CIRCLE :
A Partnership Between First Nation Communities & Researchers to Better Understand and Improve On-Reserve Diabetes Care

CIRCLE Diabetes Report Card for Healthcare Providers in Chisasibi

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CIRCLE Communities

The CIRCLE Study was conducted from 2007 to 2009 in 19 First Nation communities from seven provinces across Canada.

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Western Schulich MEDICINE & DENTISTRY

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Health Canada Santé Canada

Thank you for your continued support and participation!

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Diabetes Clinical Management in Chisasibi: A Recent Snapshot

Type 2 diabetes is a major public health problem for First Nation peoples living in Canada. Type 2 diabetes and diabetes-related complications present a burden not only on healthcare services, but on the individual, their families and their communities. Compared to national prevalence rates, estimates reveal that Indigenous peoples living in Canada have diabetes rates three to five times higher, yet little national information exists about the treatment and management of type 2 diabetes in First Nation communities.

The CIRCLE (Canadian First Nations Diabetes Clinical Management Epidemiologic) Study was designed to provide a comprehensive understanding of the current clinical management of type 2 diabetes in your community and in 18 other First Nation communities across Canada. It is hoped that this information will facilitate the development of strategies to improve diabetes healthcare delivery and reduce complications from type 2 diabetes for First Nation peoples living on-reserve.

CIRCLE had three main objectives:

1) To compare current diabetes clinical management with recommendations from the Canadian Diabetes Association Clinical Practice Guidelines (CDA CPGs);
2) To determine the prevalence of diabetes-related complications and comorbidities in participating communities;
3) To identify clinical care gaps and disparities.

Community participation was approved through the Chief and Council by a letter of participation. A random chart review of consenting adult patients with type 2 diabetes was performed in 19 communities across Canada, including your community. Chart reviews gathered information from 2002 to 2007 on diabetes care. Patients were randomly identified through the diabetes registry and approached for informed consent to participate in the study.

The information in this Diabetes Report Card summarizes the data gathered through the chart reviews from your community. It can help inform your community of areas of diabetes care that are meeting or exceeding standards of care and areas that are below optimal measures (as compared to the CDA CPGs) where efforts and limited resources should be directed.

It should be noted that all of the information contained in this report card was gathered through reviews of 50 patient charts documenting care from 2002 to 2007. Any information not explicitly written in patient charts could not be determined or collected. Any care not documented in patient charts is not reflected in this report card and is a limitation of chart audit studies. In addition, we recognize many communities may have community-based programs for the prevention and management of type 2 diabetes that will not be highlighted in this report card. Similarly, new improvements and care subsequent to 2007 are not included.

Part 1:
Chisasibi Patient Demographics and Characteristics

Table 1: Study Participant Demographics

Measurement	Chisasibi
Number of Participants	50
Male: Female	13:37
Age at Audit (mean yrs; range)	57.6; 32.0-86.0
18 – 39	8.0% (4/50)
40 – 59	48.0% (24/50)
60+	44.0% (22/50)
Age at Diagnosis (mean yrs; range)	49.1; 24.0-76.0
<18	0.0% (0/50)
18 – 39	26.0% (13/50)
40 – 59	60.0% (30/50)
60+	14.0% (7/50)

Note: Denominators represent number of people with information available on each clinical measure.

Table 2: Study Participant Characteristics

Measurement	Chisasibi
Duration of Diabetes (mean yrs; range)	8.0; 0.0-24.0
<5 years	36.0% (18/50)
5-10 Years	38.0% (19/50)
>10 years	26.0% (13/50)
Year of Diagnosis Unavailable	0/50 (0.0%)
Body Mass Index (mean; range)	33.1; 18.1-56.8
<25	13.5% (5/37)
25-29.9	21.6% (8/37)
30-34.9	32.4% (12/37)
≥35	32.4% (12/37)
Smokers in 2007	14.0% (7/50)

74.0% of patients have had diabetes for less than 10 years. It is recommended that the focus of diabetes care in your community be on screening for complications and management of risk factors in order to prevent future complications.

Smoking rates can be reduced. Quitting smoking can lower the risk of developing diabetes complications no matter how long a patient has smoked. Community smoking cessation programs may be a good way to teach people how to quit smoking.

