

**Report on
Key Performance Measurement
Data Integrity**



**Legislative Fiscal Office
February 2009**

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February 16, 2009

To the Members of the Seventy-Fifth Oregon Legislative Assembly:

Enclosed is a report on key performance measurement data integrity conducted by the Legislative Fiscal Office in collaboration with the Department of Administrative Services (DAS) Budget and Management Division Performance Management Coordinator, DAS Chief Audit Executive, and agency internal audit staff. This is the first report of its type prepared for the Legislative Assembly.

Documents can be obtained online at www.leg.state.or.us/comm/lfo/publications.htm

Ken Rocco
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Report on Key Performance Measurement Data Integrity

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Summary and Background

Report Summary

The Legislative Fiscal Office (LFO) was asked to conduct a review of key performance measurement (KPM) data quality. The goals of the review were to assess KPM data integrity and make recommendations to improve data quality within the KPM system.

Overall, findings of this review suggest areas for improvement, but no significant concerns about the data integrity of reviewed KPMs. The primary data source was KPM data reviews conducted by state agency internal auditors and LFO legislative analysts. A total of 86 KPMs in 25 different medium to large agencies were evaluated. Eleven of the agencies' reviewed had KPMs that met all the standards and 14 agencies had KPMs with one or more findings related to data documentation, repeatability, and/or consistency.

The most common KPM findings were related to documentation and data quality controls; however, no related issues with data integrity were uncovered. A few KPMs had findings that identified concerns about the use of data sourced from a third party. The scope of this review did not include the verification of third party data; however, this report recommends that protocols be put in place for agencies to better assess and inform about third party data quality and limitations. Finally, three KPMs had findings related to data assumptions and calculations. Affected agencies have agreed to review their KPM approach and list data limitations in future performance reports.

In addition to data audits and reviews, LFO and the Department of Administrative Services (DAS) Budget and Management Division (BAM) worked collaboratively to hire a summer intern to study the feasibility of standardizing KPMs for small licensing agencies. The goals of standardization were to produce more useful information and better quality data. Findings of the study suggest that standardization may be appropriate when related to timeliness of licensing application processing and complaints management.

Report recommendations are addressed to the 2009 Legislative Assembly and the Joint Committee on Ways and Means. The primary recommendation is that the Joint Committee on Ways and Means direct LFO to:

- Work with BAM to develop data documentation and control guidelines for KPMs, which should include protocols for the use of third party data, and add data fields to the automated KPM system to store documentation.

- Work with BAM and agencies to clarify the role of KPM coordinators in the context of KPM development, reporting, and data integrity.
- Continue to work with the DAS Chief Audit Executive and internal auditors to improve future KPM reviews.
- Continue to work on a pilot project to standardize KPMs for select licensing boards.
- Work with BAM and affected agencies to follow-up on KPM data reviews not completed in time for this report, and present this information to the 2009 Joint Committee on Ways and Means subcommittee that is assigned to review those agencies' budgets.
- Provide a status report during the 2009-11 interim about implementation of these recommendations that includes suggestions for future actions to ensure continued improvement to KPM system integrity.

The implementation of these recommendations will likely require additional work for some agencies. LFO will work with BAM to implement these recommendations with as minimal an impact on agency operations as is possible.

Preliminary conclusions and recommendations from this review were presented to the interim Joint Committee on Ways and Means in November 2008. The final report will be distributed to the 2009 Legislative Assembly.

Background

All state agencies are required to propose a set of KPMs during their biennial budget request, and to report annually on performance progress for approved KPMs. The Joint Committee on Ways and Means reviews and approves KPMs, and sets performance targets based on resources provided in an agency's legislatively adopted budget. The Joint Committee on Ways and Means relies on reported KPM information during the budget process, therefore LFO was asked to conduct an audit of KPMs.

Performance measurement audits typically fall into three categories: audits of relevance, reliability, and/or performance reports. Audits focused on relevance determine whether selected performance measures are the "right" measures given a particular context. Reliability audits evaluate data integrity, and audits of performance reports tend to focus on quality aspects of reporting. The KPM system has criteria for the development of new KPMs and standardized reporting forms that have been developed and improved over the last few biennia. State agencies are required to report on data sources for their KPMs;

however, no standardized statewide processes are in place for periodically reviewing the data integrity of KPM information. Given this, LFO chose to focus this first evaluation on KPM data integrity.

The evaluation of KPM data integrity is referred to as a “review” rather than an audit as LFO legislative analysts involved in the review are not formally trained auditors. Further, some of the agency internal audit staff that participated in this process also chose to perform reviews. A review does not require that an auditor follow all professional auditing standards. Several reasons exist for not following standards, including, for example, single-person audit shops that may not have the resources to have their audit reviewed as required. Ten agency internal auditors did follow audit standards during this process, and all reviewers of KPM data integrity used a standardized audit/review template or a similar approach when conducting the reviews.

