Indicator: Diabetes Incidence

DEFINITION: Incidence is expressed as the number of new cases of diabetes found during a specific period of time (e.g., over 1-year, 2-year or 5-year span) divided by the amount of time contributed by persons at risk of developing diabetes. Specifically, it is the average number of new cases of diabetes (Type 1 and 2 combined) in Winnipeg Regional Health Authority (the Region) residents aged 19 years and older per 100 person–years at risk as defined by either:

- at least one hospitalization with a diagnosis of diabetes, or
- at least two physician visits with a diagnosis of diabetes, or
- at least one prescription for diabetes medication, with no previous claims for diabetes.

NUMERATOR: Number of newly diagnosed diabetes cases (persons aged 19 years and older) in a specific time period (2004/05-2006/07 or 2009/10-2011/12).

DENOMINATOR: The number of the Region's residents aged 19 years and older at risk of developing diabetes (that is, residents with no previous claims for diabetes) in a specific time period (2004/05-2006/07 or 2009/10-2011/12).

CALCULATION: Incidence was calculated for 2004/05–2006/07 and 2009/10–2011/12 and was age– and sex–adjusted to the Manitoba population aged 19 years and older in the first time period (i.e., 2004/05–2006/07 Manitoba population as the standard population for 2004/05–2006/07 and 2009/10–2011/12).

DATA SOURCE: Manitoba Centre for Health Policy (MCHP), 2013

KEY FINDINGS:

○ Diabetes incidence in the Region was lower than the Manitoba average.

○ Diabetes incidence in the Region has been relatively stable although slightly declining from 0.86 cases per 100 person-years in 2004/05-2006/07 to 0.80 cases per 100 person-years in 2009/10-2011/12. The significant change in Churchill (from 2.36 to 0.78) may be due to year-to-year variation given its small population numbers.

○ Diabetes incidence rates vary across the Region. There was a nearly 3-fold difference in diabetes incidence across neighborhood clusters (NC), with the highest incidence (1.50 cases per 100 person-years) in Point Douglas South and the lowest incidence in River East North (0.53 cases per 100 person-years).

○ There was a trend for a higher diabetes incidence rate among lower income communities: In 2009/10-2011/12, diabetes incidence rate in the lowest income NC was 2.83 times higher than that in the highest income NC; and the diabetes incidence rate in those persons in the lowest income quintile was 1.95 times higher than those in the highest income quintile.

WHAT DO THE FINDINGS MEAN TO COMMUNITIES?

○ Actual diabetes incidence may be higher because about 20% of persons with diabetes may remain undiagnosed.[1]

○ In Canada, diabetes incidence increased by 9% between 2002/03 and 2006/07.[2] Manitoba was one of several provinces with a higher than the national average incidence rate (0.52% for both genders) between 2002/03 and 2006/07.

○ Aging, lower socioeconomic status, physical inactivity, unhealthy eating, obesity, smoking and a family history of diabetes are important risk factors for type 2 diabetes.

○ Diabetes prevention requires a comprehensive strategy including physical activity, healthy diet and smoking cessation.

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1   Public Health Agency of Canada. Diabetes in Canada: Facts and figures from a public health perspective. Ottawa, 2011.

2   Public Health Agency of Canada. Report from the National Diabetes Surveillance System: Diabetes in Canada, 2009. Ottawa, 2009.

