Champlain LHIN | RLISS de Champlain

Measuring Performance:

Champlain LHIN 2016/17 Second Quarter Report

January 2017

Ontario
Local Health Integration Network
Réseau local d'intégration des services de santé

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Executive Summary: Measuring Our Progress

In the second quarter of 2016-17, the Champlain LHIN achieved an 84% average performance level across the 14 key performance targets contained in its accountability obligation to the Government of Ontario. Six of 14 indicators were within 10% of the target, 3 were between 10% and 20% away from target, and 5 were more than 20% away. Overall, Champlain was the most improved LHIN compared to one year earlier, with a ranking that climbed from 11th to 4th. The year-over-year improvement was largely been driven by significantly reduced wait times for a client's first CCAC home care visit.

In the most recent quarter, however, those same home care wait times started to increase. Other areas of concern relate to MRI scan wait times, patients in acute care beds awaiting alternate levels of care and the time complex patients spend in emergency departments. The key challenges and strategies for those indicators are outlined in this report.

For the first time, this quarter, we are forecasting performance through the end of the year. In most cases, we expect performance to remain relatively stable through the end of Q4 2016-17. However, we expect a significant increase in home care wait times resulting from an increased demand for service. This trend has already become evident and in the face of limited resources we have seen an increase in the number of people waitlisted for service.

Also for the first time, this quarter's report starts to explore the linkages between how patients' economic and social conditions influence performance against our targets. While generally speaking, people living in lower income neighbourhoods are at higher risk for certain health outcomes, the patterns are more complex for health system performance measures

Health system performance was not worse for people from less economically advantaged neighbourhoods. The level of social support was more important. For example, people living in neighbourhoods with higher rates of people living alone, single parent families and people separated, divorced and widowed were much more likely to remain in acute care beds awaiting alternate levels of care.

Overall, the findings suggest that quality of care is comparable for people irrespective of economic advantage and that lack of social support increases the likelihood of using hospital services when other services might be more appropriate.

Better understanding of the role of economic, social and other population factors will help to better target and tailor health services. We will continue exploring these relationships in future quarterly reports, starting with what languages people speak and which sub-regions they live in.

Introduction

This report provides a snapshot of the performance of the Champlain region's health system through the lens of a set of 14 performance indicators and targets set provincially. Key challenges and strategies to address them are described. Trends, forecasts and comparisons with other LHINs are presented and, for the first time, the role of social and economic factors is presented.

New legislation will provide the LHINs new levers and tools.

With the December 7, 2016 passage of the Patients First Act in Ontario, LHINs will have the advantage of having new tools and being better positioned to build stronger relationships with partners to better address existing performance targets and other new indicators that may follow. The new tools include:

- The establishment of sub-regions to better understand, plan and organize services to meet unique local population needs.
- Expanded responsibility for primary care planning and improvement in collaboration with local clinical leaders.
- A new mandate to plan and coordinate home care services, through integration of the activities currently being managed by the Community Care Access Centres.
- Formalized linkages with boards of health and a renewed emphasis on equity.
- A stronger role for Indigenous voices in system planning and service delivery to enable more culturally appropriate care.

The Champlain LHIN's overarching objectives include ensuring timely, equitable access to health services, improving patient and family experience and increasing the value of the health system. Taken together, our performance indicators provide concrete measures of how well the health care system is meeting those objectives.

In addition to this report, our LHIN publishes a technical report that includes more information about the 14 performance indicators as well as an additional 15 indicators, aligned with the priorities in our 2016-19 Integrated Health Services Plan.

