this review was to determine whether the facility ensured safety in MRI in accordance with VHA policy requirements related to: (1) staff safety training, (2) patient screening, and (3) risk assessment of the MRI environment.<sup>9</sup>

We reviewed relevant documents and the training records of 47 designated Level 2 MRI personnel, and we conversed with key managers and employees. We also reviewed the EHRs of 35 randomly selected patients who had an MRI January 1–December 31, 2013. Additionally, we conducted physical inspections of two MRI areas. The table below shows the areas reviewed for this topic. Any items that did not apply to this facility are marked NA. The facility generally met requirements. We made no recommendations.

NM	Areas Reviewed	Findings
	The facility completed an MRI risk assessment, there were documented procedures for handling emergencies in MRI, and emergency drills were conducted in the MRI area.	
	Two patient safety screenings were conducted prior to MRI, and the secondary patient safety screening form was signed by the patient, family member, or caregiver and reviewed and signed by a Level 2 MRI personnel.	
	Any MRI contraindications were noted on the secondary patient safety screening form, and a Level 2 MRI personnel and/or radiologist addressed the contraindications and documented resolution prior to MRI.	
	Level 1 ancillary staff and Level 2 MRI personnel were designated and received level-specific annual MRI safety training.	
	Signage and barriers were in place to prevent unauthorized or accidental access to Zones III and IV.	
	MRI technologists maintained visual contact with patients in the magnet room and two-way communication with patients inside the magnet, and the two-way communication device was regularly tested.	
	Patients were offered MRI-safe hearing protection for use during the scan.	
	The facility had only MRI-safe or compatible equipment in Zones III and IV, or the equipment was appropriately protected from the magnet.	
	The facility complied with any additional elements required by VHA or local policy.	

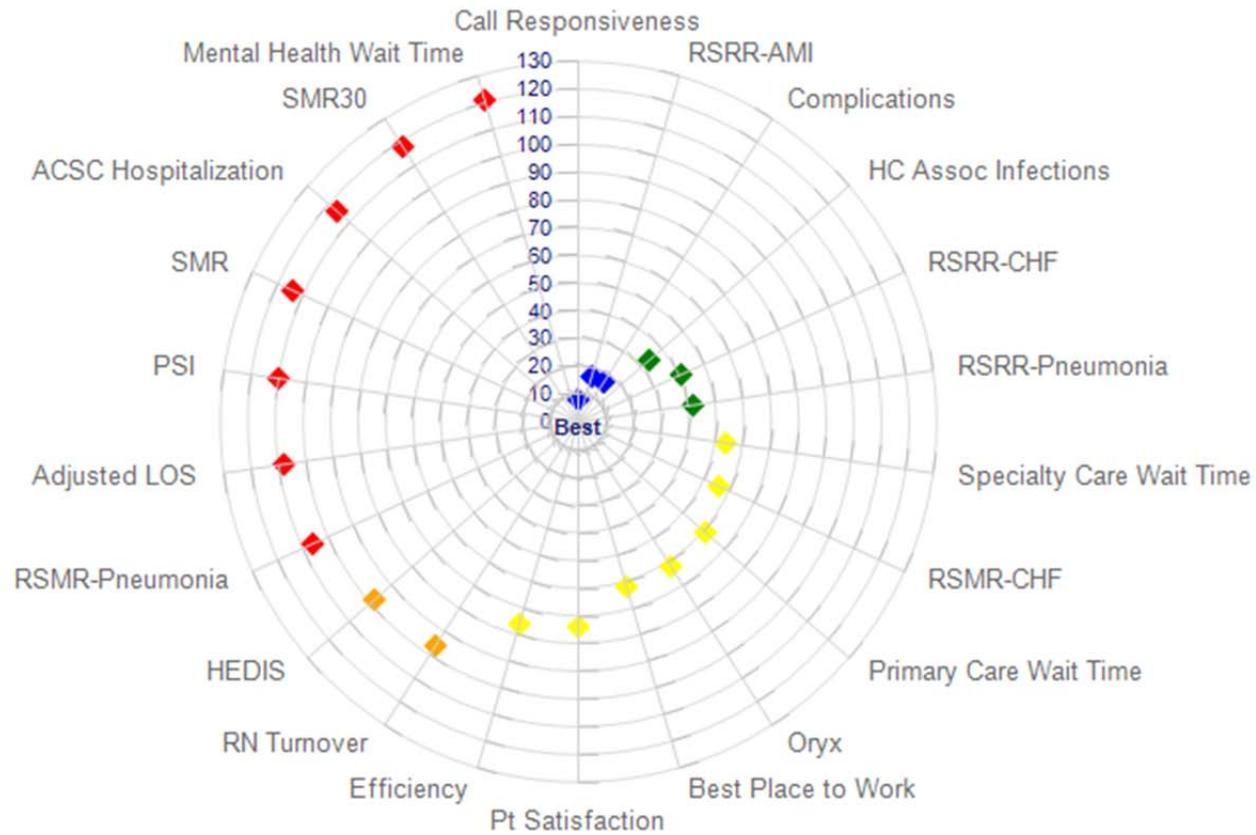
<b>Facility Profile (Nashville/626) FY 2014 through August 2014<sup>1</sup></b>	
<b>Type of Organization</b>	1a-High complexity
<b>Complexity Level</b>	Tertiary
<b>Affiliated/Non-Affiliated</b>	Affiliated
<b>Total Medical Care Budget in Millions</b>	\$664.4
<b>Number of:</b>	
• <b>Unique Patients</b>	85,505
• <b>Outpatient Visits</b>	825,207
• <b>Unique Employees<sup>2</sup></b>	1,864
<b>Type and Number of Operating Beds (July 2014):</b>	
• <b>Hospital</b>	241
• <b>CLC</b>	238
• <b>MH</b>	34
<b>Average Daily Census (July 2014):</b>	
• <b>Hospital</b>	188
• <b>CLC</b>	138
• <b>MH</b>	12
<b>Number of Community Based Outpatient Clinics</b>	13
<b>Location(s)/Station Number(s)</b>	Dover/626GA Bowling Green/626GC Ft. Campbell/626GD Clarksville/626GE Chattanooga/626GF Tullahoma/626GG Cookeville/626GH Vine Hill/626GI Hopkinsville/626GJ McMinnville/626GK Harriman/626GL Maury County/626GM McMinn Outreach/626GN
<b>VISN Number</b>	9

