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## Correspondence Memorandum

**Date:** October 23, 2019  
**To:** Group Insurance Board  
**From:** Rachel Carabell, Senior Health Policy Advisor  
Office of Strategic Health Policy  
**Subject:** Third-Party Audit of IBM Watson Health

**This memo is for information purposes only. No Board action is required.**


The Department of Employee Trust Funds (ETF) retained Segal Consulting (Segal) to conduct a third-party review of IBM Watson Health (IBM) to determine if it has the proper controls in place to ensure the data warehouse and business intelligence tools IBM provides to ETF are providing high-quality data that effectively support business decision-making. The period of the review covered the first ten months the data warehouse and its tools were operational, September 2018 through June 2019. The executive summary of Segal's report is attached. A detailed report from Segal is available upon the Board's request.

### Summary of Findings

Segal found no critical or high-level risks in its review. In a few areas, Segal found there was either data missing that hindered its ability to draw a conclusion or there are low to medium risk level recommendations to address. Segal recommended addressing the following issues:

- ETF should request that IBM provide a variety of security-related documents and review these documents on a regular basis;
- ETF should work with IBM to reduce the amount of time ETF spends on data validation to instead focus on data analytics; and
- ETF should have solid and measurable performance standards in place, agreed to by IBM, prior to the next contract negotiation.

Reviewed and approved by Eileen K Mallow, Director, Office of Strategic Health Policy

 Electronically Signed 11/1/19

Board	Mtg Date	Item #
GIB	11.13.19	9A

## **Audit Scope**

The review focused on IBM's controls regarding data security and quality. Specifically, Segal reviewed the following areas for this audit:

- Data security and privacy protections
- Data submission process, including working with data submitting entities (DSEs)
- Data validity, consistency, completeness and accuracy
- Incident response and disaster recovery planning
- Performance standards
- Program change management
- Reporting
- Restricted access to protected health information and personally identifiable information
- Risk management
- Source data extract, transform and load (ETL) processes
- Training and documentation for use by end users
- User access and customer service

## **Project Methodology**

In its review, Segal interviewed IBM and ETF staff and submitted a large data request to ETF. In response, ETF provided Segal with contractual materials and sample communications between IBM and ETF. Documentation regarding IBM's data modeling and processes was provided by IBM.

## **Findings**

Segal noted the following issues for ETF to address:

### Review all important security documents

Segal recommends that ETF request security documents as outlined in the contract and thoroughly review them. This includes documents such as annual SOC2 reports, security risk assessments, vulnerability and penetration tests, disaster recovery tests and any executive summaries that include monthly firewall and intrusion detection results, as well as access to HIPAA protected data.

IBM has been cooperative in providing security-related documents that ETF has requested for its review. During implementation, ETF reviewed a variety of security-related deliverables provided by IBM. Most recently, ETF has been focused on reviewing IBM's Service Operational Controls (SOC) 2 reports. In its review of IBM's 2018 SOC2 report, ETF accepted the report and found no reason for additional follow-up. That position has been confirmed through Segal's audit of IBM's control practices. IBM has implemented the necessary controls to protect personal health information (PHI). ETF's Bureau of Information Security Management (BISM) leadership has confidence IBM has implemented and continues to mature the core components of an

information security program in line with recognized information risk management standards. IBM's 2018 SOC2 report was also reviewed by Segal as part of its review. As BISM matures its information risk/security practice in 2020, vendor risk management will be a focal point. Policy and standards will be implemented, and the level of attestation required for each vendor will be reviewed and implemented where appropriate.

#### Continue moving toward a data-driven culture

Segal noted that 80% of an analyst's time is spent on the data *validation* process. Segal recommends that ETF work with IBM to determine how to reduce the amount of time spent on data validation, which would allow more time for data analysis.