Trends in Diabetes Incidence Rates in Winnipeg & Manitoba

Age- & sex-adjusted incidence rate (cases per 100 person-years) for residents aged 19+, 2004/05–2011/12
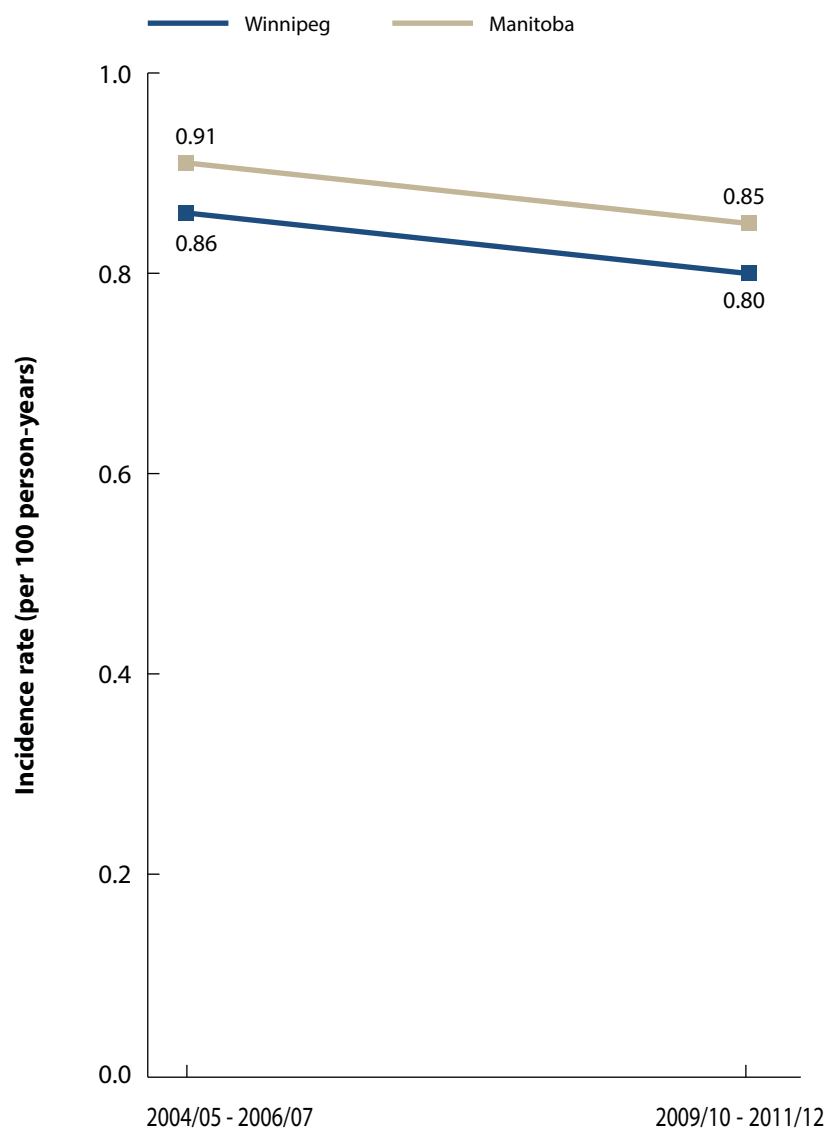
Figure A3.3.3.a2

Diabetes Incidence Rates by Winnipeg Community Area

Age- & sex-adjusted incidence rate (cases per 100 person-years) for residents aged 19+, 2004/05–2006/07 & 2009/10–2011/12

	2004/05–2006/07	2009/10–2011/12	MB Avg (2004/05–2006/07)	MB Avg (2009/10–2011/12)

Community Area

Community Area	2004/05–2006/07	2009/10–2011/12
Assiniboine South (1,2)	0.57	0.61
Fort Garry (1,2)	0.75	0.67
Transcona	0.86	0.77
St. Boniface (2,t)	0.87	0.74
St. Vital (1,2)	0.80	0.75
Seven Oaks (2)	0.97	0.96
St. James-Assiniboia (1,2)	0.77	0.71
Inkster (1,2)	1.18	1.18
River East (1,2)	0.80	0.75
River Heights (1,2)	0.72	0.66
Point Douglas (1,2)	1.19	1.25
Downtown (1,2)	1.05	1.05
Winnipeg (t)	0.86	0.80
Churchill (1,t)	2.36	0.78
Manitoba (t)	0.91	0.85

Incidence rate (per 100 person-years)

Source: Manitoba Centre for Health Policy, 2013
'1' indicates that in the first time period, the area's rate was statistically different from the MB average at that time
'2' indicates that in the second time period, the area's rate was statistically different from the MB average at that time
't' indicates for that area, the change in rates from Time 1 to Time 2 was significant

Diabetes Incidence Rates by Winnipeg Community Area & Neighborhood Cluster

Age- & sex-adjusted incidence rate (cases per 100 person-years) for residents aged 19+, 2004/05–2006/07 & 2009/10–2011/12

Legend: 2004/05–2006/07 | 2009/10–2011/12 | MB Avg (2004/05–2006/07) | MB Avg (2009/10–2011/12)

Community Area & Neighborhood Cluster (vertical axis)