<sup>1</sup> All data is for FY 2014 through August 2014 except where noted.

<sup>2</sup> Unique employees involved in direct medical care (cost center 8200) from most recent pay period.

### Strategic Analytics for Improvement and Learning (SAIL)<sup>3</sup>

Nashville VAMC - 2-Star in Quality (FY2014Q2) (Metric)

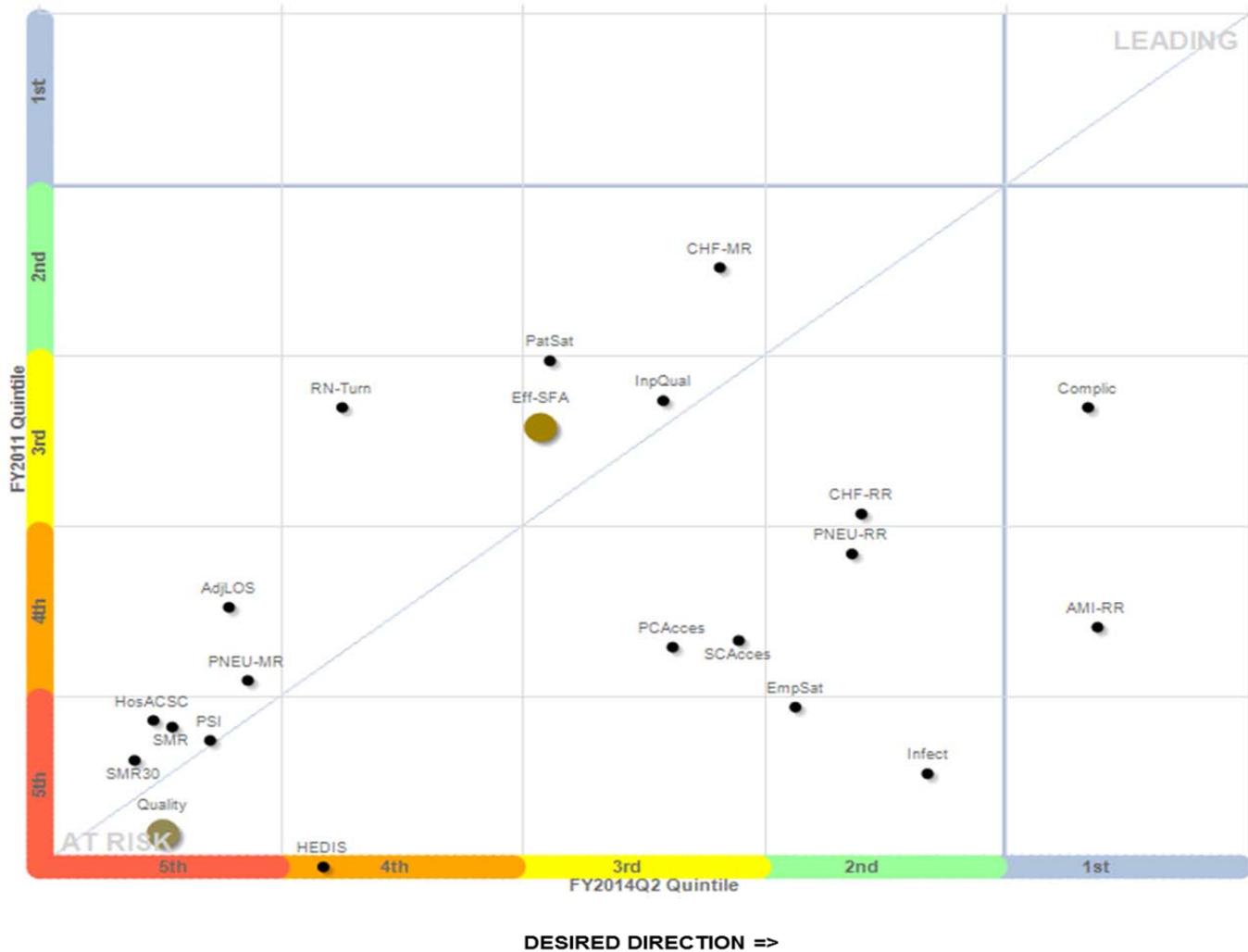


Marker color: Blue - 1st quintile; Green - 2nd; Yellow - 3rd; Orange - 4th; Red - 5th quintile.

<sup>3</sup> Metric definitions follow the graphs.

## Scatter Chart

FY2014Q2 Change in Quintiles from FY2011



**NOTE**

Quintiles are derived from facility ranking on z-score of a metric among 128 facilities. Lower quintile is more favorable.

