# Chapter 33
# Health—Preventing Diabetes-Related Health Complications

## 1.0 Main Points

By September 2017, the Ministry of Health had made some progress in having effective strategies for preventing diabetes-related health complications. It had implemented 3 of 8 recommendations remaining from our 2012 audit of this area.

Since our 2015 follow-up, the Ministry documented its reviews of each of the regional health authorities' annual primary healthcare plans that included diabetes management and prevention strategies. In addition, it reported publicly on its progress in implementing strategies to manage diabetes and diabetes-related complications.

The Ministry of Health still needs to:

- Increase the number of patients living with diabetes with completed flowsheets in the Chronic Disease Management – Quality Improvement Program (CDM-QIP) to enable improved analysis of best practice care
- Obtain and analyze data on the programs and services delivered by regional health authorities for people with diabetes, including their related costs

Preventative measures and better disease management can reduce the prevalence of diabetes, the impact of the disease on the quality of life, and in turn, health costs.

## 2.0 Introduction

The Ministry of Health is responsible for ensuring people with chronic disease, such as diabetes, receive appropriate care.

In 2011, the Canadian Diabetes Association reported that Saskatchewan faced one of the highest combined prevalence of diabetes and pre-diabetes in the prairies. It reported 7% of Saskatchewan's 2010 population was diagnosed with diabetes and estimated this would increase to close to 10% of the population by 2020.[1]

In addition to the implications on quality of life, estimated annual per capita health care costs are three to four times greater for an individual with diabetes compared to one without the disease. Individuals with diabetes are over 3 times more likely to be hospitalized with cardiovascular disease than individuals without diabetes, 12 times more likely to be hospitalized with end-stage renal disease, and almost 20 times more likely to be hospitalized with non-traumatic lower limb amputations.[2]

[1] Canadian Diabetes Association, *Diabetes: Canada at the Tipping Point*, (2011), pp. 10-11.
[2] Public Health Agency of Canada, 2011 *Diabetes in Canada – Facts and figures from a public health perspective*, p. 16.

Our *2012 Report – Volume 2*, Chapter 32 concluded that the Ministry did not have effective strategies for preventing diabetes-related health complications. We made 12 recommendations. By February 2015, the Ministry had implemented four of them.

This chapter describes the results of our second follow-up on the implementation of the eight remaining recommendations related to preventing diabetes-related health complications.

To conduct this audit engagement, we followed the standards for assurance engagements published in the *CPA Canada Handbook – Assurance* (including CSAE 3001). To evaluate the Ministry's progress towards meeting our recommendations, we used the relevant criteria from the original audit. The Ministry's management agreed with the criteria in the original audit.

We reviewed the Ministry's quality improvement plans, and examined information the Ministry used to analyze and report on diabetes program performance. We also interviewed Ministry staff responsible for chronic disease management.

## 3.0 Status of Recommendations

This section sets out each recommendation including the date on which the Standing Committee on Public Accounts agreed to the recommendation, the status of the recommendation at September 30, 2017, and the Ministry's actions up to that date. We found that the Ministry implemented three of the recommendations and made some progress on the remaining five recommendations.

## 3.1 Tracking Services But Not Analyzing Whether Appropriate

***We recommended that the Ministry of Health establish processes to monitor that people with diabetes receive appropriate services to reduce their risk of developing diabetes-related health complications.*** (2012 Report – Volume 2; Public Accounts Committee agreement September 9, 2014)

**Status** – Partially Implemented

***We recommended that the Ministry of Health establish processes to monitor that people with diabetes have access to appropriate services in the province.*** (2012 Report – Volume 2; Public Accounts Committee agreement September 9, 2014)

**Status** – Partially Implemented

***We recommended that the Ministry of Health collect and analyze information to assess whether services delivered by physicians and care providers are effective and if they provide needed services to people with diabetes to prevent diabetes-related health complications.*** (2012 Report – Volume 2; Public Accounts Committee agreement September 9, 2014)

**Status** – Partially Implemented

As of September 2017, the Ministry did not know whether people with diabetes were sufficiently monitored, and received interventions to reduce their risk of developing complications. It also had not analyzed whether people with diabetes received a similar level of service from healthcare providers (e.g., physicians) across the province.

