Alberta Health Services Performance Review

Summary Report

December 31, 2019



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1 Executive summary

Alberta's provincial health care model is one that deserves great praise. Through many years of regionalization, restructuring and redesign, Alberta has established the largest integrated provincial health care system across Canada, with more than 125,000 staff and 10,000 physicians serving 4.3 million Albertans.

Alberta's model has driven many successes. Integration has enabled Alberta Health Services (AHS) to streamline governance and accountability, driving standardization through provincially-delivered programs. Organizational leadership and culture have strengthened through consolidation – AHS is one of Canada's top 100 employers and is consistently recognized as a great place to work. AHS also raises more than $250 million annually through its foundations, which are invested in the health care system.

The transition from regional health authorities to AHS has also enabled greater integration, including through the consolidation of administrative systems like payroll, and through the current implementation of Connect Care, the largest province-wide clinical information system across Canada. The shift away from regionalization over the last 20 years has clearly begun to pay off while providing Albertans with a platform from which to continually modernize and improve health services delivery.

However, a significant challenge remains in Alberta. Alberta spends more money on public services than any other Canadian province. Health care, which accounts for approximately 43% of the public spend in Alberta, continues to outpace provinces such as Ontario, BC and Quebec on a per-capita basis. Considering the structural growth pressures that exist in health care, notably negotiated wage increases and population growth, Alberta's spending on health would have to remain flat over the next four years to align with these provinces.

This is a key component of Premier Kenney's Health-Care Guarantee to Albertans, which included a performance review of AHS. In conducting this review, we aimed to provide clear answers on how health care dollars are being spent, what improvement opportunities exist across AHS when considering leading organizations and systems, and to provide recommendations on how long-term sustainability of the health care system can be achieved.

In alignment with the Health-Care Guarantee, core to our review approach was hearing directly from Albertans, including patients, staff and physicians working in AHS. We also heard from key stakeholder groups including patient advocates, regulatory bodies and associations, as well as municipalities and universities. We received an overwhelming response from Albertans, AHS employees and physicians: over 30,000 responses were received through surveys, interviews and focus groups. This signals to us that Albertans recognize that change is needed and want to be part of it.

At the commencement of our work we were given clear direction by the Minister to engage broadly, and to hear directly from Albertans. We have done so and have been guided by the thousands of Albertans – from physicians and care providers to front line staff, managers and the organizations that work alongside AHS - who have shared their perspectives and ideas through this process.

We leveraged the response from across the province to design ten focus areas, or workstreams, that aligned with where the current state analysis and benchmarking of AHS' performance took us. We then took opportunities aligned to these workstreams to staff closer to the front-line to validate and further understand their causes and historical drivers. We also assembled a panel of Global Experts with experience working with health systems like AHS, and who have led significant optimization efforts, to provide an international point of view on potential opportunities, as well as key considerations for implementation and long-term sustainability.

This led to the design of recommendations grouped into 4 key areas of improvement: governance, people, clinical services and non-clinical services. Each area is associated with specific workstreams. The recommendations and opportunities in this report are provided at the workstream level.

Figure 1. Improvement themes and workstreams[1]

	Analysis of AHS' current performance	Review of AHS' corporate policies, strategies, initiatives	Synthesis of emerging themes from interviews and meetings	Application of EY services
Improvement themes	People	Clinical services	Non-clinical services	Governance
Workstreams	▸ Workforce ▸ Management review ▸ Physician optimization	▸ Clinical utilization ▸ Service configuration ▸ Clinical support services	▸ Non-clinical support services ▸ Corporate and back office ▸ Supply chain	▸ Functional duplication & accountability interface
Recommendations	13	21	10	8
Saving opportunities	18	27	27	

The reality is that AHS will need to take actions on a range of opportunities to meet their budget targets, while managing growth pressures and funding provincial strategies such as reducing surgical wait times. We are not suggesting AHS can implement the opportunities we've described in this report all at once. In fact,

[1] In addition to recommendations aligned to the workstreams, 5 recommendations have been put forward aligned to Implementation. These are outlined in Section 7 of this report.

we expect that appropriate validation and phasing of opportunities will be a critical element of the path forward. Our intention is to provide AHS with potential areas of focus, evidence, and opportunities that they can leverage in their future planning efforts to manage operational costs and anticipated pressures.

AHS will need to consider the opportunities presented and, in coordination with Alberta Health, develop an achievable plan for implementation. The values included in this report are presented as gross opportunity amounts and do not represent expected or even achievable savings. The values are presented in this manner to illustrate the breadth of the opportunity that is available to AHS. Achievable savings need to factor in implementation costs, the selection, phasing and sequencing of opportunities, and any potential interdependencies across opportunities. This report provides AHS with a framework from which to begin designing specific initiatives as part of a multi-year implementation strategy. This will inform a savings value that the organization can plan for. The development of this strategy is discussed in greater detail in the final section of this report.

AHS was an active and helpful participant in this exercise. Their executive team led by CEO Dr. Verna Yiu, was highly responsive, providing us with all relevant information and access to key staff within the organization and across the province.

The report that follows summarizes the findings, recommendations, and opportunities identified throughout our review. It is our hope that this will inform Alberta's continued journey of heath system improvement and sustainability.

More detailed discussion of our specific findings and recommendations is available in a full-length companion report.

2 Introduction

The pathway towards a provincial health system

AHS is Canada's largest provincially integrated health system. AHS is the major service delivery arm of Alberta's health system, governed by the AHS Board and accountable to the Minister of Health. AHS provides health services to more than 4.3 million Albertans as well to patients in Saskatchewan, British Columbia and the Northwest Territories for specific health care services.

The formation of AHS is a culmination of several efforts to restructure health services in Alberta. In 1994, more than 200 separate boards and administrations were replaced by 17 new regional health authorities, which were further consolidated in 2004 to 9. In 2008, the Minister of Health and Wellness announced the creation of AHS, as a single, centralized health authority built on an integrated governance model.

The singular governance structure of AHS was intended to streamline access of health care services, drive more effectiveness and efficiency, and create a high quality and innovative system of care.[2] This was to be achieved through a reduction in regional inequalities and competition for health system resources, while centralizing accountability for service delivery across the province.

Early in this period of restructuring, Alberta experienced significant reductions in health care spending across the province – from $1393 per capita in 1993, to $1156 in 1995 – driven largely by reducing the number of hospital beds and the associated health human resources workforce.[3] Since that time, however, Alberta has experienced uninterrupted health spending growth, which has led to Alberta spending significantly more per-capita than its peer provinces.

A national case for change

This review of AHS comes amidst many provinces exploring new and different health care delivery models. Much of this is driven by a growing body of evidence that the level of health system performance does not match how much Canada spends on health, when compared to other international jurisdictions.

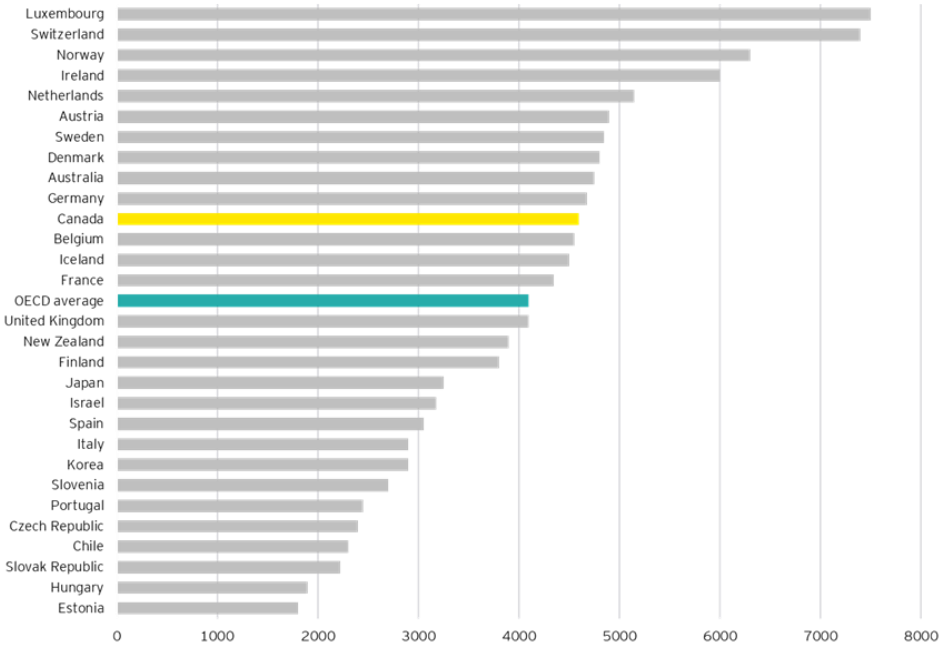
In 2017, the Fraser Institute released a study of Canada's health system performance compared to 29 other countries with similar universal access health care systems. This study used a 'value for money' approach, comparing expenditures with four measures of performance (resource availability, use of resources, access to resources, and quality and clinical performance). The study found that Canada ranks among the most expensive universal access health care systems across the OECD. Resource availability and use of resources

[2]Government of Alberta news release, 2008.
[3] Health Reform in Alberta: The Introduction of Health Regions.

were among the worst and access to resources and quality and clinical performance was mixed. Figures 2 and 3 provide examples of Canada's performance compared to other countries in the study.

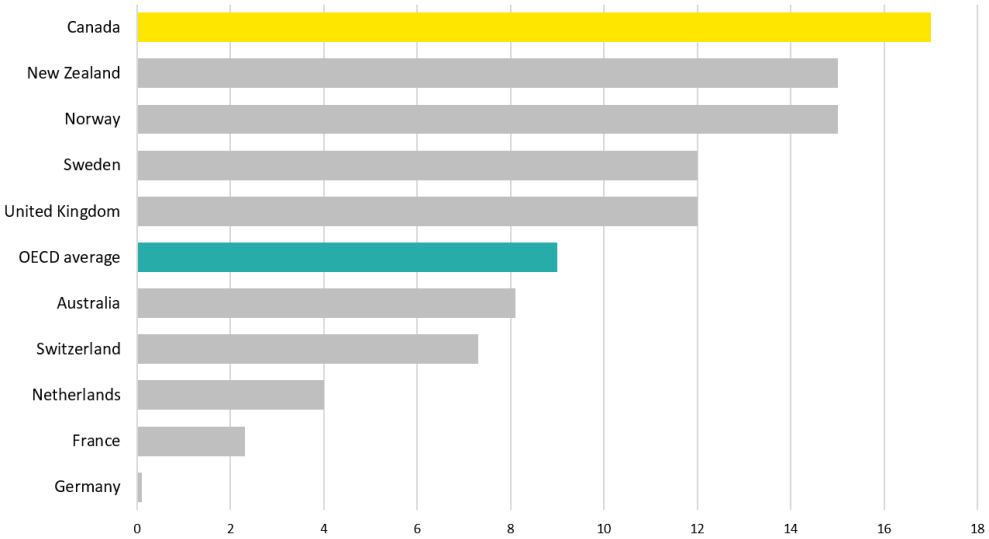
The study concluded that there is an imbalance between the value Canadians receive and the relatively high amount of money spent on care.

Figure 2. Age-adjusted health care spending per capita, 2015



Source: OECD, 2017

Figure 3. Age-adjusted percentage of patients who waited 4+ months for elective surgery, 2015



Sources: Commonwealth Fund, 2017; OECD, 2017

Another study from the Commonwealth Fund also reinforces Canada's higher spend and lower relative performance relationship on the international stage. This study also includes the US health care system and leveraged 72 indicators across the domains of care process, access, administrative efficiency, equity and health care outcomes. Canada ranked 9 out of 11 countries overall, largely driven by lower performance on indicators related to the domains of access, equity and health care outcomes.

The message that these studies create is consistent and clear: Canada's high rate of spending on health does not correlate with higher relative performance on key international measures. This creates questions around how health care dollars are spent, the distribution of these dollars across the health system and how provinces and individual health organizations like health authorities or hospitals use funding as an incentive for achieving high quality patient outcomes.

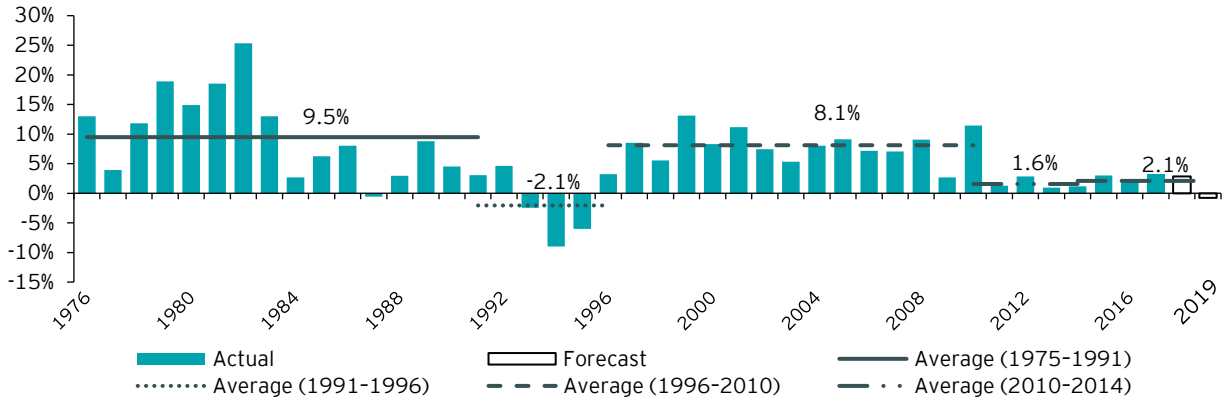
Albertans can be justifiably proud of the provincial health system. It offers world class care to Albertans located across the province, but there is clearly an opportunity to improve the quality and affordability of our health care. Our report, and the direction we have been given by the government, is not about spending less. It is about getting value for what Albertans spend and doing more with the money that exists in the system.

Alberta's health spending and performance

Health spending accounts for the largest proportion of the Government of Alberta's budget – approximately 43%[4]. How dollars are spent on health therefore has a large impact on the fiscal position of government.

Alberta's health spending per capita has generally increased over the last 40 years, with the exception of several years in the 1990s.[5]

Figure 4. Growth in Alberta provincial government health spending per capita



© Canadian Institute for Health Information, 2019

Source: Table B.4.2 (Series B), National Health Expenditure Database, CIHI.

However, Alberta continues to spend more than other Canadian provinces on health.[6] As illustrated in Figure 5, only the territories and Newfoundland spend more than Alberta, per person, on health (this includes

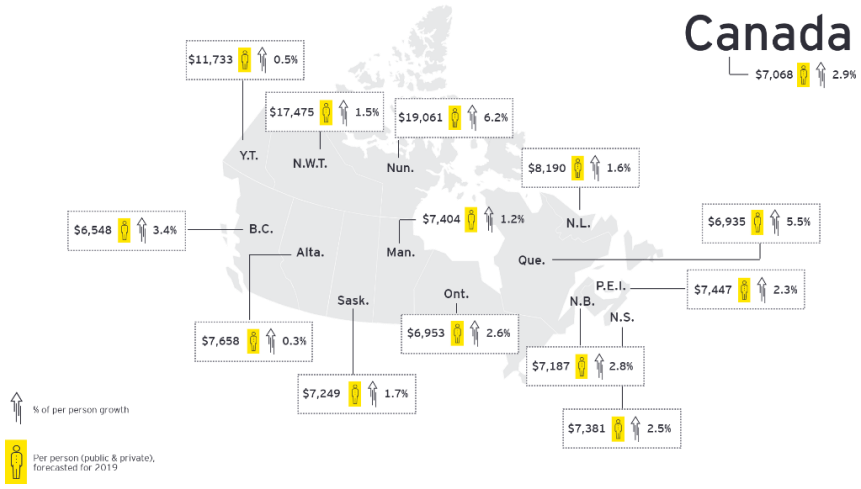
[4] Government of Alberta. *Fiscal Plan: A Plan for Jobs and the Economy 2019-23*. Edmonton, AB.
[5] Canadian Institute for Health Information. *Health Expenditures in the Provinces and Territories – Provincial and Territorial Chartbook, 2019*. Ottawa, ON: CIHI; 2019.
[6] CIHI. National Health Expenditure Trends.

private expenditures such as drug costs), and when compared to provinces with similar patient demographics, such as Ontario and British Columbia, Alberta stands out as the most expensive.

It is also concerning that Alberta's higher level of health spending has not translated into commensurate results and performance levels. Comparatively speaking, Albertans get lower value for their money.

A study from the Fraser Institute found that Alberta ranks 5th on access to physicians, 7th on access to nurses, 6th on hospital beds, 5th on MRIs and 8th on CT Scanners. The study also found that Albertans faced a median wait of 26.1 weeks between GP referral to treatment – far in excess of the national average.[7]

Figure 5. Per capita spending on health across Canada



Similarly, the Conference Board of Canada concluded that Alberta is a "middle-of-the-pack performer" when considering its performance on 10 health indicators against all 29 jurisdictions (all provinces and territories, and 15 peer countries). Alberta scored 12 out of 29 jurisdictions. Of particular concern was Alberta's performance on infant mortality rates, as well as mortality due to heart disease and stroke.[8]

This does not mean that Albertans do not have a high-quality health care system. It should be noted that Alberta does lead the country on several nationally reported indicators. These include the total time spent in the emergency department for admitted patients, repeat hospital stays for mental illness and the potentially inappropriate use of antipsychotics in long-term care. Alberta is also among the top performers nationally on obstetric patients being readmitted to hospital, hospital deaths and the percentage of patients requiring hip fracture surgery within 48 hours.[9]

Additionally, Alberta has made significant investments in innovative clinical care, including the Gamma Knife technology at the University of Alberta Hospital which avoids invasive neurosurgery, and the Alberta Transplant Institute, ranked sixth in the world for transplanting excellence in clinical care and research[10].

Moving forward, Alberta's spending on health services should be balanced by the outcomes generated for patients, as well as affordability and sustainability across the system. Alberta's integrated position provides an excellent starting point to address key areas of system improvement, driving further value for the investments made in the system.

To put it simply, Alberta's high spending on health services does not consistently translate into achieving the highest performance on key measures of system access and patient outcomes.

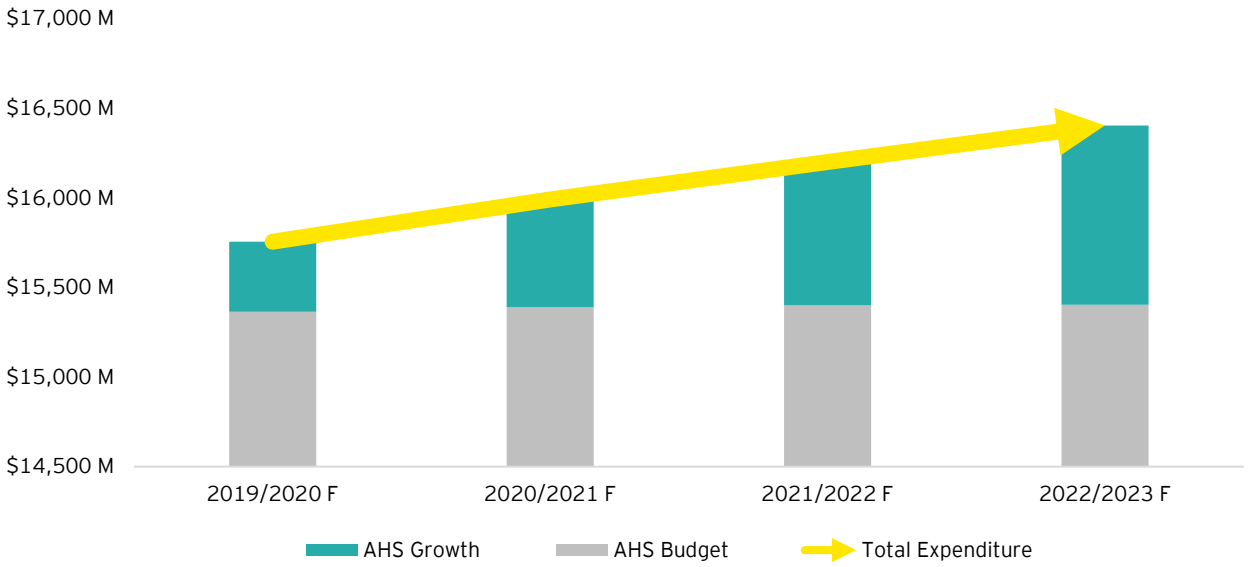
[7] The Fraser Institute. Waiting Your Turn: Wait Times for Health Care in Canada, 2018 Report.
[8] The Conference Board of Canada.
[9] CIHI. Data retrieved from *Your Health System* website.
[10] Centre for World University Rankings. 2017.

The challenge ahead

Alberta's 2019 budget outlines a plan to end the provincial deficit by 2022. Doing so is going to require making hard decisions across all sectors, including health. The government has pledged to not reduce health spending in the province – in fact, the 2019 budget includes an increase in health spending over the next four years.

While AHS isn't seeing its funding reduced, it has unavoidable growth pressures that it will need to address – things like a growing and aging population, new hospitals opening, scheduled collective agreement rate step increases, and commitments to improve services in areas such as surgical wait times. As illustrated below, these pressures represent the equivalent of approximately 1.5% year over year growth. This means that to hold expenditures flat, AHS will have to realize equivalent offsetting efficiencies. This is significant. Managing this challenge will require doing things differently and finding opportunity to use the current health budget more efficiently. The challenge is not to spend less, but to get better value for the dollars that are spent – and it's a challenge we believe that AHS will be able to meet.

Figure 6. Systemic growth pressures to be offset



While the scope of this review focuses on AHS, the scale of the fiscal challenge facing Alberta will require a response across the system. While AHS is accountable for most of the health spend across Alberta, other areas of healthcare spending, notably physician compensation and the provincial drug program, are the responsibility of Alberta Health. Addressing the fiscal challenge will require equally urgent action in these areas, including enhancing government's ability to manage uncontrolled growth in the physician services budget. In parallel to this review of AHS, Alberta Health has begun developing and implementing strategies to address spending on physicians and drugs in the province.

How to read this report

This report consists of the following sections:

- **Review approach and methodology** – restates the review mandate, summarizes the high-level approach to generate key workstreams, findings and opportunities for long-term sustainability;
- **Stakeholder engagement findings** – summarizes the approach, the stakeholders engaged across Alberta, the response received and key takeaways;
- **Workstream findings and recommendations** – outlines the findings, recommendations and opportunities across 10 key workstreams;
- **Opportunity prioritization** – an overview of the prioritization approach undertaken across all opportunities based on complexity and speed to value.
- **Implementation recommendations and the path forward** – a summary of recommendations to provide Alberta Health and AHS with clear direction on what is required to commence the implementation effort.

3 Review approach and methodology

The case for change: a performance review of AHS

On February 20, 2019, then leader of the United Conservative Party Jason Kenney called for a comprehensive performance review of AHS, as part of the Health-Care Guarantee to Albertans.[11] Alberta Health set out the following terms of reference for the review:

1. Examine AHS' management structure, organization and administrative costs, and recommend appropriate consolidation and reorganization reallocating savings to front-line service delivery,
2. Evaluate AHS' programs, services and policies, to identify overlapping functions, including overlap between AHS and Alberta Health, and methods that are out of step with the best practices in other Canadian jurisdictions,
3. Compare AHS to other provinces' health systems and best practices, and identify opportunities to make AHS' operations responsive to the front-line, based on an evaluation of resource distribution, and
4. Gather input from employees, physicians and the public to inform opportunity areas across AHS.

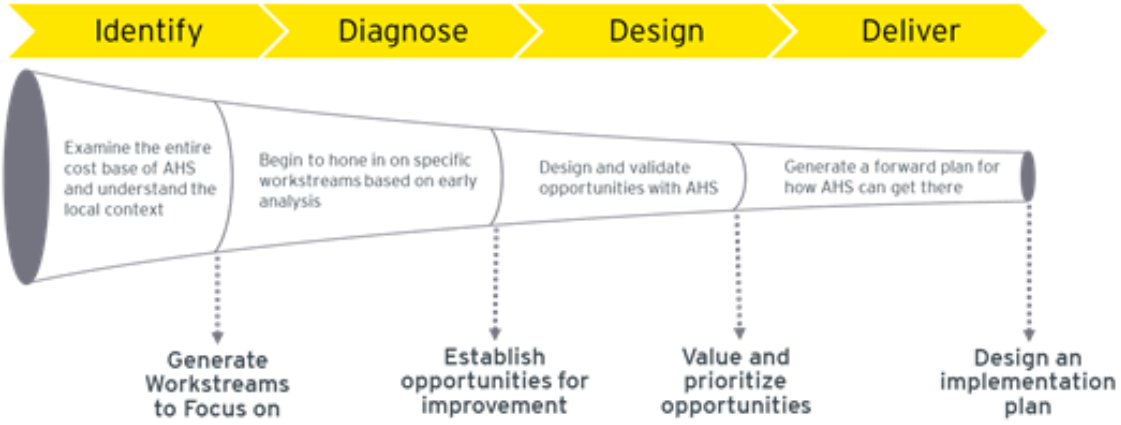
The review commenced in July 2019 with final recommendations to government due by December 31, 2019.

Review approach

To address these objectives, our team designed a four-phase approach. The approach enabled our review team to hone in on specific opportunities through an iterative process, leveraging stakeholder feedback, analysis, benchmarking, testing and validation with staff working within AHS.

[11] United Conservative Party News Release, February 2019.

Figure 7. AHS review approach



Of note, Covenant Health, Lamont Health Care and AHS' wholly-owned subsidiaries were not reviewed individually or separately throughout the review. Where relevant, they were reviewed within each of the workstreams through a consistent review methodology.

Global expert panel

Our approach leveraged the experience and expertise of experts from around the world and across Canada.

