Community Area Overview

This chapter is intended to guide the reader through the community area population health profiles and provide additional information about the methods and results that were used to generate the individual profiles. In addition, this chapter identifies some of the unique findings and highlights common patterns of issues that exist among the community areas within the WHR.

The layout of this chapter is similar to that of the community area population health profiles. Each population health profile is divided into five sections, as follows:

- **Geography**
- **Population Characteristics**
- **Health Issues**
- **Health Determinants**
- **Summary of Key Issues**

The individual population health profiles present information that is specific to each community area. In this overview, each of these sections presents background information (introduction), and a brief description of the methods used. It is important to note that a multi-method approach was used in order to minimize bias in the synthesis of the information for the community areas. In addition, this overview allows the reader to see the results of the various data analyses for all of the community areas together. While each community area population health profile is unique, the collective review of the data provides evidence for the variability that exists between community areas within the WHR. This information provides direction for program planning, policy development as well as targeting strategies and interventions.

The twelve individual community area population health profiles follow this chapter. It is recommended that the **Community Area Overview** and the **WHR Overview** accompany any individual community area population health profile when it is read or distributed.

Geography

INTRODUCTION

As Winnipeg is often referred to as a city of several “little cities” or “communities”, the concept of sub-geographies with smaller population units was recognized by many sectors as a practical and effective approach to assess the needs of a population. Groups generating and/or using health, social, economic and environmental data agreed that sub-geographies with common geographical boundaries within Winnipeg would support and improve data collection.

METHODS

A consultation process was held with stakeholders, ranging from community members and health professionals to city and government representatives, to address and develop meaningful sub-geographies. The Neighbourhood model used by the City of Winnipeg was recommended and accepted as a starting point from which to build. From there, several factors were considered including similarities in population characteristics and housing, existing neighbourhood groupings, natural conditions such as rivers and streams, transportation routes (rail lines and major roadways) and land usage (residential, commercial and industrial).

RESULTS

Based on these elements, the Winnipeg Health Region (WHR) was sub-divided into three geographic levels: Neighbourhoods, Neighbourhood Clusters (NCs) and Community Areas (CAs). Neighbourhoods are the smallest sub-geography, with an average population of about 3000. There are 232 neighbourhoods in the Winnipeg Health Region. The 232 neighbourhoods are then combined to form the 25 NCs, each with a population of approximately 27 000. Likewise, the 25 NCs are combined to create the 12 CAs, which have an average population of about 55 000. Figure 1 provides a description of the sub-geographies and how they link to one another.

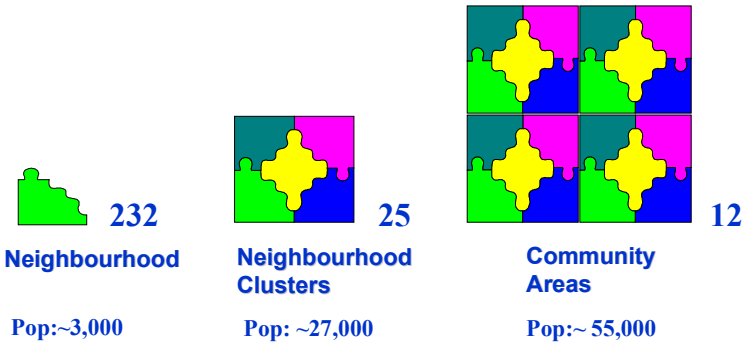


Figure 1: Description of Sub-geographies in the Winnipeg Health Region

From a health planning and service delivery perspective, the 12 Community Areas were adopted as a manageable starting point, and the 25 Neighbourhood Clusters were accepted as a sensible unit of analysis for population data (Figures 2 and 3). These sub-geographies support the collection of valuable information, which are also shared across many sectors to support other social services and community development activities. Information at the Neighbourhood geography level is too small in population size to produce meaningful health information. Population health profiles have been created for each of the 12 Community Areas. To show the variability within the region, selected health issues have been mapped at the Neighbourhood Cluster level.

Figure 2
Winnipeg Health Region: Community Areas (12)

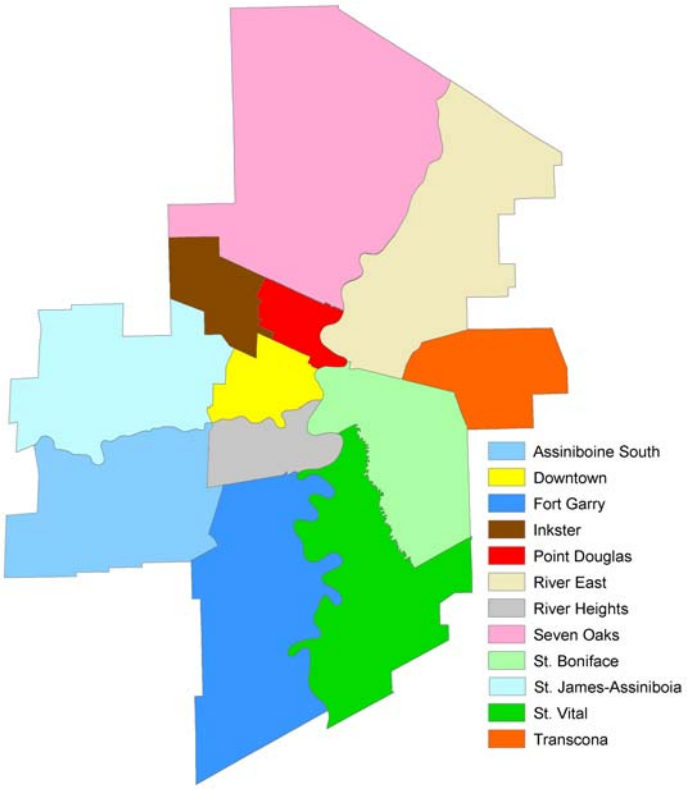
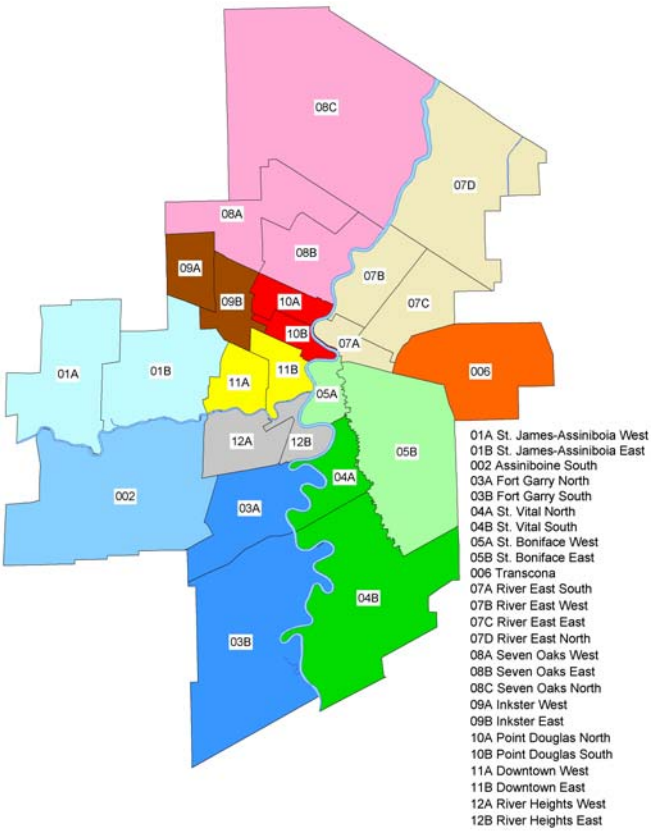


Figure 3
Winnipeg Health Region: Neighbourhood Clusters (25)



Population Characteristics

INTRODUCTION

Population characteristics have been compiled for each community area (CA). This includes demographic information: the age and sex distribution of the population. Information in areas such as family structure, ethnicity, and economics, was also highlighted in order to enhance the understanding of the people living in each community area. Population characteristic information was derived from Census 2001 data and the most recent population figures from the Manitoba Health Population Health Registry File, 2003. It should be noted that more detailed information for each community area can also be found in the Data Book, CHA Report 2004.