Area	2004/05–2006/07	2009/10–2011/12
Assiniboine South (1,2)	0.57	0.61
Fort Garry (1,2)	0.75	0.67
Fort Garry N	0.76	0.69
Fort Garry S (1,2)	0.73	0.64
Transcona	0.86	0.77
St. Boniface (2,t)	0.87	0.74
St. Boniface E (t)	0.86	0.71
St. Boniface W	0.85	0.80
St. Vital (1,2)	0.80	0.75
St. Vital S	0.74	0.69
St. Vital N	0.87	0.82
Seven Oaks (2)	0.97	0.96
Seven Oaks N	0.77	0.80
Seven Oaks W	1.12	1.01
Seven Oaks E	0.90	0.95
St. James-Assiniboia (1,2)	0.77	0.71
St. James-Assiniboia W	0.77	0.73
St. James-Assiniboia E (2)	0.76	0.67
Inkster (1,2)	1.18	1.18
Inkster West (2)	0.99	1.11
Inkster East (1,2)	1.39	1.23
River East (1,2)	0.80	0.75
River East N (1,2)	0.53	0.53
River East E	0.85	0.74
River East W	0.79	0.73
River East S	0.93	0.94
River Heights (1,2)	0.72	0.66
River Heights W (1,2)	0.68	0.63
River Heights E	0.78	0.69
Point Douglas (1,2)	1.19	1.25
Point Douglas N (1,2)	1.13	1.13
Point Douglas S (1,2)	1.36	1.50
Downtown (1,2)	1.05	1.05
Downtown W	0.94	0.92
Downtown E (1,2)	1.19	1.20
Winnipeg (t)	0.86	0.80
Churchill (1,t)	2.36	0.78
Manitoba (t)	0.91	0.85

Incidence rate (per 100 person-years) (horizontal axis: 0.0 to 2.5)

Source: Manitoba Centre for Health Policy, 2013

'1' indicates that in the first time period, the area's rate was statistically different from the MB average at that time

'2' indicates that in the second time period, the area's rate was statistically different from the MB average at that time

't' indicates for that area, the change in rates from Time 1 to Time 2 was significant

