
TO: Chair and members of the Board of Health

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Recommendations

It is recommended that the Board of Health:

1. **Receive this report for information.**

Key Points

- In 2016, Wellington-Dufferin-Guelph Public Health (WDGPH) commissioned an external comprehensive review of the Information Technology (IT) program within the Agency to identify areas within IT for improvement to meet the newly approved Strategic Plan.
- 'An Independent Review of IT – Final Report – Wellington-Dufferin-Guelph Public Health' (The Report) identified 6 key recommendations, for investment and/or process improvement to increase Organizational Capacity.
- This Board report identifies the progress that has been made to date on the 6 recommendations, and how this progress aligns with the first goal of Organizational Capacity; "We will implement and maintain a comprehensive and reliable information technology infrastructure".
- Increasing IT Organizational Capacity is part of a multi-year plan and this report will outline future initiatives that will allow WDGPH to meet its strategic goal.

Discussion

Introduction

The IT program at Wellington-Dufferin-Guelph Public Health (WDGPH) has expanded and changed significantly over the past ten (10) years. Following completion of the 2016-2020 Strategic Plan, it was identified that a detailed evaluation of the IT program was necessary to meet the required IT capacity for WDGPH, both for the present and for the near future.

WDGPH's Strategic Plan 2016-2020 identified 'Organizational Capacity' as one of the Strategic Directions for the Agency. The first goal within 'Organizational Capacity' reads; 'We will implement and maintain a comprehensive and reliable information technology infrastructure'. In 2016 WDGPH commissioned an external comprehensive review of the Information Technology (IT) program within the Agency to identify areas within IT for improvement to meet the newly approved Strategic Plan. The report of the external consultant titled: 'An Independent Review of IT – Final Report – Wellington-Dufferin-Guelph Public Health' (The Report) identified 6 areas of focus.

The Report

The Report was focused on both the internal and external IT environment, as well as current and projected future state, for an organization like WDGPH. It did not focus on IT security and data privacy, as these important areas were specifically addressed in a parallel external review specific to these topics which will be presented in a future Board of Health report. The consultants used a framework for the IT assessment, which included a focus on: (i) strategy, (ii) architecture, (iii) operations, (iv) organization and (v) financial management.

The external landscape included a comparison with several public health units and similar health-related organizations (CCAC and CMHA). A general organizational comparison is shown in Table 1, whereas, a more customized IT comparison is shown in Table 2. Comparisons between the health organizations examined the areas of staffing, budget, IT strategy and IT systems. WDGPH was in line with comparable agencies in each of those areas.

Table 1 – Characteristics of Comparator Health Organizations

Comparator		Characteristics					
		Industry	Staff	Multi-site / Single-site	Population Served	Operating Budget	Governance
1	WDG Public Health	Healthcare	230	Multi	278k	\$20m	Autonomous
2	Public Health Unit #2	Healthcare	125	Multi	143k	\$13m	Autonomous
3	Public Health Unit #3	Healthcare	400	Multi	461k	\$32m	Autonomous
4	Health Care Org #1	Healthcare	450	Multi	775k	\$124m	Integrated (LHIN)
5	Health Care Org #2	Healthcare	350	Multi	n.a.	n.a.	Integrated (LHIN)

Table 2 – IT Characteristics from Comparator Health Organizations

Comparator		Characteristics of IT								
		IT Staff	IT Staff Ratio	IT Operating Budget	IT Capital Budget	Operating Ratio	IT Expense Per User	Use of Out-sourcing / Shared services	Use of Cloud	Hosting Facilities
1	WDG Public Health	6.5	2.6%	\$1.2m	-	3.6%	\$ 3,170	N	Y	Own
2	Public Health Unit #2	4.0	3.2%	\$0.79m	\$0.18m	6.1%	\$ 6,336	N	N	Own
3	Public Health Unit #3	9.0	2.3%	\$1.09m	-	3.4%	\$ 2,726	n.a.	n.a.	n.a.
4	Health Care Org #1	11.0	2.4%	\$1.9m	\$0.4m	n.a.	\$ 5,111	Y	Y	Shared
5	Health Care Org #2	7.0	2%	n.a.	n.a.	n.a.	n.a.	N	N	Own
Benchmark			2.8%			4.3%	\$ 6,450			

All somewhat close to the benchmark

Generally low compared to the benchmark

The number of IT staff, when compared to the total number of staff at WDGPH (staff ratio), is on par with comparable organizations. The IT spend, per user, is approximately \$3200 less than the industry benchmark.¹ WDGPH does not outsource shared-services and employs cloud-based services for Board of Health Members only and remote access for internal staff only. WDGPH data is hosted on-site, which is common among comparators.