METHODS

Comparisons among the community areas were also made for selected population characteristics. In particular, those CAs with a proportion or rate that was among the three highest or lowest was highlighted in the text. Those CAs that were neither among the three highest or lowest values, were termed 'mid-range'. In general, there were six community areas with mid-range values. An exception to this was unemployment rate, where there was only one lowest value, eight mid-range values that were also equal, and three highest values.

RESULTS

Each community area profile describes population characteristics that pertain to its CA.
Highlights of findings in the CA profiles include:

- There is variability among the CAs relative to the age and sex distribution of the CA population. For example, the St. James-Assiniboia CA has the highest proportion of seniors and lowest proportion of children and youth. In contrast, Inkster has the highest proportion of children and youth. The Point Douglas CA has a high proportion of young adult males compared to most other CAs.
- The Point Douglas, Downtown, and Inkster CAs have the highest proportions of single parent families.
- The proportion of seniors living alone varies widely among the CAs, this ranges from 25.7% in the Fort Garry CA to 48.4% in Downtown CA.
- There are distinct patterns of ethnic diversity among the CAs. For example, the Point Douglas CA has the highest proportion of Aboriginal people among the CAs.
- There is wide variation in economic characteristics among the CAs. The CA with the highest median household income is the Assiniboine South CA, and that with the lowest is the Downtown CA.

Health Issues

INTRODUCTION

A multi-method approach was used to identify the major health issues and factors that influence these health issues. All methods used indicators that were developed in the Data Book, CHA Report 2004. This approach was used to increase the validity of the findings and minimize the biases of any one method.

METHODS

The following methods were used:

1. Comparison of health indicators
2. Spatial analysis (i.e. mapping)
3. Expert review

Please see the **Methods** chapter for full detail about the methods used for this report.

1. Comparison of Health Indicators

Comparison of Relative Ratios and Rate Differences were used to identify health outcomes where the CA rate was better or worse than the WHR rate. Health issues were identified by examining health status indicators in six health domains:

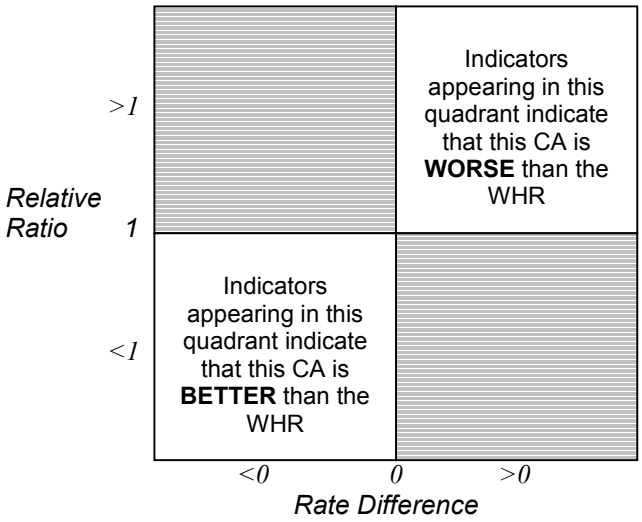
- Chronic health conditions
- Communicable disease
- Infant and maternal health
- Injury
- Mental health
- Mortality

In order to facilitate comparisons, the relative ratio and rate differences of the indicators were graphed for each health domain, for each community area (Figure 4). For all indicators within the six domains, a large rate is associated with a negative health outcome, with the exception of immunization. In all other circumstances, a rate difference greater than zero (>0) and a relative ratio greater than one (>1) means that the CA is worse than the WHR. For example, a higher diabetes prevalence rate reflects a greater burden of illness. For immunization, a higher immunization rate is associated with a positive health outcome (i.e. more children are immunized). In this circumstance, a rate difference greater than zero (>0) and a relative ratio greater than one (>1) means that the CA is better than the WHR.

Using this method, a health issue was identified in a community area if the indicator, or group of indicators in the domain, appeared to be worse compared to the WHR. The graphs are shown in the Results section. For each of the 12 community areas, the specific health issues are identified and discussed in each community area population health profile. This data was also used to identify common patterns of issues that exist among the CAs, this is presented in this Overview in the Results section.

Health issues were identified by examining health status indicators in six health domains: Chronic Health Conditions; Communicable Disease; Infant and Maternal Health; Injury; Mental Health; and Mortality. To summarize the overall health status of a population, comparisons among the community areas were made for the six health domains. In particular, for each CA a health domain was categorized as average, below or above average based on the indicators that were associated with that domain. Based on the categorization of the domains for each CA, an overall health status was characterized as being average, above average or below average.

Figure 4: Guide to Interpretation of Health Indicator Comparison Graphs



2. Spatial Analysis

Indicators of the leading health issues within the WHR were selected for spatial analysis (i.e. mapping). This was used to demonstrate variability and patterns among smaller geographies within the WHR. The majority of the maps use indicator data at the neighbourhood cluster-level, available in the Data Book, CHA Report 2004. The maps were generated using the geographic information system (GIS) by ESRI ARCVIEW version 8.3.

Maps are presented in the Results section, and are listed by health issue/domain. They are not presented in each community area population health profile.

3. Expert Review

Two sets of reviewers were invited to review finding for the community areas. An advisory panel of Medical Officers of Health in the WHR reviewed health issues, and identified gaps in information and validated findings. In addition, WRHA Community Area Directors reviewed community area population health profiles specific to their community area. Again, this confirmed validity of the findings and identification of missing information.

RESULTS

Overall Health Status

The literature suggests that the best single indicator of health status is the premature mortality rate (PMR). PMR is a ratio based on the annual number of deaths per population of individuals who are less than 75 years of age. PMR focuses on deaths that occur at an early age that may be potentially preventable. PMR was used to compare overall health status among the Community Areas (Figures 26, 27 and 28: Mortality).

Based upon crude PMR, the Fort Garry CA and Assiniboine South CA both were determined to have above average health status, as the rate difference per 1,000 population (community area to the region) exceeded –1 (on the graph). The Point Douglas CA and Downtown CA have below average health status, the rate difference per 1,000 population exceeded +1. The remaining Community Areas: St. James-Assiniboia, St. Boniface, St. Vital, Transcona, River East, Seven Oaks, Inkster, and River Heights, were found to have average health status. For these Community Areas, the PMR rate difference per 1,000 population was between –1 and +1.