Figure A3.3.3.a4

Diabetes Incidence Rates by Winnipeg Neighborhood Cluster

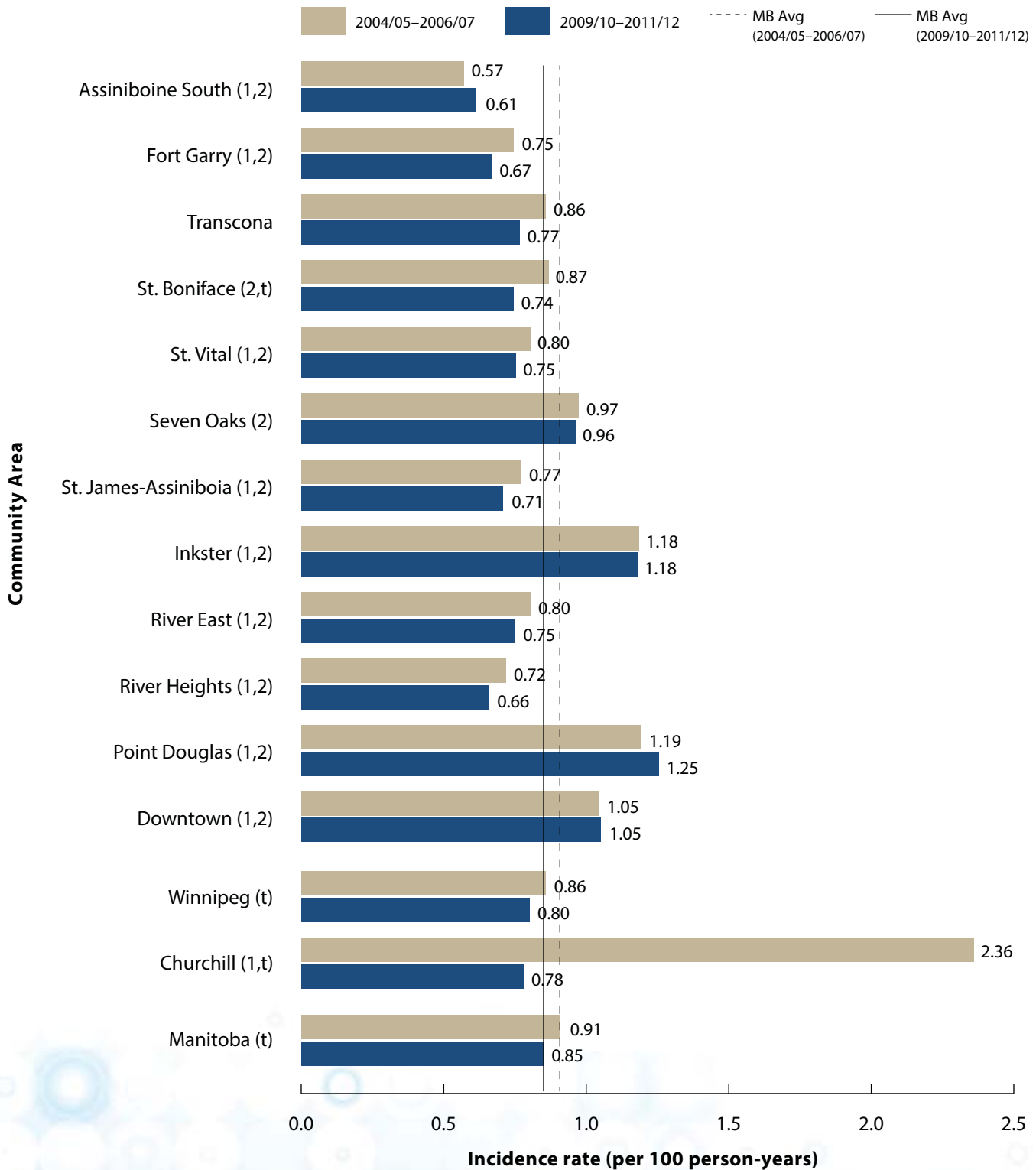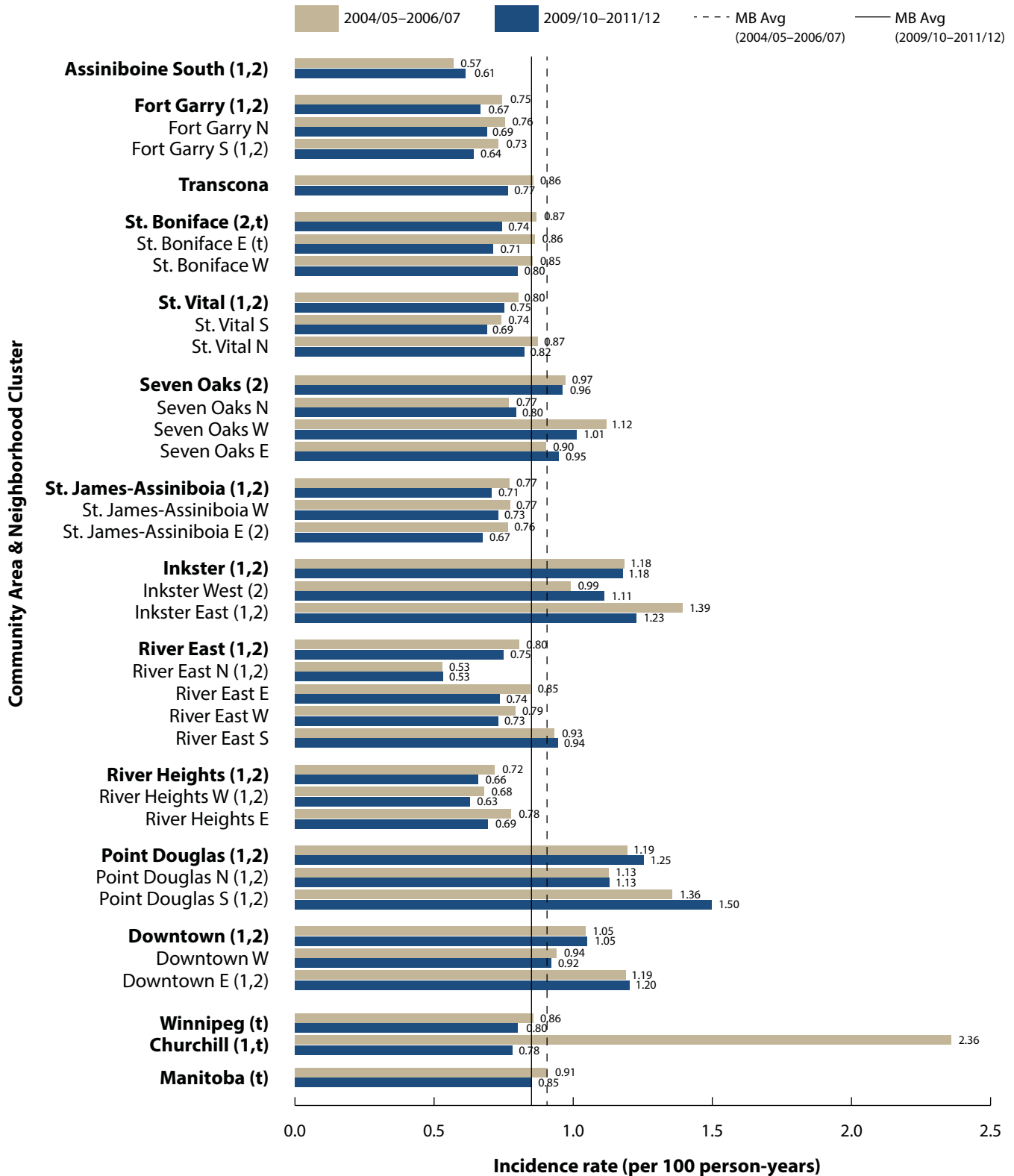