February 2017

PROGRESS AUDIT:
INTEGRATED CASE MANAGEMENT

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OFFICE OF THE
Auditor General
of British Columbia

CONTENTS

The Honourable Linda Reid
Speaker of the Legislative Assembly
Province of British Columbia
Parliament Building
Victoria, British Columbia
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Dear Madame Speaker:

I have the honour to transmit to the Speaker of the Legislative Assembly of British Columbia the report *Progress Audit: Integrated Case Management System.*

We conducted this work in accordance with the standards for assurance engagements set out by the Chartered Professional Accountants of Canada (CPA) in the CPA Handbook - Assurance and Value-for-Money Auditing in the Public Sector, Section PS 5400.

Carol Bellringer, FCPA, FCA
Auditor General
Victoria, B.C.
February 2017

AUDITOR GENERAL'S COMMENTS

TWO YEARS AGO, we released a report on the Integrated Case Management (ICM) system, which was meant to improve delivery of social programs and supports. We found that the system neither met expectations nor fulfilled key objectives.

Since we released our 2015 report, we've been following the progress of the Ministry of Social Development and Social Innovation (MSDSI) on its implementation of our eight recommendations: to improve data quality and access to client information, and for the ministry to prepare a full accounting of the ICM capital and operating costs.

MSDSI provided the Select Standing Committee on Public Accounts with an action plan in May 2016. We followed up on our original recommendations and found that MSDSI has made significant effort, but has not yet fully implemented our recommendations. Our findings of partial implementation differ from the ministry's assessment of fully/substantially complete – largely because the ministry based its progress on the *effort* of addressing each recommendation, and we looked at whether it *achieved* the recommendation.

The ministry has made little progress on cost transparency. Budget forecast information for both operating and capital costs was available during the project. After completion, the ministry was able to provide information on actual capital costs (the $182 million publicly reported), but only minimal information on actual operating costs.

The ICM project is not alone when it comes to monitoring total project costs. For the future, it's important for government to follow through on our recommendation to prepare a full accounting of both capital and operating costs for the life of each IT project. We made this recommendation in our recent report *Getting IT Right: Achieving value from government information technology investments*. This will improve

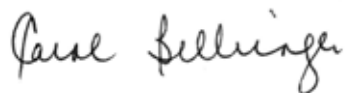CAROL BELLRINGER, FCPA, FCA
Auditor General

AUDITOR GENERAL'S COMMENTS

project management and provide legislators and the people of B.C. with greater clarity around the full costs – for ICM or any other IT project – to see if there is value for money.

With the exception of recommendation 8, MSDSI has a plan in place to fully complete its actions. We encourage staff to continue their good work on addressing our recommendations. I would like to thank MSDSI for their participation in this follow-up process.

Carol Bellringer, FCPA, FCA
Auditor General
Victoria, B.C.
February 2017

SUMMARY OF RECOMMENDATIONS

FROM OUR 2015 REPORT

WE RECOMMEND THAT THE MINISTRY OF SOCIAL DEVELOPMENT AND SOCIAL INNOVATION:

1   ensure that access to ICM is based on defined business and security requirements.

2   ensure that access to ICM is updated promptly and regularly reviewed.

3   ensure that access to restricted client records in ICM is appropriately assigned only to those with a defined need.

4   ensure that ICM system administration accounts are properly managed.

5   conduct regular monitoring of ICM for inappropriate access and activity.

6   improve system and review processes to enhance the quality of client records in ICM.

7   implement a regular compliance program to assess, monitor and improve data quality in ICM on an ongoing basis.

8   prepare a full accounting of ICM capital and operating costs for the life of the project, consistent with details provided in the business case.

We encourage the Ministry of Social Development and Social Innovation to work collaboratively with the Ministry of Children and Family Development and the Ministry of Technology, Innovation and Citizens' Services to address our recommendations.

PROGRESS AUDIT

INTEGRATED CASE MANAGEMENT SYSTEM

Report released: March 2015
Action Plan: May 2016 [see Appendix A]
Discussed by the Public Accounts Committee: June 4, 2015

Exhibit 1: The Ministry of Social Development and Social Innovation's progress in implementing our recommendations

Recommendation #	1	2	3	4	5	6	7	8
Ministry Assessment	●	●	●	●	●	●	●	●
OAG Assessment	●	●	●	●	●	Not assessed	Not assessed	●

● Fully/substantially implemented   ● Partially implemented   ● No action taken
● Alternative action taken

BACKGROUND

The Integrated Case Management (ICM) project was initiated in 2008 as a partnership of three ministries: the Ministry of Social Development and Social Innovation (MSDSI), the Ministry of Children and Family Development (MCFD), and the Ministry of Technology, Innovation and Citizens' Services (MTICS). The Ministry of Social Development and Social Innovation had lead responsibility for project delivery, but all three ministries were responsible for the project.