Age-and sex-adjusted PMR for the community areas were examined in order to factor in differences in age and sex distribution of the community area populations. While crude rates indicate what is actually happening in terms of burden of disease in a population, adjusted rates control for population differences and therefore are more suited for comparisons. Adjusting for age and sex distribution of the populations had little effect on the PMR of most CAs with two notable exceptions: St. James-Assiniboia CA and Inkster CA. The first, St. James-Assiniboia Community Area, the adjusted PMR decreased, bringing it closer to that of the WHR. This is an indication that the underlying age and sex distribution of the population may account for the higher crude PMR. It is possible that the greater proportion of seniors (age 65 years and older) may be contributing to the higher crude PMR. In contrast, in the Inkster CA, the adjusting the PMR for the underlying age and sex distribution of the population, increased the PMR. This increase in PMR equates to a higher burden of illness in this population. It is possible that the combination of the higher proportion of young people, and death at an early age, contribute to higher PMR.

This demonstrates that there is variability in the issues that affect premature mortality among the community areas. There is the need to further investigate the unique health issues that may exist for each community area.

Health Issues: Emerging Patterns Among Community Areas

The following summary identifies patterns among the indicators and community areas for the six domains used in the Comparison of Health Indicators: while maps demonstrate the variability of key health issues within the WHR.

Chronic Health Conditions

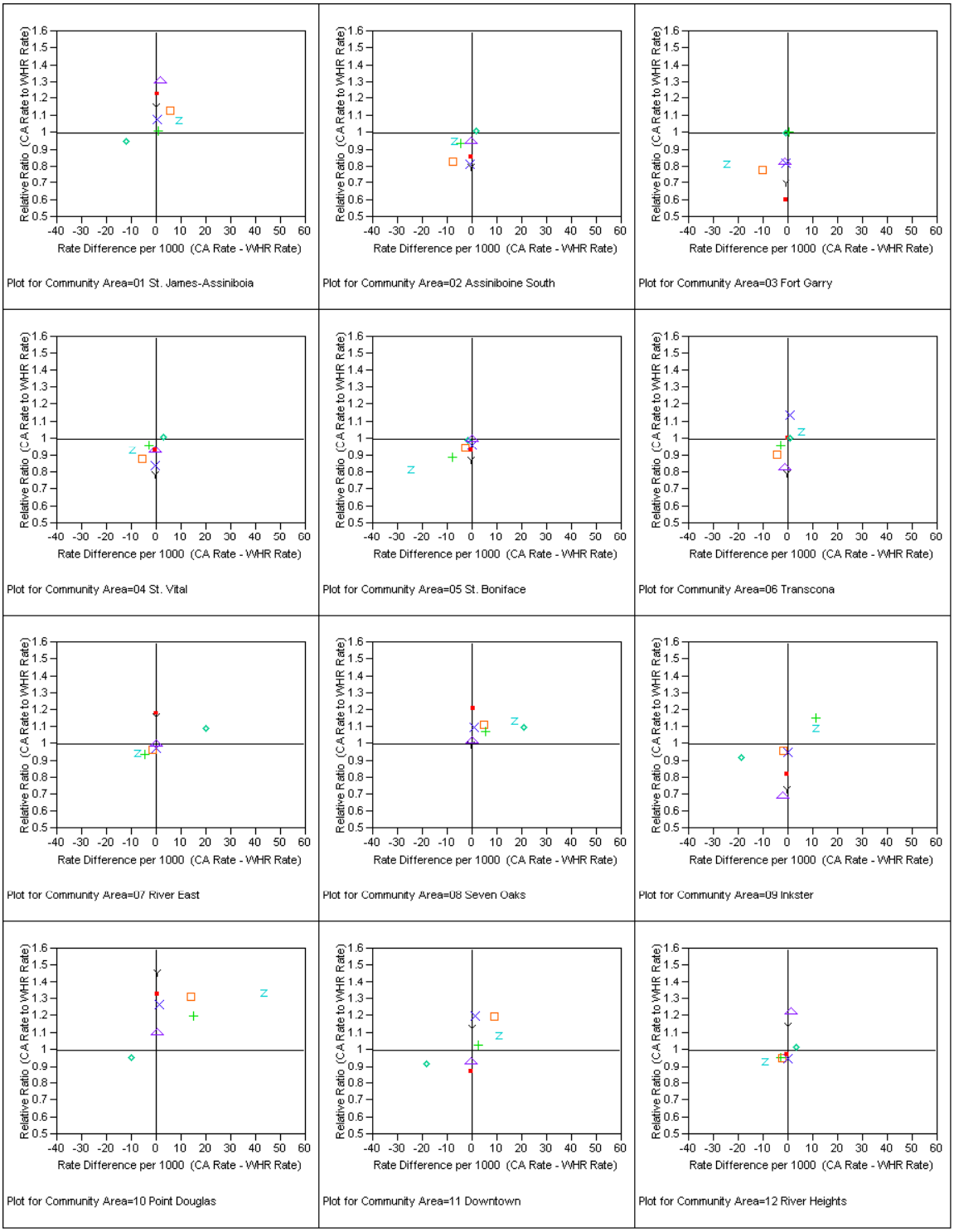
There are notable patterns of clusters of chronic disease indicators among the Community Areas (Figure 5).

A range of chronic health conditions exist in St. James-Assiniboia, Seven Oaks, Point Douglas and Downtown, in which the majority of chronic disease indicators compared less favourably to those of the region.

A common pattern was found among Assiniboine South, Fort Garry, St. Vital and St. Boniface community areas. For these community areas the majority of chronic disease indicators were better than those for the WHR.

The remaining community areas had unique patterns of indicators for chronic health conditions: River East (Cardiovascular Diseases); River Heights (Cancer and Cardiovascular Diseases); Inkster (Respiratory Illnesses); and Transcona (Diabetes Incidence and Total Respiratory Morbidity). Each of these chronic conditions compared less favourably to the regional value. However, the remaining chronic conditions were similar or better when compared to those of the region.

Figure 5
Chronic Health Conditions



Chronic Health Conditions

- Crude rates of treatment for acute myocardial infarction are highest in St. James-Assiniboia 1B, River East 7B, Point Douglas10A and B, and Seven Oaks 8B.
- Crude rates of treatment for stroke show a similar pattern. The highest rates are found in St. James-Assiniboia 1B, River East 7B, and Point Douglas10A.
- In contrast, treatment for total respiratory morbidity is most prevalent in Point Douglas 10A, 10B and Inkster 9B.