Performance Results

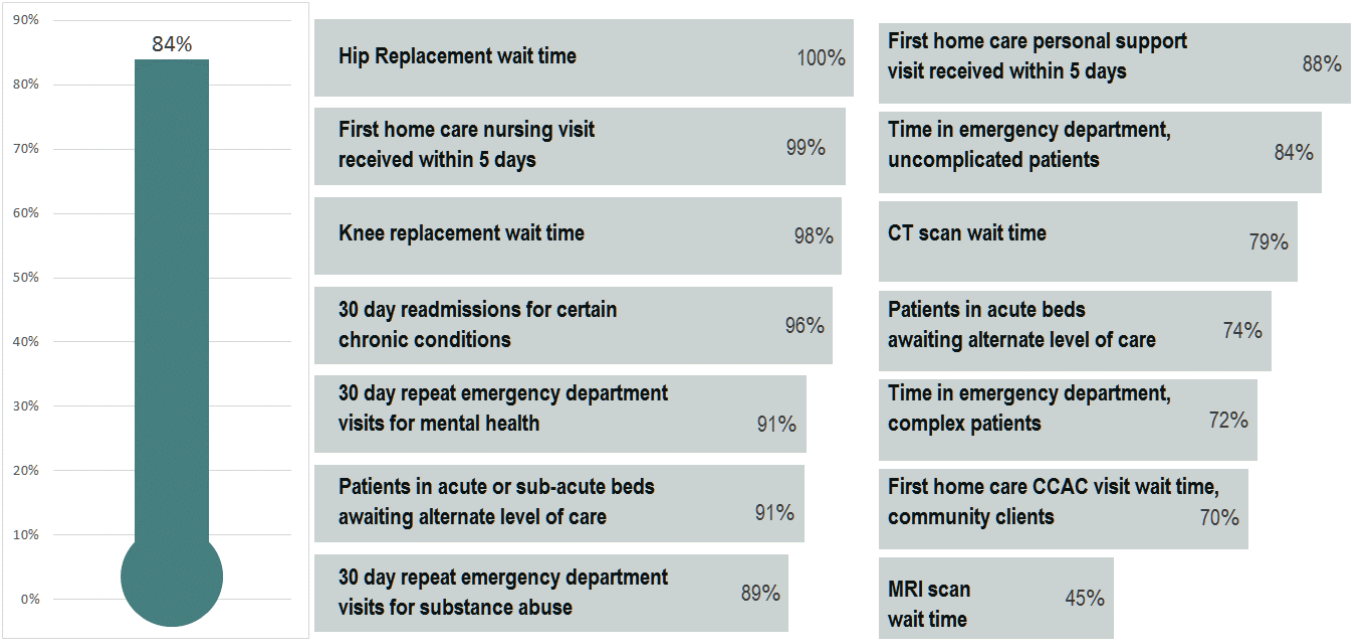
Understanding Our Current Performance

For each indicator, the "percent of target achieved" is reported. It serves as a quick summary and makes it easy to compare results for indicators based on different measures (e.g. rates or days waited or percent of cases completed in a timely way) and with different targets. If the target is to have 90% of patients seen within a certain number of hours, for example, and current performance is 45%, then we are 50% of the way to the target. Averaging across all the indicators provides a single number that summarizes, at a glance, how far the LHIN is from achieving all of its targets. A "thermometer" is used as the visual cue.

During the second quarter of 2016-17, on average, Champlain was 84% of the way to achieving our targets (see Figure 1). Six of the indicators were within 10% of their targets, including 4 within 5%. Three were between 10% and 20% and 5 were more than 20% away from target.

An assessment of challenges to closing some of the gaps and an overview of the strategies the LHIN has put in place are included later in this report.

Figure 1. Percent of Target Achieved, Accountability Indicators, Champlain Q2 2016-17

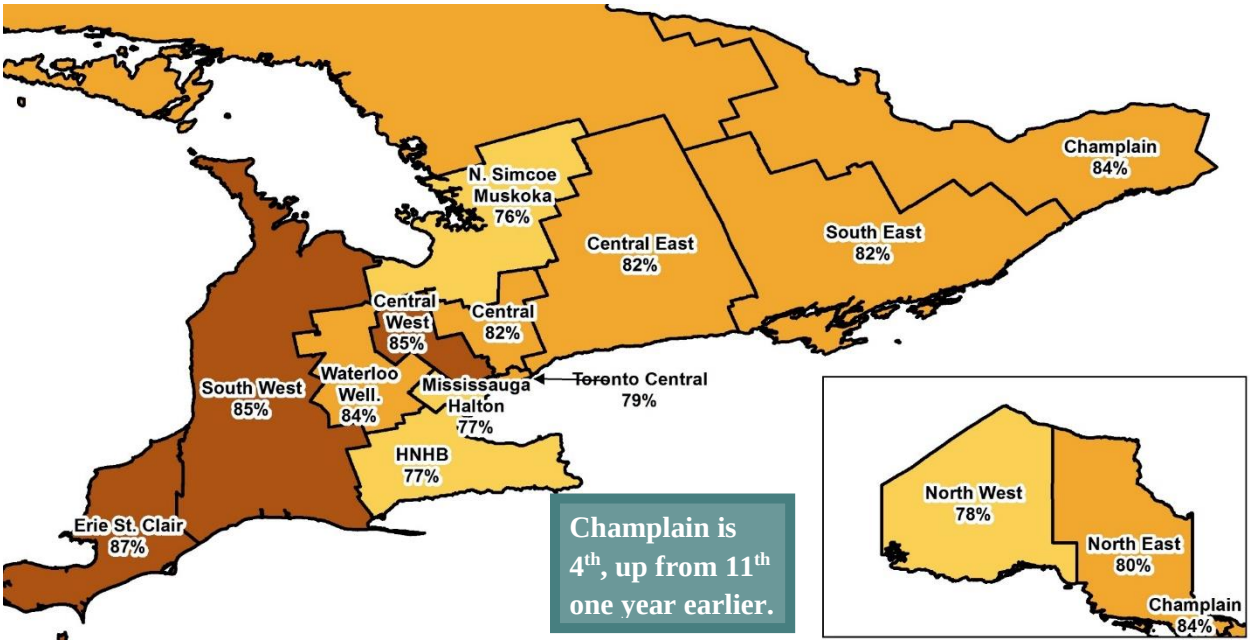


84% is Champlain's best overall performance since the Ministry set higher performance standards and targets beginning in 2015-16.

Comparisons with Other LHINs

Across the province, performance on accountability indicators averages 80% of targets met, ranging from 76% to 87%, as shown in Figure 2. Champlain is now 4th best, up from 11th position in Q2 2015-16.

Figure 2. Percent of Target Met Averaged Across 14 Accountability Indicators, by LHIN



Champlain is 4th, up from 11th one year earlier.

Trends in Performance Results

Champlain's overall "thermometer reading" improved to 84% this quarter, up 6% from a year earlier (see Figure 3) and 1% from last quarter (see Figure 4). No other LHIN improved by as much in the one year period (see Figure 5).

The Champlain LHIN improved more than any other LHIN, year-over-year

The 6% year-over-year improvement in our region's overall performance is primarily attributable to a dramatic improvement in the wait time for first CCAC home care visit. Specifically, the wait dropped from 95 days to 30 days at the 90th percentile (i.e. 90% of people waited less time).

Other notable changes compared to one year ago, include:

- The proportion of CCAC home care clients who received their first personal support service/visit within 5 days was 16% closer to the target. This metric is closely tied to the wait time for first CCAC visit.
- The proportion of people returning to the emergency department within 30 days for substance abuse is 15% closer to the target. A number of investments have been put in place in the last 2 years to add more and different services in community settings.