DESIRED DIRECTION ==>

DESIRED DIRECTION ==>

## Metric Definitions

Measure	Definition	Desired direction
ACSC Hospitalization	Ambulatory care sensitive condition hospitalizations (observed to expected ratio)	A lower value is better than a higher value
Adjusted LOS	Acute care risk adjusted length of stay	A lower value is better than a higher value
Best Place to Work	Overall satisfaction with job	A higher value is better than a lower value
Call Center Responsiveness	Average speed of call center responded to calls in seconds	A lower value is better than a higher value
Call Responsiveness	Call center speed in picking up calls and telephone abandonment rate	A lower value is better than a higher value
Complications	Acute care risk adjusted complication ratio	A lower value is better than a higher value
Efficiency	Overall efficiency measured as 1 divided by SFA (Stochastic Frontier Analysis)	A higher value is better than a lower value
Employee Satisfaction	Overall satisfaction with job	A higher value is better than a lower value
HC Assoc Infections	Health care associated infections	A lower value is better than a higher value
HEDIS	Outpatient performance measure (HEDIS)	A higher value is better than a lower value
MH Status	MH status (outpatient only, the Veterans RAND 12 Item Health Survey)	A higher value is better than a lower value
MH Wait Time	MH wait time for new and established patients (top 50 clinics; FY13 and later)	A higher value is better than a lower value
Oryx	Inpatient performance measure (ORYX)	A higher value is better than a lower value
Physical Health Status	Physical health status (outpatient only, the Veterans RAND 12 item Health Survey)	A higher value is better than a lower value
Primary Care Wait Time	Primary care wait time for new and established patients (top 50 clinics; FY13 and later)	A higher value is better than a lower value
PSI	Patient safety indicator (observed to expected ratio)	A lower value is better than a higher value
Pt Satisfaction	Overall rating of hospital stay (inpatient only)	A higher value is better than a lower value
RN Turnover	Registered nurse turnover rate	A lower value is better than a higher value
RSMR-AMI	30-day risk standardized mortality rate for acute myocardial infarction	A lower value is better than a higher value
RSMR-CHF	30-day risk standardized mortality rate for congestive heart failure	A lower value is better than a higher value
RSMR-Pneumonia	30-day risk standardized mortality rate for pneumonia	A lower value is better than a higher value
RSRR-AMI	30-day risk standardized readmission rate for acute myocardial infarction	A lower value is better than a higher value
RSRR-CHF	30-day risk standardized readmission rate for congestive heart failure	A lower value is better than a higher value
RSRR-Pneumonia	30-day risk standardized readmission rate for pneumonia	A lower value is better than a higher value
SMR	Acute care in-hospital standardized mortality ratio	A lower value is better than a higher value
SMR30	Acute care 30-day standardized mortality ratio	A lower value is better than a higher value
Specialty Care Wait Time	Specialty care wait time for new and established patients (top 50 clinics; FY13 and later)	A higher value is better than a lower value

## VISN Director Comments

**Department of  
Veterans Affairs**

**Memorandum**

**Date:** September 26, 2014

**From:** Director (10N9), VA Mid South Healthcare Network (VISN 9)

**Subject:** **CAP Review of the Tennessee Valley Healthcare System,  
Nashville, TN**

**To:** Director (54SP), Bay Pines Office of Healthcare Inspections  
Director, Management Review Service (VHA 10AR MRS  
OIG CAP CBOC)

1. I have reviewed and concur with the findings and recommendations in the report of the CBOC and PCC Review of the Tennessee Valley Healthcare System.
2. Corrective action plans have been established with completion dates, as detailed in the attached report.
3. If you have any questions or need additional information, contact Cynthia L. Johnson, VISN 9 Quality Management Officer or Joseph Schoeck, VISN 9 Health Systems Specialist/Staff Assistant to the Network Director at 615-695-2200.

  
John E. Patrick  
Network Director

## Facility Director Comments

**Department of  
Veterans Affairs**

**Memorandum**

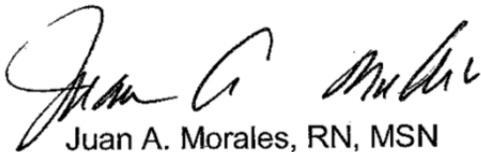
**Date:** 9/16/2014

**From:** Director, Tennessee Valley Healthcare System (626/00)

**Subject:** **CAP Review of the Tennessee Valley Healthcare System,  
Nashville, TN**

**To:** Director, VA Mid South Healthcare Network (10N9)

1. I have reviewed and concur with the findings in this report. Specific corrective actions have been provided for the recommendations.
2. Should you have any questions, please contact Paul Crews, Chief, Quality, Safety and Value, at 615-873-7080.



Juan A. Morales, RN, MSN  
Health System Director

## Comments to OIG's Report

The following Director's comments are submitted in response to the recommendations in the OIG report:

### **OIG Recommendations**

**Recommendation 1.** We recommended that processes be strengthened to ensure that actions from peer reviews are consistently completed and reported to the Peer Review Committee.

Concur

Target date for completion: 6/1/2015

Facility response: A PRC Level 2/3 worksheet was developed and implemented to track action items. It will be embedded in the minutes to track actions from Peer Reviews and be available to PRC members via the agenda drop folder/link. Members will be updated on the completion of action items monthly. Metrics will be reported to the Quality Management Committee. Corrective action follow-up will be monitored until 3 consecutive months demonstrate compliance at 90 percent completion.