Data validation is a crucial step in having high-quality data. During the period of the review, ETF converted the format of the eligibility file it sends to IBM monthly so that eligibility submissions could more easily be updated and tested. This project required a significant amount of validation from one of ETF's data analysts. Because this work required validating the eligibility file with ETF's own system data, there is very little IBM could have done additionally to assist with that validation. Since completing the project, this analyst has been able to resume a reasonable balance between data validation and data analytics. However, any program changes that require changes to eligibility and enrollment data will require ETF's data analysts to conduct data validation activities to ensure the quality of the data included in the data warehouse.

#### Ensure desired performance measures are in place; enforce as necessary

Segal recommends ETF have solid and measurable performance standards in place, agreed to by IBM, prior to the next contract negotiation. Segal noted that ETF already has a robust set of performance standards in place to measure IBM services and that these contractual performance measures are currently being reviewed and reworked.

For the first two quarters of 2019, IBM met each current performance standard except one. IBM did not meet the standard related to system up-time, which requires DAISI to be up 99.9% of the time (24 hours/day). Based on this standard, any downtime that exceed approximately two hours per quarter would result in IBM not meeting this standard. In both Q1 and Q2, IBM did not meet this standard resulting in a penalty totaling \$5,665 for both quarters. IBM has met the standard for Q3 so no penalty will be applied.

Earlier this year, ETF worked with IBM to revise the current performance standards and contractual penalties to ensure that they are measurable, enforceable and reflect ETF's priorities. A discussion of the revised performance standards and contractual penalties are included in the IBM contract extension memo, Item 9B on the agenda.

#### **IBM Response**

Neither Segal nor ETF asked IBM for a formal response to the audit since there were no significant findings. IBM reviewed the audit, however, and provided a response. IBM's

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response generally reflects that it shares its SOC1 and SOC2 reports with clients and that it has complied with the requirements under the contract. IBM and ETF also agreed to collaborate on changes desired as a result of the audit. Staff will be at the Board meeting to answer any questions.

Attachment: Executive Summary from Segal Consulting

**State of Wisconsin**

**Department of Employee Trust Funds**

**DATA WAREHOUSE AND VISUAL BUSINESS  
INTELLIGENCE SERVICES AUDIT REPORT**

September 16, 2019

# Executive Summary

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The State of Wisconsin Department of Employee Trust Funds (ETF) retained Segal Consulting (Segal) to conduct an audit of their IBM Watson Health (IBM) data warehouse and visual business intelligence services solution (DW/VBI). The purpose of the DW/VBI audit was to assess that IBM has the proper controls in place to ensure the data warehouse and its associated business intelligence tools are providing high quality data that effectively supports ETF decision making. The audit covered the ten-month period from September 2018 through June 2019 that began once the database and its business intelligence tools went operational. We reviewed the following areas for this audit:

- Data security and privacy protections;
- Data submission process, including working with data submitting entities (DSEs);
- Data validity, consistency, completeness, and accuracy;
- Incident response and disaster recovery planning;
- Performance standards;
- Program change management;
- Reporting;
- Restricted access to PHI and PII;
- Risk management;
- Source data extract, transform, and load (ETL);
- Training and documentation for use by end users;
- User access and customer service.

## Project Methodology

Our approach to the DW/VBI audit included the following key tasks:

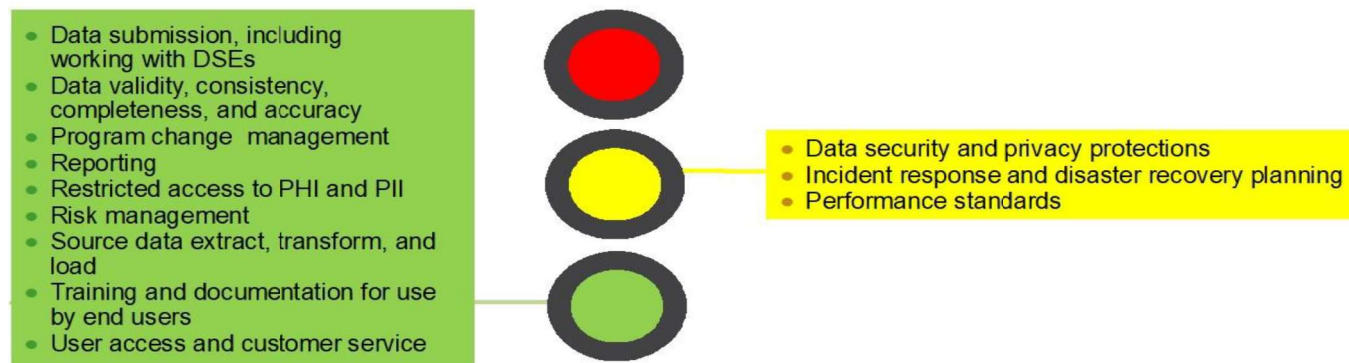
- We sent ETF an extensive data request to gather information for the above-defined review areas.
- We conducted on-site interviews with the ETF personnel shown below, listed in alphabetic order by last name, to understand the major processes, procedures, and roles related to the ongoing operations of the DW/VBI solution.
  - Rachel Carabell, Senior Health Policy Advisor
  - Bruce Johnson, Data Analyst