Part 2:
Patient Visits to Healthcare Facilities in 2007

Total number of visits (mean; range)	11.5; 3.0-37.0
Number of diabetes-related visits (mean; range)	8.0; 2.0-29.0

Part 3: Immunizations

Table 3: Immunizations

Vaccine (CDA CPGs recommendation)	Patient has received	Patient has not received	Information not present in chart
Pneumococcal (ever)	78.0% (39/50)	20.0% (10/50)	2.0% (1/50)
Influenza (2007)	56.0% (28/50)	42.0% (21/50)	2.0% (1/50)

Individuals with diabetes have higher risk of pneumonia and death associated with influenza, thus guidelines recommend that people with diabetes should receive an annual influenza vaccine and a one-time pneumococcal vaccine to reduce this risk.

Your community is doing great at documenting pneumococcal and influenza vaccines. It is recommended that more patients receive their annual influenza vaccines .

Part 4:
The ABCs of Clinical Practice in Chisasibi

Glycemic control (A1c) in Chisasibi:

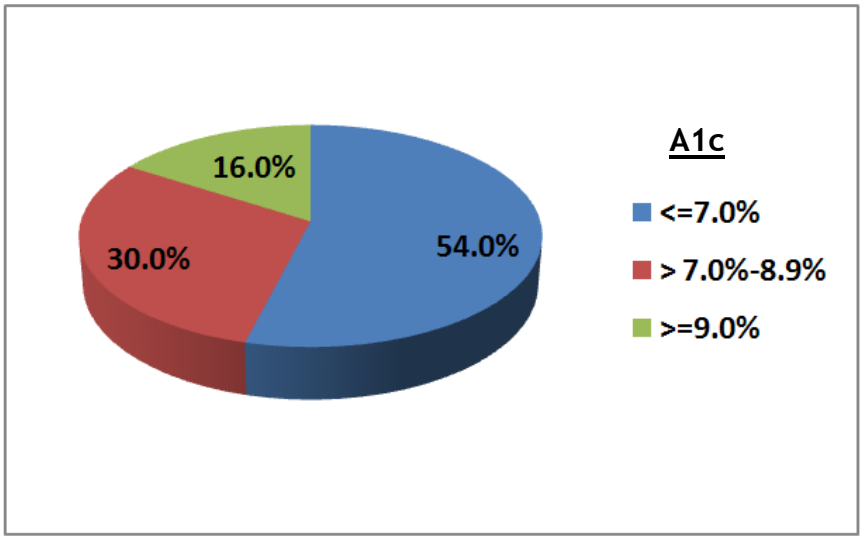
The CDA CPGs recommend checking A1c every 3 to 6 months.

100% (50/50) of patients had their A1c checked at least once in 2007

100% (50/50) of patients had their A1c checked at least once in 2002 to 2007

Of those patients who have been tested in the last five years (2002-2007), the average A1c was 7.4%.

- 54.0% of patients had an A1c ≤ 7.0% (at target)
- 30.0% of patients had an A1c > 7.0%-8.9%
- 16.0% of patients had an A1c ≥ 9.0%



Blood pressure control in Chisasibi:

The CDA CPGs recommend checking blood pressure every diabetes visit. Blood pressure was recorded for the most recent visit (i.e. one measure per patient).

100% (50/50) of patients had their BP checked in 2007

100% (50/50) of patients had their BP checked from 2002 to 2007

Of those patients who have had their BP checked in the last five years (2002-2007), the average Blood pressure was 136/75

- 46.0% of patients have a chart diagnosis of hypertension
- 40.0% of patients have reached target BP ≤ 130/ and ≤ 80

Cholesterol control in Chisasibi:

The CDA CPGs recommend a fasting lipid profile every 1-3 yrs as clinically indicated. More frequently if treatment for dyslipidemia is initiated.

92.0% (46/50) of patients had their cholesterol checked from 2005 to 2007

92.0% (46/50) of patients had their cholesterol checked from 2002 to 2007

Of those patients who have been screened in the last five years (2002-2007), the average LDL-C was 2.5

- 6.0% have a chart diagnosis of dyslipidemia
- 60.9% of patients have LDL-C > 2.0
- 39.1% of patients have LDL-C > 2.5

The 2003 CDA CPGs recommended an LDL-C target of 2.5. In 2006, the CDA adopted the new LDL-C target of 2.0. Both targets are presented for comparison.