The purpose of the project was to integrate multiple program areas and systems from MSDSI and MCFD into a single system. The objective was to improve information sharing and case management across the social services sector, and to replace disparate, aging legacy systems no longer considered sustainable for program delivery. The ICM system was intended to enable the two ministries to deliver key social programs more effectively and efficiently than before.

In November 2014, MSDSI and MCFD announced they had completed the project on time and on budget, at a total capital cost of $182 million.

PROGRESS AUDIT

Our report on the Integrated Case Management system

In March 2015, we released a two-part report on the ICM system:

- Part 1 discussed *our audit* of ICM to determine whether MSDSI, as project lead, had ensured that: 1) access to ICM was properly managed to protect client information from inappropriate access; and 2) data was managed to ensure the quality of client records in ICM

- Part 2 discussed *our review* of ICM project scope and costs

In Part 1, we found there were significant deficiencies with access management and data quality management in the new system. MSDSI did not adequately manage access to ICM to prevent inappropriate access to client information. Essential monitoring was not in place for detecting inappropriate access and activity. We also found that the ministry had identified significant issues with the quality of client records in ICM. Information used to identify clients in ICM was not always accurate or complete, and duplicate records existed.

In Part 2, we reported that the ICM project did not fully replace legacy systems as initially planned. The reported project cost for ICM was $182 million, but this did not include $13 million in supplementary capital funding or project-related operating costs associated with development, implementation and maintenance of ICM. At the time of our review, we were unable to confirm all of the costs related to the project because the project had not yet been completed. Therefore, one of the eight recommendations in the 2015 report was for MSDSI to prepare a full accounting of ICM capital and operating costs for the life of the project, consistent with details provided in the business case.

OBJECTIVE AND SCOPE

We carried out this progress audit to determine whether MSDSI's Action Plan (May 2016) accurately represents its progress in implementing six of the eight recommendations from our 2015 report, *Integrated Case Management System*. We did not assess the ministry's progress on recommendations 6 and 7 because we determined there was a lower risk that the ministry had not implemented its reported actions for improving data quality issues.

We conducted our audit in accordance with the standards for assurance engagements set out by the Chartered Professional Accountants of Canada (CPA) in the CPA Handbook – Assurance, and under the authority of Section 11 of the *Auditor General Act*.

Our work involved interviewing ministry executives and senior IT management staff, reviewing process and procedural documents and evaluating supporting material. We also considered work that was done prior to our original audit report if it had implications on the progress audit. We did not assess the effectiveness of MSDSI's actions in addressing our original audit findings, as the outcomes may not be fully evident for years to come.

This progress audit covers the period from when we published our original report (March 31, 2015) to

when MSDSI submitted its action plan to the Select Standing Committee on Public Accounts (May 31, 2016). We began our progress audit on September 9, 2016 and substantially completed this work on November 22, 2016.

CONCLUSION

In assessing the ministry's progress, we focussed on its implementation of new processes to address our recommendations. The ministry reported that it had fully or substantially implemented our recommendations, but we concluded that the recommendations were partially implemented.

The discrepancy between our assessment and the ministry's is due in part to a difference in interpretation about what constitutes "fully or substantially implemented" and "partially implemented." The ministry reported that it had assessed its progress as fully or substantially implemented given all the work it put in to addressing each recommendation, whereas our audit focussed on whether the ministry had achieved the recommendation.

The ministry reported that it had fully or substantially implemented all five recommendations on access management (recommendations 1 through 5). We found that the ministry has taken significant steps to strengthen access controls in ICM, such as updating policies and procedures, developing plans for proactive monitoring, and deploying new control processes. However, the ministry has not implemented all the processes necessary to fully address the recommendations. In some cases, the ministry

implemented control processes after it provided its action plan to the Select Standing Committee on Public Accounts in May 2016.

For recommendation 8, the ministry reported that it was fully implemented. However, we found that the ministry only partially implemented the recommendation. The ministry provided us with information to account for ICM capital costs, but could only provide limited information on operating costs. Ministry staff explained that they do not track operating costs by project, and therefore they were unable to reconcile these costs to the estimates provided in the approved business case.