- The length of time people spent in emergency departments was 5% and 7% further from target for uncomplicated and complex patients, respectively. Over the last 3 years, emergency department volumes have been growing more than 2% a year in Champlain making improvements in wait times challenging.

Figure 3. Change in Percent of Target Met Compared to Previous Year, by Indicator

Indicator	Change From Previous Year	Q2 2015-16	Q2 2016-17
First home care CCAC visit wait time, community clients	48%	22%	70%
First home care personal support visit received within 5 days	16%	72%	88%
30 day repeat emergency department visits for substance abuse	15%	75%	89%
MRI scan wait time	11%	34%	45%
CT scan wait time	6%	73%	79%
Hip replacement wait time	6%	94%	100%
30 day readmissions for certain chronic conditions	4%	92%	96%
First home care nursing visit received within 5 days	2%	96%	99%
30 day repeat emergency department visits for mental health	0%	91%	91%
Patients in acute beds awaiting alternate level of care (% ALC)	-1%	75%	74%
Knee replacement wait time	-2%	100%	98%
Time in emergency department, uncomplicated patients	-5%	89%	84%
Time in emergency department, complex patients	-7%	79%	72%
Patients in acute or sub-acute beds awaiting alternate level of care (ALC rate)	-8%	99%	91%
Average	**6%**	**78%**	**84%**

Reporting periods vary for each indicator depending on the data source. See appendix A.

Our 1% quarter-over-quarter improvement overall is related to improvements on ten indicators (see Figure 4). However, those improvements were substantially offset by a 14% deterioration in the wait time for first CCAC home care visit, as wait times increased from 25 last quarter to 30 days this quarter (at the 90th percentile). If the home care wait time had stayed at 25 days, Champlain's performance would have improved by 2%, rather than 1%.

Figure 4. Change in Percent of Target Met vs. Previous Quarter, by Indicator

Indicator	Change From Previous Quarter	Q1 2016-17	Q2 2016-17
Knee replacement wait time	8%	90%	98%
30 day repeat emergency department visits for substance abuse	7%	82%	89%
CT scan wait time	5%	74%	79%
First home care nursing visit received within 5 days	4%	95%	99%
MRI scan wait time	3%	42%	45%
30 day readmissions for certain chronic conditions	2%	94%	96%
Hip replacement wait time	2%	98%	100%
First home care personal support visit received within 5 days	2%	86%	88%
Patients in acute beds awaiting alternate level of care (% ALC)	1%	73%	74%
Time in emergency department, uncomplicated patients	1%	83%	84%
30 day repeat emergency department visits for mental health	0%	91%	91%
Time in emergency department, complex patients	-3%	75%	72%
Patients in acute or sub-acute beds awaiting alternate level of care (ALC rate)	-7%	98%	91%
First home care CCAC visit wait time, community clients	-14%	84%	70%
Average	1%	83%	84%

Reporting periods vary for each indicator depending on the data source. See appendix A.

After achieving the best performance in many years last quarter (84% of target), the first home care CCAC visit wait time has begun to worsen (now at 70%).

Figure 5. Change in Percent of Target Met vs. Previous Year, by LHIN

LHIN	1-Year change	Q2 2015-16	Q2 2016-17
Champlain	+6%	78%	84%
North West	+4%	74%	78%
North East	+3%	77%	80%
South East	+2%	81%	82%
Toronto Central	+1%	78%	79%
Erie St. Clair	+1%	86%	87%
Central West	-0%	85%	85%
N. Simcoe Muskoka	-3%	78%	76%
Waterloo Wellington	-3%	87%	84%
Central East	-4%	86%	82%
Central	-4%	87%	82%
Mississauga Halton	-5%	82%	77%
HNHB	-5%	83%	77%
South West	-5%	92%	87%
Ontario	-1%	**81%**	**80%**

What explains our performance gaps and what are we doing about them?

Champlain is more than 25% away from the target for four performance indicators.

- MRI scan wait time (45% to target)
- First home care CCAC visit, community clients (70%)
- Time in emergency department, complex patients (72%)
- Patient in acute beds awaiting alternate level of care or "Percent ALC" (74%)

MRI scan wait time:

MRI scans are used to diagnose brain ailments, spinal cord injuries and many other things. They are often used when other testing fails to provide sufficient information to confirm a diagnosis. Patients who require an MRI are categorized according to how quickly they need to receive their scan.

- Patients requiring emergency services are seen immediately (priority 1)
- For patients who need to be seen urgently (priority 2), the target wait time is within 2 days.
- For patients who need to be seen semi-urgently (priority 3), the target wait time is within 10 days.
- For patients who need an MRI on an elective basis (priority 4) the target wait time is within 28 days.

The LHIN has focused on ensuring that patients in greatest need are able to get MRI scans within recommended timeframes.

Priority 1 -Data submission is not required, but of those patients whose data was reported, 98% were seen immediately (up from 96% last quarter).

Priority 2 - 86% of patients received their scan within the recommended time (up from 84%)

Priority 3 - 79% of patients received their scan within the recommended time (up from 72%).

Priority 4 - 25% of patients received their scan within the recommended time (up from 22%)

Demand for MRI services has increased 7% per year, on average, over the past 8 years, outpacing both demographics and health care funding. One factor that has contributed to this increase was a change in clinical protocols a few years ago, increasing the number of MRI scans for patients with cancer by 30%.

All LHINs are challenged in achieving MRI wait time targets. None have achieved the target and the average is 43% of target met, similar to Champlain's current performance (45%). Champlain's performance improved in the last three quarters as a result of one-time funding

provided to operate the MRI scanners for longer hours to provide more scans as well as recent triage and efficiency work related to appointment scheduling. Referral appropriateness will be addressed through two planned projects: using an automated tool and education of primary care physicians.