Review Process

Oregon Administrative Rule 125-700-0050(5) requires an agency’s Chief Audit Executive to annually assess their performance measurement system integrity and to report the results to DAS as part of the agency’s risk assessment. Given this, LFO saw that an opportunity for a more standardized and sustained approach to ensuring KPM data integrity was to work collaboratively with the DAS Chief Audit Executive and agency internal auditors to review KPM data as part of their regular auditing activities.

After being approached by LFO, the DAS Chief Audit Executive asked the Statewide Audit Advisory Committee (SAAC) to form a subcommittee to work with LFO and the BAM statewide performance management coordinator to define the scope and protocols for reviewing KPM data integrity. Data integrity was defined as containing three elements: documentation, repeatability, and consistency. Verification of these elements was focused on exploring the answers to the following high-level questions:

- *Documentation:* Are there appropriate documentation and controls in place to ensure consistency in reporting?
- *Repeatability:* What conclusion might be drawn about the data quality of the data source, and can the data be accessed at any time to accurately replicate reported information?
- *Consistency:* Was the methodology employed to calculate reported data appropriate and consistent over time?

The SAAC subcommittee took these high-level elements and developed a KPM auditing/reviewing template for evaluating data integrity. This template was used by internal auditors who conducted KPM reviews. See Appendix A for a copy of this template.

The LFO data reviews covered the same topics as those conducted by internal auditors. Since LFO analysts were conducting “reviews”, the topics covered in the standardized audit/review template were organized into nine critical questions. See Appendix B for the LFO Data Review Worksheet.

Review Focus

The review focused on medium and large state agencies because their KPMs have a greater impact on the budget process, and they typically have more resources dedicated to supporting KPM requirements. Medium and large agencies also are more likely to have internal audit resources and could commit to conducting a KPM data review.

About 30% of state agencies are considered small agencies, and most of these are licensing boards and commissions. Small agencies are historically more likely to be late in meeting KPM system deadlines, or to not comply at all. Part of the explanation for this dynamic is that the burden on small agencies to comply with KPM system protocols is the same as larger agencies that have more staff resources to meet requirements. Another explanation is that the level of technical knowledge about performance measurement practices and the KPM system requirements is often less because smaller agencies may not have resources to attend system training. These agencies are also more affected by employee turnover as, in some cases, the loss of one employee can equate to a 50% turnover rate. Given these factors, LFO determined that there would be little value gained from reviewing small agencies’ KPMs.

Instead, LFO worked collaboratively with BAM to hire an intern to explore the feasibility of creating a set of standardized KPMs for health licensing boards and commissions. The goal of standardized KPMs is to develop more meaningful measures for the agencies and key stakeholders. Part of the standardization process would involve creating consistent processes for gathering and reporting data; hence, ensuring data integrity. Information about findings of the study and proposed next steps are presented in this review.

Review Findings

Internal Auditors' Reviews

The DAS Chief Audit Executive asked agencies with internal auditors to commit to auditing/reviewing 10-15% of their agency's KPMs and to complete this work by September 30, 2008. LFO agreed that if an agency internal auditor committed to completing an audit, they would be exempt from having LFO review their KPMs at this time. A total of 16 agencies with internal auditors agreed to complete KPM data reviews. Findings and recommendations from 14 agencies' reviews were submitted to the DAS Chief Audit Executive, who summarized this information in the *Key Performance Measure Review, Compilation of Agency Findings Report* (see Appendix C). Two agencies that had agreed to participate did not submit final review information to DAS – the Judicial Department and the Oregon Student Assistance Commission. Staff turnover contributed to both agencies not having the resources to complete this work.

KPMs evaluated by internal auditors were ultimately categorized as: verified, verified with qualifications, factors prevented verification, or inaccurate. Specific definitions for each category are:

- *Verified*: The performance reported is consistently accurate.
- *Verified with Qualifications*: The performance reported is consistently accurate, but adequate controls are not in place to ensure continued accuracy.
- *Factors Prevented Verification*: When documentation is not available and controls are not adequate.
- *Inaccurate*: The performance reported is commonly not within 5% of actual performance.

Internal Audit Report Findings:

- Participating agencies had a total of 269 KPMs. Fifty-five, or 20%, were evaluated.
- Most reviews covered the 2007 year reports, however, some agencies also reviewed 2006 or 2008 data.
- Results of the review are as follows:
 - 37 KPMs were “verified”
 - 9 KPMs were “verified with qualification”
 - 9 KPMs had “factors that prevented verification”
 - 1 KPM was determined to be “inaccurate”

- Five of the 14 agencies that submitted reports determined that all evaluated KPMs were “verified.”
- Nine agencies received findings that suggested a need for improvements to ensure data integrity. The most common issues identified were:
 - Inadequate documentation
 - Inadequate controls
 - No validation of third party data
 - Inappropriate data elements and assumptions used in calculations
- Seven of the agencies reported that they agreed with findings and recommendations, and would take action to implement recommendations. Two agencies disagreed with some of the findings and recommendations. The remaining five agency reports did not include management responses.