We did this by assembling a panel of national and international health system experts to act as advisors to our review team. Members of this global expert panel included former hospital CEOs, health care executives, chairs of government-appointed commissions, former government officials, physician leaders, and experts in key areas such as alternative service delivery for clinical and non-clinical services, IT and Digital Health. We engaged the global expert panel in sessions at four key points in the review.

The recommendations and opportunities summarized in the following sections have been informed and strengthened by the challenge offered up by these experts. We very much appreciated the support they have provided and would recommend establishing a similar advisory group during implementation.

Stakeholder engagement

Engaging Albertans, staff working within AHS, as well as physicians and a variety of health system stakeholders, was a cornerstone of our approach. This is detailed in the following section.

4 Stakeholder engagement findings

Overview

From the onset the guidance we received from Alberta Health and the Minister of Health was clear: make sure that our work is guided and informed by system stakeholders. We took this to heart. Through meetings, roundtables, surveys, and public forums we heard from those who manage our system and, most importantly, those who provide and receive care in it. Our findings reflect what we heard from them and our recommendations have considered the impact proposed change will have on them.

Key stakeholders across the province were segmented into four key groups.

- Albertans
- Health System Stakeholder Groups
- Alberta Health / AHS Executive Leadership
- AHS Front-Line Staff, Management, and Physicians

More than 1,000 responses were received from Albertans. These responses were used to better understand potential areas of opportunity that we then used to test with analysis and more in-depth discussions with AHS.

We also heard from many of Alberta's health system stakeholder groups. These included the regulatory colleges, professional associations as well as the universities and municipalities. Our project team also had the privilege of meeting with the Price Family who bravely shared a story about the untimely and avoidable death of their son and brother Greg. Our time with them profoundly impacted us, and provided us with a compelling, patient-focused perspective on gaps in the health care system. The findings and recommendations in this report address many of the areas they highlighted to us. Their determined efforts to develop proactive strategies to avoid similar incidents from happening in the future can serve as inspiration for Albertans as they embark on the transformation journey that has begun. For more information about the Price family and Greg's story, visit http://gregswings.ca.

> *"To Dream Forward we need to empower people, enable innovation, and reinforce that teamwork is key to maintaining health and providing care. This government can work with that new vision and to take those strong leadership steps."*
>
> *Comment from David Price following a viewing of "Falling through the cracks: Greg's story."*

Senior government officials in Alberta Health, as well as AHS' Executive team, were engaged throughout the review process. This provided our team with the strategic context of Alberta's health system, the structure and function of AHS and its unique structures (e.g. zones, strategic clinical networks, provincial programs), as well as with understanding the interface between Alberta Health and AHS from an accountability and funding perspective. Both leadership teams provided us with feedback on our interim findings and emerging opportunities to drive a level of validity as we designed our final recommendations.

Finally, AHS' front-line staff, management and physicians were engaged in two key ways. First, a survey was distributed to staff and physicians working within AHS, as well as AHS' wholly-owned subsidiaries and Covenant Health. The response we received was significant – more than 30,000 anonymized responses were submitted, with many staff providing ideas around key areas that could be improved across AHS. We leveraged this feedback to identify lines of inquiry, and to validate or discount opportunities that our teams had designed through our own analysis and benchmarking of AHS' costs. This survey relied on respondents to self-identify as front-line staff, management or physicians to help us understand if perspectives varied by group, and to drive more targeted engagement in future phases of work.

We also leveraged AHS staff in a series of zone-based operational leader focus groups. This allowed our team to bring forward key themes to leaders close to the front-lines of service delivery. For example, we invited leaders from HR, professional practice as well as patient care managers to understand major drivers for variation of staffing models, practices for controlling overtime and sick time, and root causes associated with varied levels of skill mix performance.

The sessions were in-person, within each of the zones. This allowed our team to understand any of the unique or local considerations that impact service delivery, which also helped us understand what would be required to implement opportunities effectively across a very diverse health system.

What we heard

Simply put, the response we received from Albertans, those working in AHS and those working with AHS, went beyond our expectations. Over 30,000 responses were received from Albertans, AHS employees and physicians across the various engagement channels guiding our review, representing stakeholder input that far exceeds any of the many other similar projects we have conducted across Canada.

Specific opportunities that came forward from staff and members of the public were assessed within each of the workstreams discussed in the following section. This allowed our team to consider these inputs alongside our analysis of AHS' performance when identifying and validating opportunities. These opportunities were also used to shape conversations with AHS staff, including the operational and clinical leaders, that drove further validation and refinement of potential improvement initiatives.

This report also includes specific quotes from Albertans, as well as AHS employees and physicians from the survey or the operational leader sessions. These quotes represent what was told to us when asked about improvement opportunities or successes across Alberta's health care system but should not be considered as perspectives that have been validated or endorsed by EY.

In addition to the engagement guidance we received in developing opportunities, feedback also led us to some important themes on culture, decision making and organizational readiness which we found very helpful in understanding the context surrounding our findings and in making recommendations for the path forward.

These themes are not a comprehensive representation of everything we heard across each channel. Our team aggregated the findings and what we heard, identified key points of consensus, and designed themes that were the most representative of what was shared with us throughout the review.

These themes are summarized below, alongside selected individual responses from the AHS staff survey, the public engagement process and our many discussions with staff throughout AHS. They provide representative insight into the themes we describe below.

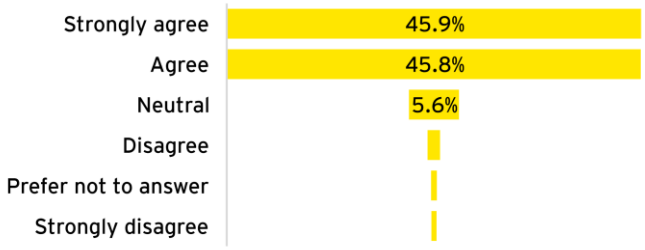
Summary of provincial engagement

1. **75+** Health System stakeholder engagement sessions
2. **5** Zone-based operational leader sessions
3. **1,074** Emails received directly from Albertans
4. **32,519** Staff survey responses, with each zone proportionally represented
   - North – **8.9%**
   - Central – **10.8%**
   - Calgary - **32.5%**
   - Edmonton – **34.9%**
   - South – **7.7%**
5. **28%** Response rate
   - **27,073** – Front-line staff
   - **4,223** – Leadership
   - **1,223** - Physician

Theme 1. *AHS is a change ready organization, with a strong organizational will to drive efficiency while delivering excellent care.*

An overwhelming majority (90%) of respondents to the AHS staff survey agreed that protecting and strengthening the affordability and sustainability of Alberta's health system should be a key priority for AHS.

Figure 8. Overall Response to Survey Question: "Protecting the affordability and sustainability of Alberta's health care system should be an important part of AHS' purpose and vision."



We also heard a clear message from all levels of staff: dedicated, strong and stable leadership is necessary for AHS.

The consolidation process was a tremendous effort and was disruptive and challenging for leaders and staff alike. The first five years of AHS' current existence was marked by changing leadership and significant uncertainty. Any organizational change has the potential to impact the morale of people at all levels. We consistently heard that the appointment of Dr. Yiu as CEO was a turning point for the organization, enabling AHS to move beyond the disruption of its first few years and build momentum towards becoming an integrated, patient-centred provincial health system.

> *"Dr. Yiu and her leadership team have provided the guidance that has been required to stabilize an organization the size and scale of AHS."*
>
> *Comment from AHS Employee Survey*

Finally, there were several perspectives that we heard from Albertans around the high degree of quality experienced when utilizing AHS' services. We heard many success stories – about individual physicians, nurses, clinical staff, speciality clinics or sites, that provided

compassionate, caring, high quality care and support to patients and their families. This is not a minor point and should not be lost in the necessary discussion on improvement opportunities that follows.

This report is in no way an indictment of Alberta's health system. Quite the contrary. It is an evidence-based commentary on a path to improvement. This path should never end. It became clear to us throughout this review that the AHS staff, physicians, leadership and users we heard from acknowledge this imperative. Our work here is focused on providing them with the information and tools they need to act on it.

Theme 2. *The prevailing culture surrounding Alberta's health system is defined by many as being risk averse. The level of transformation envisioned by Alberta's future vision for better and more sustainable health care will require responsible, but bold action.*

A common improvement opportunity raised by staff, as well as many of the health system stakeholder partners we worked with, was the risk averse culture that exists across all levels of staff at AHS.

Many of the examples cited were related to AHS' relationship with its unions. Staff indicated that skill mix opportunities, or new and innovative staffing models, often failed to receive management consideration or endorsement for fear of potential grievance or union opposition. Real change will require discussion and consideration, even if not all ideas are adopted in the end.

We also heard that staff were not able to work to their full scope of practice due to operational decisions that were based on historical ways of working. When we brought this forward to operational leaders across many of the zones, the theme resonated, and additional examples were provided related to better use of licensed practical nurses and nurse practitioners.

Front line staff and operational leaders have clear ideas about how to improve the way they work. We heard from them about topics ranging from the layers of approvals required to drive standard purchasing or hiring decisions to a perceived movement towards a more 'command and control' environment that was in place prior to the establishment of the five zones.

This isn't to say that these are black and white issues that warrant immediate action or reversal. It is more complicated than that. For example, the negative reaction to a perceived move to more "command and control" could be natural uneasiness with more standardization, fiscal restraint and increased efficiency that requires a disruption to more familiar local practices. A dialogue is required in which we can find ways to disrupt the system for the better while understanding and accommodating the impact that it has to the ways in which we are used to working. This dialog isn't without risk. In our experience and based on the engagement that led to this theme, it in our view is a risk worth taking.

Staff also told us that the culture of risk aversity is not contained to the organizational boundaries of AHS. Canada's fully public health care system links operational decisions to the elected governments that fund it. The value that Canadians place in our health system puts intense scrutiny and near-automatic opposition to any change proposed. Alberta is no different in this regard.

> *"People truly want to do the right thing, but we fall short. Sometimes I feel my hands are tied but I don't understand why."*
>
> *Comment from AHS Employee Survey*

When we asked staff and operational leaders for their ideas on long-term sustainability, many brought up opportunities related to hospital configuration – the services provided in hospitals and the number of hospitals that provide them. Many staff indicated that there could be opportunities to reclassify or reconfigure sites that had lower occupancy or under-utilized services, into long-term care homes or urgent care centres that more practically meet the needs of the community they serve. The readers of this report will understand the risk that policy and decision makers face when considering these sorts of proposals.

It is important to point out that we have been directed by the Minister and his Department to identify and report all evidence-based improvement opportunities. The consideration of them by government, AHS and Albertans will likely challenge the culture of risk aversity discussed here. Regardless of which opportunities end up forming the path to improvement and sustainability at AHS, we believe that a culture of consideration and open dialog should be welcomed. To this end, we have made a recommendation regarding Alberta Health's role in actively engaging and informing Albertans on system sustainability and performance that will be discussed later in this report.

Theme 3. *Organizational priorities for achieving health sustainability are not always clear.*

We heard examples from all levels of staff on ways to transform AHS and the broader health system. The staff survey results further recognize the commitment of organization leadership to drive the required transformation. Almost three quarters of staff respondents felt that AHS' leadership is committed to achieving greater health system efficiency. AHS has established solid organizational foundations, commitment and capabilities to drive towards long-term health system sustainability.

While many of these provincial initiatives and priorities are positive, we heard from staff that the volume of these initiatives, as well as the complexity and timescales associated with them, create difficulty in implementing or sustaining the desired benefits. For example, many operational leaders indicated that clinical pathways developed by some strategic clinical networks could not be implemented due to a lack of resources. Others indicated that the coordination of various initiatives could be improved, as guidance or direction that stemmed from different initiatives in the same area were not being coordinated by leaders at the site, zone, or executive level.

> *"From an organizational standpoint we should focus on fewer priorities but getting them done in a timely fashion and getting them done right."*
>
> *Comment from AHS Operational Leader Session*

The staff survey also suggested that grass-roots ideas driven by the front-line often fail to gain traction with leadership, potentially due to a lack of capacity and focus on other priorities. This feedback is important. AHS simply cannot execute everything at once, nor can staff, clinicians and managers be expected to treat every project or initiative as an incremental stand-alone project to their primary role of delivering health care. Phasing, coordination, and integrating the improvement program into the operational and decision-making fabric of the organization is a key topic we will return to in our section on implementation. Getting this right has been the key critical success factor for organizations that have implemented similar sustainability programs.

The feedback we heard from external health system stakeholder groups was consistent with this. Many indicated that AHS' strategy and overarching goals were clear, but how AHS works with government to take the health system forward, based on a clear articulation of priorities, objectives and goals, was not. Many of these stakeholders stated that AHS is an organization that has received many recommendations in the past, including from the Auditor General or the Health Quality Council of Alberta. Yet AHS' ability to prioritize these recommendations, act on them, and demonstrate progress in a transparent way, was voiced as an area where AHS can improve.

We've observed that the highest performing organizations have processes for setting priorities, designing initiatives and implementing them with clear indicators of success. They also have the willingness to stop doing things that are no longer adding value or have transitioned into operations. They have created a new normal where the most important changes are integrated with the most important task – caring for patients.

From what we heard from staff and health system partners, establishing clear priorities, rationalizing what is no longer adding value and creating a clear framework of what needs to get done, by whom and by when, will help to drive realization of benefits, as well as balance the workload on leaders and staff closer to the front-line.

Theme 4. *Alberta has the right foundation in place to maximize the benefits of its position as a provincially integrated system*

The survey also validated a theme that had developed through our analysis and via our many discussions with stakeholders: AHS can and should be achieving a greater level of system performance, based on its consolidation into a single health authority. As we discuss in the back-office section below, AHS' benefits from lower administration costs than its provincial peers and has developed consolidated service models in corporate services that serve as a foundation for further optimization.

However, benefits of AHS' integrated system are as important when it comes to patient care across the province. We heard from operational leaders, physicians and front-line staff that AHS' zonal structure has been useful at maintaining local considerations in care delivery, while at the same time achieving benefits of standardization and focused specialization that come with a truly integrated provincial system. There was support for retaining this structure as the provincial health system continues to transform.

At the same time, we also heard that zones are not always consistently operating as a zone, but more so as a collection of sites that exist in the same geographic area. For example, we were told by operational leaders that policies for repatriation and patient flow were often driven by preferences and historical practices of individual sites. This has apparently created difficulties in moving patients across a zone to the most appropriate setting with the available capacity. Another example was the siting and reclassification of sites based on patient demands and capacity across a zone. Consistently, we heard that these opportunities for consolidation and reconfiguring sites were understood, but not always acted upon.

Stakeholders also forwarded ideas on the opportunity to drive optimization and quality care through implementing more standard practices across the province. Through our engagement across each zone, and by analyzing AHS' performance at a provincial level, we found several examples of delivery models that were variable. The usage of Non-Hospital Surgical Facilities (NHSF) provides helpful insight into this theme: our review of AHS' data indicates that the Calgary zone performs almost all cataracts performed by privately-owned, but publicly-funded NHSFs, while Edmonton performs these services in acute-care hospitals at significantly greater cost.

Our engagement led to the conclusion that Alberta has made strong progress towards achieving an effective and important balance between localized services delivered through zones, and a standardized, system-wide, efficient network of care across the province. Where variation with sites occurs, or when zones seek ways to exempt themselves from the network, the balance is interrupted. Everyone that works in the system should seek out and correct these imbalances. The people we spoke with throughout the engagement demonstrated a sincere willingness to assist in this regard.

We are grateful to the thousands of Albertans that have provided us with their ideas, concerns, perspective and experiences. They have helped us immensely in understanding the full picture of the system as it stands, and the system that can be. We have attempted to integrate their perspective into the findings and recommendations that follow.

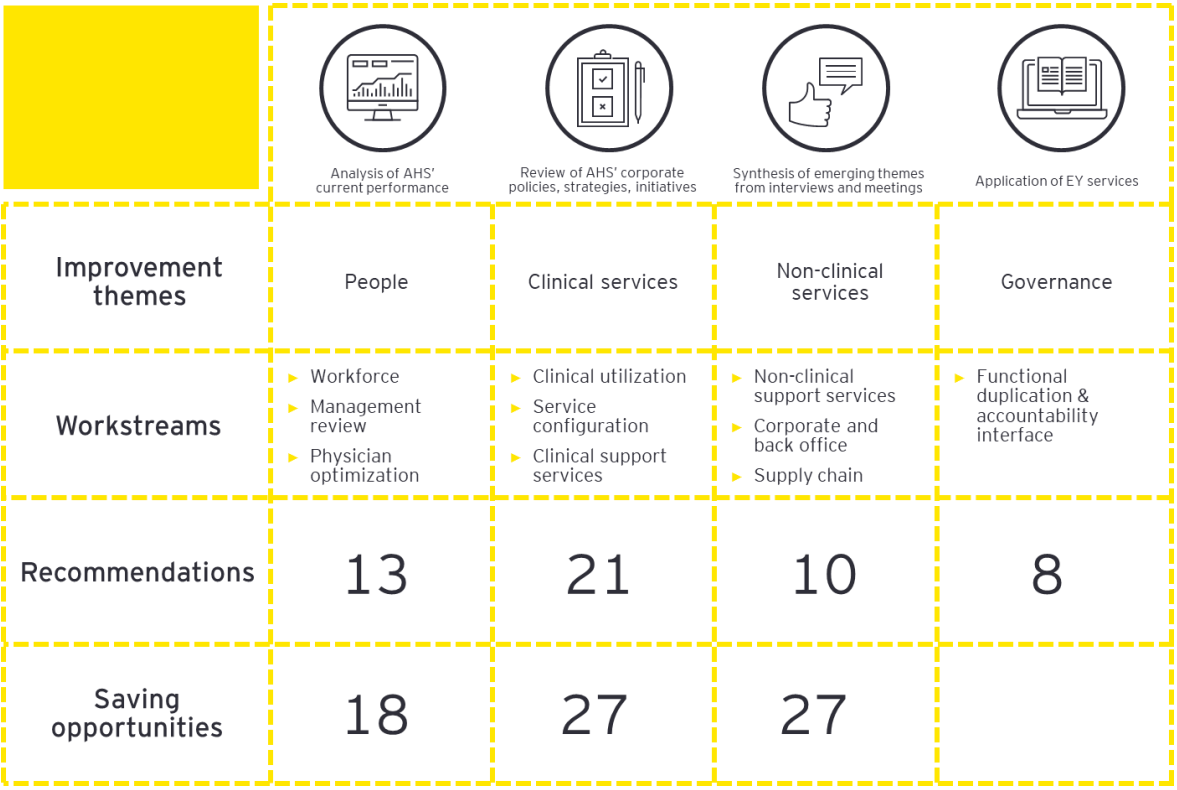
5 Workstream findings and recommendations

Workstreams

After categorizing feedback into major themes and by key functions, we aligned the early engagement outputs with our initial observations of AHS based on an analysis of current performance, a comparison of AHS' performance with other organizations, and our knowledge of improvement areas based on our experience working with other organizations.

This resulted in the creation of 10 workstreams, illustrated below.

Figure 9. Improvement areas and workstreams[12]



This section contains context, findings, recommendations and opportunities across workstreams we have reviewed. The workstreams represent the major cost drivers across AHS. They are also the areas that we feel are associated with the most significant opportunity across the system.

[12] In addition to recommendations aligned to the workstreams, 5 recommendations have been put forward aligned to Implementation. These are outlined in Section 7 of this report.

While AHS is the primary focus of this review, we also conducted interviews and analysis related to Covenant Health and Lamont Health Care Centre. Throughout this report, we have indicated where findings, recommendations, or opportunities include either of these organizations. As AHS' largest service provider, Covenant Health delivers a significant proportion of care services in the province. In specific areas we have explicitly requested data and other information and included Covenant in our analysis.

Gross opportunities – not guaranteed savings

Each of the workstream sections below contains key findings, recommendations and opportunities.

The findings are based on our analysis of AHS' financial and operational data, what we heard from Albertans, staff and physicians at AHS, and our team's experience working with organizations across Canada and globally. Some of the findings are also based on areas that AHS has already identified as being sources of opportunity, and in some instances has begun implementation. The findings inform proposed recommendations for AHS and Alberta Health.

Each section also contains a list of opportunities. Many of them are accompanied by the maximum savings potential or what we call "gross opportunity values". These opportunities provide a high-level indication of the scale of potential gross savings that can be generated. Typically, this is based on the full realization of the opportunity, or the removal of all the potential inefficiency.

Our experience supporting organizations with implementation suggests that the gross savings identified can not be wholly realized. This is because costs need to be factored in, such as new systems or technology, and the significant change management impact that full realization of a gross opportunity may have. Thoughtful planning and the translation of the gross opportunities into discrete, phased initiatives is what's required to understand the scale of savings and when they can be realized.

Example of moving from gross opportunity to realized savings: optimizing OR capacity

EY worked with a large academic health science centre in Ontario to help them identify a potential closure of 343 OR slates, or scheduled days of surgical activity, with a gross opportunity value of $390k. The opportunity was predicated on improvements in turnaround times that would enable surgeons to maintain the same level of activity in a reduced amount of operating time.

During the implementation planning phase, the hospital's Sustainability Program Office refined the valuation to reflect achievable savings based on factors such the specific case mix and needs of various sub-specialties. For example, complex cardiac cases were provided with a longer turn around time than high volume ophthalmology cases. Ultimately, the organization's executive leadership team committed to a reduction of 166 OR slates, valued at $189k.

Improvement Theme: People

Workforce

Context

The workforce section includes findings, recommendations and opportunities related to compensation, workforce management and controls (e.g. human resources policies and procedures, staff scheduling practices) and clinical staffing models.

Overview of the AHS workforce

AHS employs 102,717 people (70,139 FTE) across the province, making it the largest employer in Alberta. The workforce is highly unionized, with 93,804 (61,948 FTE) unionized staff members or 91.3% of the total workforce. Unionized staff include members of five unions, outlined in Table 1. UNA (nursing) and AUPE-GSS employees make up the largest proportion of the workforce making up 27.9% and 27.5% of total AHS headcount respectively. AHS has 8,913 (8,191 FTE) non-union employees making up 8.7% of the workforce. Non-union staff include managers and senior leaders, as well as non-union professional and technical roles. AHS' Executive Leadership Team is made up of 14.0 FTE including the CEO, earning a combined $6.03M in 2018/19 (including salaries and benefits).[13] Employee compensation makes up the largest independent driver of AHS' cost base, with salary and benefit expenses representing approximately 54.3% of AHS' total expenses. When including the employees of AHS' contracted health service providers and other contracted services (including Covenant Health), the percentage would be approximately 70% of total expenses.[14]

Table 1. Summary of AHS' workforce by employee group

Employee Group	Description	Headcount[2,3]	% of AHS Headcount	FTE[3]	Salary & Benefits ($M)[4]
Total AHS[1]		102,717	---	70,139	$7,709.2
Total Union		93,804	91.3%	61,948	$6,682.7
UNA	Provide direct nursing care to patients and deliver health education programs.	28,617	27.9%	18,001	$2,492.7
HSAA	Provide paramedical professional & technical care to patients and deliver health education programs.	19,476	19.0%	14,368	$1,762.5
AUPE-AUX	Provide auxiliary nursing care to patients.	15,804	15.4%	8,725	$782.8
AUPE-GSS	Provide general support and administrative services to patients, those that provide direct patient care and to the organization.	28,209	27.5%	19,055	$1,492.2
PARA	Provide care to patients in outpatient facilities and acute care.	1,698	1.7%	1,698	$152.6
Total Non-Union Employees (Non-Union)		8,913	8.7%	8,191	$1,026.4
All Managers and Senior Leaders		3,296	3.2%	3,197	$451.6
Senior Leaders	Set and align overarching organizational clinical and operational goals and strategies.	68	0.07%	66	$22.8
Managers	Provide leadership and supervision to union and non-union staff who deliver and support the delivery of health services.	3,228	3.1%	3,131	$428.8
Non-Union Professional/ Technical	Provide professional and administrative services to patients and those that provide direct patient care and to the organization.	5,617	5.5%	4,995	$574.9

1. *Totals may not equal the sum of the groups as employees may have jobs in more than one group.*
2. *Does not include vacant positions.*
3. *Source: AHS Payroll System*
4. *Source: AHS Payroll System. Includes salaries earned per fiscal year. Based on assumption of benefits equating to 21% of total salary. .*

[13] AHS 2018/19 Annual Report.
[14] Ibid.

AHS' approach to workforce and sustainability

AHS' Operational Best Practice (OBP) program is an organization-wide initiative that benchmarks AHS with other health care organizations across Canada, with the aim of reducing variation and achieving efficiencies. Using comparative data, AHS has developed OBP specific workforce related targets, first for nursing inpatient units with subsequent roll out across corporate services and clinical support. These targets are designed to achieve more equitable service delivery and reduce cost variation across the province. As part of this process, AHS tracks indicators related to quality, patient experience and performance to monitor and understand any unintended consequences from OBP related changes.

AHS estimates that since late 2015, OBP has achieved annualized savings of $178M and a reduction of 1.6M worked hours across AHS and Covenant Health. OBP benchmarks directly impact the amount of budget that is set for units/departments, and inform organizational decision making. For example, if an area is not achieving its OBP benchmarks it is less likely to be approved to fill vacant positions. AHS is currently in phase 4 of the OBP program and has identified further savings of $101M.

Findings

Compensation

Executive compensation

1. AHS' executives[15] are paid more than their BC counterparts, but less than comparable positions in Ontario.

    - We compared the compensation paid to senior executives at AHS and Covenant Health to their counterparts at the BC regional health authorities, as well as large hospitals in Ontario. When considering the relative size (budget and employees) of AHS compared to its peers, executive compensation does not appear to be excessive.

    - While generally executive-level compensation at AHS is, in our view, appropriate, it should be externally assessed periodically with formal reporting to the board.