The regional MRI Steering Committee is also leading work to implement a series of third party expert recommendations highlighted in the Q4 2015/16 issue of this report.

The LHIN anticipates that the region will meet the priority 1 (emergent), 2 (urgent), and 3 (semi-urgent) targets by the third or fourth quarter of 2016-17. The priority 4 (elective) targets will not be met in the 2016/17 fiscal year.

First home care CCAC visit, community clients

In last quarter's report, we noted the best ever performance since the LHIN began tracking this measure. Since then, significant growth in demand, coupled with resource limitations, have begun to result in longer wait times.

In the spring of 2016, some clients with lower therapy needs began to be placed on wait lists, pending resource availability. In the fall of 2016, clients with moderate needs also began to be wait listed. Clients with the highest needs continue to be prioritized based on formal, standardized assessments. The LHIN and CCAC are monitoring closely and working to limit potential impacts. A number of strategies have been put in place to more efficiently address and manage demand, including:

- Providing more nursing services in clinics.
- Standardizing care plans to ensure that people receive the most appropriate care for their needs. This includes adjusting the number and duration of home visits based on individuals' specific needs.
- Careful management of nursing supplies (e.g. bandages, medications) to make sure they are available when and where needed while avoiding repeat or duplicate ordering.
- Communicating with health service partners to clarify the types of referrals that are appropriate.
- Quicker communication with contracted service provider agencies thanks to new electronic reports, resulting in faster updates of individual care plans and faster discharges where appropriate.
- Reduced spending on administration as spending on direct services increased. The Champlain CCAC spends less in percentage terms on administration than any other CCAC in Ontario.

The strategies, however, have not been sufficient to address the funding gap and avoid wait listing. The CCAC and LHIN are now working with a third party consultant to better understand imbalance between funding and demand. The analysis is intended to quantify and disentangle the key drivers, including:

- The level and growth of different service needs in the population relative to funding and relative to other LHINs.
- The characteristics of clients receiving services today and how they compare by sub-region and with other LHINs.
- The service models in place for different types of clients and how they compare with other LHINs.

Another factor that may contribute to the funding imbalance is Champlain's historical investments in specialty programs. Specifically, the Champlain CCAC offers chemotherapy home infusion pumps, specialized drainage catheters (Pleurx), negative pressure wound therapy and continuous injection infusion pumps for high blood pressure in the lungs. While these services help to support more people at home and out of hospital, the costs are high. Champlain provides more of these specialty services than many other CCACs. While this helps address critical needs in the community, it impacts the ability to address other needs.

The LHIN and CCAC continue to work very closely to address the challenges, minimize impacts on clients and the growing wait lists begin shrinking again as soon as possible.

Time in Emergency Department, Complex Patients:

Complex patients require more time in the emergency department as they undergo assessments and tests and receive treatments. The target is that 90% of complex patients are able to leave the emergency department within 8 hours. Performance in Champlain, in Q2, was 11.2 hours, representing 72% of the target.

Within the complex patient group, there are two key sub-groups: patients who end up admitted to an inpatient bed and patients who go home after their time in the emergency department. Among those admitted, only 37% leave the emergency department within 8 hours, compared with 91% of those who go home. As a result, poor performance on this indicator is primarily related to the admitted group. In this quarter, lengths of stay increased for admitted but not for non-admitted patients.

Longer stays for the admitted group are influenced by the availability of inpatient beds. The lack of available beds in some hospitals in Ottawa and in Cornwall, is related to the need for alternate level of care services (see next section). Increased admission rates, from 9.2% to 9.6% this quarter have compounded the challenge.

Hospitals continue their emergency room process improvements and flow initiatives and time to initial physician assessment improved this quarter. The LHIN is working with hospital partners to ensure that all available hospital resources are used as effectively as possible through actions such as daily monitoring of system capacity and supporting the timely repatriation of patients from out of town to their home hospitals where appropriate.

Patients in acute beds awaiting alternate level of care:

Although Champlain was only 73% of the way to the target, it ranked 6th among LHINs on the alternate level of care measure specific to acute care beds. The measure reflects the number of days people spent in acute care beds waiting for other, more appropriate types of care (e.g. long term care, specialized home care or rehabilitation) as a percentage of all days people spent in acute care beds.

In Ottawa and Cornwall, in particular, the high numbers of patients waiting for alternate levels of care have resulted in very high occupancy on inpatient wards as well as crowding in the emergency departments.

The LHIN targeted a number investments this fall to help address the challenges, including:

- Additional resources to help emergency departments' ability to treat more patients more quickly.
- Improved discharge planning to so that patients are able to leave hospital when they are ready, freeing up beds for others who need them.
- More screening and services for high-risk seniors through the Geriatric Emergency Management program run by nurses with specialized expertise.
- Reduced admissions by increasing the number of referrals to Health Links which provide coordinated team-based care to patients with complex needs.
- The opening of additional acute care and sub-acute care hospital beds in Ottawa.

When occupancy spikes, the LHIN convenes teleconferences with hospitals to facilitate solutions, such as patient transfers. The LHIN also produces a daily patient flow report to help keep focus and identify where capacity is available and where the challenges are.

A plan for sub-acute capacity proposes to realign resources like rehabilitation, complex continuing care, and convalescent care beds, as well as developing a long-term solution to address the spike in patients that occurs during the flu season. A work group including partners along the continuum of care, from public health and primary care to long-term care, was established in the fall to develop a shared regional strategy to help ensure that people can access care in the right location when they need it.