Figure 6
Acute Myocardial Infarction (AMI) Treatment Prevalence in the WHR, Crude Rate per 1,000 Population, Both Sexes, 1996/97-2000/01

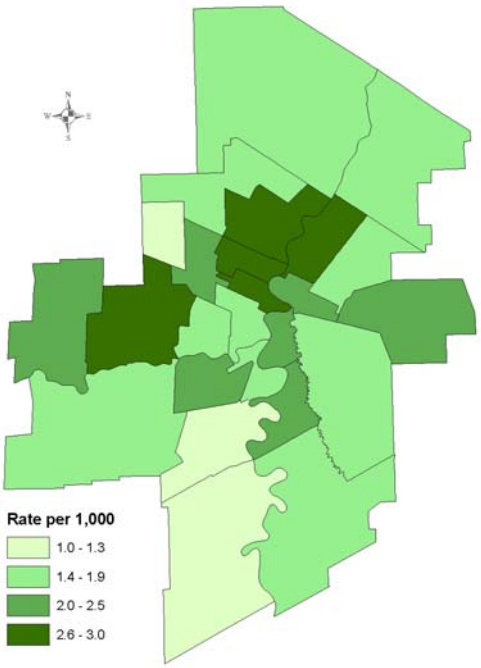


Figure 7
Total Respiratory Morbidity Treatment Prevalence in the WHR, Crude Rate per 1,000 Residents, 1999/00-2001/02

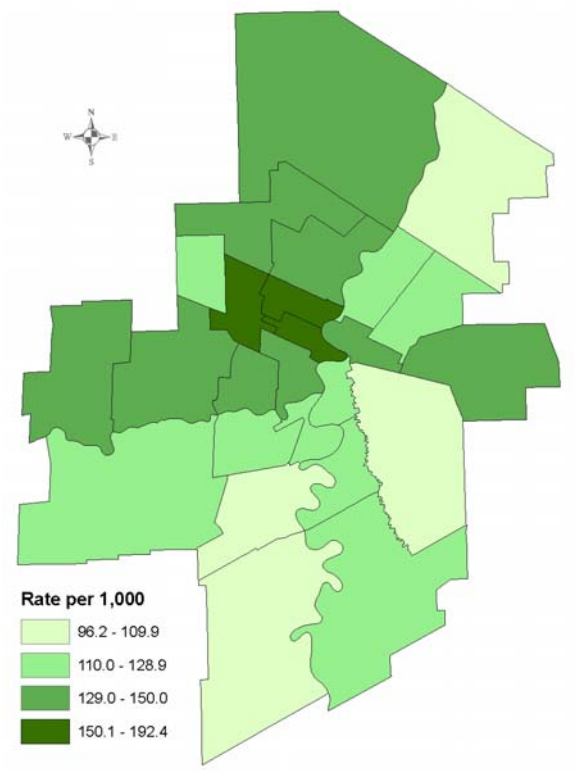
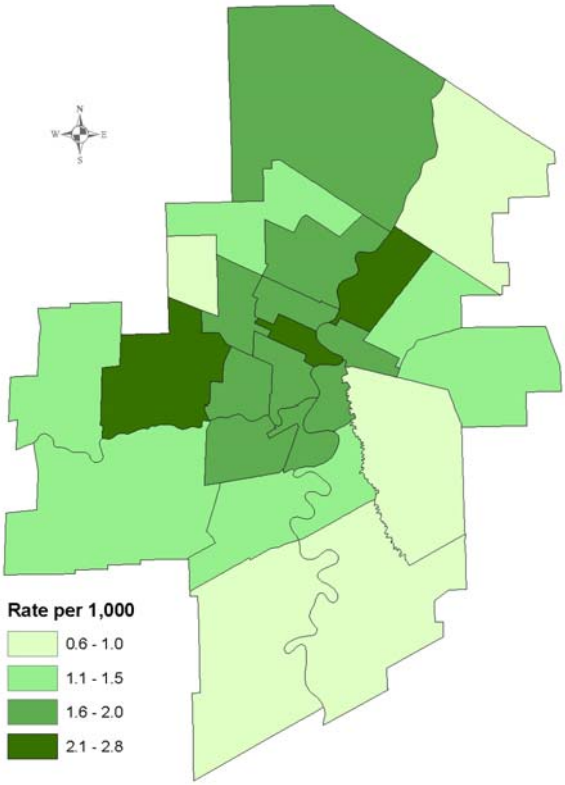


Figure 8
Stroke Treatment Prevalence in the WHR, Crude Rate per 1,000 Population, Both Sexes, 1996/97-2000/01



Chronic Health Conditions

Diabetes

- Crude rates of diabetes prevalence (all ages) are highest in Point Douglas 10B and Downtown 11B. Higher crude rates are also found in St. James-Assiniboia 1A and 1B, St. Boniface 5A, St. Vital 4A, River East 7B, Seven Oaks 8B, Inkster 9B A and Point Douglas 10A
- A similar pattern is seen for diabetes prevalence crude rates in ages 50-69. Point Douglas 10B, Downtown 11B, and Inkster 9B have the highest prevalence rates in this age group.
- Diabetes among those aged 70 years and older is most prevalent in Point Douglas 10B. Higher crude rates of diabetes prevalence are also found in St. Vital 4A, Transcona 6, River East 7A and 7C, Seven Oaks 8A and 8B Inkster 9A, and Downtown 11B.

Figure 9
Prevalence of Diabetes in the WHR, Crude Rate per 1,000 Population, Both Genders-All Ages, 1996-1999

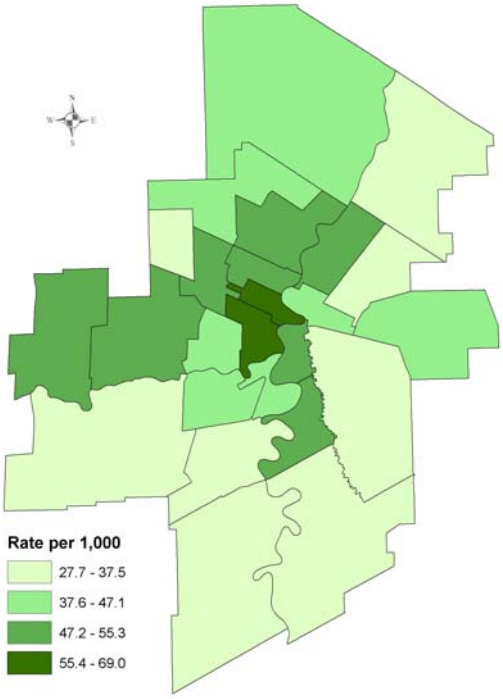


Figure 10
Prevalence of Diabetes in the WHR, Crude Rate per 1,000 Population, Both Genders-Ages 50-69, 1996-1999