Part 5: Treatment of Diabetes

Table 4: Diabetes Medications Prescribed in Chisasibi

Medication	Chisasibi
ACE/ARB	82.0% (41/50)
Anticoagulant/ Anti-Thrombotic	82.0% (41/50)
Lipid Lowering	58.0% (29/50)

Bottom Line:

Of those patients who have been screened in the last five years (2002-2007), 15.2% (7/46) met all three targets (A1c ≤ 7.0%, BP ≤ 130/80, LDL-C ≤ 2.5).

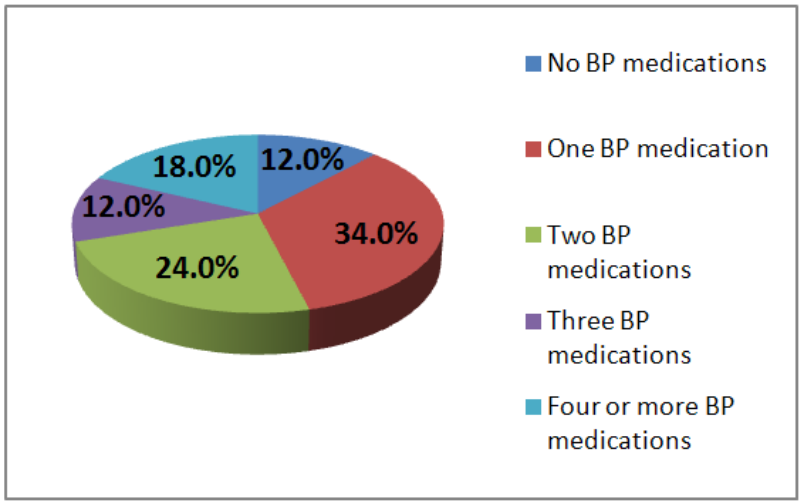
37.5% of patients with A1c ≥ 9.0% are not on insulin. Insulin should be considered for this patient population in order to achieve target A1c levels.

More than half of patients have not reached target blood pressure. Treatment intensification is recommended.

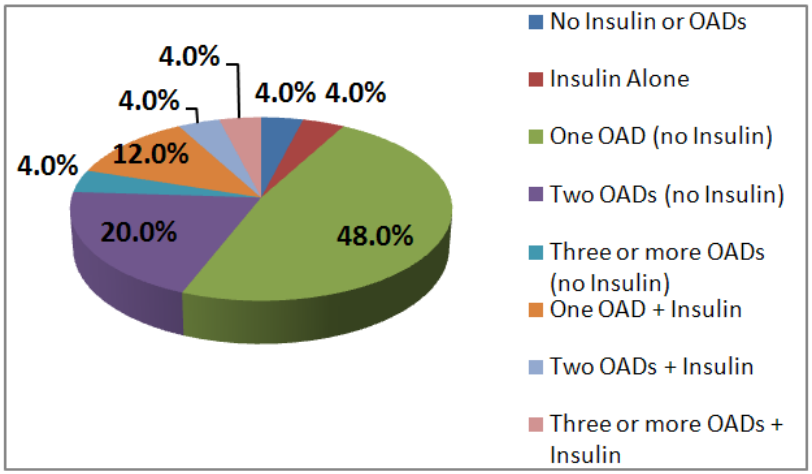
All patients with diabetes are at risk for vascular complications and most are recommended to be on an ACE/ARB. Your community is doing well with 82.0% of patients on an ACE/ARB.

58.0% of patients are on lipid-lowering medications and a large proportion are not at target. It may be appropriate to intensify the dosage for these patients.

Blood Pressure Medications



Insulin and Oral Anti-Diabetes Medications



Patients who aggressively control their blood glucose levels are less likely to develop complications and comorbidities associated with diabetes. The CDA CPGs recommend aggressive pharmacologic management in order to attain targets.

Part 6: Screening for Diabetes-Related Complications

Table 5: Patients Receiving Guideline Recommended Complications Screening

Screening Test	Schedule (Audit Years)	Patients Screened	Patients Screened Between 2002-2007
Foot Exam	Annual (2007)	36.0% (18/50)	36.0% (18/50)
Eye (Retinopathy)	Every 1-2 years (2006-2007)	26.0% (13/50)	26.0% (13/50)
Nerve (Neuropathy)	Annual (2007)	22.0% (11/50)	22.0% (11/50)
Kidney (Nephropathy)	Random urine ACR and/or serum creatinine screening at least annually (2007)	100% (50/50)	100% (50/50)

Foot, retinopathy, neuropathy and nephropathy screening are integral components of diabetes management to decrease the risk of foot ulcers, blindness, amputations and kidney disease.