Without substantial additional investments in a combination of beds (e.g. in hospital, convalescent care, long-term care, assisted living services, group/congregate homes) and home and community care services, it is unlikely that Champlain will achieve the current target.

Forecasting our Performance

For the first time, this quarter, performance forecasts are provided. They take into account:

- Historical trends with more emphasis on recent performance (i.e. linear exponential smoothing model without seasonal effects).
- The stage of implementation of related projects and investments.
- Other known influences such as the growth of wait lists.

Single values in the middle of forecasted ranges are provided to simplify comparisons. The actual forecasts do not contain that level of precision. For one indicator—first home care CCAC visit wait time—a quantitative forecast is still being developed. Due to the nature of the indicator, standard forecasting methodologies are inadequate. Results, based on more sophisticated modeling, will be available next quarter.

By Q4 2016-17, status quo (in white) or modest improvement (green) is expected for 10 measures (see Figure 6). Three are expected to deteriorate to some degree (orange) and one is expected to decline very significantly (red). Overall, across all indicators, a modest decline is forecast.

Figure 6. Forecast Performance by Indicator

Indicator	Q2 2016-17	Q4 2016-17 Forecast
Hip replacement wait time	100%	100%
First home care nursing visit received within 5 days	99%	99%
Knee replacement wait time	98%	99%
30 day readmissions for certain chronic conditions	96%	96%*
30 day repeat emergency department visits for mental health	91%	91%*
Patients in acute or sub-acute beds awaiting alternate level of care (ALC rate)	91%	84%
30 day repeat emergency department visits for substance abuse	89%	89%*
First home care personal support visit received within 5 days	88%	8%
Time in emergency department, uncomplicated patients	84%	84%*
CT scan wait time	79%	91%
Patients in acute beds awaiting alternate level of care (% ALC)	74%	66%
Time in emergency department, complex patients	72%	72%*
First home care CCAC visit wait time, community clients	70%	Decline (TBD)**
MRI scan wait time	45%	47%
Average	**84%**	**Decline**

*Unquantified forecasts are directional, based on trends, known influences and expert knowledge. Quantitative forecasts based on linear exponential smoothing model (without seasonal effects), validated and adjusted based on expert knowledge.

Most notably, home care wait times will grow considerably as a result of high demand and growing wait lists as described above. The indicator for the percent of people who receive their first home care personal support visit within 5 days will be impacted first. The first home care CCAC visit wait time for community clients, currently at 30 days (at the 90th percentile), will also deteriorate significantly but the indicator lags as it only counts people's waits when they

first receive service. While it will decline in 2016-17, the biggest impacts will be seen in 2017-18. Not all home care clients are impacted. Those with the highest needs receive service first and the proportion of people who receive their first home care nursing visit within 5 days is expected to remain near target.

The home care wait time forecasts are based on current information but are sensitive to changes in funding or referral patterns. Additional funding in 2016-17, for example, would make it possible to reduce wait times and 'beat the forecast'. The impact would be seen most quickly for the indicator related to personal support visits within 5 days. It would take longer for changes to be apparent in the first home care visit wait time indicator.

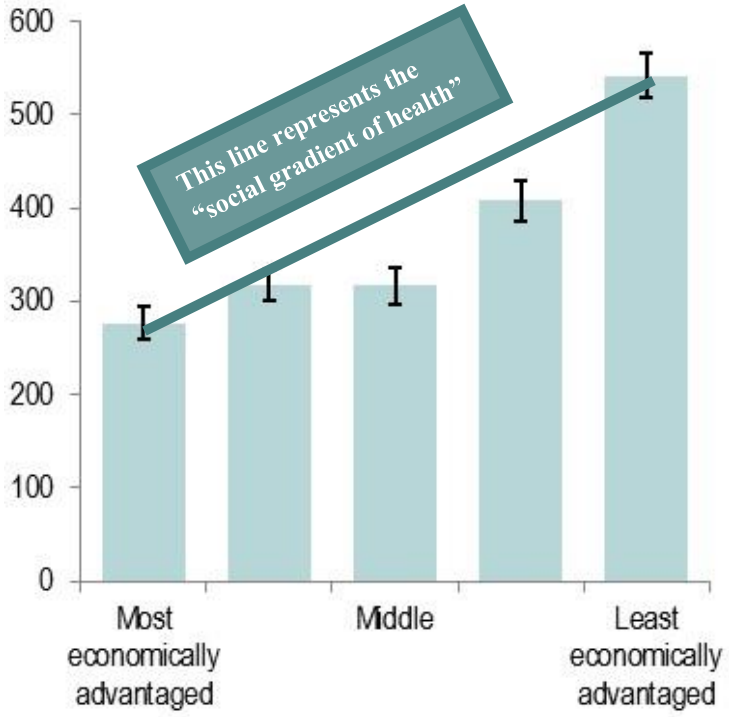
In summary, we anticipate that Q2's 84% of target met achievement represents a peak. Our thermometer reading will decline primarily as a result of wait times for certain home care services. The potential for improvement in other areas is limited and not sufficient to counterbalance the impact of home care wait times.

The influence of economic and social factors

Through implementation of the Patients First legislation, LHINs will increase their focus on achieving equity for the most vulnerable populations. Focus on sub-region level planning and a stronger connection with Public Health will facilitate this change.

