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An Audit Report on

Performance Measures at the Board of Nursing

October 2008

Report No. 09-006



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Overall Conclusion

The Board of Nursing (Board) reported reliable results for all nine key performance measures tested for fiscal year 2007. A performance measure is considered reliable if it is certified or certified with qualification. Specifically:

- Eight key performance measures were certified. These included:
 - Percentage of Licensees With No Recent Violations (RN).
 - Percentage of Licensees With No Recent Violations (LVN).
 - Percent of Licensees Who Renew Online (RN).
 - Percent of Licensees Who Renew Online (LVN).
 - Number of Individual Licenses Renewed (RN).
 - Number of Individual Licenses Renewed (LVN).
 - Percent of Complaints Resulting in Disciplinary Action (RN).
 - Percent of Complaints Resulting in Disciplinary Action (LVN).
- One key performance measure--Total Number of Programs Licensed (LVN)--was certified with qualification because the Board does not have documented policies and procedures for collecting, calculating, and entering data into ABEST for this performance measure.

Background Information

The Board of Nursing (Board) reports results for 21 key measures to the Legislative Budget Board's budget and evaluation system, which is called the Automated Budget and Evaluation System of Texas, or ABEST.

The Board is responsible for licensing, regulating, and monitoring the status of approximately 188,000 licensed and registered nurses (RN) and 79,000 licensed vocational nurses (LVN). The Board also approves 96 education programs for RNs and 117 programs for LVNs. In addition, it approves programs and schools of nursing.

The Board implements mechanisms for continuing education and assessing continued competence of licensees. It also makes information about the responsibilities of nurses available and investigates all written complaints.

Source: *Agency Strategic Plan for the Fiscal Years 2007-2011*, Board of Nursing, June 23, 2006.

In addition, the Board should strengthen specific information system controls for its automated Nursing System, which is the system it uses to record licensing and enforcement activities. Auditors identified weaknesses in program change controls, physical security, and disaster recovery testing. Despite these weaknesses, testing of the data used during this audit provided assurance that the Nursing System contained accurate data for the nine performance measures tested for fiscal year 2007.

This audit was conducted in accordance with Texas Government Code, Section 2101.038.

For more information regarding this report, please contact Ralph McClendon, Audit Manager, or John Keel, State Auditor, at (512) 936-9500.

Table 1 summarizes the certification results from audit testing.

Table 1

| Board of Nursing (Agency 507) | | | | |
|---|--|-------------|---------------------------|------------------------------|
| Related Objective or Strategy, Classification | Description of Measure | Fiscal Year | Results Reported in ABEST | Certification Results |
| A. Outcome | Percentage of Licensees With No Recent Violations (RN) | 2007 | 99.00% | Certified |
| A. Outcome | Percentage of Licensees With No Recent Violations (LVN) | 2007 | 98.00% | Certified |
| A. Outcome | Percent of Licensees Who Renew Online (RN) | 2007 | 90.33% | Certified |
| A. Outcome | Percent of Licensees Who Renew Online (LVN) | 2007 | 82.91% | Certified |
| A.1.1 Output | Number of Individual Licenses Renewed (RN) | 2007 | 93,972 | Certified |
| A.1.1 Output | Number of Individual Licenses Renewed (LVN) | 2007 | 38,475 | Certified |
| A.2.1 Output | Total Number of Programs Licensed (LVN) | 2007 | 99 | Certified with Qualification |
| B. Outcome | Percent of Complaints Resulting in Disciplinary Action (RN) | 2007 | 30.16% | Certified |
| B. Outcome | Percent of Complaints Resulting in Disciplinary Action (LVN) | 2007 | 36.25% | Certified |

A measure is **Certified** if reported performance is accurate within 5 percent of actual performance and if it appears that controls to ensure accuracy are in place for collecting and reporting performance data.

A measure is **Certified with Qualification** when reported performance appears accurate but the controls over data collection and reporting are not adequate to ensure continued accuracy. A measure is also certified with qualification when controls are strong but source documentation is unavailable for testing. A measure is also certified with qualification if the agency's calculation of performance deviated from the measure definition but caused less than a 5 percent difference between the number reported in ABEST and the correct performance measure result.

A measure is **Inaccurate** when the actual performance is not within 5 percent of reported performance, or when there is more than a 5 percent error in the sample of documentation tested. A measure is also inaccurate if the agency's calculation deviated from the measure definition and caused more than a 5 percent difference between the number reported in ABEST and the correct performance measure result.

A **Factors Prevented Certification** designation is used if documentation is unavailable and controls are not adequate to ensure accuracy. This designation also will be used when there is a deviation from the measure definition and the auditor cannot determine the correct performance measure result.

Summary of Management's Response

The Board agreed with the recommendations in this report.