- Joanne Klass, Contracts Specialist
  - Jessica Rossner, Data, Compliance, and Measurement Lead
  - Tom Wakeen, Service Delivery Coordinator
- We conducted remote interviews with the IBM personnel shown below, listed in alphabetic order by last name, to understand the major processes, procedures, and roles related to the ongoing operations of the data warehouse solution and the support provided to ETF by IBM.
- Oladipo (Dipo) Fadiran, Senior Consultant
  - Eric Poston, U.S. State and Local Account Executive
  - Adrienne Ray, Senior Data Management Consultant
  - Alison Ulicny, Audit Manager
- The information gathered was analyzed for incorporation into this report, which includes our findings and recommendations.

## Audit Results

The table below uses color-coding to illustrate our audit results, with the colors defined as follows. As you will see, there were no critical issues or high priority recommendations found during our audit process.

- Green – There were no critical, high, or medium level risk issues discovered
- Yellow – There was either data missing that hindered the ability to draw a conclusion or there are low to medium risk level recommendations to address.
- Red – There was either missing critical information or there are high priority recommendations to address.



## Recommendations

The following are notable issues that we recommend addressing:

### Review all important security documents

- IBM supplies several documents that pertain to the security posture of the DW/VBI system and its surrounding architecture. If not received, Segal recommends that ETF request these documents as outlined in the contract and thoroughly review them. This includes documents such as annual SOC2 reports, security risk assessments, vulnerability and penetration tests, disaster recovery tests, and any executive summaries that include monthly firewall and intrusion detection results, as well as access to HIPAA protected data.

### Continue moving toward a data driven culture

- Reliance on good data/information is critical to the success of the DW/VBI system. It was noted that 80% of an analyst's time is spent on the data validation process so we recommend that ETF work with IBM to determine how to reduce this effort and allow more time for analyzing data. It is expected that the data validation time will decrease post implementation, freeing up the ETF data analyst(s) for more critical analysis activities.

### Ensure the desired performance measures are in place and enforce them as necessary

- ETF has a robust set of performance standards in place to measure the IBM services. ETF noted that these contractual performance measures are currently being reviewed and reworked. Segal recommends ETF have solid and measurable performance standards in place, agreed to by IBM, prior to the next contract negotiation.

## Next Steps

The data warehouse solution is securely providing high quality data which allows ETF to focus on the data analysis itself.

Based on our findings and recommendations, ETF should consider the following next steps:

- Address audit recommendations as appropriate.
- Continue to leverage IBM's deep healthcare industry experience to refine current data models and define/develop future analytic reports.



- Use the data warehouse and business intelligence tools to move toward a data driven culture that measures both short-term data points and long-term trends to improve service to the members.

## **Conclusion**

IBM Watson Health has demonstrated that they have the proper controls in place to ensure the data warehouse and its associated business intelligence tools are providing high quality data to support ETF decision making processes.

## **Acknowledgements**

We thank the ETF staff for the time, cooperation, and courtesy extended to us throughout this process. A significant amount of effort went into providing Segal with the requested data and information collected during the onsite visit and associated interviews. We appreciate the staff's efforts.