Audit Recommendations to Agencies:

Agencies’ internal audit reports included recommendations for addressing agency specific findings. For more detailed explanations of the recommendations, see Appendix C. In summary, the recommendations were to:

- Standardize procedures for collection and calculation of data, including roles and responsibilities of staff involved.
- Put review processes in place to ensure appropriate levels of control and oversight, including ensuring staff are properly trained.
- Conduct independent verification of third party data, or, at a minimum, understand the controls that third parties have in place to safeguard data.
- Maintain appropriate permanent files to support previously reported KPMs.

The compiled report also identified “other matters,” which include a need to address:

- Performance measure coordinator roles and expectations.
- A lack of criteria related to KPM data collection and processes to ensure data reliability.
- Future reports and whether KPM relevance might also be reviewed.

LFO Data Reviews

Since not all state agencies have internal auditors, LFO selected an additional 12 agencies to participate in LFO-coordinated KPM data reviews. Candidate agencies and reviewed KPMs were selected based on feedback provided by LFO budget analysts. LFO reviews covered the 2007 report data and focused on measures that were to continue as KPMs during the 2007-09 biennium.

Findings from the LFO reviews focused on assessing whether the answers to the review questions were:

- *Yes:* Requirements implicit in the review questions are met.
- *Somewhat:* There are some mechanisms in place to meet the requirement; however, findings suggest opportunities for improvement.
- *No:* There is nothing in place to meet the requirement.

Summary of LFO Review Findings:

- Of the 12 agencies selected to review, 11 reviews were completed. The Department of Agriculture's KPM review was not completed in time for this report, as the agency was late in providing follow-up information.
- Participating agencies had a total of 178 KPMs. Thirty-one, or 17%, were evaluated.
- Of the 11 agencies reviewed, six were assessed as meeting criteria standards and five were provided with findings related to areas for improvement.
- Findings identified issues related to:
 - Documentation about measurement processes, calculations, and data limitations
 - Verification of third party data
 - Internal data quality controls
 - Misrepresented data or lack of sufficient information about data limitations and calculation assumptions
 - Data methodology and the use of terms such as Return on Investment (ROI) for measures that are not true measures of ROI
- Agency management generally agreed with audit findings and recommendations, and some agencies communicated their intention to make improvements.

LFO did not prescribe recommendations to agencies that participated in LFO-conducted reviews. Agencies were informed that the findings from the reviews would inform higher level system recommendations for improving data integrity that they may want to consider adopting.

KPM Standardization for Licensing Boards

The KPM Standardization Project evaluated existing key performance measures for licensing boards and commissions, researched secondary sources for best practices measures for licensing entities, identified a set of performance measures that might be standardized across licensing entities, and determined critical success factors for successfully implementing the measures identified.

The scope of this project was limited to exploring the realm of performance measurement as it informs management operational practices and results for health licensing agencies. The health licensing agencies interviewed as part of the project were the Health Licensing Agency, Occupational Therapy Licensing Board, Board of Radiologic Technology, Board of Pharmacy, Board of Licensed Professional Counselors and Therapists, and Board of Nursing.

The project was coordinated by an intern who worked directly with agency contacts, LFO and BAM budget analysts, LFO and BAM performance management coordinators, and other stakeholders. A steering committee, with participation from licensing agencies, the Governor's office, and the Legislature, provided direction and feedback to the intern at different times during the project. The project deliverable was a report to LFO and BAM that detailed findings and recommendations related to KPM standardization and utilization.

Summary of Findings:

Results from interviews with participating agencies uncovered the following findings:

- Sampled agencies are eager to have KPMs serve a more meaningful purpose. Most of the KPMs are not used by the agencies for management purposes despite many of the KPMs being more appropriately categorized as internal measures.
- While the agencies have similar KPMs related to application and complaint processes, each agency has unique requirements and definitions. Despite these differences, it may be possible to standardize data gathering and analysis protocols so that these measures support both process improvement efforts and the reporting requirements of a KPM.

- Many of the process measures are reports of averages without any understanding of process variation or accounting for special causes of variation. Agencies would benefit from more sophisticated knowledge about process management and improvement techniques.

The report suggested two potential areas for KPM measurement standardization:

- Percentage of licenses issued within ___ days.
- Percentage of complaints presented to the Board within ___ days.

These two measures were selected because they aligned with the two key processes of licensing agencies. When focusing a KPM on a process measure, the goal is to have the measure supply sufficient data to support improved process efficiency and continuous process improvement. While several agencies already have these KPMs, or similar measures, most licensing agencies are not currently using this information to improve management processes. Therefore, the report recommended that pursuing standardization of processes include efforts to make the measurement data more valuable to the boards.

The steering committee recommended that the same agencies who participated in the study also participate in a pilot project designed to implement the two KPMs. The BAM performance management coordinator has agreed to provide participating agencies with technical assistance to implement the KPM and related process improvement tools. Pursuing a pilot project with a smaller group of agencies allows LFO and BAM to work through implementation details and iron out any kinks before considering broader implementation. Four agencies have agreed to participate – three state agencies and one semi-independent state agency:

- Board of Radiologic Technology
- Occupational Therapy Licensing Board
- Board of Nursing
- Board of Massage Therapists

Next Steps:

Results from this pilot project and recommendations for next steps will be reported to the 2009 interim Joint Committee on Ways and Means ahead of the 2011 legislative session.