As noted in our October 2016 report, *Getting IT Right: Achieving Value from Government Information Technology Investments*, this issue is not unique to the ministry. We made a recommendation in that report for government to monitor total project costs, including operating costs.

RECOMMENDATION 1 OF THE AUDITOR GENERAL'S OCTOBER 2016 REPORT

Getting IT Right: Achieving Value from Government Information Technology Investments

" *We recommend that central oversight of ministry IT-enabled projects include monitoring of total project cost (both capital and project-related operating costs) for the term of each project.*"

PROGRESS AUDIT

KEY OBSERVATIONS

RECOMMENDATION 1: *We recommend that the ministry ensure that access to ICM is based on defined business and security requirements.*

MSDSI Assessment:
- Fully/substantially implemented

OAG Assessment:
- Partially implemented

Observations

In our 2015 report, we found that many users were given access to ICM beyond what was defined in the access model for their job roles. Since our audit, the ministry has taken steps to redefine the access model to ensure correct access is defined for job roles. The ministry has also improved the business process for approving and updating changes to the access model. To ensure users are given the correct access, the ministry has been developing a reporting tool to identify users with access to ICM that is inconsistent with their defined job roles.

This is an important enhancement for the ministry to manage access on an ongoing basis. As the reporting tool was not fully developed until August 2016, after the ministry reported its action plan to the Select Standing Committee on Public Accounts in May 2016, we concluded that the ministry has not fully addressed the recommendation. We noted that the ministry was in the process of validating access exceptions at the time of our progress audit.

We therefore assessed that the ministry has only partially implemented this recommendation.

RECOMMENDATION 2: *We recommend that the ministry ensure that access to ICM is updated promptly and regularly reviewed.*

MSDSI Assessment:
- Fully/substantially implemented

OAG Assessment:
- Partially implemented

Observations

In our 2015 report, we found that user accounts in ICM were not properly managed. Since our audit, the ministry has made some significant progress by strengthening its user account management processes to ensure users are assigned with correct access to ICM. More importantly, the ministry has introduced a regular review program for user access monitoring. This includes:

- reviewing the staff employment status or job function change report to confirm proper account changes are made

- spot-checking of user accounts to verify correct access

- reviewing inactive accounts to remove access that may no longer be required

We found that the ministry has implemented most of the review processes, but not all. Specifically, the ministry has not fully implemented the review process for inactive accounts.

We therefore assessed that the ministry has only partially implemented this recommendation.

PROGRESS AUDIT

RECOMMENDATION 3: *We recommend that the ministry ensure that access to restricted client records in ICM is appropriately assigned only to those with a defined need.*

MSDSI Assessment:
- Fully/substantially implemented

OAG Assessment:
- Partially implemented

Observations

In our 2015 report, we found that access to restricted client records in ICM for non-program area staff (staff who are not involved in direct service delivery programs) was not always appropriately assigned. Since our audit, the ministry has clarified job roles that are allowed access to restricted records, and strengthened business processes for assigning users with correct access to ICM. However, the ministry has not reviewed access to find out whether access to restricted records was properly assigned. There is a continued risk that client information held in restricted records could be inappropriately accessed without the ministries' knowledge.

We therefore assessed that the ministry has only partially implemented this recommendation.

RECOMMENDATION 4: *We recommend that the ministry ensure that ICM system administration accounts are properly managed.*

MSDSI Assessment:
- Fully/substantially implemented

OAG Assessment:
- Partially implemented

Observations

System administration accounts provide users with an elevated level of access so that they can manage and provide system support services, such as security and maintenance. In our 2015 report, we found that system administration accounts in ICM were not properly managed. In particular, they were not regularly reviewed for validity, and we found during our progress audit that this is still the case. Accounts were reviewed for validity and correct access on an ad-hoc basis.

We found that the ministry has taken steps to develop a strategy that provides for better management and monitoring of these system administration accounts, but this is not expected to be implemented until 2017.

We therefore assessed that the ministry has only partially implemented this recommendation.

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RECOMMENDATION 5: *We recommend that the ministry conduct regular monitoring of ICM for inappropriate access and activity.*

MSDSI Assessment:
- Fully/substantially implemented

OAG Assessment:
- Partially implemented

Observations

When users access ICM, this access information is stored in audit logs, which can then be used to identify and analyze unusual patterns of activity through the use of automated log management tools. In our 2015 report, we found that the ministry did not proactively monitor ICM for inappropriate access and activity. We found that this is still the case in our progress audit, but the ministry has taken steps to develop a strategy to improve its monitoring capability. The ministry's implementation timeline shows completion by March 2019.