Assessment Process

Both management and front-line staff were interviewed by the consultants to assess the current state of IT at WDGPH. The reviewers identified a number of key themes, as a result of these interviews that need to be addressed, including: (i) better integration of IT into program areas, (ii) seamless IT with mobility internal and external Agency buildings and (iii) improvement in the ability to use data to inform practice.

There were a few areas where the existing IT infrastructure at WDGPH meets the Strategic Direction of Organizational Capacity, which include:

- standardized laptops and desktops,
- industry standard firewall and networking equipment, and
- modern and reliable server architecture

Key Recommendations

Partner for Service Delivery

The cost of constructing and maintaining on-site data centres, like the one at WDGPH, is very high. By using a shared-cost data centre model, whereby WDGPH could partner with another organization and co-locate data centre hardware, both organizations could see significant

decrease in overall costs. Sharing a data centre with an unrelated organization is difficult to implement because of governance, security and privacy concerns. Instead of sharing a data centre with another organization, WDGPH could achieve the same benefits, without the implementation concerns, by engaging the services of a cloud-based service provider.

Develop an IT Plan

It is important to develop an overall plan for IT in order to have a clear direction for IT and how it will meet the strategic goals of the Agency. An IT plan will convey a suitable IT architecture and agree on a security framework for WDGPH. The progress on the IT plan would be monitored by the Senior Leadership Team.

Complete Clinical Automation

The software tools that staff use on a daily basis should be easy to use with as much automation as possible. Automation allows for less manual tasks and greater staff efficiency. Functional requirements for staff of key software systems should be documented, reviewed and then improvements can be made. Lastly, empowering the mobile worker will be key in ensuring staff can make best use of systems that are used on a daily basis.

Improve IT Service Management

The number of IT Help Desk tickets at WDGPH is 3x higher than the average for comparable organizations. There is significant opportunity to improve IT service by reducing the abnormally high volume of IT help desk tickets, by identifying root cause and monitoring the service desk performance. As the IT help desk ticket volumes decrease, IT staff can be redeployed to focus on proactive strategic initiatives, rather than simply being reactive.

Systems to Current Versions

To improve Organizational Capacity and 'maintain and implement a comprehensive reliable infrastructure', WDGPH should update the data centre and network. Updating key hardware components in the data centre will ensure reliable service for staff. A second (redundant) internet connection would allow WDGPH to stay connected with minimal down time of IT resources. Also, some software and configuration improvements can be made in order to further improve the security of the data centre.

Support IT Staff Development

Augmentations to the staff training program should be implemented to ensure a well-rounded departmental knowledge base to accommodate the IT department of the future. Enhancements to the current IT documentation process should be made to include a more formalized and documented process for problem solving, incident management and release management. Having clear expectations, especially with respect to service levels from IT, will allow staff to know what to expect when engaging the IT department.

Progress on Recommendations

Partner for Service Delivery

WDGPH is expanding its use of cloud-based systems. A cloud-based software solution called 'Leading Boards' has been deployed, which enables Board of Health members to collaborate online and to access Board meeting materials from any internet connected device. In addition, an evaluation is currently underway to move WDGPH's email system to a cloud-based provider. The email system is one of the most highly used applications at the Agency and moving to a cloud-based provider will allow for near 100% availability of email and 24/7 on-call support in case of any issues.

Develop an IT Plan

Over the past year, the IT plan has been enhanced through a collaborative effort between Information Systems and the Agency as a whole. More specifically, the updated IT Operational Plan outlines the various in year operational IT projects being completed and the modernized IT Strategic Plan is a multi-year high level guidance document that identifies three (3) pillars: Availability, Accessibility and Mobilization, which were deemed to be essential to the ongoing success of IT at the Agency.