    - In general, AHS' executive members make less than twice that of their counterparts at BC's Fraser Health. Fraser Health is one quarter of the size of AHS. CEOs of similar organizations in Ontario make more than the AHS CEO, while leading organizations that are significantly smaller than AHS. Other AHS executive members are compensated generally similarly to their Ontario counterparts.

    - Covenant Health executives are paid comparatively to AHS, despite being a significantly smaller organization. Comparisons of executive leadership compensation per employee across several organizations demonstrates that Covenant health is an outlier compared to AHS, Ontario, and British Columbia. For example, the Covenant Health CEO is paid $51 for every full-time staff member compared to the AHS CEO who is paid $6. While this is only one potential metric for comparison, considering the organizations by size of budget would yield similar results.

[15] Executive in this comparison are those that report to the CEO as per the AHS' organizational chart. We recognize that there are other executive positions that exist within AHS.

Unionized staff compensation

2. AHS' unionized employees are paid more than their peers in other Canadian provinces.

   - Alberta pays higher than the Canadian average across employee groups: 7.2% higher for RNs, 5.5% higher for LPNs, 6.8% higher for HCAs, 11.1% higher for HSAA employees and 6.95% higher for AUPE-GSS employees. [16,17,18 19,20]

   - While AHS has been successful at negotiating a 0% increase to the pay bands in the collective agreements for the past two years, overall costs increased as employees moved up bands.

Non-union exempt employee compensation

3. The high relative pay of nurses in Alberta creates a disincentive to pursue management or advanced practice roles, such as nurse practitioner. These roles are critical to providing consistent and high-quality patient care.

   - The average yearly salary for a unit manager at AHS in 2019 was $109,229[21] with the top 10 highest paid unit managers at AHS earning between $122,000-$127,000.[22] According to publicly disclosed information, 1,851 registered nurses earned more than $127,000 in 2018, with 485 earning over $150,000 and 31 earning over $200,000.

4. Compensation for non-union employees is not linked to the achievement of specific goals, objectives and outcomes.

   - AHS introduced pay-at-risk for health care executives in 2009 but it was ended amid controversy. However, other health care organizations have used this approach successfully to improve accountability and performance.

> *"Front-line unit managers have one of the hardest jobs in health care and they do fantastic work. I would not want to be a unit manager again…there is little incentive to go into management since front-line nurses will easily make as much or more salary with far fewer responsibilities."*
>
> *Comment from AHS Employee Survey*

[16] Source: Provincial Bargaining Coordination Office.
[17] Comparison is based on total compensation.
[18] HSAA union members include Pharmacists, Physical Therapists, Paramedics, Dialysis Technicians, Respiratory Therapists, Psychologists, Public Health Inspectors and others.
[19] AUPE-GSS union members include unit clerks, food services workers, administrative support, carpenters, accounting clerks and others.
[20] While AUPE-GSS employees earn on average 6.95% higher than their peers, compensation ranges by job type with some job types earning below or at market rate.
[21] Estimate based on 1.0 FTE and the average hourly salary.
[22] Based on AHS employee data.

Workforce management and controls

Overtime

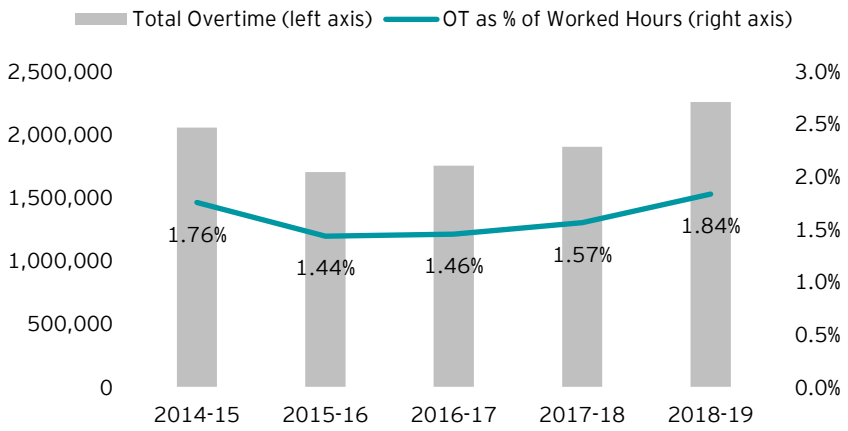
5. Compared to its peers, AHS has been successful overall at managing overtime across the organization, with a low overtime rate of 1.84% of total worked hours across the organization; however, the overtime rate has increased annually beginning in 2015/16, growing from 1.44% to 1.84% in 2018/19.

"More support needs to be given to North zone and rural communities in general. Not enough staff means greater overtime needed and more costs to the system."

Comment from AHS Employee Survey

CIHI data confirms this finding. For 2015-16 and 2016-17, respectively, overtime rates were: 2.60% and 2.86% for Canada as a whole; 2.58% and 2.81% for Ontario and BC; and 1.44%, and 1.46% for Alberta. While Alberta's overtime rate has increased since 2018/19 this rate is still likely lower than peers in Ontario-BC and Canada.

Figure 10. AHS Overtime Hours, 2014/15 to 2018/19



Source: Data provided by AHS.

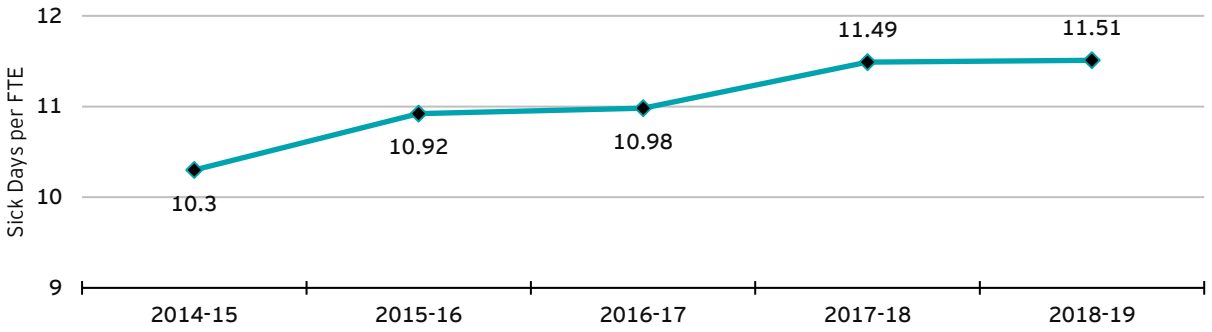
- Despite success with this measure, AHS should assess areas of internal variation across the organization, which may produce opportunities for further incremental reductions.

Sick-time

6. While AHS' sick time rate remains low when compared to peers, the rate has been steadily increasing.

   - AHS' sick rate has increased from 10.3 sick days per FTE in 2014/15 to 11.51 sick days per FTE in 2018/19. This equates to an 11% increase over the past five years.

Figure 11. AHS sick time rate, 2014/15 to 2018/19



Source: Data provided by AHS.

7. AHS has an attendance management policy in place, however it is not consistently enforced, and AHS has had challenges managing inappropriate use of sick time.

Recruitment, retention and vacancy management

8. Provisions contained in the collective agreements can make it challenging for AHS to implement innovative staffing approaches to meet demands, especially in rural areas.

   - The collective agreements contain provisions including restrictions on the use of vacancies that are not common in nursing agreements across Canada.

   - Collective agreements can also inhibit adopting flexible staffing models, such as changing positions to be multi-site positions to help meet demand in rural areas. The UNA collective agreement gives the union the ability to review such positions.

9. AHS' vacancy management program is an effective workforce control that should be strengthened to ensure best use of realized savings.

   - Under AHS' current vacancy management program, each vacancy is reviewed by senior leadership prior to posting to assess necessity to fill.

   - AHS tracks and forecasts future savings generated through enhanced vacancy management, however budget associated with vacant positions is not secured or frozen from Alberta Health budget, resulting in potential redirection rather than actual budget reduction.

Staff scheduling

10. While AHS has followed leading practice in creating a centralized staff scheduling function, there continues to be large parts of the organization that have not transitioned to this model.

    - Decentralized scheduling leads to inconsistent local interpretation of contracts and collective agreements, often relies on resource-intense manual processes, creates challenges with conducting system-wide performance management and reporting, and is less efficient.

    - AHS' centralized Provincial Staffing Services (PSS) provides staffing services to 40% of all employees, while the remaining 60% are supported outside of PSS by decentralized staffing offices and resources that could be consolidated, such as the Rural Hospital Scheduling Office Edmonton.

> *"I have worked in the world of both paper-based and computer-based staff scheduling and can see a huge improvement in terms of less overtime and workload levelling, less sick calls, etc."*
>
> *Comment from AHS Employee Survey*

11. There is an additional opportunity to automate some of the current, highly manual processes involved to collect, evaluate and approve time. This would improve efficiencies and reduce payroll errors, including overpayments.

    - While some degree of automation is enabled in the current state, there are limitations to the current Environment for Scheduling Personnel (ESP) system that inhibit AHS' ability to fully maximize automation opportunities.

    - There are approximately 3,698 employees across the organization who support time entry for decentralized scheduling operations. While time entry typically only makes up a portion of these employees' responsibilities, there is an opportunity to reduce the amount of support required through centralization.

Clinical staffing models

Skill mix and staffing levels: Nursing

12. Clinical staffing decisions are typically based on historical staffing levels and OBP worked hours targets, rather than evidence-based assessments of patient acuity.

    - The optimal staffing model on a unit enables high-quality, safe patient care where patients are being cared for by appropriately qualified and experienced staff.

    - Leading jurisdictions in Canada and internationally have begun to use evidence-based tools to carefully assess patient needs to determine the right number and skill mix of staff on a given unit.

13. Staffing levels within clinical units can vary significantly across similar type of units. When compared with leading practice and other provinces, AHS has higher levels of staffing across all types of units.

- Leading organizations in Canada and internationally use a set of common targets for assessing patient care staffing ratios on different types of acute inpatient units:
  - Medical and surgical units: 4 patients to 1 nurse on days, 5 patients to 1 nurse on nights (equates to 5.33 hours per patient day).
  - Obstetrical units: 5 patients to 1 nurse, days and nights (equates to 4.80 hours per patient day).

Table 2. RN/LPN/HCA worked hours per patient day across AHS and Covenant Health inpatient units

Clinical Area	Degree of variation across AHS (25th and 75th percentiles)	AHS Average (50th Percentile)	Leading practice/ Provincial comparator[23]
Medical Unit	5.17-6.56	5.80	5.33
Surgical Unit	6.24-7.43	6.65	5.33
Medical/Surgical Unit	5.19-6.46	5.69	5.33
Obstetrical	8.33-10.11	9.15	4.80

14. The skill mix of clinical staff at AHS can vary significantly across similar units and can be further optimized.

- While there are some organizations in Canada that are still staffing their inpatient units with only registered nurses, Alberta has worked to introduce staffing models that leverage staff of various skill levels, including registered nurses, licensed practical nurses (LPNs) and health care aids (HCAs).

- Aligning units that use a higher level of RNs to the staffing ratios of their higher performing peers, would reduce staffing costs, and support clinical staff in working to their full scope of practice.

"Our operating room runs with higher than recommended staffing levels and uses almost no ORT/LPN employees."

Comment from AHS Employee Survey

15. AHS and Covenant Health have established staffing models through the OBP program, which will continue to move staffing levels and skill mix towards more effective and sustainable models of care delivery.

[23] Medical/Surgical units was based on 4:1 on days, 5:1 on nights which provides more hours per patient day than UK NHS averages.
Obstetrical units were modelled on 5:1
The remaining areas were benchmarked based on internal variation

Skill mix and staffing levels: Clinical support services

16. AHS has implemented effective strategies to optimize its pharmacy workforce, both in terms of skill mix and overall staffing levels.

    - AHS has also developed an inpatient clinical practice model to ensure limited and costly pharmacist resources are allocated to patients of the highest need, to maximize the impact on clinical outcomes, readmission, and length of stay. To develop the model, bed types were categorized based on the needs of the patient population. Target ratios for 'beds to clinical FTE' were developed, as well as guidance on continuity of care considerations.

17. There is variation in the proportion of laboratory assistants used relative to more expensive laboratory technicians.
    - By standardizing staffing models across the system to optimize the use of laboratory assistants, AHS can have an appropriate and more efficient staffing model.

Full-time/part-time/casual nursing mix

18. AHS' high rate of part-time nurses is not cost effective and poses operational challenges.

    - 33% of AHS' registered nurses (RNs) are full-time, 42% are part-time and 25% are casual.
    - The cost of a 1.0 FTE RN per year is approximately $111,789 as opposed to $118,631 for two 0.5 FTE positions.
    - A part-time workforce can be challenging for management. It can pose challenges in implementing optimal scheduling practices and increases the headcount that managers need to manage, contributing to additional workload.
    - The designated day of rest provision for part time nurses in the UNA Collective Agreement has created challenges in staff scheduling. Part time RNs receive the same number of designated days of rest as full-time employees.[24] Part time nurses who work on designated days of rest are eligible for overtime, regardless of whether they have worked full time hours.

"Previously, nursing was a secondary family income in Alberta, but this isn't the case anymore. We [AHS] have the ability to rethink how we approach part-time nursing."

Comment from AHS Operational Leader Session

"It drives me batty that I have to go in every week for my treatments and I get a new staff member who is casual that doesn't know their way around… this is wasteful and impacts patients."

Comment from AHS Patient and Family Advisory Council

[24] Designated Days of Rest are protected days, and any work on those days triggers payment at 2x the basic hourly rate of pay (or applicable overtime rate).

Patient watch

19. AHS uses highly skilled staff to observe at-risk patients in cases where less costly staff would be more appropriate.

    - Based on available data we estimate that 258 FTE across AHS are providing this service.[25] Of these FTEs, 13% are providing patient watch at overtime or banked overtime rates, increasing the cost of this service.

    - Patient watch is typically provided by Health Care Aides or Mental Health Aides; however, 9% of hours are currently provided by higher levels of nursing care signaling an inefficient use of resources. In addition, there is variability within staffing models across zones.

AHS' approach to workforce sustainability

20. The Operational Best Practice (OBP) program has been successful in raising awareness and instilling a sense of accountability for sustainability across managers and operational leaders.

    - OBP provides managers and leaders with extensive operational data about their areas and supports the organization in setting and achieving savings and quality improvement targets. It should be strengthened by broadening benchmarks, including skill mix targets, as well as further integration with existing organizational budgeting processes.

Recommendations

Recommendation 1: AHS should work with the unions and government to remove or revise collective agreement provisions that impede sustainability without providing any patient benefit.

Recommendation 2: AHS should review its workplace policies and processes to strengthen controls where required to achieve incremental benefits.

Recommendation 3: AHS should expand the use of the Provincial Staffing Services, as well as consider a technology strategy to enable automation and positive time keeping.

Recommendation 4: AHS should optimize staffing levels and skill mix across the organization in both nursing and clinical support services through the use of evidence-based approaches such as acuity-based staffing.

[25] 258 FTE is based on an extrapolation of ESP data on constant care provision.

Opportunities

Table 3. Summary of workforce opportunities

#	Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
W1	Removing specific UNA provisions	Removing lump sum payments, designated days of rest for part-time employees and benefits for part-time employees working <15 hours per week. Valuation based on AHS' estimate.	$42M
W2	Overtime reduction	Reduction in overtime usage across all positions. Valuation is based on all areas and positions being at or under a 2.8% rate of overtime. Considers premium costs associated with OT.	$24M
W3	Sick time reduction	Focused attention on attendance management, wellness strategies and sick time protocols to reduce % of sick time across AHS. Valuation is based on a reduction in average sick time from 11.51 sick days per FTE per year to 11 (low estimate) or 10.3 (high estimate). 10.3 sick days per FTE per year was the AHS sick rate in 2014/15 and 11 in 2015/16. Valuation is based on reduction in total sick relief replacement cost of $58.5M, the total cost in 2018/19.	$3M-$7M
W4	Eliminate vacancies >1 year	Eliminate, inactivate and permanently remove budget for positions vacant longer than one year. Valuation is based on elimination, inactivation and permanent removal of budget for vacant position. Low opportunity is based on removal of only exempt positions; high value is based on all positions. Positions identified by AHS as being purposefully held or non-budgeted were removed.	$11M-$103M
W5	Enhanced vacancy management	Implement process to secure budget for vacant positions being held for enhanced vacancy management targets to ensure the underspend is not used to offset other pressures. Valuation is based on AHS' targeted savings from existing enhanced vacancy management program.	$22M
W6	Implement staff scheduling system	Implement staff scheduling system to reduce payroll errors, premium payments and number of timekeeping FTEs. Efficiencies realized through automation including positive time capture are typically in the range of 3-5% annually of the payroll bill for hourly workers; valuation is based on 2-3% to discount for efficiencies already realized. Significant initial investment will be required to realize savings. That investment would offset potential savings.	$82M-$123M
W7	Optimize nurse staffing based on patient demand	Optimize nursing ratio (RN/LPN/HCA) and reduce staffing level in alignment with internal and external leading practice based on patient demand. Includes AHS and Covenant Health sites in nursing units (medical, surgical, obstetrical), operating room, ICU, Emergency department, and long-term care. Valuation is based on both 1) Aligning RN/LPN/HCA ratio (i.e. increasing use of LPNs & HCAs) and 2) reducing staffing levels with either external leading performer or internal median performer.	$231M-$322M

W8	Optimize clinical support staffing based on patient demand	Optimize staffing level for clinical support staff in both AHS and Covenant Health sites for areas including labs, pharmacy, and allied health professionals. Valuation is based on standardizing skill mix (e.g. use of lab techs versus lab assistants) across each functional area using a median target.	$8M
W9	Shift from PT to FT nursing positions	Shifting nursing headcount to move towards more full-time staff. Valuation is based on moving from a 43/57 FT/PT ratio (current ratio, excluding casuals) to a FT/PT ratio of 55/45. Savings are based on estimated $6842 annualized savings and $2848 one time saving; the average difference in cost of employing one FT RN in place of two part-time RNs. Savings are from legislated benefit premiums, AHS' paid health and dental benefit premiums and professional dues reimbursement and wages for attending compulsory training.	$15M
W10	Optimize constant care staffing model	Improve staffing model for "patient watch" patients ensuring the right role is used to perform these duties and technology (e.g. tele-sitting) supports efficiencies. Low valuation is based on reduction in costs for using HCAs for hours of constant care currently provided by LPNs, security or protective services where appropriate. High valuation is based on assumed coverage of 10 patients for tele-sitting and consideration of ongoing operating/technology costs.	$17M-$18M

Management review

This section includes findings, recommendations and opportunities related specifically to the AHS management structure, including the number and types of positions, the number of employees a manager directly supervises and alignment of responsibilities and accountabilities.

Context

Overview

AHS defines managers as positions that have "direct accountability for setting direction, planning, organizing, staffing (hiring/firing), managing performance and outcomes, leading/directing and controlling work and resources." AHS has 3,296 management employees (3,197 FTE), comprising 3.2% of the total AHS workforce.[26]

In addition to management employees, there are 5,617 non-union professional/technical employees (4,995 FTE), making up 5.5% of the total workforce. These employees provide professional and administrative services to patients and staff of AHS. They include positions such as legal counsel, human resource advisors and also include front-line staff such as patient navigators, nurse practitioners and high-level professionals such as researchers and scientists. While some professional/technical positions may provide supervision, AHS does not consider them to exercise managerial responsibility and therefore are not considered to be management.

[26] Based on percentage of total headcount.

Both the management and professional/technical workforce has remained relatively constant over time in terms of size and salary expense.

AHS' human resources team works with operational areas to document the accountabilities of non-union positions and determine position rationale, classification, and the appropriate pay grade. Each role is analyzed and measured against the AHS career framework, which assesses the position along several key dimensions. This framework has specific criteria that must be met to justify classification as a management position.

Findings

Management span of control

1. AHS' percentage of management positions relative to its overall staff base is comparable to industry averages in Canada.

    - The Conference Board of Canada reports that the median management percentage for health care organizations in Canada is 3.4%. Depending the criteria used to determine the management cohort, AHS ranges from 3.2%-3.5%.

2. According to external benchmarking data, several AHS managers have fewer direct reports than managers in peer organizations.

    - A series of benchmarks were compiled from comparator health and public sector organizations. These benchmarks serve as a useful guide for initial assessment of span of control of AHS' management.

    - We compared the number of direct reports of each manager to benchmarks based on our experience working with peer hospital organizations in BC and Ontario, results from other government and public sector organizations, and the Ontario Hospital Association's health human resource planning report. We used both a low and high benchmark to generate a range.

    - It is important to note that these benchmarks are only effective in identifying a cohort of management positions that should be individually assessed against AHS-developed criteria for appropriateness.

"Directors are considered "people managers", however, there are many Directors that have less than five staff in their portfolio…Leaders that have less than twenty staff are not Directors; they are Program Managers, Managers, Team Leads."

Comment from AHS Employee Survey

"Where I work there are three units each with a unit manager. Two of these managers have at least 60 employees under them and the remaining manager has about eight. Most people seem to think that the smaller group could be easily divided and placed into the two larger groups eliminating unnecessary management positions and streamlining communication and workflow."

Comment from AHS Employee Survey

- Our assessment identified 741 positions at AHS with fewer direct reports than the low range of the benchmarks and 1269 with fewer direct reports than the high range of the benchmarks.[27]

- We compared the number of direct reports of each manager at Covenant Health to the same low and high benchmarks used for AHS. We found that 35% up to 59% of management positions are not aligned with benchmarks, which is higher when compared to AHS' 24% to 41%.

- Again, it should be noted that these findings do not account for other factors that drive complexity of the work, which need to be assessed as part of a detailed position-by-position review.

"Managers know their business well and they genuinely want to be efficient with operations."

Comment from AHS Employee Survey

3. There is variability in the number of direct reports for management positions at similar levels, particularly in lower-level management roles, such as supervisors and managers.

- While the median number of direct reports for nursing managers is 57, 25% of nursing managers (approximately 113 positions) have fewer than 31 direct reports and 25% have a very high number of direct reports, more than 84.

- While we recognize that other factors (e.g. budget, location, specialization, and facility size) impacting the complexity of the work may explain some of the variation observed, the degree of variability warrants further investigation to ensure appropriateness.

"Reduce the number of middle managers and empower front-line managers to make decisions and escalate to senior managers if needed."

Comment from AHS Employee Survey

Compensation and classification

4. There is a lack of standardization and consistency in the compensation and classification of management positions that leads to pay inequities and the potential for positions to be paid more than what is appropriate for the role.

- The table below shows examples of management staff job descriptions where there is a significant degree of variation in classification.

- In British Columbia, position classification at the health authorities is tightly controlled by the Health Employers Association of BC (HEABC) to ensure all positions have the commensurate level of responsibilities and accountabilities and ensure standardization across the province's health authorities. In BC, all positions with the same job description are classified to a single salary grade.

[27] The following positions were excluded from the analysis: casual positions, medical leaders, and positions on leave of absence (LOA).

Table 4. Management positions with a high degree of variability in job classification, by job description and number of positions at each salary grade

Salary Grade	M1-2	M1-1	M2-2	M2-1	M3-2	M3-1	M4-2	M4-1	M-5	Total
Executive Director						58	82	23		166
Director				92	111	217				424
Manager		145	776	834						1762
Supervisor	245	110	114							469
Lead				22						32

Legend:

<5 positions

Non-union professional/technical positions

5. While AHS does not consider professional/technical positions to be management and does not expect them to have direct reports, there are a number of non-union professional/technical staff that have job titles implying they should be considered as management.

   - Based on a review of AHS' employee data, we identified 287 positions with position titles that imply they should be managers or directors.

   - The number of positions with management-like titles leads us to believe that there are inappropriate classifications in this category. Review and reclassification of positions would ensure these positions are held to the same expectations in terms of overseeing direct reports as their peers in the management category of staff and allow for an accurate reporting on the true size of management.

   > *"My manager does a lot of the same work I do as the Team Lead, so I wonder why she is my manager and not just a Team Lead and we all report directly to the director."*
   >
   > *Comment from AHS Employee Survey*

   - Additionally, there are approximately 704 team lead/supervisor positions within the professional/technical employee group. While these positions typically don't have staff who report to them, they receive a higher level pay for taking on additional supervisory responsibilities. AHS should review the effectiveness of these positions as there is often a lack of clarity within the role and perceptions that the work can be redundant with middle managers.

Administrative support

6. Most senior-level AHS management employees have non-shared administrative or executive administrative support. In other Canadian health care organizations, management and senior leaders are expected to share administrative support with at least one other position.

   - AHS has 167.6 FTE administrative support for 225.15 FTE director-level position and above[28]; this means there is 1 FTE administrative staff for every 1.3 FTE director-level and above position. With 49 FTE administrative support for 56.95 FTE director-level and above positions, Covenant Health has a similar ratio of 1 FTE administrative staff for every 1.16 leadership FTE.

   - AHS was unable to provide granular data regarding administrative support outside of senior corporate leadership. This leads to challenges with establishing and monitoring consistent and appropriate administrative support ratios throughout the organization.

Recommendations

Recommendation 5: Our initial analysis suggests that there may be opportunities to reduce the number of managers in some areas. AHS should review positions identified as having fewer direct reports than their peers in other organizations with the objective of identifying opportunities to consolidate portfolios and reduce management levels.

Recommendation 6: AHS should review the way it classifies positions and ensure that the organization applies a rigorous and standardized approach moving forward.

Recommendation 7: AHS should look to optimize the use of administrative support by leaders.

Opportunities

Table 5. Management review opportunities

#	Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
MR1	Management position review and realignment	Realignment of management positions based on meeting benchmarks for number of direct reports (Covenant Health and AHS).	Unvalued
MR2	Share administrative assistants	Valuation is based on reducing the number of administrative assistants to a 2:1 or 3:1 ratio of director-level positions (M4 and above) to administrative assistants.	$6M-$9M

[28] For the purposes of this analysis, director-level positions and above were considered to be those at the salary grade M4 and above.