The Ministry uses data collected through the Chronic Disease Management - Quality Improvement Program (an IT system). This data is submitted into a chronic disease data repository (CDM-QIP) to track key indicators (e.g., A1C blood levels are tested twice a year for those living with diabetes) about health services provided to people who are living with at least one of four chronic conditions. The four chronic conditions are diabetes, coronary artery disease, chronic obstructive pulmonary disease, and congestive heart failure. The IT system is maintained by eHealth Saskatchewan.

The purpose of CDM-QIP is to improve care to people living with chronic conditions by providing best practice flow sheets and other tools to healthcare providers. Best practice flow sheets (both electronic and paper-based versions) support care according to best practice guidelines.

To September 2017, the Ministry has focused on increasing uptake of CDM-QIP (i.e., the number of providers using the program and the number of patients for whom best practice flow sheets are being used). The Ministry has goals and targets for the use of CDM-QIP.

By March 2017, the Ministry achieved its target enrolment of at least 765 healthcare providers using CDM-QIP flow sheets but did not achieve its target of 80,200 patients receiving best-practice care as evidenced by completion of the flow sheets.

At March 2017, 799 physicians and nurse practitioners were using CDM-QIP flow sheets. Also at March 2017, the Ministry records showed that the services received by about 49,000 patients with at least one of the four chronic diseases, including diabetes, were recorded using the tools available through CDM-QIP—about 60% of the patients planned. We found the Ministry had developed corrective actions to achieve its provider and patient targets for CDM-QIP.

Because of the lower than expected number of patients who are receiving care utilizing the flow sheets, the Ministry had not analyzed the chronic disease management data for services provided by physicians to people with chronic conditions like diabetes. Additional analysis of indicator data to assess appropriateness of care provided is planned.

Not having sufficient data or doing analysis increases the risk of people with diabetes not being appropriately monitored or receiving interventions that reduce their risk of diabetes-related complications. In addition, it increases the risk that people with diabetes do not receive a similar level of service across the province. Investing in information collection and analysis will enable a better quality of life for people with diabetes and long-term savings through effective diabetes management.

## 3.2 Further Information Needed to Assess Reasonableness of Resource Allocations and Programs across Regions

***We recommended that the Ministry of Health implement processes to accumulate, analyze and monitor provincial spending information on people with diabetes, and on diabetes-related complication prevention programs to assess the reasonableness of its resource allocations.*** (2012 Report – Volume 2; Public Accounts Committee agreement September 9, 2014)

**Status** – Implemented

***We recommended that the Ministry of Health work with regional health authorities to ensure resources on a regional basis are effectively deployed to manage diabetes and diabetes-related health complications.*** (2012 Report – Volume 2; Public Accounts Committee agreement September 9, 2014)

**Status** – Partially Implemented

***We recommended that the Ministry of Health collect and analyze information to assess the effectiveness of regional health authorities' programs to manage diabetes and the prevention of diabetes-related health complications.*** (2012 Report – Volume 2; Public Accounts Committee agreement September 9, 2014)

**Status** – Partially Implemented

The Ministry took steps to systematically collect key information on its provincial spending on diabetes-related health care and programs, and had started to analyze data collected. But, because of incomplete data related to programs delivered by regional health authorities, the Ministry does not know the cost and effectiveness of health services and related programs to treat people with diabetes.

The Ministry collected some information on certain direct costs attributed to diabetes including medications, insulin pumps, certain hospital costs, and provincial education/resources. As discussed in **Section 3.1**, the Ministry is in the process of gathering data through CDM-QIP on the services diabetic patients received to allow them to assess if patients are receiving best practice care.

The Ministry periodically reviews its provincially-delivered chronic disease programs.[3] Since 2015, the Ministry completed internal reviews of two of these programs (including spending information) (i.e., LiveWell with Chronic Conditions Program and Enhanced Preventative Dental Services Program).

By September 2017, although it had attempted to, the Ministry had not determined whether regional authorities effectively managed, on a regional basis, diabetes and diabetes-related health complications.

[3] Provincial programs related to chronic diseases management include: LiveWell with Chronic Conditions Program, Chronic Kidney Disease Program, Insulin Pump Program, Chronic Disease Management – Quality Improvement Program (CDM-QIP), Enhanced Preventative Dental Services Program, and the Public Health Nutrition Program.