Factors for Future KPM Reviews

As this was the first review of KPMs, several factors were identified for consideration when planning future reviews:

- Review findings and recommendation reports were prepared by more than 19 different reviewers. Looking across the auditor and LFO reviewer reports, there is a significant amount of variability. This occurred despite having had discussions upfront to define audit and review processes and criteria. Future reports would benefit from providing auditors/reviewers training on process and criteria standards, by defining greater specificity in criteria standards, and by adding process and quality controls to help ensure that consistent assessments are drawn.
- Future reviews should include some overlap of agencies that were reviewed this cycle to confirm that agencies have taken actions that led to improved future reviews. In addition, future reviews should consider agency compliance with data integrity guidelines that are established as a result of implementing the recommendations of this report.
- Future reviews may want to consider audits of relevance and performance reporting.

Conclusions and Recommendations

Conclusions

Overall, findings of this review suggest areas for improvement but no significant concerns about the data integrity of reviewed KPMs. A total of 86 KPMs were evaluated from 25 different agencies when internal auditor and LFO legislative analyst reviews are combined. Eleven of the 25 agencies reviewed had KPMs that met all the standards. Fourteen agencies' KPM reviews resulted in findings related to data integrity.

- *Documentation:* The most common finding was a lack of documentation about KPM data gathering processes and controls. For the reviewed KPMs, there were no findings concerning data integrity resulting from a lack of documentation or controls. While a lack of documentation and controls does not mean that data integrity is directly compromised, it increases the risk for sustaining repeatability and consistency.
- *Repeatability:* Agencies were generally able to replicate data and data calculations; however, issues were identified related to the validity of data sourced from a third party. The audits/reviews conducted did not extend to evaluation of the integrity of third party data. Information gathered in the process suggests that there are various types of third party data used, from national statistics to information provided by local service providers. To date, agencies have been given no guidance on how to report and evaluate third party data integrity.
- *Consistency:* In general, KPMs were not changed inappropriately, and sufficient documentation was present when changes were made. Three KPMs were noted as having findings related to assumptions and the calculation methodologies used. Data calculation details and related data limitations should be disclosed in each agency's annual report. Agencies with these issues agreed to review their methodologies and to properly cite data limitations in their future reports.

Recommendations

Report recommendations are addressed to the 2009 Legislative Assembly and the Joint Committee on Ways and Means.

This review and related conclusions point to several recommendations for future actions that LFO might take to improve data integrity. Hence, the primary recommendation

is that the Joint Committee on Ways and Means direct LFO to take the following actions to improve data integrity:

- Work with BAM to develop data documentation and control guidelines for KPMs that address issues uncovered during this review, which includes protocols for the use of third party data. Further, the automated KPM system should include the capacity to store state agency documentation related to KPMs.
- Work with BAM and agencies to clarify the role of KPM coordinators within state agencies, and formally communicate this role to all state agency directors.
- Continue working with the DAS Chief Audit Executive and internal auditors to conduct future KPM audits and/or reviews.
- Continue work on a pilot project to standardize KPMs for select licensing boards and commissions.
- Work with the agencies that did not provide information in time for this review. Follow-up information should be reported to the Joint Committee on Ways and Means subcommittee assigned to review their budgets. These include the Judicial Department, Oregon Student Assistance Commission, and Department of Agriculture.
- Provide a status report during the 2009-11 interim to the interim Joint Committee on Ways and Means about implementation of these recommendations that includes suggestions for future actions to ensure continued improvement to KPM system integrity.

The implementation of these recommendations will likely entail additional work for some agencies. KPMs are a required component of the budget process, so it is assumed that work associated with ensuring KPM data integrity is part of normal business operations. LFO will work with BAM to implement these recommendations with as minimal an impact on agency operations as is possible. Ultimately, each individual state agency will have to weigh the priorities within their organization to determine their funding strategy for any additional work that results from implementation of the review recommendations.

Acknowledgements

LFO extends a special acknowledgement to the DAS Chief Audit Executive for coordinating and reporting on internal auditors' efforts to audit KPM data.

LFO recognizes the agencies with internal auditors who took the initiative to participate in this first review process and who met the reporting timeframes:

- Department of Administrative Services
- Department of Consumer and Business Services
- Department of Corrections
- Employment Department
- Department of Forestry
- Department of Higher Education
- Department of Housing and Community Services
- Department of Human Services
- Department of State Lands
- Department of State Police
- Public Employees Retirement System
- Department of Revenue
- Department of Transportation
- Department of Veterans' Affairs

LFO appreciates the responsiveness and candor from agencies that participated in the LFO data review process:

- Community Colleges and Workforce Development
- Department of Energy
- Department of Fish and Wildlife
- Department of Justice
- Department of Land Conservation and Development
- Oregon Liquor Control Commission
- Military Department
- Parks and Recreation Department
- Public Defense Services Commission
- Treasurer of State
- Oregon Youth Authority