Physician optimization

Context

As the largest health care delivery organization in Canada, AHS has more than 8,600 physicians working in its facilities across a range of specialties. While most of the physician activity occurs on a fee for service basis and is paid by Alberta Health based on a provincial Schedule of Medical Benefits (SOMB), AHS does have a considerable operating budget for physician services within its Medical Affairs and Clinical Support Services portfolios.

The scope of this review is focused on the payments to physicians within the control of AHS. It does not comment on compensation to physicians paid directly by Alberta Health.

Table 6. AHS' medical affairs physician-related budgets

Budget category	2016-2017	2017-2018	2018-2019
Medical Leadership	40,682,115	47,325,923	50,324,858
Oncologists	63,365,820	64,705,564	68,239,623
Pathologists	41,288,465	41,571,778	18,279,791
Acute Care	157,552,549	159,513,123	156,681,400
Radiologists	154,936,436	154,936,436	160,494,202
Total	457,825,385	468,052,824	454,019,874

AHS has major physician-related budgets across the following categories:

1. Medical Leadership: Payments to physicians for non-clinical administrative services. This includes positions such as department heads and zone medical leadership positions. Many of these positions operate in "dyad" relationships, in which physician leaders are paired with operational leaders at various levels of the organization to enable joint clinical and operational accountability. These payments total approximately $60 million[29] across 996 distinct individuals.

2. Acute Care: Payments made to physicians as top-ups over and above fee for service billings, including stipends to hospitalist physicians providing general medicine services in acute care units.

3. Oncologists: Cancer physicians paid by AHS, either as salaried employees or as contractors. While most physicians are paid fee-for-service, it is a common model in Canada for oncologists to be paid an annual salary.

4. Pathologists: With the restructuring of Alberta Precision Labs, the costs associated with paying pathologists are being transferred from the AHS medical affairs budget to APL.

5. Radiologists: AHS pays radiologists directly for services completed within AHS facilities, as the Schedule of Medical Benefits does not cover these activities when performed within AHS.

[29] While most of these positions are paid from the medical affairs budget outlined in the table above, some positions are funded via other provincial or zone operational budgets.

Findings

Clinical payments

1. AHS has a large number of legacy contracts in place that provide clinical payments for services that can be billed through the Schedule of Medical Benefits.

    - These programs have a net cost to AHS of approximately $76.1 million. 65% ($50 million) of that cost represents payments for services included in the Schedule of Medical Benefits.

    - Alberta Health has begun a consultation process with physicians on its plans to eliminate $50 million in supplemental payments.

2. Radiologists working at AHS are paid considerably more than in other provinces.

    - In 2014/15, the average radiologist in Alberta billed $1.4 million, versus $872,000 for the average radiologist in Ontario, representing a 59% difference. Alberta pays radiologists 30% more than Ontario and 21% more than BC for X-rays, and 169% more than Ontario and 99% more than BC for ultrasounds.

3. The amount that AHS pays physicians to interpret diagnostic tests is not consistently aligned with what Alberta Health pays for the same services outside of AHS. It is generally less costly for physicians to provide those services in AHS facilities, leading to an opportunity to standardize AHS payments at a lower rate than the Alberta Health Schedule of Medical Benefits.

    - By standardizing the amount that AHS pays physicians for these services to 50% of the comparable amount paid by Alberta Health, approximately $7.5 million would be saved. The lower cost is justified by the fact that by performing these services in an AHS facility, physicians are not incurring the overhead costs that would be associated with performing them in their private offices.

4. AHS does not consistently recover costs for space and other in-kind support provided to physicians operating within its facilities.

    - AHS Medical Affairs is aware of 165 physicians or physician groups that are receiving space or other in-kind support. Of these:
        - AHS recovers some amount of the costs from 86, though the amount and mechanism is inconsistent.
        - 112 do not appear to have an agreement in place establishing the terms of this support.

    - There is no central repository of contracts and it is likely that the 165 physicians/physician groups that medical affairs is aware of is only a small subset of the total number of physicians receiving space or other in-kind support.

Medical leaders' payments

5. AHS' dyad-based medical leadership model aligns with practices in peer organizations, however there are many 'deputy'-level positions that are aligned with lower levels of operational management and are not explicitly required by the medical bylaws.

    - AHS has a dyad-based model of medical leadership, in which physician leaders are paired with operational leaders at various levels of the organization to enable joint clinical and operational accountability. AHS' medical staff bylaws describe the specific medical leadership positions that AHS requires to have in place, at the provincial, zone, regional, and site levels.

    - 45 positions, representing $2.5 million in annual spending, are at the 'deputy' level, which is not a formally required leadership position within the AHS medical staff bylaws.

6. Approximately 359 positions exist that are not explicitly required by the medical bylaws and should be assessed for rationalization or removal, while keeping in mind the critical role that integrated medical leadership plays in delivering quality care and executing on difficult transformational change.

    - Payments to these positions total approximately $17 million and include various administrative and consultative positions, including various knowledge leads, quality and safety positions, and champions. Many of these positions may be delivering value and should be continued, but there is an opportunity to review and rationalize them while considering any potential impacts to patient care.

7. 189 leadership positions are paid to work less than 0.1 FTE (less than four hours per week), which may not enable efficient use of leader's time or delivery of value.

    - Payments to these positions total approximately $2.5 million. These include various positions, including community medical coordinators, physician scheduler, and co-deputy facility section head.

8. AHS pays for increases in salaries to physicians in academic positions, despite being under a salary freeze.

    - 378 faculty positions at the University of Calgary and the University of Alberta are cost-shared between AHS and the respective institutions.

Recommendations

Recommendation 8: Stop paying clinical stipends for services covered by the Alberta Health Schedule of Medical Benefits.

Recommendation 9: In alignment with Alberta Health physician compensation negotiations and budget management initiatives, AHS should address radiology compensation and contracts.

Recommendation 10: Develop a consistent framework for paying physician interpretation fees by aligning payments to 50% of the Schedule of Medical Benefits rate as proposed by AHS.

Recommendation 11: Develop and implement a consistent framework for recovering physician overhead costs.

Recommendation 12: Review 'deputy'-level medical leadership positions, other positions not required by the medical staff bylaws, and positions with less than 0.1 FTE of effort.

Recommendation 13: AHS and AH should work with government and academic institutions with the aim of reducing or eliminating increases in academic salaries, in alignment with AHS and broader government salary freezes.

Opportunities

Table 7. Summary of physician optimization opportunities

#	Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
PO1	Physician clinical contracts review	Reduce/remove supplementary payments for clinical services. Savings amount represents the payments made to physicians for service covered by the Schedule of Medical Benefits.	$50M
PO2	Interpretation fees reduction	Rationalize and standardize fees paid by AHS for non-invasive diagnostics tests. Savings amount is based on standardizing diagnostic interpretation fees to 50% of the amount paid by the Schedule of Medical Benefits	$8M
PO3	Medical leaders' stipends and payments review	Review positions not specifically required by the medical bylaws. Savings amount represents full payments to all positions which would be reviewed.	$17M
PO4	Academic funding review	Work with stakeholders to reduce or eliminate increases to academic position salaries and benefits. Savings amount is based on avoiding an annual 3.5% increase over three years.	$5M
PO5	Physician overhead costs recovery	Recover the cost of space and other overhead from physicians using AHS facilities. Savings amount is based on an AHS estimate of potential recoveries	$2M
PO6	Radiologist fee reductions	Further reduce AHS' radiologist billings to bring them in line with other Canadian provincial peers. Savings amount is based on AHS' estimate of difference between radiologist fees in Alberta and Ontario.	$42M

Improvement Theme: Clinical services

Clinical utilization

Context

Clinical Utilization focuses on the efficient and appropriate use of services, procedures and resources. The scope of this workstream includes clinical services provided across AHS' continuum of care, including acute hospital care (inpatient, critical care, surgical and ambulatory), post-acute, long-term care, as well as community-based and home care services. The improvements identified in this workstream are primarily focused on adjusting the resources and costs associated with beds and operating rooms across AHS while allowing patients to be cared for in the right place, at the right time.

Overview of AHS' clinical resources

Clinical care services are a major component of AHS' budget, with acute care representing the largest proportion at 32.9% of total AHS expenses. Over the past few years, AHS has made strategic efforts to curb acute care spending through shifting care to the community and has made investments in upstream services including community, home and continuing care. This has been supported by a 22% increase in spending on continuing and community care since 2014/15, with those areas now making up 7.4% and 9.4% of AHS' budget respectively.[30]

AHS has 38,890 beds across acute care, continuing care and mental health. The acute care bed base has remained relatively stable, with AHS focused on increasing supports in the community. Last year, AHS opened 1,267 new continuing care beds bringing the total increase in continuing care beds to 7,463 since AHS was formed in 2009/10.

Table 8. AHS' beds by category and zone

Bed Category	South	Calgary	Central	Edmonton	North	Provincial
Acute Care (includes ICU, NICU, psychiatric sub acute and palliative in acute)	645	2,791	1,098	3,020	929	8,483
Continuing Care – Long Term Care	968	5,947	2,364	5,085	1,233	15,597
Continuing Care – Designated Supportive Living (DSL3, DSL4, Dementia)	1,892	2,865	1,897	3,677	986	11,317
Continuing Care - Community Palliative and Hospice	20	121	10	85	13	249
Continuing Care – Sub- acute in Auxiliary Hospitals	24	280	0	168	0	472
Addictions and Mental Health	124	913	427	1,185	123	2,722
Total	**3,673**	**12,917**	**5,796**	**13,220**	**3,284**	**38,890**

Source: AHS Annual Report 2018/19.

For the purposes of this report, surgical services encompass main operating rooms and associated processes and flow. Across AHS, there are 252 working operating rooms (ORs) across 55 facilities. For low risk, low acuity surgeries, AHS has 51 contracts in place across 42 facilities to undertake additional surgical activity on its behalf.

[30] AHS Annual Report 2018-19.

AHS' clinical utilization strategies

Enhancing Care in the Community: AHS has strategically focused on providing comprehensive care in the community to help Albertans receive the care they need outside of acute, hospital-based settings. This strategy encompasses a variety of initiatives focused on improving connections between community health care providers and hospital teams, as well as programming and capacity in community, long term care and home care.

Patient Flow and Bed Management: AHS has implemented several initiatives with the aim of improving patient flow throughout the health care system, to facilitate timely and safe discharges, optimize length of stay and support quality patient outcomes. A pillar of this strategy has been the CoACT Program that helps patients, families and care providers communicate and work together and include standard processes across patient intake, daily management and discharges.

The Alberta Surgical Initiative: According to AHS, there are approximately 70,000 people in Alberta waiting for surgery; with 50% of these patients deemed to be waiting longer than clinically recommended targets. AHS and AH have proposed a large-scale business case, requiring $669M of investments, to improve access and the coordination and management of surgery. The cost of this initiative is expected to be absorbed with AHS' current budget.

Findings

Acute care

Emergency department (ED) utilization

1. ED (including urgent care) utilization is higher in Alberta than other provinces, with especially high rates in the North, South and Central zones.

    - Alberta has an average of 514 ED/urgent care visits per 1,000 population compared to 445 in Ontario and 452 in Quebec[31].

    - The average number of ED and urgent care visits per 1,000 population is twice as high in the South, Central and North zones when compared to the Calgary and Edmonton zones.[32] The North zone has on average more than one visit per person per year.

[31] CIHI, *NACRS Emergency Department Visits and Length of Stay*, 2018-2019.
[32] AHS 2018-2019 Annual Report.

2. ED visits in the North, South and Central zones are typically lower acuity levels compared to those in Calgary and Edmonton, suggesting that some of these patients are visiting the ED in place of more appropriate care settings.

   - The South, Central and North Zones have an average 59% of visits associated with lower acuity levels (CTAS 4, 5[33]) compared to 29% for the Calgary and Edmonton Zones.
   - While the percentage of ED/urgent care visits for Family Practice Sensitive Conditions (FPSCs)[34] has decreased by 7.4% over the past ten years, 20% of ED/urgent care visits are still related to FPSCs with particularly high rates seen in the North Zone (32%).

> *"Emergency Departments should be encouraged to dismiss non-emergent conditions back to the GP without fear of "missing something" or the person "being lost in the system."*
>
> *Comment from AHS Employee Survey*

Inpatient admissions

3. Alberta has a higher rate of hospitalizations when compared to other provinces[35]. There are particularly high rates in the North, South and Central zones where the rate is 41% higher than in Calgary and Edmonton zones signalling there is a lack of consistency in terms of how patient pathways are managed.

   - This suggests that there is a lack of consistency in terms of how patient pathways[36] are managed across AHS.

Table 9. Age-standardized inpatient hospitalization rate per 100,000 population, 2017/18

	Rural (North, Central, South)	Urban (Calgary and Edmonton)	Alberta	Rural to Urban Zone Comparison
Inpatient Hospitalization Rate per 100,000	10,343	7,312	8,212	41% ▲

Source: CIHI

[33] CTAS stands for the Canadian Triage and Acuity Scale triages patients based on severity and urgency. On a scale of 1-5 (1 is resuscitation, 2 is emergent, 3 is urgent, 4 is less urgent and 4 is non urgent) typically scores of 1-3 are deemed to be high acuity where scores of 4-5 are low acuity.
[34] Family Practice Sensitive Conditions are specific conditions that could be appropriately cared for in a family physician's office.
[35] CIHI Quick Stats: CIHI Quick Stats: Inpatient Hospitalizations: Volumes, Length of Stay and Standardized Rates, 2017/18
[36] Patient pathways are the route or path a patient will take if they are referred for treatment from the first contact with the health system to the completion of their treatment, including the period the patient is in a hospital or treatment centre, right up until they leave.

4. While the rate of hospitalization for Ambulatory Care Sensitive Conditions (ACSC)[37] has been reduced, Alberta admits 338 patients for ACSC per 100,000 which is above the Canadian average of 321 ACSC admissions per 100,000.

    - High rates in the Central, North and South zones highlight the continued challenges in providing access to primary care, coordinated disease management and support for patients to self-manage their own conditions.

    - It should be noted that AHS has made appreciable efforts to improve care coordination between acute, primary and community providers through the implementation of integrated clinical pathways with the goal of reducing hospital use and avoiding admissions where possible.

5. A review of AHS' top 100 diagnoses admitted through the ED identified 15 specific diagnoses where patients could have been more appropriately managed in an ambulatory setting as per NHS Ambulatory Emergency Care (AEC)[38] guidelines.

    - Ambulatory Emergency Care is predicated on the notion that a significant proportion of adults requiring emergency care can be safely managed on the same day without hospital admission, or through a shortened length of stay. When successfully implemented, AEC becomes the norm for patient care unless otherwise clinically indicated. While originally focused on medical cases, these pathways have expanded across other subspecialties including trauma and orthopedics, general surgery, urology, and obstetrics and gynaecology.

    - During our consultation with operational leads, we were informed of examples in AHS where AEC-like pathways are being implemented. For example, in the Calgary zone, enhanced transitional services were created for specific interventions with a community support team consisting of 24/7 Nurse Practitioners to prevent admissions into the hospital setting. This is an example of leading practice that should be scaled-up across AHS.

[37] ACSC refers to 7 conditions that have are more appropriately managed in ambulatory or community settings as opposed to high cost, acute care. These conditions include: angina, asthma, chronic obstructive pulmonary disease (COPD), diabetes, epilepsy, heart failure and pulmonary edema, and hypertension.

[38] Ambulatory Emergency Care Network, *Directory of Ambulatory Emergency Care for Adults*, NHS Elect, 2018

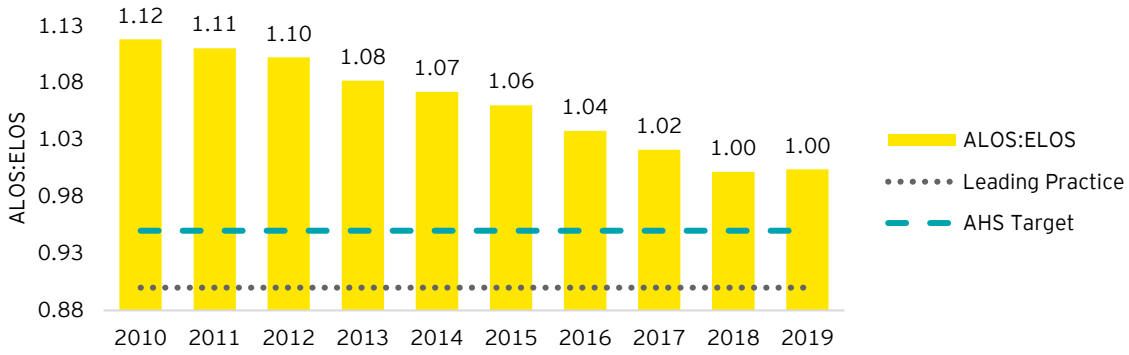
Key terms used in this section

- **Total LOS:** LOS represents a single episode of hospitalization and is calculated by subtracting the day of admission from the day of discharge.
- **Acute LOS**: The number of days a patient is receiving treatment required in the current care setting.
- **Alternative Level of Care (ALC) LOS:** The number of days associated with a patient occupying a bed with a resource intensity or services that are no longer required.
- **Expected LOS (ELOS)**: Estimate of a patient's LOS based on similar clinical groups, age, comorbidities and other intervention factors. Estimates are provided by CIHI and based on national comparisons.
- **ALOS:ELOS Ratio:** For typical patients, the average number of acute days in hospital compared to expected length of stay. A ratio less than one indicates overall efficiency in LOS.
- **Designated Supported Living (DSL):** includes comprehensive services including nursing care for Albertans living in lodges, retirement homes and living centres. There are different levels of DSL including level 3 and 4 for patients requiring 24-hour nursing care and level 4-Dementia DSL for clients living with severe dementia or cognitive impairment.
- **Long Term Care (LTC):** is provided in nursing homes and auxiliary hospitals for patients with unstable, chronic and complex health needs. Health and personal care is provided 24/7 by allied health, RNs or LPNs.
- **Home Care:** provides health and personal care supports for clients to support independent living in their own homes. Depending on patient need, the care team may include a nurse, social worker, occupational therapist, physiotherapist and other professional services.

Inpatient bed utilization and management

6. AHS has improved length of stay (LOS) performance over time which is now in line with expected LOS; however, performance falls short of the AHS target and leading practices with patients in some services staying a greater number of days than expected for their condition.

Figure 12. Typical patient ALOS:ELOS performance trend



Source: CIHI, Discharge Abstract Database (DAD).

7. Mental health patients experience on average a 13% longer than expected length of stay across the province.

    - We heard from operational leaders that particularly in rural areas that improving mental health LOS is hampered by a lack of community supports and resources available for patients outside of hospital.

    - The creation of complex community care centres such as Ambrose Place in Edmonton have supported more timely discharge of patients with mental health and complex needs

    - In the Edmonton zone, a 24/7 access program for mental health and addictions has resulted in less emergency room and acute care utilization, while also improving the wait times for these critical patient services.

8. On average, AHS' elective surgical patients spend 6.3 hours in an inpatient bed before receiving surgery.

    - Leading practice seen in other jurisdictions shows that effective management of elective surgical pathways can eliminate pre-operative length of stay days.

    - Given that most patients proceed straight to surgery, these numbers seem to indicate that a proportion of patients spent several days in hospital prior to elective surgery.

9. Alberta has higher Alternative Level of Care (ALC) rates when compared with other provinces meaning that there are many patients being cared for in a higher-level care setting than what is clinically required. Although AHS has demonstrated recent improvements, ALC rates have continued to climb over the past 10 years.

    - AHS had an ALC rate of 16.5% in 2018/19 compared to a target of 13.5% with variability across the zones. The Calgary and North zone have the highest ALC rates at 18.8% and 20.7% respectively.

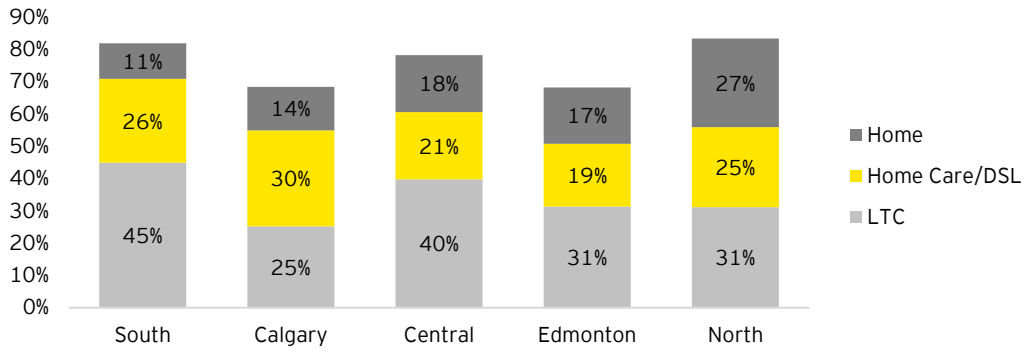
    - An estimated 1,478 bed equivalents are being occupied by ALC patients across the province. Achieving a 13.5% target would release approximately 315 beds.

Table 10. Average number of ALC beds by zone

South Zone	Calgary Zone	Central Zone	Edmonton Zone	North Zone	Alberta
98	554	162	511	153	**1,478**

10. While many ALC patients are waiting for Long Term Care (LTC), Designated Supported Living (DSL) and home care supports, a significant proportion of patients could have been sent directly home from hospital.

Figure 13. ALC patients waiting for discharge home, home care/DSL or LTC



- Different zones have taken different approaches to address these ALC patients including patients within hospitals or providing specialized services in community settings. For example, Calgary and Edmonton zones have created ALC units in the community by leveraging underutilized LTC beds.

- It is important to note that AHS does not have control over the capital program for construction of continuing care spaces.

11. As part of this review, we conducted a patient appropriateness study at Foothills Medical Centre (FMC) that identified a larger proportion of patients that could be cared for in alternative settings than typically reported in AHS' data, as well as areas for improvement within flow and discharge planning.

Assessing Patient Appropriateness at FMC

The Study: EY partnered with *Vitalhub*, who applied their *The Making Care Appropriate for Patients (MCAP)* tool to assess 341 medical and psychiatric patients in October 2019. MCAP is an evidence-based tool that determines the medical necessity for patients to receive a given level of care.

What We Found: While patients were appropriately admitted to FMC, one third of medical and one quarter of psychiatric patient's stay post admission, could have been provided in an alternative level of care. Discharge planning issues were cited as a major challenge with many patients able to go home with supports, or directly home. Only one third of the patients reviewed had a discharge plan created on or after admission. Psychiatric patients generally did not have discharge planning information included in their chart. Of reviewed charts, 77% of medical and only 14% of psychiatric patients had an anticipated date of discharge.

What This Means: The MCAP builds on our ALC related findings identifying a larger patient cohort of patients that could be cared for in a more appropriate setting. Although FMC is one of many hospitals within AHS, we believe insights from this review can be translated across the system to support an action plan that improves flow and allows patients to be cared for in the most appropriate setting.

12. AHS has several clinical pathways, patient flow and LOS initiatives underway however, many initiatives are zone specific and the uptake and implementation of provincial initiatives varies.

    - While tailoring initiatives within the local context can make sense, we have heard that this has also created large differences across various sites in terms of care delivery processes, strategies and resource deployment.

13. On average, critical care patients wait 29 hours after their discharge decision is made before being sent to the ward or home.

    - This delay equates to 85 bed equivalents out of 285 adult ICU beds. Reducing this delay would allow for the more efficient use of one of the systems most costly resources.

> *"A lot of the time people will be sitting in the ICU ready for transfer for days or even weeks with no beds available on general wards or in the community. This creates a huge back up of patients in the ICU, it's expensive for patients to take up an ICU bed."*
>
> *Comment from AHS Employee Survey*

Surgical services

14. Across AHS, surgical services are locally owned and managed at a site level. Individual physicians have significant control over operating room (OR) scheduling, leading to variations in operational management.

    - ORs are allocated to physicians in the form of OR timeslots, called "slates", which are in most zones, based on historical trends rather than actual utilization or changes in demand. While this practice is not unique to AHS, it creates significant challenges in OR resource management.

    - In larger zones such as Calgary and Edmonton, they are developing new policies to regulate booking and are establishing Committees to review utilization and allocations across sites.

15. In 2018/19 AHS performed 50,050 cases across 44 different elective procedures that matched the NHS criteria of limited clinical value.[39][40]

    - To determine the clinical appropriateness of procedures performed in the OR, we reviewed all 2018/19 elective procedures across AHS using the NHS Clinical Commissioning Group list of "procedures of limited clinical value", defined as procedures where the evidence of clinical effectiveness is deemed to be weak or absent.

16. Among physicians performing the same procedures, there is variability in delivery as day surgery versus inpatient overnight cases.

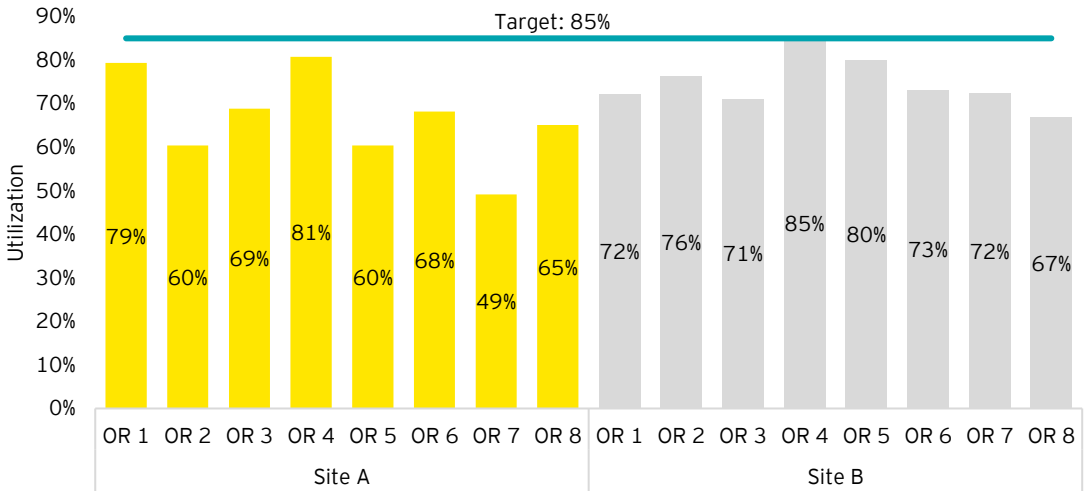
    - Supported by further clinical review, a conversion of select inpatient cases to day surgery would eliminate the accompanying LOS, releasing 71 beds of capacity across the system.

