



Department of Veterans Affairs Office of Inspector General

Accuracy of Data Used to Compute VA's Chronic Disease Care and Prevention Indices for FY 2001

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Memorandum to the Under Secretary for Health (10)

**Accuracy of Data Used to Compute VA's Chronic Disease Care
and Prevention Indices for FY 2001**

1. The Office of Inspector General (OIG) conducted an audit to determine whether Veterans Health Administration (VHA) officials accurately computed the Chronic Disease Care Index (CDCI) and the Prevention Index (PI) for Fiscal Year (FY) 2001. This was one in a series of audits assessing the accuracy of data used to measure the Department of Veterans Affairs' (VA's) performance in accordance with the Government Performance and Results Act (GPRA) of 1993.
2. VHA computes various performance measures annually in accordance with GPRA requirements. Two key performance measures are the CDCI and PI. The CDCI and PI represent the degree of nationwide compliance by VA medical centers (VAMCs) with prescribed treatment guidelines for selected medical conditions. The CDCI captures data on 23 medical interventions to assess how well VHA follows nationally recognized guidelines for treating patients experiencing health problems in 7 health care categories: ischemic heart disease, hypertension, chronic obstructive pulmonary disease, diabetes mellitus, major depressive disorder, schizophrenia, and tobacco use. The number of medical interventions within each health care category ranges from one to eight.
3. The PI captures data on nine medical interventions to measure how well VHA follows nationally recognized recommendations for early detection and prevention of certain diseases and health factors that significantly determine health outcomes. The medical interventions involve vaccinating patients that are highly susceptible to influenza or pneumonia, screening for alcohol or tobacco use and high cholesterol levels, and testing patients for four types of cancer (breast, cervix, colon, and prostate).
4. The source of data used in computing the CDCI and PI is the External Peer Review Program (EPRP). VHA contracts with the West Virginia Medical Institute (WVMI) to administer the EPRP. WVMI hires health care professionals, who are called abstractors, to visit VAMCs and review the records of randomly selected patients. The results of the abstractor reviews are compiled in a database by WVMI personnel and submitted to VHA. EPRP results are used to determine the percent of patients who received each recommended intervention. The aggregate CDCI and PI rates are then computed by averaging the results of review of the medical interventions. The EPRP is a functional component of VHA's quality management program.
5. In FY 2001, VHA established performance goals of 77 percent for the CDCI and 73 percent for the PI. VA's Annual Performance Report for that year showed VHA medical centers achieved an average compliance rate of 77 percent for the 23 interventions included in the CDCI and an average compliance rate of 80 percent for the 9 interventions included in the PI, meeting and exceeding the respective goals.

6. To assess the accuracy of data used to calculate these two performance measures, we randomly selected 168 medical records reviewed by abstractors during the first quarter of FY 2001. We had VAMC quality assurance personnel review the patients' medical records to verify the specific diagnosis and treatment information recorded in the abstractor database and provide us their findings on data validation worksheets, including supporting documentation. We then compared the data validation worksheets to abstractor database results, evaluated differences, and recalculated the CDCI and PI rates for the quarter reviewed.
7. The sample results showed data used to compute the CDCI and PI were accurate. CDCI abstractor database results for the records in our sample supported a rate of 74 percent compared to our calculation of 75 percent. For the PI, abstractor database results supported a rate of 81 percent compared to our calculation of 80 percent. (See Appendices D and E for more detailed sample results.)
8. Based on the sample results and a review of related internal controls, we concluded that the differences between the abstractor database results and results of our sample were immaterial given the complexity of the reviews.
9. VHA officials reviewed a draft of this report and had no additional comments on the issue.

For the Assistant Inspector General for Auditing

(original signed by:)

MICHAEL E. GUIER

Director, Dallas Audit Operations Division

Background

GPRA requires Federal agencies to set goals, measure performance against those goals, and report on their accomplishments. The law is part of a statutory framework for improving management of the Federal Government. To comply with GPRA, VA established performance goals for the quality of health care afforded veterans in its medical facilities.

VHA developed the CDCI and PI performance measures in support of VA's goal to provide high-quality health care to veterans. The CDCI is used to evaluate the overall effectiveness of chronic disease management programs at VA medical facilities. The objective of a chronic disease management program is to improve the general health of patients while enhancing efficiency and reducing the need for related health care services in the future.

The CDCI was developed to assess how well VHA follows nationally recognized guidelines for treating patients with common health problems. It consists of 23 medical interventions related to 7 chronic health problems as listed in Appendix D. A medical intervention is a diagnostic test or procedure, prescribed therapy, or other action intended to detect, prevent, or treat a health problem. For example, screening patients for depression is one of two medical interventions included in the CDCI related to major depressive disorder, and performing periodic eye examinations is one of eight medical interventions related to diabetes mellitus.

The PI is intended to measure how well VHA follows nationally recognized recommendations for the detection and prevention of diseases or health factors that significantly determine health outcomes. It consists of nine medical interventions, such as offering vaccinations to patients who are highly susceptible to influenza and screening patients for tobacco use. The nine interventions included in the PI are listed in Appendix E.