**Recommendation 2.** We recommended that processes be strengthened to ensure that results of Focused Professional Practice Evaluations for newly hired licensed independent practitioners are consistently reported to the Medical Executive Board.

Concur

Target date for completion: 3/1/2015

Facility response: Current forms are being revised, allowing more autonomy, with competencies clearly defined. SharePoint (LIP) link has been established and will aid in system monitoring and tracking. Data sources have been clearly defined. Education of staff and committee members regarding timely submission and reporting, as mandated by local policy, will continue. Random department/section audits of new hire LIP six-part folders will be conducted to ensure FPPEs have been completed. Medical Executive Board minutes will be reviewed monthly to ensure minutes clearly document successful completion of FPPEs. Metrics of FPPE completion will be reported to the Quality Executive Board monthly until 90 percent compliance is achieved for 90 days.

**Recommendation 3.** We recommended that processes be strengthened to ensure that Cardiopulmonary Resuscitation Review Committee code reviews include screening for clinical issues prior to the event that may have contributed to the occurrence of the code.

Concur

Target date for completion: 3/1/2015

Facility response: The Code Blue review process is undergoing active restructuring by implementing a 24 hour look-back (up to 72 hours if the patient has been inpatient for that long) using Modified Early Warning System 4<sup>th</sup> generation (MEWS4) criteria to identify patients whose clinical conditions had changed within that time frame and prior to cardiac arrest. Other changes include a physician review of any Code Blue Events where potential clinical issues are identified by this 24–72hr look-back. This information will be reviewed in the Cardiopulmonary Resuscitation Review Committee with opportunities for improvement identified. Monitoring for compliance will continue through review of minutes until at least 90 percent compliance is achieved for 3 months.

**Recommendation 4.** We recommended that the Surgical Quality Work Group meet monthly.

Concur

Target date for completion: 12/1/2014

Facility response: The Surgical Quality Work Group has been meeting monthly since April, 2014, under the direction of the new Chief, Surgical Services. Compliance of meetings will be monitored for another 90 days to ensure compliance with meeting frequency is 100 percent.

**Recommendation 5.** We recommended that processes be strengthened to ensure that all surgical deaths with identified problems or opportunities for improvement are reviewed by the Morbidity and Mortality Committee.

Concur

Target date for completion: 12/1/2014

Facility response: All surgical deaths with identified problems or opportunities for improvement will be reviewed by each surgery section's Morbidity and Mortality (M&M) committee. The minutes of the M&M committee will reflect discussion of the death and any identified opportunities for improvement. The Surgical Work Group will review/track all surgery deaths. Compliance will be monitored through review of the M&M minutes.

**Recommendation 6.** We recommended that processes be strengthened to ensure that the critical incident tracking and notification system's recipient list is current.

Concur

Target date for completion: 8/15/2014

Facility response: The critical incident tracking and notification system's recipient list was made current before the end of the OIG survey. The list will be reviewed for accuracy quarterly and will be documented in the Surgical Quality Workgroup minutes. The Chair of the Surgical Quality Workgroup will be responsible for conveying any changes to the recipient list to the VASQIP nurse in a timely manner for updates.

**Recommendation 7.** We recommended that processes be strengthened to ensure that Environment of Care Board minutes reflect sufficient discussion of deficiencies, corrective actions taken, and tracking of actions to closure.

Concur

Target date for completion: 1/30/2015

Facility response: The Environment of Care Board minutes will include detailed discussion of deficiencies noted in reports, measures and inspections that are presented for the reporting period, including corrective actions needed. An "action tracker" will be included in the minutes for open task tracking that the committee continues to follow. Monthly updates of items on the action tracker will occur until closure. Compliance will be monitored through review of minutes until at least 90 percent compliance is achieved for three months.

**Recommendation 8.** We recommended that processes be strengthened to ensure that the surveillance monitoring systems on the locked mental health units at the York campus are functional and that regular inspections are documented.