[39] NHS Milton Keynes Clinical Commissioning Group, https://www.miltonkeynesccg.nhs.uk/referrals-and-priorities-policies/
[40] This represents approximately 40,156 outpatient, and 9,894 inpatient cases.

17. Opportunities exist to improve utilization within existing OR infrastructure and staffing.

- While AHS reports that its ORs are approximately 90% utilized, there are variations in the local definitions for utilization resulting in a lack of clarity on true overall OR performance.
- Our assessment indicates that operational OR capacity was utilized 71% of the time across AHS in 2018/19, indicating an additional 18,713 potential OR slates to be undertaken.
- We assessed utilization, using a common leading practice definition[41], at two sites in AHS. As can be seen from the chart below, there is significant variation in overall utilization across each of the ORs.

Figure 14: OR utilization



18. AHS and AH have developed the Alberta Surgical Initiative (ASI) to reduce wait times that is predicated on building net new capacity, including staffing and capital infrastructure.

- In total, AHS identified 79,511 additional procedures to be undertaken over the next four years to achieve waiting time targets.
- Our analysis suggests that surgical wait times can be reduced, in part, by maximizing existing capacity (as discussed above), moving some procedures out of hospitals to independent providers and reducing procedures of limited clinical value.
- There are also examples of leading practice where clinical services such as Oncology and Hip and Knee Replacements have already moved to a centralized intake model which allows for better wait list management, triage for surgery and movement of patients along the surgical pathway.

[41] *For this review, we looked at capped utilization, the percentage of surgical time used within a defined period of staffed resourced time*

Ambulatory care

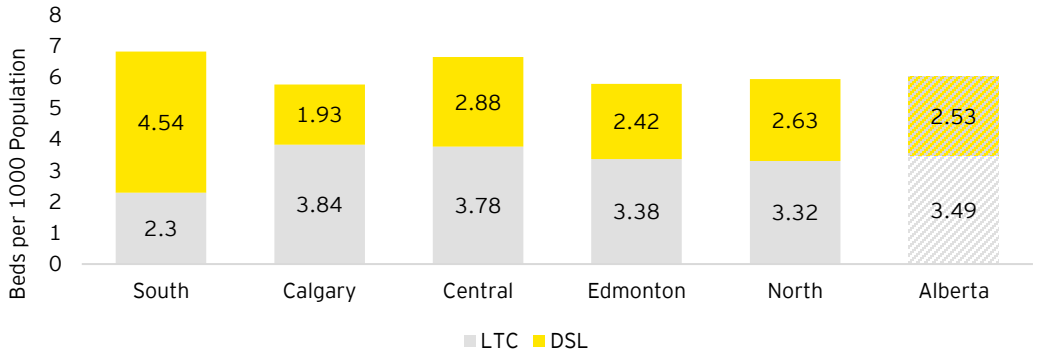
19. In newer AHS ambulatory clinics, policies and procedures have been put in place to manage the number and types of patients being seen. However, several historical AHS clinics, as well as several community providers remain outside of this framework with unclear definition and purpose.

20. While AHS has made recent progress with standardizing some clinic processes, key processes related to booking, scheduling, and referrals remain highly variable from clinic to clinic, resulting in underutilization of space and resources and limited coordination for patients.

Long term care (LTC)/ Designated supportive living (DSL)

21. Across AHS, there is variation in the mix and the number of LTC/DSL beds across zones, contributing to AHS' high ALC rates and challenges in moving patients through the system.

Figure 15. LTC and DSL bed capacity per 1,000 population across AHS



22. A detailed review conducted by AHS revealed that a significant proportion of patients admitted to LTC would have been more appropriately cared for in DSL.

    - An AHS study of LTC patients between April 2014-October 2017 found only 30% of patients assessed for placement into Continuing Care were assessed as needing LTC. However, 62% of all assessed patients were placed into LTC. Some of these patients were placed in LTC due to geographical, financial or living constraints that impeded the appropriate placement into a DSL setting.

23. AHS has a shortage of DSL beds to meet the current patient need and a potential surplus of acute and LTC beds. A realignment of this bed base would support a reduction in wait times, ALC rates and improve quality of patient care.

    - There are 506 patients waiting at home for DSL, 296 patients in acute care and 1,300 patients in long-term care that could be in DSL beds.

> *If the need is more for Designated Supportive Living and less LTC, conversion should be allowed (i.e. communities with 2 LTC and no DSL)."*
>
> *Comment from AHS Employee Survey*

24. There is a mixed ownership model of LTC and DSL beds in Alberta where facilities are either AHS owned and operated, AHS subsidiaries, non-profits or contracted private third-party providers. AHS' dual role in oversight of services from providers as well as a service provider itself has created confusion regarding its role within the system.

    - Across AHS and its wholly owned subsidiaries (Carewest and CapitalCare), AHS owns a total of 4,604 LTC beds which is 30% of the total LTC spaces. AHS' ownership, particularly of Carewest and CapitalCare represent an opportunity to harness this large financial asset to improve its financial position.

    - AHS conducts audits on providers, including those that it directly operates. Alberta Health is also involved in audits of continuing care creating potential role duplication, and mixed messages within the system.

25. Long-Term Care providers are funded using a Patient Care Based Funding Model (PCBF) that aligns funding per resident with clinical, physical and psychosocial needs. The design and implementation of this funding model is a significant accomplishment. For AHS to continue to maximize the benefits from this model, there are several key improvements that could be made.

    - When AHS shifted to PCBF, a no loss provision was implemented to support providers. This temporary measure should now be removed, and providers required to comply with the PCBF funding parameters.

    - The current tool used to assess residents clinical, physical and psychosocial needs is challenged to accurately measure dementia and behavioural problems that are increasing in the complex LTC population. AHS is working to improve its methodology to better reflect the nuances of patient acuity.

26. In LTC, the funding each organization receives is the same based on PCBF, however, the cost per resident day varies across the different ownership models. This requires further investigation to understand patient acuity and other drivers of cost differences.

    - AHS is not able to currently delineate exactly how much it spends per resident day. This is in part, due to resource sharing across co-located hospitals and LTC facilities, and how these resources are financially reported. AHS is in the process of conducting a detailed costing exercise to better understand the true cost of its owned LTC facilities.

27. AHS has made a significant effort to standardize LTC contracts by bringing providers under a single Master Service Agreement with a variety of performance tracking mechanisms such as KPIs and quality measures. However, there is opportunity for improvement to ensure that AHS is exercising its full rights with each contract.

Home care

28. There is a lack of standardization and consistency in terms of the delivery and availability of home care services. Operational leaders told us that there are challenges in the distribution of home care services and that comprehensive home care services are not readily available in all parts of the province.

    - Approximately one third of home care services are contracted out to third-party providers. AHS has an oversight role, as well as professional care and case management. In some cases, particularly in rural areas, AHS directly provides home care services.

29. Outcomes-based performance monitoring is not a consistent component of the management of third-party home care providers by AHS.

    - There are currently 48 homecare contracts, 67% of which are managed through a standard Master Service Agreement (MSA). All contracts are monitored by AHS procurement and requires providers to report performance data, however 16.5% of contracted providers do not regularly provide the required information.

    - AHS tracks system-level indicators for home care performance (e.g. readmissions, ALC, ED visits), volumes and financials, however these indicators and targets are not consistently focused on assessing quality and optimal patient outcomes for those directly served. While this may incentivize operators to provide cost effective care, it does not hold them to account to provide the best quality for clients.

> *"Current home care vendor contracts are not benefiting patients. Patients are not receiving needed care as assessed by AHS professional staff due to a business model that relies on a casual workforce (double booking and missed visits) and not being held accountable for the care provided"*
>
> *Comment from AHS Employee Survey*

Recommendations

Recommendation 14: AHS should prioritize the further provincial standardization of clinical care pathways and protocols to ensure all Albertans have access to evidence-based, outcomes focused and cost-effective care.

Recommendation 15: AHS should continue to strengthen its integration with primary care through the expansion of community-based and home care programs to care for patients in the most appropriate setting.

Recommendation 16: AHS should expand a bed flow program, such as the CoACT Collaborative Care Framework, to standardize and manage beds effectively across the province, improve LOS and allow for the patient care in the right place, at the right time.

Recommendation 17: AHS should internally establish a province wide performance monitoring and management framework for the governance, accountability and reporting of surgical services.

Recommendation 18: Within a provincialized surgical framework, AHS should reassess the level of investment needed to achieve the Alberta Surgical Initiative volumes based on utilization improvements and potential for alternate treatment pathways for patients.

Recommendation 19: AHS should create a fit for purpose operating model for ambulatory care and outpatient clinics and develop a strategic vision and governance model to support AHS' objectives both in the hospital and the community.

Recommendation 20: AHS should consider realigning bed resources within acute, LTC, designated supportive living (DSL) and community care, to support an immediate reduction in ALC, ensuring that patients are cared for in the most appropriate setting.

Recommendation 21: AHS should reconsider LTC facility ownership in cases where private delivery may be more efficient and appropriate.

Recommendation 22: Transition from volume based and transactional home care oversight model to one where providers are held to account for patient outcomes and quality of care for those that they serve.

Opportunities

Table 11. Summary of clinical utilization opportunities

#	Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
CU1	Reduce avoidable admissions for ambulatory care sensitive conditions	Maximize existing "Ambulatory Care Sensitive Conditions" guidelines and expand to include additional pathways that can be treated through ambulatory emergency care setting vs. being admitted. Valuation based on reducing inpatient admissions as per the NHS Ambulatory Emergency Care (AEC) guideline's target range multiplied by bed days reduced.	$1M-$14M
CU2	Acute LOS improvement	Bed reductions based on driving down length of stay for typical and long stay patients through improved clinical pathways and supporting flow processes. Valuation based on reducing the LOS of typical patients to an ALOS: ELOS target of 0.9 and reducing LOS of long stay patients by 10% based on external leading practice.	$71M
CU3	Reduction of ALC in acute setting	Reduction of ALC to meet the AHS 13.5% target by improving out of hospital assessment and managing patients in the community. Savings based on acute bed reductions. Valuation based on reducing the inpatient ALC LOS associated with reducing the ALC rate down to AHS' internal target of 13.5% for each site.	$34M
CU4	ALC cohorting	Shift 554 acute level of care beds to different care model (i.e. LTC) to provide the optimal care to patient needs. Valuation based on reduction of cost associated with providing lower level of care for those beds. Valuation assumes each site meets the 13.5% ALC rate target.	$29M
CU5	ICU discharge delay	Reduce and eliminate the delay in patient discharge for ICU units across hospital sites based on time between transfer decision made and patient discharge. Valuation based on the delayed ICU LOS multiplied by the cost differential between an ICU unit and ward unit, assuming all delays can be eliminated for all ICU units (excludes NICU).	$20M

CU6	Day case conversion	Increase the number of procedures done in day case as opposed to inpatient, where appropriate, to reduce overall reliance on acute beds. Valuation based on a reduction in cost of inpatient beds associated with inpatient procedures being converted to a day case procedure. Target number of procedures has been set at the internal median rate for day case for each procedure.	$13M
CU7	Reduce procedures of limited clinical value	Targeted reduction of the number of procedures with limited clinical value being undertaken across AHS. Valuation based on reducing the cost associated with not undertaking procedure identified within the UK NHS Commissioning Group guidelines. Range of valuation based on reducing only ambulatory procedures through to all procedures.	$47M-$100M
CU8	Surgical wait time	Reassess level of operational and capital investment required as part of Alberta Surgical Initiative based on utilization improvements, wait times strategy and alternative patient pathways (i.e. NHSF).	
CU9	OR suite & procedure room Utilization	Maximize the utilization of OR capacity by reducing turnaround times, enhancing on-time starts and finishes and structuring days aligned to case lengths.	
CU10	LTC to DSL reconfiguration	Convert LTC beds to DSL beds. Staff converted beds as DSL, e.g. with a less intense staffing level. Valuation based on the reduction of cost from the change in care model associated with transitioning the 1,300 patients that AHS has identified to the most optimal level of care.	$32M
CU11	Rightsizing LTC care models to Patient Care Based Funding Model	Remove funding floor protections put in place in FY2010/11 to enable LTC facilities to right size their model of care with Patient Based Funding model. Valuation based on AHS' estimate of the funding floor removal impact.	$21M
CU12	Sale of Capital Care and Carewest LTC	Divest and sell Capital Care and Carewest to third party provider. This represents one-time revenue for AHS. There are no operational savings.	Estimated in hundreds of millions of dollars
CU13	Optimize home care contracts	Improve the current home care contract terms through performance/ quality measures-based contracts and potential further outsourcing opportunity.	

Service configuration

Context

Service configuration refers to how and where care is delivered in the province, with the goal of organizing resources so that patients receive the most appropriate care in the right place and at the right time.

> *"Why does Alberta have so many more hospitals than every other province?"*
>
> *Comment from AHS Employee Survey*

The demand for care in Alberta will only continue to increase as its population grows and ages over time. Leading jurisdictions are responding to these trends by 'shifting care left' – focusing on maximizing out of hospital care and ensuring the hospital system is truly for the most unwell. Alberta's single provincial system facilitates the provision of care in the optimum locations across a single integrated system.

The configuration of clinical services in Alberta is influenced by its unique geography and population distribution. Achieving a sustainable provincial health care system will require:

a) Delivering services in areas of low population density in a way that balances patient access with the critical mass of patient volumes needed to provide safe patient care.
b) Appropriately allocating services between regional hospitals that can care for less acute patients and larger hospitals in urban centres that can deliver tertiary and quaternary care.
c) Creating centres of excellence for complex specialty care to enable deep specialization and avoid costly duplication.
d) Expanding the use of efficient, high-volume independent facilities that can best deliver common surgeries and clinical procedures.

For the purposes of this review we have predominately considered acute service configuration. Long term care (LTC) and Designated Supported Living (DSL) have been included with the Clinical utilization section.

Service configuration outside main population centres

Alberta has a total of 100 acute care facilities, 85 of which are classified as small/medium community hospitals (with 24/7 emergency departments). Many of the sites are run by general practitioners (GPs) or family practitioners (FPs) and the acute services are co-located with outpatient centres, long-term care, and designated supportive living facilities, with staff often being shared across each of these areas. These facilities serve approximately 830,000 Albertans and cost approximately $880 million per year.

Determining the configuration of services that meets the needs of smaller more remote communities generally involves balancing enabling timely access to care against the need to ensure appropriate quality. These communities expect to have reasonable access to emergency departments, acute inpatient beds, and obstetrical care to support delivery of babies in the surrounding areas. At the same time, servicing a community with a small, low-volume facility can lead to both quality and cost effectiveness challenges. Physicians and other care providers require ongoing exposure and experience with certain types of procedures, such as complex births, to maintain proficiency. Likewise, underutilized hospitals lead to inefficient use of staff and facilities.

AHS has developed frameworks for defining the clinical configuration of services relating specifically to the remote locations of EDs, acute beds, and maternity. In conjunction with the configuration framework, access guidelines exist to help inform an assessment of their clinical viability. For ED, Acute care and Maternity the

frameworks can help to determine if a facility could be reclassified as a daytime-only unit or be consolidated with another hospital nearby.

Service configuration in metro and urban areas

Approximately 81% of Alberta's population resides within an urban area, with the notable majority living along the Calgary-Edmonton corridor. There are 16 facilities in Alberta which are classified as "metro/urban" hospitals with 6,323 acute beds. Making up over 74% of the province's beds, these hospitals serve both the local population of 3.5M in local catchment areas, as well as provincial patients for defined specialties. AHS has developed a structured and evidenced system for classifying these facilities, depending on the level of care that they provide.

Since its formation, AHS has focused on establishing and enhancing integrated 'corridors of care' that connect smaller populations, regional and tertiary/provincial centres together and support the flow of patients across the system.

Configuration of specialty tertiary and quaternary services

Beyond the broad configuration of core services at the local, metro, and urban levels, it is important for the health system to consider how it provides effective and appropriate specialized tertiary and quaternary care. Leading practices from the UK and other jurisdictions suggest that driving towards consolidated centres of excellence for specialist services enables a critical mass of expertise and resources, which in turn leads to improved patient care[42]. Integrated health systems such as Alberta are better positioned to be able to adopt this model. AHS has consolidated many specialty services into regional centres with most tertiary/quaternary services provided in Calgary or Edmonton. As part of this review, we have considered the standard basket of specialized services, this listing is provided in the full report.

Non-hospital surgical facilities

In addition to providing services in AHS operated hospitals, Alberta currently allows several procedures to be delivered in non-hospital surgical facilities (NHSF). NHSFs are publicly funded, independently operated facilities that perform scheduled surgeries (i.e. not emergent care cases) in a specialized surgical centre with its own clinical and support staff. The types of cases performed in NHSFs vary from province to province, but in most circumstances are for stable and low-risk patients not requiring advanced levels of care that is usually provided by hospital operating rooms. A recent jurisdictional scan shows that Alberta is one of the leading adopters of NHSFs across Canada.

The province has undertaken substantial work in developing processes and accreditation standards for out-of-hospital surgical cases. AHS currently has 51 contracts across 42 of these facilities to conduct approximately 40,000 surgical procedures annually (this represents 15% of all AHS surgical procedures – 293,000 total cases), for a combined spend of $24M. Alberta Health and AHS plan to expand the use of NHSFs over the next four years, both in terms of the volume and types of cases.

[42] https://www.kingsfund.org.uk/publications/reconfiguration-clinical-services

Findings

Small/medium hospital configuration framework

1. AHS has established a transparent classification framework for defining hospital levels of service and access guidelines that indicate where these services may be located.

    - The framework has been applied to all acute hospital facilities, EDs and Maternity services across AHS, and enables AHS to ascertain what levels of service provision it has across all zones.

    - Alongside the classification framework, AHS has developed clinical access guidelines for EDs, acute care and elective care relating to small/medium community hospitals.

    - AHS has done a good job of assessing its hospital configuration against these access guidelines, however these guidelines have not yet been used to implement any provincial configuration strategies.

2. Of the 83 small/medium facilities outside the main population centres, 77 emergency departments within small/medium community facilities in Alberta meet the criteria to be considered for reclassification or consolidation.

    - These sites are characterized by very low overnight visit volumes (average three per night) and high proportions of patients with minor emergency care needs, that could be better treated by their GP or in the community.

    - For the 73 sites our assessment found that the cases would be better served through an urgent care model or ambulatory clinic setting with reduced hours of operation (typically around 16 hours per day).

    - Alongside the under-utilization of the existing resources it was found that more than 50% of the small/medium facility EDs had higher 30-day ED readmission rates compared to the provincial average. This could be an indication of clinical quality and safety challenges.

3. 36 acute sites do not meet the criteria for clinical viability in their current configuration.

    - These sites would be potential candidates for reconfiguration or reduction of the inpatient beds. There are 5 facilities where occupancy and patient acuity is sufficiently low that they would be considered for closure

    - When reviewing the configuration, access times to services have been considered, and in these cases the populations served would reside within 45 minutes travel time window specified.

4. AHS is making notable progress in establishing virtual care, telehealth and other technology enabled solutions to support care to remote populations.

    - There are 51 local, zone, or provincial initiatives related to community-based virtual care, technology-enabled care, and telehealth programs currently in progress across AHS. In many cases the projects are highly innovative, and AHS is potentially leading when compared to its peers.

- Most of these projects are in pilot phases and while local outcomes are being assessed, it is important to further understand the potential to scale across broader geographies and on a more permanent basis.

- Virtual care and other technologies should be at the centre of any configuration activities. This is consistent with many other jurisdictions with similar rurality, and the need to continue to provide access to consultation and care in a timely manner.

5. Small/Medium sites which provide 24/7 access to maternity surgical services deliver an average of 201 cases per year per site, which may not be high enough volume to ensure appropriate quality and patient safety.

   - A total of 28 of AHS' small/medium sites have full or specialist obstetrical services that are available 24hrs a day. On average there are 201 births annually in these facilities.

   - Clinical evidence indicated that less than 250 births annually would be deemed sub-optimal and may result in clinical quality concerns for the facility. AHS' Maternal Newborn Child & Youth strategic clinical network has suggested that a minimum of 300 obstetrics patients per year per site would reduce clinical risk through increased clinical competency.

   - Furthermore, when assessing access times for these patient populations it would be possible to consolidate maternity services while maintaining the 45 mins access time goal.

Service configuration

6. AHS has a largely well-consolidated tertiary and quaternary service portfolio that supports patients across the province.

   - When compared to other jurisdictions and standardized for population, the number of service centres for specific tertiary and quaternary specialties are in line with expectations. Furthermore, AHS has broadly allocated these services evenly across Edmonton and Calgary, to ensure appropriate coverage for the north and south of the province respectively.

   - Based on the current allocation of services, there are some relevant areas where AHS could consider further consolidation. This would include plastic surgery, neonatal-perinatal medicine and the configuration of Neurosciences across Edmonton.

Provincial trauma program

7. Edmonton has two adult major trauma centres (level I and level II), while receiving similar case volumes of major trauma as Calgary, which has one level I centre.

   - Clinical guidance would suggest that one Level I or Level II adult trauma centre and one Level I or Level II paediatric trauma centre will be required in a trauma system serving population of up to 2 million within an anticipated caseload in the order of 500 to 1,000 major trauma cases[43]. In 2018/19, 991 adult major trauma cases were treated in Edmonton across two sites, while 851 cases were seen in Calgary through the single level I centre.

   - Experience from other jurisdictions highlights that running two separate trauma sites in close proximity can lead to duplication of the tertiary and quaternary services needed to support a trauma program. In assessing the current state in Edmonton, this appears to be the case, with a number of tertiary services provided across both centres. Associated on-call rotas are also independently provided on each site for select tertiary services through which major trauma coverage is provided.

8. 15% of patients seen at the level I and II trauma centres are minor/intermediate trauma patients from out of zone. These cases could be treated at local level III and IV trauma centres.

   - 15% of the cases from outside of the Edmonton and Calgary zones that are treated at the level I and II sites are below the ISS > 12 threshold for major trauma. While this pathway does not result in suboptimal care, there is the potential for cases to be treated in local regional trauma units rather than the provincial trauma centres.

   - While both EMS (local) and Referral, Access, Advice, Placement, Information & Destination (RAAPID) (out of zone) triage trauma cases to be allocated to a relevant and available trauma centre (with RAAPID also coordinating repatriation and capacity management of the ICU and trauma beds), a notable volume of patients bypass regional centres equipped to receive minor/intermediate trauma and are treated at the level I or II in Calgary or Edmonton.

Non-hospital surgical facilities

9. NHSFs in Alberta and in other Canadian jurisdictions are conducting procedures at lower cost than in acute settings.

   - There is a significant cost efficiency reported for the defined basket of procedures that are currently performed through NHSFs. This ranges between 13% and 55%. This level of savings is significant given the volume of cases undertaken across AHS.

   - Experiences of other Canadian jurisdictions indicate cost efficiencies of up to 70% by performing appropriate cases in private surgical environments.

[43] Trauma Association of Canada, Trauma Accreditation Guidelines (2011)

10. There is significant geographic variation in the use of non-hospital surgical facilities across zones in AHS, particularly for cataract procedures.

    - 96% of cataract procedures in the Calgary zone are done in NHSFs, compared to only 18% of procedures in the Edmonton zone.

    - As some NHSF contracts have been in place since prior to AHS' consolidation, there is an additional opportunity to review existing contracts and procure new rates based on market availability.

Recommendations

Recommendation 23: Alberta Health and AHS should establish provincial clinical access guidelines and further develop clinical standards to enable an affordable and safe configuration of acute care facilities across the province.

Recommendation 24: AHS should consider reconfiguration of small/medium community sites based on the validated and agreed access guidelines.

Recommendation 25: Review existing virtual health initiatives and consider development of a provincial plan to leverage virtual health technology to provide care across remote populations.

Recommendation 26: Ensure trauma is managed as a provincial service, with stronger adherence to trauma triage and referral protocols to avoid bypass of regional centres where not clinically appropriate.

Recommendation 27: Consider consolidating Edmonton's two major trauma centres to a single site.

Recommendation 28: AHS and Alberta Health should assess opportunities to expand the use of non-hospital surgical facilities (NHSFs) across the province.

