



# Department of Veterans Affairs Office of Inspector General

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## Healthcare Inspection

### Evaluation of Radiology and Laboratory Service Timeliness in Veterans Health Administration Facilities

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## **Executive Summary**

The review was conducted to determine whether Veterans Health Administration (VHA) medical facilities provided diagnostic radiology and laboratory services to outpatients in a timely manner. We did not find any particular pattern of issues or deficiencies which resulted in radiology exam or laboratory test delays across the facilities. We determined that, overall, laboratory tests and radiology exams were completed within established timeframes, and we did not make any recommendations for improvements. However, we suggested that VHA Radiology managers assess the need to:

- Define timeliness standards for “Urgent” radiology requests.
- Educate providers on the appropriate use of “future date” radiology requests.
- Improve monitoring processes for outsourced radiology services.

The Acting Under Secretary for Health concurred with our findings and suggestions. We consider all issues resolved.



**DEPARTMENT OF VETERANS AFFAIRS**  
**Office of Inspector General**  
**Washington, DC 20420**

**TO:** Acting Under Secretary for Health (10N)

**SUBJECT:** Healthcare Inspection – Evaluation of Radiology and Laboratory Service  
Timeliness in Veterans Health Administration Facilities

## **Purpose**

The Department of Veterans Affairs, Office of Inspector General's (OIG) Office of Healthcare Inspections (OHI) conducted a review to determine whether Veterans Health Administration (VHA) medical facilities provided diagnostic radiology and laboratory services to outpatients in a timely manner. We conducted this review at 21 Combined Assessment Program (CAP) review sites between June 2005 and November 2005.

## **Background**

Radiology and laboratory services are critical components in the delivery of quality patient care and provide the diagnostic confirmation needed for clinicians to initiate treatment. As VHA medical facilities range from community based outpatient clinics (CBOCs) to tertiary care medical centers, the types of services offered and the method of service delivery vary greatly from facility to facility. However, the provision of timely radiology and laboratory services is essential, regardless of facility location and complexity, to ensure the delivery of high quality patient care.

*Radiology Service.* Radiology Service (also known as Imaging Service in facilities that offer Nuclear Medicine) offers diagnostic and interventional services including x-rays, computerized tomography (CT), magnetic resonance imaging (MRI), ultrasonography (US), angioplasty, and image guided biopsy. Due to difficulty recruiting radiologists in some areas of the country, VHA medical facilities often use consultants and contract vendors to complete workload that cannot be managed by VHA staff radiologists.

Digital technology, available in most VHA medical facilities, allows radiologists to view high definition radiographic images on a computer screen immediately after completion of exams. Voice-recognition software is being implemented in radiology departments nationwide, which allows radiologists to interpret images and dictate and verify reports within minutes. To meet performance improvement targets, VHA Performance Measure

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19 requires that 90 percent of radiology exams should be interpreted and verified within 2 days of exam completion. In accordance with VHA access guidelines, routine (non-urgent) radiology exams should be completed within 30 days of the requested date. Other timeliness standards are not universally defined or mandated; individual VHA medical facilities establish timeliness standards locally. VHA medical facilities performed or outsourced over 8 million radiology exams during fiscal year (FY) 2005.

*Pathology and Laboratory Medicine Service.* Pathology and Laboratory Medicine Service (P&LMS) provides the principal diagnostic laboratory testing for the diagnosis, treatment, and prevention of disease in patients served in VHA medical facilities. P&LMS either performs those tests and services required to provide quality care to patients or arranges for those services to be performed by an accredited laboratory.<sup>1</sup> With technological advances, some laboratory tests can be completed at the point of care (e.g. emergency room) to improve access and timeliness of testing and results. VHA policy requires P&LMS to ensure the availability of “...accurate, reliable, and timely laboratory medicine results...” to the patient’s health care provider, and dictates use of the computerized patient record system (CPRS) to document laboratory results. VHA does not currently have a performance measure specifically related to outpatient laboratory services;<sup>2</sup> individual VHA medical facilities often establish timeliness standards locally. VHA medical facilities performed or outsourced over 207 million diagnostic laboratory tests during FY 2005.

## Scope and Methodology

We assessed radiology and laboratory timeliness at 21 VHA medical facilities during CAP reviews conducted between June and November 2005. We used a downloadable computer program created by a VHA computer specialist to extract scheduling, turn-around-time (TAT), and workload data from VistA<sup>3</sup> radiology and laboratory files at each of the medical facilities.

For the purposes of our review, we selected three high volume radiology exams—CT, MRI, and US. For laboratory tests, we selected Troponin (determines heart attack or other damage to the heart) and CBC (complete blood count – evaluates red and white blood cell and platelet counts). Information technology (IT) staff at the medical facilities generated the requested reports for exams and tests completed during a 2–4 week date range during the month immediately preceding our site visits.