Concur

Target date for completion: 10/15/2014

Facility response: Cameras were repaired before the end of the OIG survey. A nursing assignment was added to each Shift Assignment Sheet with the verbiage "check camera functionality." Any discrepancy will be reported to the Nurse Manager during administrative hours and Nurse-On-Duty during off tours. Work orders will be placed when deficiencies are identified and additional staff will be posted for areas where cameras are not working until the camera is fixed. The cameras and recording system will be checked monthly by Biomedical Engineering in real time to check functionality with results reported to the Environment of Care Board.

**Recommendation 9.** We recommended that processes be strengthened to ensure that chemicals stored on the dialysis unit at the Nashville campus are secured at all times and that compliance be monitored.

Concur

Target date for completion: 11/1/2014

Facility response: Dialysis technicians were reminded during their staff meetings of the requirement to never leave carts with any chemicals unattended. All carts with chemicals will be stored in a secured room when not in use. The lead technician will monitor for compliance daily until three months of 100 percent compliance is achieved.

**Recommendation 10.** We recommended that processes be strengthened to ensure that the negative pressure control systems in the post-anesthesia care unit isolation rooms at both campuses are functional and that compliance be monitored.

Concur

Target date for completion: 11/1/2015

Facility response: Replacement electronic monitoring systems have been ordered for the PACU at both campuses and will be installed as soon as they are received (within 30 days). In addition, mechanical “flapper” type monitors will be added to the rooms to provide a visual verification of the room pressurization (within 30 days).

**Recommendation 11.** We recommended that a laser warning sign be posted on the door in the eye clinic laser room at the York campus and that compliance be monitored.

Concur

Target date for completion: 9/2/2014

Facility response: A temporary sign was posted on the eye clinic laser room at the York campus before the OIG visit was complete. A permanent, yellow warning sign was ordered and has now replaced the temporary sign. The compliance of the use of the sign will be monitored by the Eye Clinic staff at the York campus.

**Recommendation 12.** We recommended that processes be strengthened to ensure that providers complete and document patient discharge instructions and that compliance be monitored.

Concur

Target date for completion: 7/1/2015

Facility response: A multi-disciplinary committee is being formed to address strengthening the patient discharge plan to include discharge instructions. Compliance

will be monitored through review of 30 electronic records of discharges per month. Monitoring will continue until 90 percent compliance is achieved for three months. Metrics will be reported to the Quality Executive Board.

**Recommendation 13.** We recommended that processes be strengthened to ensure that patients receive ordered aftercare services and/or items within the ordered/expected timeframe.

Concur

Target date for completion: 4/1/2015

Facility response: A multi-disciplinary workgroup will be established to address the discharge planning process. The workgroup will be led by SWS and will look at how to best address discharge planning needs and services. The current policy will be revised or an additional policy written to better define the discharge process and staff will be educated. The discharge template will be provided to the patient and/or family member, as appropriate. Random audits of aftercare service scheduling and services will be completed on 15 discharged patient records per month with metrics reported to the Quality Executive Board until 90 percent compliance is achieved for 90 days.

**Recommendation 14.** We recommended that the facility develop an acute ischemic stroke policy that addresses all required items, that the policy be fully implemented, and that compliance be monitored.

Concur

Target date for completion: 3/20/2015

Facility response: The VA Tennessee Valley Healthcare System (TVHS) will have approved policies defining the treatment of Acute Ischemic Stroke (AIS) as required by VHA Directive 2011-038 by October 22, 2014. TVHS is an integrated healthcare system with medical centers at the Nashville campus and the Alvin C. York campus in Murfreesboro. The policies will reflect differences in the capabilities of the two medical centers. The Nashville Medical Center functions as a Primary Stroke Center (PSC) and the Alvin C. York Medical Center functions as a Supporting Stroke Facility (SSF).

Validation of compliance with VHA Directive 2011-038 and facility policies will be monitored through the TVHS Stroke Center Oversight Committee (SCOC) and reported to leadership through the Clinical Care Committee (CCC) on a quarterly basis.

**Recommendation 15.** We recommended that processes be strengthened to ensure that clinicians complete and document National Institutes of Health stroke scales for each stroke patient and that compliance be monitored.