The role of social determinants (including income, social supports, education, social status, cultural group, immigrant status, and Indigenous status and LGBTQ status) on population health is well documented. Much evidence has accumulated since the 1974 Lalonde report.[1] Innumerable reports and studies highlight how certain characteristics, such as low income, are associated with poorer health outcomes. The notion of "social gradient" describes how health status, on average, increases with each step up the social "ladder". An example from a recent Ottawa Public Health report is replicated and modified in Figure 7.[2]

Figure 7. Premature deaths per 100,000 by socioeconomic quintile, Ottawa 2010-2011.



There are many similar-looking graphs from around the world. There are few analyses, however, of how the social gradient relates to the types of health system performance measures that this report addresses. This section asks the question: how do factors, such as income, education and family/household structure impact the Champlain LHIN's key accountability indicators. Our initial hypothesis was that we'd see a clear social gradient across most of our

[1] See here, here and here for examples and additional information.
[2] Ottawa Public Health. Health Equity and Social Determinants of Health in Ottawa. November 2016. Ottawa (ON): Ottawa Public Health; 2016.

indicators. The truth, as it turns out, is more complex.

Economic and Social Factors: Methods

Income and other socio-demographic patient characteristics are not available in the data used to calculate the LHIN's accountability indicators. Instead, we use neighbourhood-level data from Statistics Canada as a proxy, attached to patients based on their postal codes. This area (neighbourhood) or "ecological" approach is not perfect because individuals' characteristics differ from the neighbourhood averages. The approach, however, provides useful proxies where data is not otherwise available and is widely used (including in the Ottawa example in Figure 7).

Based on a review of the Canadian literature, two widely used indices developed in Quebec by R. Pampalon were selected. One index relates to economic factors (referred to as "material deprivation" in other reports) and the second relates to social factors. Each index is calculated based on a combination of three measures derived from Statistics Canada surveys (see Figure 8).

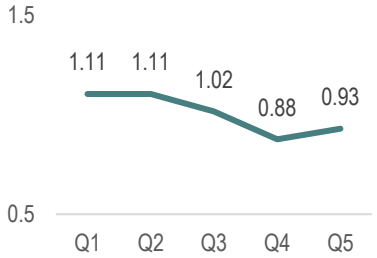
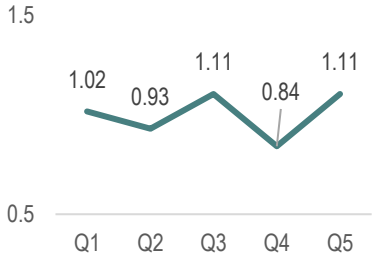
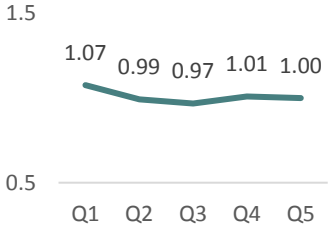
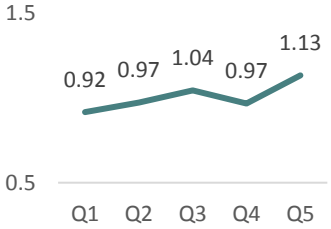
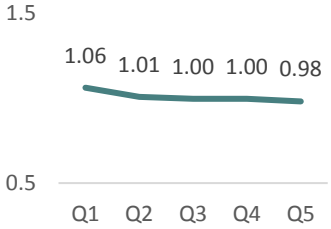
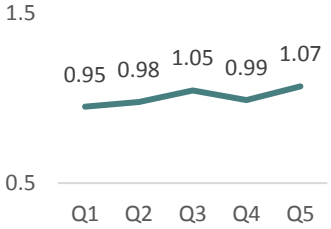
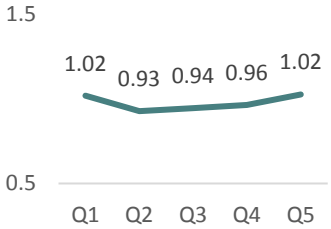
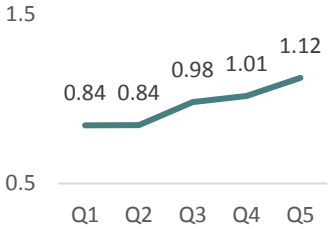
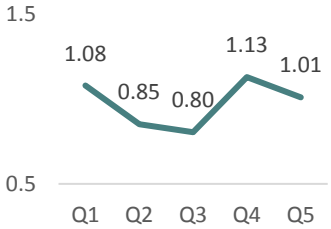
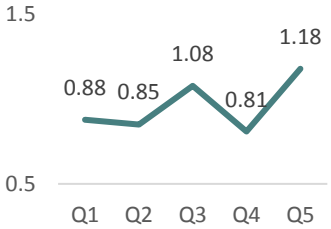
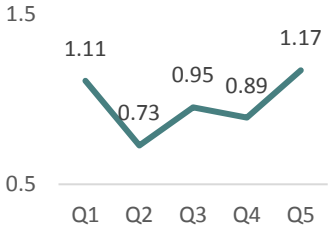
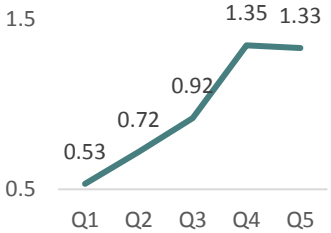
Figure 8. Measures Included in the Economic and Social Indices

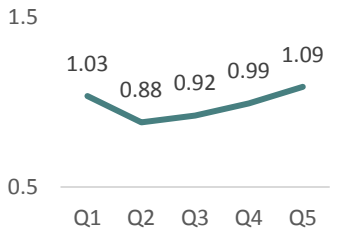
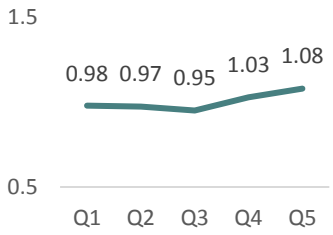
Economic	Social
• Proportion of people without high school diplomas • Average personal income • Ratio of employment to population	• Proportion of people separated, divorced or widowed • Proportion of single-parent families • Proportion of people living alone

The measures are calculated for most dissemination areas in Canada. A dissemination area contains 400 to 700 persons and is the smallest areas for which census data are generally available. Each area receives a score on each index and is then placed into one of five groups (quintiles), from highest to lowest.