We therefore assessed that the ministry has only partially implemented this recommendation.

RECOMMENDATION 6: *We recommend that the ministry improve system and review processes to enhance the quality of client records in ICM.*

MSDSI Assessment:
- Fully/substantially implemented

OAG Assessment:
  Not assessed

Observations

This recommendation is about improving preventative measures to ensure the correct recording of client identity information during intake, and improving detective measures where this was not practical. As noted in our 2015 report, we were aware of a number of initiatives that the ministry had undertaken to address data quality issues in ICM, most notably the implementation of a data quality tool in the last phase of the ICM project.

We reviewed the ministry's progress assessment as reported in its action plan and determined that its reported actions were reasonable in addressing the recommendation. However, we did not audit this information and therefore provide no assessment on the degree to which the ministry has implemented this recommendation.

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RECOMMENDATION 7: *We recommend that the ministry implement a regular compliance program to assess, monitor and improve data quality in ICM on an ongoing basis.*

MSDSI Assessment:
- Fully/substantially implemented

OAG Assessment:
Not assessed

Observations

This recommendation is about managing data quality on an ongoing basis, including remediating known data quality issues and establishing baselines to measure data quality. As noted in our 2015 report, the ministry made a significant effort to remediate known data quality issues in the system.

As part of the follow-up process, the ministry told us that it has established a compliance program for assessing and monitoring data quality. It has also implemented processes for raising awareness of data quality issues with program areas and developed a data management strategy for the social services sector as a whole.

We reviewed the ministry's progress assessment as reported in its action plan and determined that its reported actions were reasonable in addressing the recommendation. However, we did not audit this information and therefore provide no assessment on the degree to which the ministry has implemented this recommendation.

RECOMMENDATION 8: *We recommend that the ministry prepare a full accounting of ICM capital and operating costs for the life of the project, consistent with details provided in the business case.*

MSDSI Assessment:
- Fully/substantially implemented

OAG Assessment:
- Partially implemented

Observations

In November 2014, MSDSI and MCFD reported that the ICM project had been completed on time and on budget. In our 2015 report, we clarified that this referred to the $182 million in project capital costs, but did not include $13 million in supplementary capital funding, or ICM project related operating costs. It is important to report on the operating costs of a project, because these costs can be significant and can affect the ministries' program operation.

As noted in our 2015 report, MSDSI could not provide a complete reconciliation of capital and operating costs because the project had not yet been fully completed. As a result, we recommended that the ministry prepare a full accounting of ICM capital and operating costs for the life of the project, consistent with details in the business case. This would give legislators and the public clarity on the full costs of ICM, and provide management with a basis to determine whether the project had achieved value-for-money, as set out in the initial business case.

PROGRESS AUDIT

For our 2016 progress update, MSDSI reported that it had fully implemented the recommendation. However, we found that the ministry only partially implemented the recommendation. The ministry was able to provide detailed information on capital costs related to the project, but only limited information on ICM-related operating costs.

For capital costs, ministry staff tracked the information and updated Treasury Board on estimates for the duration of the ICM project. Even though ministry staff did not prepare the actual final capital cost of the completed project by cost components (as outlined in the business case), information is available for such reporting if needed.

In our 2015 review, we noted that ministry staff had been providing updated operating cost estimates to Treasury Board over the course of the project. However, as reported in their action plan (and presented to the Select Standing Committee on Public Accounts in June 2015), MSDSI had only prepared ICM operating costs for 2014/15, not for the term of the ICM project. We also found that this does not represent a complete picture of operating costs incurred for the year. The ministry attempted to estimate the additional cost components (as outlined in the business case) for 2014/15 during the progress audit, but these figures were incomplete.

Ministry staff explained that they do not track operating costs by project, in part because it is not a requirement under government core policy, and also because they do not have systems in place to do so. For the information they did provide, ministry staff told us that it took considerable effort to compile and that certain cost components could not be easily estimated with any degree of accuracy.

As noted in our October 2016 report, _Getting IT Right: Achieving Value from Government Information Technology Investments_, this issue is not unique to MSDSI. This report also notes that the Office of the Chief Information Officer (OCIO) has been working with ministries on implementing a reporting process for total project costs, including operating costs.