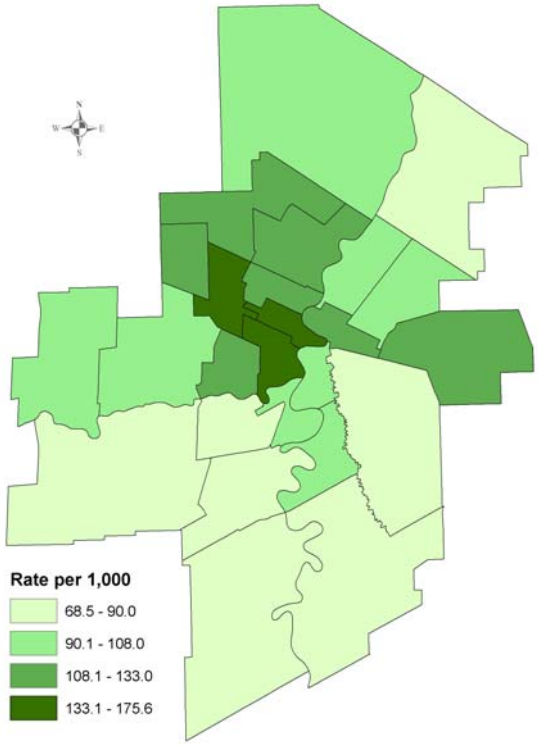
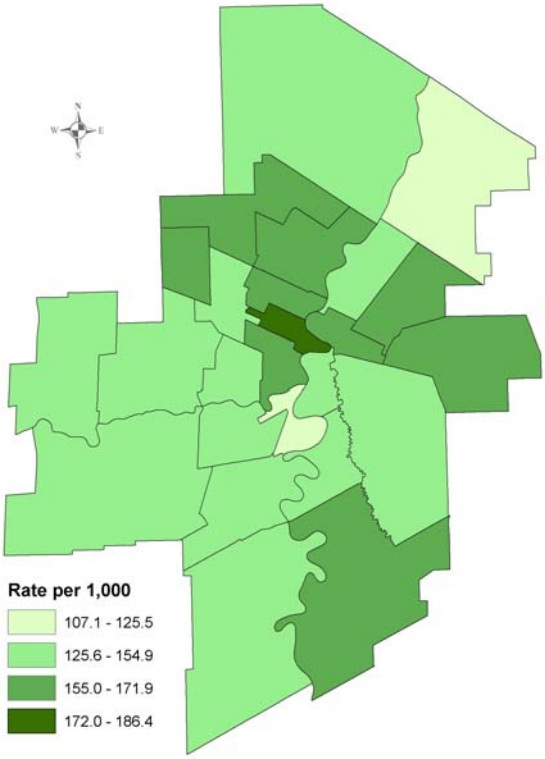


Figure 11
Prevalence of Diabetes in the WHR, Crude Rate per 1,000 Population, Both Genders-Age 70+, 1996-1999



Communicable Disease

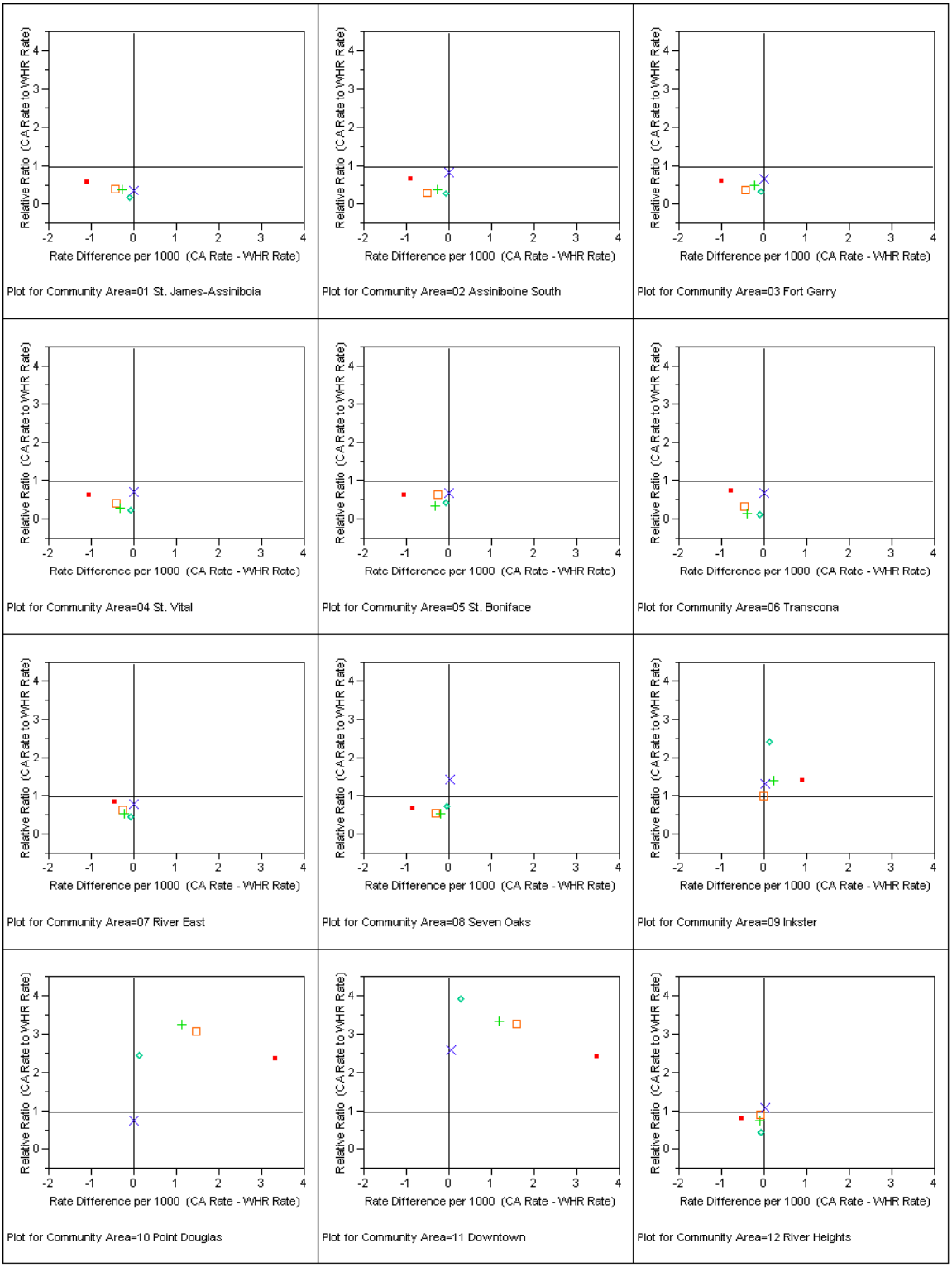
A few different patterns of communicable diseases were found among the community areas (Figure 12).

There were similar patterns of communicable disease indicators in Point Douglas and Downtown community areas that compared less favourably to almost all regional values.

The St. James-Assiniboia, Assiniboine South, Fort Garry, St. Boniface, River East, Transcona, River Heights, and St. Vital community areas shared a pattern that reflects many communicable disease indicators that fared better compared to the region.

River Heights, Seven Oaks and Inkster community areas reflect unique patterns of communicable disease issues compared to the other community areas. The Inkster community area appears to fare less favourably than the WHR for most communicable disease indicators, however, not as poorly as in Point Douglas and Downtown. The River Heights and Seven Oaks community areas share a similar pattern: most communicable disease indicators fare better than those for the WHR, with the exception of Hepatitis B acute. The hepatitis B acute rate is higher in Seven Oaks than River Heights; both of which are higher than the regional rate.

Figure 12
Communicable Disease



Communicable Disease

- The highest crude rates of Gonorrhea infection in the WHR are found in Point Douglas 10B and Downtown 11B. Higher rates are also found in River East 7A, Inkster 9B, Point Douglas 10A, Downtown 11A.

- Tuberculosis infection shows a similar pattern, the highest crude rates in the WHR are found in Point Douglas 10B and Downtown 11B. Higher rates are also found in Inkster 9A and 9B, and Downtown 11A.