Opportunities

Table 12. Summary of service configuration opportunities

#	Proposed Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
SeC1	Small/medium ED configuration	Reconfigure current in-scope small/medium hospital EDs based on visit volumes and appropriateness, this includes options for ED hours modification and reclassification or closure. Valuation based on a reduction of 1/3 of ED operating costs and associated on-call costs for DI and labs considering where services may run reduce hours of operation.	$32M
SeC2	Small/medium hospital configuration	Consolidate/ repurpose in-scope small/medium hospitals based on defined access and hospital classifications as a function of underutilization or occupancy. Valuation based on cost of either reclassifying or reducing inpatient beds across sites.	$29M
SeC3	Maternity service consolidation	Consolidate maternity services in rural areas to support maintenance of clinical competency and appropriate level of care, where appropriate. Valuation assumed to be part of small/medium hospital configuration.	
SeC4	Urban area service configuration	Reconfigure and reduce duplications of services across quaternary service sites. Optimize tertiary and quaternary services through consolidation and reduction of duplication of services between neighbouring sites.	
SeC5	Provincial trauma program optimization	Optimize the Trauma provincial program through better utilization of specialty services in tertiary and quaternary hospital sites. Valuation based on potential rationalization and standardization of Trauma program staff only; it does not include any potential savings related to consolidation of clinical trauma services.	$0.4M-$1M
SeC6	Non-hospital surgical facilities (NHSF) procedure expansion across zones	Expand the usage of NHSF procedures across each zone. Implement new procedures in NHSFs based on jurisdictional comparators (ON, BC, SK, QC). Valuation based on providing AHS day surgery cases at 10-20% lower support costs.	$32M-$65M

Clinical support services

Context

The section includes findings, recommendations and opportunities that focus on the provision of laboratory, diagnostic imaging, pharmacy, and emergency medical services across AHS. These clinical support services are an essential part of the health care system and critical to delivering safe, efficient and effective patient care. Structurally, these functions are organized into provincial programs that provide overarching strategy, clinical and operational oversight and set standards across AHS. The provincial leadership teams from each function work closely with AHS zone leadership to support locally based operations and initiatives. This section will highlight opportunities within clinical support services related to clinical appropriateness, utilization, service delivery models and cost effectiveness.

"Provincial Services under the Clinical Support Services areas have seen numerous successes & strengths. Standardization of education, training, best practice have been implemented across the province in all of these areas"

Comment from Operational Leader Session

Table 13: Clinical Support Overview

Clinical Support Area	# Locations	Activity	FTE	Expense
Laboratory Services	210	81M tests	3,819	$800M
Diagnostic Imaging	299	2.9M exams	1,137	$457M
Pharmacy	146	N/A	1,837	$507M drug $210M department
Emergency Medical Services	204	560k events	3,600	$506M

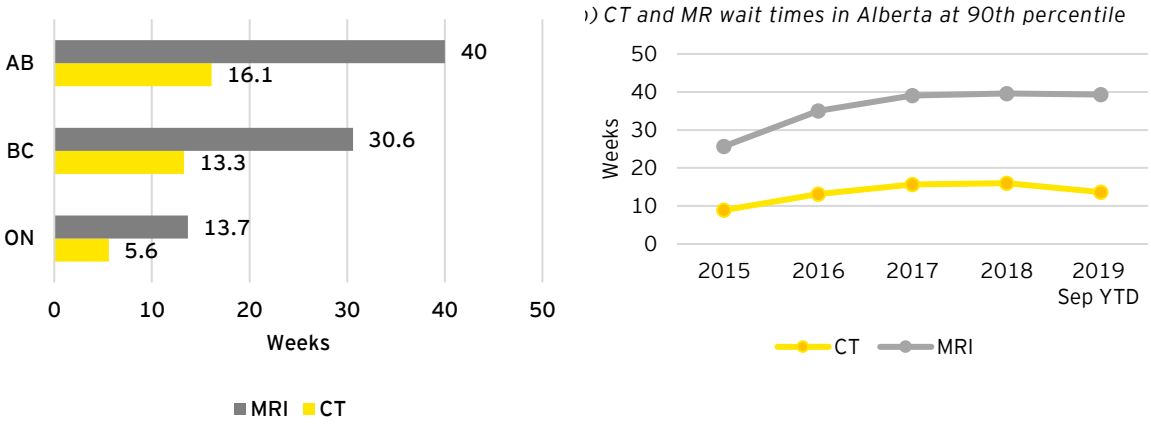
Labs

Lab services are predominantly focused on hospital and community-based lab tests, but also include mobile collections, specimen transportation, and specialized and public health laboratories. Over the past several years, laboratory services in Alberta have been the focus of several significant re-structuring and integration efforts, marked by multiple reviews and attempts to transform the laboratory services business model. These transformation agendas have been shaped by government strategy and direction and have been impacted substantially by electoral changes in 2015 and 2019.

Alberta Precision Labs (APL), created as Alberta Public Labs in 2018 and renamed in 2019, is a wholly owned subsidiary of AHS. APL is led by a Chief Operating Officer and a Chief Medical Laboratory Officer. This public organization represents the consolidation of laboratory services previously provided by AHS, Calgary Lab Services, Covenant Health, and Lamont Health Care Centre. APL has two distinct operating models: the North sector is a hybrid of private and public providers whereas the South sector is fully public. Overall, APL outsources 23% of its tests to private providers.

Diagnostic Imaging

The program delivers over 2.9M exams per year across multiple modalities including CT, X-Ray, Radiography, Nuclear Medicine, Ultrasound, and Lithotripsy. Provincially, Alberta's CT and MRI wait times are significantly higher than other provinces creating challenges related to quality and accessibility to healthcare for Albertans. One in every ten patients in Alberta waits more than 40 weeks for an MRI which is months longer than the wait times experienced by residents of BC or Ontario. It is important to note that compared to Ontario and BC, Alberta has a similar amount of equipment per capita signalling that challenges lie in how this equipment is utilized[44].



) CT and MR wait times in Alberta at 90th percentile

Source: CIHI

Pharmacy

The pharmacy provincial portfolio is responsible for drug production, distribution and direct patient care in hospitals and other AHS facilities. Drug expenses represent a significant cost pressure, and since 2017/18 AHS' spend on drugs and gases has increased by 8.5%; largely due to the advent of new biologics and the approval of new cancer drugs. In Alberta, medications are paid for by different parties depending on how and where the medications are administered. Medications provided in hospitals and long-term care are provided to patients at no cost and are funded by AHS, or in the case of specialty cancer drugs, by Alberta Health. In the community many Albertans rely on insurance coverage provided through supplementary plans, often sponsored by their employer or sponsored by the Government of Alberta through various programs (e.g. Seniors Benefit Program).

Emergency Medical Services

AHS' Emergency Medical Services (EMS) provides out-of-hospital response, treatment and transport to patients requiring urgent and immediate care. EMS also performs inter-facility transfers and non-emergent patient transport across AHS (this will be discussed in the non-clinical support services section). This past year, EMS responded to 560,434 events, which has increased by 9% over the last three years. AHS' EMS also provides community paramedic services as part of a Mobile Integrated Health Program that trains community paramedics to provide short-term treatment for low-acuity illnesses.

[44] https://www.cadth.ca/canadian-medical-imaging-inventory-2017

Findings

Clinical appropriateness

1. AHS has begun to adopt and implement recommendations from the national "Choosing Wisely" appropriateness program. While appreciable progress has been made, targeted reductions are often lower than Choosing Wisely guidelines.

Choosing Wisely

Evidence has found that up to 30% of tests, treatments and procedures in Canada are potentially unnecessary. While reducing these inappropriate services can save money, most importantly, it will decrease wait times, improve patient safety and the overall patient experience.

Choosing Wisely Canada is the national voice for reducing inappropriate tests, working with health systems, providers and patients to create recommendations, tools and clinical guidance for implementation.

Source: Choosing Wisely Canada

- Currently, there are 53 initiatives in-flight across AHS, of which 28 are led by the clinical support services and 25 are led by the strategic clinical network teams.
    - Approximately half of these initiatives have quantified savings or efficiencies totaling $42M-$62M. Further quantification of initiatives could provide additional savings opportunities for AHS.
- In some cases, targets are not fully aligned with Choosing Wisely recommendations or could potentially be pushed more aggressively.
- AHS established the Improving Health Outcomes Together team, a provincial governing body to oversee the delivery, spread, engagement and monitoring of clinical appropriateness initiatives.
    - Even with this team in place, many initiatives remain localized to sites or departments, and initiative owners have varied approaches to target setting, return on investment assumptions and overall implementation.
- Most of the savings identified have been deemed cost avoidance by AHS, rather than budget savings.

"My family doctor declined my request for an MRI when I had a herniated disc in my back. I needed physio to get better and his diagnosis of the problem was 100% correct. I did not need an expensive MRI. More education for doctors around using knowledge and experience without adding to already lengthy waits for imaging that are costly to the system is needed.

Comment from AHS Employee Survey

Laboratory services

2. Alberta Precision Laboratories (APL) deploys a mixed service delivery model for lab services in Alberta, delivering laboratory services in the South, while managing an outsourced delivery model in the North. When comparing similar tests within this hybrid model, there is a cost differential of $1.29 per test between APL ($9.61/test) and the private provider ($8.32/test)[45].

Diagnostic imaging

3. Diagnostic imaging utilization (e.g. exams/hour) can vary greatly within the same modality and can be further optimized to increase capacity and reduce wait times where appropriate.

   - There is significant variability across all modalities with large differences between low and high performing sites. AHS is achieving its internal target for MRI utilization, but CT utilization is falling behind internal targets. However, wait times for these exams are significantly higher than other provinces.

Table 14. Diagnostic Imaging exam volume per hour

DI Modality	Average Exams/Hour	Low Exams/Hour	High Exams/Hour	AHS Target
CT	1.69	0.85	5.56	3.80
MRI	1.85	1.00	2.5	1.60
Ultrasound	1.05	0.44	2.36	N/A
Radiography	1.72	0.65	3.20	N/A
Nuclear Medicine	0.54	0.30	0.73	N/A

   - Currently, AHS is responsible for all costs associated with DI activity, including radiologist compensation. As a result, an increase in volumes may lead to an increase in radiologist fees that needs to be considered. As discussed in the physician optimization section of this report, radiologists are paid significantly more in Alberta than in other provinces.

4. AHS has identified 6 radiography sites that could be consolidated or closed based on AHS developed DI utilization and access guidelines.

   - There could be further opportunity to consolidate an additional 5 radiography and 1 ultrasound site if the DI guidelines, specifically travel time, were adjusted from 20 minutes to 45 minutes to align with broader AHS acute care access guidelines.[46][47]

[45] APL Cost and Volume Analysis Sept 2018 – Aug 2019
[46] AHS Rural Service Access Guidelines for Emergency Department & Acute Medical Inpatient Service Planning (2013)
[47] The two consolidation scenarios above are separate from DI consolidations associated with site closures as part of the *Service Configuration Workstream*.

5. Diagnostic imaging at AHS is challenged by aging equipment, 32% of which is past its recommended replacement year. The majority of DI equipment is due for replacement in the next 5-10 years.

   - With no allocated capital funding in 2019/20 and significant expenses related to service/maintenance costs, AHS could consider alternative models such as a Managed Equipment Service (MES) arrangements, which are being adopted in other Canadian hospitals.
   - Managed Equipment Service would provide AHS with timely replacement of the equipment as part a long-term contract (typically 10-15 years). In addition, vendors would provide services related equipment purchasing, installation, maintenance, and staff training.
   - Many vendors have invested heavily in the development of AI technology that improves automation, productivity and standardization within DI. Moreover, vendors are using advanced data analytics to support the interpretation and analysis of images. Leveraging a MES model could provide AHS with expedited access to these types of new innovations.

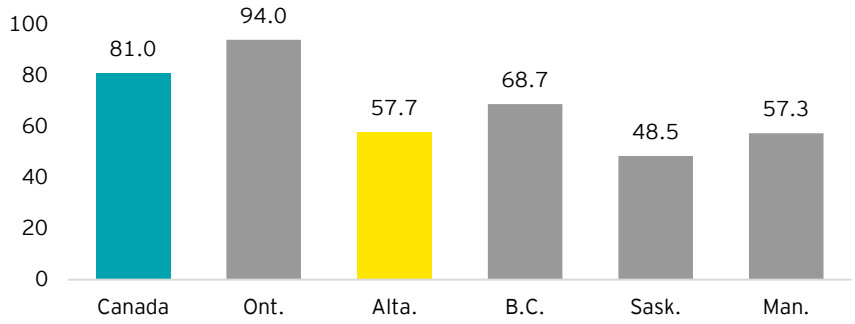
Pharmacy

6. Alberta spends less per-capita on hospital drugs than many other provinces.

   - Alberta has a province-wide formulary, which has allowed AHS to drive down drug costs through controls on what can be prescribed and the use of generic medications
   - As part of the formulary process, AHS reviews new drugs for approval against what is provided on formularies across Canada enabling cost effective, and evidence-based access to medications.

> *"Provincial pharmacy has saved millions by streamlining provincial formulary and drug optimization initiatives."*
>
> *Comment from AHS Employee Survey*

Figure 17. AHS hospital drug spend per capita by province 2017/18[48]



[48] Canadian Institute of Health Information - Canadian MIS Database (CMDB). *Hospital Expenditure by Type of Expense*, 2018

7. AHS has controls in place for the approval and ordering of drugs that are not on the provincial formulary. As evidenced by a relatively small non-formulary spend, AHS performs well in this area

   - AHS' spend on non-formulary drugs in 2018/19 was $2M across the most commonly used drugs. While this is a small spend, it has doubled from the previous year, with AHS actively reviewing these variances to reinforce its controls and processes where necessary.

8. AHS conducts quarterly reviews of its drug spending across the top 25 drugs to address increases in spend as well as to investigate variations across zones. AHS is working to be able to provide provider level feedback by improving its drug database and partnering with the University of Alberta to apply more advanced analytics.

9. AHS has a variable approach to retail pharmacy in its facilities across the province and has not fully leveraged its size and scale to maximize existing retail pharmacy arrangements.

   - There is a mix of outsourced arrangements including leasing and profit-sharing agreements. Pharmacies in rural areas are mostly AHS owned and operated.

10. The Calgary zone has consolidated pharmaceutical services for long-term care with three private providers, saving $670,000 per year. Adopting this model in other parts of the province could allow for similar benefits to be achieved.

11. In Alberta, there is no co-pay for drugs for LTC clients and many non-prescription medications are 100% covered by AHS. AHS can explore alternative options for drug payments that align with similar patient populations within AHS, and provinces such as Ontario[49].

Emergency medical services and air ambulance

12. Four of the province's air ambulance bases are significantly underutilized.

Table 15. Air ambulance base volumes

Community	Air Ambulance Volume	Volume from Base Community	Volume from Other Communities	Percent Pick-up away from Base
1. Lac La Biche	761	74	687	90%
2. Peace River	1439	259	1180	82%
3. Slave Lake	799	152	649	81%
4. Fort Vermilion	537	206	331	62%
5. High Level	583	253	330	57%

   - In these facilities, most transports do not originate in the aircraft's community base location. An assessment of volumes, transport routes, and costs suggests that some of these bases could be consolidated with higher utilized bases. These communities would continue to have air ambulance services to maintain service delivery, with aircrafts relocated to nearby locations.

13. AHS has identified an opportunity to consolidate four contracted EMS dispatch centres into EMS managed communications centers to reduce costs.

[49] Ontario Drug Benefit Program. https://www.ontario.ca/page/get-coverage-prescription-drugs

- The workload currently handled through service agreements with the City of Calgary, City of Lethbridge, City of Red Deer and the Regional Municipality of Wood Buffalo Dispatch Services is duplicative of what AHS' EMS communications centers currently provide and can be consolidated and managed by AHS.

Recommendations

Recommendation 29: AHS should expand and scale clinical appropriateness initiatives to reduce unnecessary tests to improve patient safety, experience and access across Alberta.

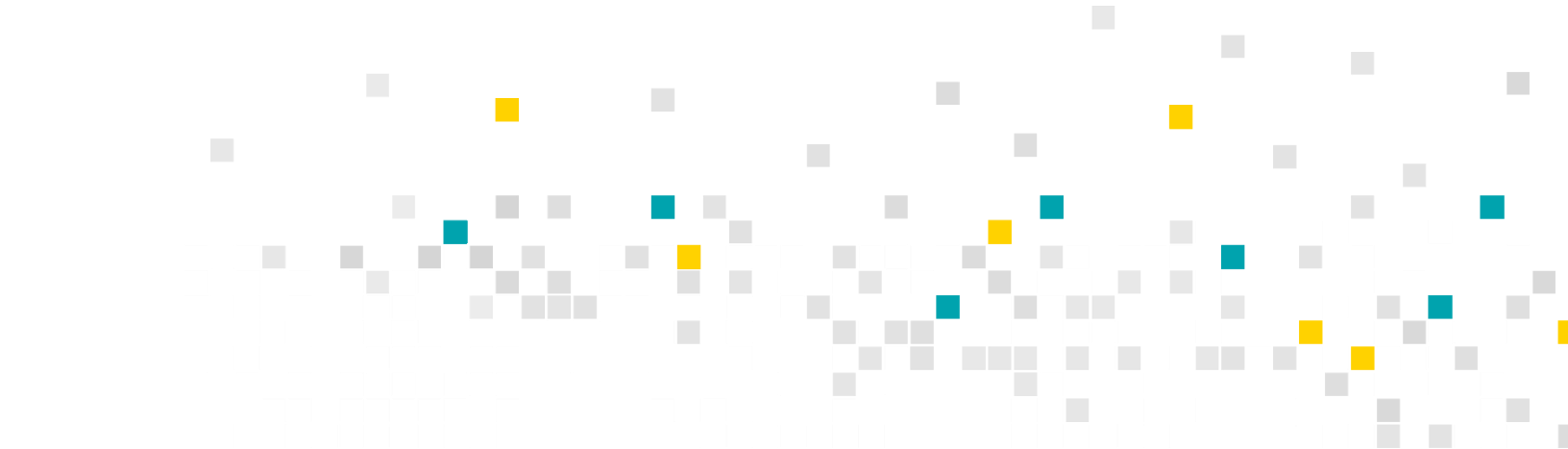
Recommendation 30: AHS should further leverage private contracts for the provision of laboratories services across Alberta. While an initial focus should be on community-based testing, subsequent consideration should be given to expanding to specialty test options.

Recommendation 31: AHS should optimize capacity across DI services by consolidating underutilized radiography facilities and increasing throughput of CT and MRI modalities to help manage wait lists where appropriate.

Recommendation 32: AHS should consider and assess options related to a Managed Equipment Service (MES) approach to major DI equipment to provide more timely equipment replacement and access to innovations that can drive further efficiencies.

Recommendation 33: AHS should review and optimize its commercial business models for pharmacy including retail pharmacy options (e.g. owned, lease, profit share) and LTC delivery models. Consideration should be given to co-pay options and expanding the Calgary private LTC model.

Recommendation 34: AHS should rationalize EMS dispatch and air ambulance operations including the relocation and decommissioning of underutilized airbases and a review of service agreements where services can be more efficiently delivered by AHS.



Opportunities

Table 16. Summary of clinical support services opportunities

#	Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
CSS1	Improve adherence to test appropriateness	Reduce redundant/ unnecessary tests based on clinical appropriateness. Savings identified by AHS clinical appropriateness initiative leaders. Valuation challenged to incorporate province-wide scale or maximum target informed by leading practice, where possible.	$43M-$62M
CSS2	Improve DI utilization	Improve efficiency and productivity across DI modalities, driving higher utilization and potential rationalization. Valuation based on reduction in cost through increased utilization to targets set by either AHS or median performer.	$7M-$15M
CSS3	Closure of underutilized DI sites	Rationalize DI sites where volume is low (<1500 per year) and is close (Within 45 min) to another hospital that offers the same service. Valuation based on removal of DI function for underutilized sites as per the budgeted costs.	$2M
CSS4	Outsourcing lab activities	Maximize current outsourcing model across remaining laboratory services. Valuation based on the cost differential between current insource vs. outsource cost per test (excluding genetics and public Health) multiplied by current in-house AHS volumes.	$102M
CSS5	Managed Equipment Service - private partnership model	Explore a private partnership model for Managed Equipment Service (MES) to improve overall cost effectiveness and maximize additional technology to drive productivity. Valuation based on industry benchmarks with reductions to capital and service costs. This would be applied to all identified DI equipment.	Unvalued
CSS6	Outpatient and private LTC pharmacy business model	Assess options to determine best approach to deliver retail and private LTC pharmacy services. Assess options for clients to pay for non-prescription drugs and co-pay for other drugs.	Unvalued
CSS7	Underutilized air ambulance bases closure	Decommission underutilized air ambulance bases and consolidate aircrafts to existing bases. Valuation based on AHS estimate of decommissioning air ambulance base operational costs.	$2M
CSS8	Consolidate regional dispatch operations into EMS communications centers	Confirm and validate two separate EMS dispatch savings initiatives to terminate City of Calgary, Lethbridge, Red Deer and Wood Buffalo Dispatch Services. Valuation based on AHS estimates.	$5M

Improvement Theme: Non-clinical services

Non-clinical support services

Context

AHS' non-clinical support services are discussed in this section. These refer to services that are essential to enabling the wellbeing of patients when they experience the health system, such as food and protective services. Our analysis first reviews the delivery model of these services (in-house, hybrid or outsourced) then assesses the viability of moving to an alternative service delivery (ASD), or outsourced model based on jurisdictional comparators, EY's experience and market intelligence.

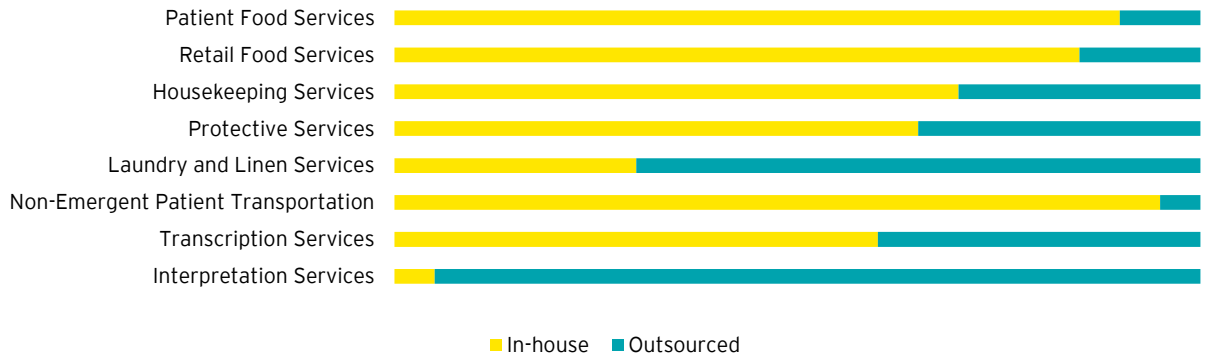
The following non-clinical support services were included in this assessment.

Table 17. Non-clinical support services: breakdown of AHS spend and FTEs

Service	# FTE	Size of Budget
Patient Food Services	1,330	$205,618,488
Retail Food Services	172	$26,301,430
Housekeeping Services	2,355	$198,560,379
Protective Services	418	$71,324,855
Laundry and Linen Services	235	$60,138,385
Interfacility transfers and non-emergent patient transportation (part of EMS operations)	3,600[50]	$506,000,000
Health information management	1,999	$159,994,275
Interpretation and translation services	2.4	$1,561,091
Facilities management and real estate	1,190	$412,086,168

Across various non-clinical support services, AHS uses a mixed model of in-house and outsourced service delivery. This breakdown is described in the figure below.

Figure 18. Summary of in-house versus outsourced model for non-clinical support services



[50] Non-emergent patient transport FTE and budget is integrated within EMS total operations.

Findings

Review of Non-Clinical Support Services

Patient food services

1. AHS' average cost per day for patient food across several sites benchmarks higher than industry comparators with outsourced delivery models. The table below indicates food and total costs per inpatient day. Food costs are only food and raw materials, while total costs are inclusive of food, supplies and labour costs.

Table 18. Cost per day for patient food across 13 sites

Facility Type	Facility Name	Net Food / IP Day	Site Net Costs / IP Day
Acute	Alberta Children's Hospital	$11.91	$41.11
Acute	Chinook Regional Hospital	$13.81	$37.63
Acute	Medicine Hat Regional Hospital	$13.11	$41.44
Acute	Queen Elizabeth II Hospital	$13.23	$36.62
Acute	Red Deer Regional Hospital	$11.54	$39.85
Acute	South Health Campus	$10.42	$34.39
Acute	Sturgeon Community Hospital	$13.37	$39.97
Acute	Peter Lougheed Centre	$10.78	$29.60
Acute	Rockyview General Hospital	$10.46	$27.97
Acute	Royal Alexandra Hospital	$11.30	$36.25
Acute	U of Alberta and Stollery Hospital	$10.61	$31.18
Acute	Foothills Medical Centre	$11.50	$28.36
Mixed	Northern Lights Regional Health Centre	$16.60	$54.17
Outsourced Benchmark 1	*Site in Ontario*	*$7.90*	*$27.80*
Outsourced Benchmark 2	*Site in Ontario*	*$8.33*	*$30.68*
Outsourced Benchmark 3	*Site in British Columbia*	-	*$28.00*

2. Other jurisdictions such as Ontario and British Columbia have outsourced their patient food operations to third party vendors. These organizations have achieved an increase of patient satisfaction by 5-15% while reducing food costs per patient day of 5-20%.

Retail food services

3. Retail food services, largely delivered through in-house delivery models, are not profitable across AHS.

   - Retail food sales generate an operating deficit of $1.3m. The Regional Health Authorities Regulations do not allow ancillary services like retail food sales to be subsidized by operational dollars. AHS therefore relies on vending, leasing and catering revenues to address the shortfall created by retail food sales.

Table 19. Retail food services revenue and expenses (FY 2017/18)

AHS Retail Food Services Revenue and Expenses (FY 2017/18)			
	Expenses ($)	Revenues ($)	Net Income/ (Loss) ($)
Retail Food Services	26,690,801	25,346,882	(1,343,919)

- AHS has identified a hesitancy by the private sector to provide retail food operations in lower volume, non-urban sites. Other jurisdictions have addressed this hesitancy by pushing vendors to bundle these under-serviced locations into large procurements that involve more profitable, urban areas, or inpatient food services.

Housekeeping services

4. The sites in which AHS has outsourced housekeeping services, such as Chinook Regional Hospital, are less expensive and are of same or better quality when compared to AHS sites with in-house delivery models.