Your community is doing great at screening patients for kidney disease with 100% of patients screened in 2002—2007. However, the majority of patients are not meeting the recommended screening schedules for feet, nerves and eyes. It is recommended that a screening program be developed and implemented.

Part 7: Diabetes-Related Complications

Complications of diabetes can be successfully managed by regular screening. The CDA CPGs recommend that the best possible glucose, blood pressure and lipid control should be instituted to prevent the onset and delay the progression of these complications.

Table 6: Macrovascular Complications

Complication	Chisasibi
Any Macrovascular Disease	**20.0% (10/50)**
Heart Disease	2.0% (1/50)
Cerebrovascular Disease	8.0% (4/50)
Peripheral Vascular Disease (PVD)	4.0% (2/50)
Amputations	0.0% (0/50)

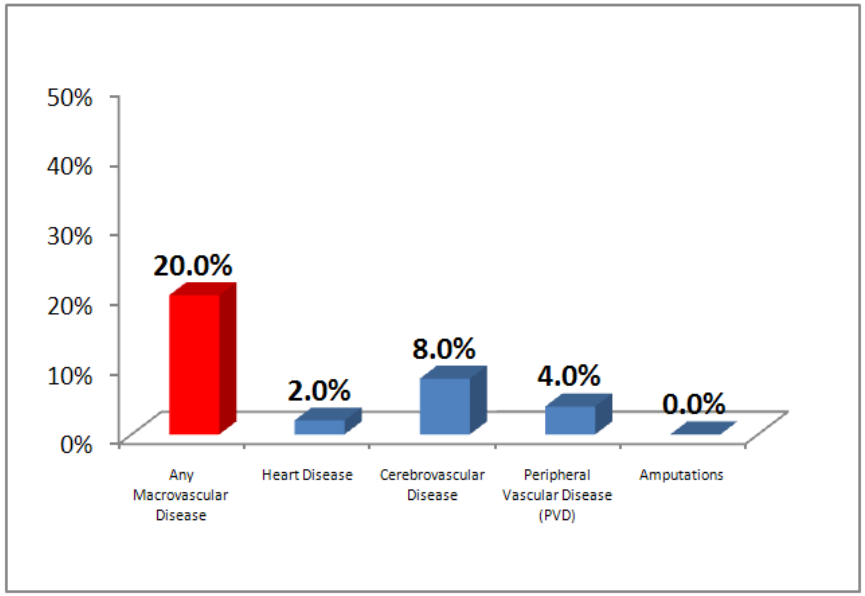


Table 7: Microvascular Complications

Complication	Chisasibi
Any Microvascular Disease	**46.0% (23/50)**
Any Kidney Disease	44.0% (22/50)
Neuropathy	4.0% (2/50)
Eye Disease	16.0% (8/50)
Diabetic Foot Disease	0.0% (0/50)