Figure 13
Gonorrhea Rate in the WHR, Crude Rate per 1,000 Residents, Both Sexes, 1998-2002

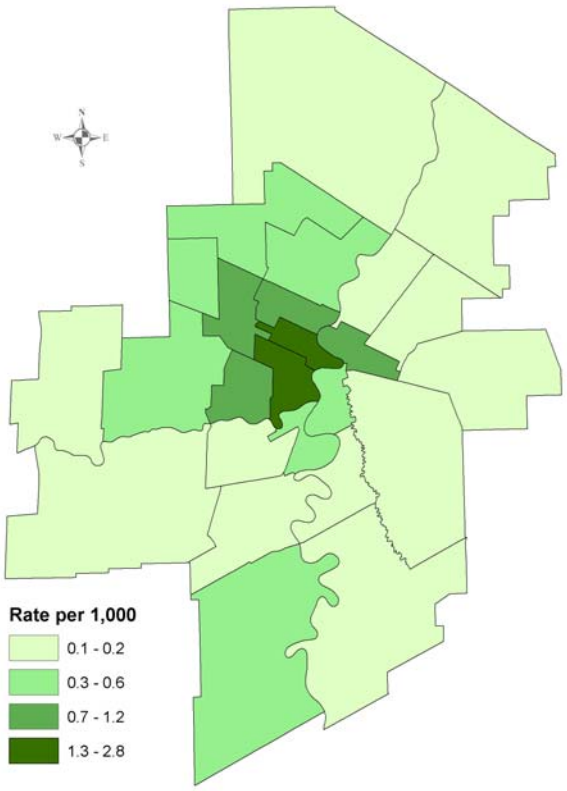
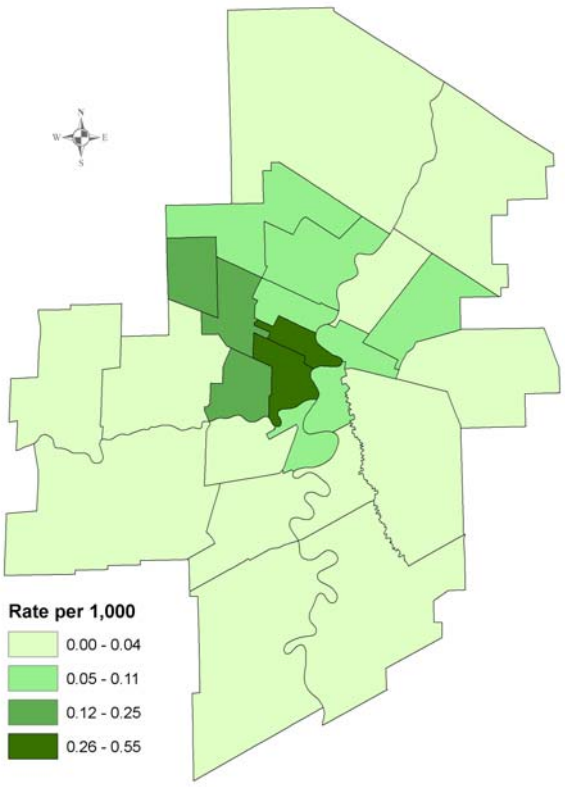


Figure 14
Tuberculosis Rate in the WHR, Crude Rate per 1,000 Residents, Both Sexes, 1998-2002



Communicable Disease

- Crude rates of Chlamydia infection also show a similar pattern to Gonorrhea infection. The highest crude rates of Chlamydia infection in the WHR are found in Point Douglas 10B and Downtown 11B. Higher rates are also found in River East 7A, Inkster 9B, Point Douglas 10A, Downtown 11A.
- Clamydia infection among females in the WHR shows a similar pattern to males. The highest crude rates of Chlamydia infection in females and males are found in Point Douglas 10B and Downtown 11B.
- Higher rates are also found in River East 7A, Inkster 9B, Point Douglas 10A, Downtown 11A for females.
- For males, higher rates of Chlamydia infection are found in River East 7A, Inkster 9B, Point Douglas 10A, Downtown 11A and River Heights 12B.

Figure 15
Chlamydia Rate in the WHR, Crude Rate per 1,000 Residents, Both Sexes, 1998-2002

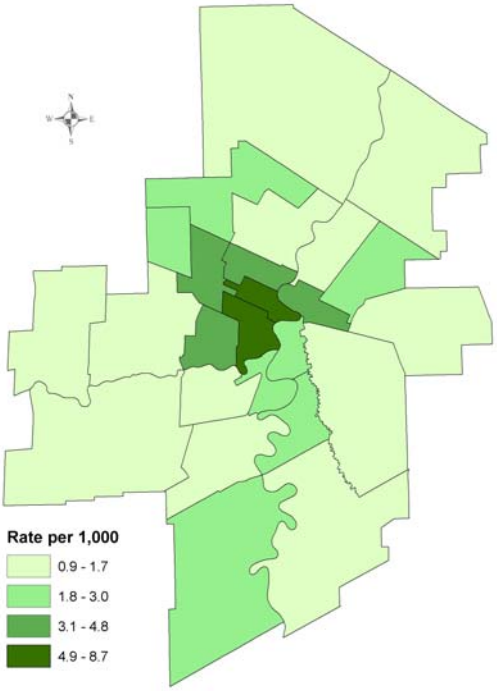


Figure 16
Chlamydia Rate in the WHR, Crude Rate per 1,000 Female Residents, 1998-2002

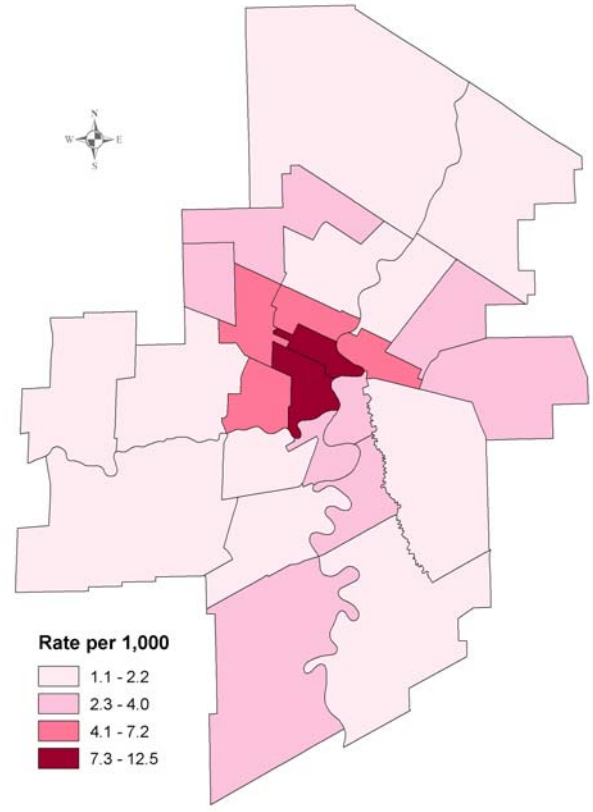
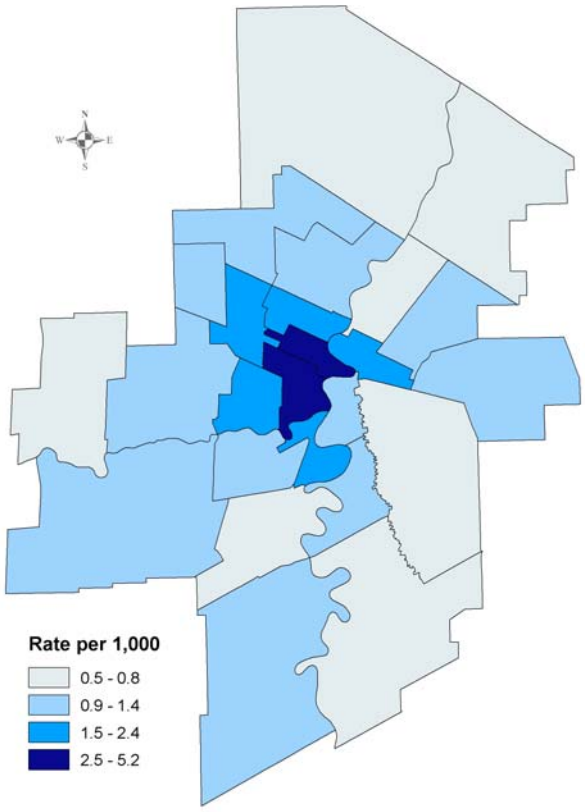