Summary of Information Technology Review

This audit included a review of (1) security controls for the Board's Nursing System (the automated system the Board uses to record licensing and enforcement activities) and (2) the Board's network controls for folders that contain performance measure data. Users' access to the Nursing System was appropriate in relation to their job functions. However, the Board has no documented policies or procedures for its management of changes to the system such as updates and program code revisions. The Board also has not completely restricted access to network folders that contain performance measure data. Auditors communicated details about these control weaknesses and other less significant issues directly to the Board's executive management in writing.

Summary of Objectives, Scope, and Methodology

The objectives of the audit were to determine whether the Board:

- Accurately reports key performance measures in ABEST.
- Has adequate control systems in place over the collecting, calculating, and reporting of key performance measures.

The audit scope included the nine key performance measures the Board reported for fiscal year 2007. Auditors also reviewed controls over the collection, calculation, and submission of data used in reporting performance measures and traced the performance measure documentation to the original source when available.

The audit methodology consisted of selecting measures to audit, auditing results for accuracy and adherence to the measure definitions, evaluating controls over the performance measure certification process and related information systems, and testing samples of source documentation.

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Detailed Results

Chapter 1

The Board Reported Reliable Results for All Nine Performance Measures Tested

The Board of Nursing (Board) reported reliable results for the nine key performance measures tested for fiscal year 2007. The nine performance measures tested represented 43 percent of the Board's total number of key performance measures. A performance measure is considered reliable if the results are determined to be certified or certified with qualification. Eight of the nine performance measures tested were certified, and one was certified with qualification.

Key Measures

The following eight key performance measures were certified:

Result: Certified

A measure is certified if reported performance is accurate within 5 percent of actual performance and if it appears that controls to ensure accuracy are in place for collecting and reporting performance data.

- Percentage of Licensees with No Recent Violations (RN).
- Percentage of Licensees with No Recent Violations (LVN).
- Percent of Licensees Who Renew Online (RN).
- Percent of Licensees Who Renew Online (LVN).
- Number of Individual Licenses Renewed (RN).
- Number of Individual Licenses Renewed (LVN).

- Percent of Complaints Resulting in Disciplinary Action (RN).
- Percent of Complaints Resulting in Disciplinary Action (LVN).

For each of these eight performance measures, auditors verified that (1) the Board's submissions into the Automated Budget and Evaluation System of Texas (ABEST) were within 5 percent of actual performance, and (2) controls were adequate to ensure accuracy of data reported in future submissions to the ABEST system.

Many of the performance measures selected for testing were similar for registered nurses (RN) and licensed vocational nurses (LVN). In these instances, the Board collected information using the same processes and systems.

Total Number of Programs Licensed (LVN)

Result: Certified with Qualification

A measure is certified with qualification when reported performance appears accurate, but the controls over data collection and reporting are not adequate to ensure continued accuracy.

This performance measure was certified with qualification because the Board did not develop documented policies and procedures for collecting, calculating, and entering data into ABEST for this performance measure.

Additionally, the Board should strengthen data input controls for this performance measure. For this performance measure, 16 employees have unlimited access to the file that lists the licensed programs, but only one employee is responsible for maintaining and calculating data for this measure.

Recommendations

The Board should:

- Develop documented policies and procedures for collecting, calculating, and entering data into ABEST for Total Number of Programs Licensed (LVN).
- Limit user access for employees who are not responsible for maintaining and calculating data for Total Number of Programs Licensed (LVN).

Management's Response

The Texas Board of Nursing acknowledges and concurs with this finding. The BON will develop and implement a policy and procedure for this measure by December 31, 2008. The Director of Operations will be responsible for follow-up.

The Board Should Strengthen Specific Information Technology Controls

The Board's automated Nursing System has appropriate controls to ensure the integrity and accuracy of performance measure data and calculations. However, the Board should strengthen controls over the Nursing System and data in areas such as program change control, physical security, and disaster recovery testing. Weaknesses in these areas increase the risk of involuntary or intentional alteration or deletion of data, which could affect the Board's ability to ensure data integrity. Testing of the data used during this audit provided assurance that data was accurate for fiscal year 2007 performance measures.

General and Application Controls

Program change controls are processes that ensure that changes to the information technology environment, system software, applications, and data are applied in a manner that ensures system changes work as required and prevents those changes from being exploited. Examples of changes include applying software patches, modifying data in databases, and changing program code to modify a system's functionality.

General controls are the structures, policies, and procedures that apply to an entity's overall computer operations. They include an entity-wide security program, access controls, application development and change controls, segregation of duties, system software controls, and service continuity controls.

The Board should strengthen program change controls over its automated Nursing System.

The Board should strengthen its change management policy and procedures to protect against unauthorized changes and errors in performance measure data and against disruptions to the Board's information technology assets, computer applications, and operating systems. As of August 2008, the Board did not have documented policies for making changes to its automated Nursing System. Furthermore, a single employee was solely responsible for making all changes to the Nursing System, including changes to program coding and modifications to data. Because this employee makes changes directly to the production environment, there is a risk that the employee could inadvertently make changes that adversely affect system performance or that corrupt data in the Nursing System.