The Ministry gave each regional health authority discretion in use of annual funding the Ministry provided for general operations. That is, authorities decide how much to allocate to primary healthcare and chronic disease management. The Ministry gave them general guidelines[4] to help them decide.

In 2015, the Ministry gathered, using a survey of regional health authorities, information on diabetes programs and services delivered in each health region and on the number of staff involved in program delivery. As part of the survey, the Ministry asked authorities to provide program specific information[5] (e.g., the types of services available in the region, the healthcare providers who deliver the service, and the number of days diabetic patients waited to see a provider in the region) but did not ask for any cost information.

It did not receive some survey information from all regional health authorities (e.g., wait times to access services). The Ministry summarized information received. The Ministry recognized that there were data limitations in the summary and concluded that it could not determine if some regional programs or services are effectively deployed. Regardless, the Ministry noted it intends (once approved) to share the summary with authorities. In addition, it indicated it intends to enhance and repeat this work every two years.

The Ministry also required the regional health authorities to report whether they are meeting the provincial target for hospitalizations related to six chronic conditions, including diabetes. Overall, at March 31, 2016, regional health authorities were not meeting the target for hospitalizations. This indicator, along with others and complete survey information from regional health authorities, could be used to evaluate authorities' progress in implementing chronic condition strategies and reducing the cost burden on the healthcare system (i.e., hospital services cost more than community-based services).

Treating diabetes complications is a significant cost to the health system. Having complete program information and associated costs from the regional health authorities/Saskatchewan Health Authority would help the Ministry determine if programs to manage diabetes complications are designed correctly and are suitably available across the province.

## 3.3 Programs Assessed for Alignment with Ministry Strategies

***We recommended that the Ministry of Health review regional health authorities' Primary Health Care plans and programs to ensure they contain appropriate actions and align with the Ministry's strategies relating to chronic disease management including diabetes management and prevention of diabetes-related health complications.***

(2012 Report – Volume 2; Public Accounts Committee agreement September 9, 2014)

**Status** – Implemented

Since 2015, the Ministry reviewed and assessed the annual Primary Health Care plans of each authority and gave them feedback. The reviews assessed the alignment of each plan

[4] Information is included in the Ministry of Health's annual accountability document.
[5] The categories of program information were: Screening/Assessment, Education/Counselling, Management, Support/Testing, Insulin Pumps, Pediatric, Gestational and Other (outreach, other services offered, use of telehealth and group medical visits).

with the Ministry strategies and direction, including how the plans relate to chronic disease management.

## 3.4 Progress Reported on Strategies

***We recommended that the Ministry of Health publicly report progress in implementing its strategies to manage chronic diseases separately identifying diabetes and prevention of diabetes-related health complications.*** (2012 Report – Volume 2; Public Accounts Committee agreement September 9, 2014)

**Status** – Implemented

In the Ministry of Health's *2016-17 Annual Report*, the Ministry described its planned and actual results related to six chronic conditions, including diabetes. The annual report highlighted the actions the Ministry took during the year.

The Ministry's objective for 2016-17 was to ensure that people living with chronic diseases experience better health. Its targets and results, as outlined in its annual report, were:

- 30% decrease in hospital utilization related to six chronic conditions, by March 31, 2017. The target was changed in 2016 to be a 10% decrease in hospital utilization by March 31, 2017. The Ministry reported that as of March 2016, total hospitalizations (for all conditions combined) had increased 3.94% from baseline.

- 80% of patients with any of six chronic conditions receive best practice care as evidenced by the completion of flow sheets, by March 31, 2017. The target was changed in 2016-17 to be 45% of patients with any of four[6] chronic conditions receive best practice care as evidenced by the completion of flow sheets. The Ministry publicly reported progress on this target at March 2017, indicating that 27.7% or 49,283 discrete patients have data submitted through the CDM-QIP repository.

Making this information public helps keep legislators and the public informed about the Ministry's progress towards implementing strategies key to managing chronic diseases, and improving the quality of life of those affected while carefully managing associated health costs.

[6] Coronary artery disease, diabetes, chronic obstructive pulmonary disease, and congestive heart failure.