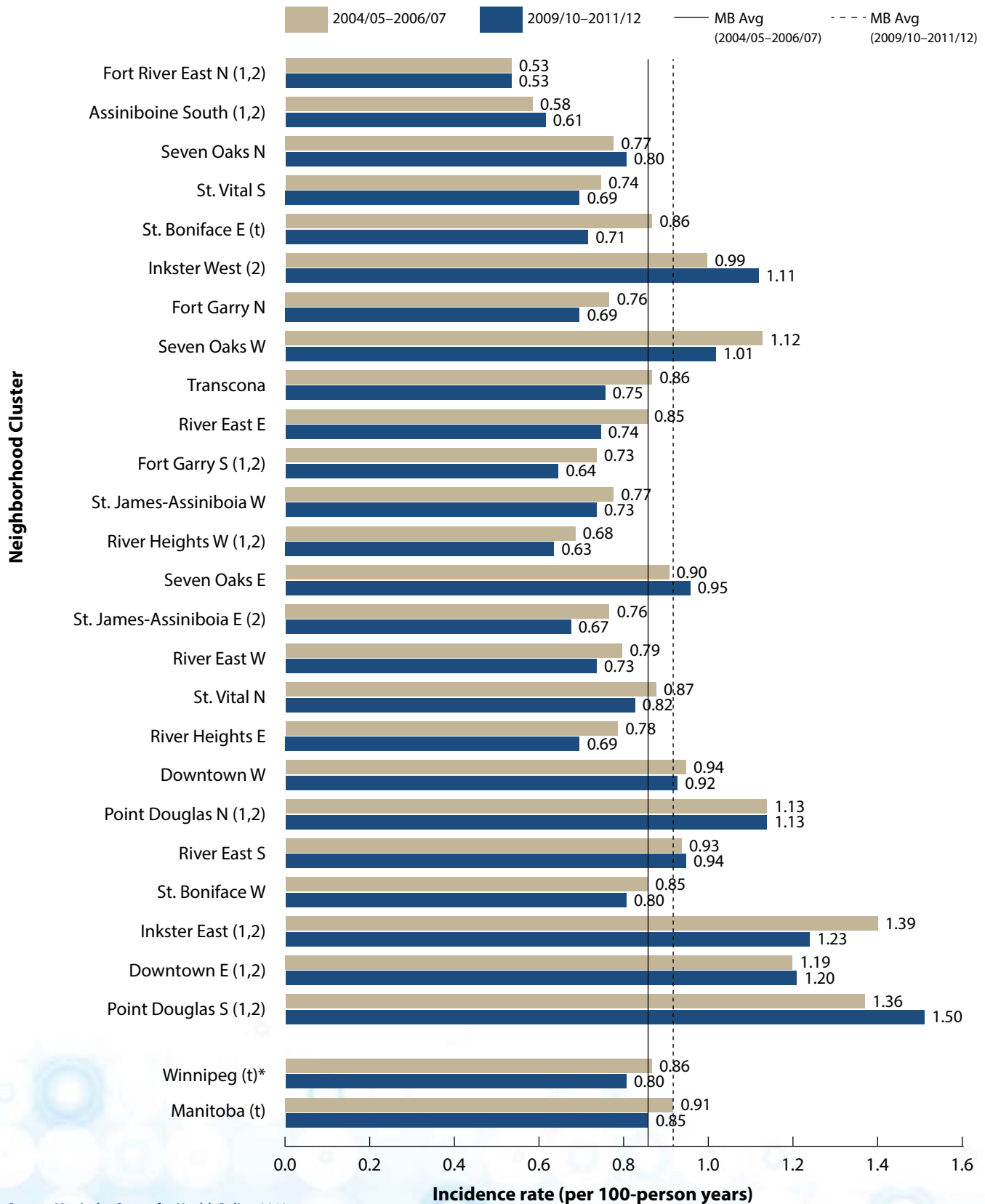Age- & sex-adjusted incidence rate (cases per 100 person-years) for residents aged 19+, 2004/05–2006/07 & 2009/10–2011/12