    - There is a cost differential of $24.74 per cleanable square metre between AHS' outsourced service provider and the average cost of the 12 largest insourced sites.

Protective services

5. AHS' protective services model, leveraging the unique role of Community Peace Officers, is a higher cost model compared to other jurisdictions.

    - AHS' Protective Services Community Peace Officer Training Program is the first program outside the Government of Alberta to be an accredited program by Justice & Solicitor General.

    - The average cost of a CPO at AHS is approximately $18K higher than a contracted security guard (not inclusive of training).

6. Other jurisdictions such as Ontario, Nova Scotia and British Columbia have a mixed model between in-house and outsourced security and protective services staff where they effectively utilize an 80:20 or 90:10 model of contracted security guards to higher trained or skilled protective service resources.

    - In-house resources used by other jurisdictions include security staff, Commissionaires, Special Constables or a combination of all.

    - AHS is supporting and collaborating with representatives from various BC Health Authorities, Saskatchewan Health Authority, Newfoundland Regional Health Authority and the Nova Scotia Health Authority in work that could lead to a national health care protective services benchmark.

Laundry and linen services

7. AHS has a mixed model for laundry and linen services with approximately 68% of services outsourced across the province. The current outsourced arrangements generate several benefits to AHS.

    - Laundry outside Calgary and Edmonton is provided through six AHS operated regional processing plants and 44 dedicated on-site facilities. AHS incurs all costs associated with these sites, including utilities, maintenance, facility and plant repair, and site-to-site transport. These costs are not incurred when AHS outsources this function.

    - The equipment and plant infrastructure at several AHS-run facilities is nearing or past end of life and would require an investment estimated at over $200M to maintain operations.

8. While the same vendor serves both the Calgary and Edmonton regions, two contracts exist with a difference in unit cost.

    - The difference in unit cost between the Calgary and Edmonton contract is $0.34 per cleanable kilogram.

    - Moving to a fully provincial delivery model for laundry and linen may enable AHS to drive price standardization across the two current contracts, enabling additional savings.

Non-emergent patient transportation

9. Interfacility transfers (IFT) across AHS sites are largely provided by AHS Emergency Medical Services (EMS). This has been a historical trend where patient transfers (medically required or not) have been provided by EMS using a mix of high cost ambulance vehicles with medically trained staff and a much smaller fleet of non-ambulance transport (NAT) units.

   - There is currently one existing contract in Red Deer that provides AHS non-ambulance transport resources to support interfacility transports. This contract supports approximately 1,500 transfers.

   - However, as the volumes below indicate, over 30,000 annual trips could be provided through a dedicated NAT service through an ASD arrangement. Such an agreement has resulted in a significant cost reduction across BC's lower mainland health authorities. This would also result in capital cost avoidance as the burden on the more expensive ambulance fleet is reduced.

Table 20. Resource level required at booking (transport count), January to December 2018

Resource Level Required at booking (Transport Count) From January 2018 to December 2018				
Pick Up Location Municipality	Advanced Life Support (ALS)	Basic Life Support (BLS)	NAT	Total
Calgary	6,627	17,937	12,896	37,460
Edmonton	5,161	16,825	17,253	39,239
Red Deer	1,261	2,659	1,954	5,874
Total	13,049	37,421	32,103	82,573

   - AHS is unable to provide the current cost per trip of IFTs carried out by EMS across the province. It is therefore difficult to understand the cost-differential and magnitude of savings that could be achieved by transitioning to a lower cost provider that fully services all non-ambulance transportation calls in the three cities.

10. Other jurisdictions such as British Columbia and Ontario have outsourced their interfacility patient transports to third party providers to reduce costs and infrastructure requirements.

   - In British Columbia, studies showed that approximately 30% or 130K ambulance events in the Lower Mainland were interfacility transfers, and approximately 75% did not require a paramedic in attendance. The Lower Mainland saved over $50M from 2014 – 2017 using non-emergent patient transport providers.

   - Over a 5-year period, the number of BC interfacility transfers provided by ambulances (as deemed medically necessary) declined from 65% to 29%. 911 response times were improved by allowing emergency medical services groups to devote their limited and costly resources to be a first responder role.

   - Benefits realized by other jurisdictions include avoidance of patients missing or being late for essential treatments or diagnosis, as well as improved patient flow with timely and reliable discharges.

11. AHS EMS services are sometimes not used for intended purposes or in lieu of community transportation.

    - For example, patients needing transfer to long term care homes to and from appointments are going by ambulance when families/friends or community transportation would be more efficient.

Health information management

12. AHS has achieved significant savings through a contracted service provider for transcription services and could realize additional savings through expansion of ASD in this area.

    - Covenant Health and Lamont Health Care Centre operate their own transcription services using AHS' dictation platform and should be included in any consolidation or ASD assessments.

Interpretation and translation services

13. AHS has transitioned a significant amount of face-to-face interpretation services to a contracted over-the-phone provider for a lower cost. Further transition would result in additional savings.

Real estate and facilities management

14. AHS has recently initiated sustainability measures related to their facilities and their operations including exploring the consolidation of leases and a corporate utilities management plan, which have the potential to reduce costs across the organization.

Alternative service delivery (ASD)

15. There are significant opportunities to achieve greater system sustainability through an expansion of ASD at AHS.

    - Alberta can take a "fast follower" approach to other jurisdictions that have achieved significant savings and enhanced services in commonly outsourced areas.

    - The benefits of ASD are not limited to reduced cost and include capital avoidance, technology refresh, modernization, risk transfer and a reduced burden on management and corporate support.

    - Additional efficiencies have been gained through strategic procurement, enhanced vendor performance management, and jointly managed utilization reduction programs.

16. AHS does not have any integrated support models across its current outsourced arrangements.

    - Hospitals in British Columbia and Ontario, for example utilize an integrated support services model where there is end-to-end third-party service provision of services that lower overall administration costs and share common support platforms such as help desk and service management tools.

17. AHS does not have a central structure managing existing ASD relationships or future service delivery partnerships. The management of AHS' current ASD arrangements falls under the same division and executive leader but is part of an extensive operational portfolio that includes provincial laboratories and the province's cancer program.

- The Business Initiatives and Support Services (BISS) office in BC has overseen a portfolio of ASD initiatives that have achieved industry leading results in efficient, high-quality services throughout the province.
- The centre of excellence has established key performance metrics and benchmarks across contracted services, introduced innovative public sector procurement approaches that allow for outcomes-based solutions, and provides independent challenge and deal support from within to ensure that health authorities gets the best contracts possible.

"Current contracts don't support innovation or quality incentives."

"Previously have had poor experiences with outsourcing in terms of quality outcomes."

Comments from AHS Operational Leader Session

Recommendations

Recommendation 35: A dedicated function should be established within AHS to support the qualification, service design, procurement, negotiation and management of alternative service delivery partnerships.

Recommendation 36: AHS should develop an enterprise-wide alternative service delivery strategy, and actively pursue opportunities to reduce costs, and improve services through outsourcing non-clinical support services.

Recommendation 37: As part of, or in parallel to, the ASD strategy AHS should fully assess opportunities to optimize and strengthen existing non-clinical support services.

Opportunities

Table 21. Summary of non-clinical support services opportunities

#	Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
NCSS1	Inpatient food services outsourcing	Outsourcing patient food services operations to third-party. Valuation based on market intelligence and jurisdictional comparators. Investment will be required.	$100M-$146M
NCSS2	Housekeeping services outsourcing	Outsourcing housekeeping services operations to third-party. Valuation based on market intelligence and jurisdictional comparators. Investment will be required.	
NCSS3	Protective services outsourcing and resource rationalization	Transition protective services model to an 80% contracted and 20% in-house model (using CPOs). Valuation determined by scaling in-house and contracted provider costs to 80:20 model (low range) and 90:10 model (high range).	
NCSS4	Transcription services outsourcing	Transition remaining in-house minutes to existing contracted service. Valuation based on calculating difference of in-house transcription minutes to contracted provider rate.	
NCSS5	Laundry and linen services outsourcing	Transition remaining laundry and linen services to existing contracted provider. Valuation based on AHS estimate and market intelligence. Investment will be required.	
NCSS6	Interpretation services outsourcing	Transition remining face-to-face interpretation services to contracted telephone provider. Valuation based on calculating difference between face-to-face operational cost to telephone provider rate.	
NCSS7	Non-emergent patient transportation outsourcing	Transition interfacility transfers and non-emergent patient transportation to contracted provider.	
NCSS8	Implement comprehensive retail strategy	Outsource retail operations to third party vendor to assume all retail operational costs. Revenue from lease and profit share model to AHS.	
NCSS9	Implement AHS-wide sustainability management program	Program to reduce utility and energy costs in electricity, natural gas and water, based on external plan. Valuation based on AHS estimates received. Investment will be required.	$25-$28M

Corporate and back office services

Context

The corporate and back-office workstream is comprised of corporate programs, tactical measures and automation. Corporate programs include human resources, finance, information technology, and other support functions, which are delivered across each zone but report through a central provincial structure. Tactical measures refer to a broad category of activities that AHS can take in the short term to reduce costs and increase revenue in non-patient facing or discretionary categories. During the review we also assessed the extent to which key back-office processes could be automated, through workshops with AHS operational staff.

Findings

Corporate support programs

Finance

1. AHS' finance function benchmarks favourably, with a lower cost proportional to the overall operating budget, compared to peer organizations.

2. The total cost to perform the finance function per finance function FTE is higher than comparative organizations. This suggests that there could be internal opportunities to streamline services within the function. For example, AHS' accounts receivable function utilizes more than 12 Accounts Receivable (AR) systems.

Information technology

3. AHS' centralized IT function performs better than benchmark medians, and in some cases better than 25th percentile, which should be expected in a large consolidated organization that benefits from economies of scale and integrated services.

    - Rationalizing IT applications could drive further improvements in performance. AHS has more than 1000 applications, which could be reviewed for potential rationalization based on business requirements and cost reduction.

    - AHS has also identified 28 groups (167 FTEs) of "shadow IT" that sit outside of the centralized IT function.

4. AHS has a predominantly in-house model for IT services and infrastructure such as data centers, networks, mobility services, and desk side support

Human resources

5. Like finance and IT, AHS' consolidated human resources function performs well against benchmarks, considering the number of HR FTE and the scope of the organization they support.

    - Some HR portfolios could potentially be consolidated based on service scope to improve organizational productivity and achieve some cost efficiency. Examples include consolidating Abilities Management with Workplace Health and Safety, and consolidating Workforce Strategies, Talent Management and Employee Relations into a combined portfolio.

Legal and privacy

6. With an annual budget of $13 million, 38 lawyers and 15 paralegals, AHS' legal services operation is significantly larger than similar support functions in peer organizations and offers specialized legal services that are not provided by other health provider organizations.

    - Given the relative size differential between AHS and peer organizations, and AHS' predominantly in-house staffing model, it is difficult to assess whether the cost of these services is disproportionately high without deeper analysis. AHS does have unique services related to system responsibilities not common amongst its peers that must also be considered in any assessment.

    - The staffing model should be reviewed and adjusted if necessary.

Learning and education

7. Learning and education at AHS benchmarks higher than peer organizations, considering the costs of this function relative to the size of the overall operating budget.

    - AHS spends more than $170 million and has more than 1,000 FTEs dedicated to learning and education across multiple parts of the organization. Of those employees, approximately 650 are clinical nurse educators, with the remaining responsible for a variety of knowledge management activities.

    - AHS also has 10 learning-related IT systems, providing duplicative functionality. For example, there are multiple licenses for different versions of Adobe Connect (an e-learning program) held by teams across AHS. This lack of coordination has resulted in a variety of similar software products in use, different versions of the same software, and in some cases, different pricing from the same vendor.

Analytics

8. AHS has 80 analytics functions embedded within provincial programs and sites, in addition to a centrally delivered analytics program.

    - AHS estimates approximately 300-350 data analyst roles operate independently of the centralized analytics function, in areas such as mental health and cancer, whereas other programs make greater use of the centralized function.

Other

9. AHS' wholly-owned subsidiary Alberta Precision Laboratories (APL) has a number of corporate back-office functions, as well as management that have not been reviewed or consolidated during the integration of APL into AHS. In total, there are approximately 88 FTE that fall into this category.

    - These back-office functions and management positions should be reviewed and right-sized to reflect service levels provided to other clinical support programs, such as Diagnostic Imaging and Pharmacy.

Tactical measures

Revenue generation

10. Alberta captures less potential revenue for private and semi-private rooms in acute-care hospitals than other provinces.

    - AHS is only capturing 2.3% of potential preferred accommodation revenue, whereas in Ontario we have observed large academic hospitals achieve a capture rate of more than 25% with similar clinical and operational structures as AHS.

11. The rates that Alberta charges for private and semi-private rooms in acute-care hospitals are on par with the Canadian average. However, there are several other Canadian health care providers that charge significantly higher rates in comparison to AHS.

Table 22. Comparison of preferred accommodation rates

Hospital / Health Authority	Province	Semi-Private Accommodation Rate	Private Accommodation Rate
AHS	Alberta	$150	$187
Vancouver General Hospital	British Columbia	$165	$195
Eagle Ridge and Peace Arch Hospitals	British Columbia	$165	$195
Grand River Hospital	Ontario	$247	$290
Strathroy Middlesex General Hospital	Ontario	$210	$250
North Bay Regional Health Centre	Ontario	$220	$245
Joseph Brant Memorial Hospital	Ontario	$250	$290
Mount Sinai Hospital	Ontario	$310	$410
Cape Breton Healthcare Complex	Nova Scotia	$160	$180
South Shore Health	Nova Scotia	$160	$180

12. Alberta's legislated co-pay rates for long term care (LTC), designated supportive living (DSL) and alternate level of care (ALC) beds are lower than those in Ontario.

- Updating the legislation to bring long-term care rates in-line with other provinces could offset the costs of providing these beds.

> *"I feel that there should be a system in place when a patient is placed in an AHS Continuing Care Facility to have payments set up and ready to go. Currently we have upwards of 20 residents who do not pay their AHS monthly rent, so AHS is losing $30,000 every month ($360 000 per year). This money doesn't seem to be recouped with accounts going to collections either."*
>
> *Comment from AHS Employee Survey*

Table 23. Monthly accommodation LTC and DSL rates, 2018

Monthly Accommodation LTC and DSL rates for 2019[51]			
Province	Standard Room	Semi-Private Room	Private Room
Alberta	$1,705	$1,795	$2,074
Ontario	$1,891	$2,150	$2,474
Quebec	$1,189	$1,596	$1,910
BC	$3,377		
Saskatchewan	$2,829		

- AHS also has an Alternate Level of Care (ALC) accommodation charge for patients occupying hospital beds while awaiting admission into an LTC/DSL facility. As with most provinces, the Alberta's ALC rate is equivalent to its LTC. If Alberta increased its LTC rate, its ALC revenue would increase correspondingly.

13. AHS has optimized its collection of parking revenue, with over $40m collected annually and rates that are set in a 5-year strategy in alignment with market comparators.

14. The fees that AHS collects through enforcement of the Public Health Act offset only a small proportion of the cost of performing enforcement activities.

- AHS spends approximately $39.58 million per year on its Safe, Healthy Environments program, which is responsible for monitoring and enforcing *Public Health Act* and supporting regulations in a variety of settings, including restaurants, rental accommodations, pools, etc.

- The Public Health Act and supporting regulations could be modernized. Consideration should be given to allowing for alternative enforcement techniques such as those used in other provinces. Furthermore, the amount of the fines prescribed for violating the Act and supporting regulations should be increased to bring the Act in line with other similar legislative schemes, and to ensure an appropriate deterrent.

[51] Alberta Health, Continuing Care Accommodation Rate, 2019.

Discretionary spending

15. AHS has put in place effective policies and processes to reduce or control discretionary spending in several areas, including staff travel, minor equipment purchasing, telecommunications, mailroom and the central management of technology subscriptions.

16. AHS can further implement discretionary spending controls, including through the use of a bring-your-own-device policy, leveraging a provincial courier contract and actively managing the 'spike' of discretionary spending we have observed at AHS towards the end of the fiscal year.

Strengthening the budgeting process

17. AHS' current practices for budget management and accountability impact the ability to identify and address cost pressures, to understand root causes of budget variances and to drive enhanced capture of revenue.

    - Budgets are typically rolled over from prior year with select adjustments made for strategic investments and corporate saving initiatives (such as OBP targets).

    - Currently, AHS is running an overall budgetary deficit with a large negative "savings target" being held corporately to balance out the deficit. This negative variance is addressed through in-year underspends. Strengthening budgetary process and aligning budgets according to actual spending will allow AHS to more effectively identify and address cost pressures.

    - AHS' Business Advisory Services team works closely with budget owners to identify and document explanations of budget variances for financial reporting. However, these explanations are often a blend of approved/justified and unjustified and are not always translated into a clear mitigation strategy with a documented action plan.

Automation

18. Through joint workshops with AHS, 47 manual processes across HR, Finance and Supply Chain, accounting for 172 FTE, were identified as candidates for potential automation. These include the staff onboarding process, balance sheet reconciliation and data management processes.

    - To the extent that AHS has explored automation, it has been done through local initiatives. Healthcare organizations across Canada are moving towards a centre of excellence model for identifying, implementing and sustaining automation opportunities across the organization, which allows them to maximize benefits and target organization-wide processes.

Recommendations

Recommendation 38: AHS should explore opportunities to optimize corporate programs to achieve or exceed performance levels of comparative organizations.

Recommendation 39: AHS should develop a corporate automation program and pursue automation opportunities across HR, Finance, CPSM, IT, and others.

Recommendation 40: AHS should aggressively pursue revenue generation initiatives in non-clinical, auxiliary categories, in alignment with peer organizations.

Recommendation 41: AHS should look to refine its overall budgetary process to ensure departmental budgets are aligned with the actual operating model of each department, along with instituting an immediate review of discretionary spending controls to drive immediate savings.

Opportunities

Table 24. Summary of corporate and back office services opportunities

#	Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
CBO1	AHS-wide budget review	Review and challenge spending patterns against budgets to identify tactical opportunities and true cost pressures. Savings based on 0.5% of total operating budget based on EY experience conducting these reviews.	$70M
CBO2	Preferred accommodation rate and capture increase	Increasing preferred accommodation rates based on jurisdictional comparators and increasing capture. Valuation based on increasing private and semi-private accommodation rates to provincial comparators, increasing capture rate to 10-20%, and removing 60% legislative requirement for standard accommodation.	$40M-$83M
CBO3	Robotic process automation - back office services	Automation of repetitive, high transactional processes in HR, Finance, CPSM, and IT. Valuation based on reducing FTEs currently associated with executing the processes that were identified for potential automation.	$16M
CBO4	LTC/DSL accommodation fee Increase	Alberta's LTC/DSL accommodations fee is lower than other provinces. Opportunity to increase fees to align with what Ontario is charging and reduce the LTC/DSL funding by the same amount. Valuation based on revenue increase associated with aligning with Ontario's rate based on the current occupancy rate with the assumption that 42% of the clients will require income support.	$57M
CBO5	Stop / limit discretionary spending	Strengthen controls and reduce discretionary spend across AHS.	
CBO6	Reduce redundancies between AHS and APL	Reduce duplicative management and corporate functions between AHS and APL. Savings amount determined by calculating total cost of APL corporate support and management functions.	$3M-$8M
CBO7	Application rationalization	Over thousand applications currently housed within AHS - opportunity to rationalize based on total users and active licensing agreements.	
CBO8	Data centres/hosting, help desks, networks outsourcing	Consider outsourcing for data centres / hosting, service help desks, and networks based on similar models in other jurisdictions.	

Supply chain

This section focuses on findings, recommendations and opportunities related to supply chain operations at AHS. The AHS supply chain, managed by the Contracting, Procurement and Supply Management (CPSM) program, refers to the way that products and services are procured, managed and distributed to clinical and non-clinical customers across AHS.

Context

CPSM employs approximately 1,000 FTEs distributed across the province. In 2018/19, CPSM procured more than $5.9B in products and services across AHS, its wholly-owned subsidiaries and Covenant Health. CPSM also manages a significant physical distribution network with two large distribution centres (DCs) in Edmonton (EDC) and Calgary (CDC) and eight smaller regional warehouses.

Findings

Strategic sourcing

1. CPSM has many suppliers in several product and service sourcing categories. The sourcing categories that account for a large proportion of provincial spend include on average, 15 suppliers. A larger number of suppliers can drive increased workload and impact the ability to get the best pricing.

Table 25. Number of vendors by sourcing category

Sourcing Categories	Annualized Spend	Annualized Addressable Spend	# of Suppliers making up 80% of Total Category Spend
LAB.REAGENTS	$ 72,804,967	$ 43,359,301	26
LAB.SUPPLIES	$ 41,231,900	$ 41,231,900	20
MED SURG.MEDICAL FACILITY	$ 38,287,128	$ 38,287,128	21
LAB.EQUIPMENT & INSTRUMENTS	$ 21,102,576	$ 21,102,576	17
MED SURG.CARDIOLOGY	$ 68,053,048	$ 21,005,409	11
MED SURG.CARE & TREATMENT	$ 23,156,912	$ 19,457,900	16
DIAGNOSTIC IMAGING	$ 48,625,439	$ 19,450,176	11
MED SURG.SURGICAL	$ 31,120,609	$ 15,000,000	23
EQUIPMENT MAINTENANCE.NON-BIOMEDICAL	$ 12,741,586	$ 12,741,586	36
MED SURG.SURGICAL EQUIPMENT	$ 11,493,493	$ 11,493,493	8
MED SURG.EXAM & MONITORING	$ 10,612,535	$ 10,612,535	18

- Note: the large number of contracts identified across lab sourcing categories are based on the recent transition of these contracts from Calgary Laboratory Services to CPSM. CPSM has begun the work to consolidate these contracts.

2. Based on a comparison of similar items purchased by AHS and a group of shared service organizations (SSOs), we identified 1,381 items where AHS pays more than the SSOs. For these items, the price differential averaged 16%.

   Note: This analysis also identified approximately 845 items that AHS pays less than the price benchmark, suggesting that in many cases, AHS is performing better than its peers.

   - With appropriate approvals and sharing agreements with other SSOs, CPSM could leverage this information to enhance sourcing event negotiations. Understanding what other similar jurisdictions are paying for the same items will enable CPSM to negotiate from a more informed position, potentially resulting in cost savings from reduced prices. Additionally, CPSM could partner with these other jurisdictions (provincially or nationally) to aggregate their volumes and drive further unit price savings.

Non-contract spend

3. Of the $5.9B of spend CPSM manages, approximately $422m is not on a contract. Of this non-contract spend, $156m is not associated with a purchase order.

   - Spend that is not on contract can result in:

     - Increased cost due to higher item/service pricing;

     - Increased and/or duplication of effort from having to negotiate with suppliers on an individual or ad hoc basis; and

     - Potential risk from non-standard or unfavourable terms and conditions.

   - Additionally, non-PO spend suffers from a lack of detailed purchasing information, which hampers detailed analysis and thus efforts to identify, audit, and remedy non-compliant activity as well as limiting the ability to look for cost reduction opportunities.

   - Adjusted for non-addressable spend, AHS' total off-contract spend is estimated at $230-$422M. This represents 3.8%-7.1% of AHS' total purchasing spending, which exceeds industry peer performance.

   - CPSM has many agreements with numerous major suppliers. Our analysis identified 55 suppliers with six or more contracts each. Together, these 55 suppliers represent $981M (or 17%) of the total annual spend across 1,994 contracts. $345M of this spend is considered addressable and excluded from opportunity calculations.

- AHS can achieve cost savings by better leveraging its bargaining position with selected suppliers by reducing the number of contracts and negotiating optimized terms and conditions, total supplier spend and earned volume rebates (EVRs), and pricing using an MSA framework.

Inventory management

4. The current process for determining the minimum and maximum quantities of stock to be held within distribution centres is based on historical use and order patterns. While this process is generally effective at the organization level, it does not provide forward-looking or predictive forecasting.

    - Other organizations have begun to leverage more predictive tools such as machine learning to enable better forecasting of supplies required. These technologies leverage historical usage data, but also enable inventory levels to be set based on surgical schedules, shortages vendors have reported on social media, or even the weather.

5. Reducing slow moving and obsolete inventory (SLOB) avoids incurring holding costs for items that will effectively never be used. These items can be transferred to other locations where they are still in demand, sold off to generate revenue, or transferred back to suppliers for credit.

    - CPSM has at least $4.7M of slow moving and obsolete inventory:
        - $1.2M is slow moving with over 360 days of inventory
        - $3.5M is obsolete and has not had demand in the last 720 days (2 years)

Warehousing and logistics

6. CPSM has made several positive physical distribution network and personnel changes in the past years but their network is not yet optimized.

    - Satellite sites are used to serve one or more health service providers in the geographical region of the site. Each site has its own inventory, transportation (if applicable), and staff. Some of these smaller satellite DCs are integrated directly into existing hospitals.

    - CPSM management has been working to improve the productivity at the Calgary DC, as it is not as efficient as the distribution centre in Edmonton. Implementing best practices from Edmonton will optimize and reduce inventory levels. Doing so will also improve working capital and reduce stockouts, will also result in improved productivity and free up new capacity. EDC has doubled its picking productivity in the past two years.

    - There is also an opportunity standardize products to a greater degree across CPSM's distribution centres as currently there is only a 60% match between the Calgary and Edmonton sites.

Supply chain activities outside of CPSM

7. Procurement of capital equipment is currently being done in a disparate and uncoordinated manner by both the equipment planning group as well as 23 other decentralized groups outside of direct control by CPSM.

    - The capital equipment procurement process allows clinical programs and zone operations leaders to create their own equipment priorities independently of each other. This results in an allocation of provincial capital equipment spending that is not always reflective of the true needs.