The EPRP is the source of data used in computing the CDCI and PI. The EPRP collects data relating to the interventions evaluated through reviews of medical records. The medical record reviews are performed by representatives of WVMI, the contractor responsible for administering the EPRP. WVMI makes arrangements for health care professionals, called abstractors, to review patients' medical records and collect data concerning the patients' diagnoses and related health care. The medical records are selected based on statistical samples of patient visits in designated clinics, and diagnoses matching the selected medical interventions, during a specified period. Using results of the abstractors' reviews, VHA officials determine the number of patients who should have received each intervention and the percentage that did receive each intervention. The aggregate CDCI and PI rates are then computed by averaging the nationwide review results for the appropriate medical interventions.

For FY 2001, VHA established performance goals of 77 percent for the CDCI and 73 percent for the PI. VHA achieved related rates of 77 percent for the CDCI and 80 percent for the PI. This indicates that the average rate of compliance for the 23 interventions included in the CDCI met the goal of 77 percent and the average rate of compliance for the 9 interventions in the PI exceeded the goal of 73 percent.

Objective, Methodology, and Scope

Objective

The purpose of the audit was to determine whether VHA officials accurately computed the CDCI and PI for FY 2001. This was one in a series of audits to assess the accuracy of data used to measure VA's performance in accordance with GPRA. Prior audits in the series are listed in Appendix F.

Methodology

To determine the accuracy of the computations of the CDCI and PI, we:

- Assessed internal management controls for the EPRP during a site visit to WVMI.
- Attended the training course WVMI provides for abstractors hired to review medical records under the EPRP.
- Selected a random sample of medical records included in VHA's computation of the CDCI and PI for FY 2001. As VHA computed the CDCI and PI quarterly, we stratified the sample selection of medical records for that fiscal year by quarter. We limited our sample to records for the first quarter of FY 2001, with plans to continue the sample for the rest of that fiscal year if the initial results warranted such action.
- Prepared data validation worksheets with questions that correlated directly to computations of the CDCI and PI. The worksheets were designed to validate information gathered by WVMI abstractors.
- Submitted data validation worksheets to 96 VAMCs for 168 medical records that abstractors had reviewed under the EPRP. We asked VAMC directors to have quality assurance personnel or other qualified clinicians review the respective patients' medical records to verify the specific diagnosis and treatment information recorded by the abstractors. We also asked VAMC personnel to provide copies of documentation from the patients' medical records to support their responses on the data validation worksheets.
- Analyzed the responses received from VAMC personnel and, when appropriate, followed up to obtain any additional information or documentation needed to resolve discrepancies between the results of reviews by abstractors and VAMC personnel.
- Summarized the reconciled data by individual medical intervention and recalculated the CDCI and PI based on the sample results. Our calculations included 22 of the 23 medical interventions for the CDCI and 8 of the 9 medical interventions for the PI. We excluded the medical interventions on influenza vaccinations for both the CDCI and PI because VHA

Appendix B

officials did not include these interventions in their computations of the CDCI and PI for the first quarter of FY 2001.

- Evaluated EPRP procedures by observing abstractor work on selected medical record reviews, interviewing abstractors and VAMC personnel to obtain feedback on how well the procedures were working, and attending the exit conferences with medical center staff. We made site visits in August 2002 to the VAMCs in Dallas, San Antonio, and Temple, Texas; Cincinnati, Ohio; and Marion, Illinois.

Scope

Our scope was limited to determining whether the FY 2001 CDCI and PI were computed in accordance with VHA's definitions of these measures and supported by available documentation. We did not assess the usefulness of the CDCI and PI as performance measures or the appropriateness of VHA's definitions of these measures.

The audit was conducted between April 2001 and January 2003 in accordance with generally accepted Government auditing standards.

Sampling Plan

Audit Universe

We selected our sample from three data files produced by WVMi and provided to us by VHA Headquarters officials.

- **Clinical Practice Guideline and Prevention Indicators.** This file contained outpatient data related to a variety of common chronic conditions such as hypertension, diabetes, and heart disease. It also contained data associated with the prevention of common diseases through periodic screening for various types of cancer or other conditions and offering immunizations. The file included 83,454 records for FY 2001, with 15,476 records from the first quarter of that fiscal year.
- **Schizophrenia.** This file contained data concerning patients treated for mental conditions either on an inpatient or outpatient basis. It included 19,473 records for FY 2001, with 3,419 records from the first quarter of that fiscal year.
- **Acute Myocardial Infarctions.** This file contained data concerning inpatient admissions to VA medical facilities within the past year for heart attacks. The file included 5,480 records for FY 2001, with 686 records from the first quarter of that fiscal year.

WVMi abstractors gathered the data in these files from medical records involving inpatient admissions or outpatient visits to VAMCs during the specified review periods. The results of the abstractors' reviews were used to compute the CDCI and PI for FY 2001.