Finally, LFO acknowledges the work of Bruce Stoffmacher, a student intern from UCLA's Masters in Public Policy Program, for his report on KPM standardization for health licensing. The following study participants were helpful to this project:

- Board of Licensed Professional Counselors and Therapists
- Health Licensing Agency
- Board of Nursing
- Occupational Therapy Licensing Board
- Board of Pharmacy
- Board of Radiologic Technology

Agency X - Internal Audit Section
 Performance Measures – Data Integrity Audit/Review #XX-XXX
 Audit/Review Program ‘Template’
 Year XX

Budget Hours	Procedures	Completed By Date	W/P Ref.
<i>Scope</i>			
	This audit will review (Key or Internal) Performance Measures reported data for FY XXXX.		
<i>Objectives</i>			
	<ol style="list-style-type: none"> 1. Meet the requirement of OAR 125-700-0050. 2. Determine accuracy/reliability of the data reported in the agencies (Key or Internal) Performance Measures report for FY XXXX. 3. Help ensure management that the agency’s performance measures are: <ul style="list-style-type: none"> • Documented – appropriate information behind the measures exists • Repeatable – can be accurately re-created • Consistent – reported the same year to year 		
<i>General Audit Steps</i>			
	<ol style="list-style-type: none"> 1. During audit work be aware of management accomplishments and report as necessary. 2. During audit work be aware of potential areas for fraud and report to management as necessary. 3. Discuss the areas of greatest risk and exposure with management. Also, include suggested objectives and test procedures. Discuss with management. 4. Document and perform any additional audit steps deemed necessary. 		
<i>Fieldwork</i>			
	<ol style="list-style-type: none"> 1. Conduct an entrance conference with the Performance Measure Coordinator and appropriate members of management. 2. Obtain and review appropriate background information including: <ol style="list-style-type: none"> a) pertinent laws, rules, regulations and performance measure reporting guidelines b) Agency strategic plan c) Any previous audit reports of agency’s performance measures 		

Budget Hours	Procedures	Completed By Date	W/P Ref.
	<p>3. Obtain and review documentation of key performance measures to determine completeness. Each measure's documentation should include:</p> <ol style="list-style-type: none"> a) Definition of all components of the measure b) Identification of the source of the data c) Statement of all calculations involved in creating the final number d) Methodology used for calculations e) Definition of the timelines of data gathering and the frequency of reporting f) Reports include current performance data, trends, targets and/or required levels of performance and dates of performance <p>4. Interview the Performance Measure Coordinator, data owners, and other pertinent personnel as necessary to gain an understanding of performance measurement processes. Request and review any available documentation of the performance measure reporting process including procedures, desk manuals of appropriate staff, or flowcharts.</p> <p>5. Determine which key performance measures to test using the following information:</p> <ol style="list-style-type: none"> a) Risk assessment results b) Measures that represent the major business lines and their products and services, quality elements, outcomes and those of significant customer interest or input <p>6. Identify testing methodology and sample plan for each data set to be tested.</p> <ul style="list-style-type: none"> • Determine number of reports to include in testing per each measure depending on length of reporting period. Include a reasonable represented sample for each measure – recommended use at least 2 reporting periods for each measure (for example, if a measure is based on a population survey conducted every 2 years, you may include the last 4 reports in testing.) Sufficient data for each measure must be reviewed to allow a conclusion to be drawn. • Review each measure's definition and calculation for accuracy and determine the degree of deviation for each, if any. • For each measure, determine how the data is kept and identify the source of documentation review – manual (paper files) or automated (computer – application or spreadsheet) system. <p>7. Determine if adequate controls are in place for each measure being tested. Begin this review at the point of incoming information and end at the point when calculated performance information is reported.</p>		

Budget Hours	Procedures	Completed By Date	W/P Ref.
	<ul style="list-style-type: none"> • For a manual system: Determine if documentation exists to outline how and when performance information is first recorded, and for collecting and calculating the information. There should be consistencies in staff understanding and application of the procedures, and staff should understand the source of the information and be familiar with any modifications. Are regular reviews taking place to ensure consistency? • For an automated system: Ensure staff performing data entry have been trained and have access to guidelines and procedures. Perform testing to ensure the computer program being utilized is obtaining the correct data and making the correct calculations. System data, summary information, and measure calculations should be reviewed for correctness on a regular cycle. <p>8. Determine if the performance data can be recreated. Obtain performance measure reports and all supporting raw data for measures selected for review. Using the documentation for each measure, determine the method used to collect and calculate the performance data. Using the raw data, recalculate all of the performance measure information based on the defined calculations in the documentation for each of the measures. Document any miscalculations in the performance measure reports.</p> <p>9. Request a list of all data elements included in the performance measures to be tested, or create a list based on the performance measure documentation already obtained. Verify with appropriate staff that the list is correct and all-inclusive. Obtain data to match the data elements.</p> <p>10. Test the source documentation for accuracy. Verify that performance measure documentation is complete and accurate. The definition should be adequate to minimize any misunderstanding. The data elements should mirror the data element list. The directions for the calculation of each performance measure should support the performance reported. The data sources(s) listed should be complete and accurate.</p> <p>11. Review testing results and conclude as to each performance measure’s verification category:</p> <ul style="list-style-type: none"> • <i>Verified:</i> The performance reported is consistently accurate within plus or minus five percent and adequate controls are in place to ensure consistency and accuracy in collection of all supporting data and subsequent reports. • <i>Verified with Qualifications:</i> The performance reported is consistently accurate within plus or minus five percent, but adequate controls are not in place to ensure continued accuracy. The span of data is less than ideal or the performance measure 		