Figure 9 shows the trends by economic and social quintile for 7 indicators and also notes significant gender differences. In each case, Q1 is the most advantaged quintile and Q5 is the least. To simplify comparisons, each quintile was compared with the average performance on that indicator (set to 1.0), such that a rate 20% higher than the average is reported as 1.2 and 20% lower, is 0.8. All graphs were scaled equally, from 0.5 to 1.5. In all cases lower numbers represent better performance.

Figure 9. Select Indicators by Economic and Social Quintile and Gender

Indicator	Economic_Q1= richest" 1.1=10% higher than average	Social_Q1=most "social support" 1.1=10% higher than average	Gender differences
First Home Care CCAC Visit Wait Time, Community Clients (lower is better)			
Time In Emergency Department, Complex Patients (lower is better)			Men tend to stay longer
Time In Emergency Department, Uncomplicated Patients (lower is better)			Women tend to stay longer
30-Day Repeat Emergency Department Visits for Mental Health (lower is better)			Men have higher rates, especially in most disadvantaged quintiles
30-Day Repeat Emergency Department Visits for Substance Abuse (lower is better)			Men have higher rates, except social-Q1 where women have higher
Patients in Acute Beds Awaiting Alternate Level of Care (lower is better)			Men have higher rates

Indicator	Economic Q1= richest" 1.1=10% higher than average	Social Q1=most "social support" 1.1=10% higher than average	Gender differences
30-Day Readmissions for Certain Chronic Conditions (lower is better)			Women have higher rates

All rates are for 2015-16. All are age-adjusted except for wait time to emergency department length of stay and home care wait time measures.

Economic and Social Factors: Interpretation of Results

Unlike population health measures, the health system performance measures we analyzed were not dramatically or consistently worse among more economically disadvantaged patients. This suggests that quality of care in Champlain does not vary based on patients' economic circumstances.

Where there were differences, they were not significant. For example, although it looks like people from richer spent slightly more time in emergency departments, this is explained by the fact that the vast majority of richer neighbourhoods are clustered in the City of Ottawa, where emergency department times are longer.

Only one indicator seemed to demonstrate a pattern in relation to economic factors and the trend was the opposite of the usual social gradient. People in wealthier neighbourhoods (Q1 and Q2) waited longer to receive their first home care service than those in the poorest neighbourhoods (Q4 and Q5). The longer wait for home care in more advantaged neighbourhoods may reflect less urgent needs (i.e. less complex care requirements), more supports or more ability to pay for private services.

While economic status does not seem to be a factor, the level of neighbourhood social support was very important for two indicators:

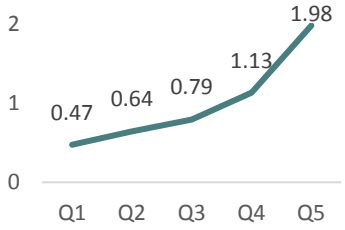
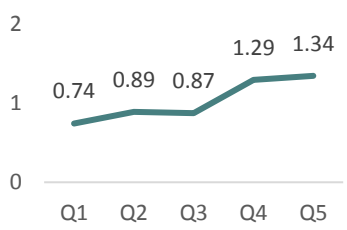
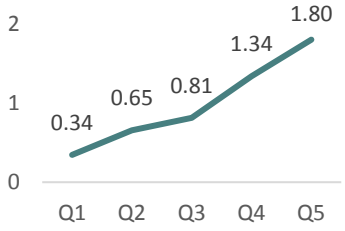
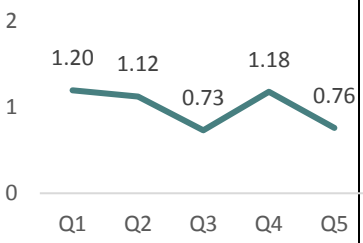
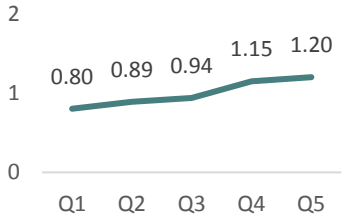
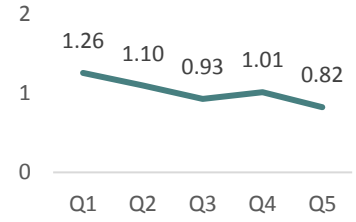
- The rate of 30-day repeat emergency department visits for mental health was higher among those in the more socially disadvantaged neighbourhoods. There is a fairly clear trend from Q1 to Q5 with a 33% difference between top and bottom. People living in the most socially disadvantaged neighbourhoods (Q5) were also more likely to make repeat emergency department visits for substance abuse, although the overall trend is less clear.
- The proportion of patients awaiting alternate level of care (% ALC) was strongly associated with social support. The rate was 2.5 higher among those in Q5 (with the least social support) compared with those in Q1. If everyone had the same rate as those in Q1, Champlain would be would be a top-performing LHIN and we'd free up enough beds to be able to care for 4,000 more patients a year.

Hospital and LHIN staff working to reduce the number of people awaiting alternate levels of care frequently note that a patient's social support (or lack thereof) is often the most important consideration in their ability to be discharged home from hospital.