The reports provided average waiting times to schedule exams and average TATs for radiology and laboratory test results. As averages can be significantly influenced by just a few extreme outliers, our goal was to identify general patterns of timeliness and to

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<sup>1</sup> VHA Handbook 1106.1, *Pathology and Laboratory Medicine Service Procedures*, June 4, 2003.

<sup>2</sup> Troponin TAT is a cardiovascular performance measure indicator for inpatients with acute coronary syndrome.

<sup>3</sup> Veterans Integrated Systems Technology Architecture (VistA) is the platform on which VHA’s electronic medical records are based.

review individual cases to either confirm or refute that delays occurred. At each CAP site, we shared the reports with Radiology and P&LMS managers, discussed the overall data and whether it presented opportunities for improvement, and reviewed a sample of individual cases where exam or test completion times substantially exceeded expectations.

We included 14 sites in the radiology portion of our report. At the seven remaining sites, computerized data was not available. The 14 medical facilities in our sample completed a total of 15,125<sup>4</sup> CT, MRI, and US exams during the date ranges specified. We included all 21 VHA medical facilities in the laboratory portion of our report. The medical facilities completed a total of 76,130<sup>5</sup> Troponin and CBC tests during the date ranges specified. We randomly selected and reviewed 152 radiology cases and 145 laboratory cases that were outliers to determine whether the reasons for the delays were evident.

In addition, we interviewed selected radiology and laboratory staff to determine the processes used to schedule, complete, and document exams and tests, to discuss and evaluate reasons for delays, and to assess Service-level performance improvement activities. We reviewed VHA directives, policies, and national performance measure data, and examined local policies to determine each facility's timeliness expectations, if defined. When no policy on timeliness existed, we asked clinical managers about their expectations. We applied the appropriate standard when evaluating each record.

We conducted the evaluation in accordance with the *Quality Standards for Inspections* published by the President's Council on Integrity and Efficiency.

## Inspection Results

Our review showed that while individual VHA medical facilities often had regional and site-specific challenges (such as difficulty recruiting radiologists or the need to update equipment), those facilities were making efforts to improve the timeliness of their radiology and laboratory services. Our record review did not identify any cases where delays actually harmed patients. However, we found 13 of 297 cases where delays had the potential to cause serious harm. In one radiology case, a physician ordered an urgent MRI for sudden onset, progressive vertigo. The MRI was not completed for approximately 5 months, even though the patient remained symptomatic. While the results of the exam were normal, the patient's symptoms could have reflected a serious medical condition requiring prompt attention.

We did not find any particular pattern of issues or deficiencies which resulted in radiology exam or laboratory test delays across the VHA medical facilities. We determined that, overall, laboratory tests were generally completed within established

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<sup>4</sup> CT = 7,098; MRI = 3,083; US = 4,944.

<sup>5</sup> Troponin = 5,850; CBC = 70,280.

timeframes. However, in 64 of 145 outlier cases we reviewed, we did not find any documented reason for the delay. P&LMS managers told us that delays sometimes occurred when additional testing was required to validate abnormal laboratory results. At one facility, delays were related to the timing of specimen transport from a CBOC. We asked facility P&LMS managers to follow up, assess whether the delays could have been prevented, and take corrective actions as needed. We did not make any recommendations for improvement to facility P&LMS managers.

However, we noted the following issues for VHA Radiology managers' attention:

*Standardization of Priority Designations.* VHA did not have standardized timeframes for STAT<sup>6</sup> and "Urgent" priority designations. At 8 of 14 facilities reviewed, managers had policies defining TAT expectations for STAT designations, and at 7 of 14 facilities, managers had policies defining TAT expectations for "Urgent" designations. As most providers would agree that STAT generally means "immediately," we saw limited variation in TAT expectations and actual TAT performance.

However, the "Urgent" priority designation is less clear, and we found considerable variation in expectation and performance. Some radiology managers told us that "Urgent" exams should be completed within 1 day, while another manager said that 2 weeks was an acceptable time frame for completion. In some cases, providers were ordering exams with an "Urgent" priority with no clear understanding of what the response time should be. Of the facilities in our sample that had "Urgent" TAT data available for review, the average TAT was 15.75 days (range at individual facilities of 7.2 days to 19 days). We found that 6 of the 7 facilities with documented TAT expectations for "Urgent" examinations did not meet their own standard.

*"Future Date" Requests.* CPRS has a function that allows providers to request radiology exams for a desired date. Providers can request exams for future dates to coincide with future appointments or can request serial or follow-up exams, as in the case of annual mammograms. However, we found that providers wanting a "future date" exam often did not enter the future date; rather, they allowed CPRS to default to "today." We identified multiple cases where providers apparently requested exams using the default option of "today," but progress notes reflected that exams were desired for future dates as part of serial follow-up. We could not determine with certainty whether providers were unaware of the procedure to request "future date" exams or they simply selected the default option. Exams desired for future dates but requested "today," by default, appear on waiting time reports as delays when they really are not. In addition, providers who do not properly request exams for dates when they are needed may subject their patients to duplicate and unnecessary exams.