Budget Hours	Procedures	Completed By Date	W/P Ref.
	<p>definition is not followed, but the calculation remained within the five percent error range.</p> <ul style="list-style-type: none"> • <i>Factors Prevented Verification:</i> When documentation is not available and controls are not adequate to ensure consistency and accuracy, or the performance measure definition is not followed and the correct measure result cannot be determined. • <i>Inaccurate:</i> The performance reported is commonly not within five percent of actual performance. • <i>Not Applicable:</i> Lack of adequate data exists for review for a justifiable reason (e.g., a new measure). <p>12. Review methodology behind measure calculations. Determine data type and verify appropriateness of methodology employed (reference guide).</p> <p>13. Prepare findings for results in the Verified with Qualifications, Factors Prevented Verification and Inaccurate categories.</p> <p>14. Conclude on the results, including listing strengths and opportunities for process improvement in performance measure reporting processes regarding documentation, reports, calculations, data handling and verification category.</p>		
Reporting			
	<ol style="list-style-type: none"> 1. Complete and index working papers. 2. Prepare a preliminary draft of the report and forward to CAE, Performance Measure Coordinator, and appropriate management for review. 3. Have report and supporting work papers reviewed and clear any review notes. 4. Hold exit conference and provide draft to agency. Request response and action plan to implement recommendations, if appropriate. 5. Incorporate response into the final report. 6. Distribute final report to management, present to Internal Audit Committee, and submit summary to the Department of Administrative Services Internal Audit Section and to the Legislative Fiscal Office. 7. Complete quality control worksheet. 		

LFO KPM Data Review Worksheet

AGENCY: _____ **REVIEW DATE:** _____

AGENCY CONTACT(S): _____ **LFO REVIEWER:** _____

KPM BEING REVIEWED:	
KPM Data Review Questions	Review Notes/Findings
<p>Documentation</p> <ul style="list-style-type: none"> • Is there written documentation available regarding components of measure, timeframe being measure, and source of data? • Are there written instructions for how to calculate the measure—get to the number that is reported? 	
<p>Repeatability</p> <ul style="list-style-type: none"> • If reports are generated to get source data, can these reports be recreated? • What conclusions can be drawn about the data integrity of source data? • Does using the raw data and recalculating the measure lead to the reported data result? 	
<p>Consistency</p> <ul style="list-style-type: none"> • Has the data methodology been consistent over time? If not, have changes to methodology been documented? • Are there quality review processes in place to ensure that data reported is accurate and consistent? 	
<p>Other Data Quality Questions</p> <ul style="list-style-type: none"> • Is it clear who in the organization is responsible for data integrity? • Do the data analytics used to calculate the data results make sense? 	



Oregon

Theodore R. Kulongoski, Governor

Department of Administrative Services

Office of the Director, Internal Audit Section

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January 8, 2009

Scott Harra, Director
Department of Administrative Services
155 Cottage St. N.E., U20
Salem, Oregon 97301

Re: Key Performance Measure Review - Compilation of Agency Findings

Dear Mr. Harra:

We have completed our compilation of the findings and recommendations for the sixteen agencies whose internal audit function participated in the Key Performance Measure data integrity audit. Fourteen of those agencies reported results to us by September 30, 2008 which are summarized in this report. A copy of our report is attached.

Thank you for the opportunity to provide the results of this collaborative statewide internal audit review. If you have any questions or require any further information please do not hesitate to contact me at 503-378-4037.

Sincerely,

Pamela J. Stroebe Valencia, CPA, CIA
Chief Audit Executive

Attachment

cc: Ken Rocco, Legislative Fiscal Officer
George Naughton, Budget and Management Division Administrator
Statewide Audit Advisory Committee Members
Agency Directors and Chief Audit Executives of the 16 Participating Agencies



Key Performance Measure Data Integrity Review

Compilation of Agency Findings
January 8, 2009

Compiled By Pamela Stroebel Valencia, CAE, DAS Internal Audit Section
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Purpose

Individual agency audits and reviews were conducted to assess the accuracy and reliability of data reported for Key Performance Measures (KPMs) in the Annual Performance Progress Report (APPR). This report is a compilation of the 16 participating agency's reports.

Oregon Administrative Rule (OAR) 125-700-0050 (5) requires an agency's Chief Audit Executive to annually assess their performance measurement system integrity and report the results to the Director of the Department of Administrative Services (DAS) as part of the agency's risk assessment.