Finally, those in the least advantaged quintiles (Q5), both social and economic, are about 10% more likely to be readmitted to hospital within 30 days for select chronic conditions. People living in less advantaged neighbourhoods may have fewer resources with which to manage their conditions following an initial hospitalization.

In addition to the 7 accountability indicators related to health system performance, we also looked at 3 other Champlain LHIN indicators more closely related to population health (see Figure 10). Here, the typical social gradient of health is apparent, with rates climbing steadily from the least to the most economically disadvantaged neighbourhoods. The graphs below are scaled from 0 to 2 because some of the trends are more pronounced.

Figure 10. Other Champlain Performance Indicators by Economic and Social Quintile and Gender

Indicator	Economic Q1= "richest" 1.1=10% higher than average	Social Q1=most "social support" 1.1=10% higher than average	Gender differences
Hospitalization Rate for Ambulatory Care Sensitive Conditions (lower is better)			Men have higher rates than women
Emergency department Visits for Conditions Best Managed Elsewhere (lower is better)			Women have higher rates than men
Fall-Related Emergency Department Visit Rate Among Seniors (lower is better)			Women have much higher rates than men

People in more economically disadvantaged neighbourhoods have higher rates of

- Hospitalization for ambulatory care sensitive conditions (including respiratory disease,

diabetes, epilepsy, congestive heart failure and hypertension). There is a four-fold difference from lowest to highest. If everyone experienced the same rate as the Q1 group, these would be 1750 fewer of these hospitalizations each year, a drop of 52%. More conservatively, if the Q4 and Q5 groups had the same rate as the Q3 group, the rate would drop 29%.

- Emergency department visits for conditions best managed elsewhere (e.g. cystitis, otitis media, and upper respiratory infections including the common cold, sinusitis and others). There is a five-fold difference from highest to lowest.
- Fall-related emergency department visits among seniors. There is a 1.5-fold difference from highest to lowest.

Taken together and in keeping with analyses elsewhere, we see a strong social gradient in the use of hospital services. People in the lowest socioeconomic status neighbourhoods require a disproportionate amount of hospital care.

We clearly see the social gradient of health in Figure 10 for three population health measures. The patterns for seven health system performance measures in Figure 9 suggest that:

- Quality of care is comparable for people irrespective of economic advantage
- Lack of social support increases the likelihood of using hospital services when other services might be more appropriate.

Additional analysis is needed to disentangle and better understand the findings. What, for example, is the role of geography, separate and apart from very specific neighbourhoods used to assign quintiles? What other demographic factors influence health system performance? Is immigrant status important? Indigenous identity? LGBTQ status? Language? In future reports, we will explore differences between sub-regions and compare people with English, French and other mother tongues. A better understanding of the different needs and experiences of sub-populations will help us to better target and tailor services and strategies to help reduce inequities.

Appendix A: Champlain LHIN Performance by Metric

Indicator	Period of the Data*	Target	Current performance	Current Performance (% target achieved)	Champlain 2015/16 Performance Among LHINs (by Quartile)	Performance Drivers? Related to availability of services relative to demand**	Performance Drivers? Related to processes or efficiencies
% Receiving personal support services within 5 days	Q1 2016/17	95%	84%	88%	Lower Quartile	√	√
% Receiving nursing services within 5 days	Q1 2016/17	95%	94%	99%	Middle of the Group		√
1st CCAC home visit, community clients, 90th percentile wait	Q1 2016/17	21 days	30	70%	Middle of the Group	√	√
Time in emergency department, complex patients, 90th percentile	Q2 2016/17	8 hours	11.15	71%	Middle of the Group	√	√
Time in emergency department, non-admitted non complex patients, 90th percentile	Q2 2016/17	4 hours	4.77	83%	Lower Quartile	√	√
MRI scan cases completed within target period	Q2 2016/17	90%	40%	45%	Middle of the Group	√	√
CT scan cases completed within target period	Q2 2016/17	90%	71%	79%	Middle of the Group	√	√
Hip replacement cases completed within target period	Q2 2016/17	90%	91%	100%	Top Performer		√
Knee replacement cases completed within target period	Q2 2016/17	90%	88%	98%	Middle of the Group		√
Patients in acute beds awaiting alternate levels of care (% ALC)	Q1 2016/17	9.50%	12.7%	75%	Middle of the Group	√	√
Patients in acute or sub-acute beds awaiting alternate care (ALC Rate)	Q2 2016/17	12.7%	14.0%	91%	Middle of the Group	√	√
30 day repeat emergency department visits for mental health	Q1 2016/17	17.1%	17.9%	96%	Middle of the Group	√	√
30 day repeat emergency department visits for substance abuse	Q1 2016/17	25.1%	25.1%	100%	Top Performer		√
30 day readmissions for certain chronic conditions	Q4 2015/16	15.5%	16.1%	96%	Middle of the Group		√

*Q4 2015/16 data refers to Jan, Feb, Mar 2016
Q1 2016/17 data refers to Apr, May, Jun 2016
Q2 2016/17 data refers to Jul, Aug, Sep 2016

**Red checkmarks indicate larger impact.

Champlain **LHIN** | **RLISS** de Champlain

1900 City Park Drive, Suite 204
Ottawa, ON K1J 1A3
Tel: 613.747.6784 • Fax: 613.747.6519
Toll Free: 1.866.902.5446
www.champlainlhin.on.ca

1900, promenade City Park, bureau 204
Ottawa, ON K1J 1A3
Téléphone : 613 747-6784 • Télécopieur : 613 747-6519
Sans frais : 1 866 902-5446
www.rlisschamplain.on.ca

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