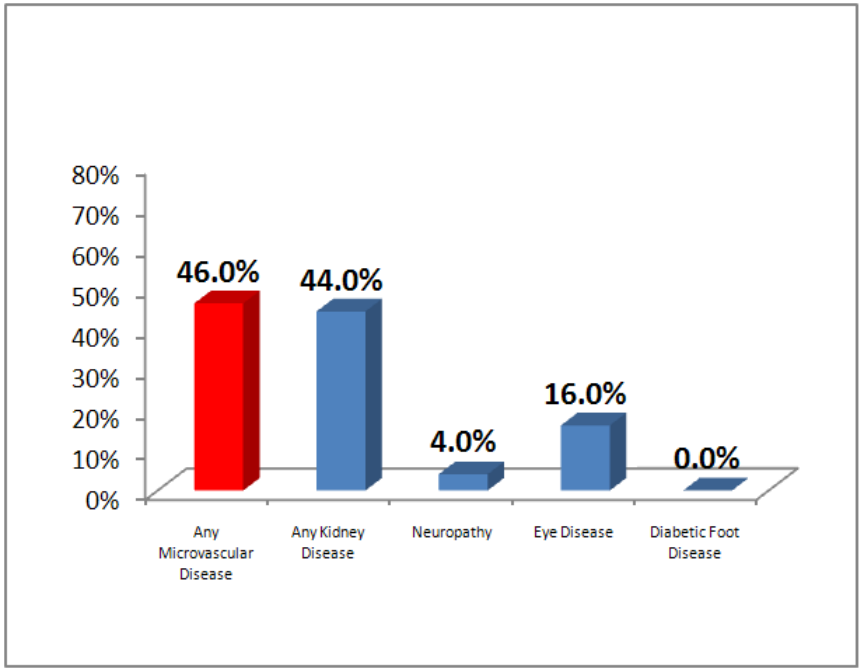
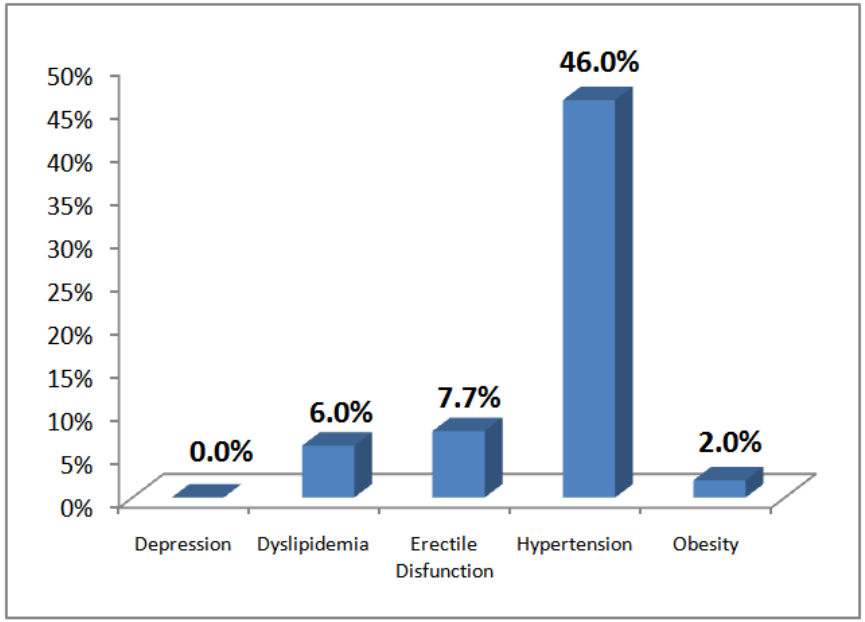


Table 8: Diabetes-Related Comorbidities

Comorbidity	Chisasibi
Depression	0.0% (0/50)
Dyslipidemia	6.0% (3/50)
Erectile Dysfunction	7.7% (1/13)
Hypertension	46.0% (23/50)
Obesity	2.0% (1/50)



The comorbidities listed above are recorded from chart diagnoses only.

Part 8: Five Ways to Better Care in Chisasibi

Diabetes is a condition that patients live with *every day*. Healthcare teams can work together to make sure that people with diabetes get the support, physical activity, healthy foods, treatments, medications and tests they need to live long, healthy lives.

Your community is doing particularly well at getting your blood sugar, blood pressure and cholesterol levels tested but there is a lot more that can be done to improve care.

Many patients in your community have had diabetes for less than 10 years. These patients run the risk of developing complications if not screened regularly. It is recommended that screening for feet, nerves and eyes be improved.

Diabetes management involves many steps. Based on the audit, here are some key areas to focus on for improvement.

SUMMARY

1) Keep on Measuring and Documenting

The only way to tell if the changes you are making are making a difference is to keep track! Continue to monitor and document patient treatment and tests results. In particular, improved screening for feet, nerves and eyes is recommended.

2) Improving Management of Blood Pressure

More than half of patients have not reached the blood pressure target. Of these patients, only 35.1% are taking 3 or more blood pressure medications. It is recommended that treatment be intensified to bring more patients to target.

3) Improving Management of Cholesterol

The majority of patients (58.0%) are taking lipid-lowering medications. However, 39.1% have LDL-C > 2.5. Therefore, it may be appropriate to intensify the dosage for these patients.

4) Improving Immunizations

56.0% of patients had their annual influenza vaccine. It may be beneficial for more patients to receive this vaccine.

5) Talk to Patients

The quality of diabetes care depends on a partnership between the individual with diabetes and the healthcare team. Optimal results occur when people fully participate in their own diabetes management. What do patients think might help? Where do they think care could use improvement? What goals would they like to focus on?

Thank you for your ongoing efforts in helping to improve diabetes care in Chisasibi.