The Board should strengthen general controls at its data center.

The Board should strengthen physical security and environmental controls at its data center to protect information system resources. Auditors visited the Board's data center and noted that fire extinguishers were not routinely inspected; in addition, flammable materials were stored in the server room. The Board also had not documented a physical security policy to help it control access to its data center.

Although the Board has a disaster recovery plan, the Board has not reviewed or tested that plan at least annually as required by Title 1, Texas Administrative Code, Section 202.24. Not reviewing or testing the disaster recovery plan at least annually prevents the Board from ensuring that it would be able to continue operations in the event of a disaster such as a fire or computer hardware failure.

In addition, the Board has developed and implemented a password policy, but that policy does not require that passwords expire on a periodic basis. The

Department of Information Resources' recommended information security policies suggest that passwords be changed routinely. Other components of the Board's password policies were adequate. For example, the Board has policies that require passwords to include special characters, and it has policies that provide instructions for the construction of a strong password.

Auditors communicated details about these control weaknesses and other less significant issues directly to the Board's executive management in writing.

Recommendations

The Board should:

- Strengthen its change management policy and procedures to ensure that controls are in place to protect against unauthorized changes to its automated system and data.
- Strengthen the physical and environmental security at its data center to ensure that adequate controls exist to protect its resources.
- Test its disaster recovery plan at least annually, as required by Title 1, Texas Administrative Code, Section 202.24.
- Update and implement its password policies to comply with the Department of Information Resources' recommended information system security policies.

Management's Response

The Texas Board of Nursing concurs with the recommendation to strengthen its change management controls. The Information Resource Manager (IRM) will document the BON's policies and procedures for change management by December 31, 2008. The BON acknowledges the risk of a single employee performing all alterations to its Nurse programs. However, due to resource limitations the BON is currently unable to hire additional staff with the same skill set. As a possible alternative, the BON will evaluate options for external annual validation testing. Additionally, the BON will evaluate resources for a viable developmental server instead of utilizing test databases on the production server for alterations to its Nurse programs and database.

The Texas Board of Nursing concurs with the recommendation to strengthen its data center general controls. The IRM will document the BON's policies on physical security of its data center by December 31, 2008. Regarding environmental controls, starting September 2008 the BON discontinued the production and mailing of wallet size licenses. These controlled license

forms, stored in the data center, are no longer required and will be destroyed by December 31, 2008. Other factors noted have already been rectified.

The Texas Board of Nursing concurs with the recommendation to perform comprehensive testing of its disaster recovery plan during its annual December review, thus ensuring full compliance with Title 1, Texas Administrative Code, Section 202.24. Management and key staff will participate in disaster scenarios to perform a refresh of training and ensure usability of the plan.

The Texas Board of Nursing concurs with the recommendation regarding the mandatory change of passwords. The BON has altered its policy and systems to ensure compliance with all aspects of the recommended state security password policy.

The Information Resource Manager will be responsible for follow-up and implementation.

Appendix

Appendix

Objectives, Scope, and Methodology

Objectives

The objectives of this audit were to determine whether the Board of Nursing (Board):

- Accurately reports key performance measures in the Automated Budget and Evaluation System of Texas (ABEST).
- Has adequate control systems in place over the collecting, calculating, and reporting of key performance measures.

Scope

The scope of the audit included the nine key performance measures the Board reported for fiscal year 2007. Auditors also reviewed controls over the collection, calculation, and submission of data used in reporting performance measures and traced the performance measure documentation to the original source when available.

Methodology

The audit methodology consisted of selecting measures to audit, auditing results for accuracy and adherence to the measure definitions, evaluating controls over the performance measure certification process and related information systems, and testing samples of source documentation.

Procedures and tests conducted included the following:

- Reviewing measure calculations for accuracy and to ensure they were consistent with the methodology agreed upon by the Board and the Legislative Budget Board.
- Testing a sample of source documents, when available, to verify the accuracy of reported performance.
- Conducting a review of the Board's Nursing System, which supports performance measures.
- Certifying performance data results in one of the four categories: Certified, Certified with Qualification, Inaccurate, or Factors Prevented Certification.

Criteria used included the following:

- The *Guide to Performance Measure Management* (State Auditor's Office Report No. 06-329, August 2006).
- ABEST measure definitions prepared by the Legislative Budget Board.

Project Information

Audit fieldwork was conducted from July 2008 through August 2008. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The following members of the State Auditor's staff performed the audit:

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- Isaac Barajas
- Cain Kohutek
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- Leslie Ashton, CPA (Quality Control Reviewer)
- Ralph McClendon, CCP, CISA, CISSP (Audit Manager)

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The Honorable Tom Craddick, Speaker of the House, Joint Chair
The Honorable Steve Ogden, Senate Finance Committee
The Honorable Thomas “Tommy” Williams, Member, Texas Senate
The Honorable Warren Chisum, House Appropriations Committee
The Honorable Jim Keffer, House Ways and Means Committee

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