A sub-committee of the Statewide Audit Advisory Committee was formed to create an audit program or review template for meeting the intent of the OAR. Agency internal audit functions were asked to volunteer to participate in a joint effort with Legislative Fiscal Office (LFO) to review data integrity of 10 to 15 percent of their KPMs. Sixteen agency internal audit functions committed to participating in this statewide review and fourteen submitted reports by the September 30, 2008 deadline.

Background

In 1993 the Legislative Assembly asked agencies to include benchmark-based planning in performance measurement and budget policy. In 2001, with the passing of House Bill 3358, the Progress Board, in collaboration with the LFO, the Office of the Secretary of State and DAS was tasked with developing performance measure guidelines for state agencies. ORS 291.110(2)(a) states each agency is required to develop performance measures consistent with and aimed at achieving Oregon benchmarks and shall "identify the mission, goals, and objectives of the agency and any applicable benchmarks to which the goals are directed." KPMs are designed to assist in accurately measuring and reporting on key indicators for agencies.

Scope

Agencies who participated in this joint review include:

Agency	Number Measures Reviewed	Total KPMs¹	Year APPR Reviewed
Administrative Services, Department of	2	19	2007
Consumer & Business Services, Department of	3	15	2007
Corrections, Department of ²	2	13	2007
Employment Department ²	4	18	2007
Forestry, Department of ²	2	22	2007
Housing and Community Services	10	10	2008
Human Services, Department of	5	33	2007
Judicial Department ³	0	9	2008
Public Employees Retirement System	2	7	2007
Revenue, Department of	4	12	2008
State Lands, Department of	3	18	2007

State Police	5	15	2007
Student Assistance Commission ³	0	15	2008
Transportation, Department of ²	5	29	2007
University System	3	29	2007
Veterans Affairs, Department of	5	5	2008

1 As reported by agency internal auditors.

2 These agencies reviewed measures from both 2007 and 2006 APPRs.

3 Final reports were not received from these agencies due to turnover in internal audit staff.

Note: data reported in APPRs span different periods of time. Some agencies reviewed data from as far back as 2006.

Objectives

The objectives of the audit work performed were to determine the accuracy and reliability of the data reported in the agencies' APPR for the year stated, and to help ensure that the data reported in the APPR was:

- Documented: appropriate information behind the measure exists;
- Repeatable: the information can be accurately re-created; and
- Consistent: the measure is reported the same year to year.

Methodology

Audit work performed at most of the agencies included:

- Interviewing key personnel involved in KPM reporting;
- Reviewing applicable policies and procedures relating to KPM reporting;
- Reviewing file documentation maintained by staff responsible for reporting on selected measures;
- Determining if adequate controls are in place for measures;
- Attempting to recreate values reported using calculation methodologies identified;
- Reviewing measure definitions and calculations for accuracy;
- Concluding on the verification of the performance measure data;
- Examining databases containing data reported on;
- Performing reconciliations of data held in databases to source documentation;
- Comparing source documents to electronic records to test accuracy controls;
- Obtaining APPR and supporting raw data and identifying proper data elements for each measure; and
- Discussing various levels of risk involved with the performance measures.

Results

Testing results for each measure were reported using the following definitions:

- Verified: The performance reported is consistently accurate within plus or minus five percent and adequate controls are in place to ensure consistency and accuracy in collection of all supporting data and subsequent reports.
- Verified with Qualifications (qualified): The performance reported is consistently accurate within plus or minus five percent, but adequate controls are not in place to ensure continued accuracy. The span of data is less than ideal or the

performance measure definition is not followed but the calculation remained within the five percent error range.

- **Factors Prevented Verification (prevented):** When documentation is not available and controls are not adequate to ensure consistency and accuracy or the performance measure definition is not followed and the correct measure result cannot be determined.
- **Inaccurate:** The performance reported is commonly not within five percent of actual performance.
- **Not Applicable:** Lack of adequate data exists for review for a justifiable reason, i.e. a new measure.

Out of 269 KPMs for the participating agencies 55 or 20 percent of these measures were reviewed as part of this statewide project. The measures selected for review were selected by agency internal auditors using criteria set forth in the provided audit program or review template. Of the KPMs reviewed:

- 36 were determined to be Verified;
- 9 were Verified with Qualifications;
- 9 had Factors that Prevented Verification;
- 1 was determined to be Inaccurate; and
- No measures reviewed received a conclusion of Not Applicable.

Five agencies concluded all measures reviewed as verified. Two of these agencies had performed prior KPM data integrity audit work. As part of this follow-up work, one of these agencies found that the five prior audit recommendations had been resolved.

At nine agencies, factors were found that led to qualified, prevented, or inaccurate conclusions. Those findings and the related recommendations to each are summarized into four overarching categories: inadequate controls, inadequate documentation, lacking verification of third party information and inappropriate data.