Figure 17
Chlamydia Rate in the WHR, Crude Rate per 1,000 Male Residents, 1998-2002

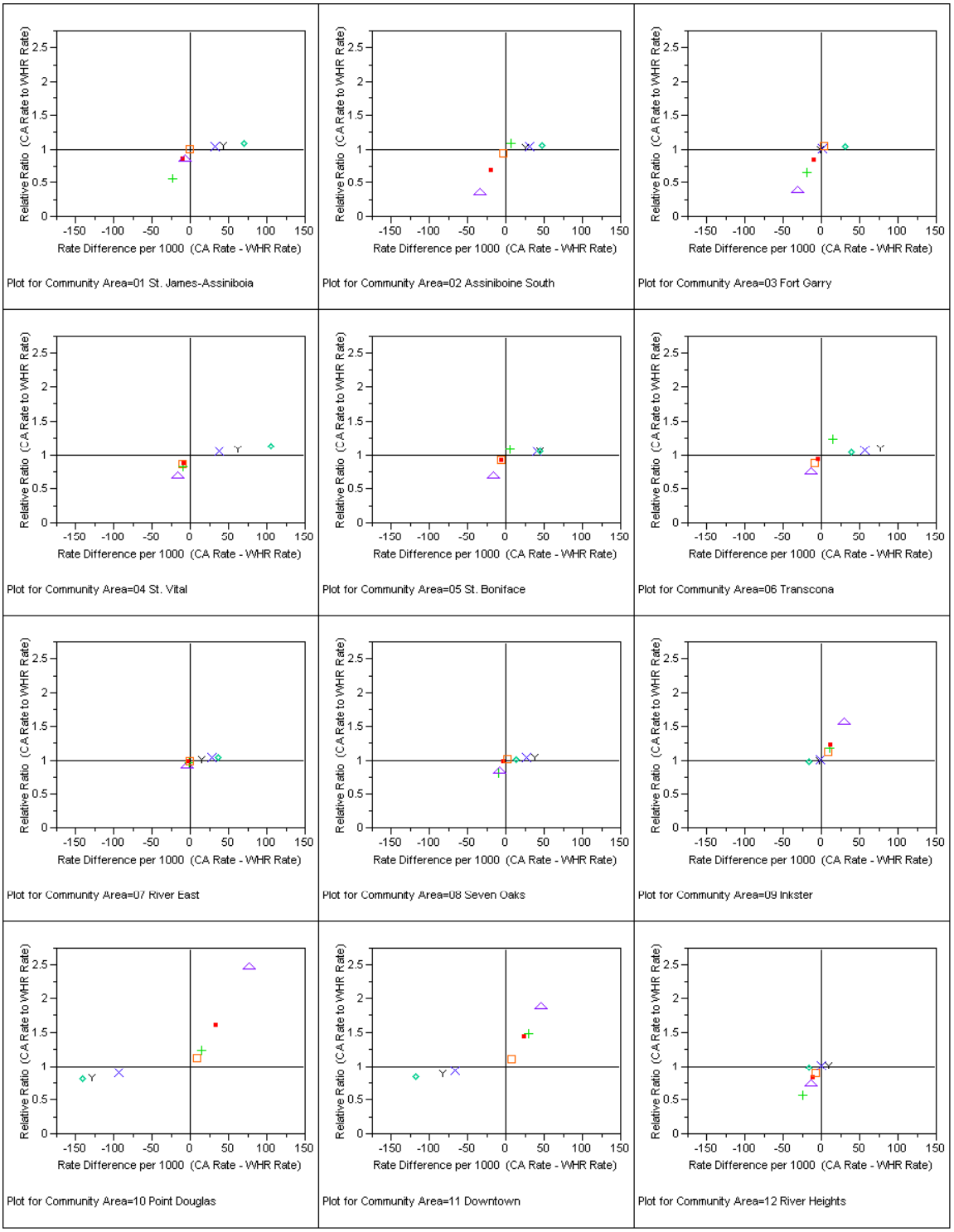


Infant and Maternal Health

The majority of community areas share a similar pattern of average to above average outcomes for infant and maternal health indicators (Figure 18). This was found in St. James-Assiniboia, Assiniboine South, Fort Garry, St. Boniface, Transcona, River East, Seven Oaks, and St. Vital community areas. These community areas reflect good immunization rates as well as the other infant and maternal outcomes. Maintaining good immunization rates in these areas is reducing the risk of communicable diseases like measles. It should be noted that in Transcona, low birthweight compared less favourably, however, the remaining infant and maternal health outcomes were similar to those of the region. River Heights follows a somewhat similar pattern for most infant maternal health outcomes except seven-year immunization rates, this community area has lower immunization rates for seven year-olds compered to the region.

Distinct patterns of indicators that compare less favourably were found in Point Douglas, Downtown and Inkster community areas. There is a similar pattern between Point Douglas and Downtown, which shows less favourable outcomes for all infant and maternal outcomes. Inkster shows similar immunization rates to the WHR however, fares less favourably for teen pregnancy, low birth weight and pre-term birth; this community area also has higher fertility rates compared to the WHR.

Figure 18
Infant and Maternal Health



* Note that for Immunization rates, a higher rate indicates a favourable outcome.

Infant and Maternal Health

- The highest crude rates of low birth weight infants occur in Inkster 9A, Point Douglas 10B, Downtown 11B and River East 7A.
- Higher rates of low birth weight infants occurs in Inkster 9B, Seven Oaks 8A and 8C, Transcona, and Downtown 11A.

- The lowest rate of completed immunization schedules for 2 year-old children occurs in Point Douglas 10B. Lower rates are also found in the surrounding neighbourhood clusters: River East 7A, Inkster 9B, Point Douglas 10A, Downtown 11 A and 11B and River Heights 12B.