Concur

Target date for completion: 3/20/2015

Facility response: TVHS has completed an educational program on performing the National Institutes of Health Stroke Scale (NIHSS) for all of the Stroke Team members at the Nashville campus and will complete training for all of the Stroke Team members at the Alvin C. York campus by October 22, 2014. TVHS has developed standardized templates for stroke CPRS notes that contain the NIHSS as a required element.

Validation of compliance will be monitored by the TVHS Stroke Center Oversight Committee for a period of not less than 90 days to ensure 90 percent performance.

**Recommendation 16.** We recommended that stroke guidelines be posted on the intensive care and inpatient medical units.

Concur

Target date for completion: 10/31/2014

Facility response: TVHS will post the facility stroke flowchart for recognition and treatment of AIS according to local policy in all outpatient and inpatient areas by October 22, 2014. The Act FAST algorithm, developed by the American Stroke Association, and Stroke Team pager number will be included in the posted material.

**Recommendation 17.** We recommended that processes be strengthened to ensure that clinicians screen patients for difficulty swallowing prior to oral intake.

Concur

Target date for completion: 3/20/2015

Facility response: TVHS has an established dysphagia policy (TVHS Memorandum 626-12-126-01 Evaluation and Management of Swallowing and Feeding Disorders). Additionally, a dysphagia assessment template has been created in CPRS for standard use in the Nashville Emergency Department and the Stroke Admission Note. To ensure that clinicians screen patients for difficulty swallowing prior to oral intake, the dysphagia memorandum and assessment template will be made available, with in-service education, to members of the stroke teams, ICUs and EDs at both TVHS campuses. Validation of compliance will be monitored by the TVHS Stroke Center Oversight Committee for a period of not less than 90 days to ensure 90 percent performance.

**Recommendation 18.** We recommended that processes be strengthened to ensure that clinicians provide printed stroke education to patients upon discharge and that compliance be monitored.

Concur

Target date for completion: 3/20/2015

Facility response: Education Service will identify select stroke education materials that will be available for Veterans. Educational material will be added to the tools section in

CPRS so staff can print and provide to patients on discharge. Reminder dialogue will be added to the Education Note for staff to document the specific handout that was provided to the Veteran/Caregiver. Training of staff will occur by November 30, 2014. Compliance monitoring of documentation of printed materials will be reported to the Quality Executive Board.

**Recommendation 19.** We recommended that the facility collect and report to VHA the percent of eligible patients given tissue plasminogen activator, the percent of patients with stroke symptoms who had the stroke scale completed, and the percent of patients screened for difficulty swallowing before oral intake.

Concur

Target date for completion: 3/20/2015

Facility response: AIS data will be entered into the IPEC tool monthly and reviewed quarterly by the TVHS Stroke Center Oversight Committee to monitor program metrics and patient care.

**Recommendation 20.** We recommended that processes be strengthened to ensure that employees who perform restorative nursing services receive training on and competency assessment for range of motion and resident transfers.

Concur

Target date for completion: 8/15/2014

Facility response: 100 percent of the restorative nursing team has received comprehensive training on the range of motion and resident transfers restorative programs. These eight individuals will be providing the range of motion and resident restorative care. A competency assessment has been completed on all restorative nursing assistants on range of motion and transfer. All future restorative nursing assistants will have competency assessments completed within eight weeks of hire.

## OIG Contact and Staff Acknowledgments

<b>Contact</b>	For more information about this report, please contact the OIG at (202) 461-4720.
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This report is available at [www.va.gov/oig](http://www.va.gov/oig).

## Endnotes

<sup>a</sup> References used for this topic included:

- VHA Directive 2009-043, *Quality Management System*, September 11, 2009.
- VHA Handbook 1050.01, *VHA National Patient Safety Improvement Handbook*, March 4, 2011.
- VHA Directive 2010-017, *Prevention of Retained Surgical Items*, April 12, 2010.
- VHA Directive 2010-025, *Peer Review for Quality Management*, June 3, 2010.
- VHA Directive 2010-011, *Standards for Emergency Departments, Urgent Care Clinics, and Facility Observation Beds*, March 4, 2010.
- VHA Directive 2009-064, *Recording Observation Patients*, November 30, 2009.
- VHA Handbook 1100.19, *Credentialing and Privileging*, October 15, 2012.
- VHA Directive 2008-063, *Oversight and Monitoring of Cardiopulmonary Resuscitative Events and Facility Cardiopulmonary Resuscitation Committees*, October 17, 2008.
- VHA Handbook 1907.01, *Health Information Management and Health Records*, September 19, 2012.
- VHA Directive 6300, *Records Management*, July 10, 2012.
- VHA Directive 2009-005, *Transfusion Utilization Committee and Program*, February 9, 2009.
- VHA Handbook 1106.01, *Pathology and Laboratory Medicine Service Procedures*, October 6, 2008.