We therefore assessed that the ministry has only partially implemented this recommendation.

APPENDIX A: ACTION PLAN
BY MINISTRY OF SOCIAL DEVELOPMENT AND SOCIAL INNOVATION

Prepared for the Select Standing Committee on Public Accounts by the Ministry of Social Development and Social Innovation

Integrated Case Management System Report released: March 2015
Action Plan: May 2016
Discussed by PAC: June 4, 2015

Recommendation #	1
OAG Recommendation	Ensure that access to ICM is based on defined business and security requirements.
Action Planned	
Target Date	Complete
Assessment of Progress by Entity	● Fully implemented
Action Taken	As part of ICM Phase 4, security profiles were reviewed in detail and updated to reflect current program area and security requirements. Job titles were standardized and approval processes were updated and improved. Business and security requirements have been incorporated in to the release and change processes.
Recommendation #	2
OAG Recommendation	Ensure that access to ICM is updated promptly and regularly reviewed.
Action Planned	
Target Date	Complete
Assessment of Progress by Entity	● Fully implemented
Action Taken	User account management processes were updated. Implemented regular review schedule using new user access monitoring capabilities. Developed compliance reviews and reporting to ensure system access can be promptly updated to reflect staff and agency role changes.

ACTION PLAN BY MINISTRY OF SOCIAL DEVELOPMENT AND SOCIAL INNOVATION

Recommendation #	3
OAG Recommendation	Ensure that access to restricted client records in ICM is appropriately assigned only to those with a defined need.
Action Planned	
Target Date	Complete
Assessment of Progress by Entity	● Fully implemented
Action Taken	Ensure that access to restricted client records in ICM is appropriately assigned only to those with a defined need. Implemented reporting on user access levels to enable ongoing systems access monitoring. Access management staff continue to work with SDSI/CFD program areas to ensure policy and/or service delivery changes that affect access requirements are updated promptly.
Recommendation #	4
OAG Recommendation	Ensure that ICM system administration accounts are properly managed.
Action Planned	
Target Date	Complete
Assessment of Progress by Entity	● Fully implemented
Action Taken	User account management processes, and related security procedures were updated. All user accounts were reviewed as part of ICM Phase 4. Privileged access accounts have been segregated and a process is in place to review on a quarterly basis. Privileged accounts that were no longer needed have been disabled and removed.

ACTION PLAN BY MINISTRY OF SOCIAL DEVELOPMENT AND SOCIAL INNOVATION

Recommendation #	5
OAG Recommendation	Conduct regular monitoring of ICM for inappropriate access and activity.
Action Planned	We are initiating a project to develop enhanced reporting.
Target Date	October 28, 2016
Assessment of Progress by Entity	● Substantially implemented
Action Taken	Implemented user access monitoring capabilities as part of ICM Phase 4. Reviewed and updated system settings for audit logging. Completed security testing with ICM Phase 4 and prior phases. Now incorporated in to our release and change management processes. Updated procedural documentation. Updated audit log retention procedures
Recommendation #	6
OAG Recommendation	Improve system and review processes to enhance the quality of client records in ICM.
Action Planned	
Target Date	Complete
Assessment of Progress by Entity	● Fully implemented
Action Taken	As part of ICM Phase 4, significant system improvements were made to the data quality and search functionality through implementation of a new data quality tool. Improved awareness and business procedures with ministry program areas to ensure quality of client records. Director hired to focus on data quality and training staff to optimize tools and implement monitoring processes.

ACTION PLAN BY MINISTRY OF SOCIAL DEVELOPMENT AND SOCIAL INNOVATION

Recommendation #	7
OAG Recommendation	Implement a regular compliance program to assess, monitor and improve data quality in ICM on an ongoing basis.
Action Planned	
Target Date	Complete
Assessment of Progress by Entity	● Fully implemented
Action Taken	As part of ICM Phase 4, data quality was improved by conducting a clean-up of data to remove duplicate records. Data quality management activities were augmented as part of ICM Phase 4, and a compliance program was established and implemented. An ongoing data quality management and awareness program has been implemented.
Recommendation #	8
OAG Recommendation	Prepare a full accounting of ICM capital and operating costs for the life of the project, consistent with details provided in the business case.
Action Planned	
Target Date	Complete
Assessment of Progress by Entity	● Fully implemented
Action Taken	Full accounting of project capital costs is complete. Project operating costs for 2014/15 were provided to the Public Accounts Committee in June 2015.

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