1. **Inadequate documentation was found at eight agencies:** Measures and procedures for them were not well documented or documentation was not complete enough to ensure consistency and accuracy of the affected measures. In some cases it was difficult for auditors to determine the intent of the measure or how targets were set. Inadequate documentation includes the lack of maintained history files for the measures containing defined data elements, targets, and calculations. One agency determined the calculation methodology was not adequately disclosed to users of the APPR.

Internal auditors recommended standardized procedures be developed and implemented over the collection and calculation of data. Agencies should maintain fully documented measure definitions including elements, calculations, methodology, scope, and source data. Procedures should include roles and responsibilities of staff involved in the performance measurement process.

2. **Inadequate controls were found in the performance measurement reporting process at nine agencies:** Lacking or insufficient controls led to system errors and the inability for measures to be reported accurately or consistently. The lack of appropriate controls in the performance measure process led to inconsistent and sometimes inappropriate methodologies, reporting, and data collection processes. Two agencies detected a greater than five percent error in a measure's reported performance.

Recommendations specified review processes be put in place over performance measure gathering, calculating, and reporting functions and appropriate levels of management oversight be added to the KPM processes. Staff involved in KPM reporting processes must be adequately trained. Access controls should be developed and implemented to prevent unintended editing of system data.

3. **No validation process was in place to ensure data received from third parties was found at three agencies:** Information for some of the measures reviewed was received from third party providers or third party sources. In these instances it may be difficult for agencies to ensure the accuracy of the data received. Agencies may have little or no control over the outcome of the measure due to the fact that it is gathered from third parties.

Internal auditors at the three affected agencies recommended independent verification of third party data prior to reliance for KPM reporting. At a minimum, agencies should have an understanding of the controls in place over reporting by third parties.

4. **Inappropriate data elements and assumptions were used in calculations at three agencies.**

Specific recommendations were made for each of these three agencies around maintaining appropriate permanent files containing information on raw data, calculations and descriptions to support previously reported KPMs.

Agency Management Response

Seven of the agencies reported that management generally agreed with findings and recommendations as stated and was either committed to action, had already taken action to implement recommendations, or was actively considering taking action. Management in two of the agencies disagreed with some of the findings and recommendations. The remaining five agency's reports did not include management responses.

Other Matters

Although not deemed to be reportable audit findings within individual agencies, some auditors did note issues with the following:

Performance Measure Coordinators: There does not appear to be standardized position expectations for performance measure coordinators across state agencies. A standardized set of expectations for the performance measure coordinator position would help increase consistency in KPM reporting both within and across state agencies. Performance measure coordinators can provide support to the data owners responsible for collecting, calculating, and reporting on KPMs to help ensure accuracy and reliability of information reported.

Lack of KPM Criteria: For some measures there is little to no guidance as to how information should be validated or reported on. For some measures reviewed, Auditors were unable to clearly determine the intent and found it difficult to determine how targets were set. Standardized criteria and guidance provided to state agency performance measure coordinators could help improve processes over performance measure data gathering, validation, calculations, and reporting and could support the effort to resolve documentation weaknesses found in agencies.

Adequacy of Performance Measures: Reviewing the adequacy of performance measures, or making a determination on whether an agency is reviewing the right thing, was not an objective of this review. Performance measures should be aligned with an agency's mission and objectives and should appropriately reflect the priorities of the agency. Agency internal auditors, LFO, and the Budget and Management Division of DAS could additionally consider reviewing the adequacy of performance measures in the future.

Commendation

The cooperation of the internal auditors, performance measure coordinators, management, and program staff of agencies who participated in this statewide review is appreciated.

DAS and the Statewide Audit Advisory Committee appreciate the work of the sub-committee members in developing the template audit program:

David Clouse, Chief Audit Executive, Department of Forestry

Dawn Farr, Legislative Analyst, LFO

Rick Gardner, Performance Management Coordinator, DAS Budget and Management Division

Mary Hull Caballero, Senior Internal Auditor, Department of Transportation

Jacqueline Sewart, Former Chief Audit Executive, Department of Consumer and Business Services

Pamela Stroebel Valencia, Chief Audit Executive, DAS Internal Audit Section

Dallas Weyand, Former Legislative Analyst, LFO

Laura Wipper, Performance Management Consultant, Department of Transportation

Suggestions for Future Audits

The sub-committee will be reconvened to analyze the lessons learned from this first statewide internal audit. Some items for consideration include:

- The need for follow-up to the findings contained in this report;

- Modifications to the template audit program and timing of a future report;
- Providing standard audit criteria;
- Providing a standardized reporting template;
- Ways to increase participation and ensure integrity of measures selected for review;
- Training for internal auditors on performance measurement processes, methodologies, and statistics commonly used in reporting; and
- Ability for performance measure coordinators to perform these reviews regularly, with occasional audits of high-risk areas and continued analysis of measures by analysts.

Disclaimer

DAS's Internal Audit Section did not review the audit work completed by the participating agencies, the results of which were included in this report. An audit program or review template was provided, however it was not mandated that all agencies follow the program specifically to perform the work. Ten of the agencies reported to have followed professionally accepted auditing standards while performing this work.