Legend:
- 2004/05–2006/07
- 2009/10–2011/12
- MB Avg (2004/05–2006/07)
- MB Avg (2009/10–2011/12)

Neighborhood Cluster	2004/05–2006/07	2009/10–2011/12
Fort River East N (1,2)	0.53	0.53
Assiniboine South (1,2)	0.58	0.61
Seven Oaks N	0.77	0.80
St. Vital S	0.74	0.69
St. Boniface E (t)	0.86	0.71
Inkster West (2)	0.99	1.11
Fort Garry N	0.76	0.69
Seven Oaks W	1.12	1.01
Transcona	0.86	0.75
River East E	0.85	0.74
Fort Garry S (1,2)	0.73	0.64
St. James-Assiniboia W	0.77	0.73
River Heights W (1,2)	0.68	0.63
Seven Oaks E	0.90	0.95
St. James-Assiniboia E (2)	0.76	0.67
River East W	0.79	0.73
St. Vital N	0.87	0.82
River Heights E	0.78	0.69
Downtown W	0.94	0.92
Point Douglas N (1,2)	1.13	1.13
River East S	0.93	0.94
St. Boniface W	0.85	0.80
Inkster East (1,2)	1.39	1.23
Downtown E (1,2)	1.19	1.20
Point Douglas S (1,2)	1.36	1.50
Winnipeg (t)*	0.86	0.80
Manitoba (t)	0.91	0.85

Incidence rate (per 100-person years)

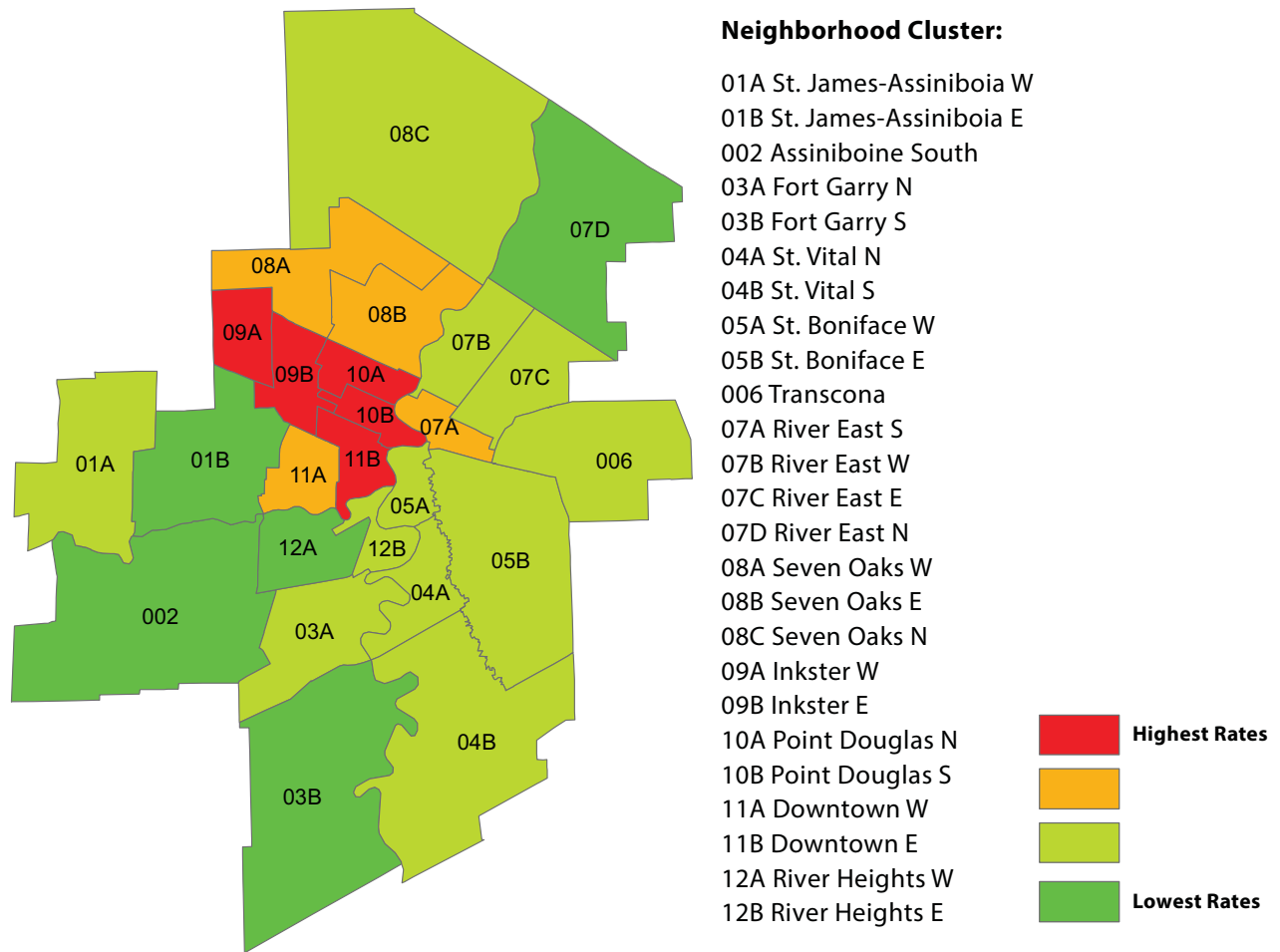*Source: Manitoba Centre for Health Policy, 2013*
*Excluding Churchill
'1' indicates that in the first time period, the area's rate was statistically different from the MB average at that time
'2' indicates that in the second time period, the area's rate was statistically different from the MB average at that time
't' indicates for that area, the change in rates from Time 1 to Time 2 was significant