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<sup>6</sup> STAT is a medical term which comes from the Latin *statim*, the word for immediately.

*Outsourced Radiology Services.* When radiology contractors outside the VHA medical facilities were used, timely transcription and reporting were not always assured. Several VHA medical facilities used outsourced radiology services to complete workload when VA staff radiologists were not on duty (evenings, weekends, holidays) or when specific radiological services were not available through their facility. Outsourced radiology services should be provided in a timely manner as defined in the contracts; however, we found some VHA medical facilities did not have any method to monitor the timeliness of these services. We advised managers at four of the five VHA medical facilities that routinely utilized outsourced radiology services to develop monitoring processes that ensured timely completion of reports and availability of results to providers.

## Conclusion

Overall, we found that selected laboratory services were provided in a timely manner at the VHA medical facilities in our sample. While individual facilities may have had timeliness challenges due to unique job market conditions or other local resource issues, radiology managers were making efforts to enhance access to and timeliness of radiology services. We identified opportunities to: (1) define timeliness standards for “Urgent” radiology requests; (2) educate providers on the appropriate use of “future date” radiology requests; and (3) improve monitoring processes for outsourced radiology services. When applicable, we made these recommendations to individual VHA medical facility managers. While we could not say that these conditions were indicative of VHA system-wide issues, we believe that VHA Radiology managers should further assess the need to develop national guidance to address these concerns.

## Comments

The Acting Under Secretary for Health agreed with our findings and reported that actions would be taken to enhance processes in Radiology. We considered all issues resolved.

*(original signed by:)*

JOHN D. DAIGH, JR., M.D.  
Assistant Inspector General for  
Healthcare Inspections

**Evaluation of Radiology and Laboratory Timeliness  
CAP Sites**

| <b>VHA Facility</b>     | <b>Radiology</b> | <b>Laboratory</b> | <b>CAP Recommendation</b> |
|-------------------------|------------------|-------------------|---------------------------|
| Asheville               | X                | X                 |                           |
| Bedford                 | X                | X                 | X                         |
| Birmingham              | X                | X                 |                           |
| Buffalo                 |                  | X                 | X                         |
| Butler                  | X                | X                 |                           |
| Fayetteville, NC        | X                | X                 |                           |
| Fayetteville, AK        |                  | X                 |                           |
| Lebanon                 |                  | X                 |                           |
| Lexington               | X                | X                 |                           |
| Madison                 | X                | X                 |                           |
| Northampton             |                  | X                 | X                         |
| North Chicago           | X                | X                 |                           |
| Oklahoma City           | X                | X                 |                           |
| San Francisco           | X                | X                 |                           |
| Spokane                 |                  | X                 |                           |
| Tennessee Valley<br>HCS | X                | X                 | X                         |
| Tucson                  | X                | X                 |                           |
| Togus                   |                  | X                 | X                         |
| West Palm Beach         | X                | X                 |                           |
| White River Junction    | X                | X                 | X                         |
| Wilmington              |                  | X                 |                           |

## Acting Under Secretary for Health Comments

**Department of  
Veterans Affairs**

**Memorandum**

**Date:** September 21, 2006

**From:** Acting Under Secretary for Health (10)

**Subject:** OIG Draft Report, Evaluation of Radiology and Laboratory Service Timeliness in Veterans Health Administration Facilities, Project No. 2005-01658-HI-0190 (WebCIMS 363706)

**To:** Inspector General for Audit (50)

1. I have reviewed the draft report and I am pleased to know that timely laboratory services were provided among the Veterans Health Administration (VHA) facilities included in your review. I agree, however, that additional effort may be needed to enhance access to and timeliness of radiology services in the VA health care system.

2. Your review identified three opportunities where imaging services could be further enhanced at VHA medical facilities. First, your auditors found that radiology requests marked “urgent” lacked timeliness standards. Although I agree with your assessment, you should also know that timeliness for “urgent” radiology services differs from “STAT” services in that it may depend on the setting and medical condition of the patient.

3. Second, your report suggests that providers should be educated on the need to specify a desired date when ordering radiology studies. In that regard, radiology wait times will be monitored as a performance measure in 2008. In preparation for meeting this new standard, quality managers will be educated on the importance of accurately entering the desired date of radiology requests.

4. Third, I agree that an improved means of monitoring processes of outsourced radiology services is also needed. We are currently planning to implement a national VA Teleradiology Center to provide better monitoring of outsourced services, and as a result, eliminate poor performing contracts.

5. Thank you for the opportunity to review the draft report. If you have any questions, please contact Margaret M. Seleski, Director, Management Review Service (10B5) at (202) 565-7638.

*(original signed by:)*

Michael J. Kussman, MD, MS, MACP

## OIG Contact and Staff Acknowledgments

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Acknowledgments

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