Sample Size

We randomly selected 168 of the 19,581 medical records that abstractors had reviewed under the EPRP during the first quarter of FY 2001. Our sample included 79 of the 15,476 records in the Clinical Practice Guideline and Prevention Indicators file, 72 of the 3,419 records in the Schizophrenia file, and 17 of the 686 records in the Acute Myocardial Infarctions file. The audit plan called for reviewing medical records from all four quarters of that fiscal year if the first quarter sample results warranted such action.

Sample Design

We selected a random attributes sample from the records abstractors had previously reviewed under the EPRP for the first quarter of FY 2001.

Attributes

For each case in our sample, we determined whether documentation in the patient's medical record supported the data in the abstractor database. For each medical intervention included in the CDCI and PI, we determined whether the abstractor database correctly showed that the patient qualified or did not qualify for the intervention. If we concluded the patient qualified for the intervention, we also determined whether the abstractor database correctly showed that the patient received or did not receive the intervention.

Sample Results

See Appendix D for the complete sample results related to the CDCI. Appendix E contains the sample results for the PI.

FY 2001 Sample Results for CDCI

<u>Medical Intervention</u>	<u>Number Receiving/ Qualifying for Intervention per</u>		<u>Related Rate (Percentage) Computed by</u>	
	<u>WVMI</u>	<u>OIG</u>	<u>VHA</u>	<u>OIG</u>
Ischemic Heart Disease				
Administer aspirin at most recent visit	11/13	13/15	85	87
Administer beta-blocker at most recent visit	9/13	12/17	69	71
Low density lipoprotein level less than 130	10/15	14/18	67	78
Prescribe beta-blockers at discharge	13/13	13/13	100	100
Prescribe aspirin at discharge	12/13	12/13	92	92
Hypertension				
Blood pressure less than 140/90	22/40	23/43	55	53
Chronic Obstructive Pulmonary Disease				
Pneumococcal immunization	18/22	21/26	82	81
Percent non-tobacco users	11/22	13/26	50	50
Diabetes Mellitus				
Visually inspect foot	35/39	35/39	90	90
Examine foot pulse	33/39	31/39	85	79
Conduct foot sensory examination	32/39	29/38	82	76
Conduct retinal eye examination	33/39	28/39	85	72
Annual hemoglobin A1c	35/39	35/39	90	90
Hemoglobin A1c less than 9.5	29/39	30/39	74	77
Blood pressure less than 140/90	22/39	22/39	56	56
Obtain lipid profile every 2 years	34/39	35/39	87	90
Major Depressive Disorder				
Screen for depression	49/61	49/65	80	75
Follow-up for positive screen	0/1	1/3	0	33
Schizophrenia				
Patient assessed for involuntary movements annually if on antipsychotic medication	51/67	50/66	76	76
Tobacco Use				
Screen for use	75/79	78/79	95	99
Counsel 3 times in a year if tobacco user	12/20	11/21	60	52
Percent non-tobacco users	57/79	57/79	<u>72</u>	<u>72</u>
Total Value of Interventions			1632	1649
Average Value of Interventions			74.2	75.0

FY 2001 Sample Results for PI

	Number Receiving/ Qualifying for <u>Intervention per</u>		Related Rate (Percentage) <u>Computed by</u>	
	<u>WVMI</u>	<u>OIG</u>	<u>VHA</u>	<u>OIG</u>
<u>Medical Intervention</u>				
Pneumococcal vaccination	55/70	57/71	79	80
Tobacco use screening	75/79	78/79	95	99
Alcohol use screening	32/45	21/34	71	62
Mammography	4/4	4/4	100	100
Cervical cancer screening	5/5	3/3	100	100
Colorectal cancer screening	38/68	39/68	56	57
Prostate cancer screening education	25/36	22/36	69	61
Hyperlipidemia	51/64	56/67	<u>80</u>	<u>84</u>
Total Value of Interventions			650	643
Average Value of Interventions			81.4	80.4

Prior Data Validation Audits Conducted by VAOIG

- Audit of Data Integrity for Veterans Claims Processing Performance Measures Used for Reports Required by the Government Performance and Results Act (Report No. 8R5-B01-147 dated September 22, 1998)
- Accuracy of Data Used to Measure Claims Processing Timeliness (Report No. 9R5-B01-005 dated October 15, 1998)
- Accuracy of Data Used to Measure Percent of Veterans with a VA Burial Option (Report No. 9R5-B04-103 dated May 12, 1999)
- Accuracy of Data Used to Count the Number of Unique Patients (Report No. 9R5-A19-161 dated September 20, 1999)
- Accuracy of Data Used to Compute the Foreclosure Avoidance Through Servicing Ratio (Report No. 99-00177-14 dated November 16, 2000)
- Accuracy of VA Data Used to Compute the Rehabilitation Rate for Fiscal Year 2000 (Report No. 01-01613-52 dated February 6, 2003)

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