Map A3.3.3.a5
Diabetes Incidence Rates by Winnipeg Neighborhood Cluster
Age- & sex-adjusted incidence rate (cases per 100 person-years) for residents aged 19+, 2009/10-2011/12

Neighborhood Cluster:

01A St. James-Assiniboia W
01B St. James-Assiniboia E
002 Assiniboine South
03A Fort Garry N
03B Fort Garry S
04A St. Vital N
04B St. Vital S
05A St. Boniface W
05B St. Boniface E
006 Transcona
07A River East S
07B River East W
07C River East E
07D River East N
08A Seven Oaks W
08B Seven Oaks E
08C Seven Oaks N
09A Inkster W
09B Inkster E
10A Point Douglas N
10B Point Douglas S
11A Downtown W
11B Downtown E
12A River Heights W
12B River Heights E

Highest Rates

Lowest Rates

Source: Manitoba Centre for Health Policy, 2013

Table A3.3.3.a1

Health Inequality in Diabetes Incidence (cases per 100 person-years) by Median Household Income & Urban Income Quintile

Health Inequality Measures	Time Period	
Diabetes Incidence (new cases) by *Neighborhood Cluster (NC) median household income*	2004/05–2006/07 (new) cases per 100 person-years at risk	2009/10–2011/12 (new) cases per 100 person-years at risk
Highest income NC (River East N)	0.53 cases	0.53 cases
Lowest income NC (Point Douglas S)	1.36 cases	1.50 cases
Absolute difference (Lowest income NC – Highest income NC)	0.83 cases	0.97 cases
Ratio (Lowest income NC / Highest income NC)	2.57 cases	2.83 cases
Diabetes Incidence (new cases) by *Urban Income Quintile*	2004/05–2006/07 (new) cases per 100 person-years at risk	2009/10–2011/12 (new) cases per 100 person-years at risk
Highest Urban Income Quintile (U5)	0.62 cases	0.57 cases
U4	0.74 cases	0.71 cases
U3	0.84 cases	0.81 cases
U2	0.96 cases	0.89 cases
Lowest Urban Income Quintile (U1)	1.12 cases	1.11 cases
Absolute difference (U1-U5)	0.50 cases	0.54 cases
Ratio (U1/U5)	1.81	1.95

Source: Manitoba Centre for Health Policy, 2013