    - There is no single asset inventory for the province and no AHS policy for life cycle management.

        - There is no single provincial inventory of capital equipment assets resulting in situations where inventory on books is far less than actual inventory value.

        - Individual departments (e.g. Biomedical Engineering, Diagnostic Imaging, Labs, etc.) hold their own lists of the equipment they maintain and service while outsourced equipment servicing is not well-tracked.

        - Teams sometimes rely on vendors to provide information on the quantity and location of equipment purchased by AHS to plan equipment maintenance and upgrade cycles.

8. Construction contracting is currently not subject to the same governance, policies and controls as products and services purchasing through CPSM, leading to the potential for both procurement and execution costs to be higher than necessary, with lower quality than could be achieved via the application of the governance, policies, and processes used within CPSM.

9. There are staff with supply chain titles that do not report to CPSM.

    - 52.0 FTE (24.0 FTE Supply Coordinators and 28.0 FTE Stores personnel) work outside of CPSM and in AHS facilities. These staff do not follow processes and policies established by CPSM in key areas such as how goods are sourced, how vendors are engaged or how inventory is managed. While the number of these staff is relatively small, the decisions made by such staff could have significant financial implications and contribute to variable clinical practice.

Recommendations

Recommendation 42: AHS should improve strategic sourcing to realize cost savings, including reducing the number of suppliers per category and converting purchases currently not made on contract to contract.

Recommendation 43: AHS should continue to drive improvements to the provincial planning and materials management functions and should integrate supply chain functions across AHS that are not currently within CPSM.

Recommendation 44: AHS should consider integrating the contracting and management of capital equipment and capital construction into the CPSM function.

Opportunities

Table 26. Summary of supply chain opportunities

#	Opportunity Name	Opportunity Description & Valuation Approach	Gross Valuation
SuC1	Reduce supplier fragmentation in selected procurement categories	Reduce the number of suppliers per category where appropriate, increasing purchase volumes per supplier to drive reductions in unit pricing and improvements in terms and conditions. Valuation based on reduction of the number of suppliers per category, resulting in a cost savings of 3-6% on total spend (per selected category).	$9M-$18M
SuC2	Benchmark item purchase prices against other jurisdictions, identifying opportunities for joint cost savings	Utilize price benchmarking against other jurisdictions to ensure that CPSM achieves the supplier "best price" that leverages AHS' buying power. Valuation based on a comparison between AHS and Canadian health care item price database. Savings were calculated for matched items only.	$4M-$8M
SuC3	Migrate non-contract spend to contract. Capture additional transaction data for non-Purchase Order purchases	Convert purchases currently not made on contract to contract which will result in lower prices and better terms and conditions. Ensure that more detailed information is available for purchase transactions (especially non-PO). Valuation based on a 5-10% reduction in pricing for items that were previously not on contract being migrated to contract.	$9M-$34M
SuC4	Consolidate agreements with selected major suppliers	Sign Master Services Agreements (MSAs) with larger, strategic suppliers, to strengthen supplier relationships, take advantage of Earned Volume Rebates and secure mutual benefits. Valuation based on a 0.5-1.0% reduction in total spend for top selected suppliers with more than 5 contracts.	$3M-$7M
SuC5	Build a more proactive demand planning/forecasting process	Implement a predictive demand planning process (leveraging machine learning) to improve inventory performance, reduce inventory costs and improve service while supporting ongoing growth. Valuation based on inventory holding cost savings resulting from a 10-20% reduction in CPSM and in-hospital supplies inventory.	$1M
SuC6	Reduce slow moving and/or obsolete inventory	Address slow moving and/or obsolete inventory to free up space and recover resources. Valuation based on a 25% cost recovery for obsolete items at the CPSM DCs.	$0.2M
SuC7	Optimize CPSM's physical distribution network, improve Calgary DC and optimize distribution channels	Continue to optimize CPSM physical distribution network through warehouse consolidation, distribution channel adjustments, and further performance improvement initiatives. Valuation based on a 20% operating cost savings from consolidated sites and 15-20% savings from continuous improvement initiatives at CDC.	$2M
SuC8	Integrate non-CPSM in-hospital supply chain team into CPSM	Non-CPSM in-hospital supply chain functions can be done by more consistently and efficiently if integrated into CPSM. Valuation based on operating cost savings from identified in-hospital supply chain personnel.	$0.5M

SuC9	Integrate and improve the capital equipment procurement process into CPSM	CPSM should be charged with managing and coordinating capital equipment purchasing in a single consistent process, province-wide, to fully benefit from larger, bulk capital buys and timelier replacement of equipment at the end of its economic life. Valuation based on a 5-10% savings on identified capital spend.	$8M-$16M
SuC10	Improve construction contracting procurement, management and control	Leverage CPSM's governance, policies, processes, and templates for construction contracting. Valuation based on a 7.5-10% savings on identified construction contracting spend.	$8M-$15M

Improvement Theme: Governance

Functional duplication and accountability

Context

In many ways, Alberta's care delivery model is ahead of its provincial peers – Alberta has done significant and challenging work to build a consolidated health care system with a single major provider of acute care services. Across Canada, jurisdictions are struggling to manage fragmented systems that are making increasingly expensive and duplicative investments in new technologies, clinical protocols, facilities, and equipment. As care becomes more complex and dependent on technology, this fragmentation is accelerating, leading health systems across Canada to move towards consolidation in response. For example:

- Saskatchewan and Nova Scotia have followed Alberta in the creation of single health authorities.
- British Columbia is centralizing major pillars of service delivery, including IT and digital health, laboratory services, and diagnostic imaging into its Provincial Health Services Authority (PHSA).
- Manitoba has created a new provincial organization, Shared Health, to serve a similar purpose as PHSA in BC.
- Ontario has recently introduced Ontario Health Teams and has created a "super agency", Ontario Health, to begin coordinating the activities of the more than 150 independent hospitals and hospital networks in the province.

AHS has a $15.4 billion annual budget and more than 102,000 employees. AHS' massive size relative to Alberta Health creates the opportunity for a power imbalance between the two organizations. The structure of Alberta's system also impacts Alberta Health, as it does not need to play the role of broker, funder, and coordinator across multiple regional organizations. To address the potential imbalance and the unique relationship, the roles and expectations of Alberta Health, AHS, and other players in our complex system need to be clearly defined.

In a system such as Alberta's, the role of Alberta Health should generally be focused on three high-level functions:

- **Mandate:** Articulating a clear strategic vision for the system, developing enabling policies, and defining expected outcomes.
- **Funding:** Allocating the provincial health budget in such a way that it effectively and efficiently enables the achievement of outcomes.
- **Governance:** Commissioning the achievement of desired policy and outcomes to the most appropriate service provider, defining expected service levels, and managing delivery against clearly understood performance expectations.

Conversely, the role of service providers is to operationalize the achievement of Alberta Health's strategy and policy. They do this through:

- **Accountability:** Developing an operational plan to achieve Alberta Health's expected outcomes and providing Alberta Health with the data and analysis necessary to measure progress.
- **Service delivery:** Executing on the operational plan and providing services to Albertans.

The accountability interface that connects Alberta Health's governance responsibilities with AHS' service delivery responsibilities is critical to this model succeeding.

With the current fiscal situation and the significant transformation that is planned for the health system, Alberta Health's need to have a highly effective relationship with AHS and other service providers will only become more important. The remainder of this section:

1. Provides findings related to the effectiveness of the accountability interfaces in Alberta's health system, as well as a number of specific areas of functional duplication identified throughout the review; and
2. Provides recommendations for strengthening the interfaces and resolving some areas of duplication.

Findings

Accountability interface

1. Alberta's governance model has not fully evolved to align to a single provider/administrator model.

    - Within Alberta Health, policy portfolios are not always clearly aligned with significant areas of AHS operations. While efforts have been made to more clearly define the roles and responsibilities between the two organizations, they have not resulted in lasting clarity or consistent understanding, particularly as it relates to operational oversight and policy development.

    - Alberta Health and AHS do not consistently work in partnership to develop and operationalize provincial policies through a formalized approach. In a single-provider system where the government does not need to coordinate across multiple health authorities or hospitals, Alberta Health should be focused on system-wide strategy and priority setting.

2. In FY 18/19, Alberta Health provided AHS with a $13.9 billion financial transfer, most of which it expects AHS to manage within a small number of high-level funding envelopes. This system appears to strike a reasonable balance between providing operational flexibility to AHS while enabling accountability.

3. AHS receives an annual accountability letter outlining Alberta Health's expectations for the year, however there is an opportunity for increased coordination and collaboration in the development of the annual plan and ongoing performance management approach.

   - Stakeholders from both Alberta Health and AHS suggested that the letters reflect specific priorities and requirements, rather than an integrated provincial health system strategy.

   - Given the significant challenges ahead for AHS and the health system, it will be critical for an effective and streamlined approach to be in place to enable joint planning between Alberta Health and AHS.

4. Achieving the government mandate of increased use of non-hospital surgical facilities will require enhanced and sophisticated health care services planning and contracting capabilities.

   - To effectively qualify, contract, and manage private providers, the province will need to develop capabilities in service planning, strategic procurement, financial and commercial management, and contract performance management. These are skillsets that are not always consistently available in the public or health sectors, necessitating the building of capability and capacity.

5. The agreement and relationship between AHS and Covenant Health does not allow AHS to exercise effective oversight over Covenant Health as a part of an integrated health system.

   - The relationship between the two organizations is governed by a Cooperation and Services Agreement. The Agreement makes Covenant Health accountable to AHS for the provision of services, but also asserts the independence of Covenant Health. The agreement necessitates negotiation for changes in contracted services, restricting AHS' ability to manage the province as an integrated system.

   - This issue becomes particularly challenging in relation to matters such as integrated system planning that involve Covenant Health facilities. For example, AHS has identified an opportunity to achieve ICU operational efficiencies in the Edmonton zone, but is challenged with implementing it as it would impact ICU facilities at Covenant-run hospitals.

6. Alberta's consolidated system has enabled it to reduce the duplication seen in other jurisdictions; however, some specific areas have been identified.

   - Relative to other provincial systems, Alberta does not have significant functional duplication, however several specific areas were identified throughout the review and are considered later in this section.

7. Having achieved an impressive level of consolidation, zone-based siloes are beginning to re-emerge.

   - While AHS is a consolidated organization, there continue to be variations in practices, policies, and service delivery across the zones. This was a consistent theme throughout our stakeholder consultations.

Areas of identified duplication

Throughout our report, specific areas of potential duplication between Alberta Health and AHS were identified to us for consideration. Based on a rapid assessment of the potential impact and materiality of those areas, we considered the following areas:

- Analytics
- Public Health
- Primary Care
- Strategic Clinical Networks
- Infrastructure
- Information Technology

Analytics

1. It is reasonable for both organizations to have dedicated analytics functions to support their mandates.

    - AHS leverages analytics for supporting operations and internal planning, including clinical decision support, clinical performance management, capacity management, operational performance management, and human resource management. Alberta Health requires analytics to support health system planning, health system performance management, resource allocation, health economics, population health analytics.

2. Both Alberta Health and AHS have mature analytics functions that work collaboratively together.

    - The leaders of the Alberta Health and AHS analytics functions are working to develop and implement a modern, federated provincial health data system and framework that would enable effective sharing and use of data across both organizations, as well as with researchers and other third parties, as appropriate.

Public Health

3. Public health was identified as an area of potential duplication, in part due to the presence of provincial public health medical officers in both Alberta Health and AHS.

    - The Alberta model is comparable to public health systems in other Canadian Jurisdictions, as there is necessity to separate the development of provincial public health policy from the operationalization of that policy.

Primary Care

4. Alberta has invested heavily in the creation of a system of Primary Care Networks (PCNs), intended to improve access and quality of care, and to facilitate more coordinated transitions along the continuum of care.

    - Alberta Health provides approximately $238 million in funding to PCNs annually, exclusive of associated physician billing.

    - Each PCN is governed jointly between the physician leadership of the PCN and AHS. AHS has 88 staff supporting primary care-related planning, strategy, and coordination, with a large focus on providing support to the PCNs.

5. In response to a 2015 review of the PCN program by Alberta Health, the province has put in place a new provincial governance model. This governance model articulates a reasonable delineation of roles and responsibilities between Alberta Health and AHS.

    - If implemented properly, this new model should help to address concerns that AHS is developing primary care policy that is more appropriately within the scope of Alberta Health.

6. While AHS plays an important role in managing the PCNs, focused on the integration and delivery of care across community and the acute care sectors, ultimate responsibility for the primary care system falls with Alberta Health. Alberta Health's primary role in funding PCNs and physicians, as well as developing system policy, desired outcomes and broader provincial strategies is important and appropriate.

    - AHS has a significant number of resources dedicated to primary care strategy and coordination. AHS and AH will need to ensure that those resources are working in alignment with AHS' areas of primary care responsibility. In cases where they may not be, their activities should support AH in developing broader primary care policy and strategy.

Strategic Clinical Networks

7. AHS has 16 Strategic Clinical Networks, each with a specific area of clinical focus:
   - Addiction and mental health
   - Bone and joint health
   - Cancer
   - Cardiovascular health and stroke
   - Diabetes, obesity, and nutrition
   - Seniors health
   - Critical care
   - Emergency
   - Surgery
   - Respiratory health
   - Maternal, newborn, child, and youth
   - Digestive health
   - Kidney health
   - Population, public, and Indigenous health
   - Primary health care integration
   - Neurosciences, rehabilitation, and vision

8. Since 2012, AHS has spent $116.26 million on strategic clinical network operations. The strategic clinical networks have spent a further $124 million of grant funding on specific projects, $65.8 million of which has come from outside of Alberta.

9. AHS senior leadership is strongly committed to the strategic clinical network model and highlight the significant value they have brought to the health system. Examples include:

   - Reducing the time between suspicious breast imaging and surgical consult by 60%.

   - Reducing the 'door to needle' time for stroke victims from 70 to 39 minutes in Edmonton and Calgary.

   - Reduced bed-days for diabetes-related foot amputations by half and implemented new pathways with limb-preserving approaches.

   - Based on evidence, discontinued fetal fibronectin testing for preterm labour. AHS estimates this has saved $5 million per year.

10. While the strategic clinical networks have demonstrated valuable outputs, they represent a complex and costly model to do so, which may warrant reconsideration given the sector's fiscal challenges.

    - Each strategic clinical network has a medical leader and an operational director, along with supporting staff and overhead costs.

    - Having 16 subject-matter specific networks may result in sub-optimal use of funding:

        - Each strategic clinical network will be actively looking to conduct research within their specific domain, regardless of if that domain is a provincial priority.

        - There is no flexible structure for conducting similar activities in other priority areas, short of creating a new strategic clinical network.

11. Strategic clinical networks have wide latitude to determine their own priorities, and do not generally align to provincial priorities set by Alberta Health.

    - The process for setting SCN priorities is largely bottom up, with SCNs generating ideas and then bringing them to AHS leadership for approval. A more top-down priority setting process could allow for closer alignment of SCN activity to Alberta Health and AHS' priorities.

    - Alberta Health would likely benefit from the significant expertise of strategic clinical networks in the development of provincial health strategy and policy.

Information Technology

12. AHS and Alberta Health both have extensive IT responsibilities, however system governance, planning, and delivery is not always optimally coordinated.

    - Alberta Health mandates and funds AHS to develop and implement some of the largest IT systems in the country. These complex, multi-year implementations have high delivery and cost risk associated with them. While AHS is often best suited to deliver them, it is essential that Alberta Health have the ability to provide prudent oversight on behalf of the Government of Alberta.

    - Along with AHS, they have established gated grant processes for large projects, which require fulfillment of project deliverables to unlock further funding. While this approach is effective for large projects, Alberta Health has less visibility into how grant funds are used in other projects.

    - Alberta Health plays a system coordination role to ensure that there is an integrated technology strategy that connects all parts of the health care system and manages competing priorities and funding needs.

Infrastructure

13. For capital investments over $5 million, Alberta Infrastructure takes the lead role on project management and delivery, working with Alberta Health and AHS.

    - This model can create some additional complexity; however, it enables Alberta Health and AHS to draw on existing government major capital project expertise, rather than maintaining that expertise in-house or building it up each time a new capital project is initiated.

Recommendations

Recommendation 45: Strengthen the accountability interface between Alberta Health and AHS to clarify responsibilities, put in place a coordinated annual planning process, and develop an effective performance management framework.

Recommendation 46: Consider assigning a senior leader within Alberta Health with primary responsibility for strengthening and managing the accountability interface between Alberta Health and AHS.

Recommendation 47: Create a dedicated independent providers secretariat.

Recommendation 48: Alberta Health should develop a funding model that separates system funding into three categories: global budgets, targeted grants for priority areas, and funds for independent provider services.

Recommendation 49: End the current Covenant Health Cooperation and Services Agreement and develop a new agreement that enables more effective system coordination by AHS.

Recommendation 50: Develop and formalize clear operational accountability frameworks for Primary Care and Information Technology.

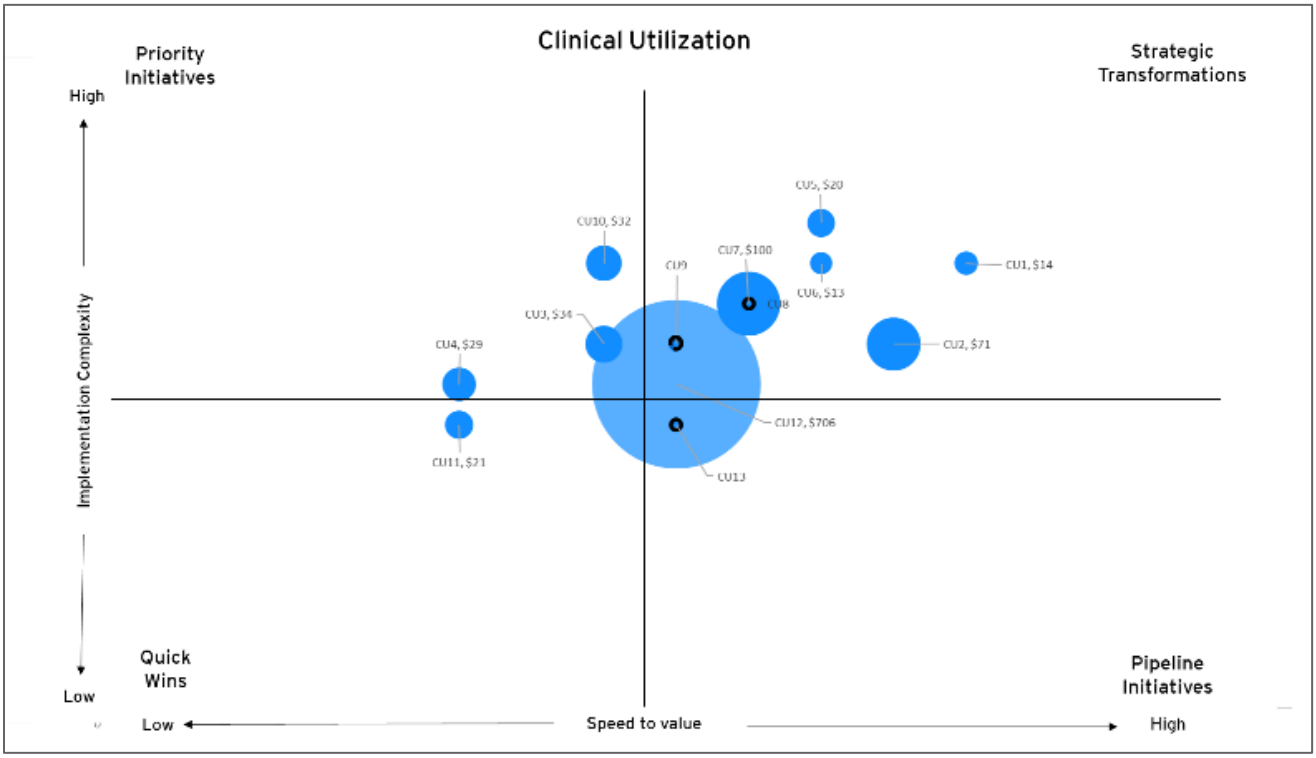
Recommendation 51: Reconsider the number, mandate, and governance of strategic clinical networks to more efficiently leverage them to achieve health system priorities.

Recommendation 52: AHS should be diligent in completing the consolidation of the provincial health system and should actively seek to avoid retrenchment to unnecessary local variation in care delivery.

6 Opportunity prioritization

The opportunities put forward in the previous section suggest that significant fiscal improvement can be driven across Alberta's health system. Unfortunately, the task is not as simple as saying "go." Each opportunity requires thoughtful planning and strategic support from the Executive, ownership from operational leaders and physicians, project management support to ensure key performance metrics are achieved, consultation with health system stakeholders including unions, and for certain opportunities, dedicated investment to fully realize the degree of benefits set out. Simply put, opportunities cannot be implemented without a clear plan of attack.

Sample workstream prioritization. Prioritization details for each workstream are available in the companion document.



EY conducted a prioritization process. The outputs of this process can be found in the detailed companion document. This prioritization should inform AHS' implementation planning process, based on a clear articulation of strategic and financial goals from Alberta Health. This is further described in the next section of this report.

7 Implementation recommendations and the path forward

The scale of the challenge facing the Alberta health system is significant. Albertans pay more for their health care than other comparable provinces and bringing costs into line will not happen overnight – nor will it happen easily. But despite the challenge, making these financial improvements are necessary for the long-term viability and wellbeing of the health system. Responding to the challenge will require new thinking, new capabilities and new ways of working for Alberta Health and AHS. Simply put, it will require creating a "new normal" where sustainability is at the core of the provincial health system.

To establish this new normal, AHS needs to understand the change, be ready for the change, and have the right leaders to take the change forward. As part of the set-up of the Sustainability Program Office discussed in recommendation 55, a maturity and change readiness assessment should be undertaken. This should include key dimensions required for success, such as AHS' vision, culture, sustainability mindset, benefit tracking processes, and governance. As part of this assessment, it will also be important to ensure that AHS' leadership has the capabilities and commitment to deliver the level of change anticipated.

Lessons from other provinces and global jurisdictions have shown that making changes of this scale comes down to building momentum and maintaining a relentless focus on successful execution. As stated, AHS needs to act on a range of opportunities to meet their budget targets, or to keep expenditures flat. The opportunities we've put forward offer a starting point for an actual plan to be formed that begins the process of designing savings and targets that are clear and reasonable. The remainder of this section provides recommendations related to implementation.

Recommendation 53: AHS should complete a formal leadership review of the executive leadership team, including its structure, capabilities, and readiness to deliver a large transformation program. The review should be actioned expeditiously so that the results can inform the development of the implementation plan.

Recommendation 54: AHS should develop an implementation plan, based on the fiscal targets and strategic priorities set by Alberta Health. AHS should lead the development of this plan in coordination with Alberta Health within the first 100 days of implementation.

Given the pressing fiscal reality, AHS should continue to execute any in-progress savings initiatives and rapidly commence any "quick win" opportunities that have been identified, in parallel to the development of the longer-term implementation plan.

Recommendation 55: Establish an AHS Sustainability Program Office to drive the plan forward, with clearly defined resources, reporting processes and executive accountabilities.

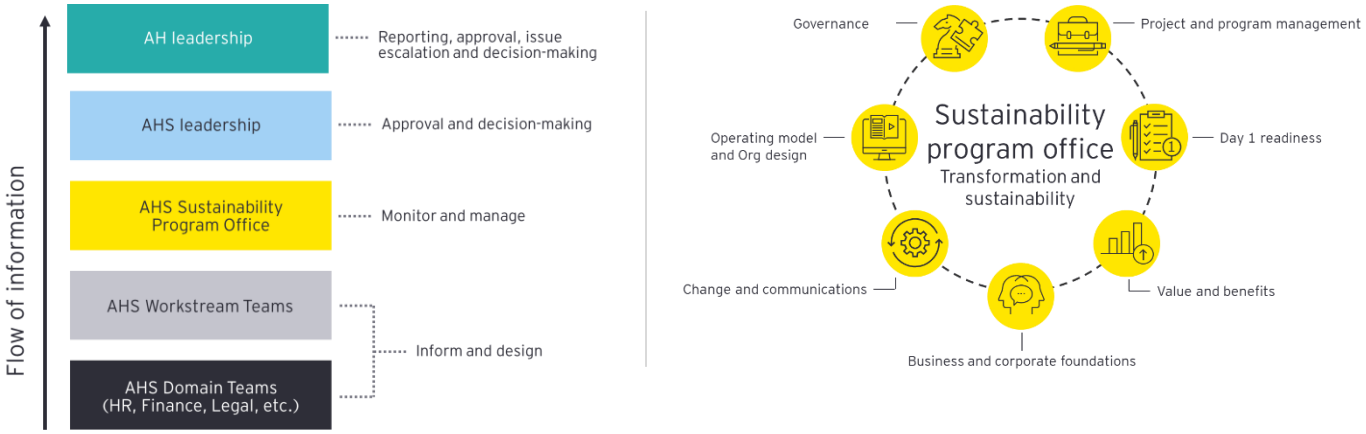


Figure 19. Sustainability program office model

Recommendation 56: Develop an integrated change and communications strategy that will enable appropriate clinical and operational ownership of initiatives.

Recommendation 57: Alberta Health should educate and regularly update Albertans, providing ongoing reporting to taxpayers to build increased awareness and understanding of the cost and performance of Alberta's health system establishing an important accountability interface with citizens for achieving value for money.

"A public education campaign should be developed, focused on the cost of health services delivery, the realities of making difficult decisions (e.g. service configuration) and their role in a public system (e.g. secure access to a family doctor)"

Comment from Operational Leader Session

With the right enablers in place, as well as the right implementation plan, Albertans should feel optimistic that the level of health system transformation needed for long-term sustainability can be achieved.

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