<sup>b</sup> References used for this topic included:

- VHA Directive 2011-007, *Required Hand Hygiene Practices*, February 16, 2011.
- VHA Handbook 1121.01, *VHA Eye Care*, March 10, 2011.
- VA National Center for Patient Safety, “Multi-Dose Pen Injectors,” Patient Safety Alert 13-04, January 17, 2013.
- “Adenovirus-Associated Epidemic Keratoconjunctivitis Outbreaks –Four States, 2008–2010,” Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, August 16, 2013.
- Various requirements of The Joint Commission, the Occupational Safety and Health Administration, the American National Standards Institute/Advancing Safety in Medical Technology, the Centers for Disease Control and Prevention, the International Association of Healthcare Central Service Materiel Management, the National Fire Protection Association, the Health Insurance Portability and Accountability Act, Underwriters Laboratories.

<sup>c</sup> References used for this topic included:

- VHA Handbook 1108.06, *Inpatient Pharmacy Services*, June 27, 2006.
- VHA Handbook 1108.05, *Outpatient Pharmacy Services*, May 30, 2006.
- VHA Directive 2011-012, *Medication Reconciliation*, March 9, 2011.
- VHA Handbook 1907.01, *Health Information Management and Health Records*, September 19, 2012.
- Manufacturer’s instructions for Cipro® and Levaquin®.
- Various requirements of The Joint Commission.

<sup>d</sup> References used for this topic included:

- VHA Handbook 1120.04, *Veterans Health Education and Information Core Program Requirements*, July 29, 2009.
- VHA Handbook 1907.01, *Health Information Management and Health Records*, September 19, 2012.
- The Joint Commission, *Comprehensive Accreditation Manual for Hospitals*, July 2013.

<sup>e</sup> The references used for this topic were:

- VHA Directive 2011-038, *Treatment of Acute Ischemic Stroke*, November 2, 2011.
- Guidelines for the Early Management of Patients with Acute Ischemic Stroke (AHA/ASA Guidelines), January 31, 2013.

<sup>f</sup> References used for this topic included:

- VHA Handbook 1142.01, *Criteria and Standards for VA Community Living Centers (CLC)*, August 13, 2008.
- VHA Handbook 1142.03, *Requirements for Use of the Resident Assessment Instrument (RAI) Minimum Data Set (MDS)*, January 4, 2013.
- Centers for Medicare and Medicaid Services, *Long-Term Care Facility Resident Assessment Instrument User’s Manual*, Version 3.0, May 2013.
- VHA Manual M-2, Part VIII, Chapter 1, *Physical Medicine and Rehabilitation Service*, October 7, 1992.
- Various requirements of The Joint Commission.

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<sup>g</sup> References used for this topic included:

- VHA Handbook 1105.05, *Magnetic Resonance Imaging Safety*, July 19, 2012.
- Emanuel Kanal, MD, et al., “ACR Guidance Document on MR Safe Practices: 2013,” *Journal of Magnetic Resonance Imaging*, Vol. 37, No. 3, January 23, 2013, pp. 501–530.
- The Joint Commission, “Preventing accidents and injuries in the MRI suite,” Sentinel Event Alert, Issue 38, February 14, 2008.
- VA National Center for Patient Safety, “MR Hazard Summary,” <http://www.patientsafety.va.gov/professionals/hazards/mr.asp>.
- VA Radiology, “Online Guide,” [http://vaww1.va.gov/RADIOLOGY/OnLine\\_Guide.asp](http://vaww1.va.gov/RADIOLOGY/OnLine_Guide.asp), updated October 4, 2011.