Complete Clinical Automation

Secure remote access has been provided to all staff that have a business need for remote access. A new version of the health inspection software has been implemented this fall. The new inspection software effectively supports our mobile workforce, which in turn should lead to decreased mileage costs and increased staff efficiency. Also, IT has started to conduct a needs assessment throughout the Agency to gather requirements for all users of the electronic medical records (EMR) system, which should be completed by the end of 2018.

Improve IT Service Management

There has been approximately a 5% decrease in IT help desk tickets over the past year. Root cause analysis uncovered increased ticket submission with relation to password resets and IT project delivery. Improvements to communication, project planning and project documentation during project launches have helped decrease the number of tickets. Both the front line IT staff and management are involved in various activities to further decrease the number of IT help desk tickets, in the future, and strive to ensure alignment with the expected industry standard volume.

Systems to Current Versions

Software and hardware upgrades have occurred throughout 2017, including new laptops for staff due for a refresh (50 staff per year), upgrading out-of-date operating systems on servers in the data centre and new audio-visual upgrades for meeting rooms. An external consultant completed an IT Security Report in December of 2016 and approximately 50% of the recommendations have been implemented, to date, with the remaining 50% scheduled to be implemented throughout 2018-2019. Preliminary work has been performed on implementing internet redundancy and this will be further examined through a fulsome cost-benefit analysis in 2018 to determine feasibility.

Support IT Staff Development

IT has completed training to better align skills and function and a professional development plan has been implemented for each IT staff member. The IT department has started to document processes through mapping, which should help to ensure standardization of process and optimization of resources. Service level agreements will be established and reviewed in 2018.

Future Work

A number of strategic recommendations, from the Consultant's Report, are planned for 2018 and beyond. A comprehensive disaster recovery plan is being developed, which allows for business continuity of IT resources, and thus program delivery, after some type of natural or manmade disaster that affects WDGPH's data centre. If the disaster caused a complete rebuild of the entire data centre, current timelines for WDGPH to return to business as usual are estimated to be 1-3 months, which demonstrates why having an effective disaster recovery plan is so critical.

In addition, the implementation of more cloud based technologies will continue to be a focus for WDGPH. The email system is scheduled to move to the cloud by Q1 of 2018, with plans to move some document storage to the cloud by Q4 of 2018. Cloud-based technologies will enable WDGPH to deliver more consistent and reliable tools to staff at a lower cost.

The telephone system will be re-evaluated in 2018/2019 to ensure that the system is reliable and has the required functionality for our staff. The phone system is aging and may not be fully meeting the needs of our Agency. Newer systems have more out-of-the-box features and functionality which could improve our efficiency and ability to collaborate.

Further improvements to the audio visual infrastructure in meeting rooms will occur throughout 2018. The expectation of staff is to have simple and easy-to-use audio visual in any meeting room. Also, with improvement to AV in meeting rooms, the mobile worker will be supported and better able to take part in meetings remotely.

Conclusion

As the six (6) key recommendations of The Report are addressed, improvements will be seen in IT delivery at the Agency. The enhanced multi-year IT Strategic Plan will allow for increased Organizational Capacity in support of WDGPH's strategic directions and ultimately ensuring that: "We will implement and maintain a comprehensive and reliable information technology infrastructure." IT will continue to monitor current trends and new technologies and appropriately alter course, if necessary, while ensuring that front line staff members see improvements within IT's three (3) strategic pillars: Availability, Accessibility and Mobilization.

Ontario Public Health Standard

Ontario Public Health Organizational Standard – Management Operations

- Strong organizations will have an operational planning process, which may include several separate documents including at IT strategy
- Management operations relates to the administration function in terms of:
 - Financial Management;
 - Information Management;
 - Communication strategies;
 - Human resource planning and management; and
 - Program management

WDGPH Strategic Direction(s)

Health Equity

We will provide programs and services that integrate health equity principles to reduce or eliminate health differences between population groups.

Organizational Capacity

We will improve our capacity to effectively deliver public health programs and services.

Service Centred Approach

We are committed to providing excellent service to anyone interacting with Public Health.

Building Healthy Communities

We will work with communities to support the health and well-being of everyone.

Health Equity

N/A.

Appendices

None.

References

1. Guevara J. HL,SE. IT Key Metrics Data 2014: Executive Summary. Research Report. Gartner Inc.; 2013.