Figure 19
Low Birth Weight, Crude Rate per 1,000 Livebirths, 1998/99-2002/03

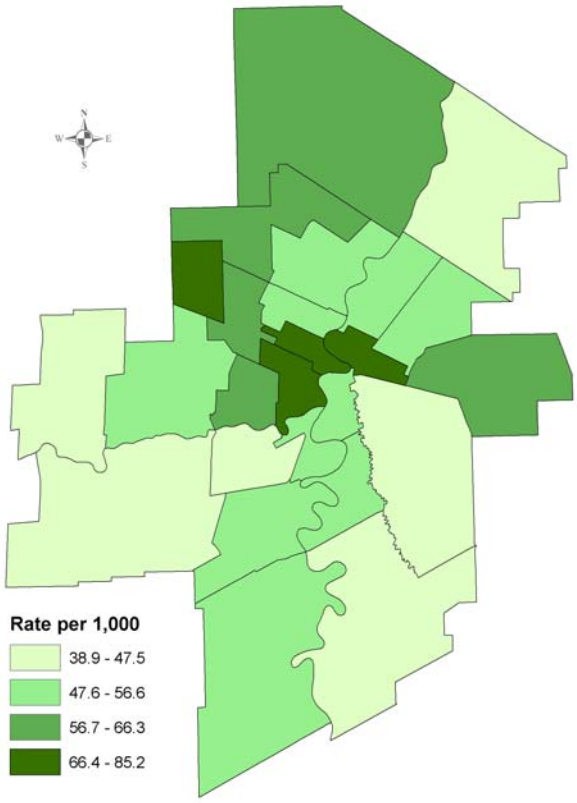
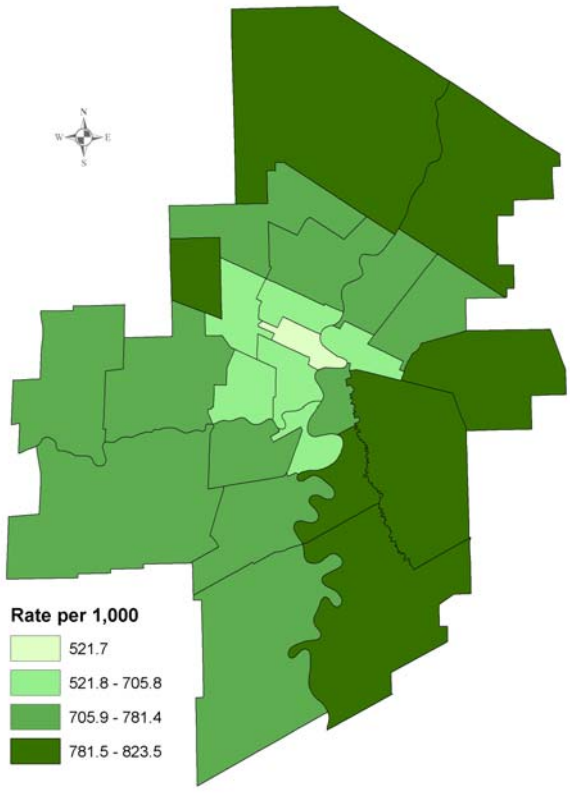


Figure 20
2-year Immunization Rates, Crude Rate per 1,000 Two-Year Olds, Born 1997/98-1998/99



Injury

There are several distinct patterns of clustering of injury indicators among the Community Areas (Figure 21). There is a notable pattern shared by Inkster, Seven Oaks and Fort Garry community areas. This reflects a pattern where all indicators fared better than those for the region.

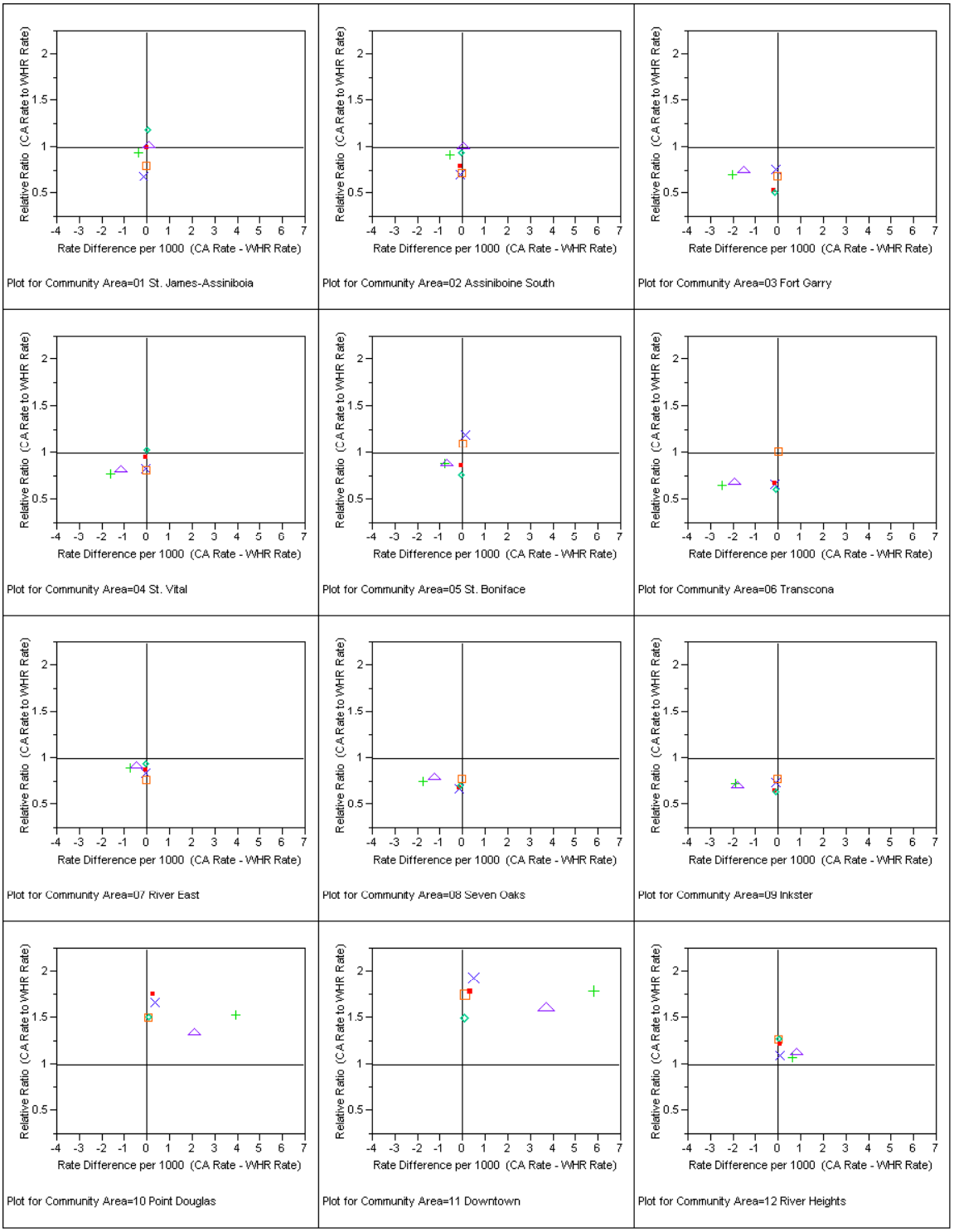
The second pattern was common to River East, St. Vital, Assiniboine South community areas where all injury indicators were similar to the regional rate.

A unique pattern was found in St. James-Assiniboia. Unintentional injury death and hospitalization rates were higher than those for the WHR. However, the remaining indicators compared more favourably to the region.

Among two community areas: Transcona and St. Boniface, suicide rates were slightly higher than that for the region. In Transcona all other injury indicators were better compared to the region. In St. Boniface, suicide and self-inflicted injury hospitalization rates were higher than those for the region. However, the remaining indicators compared more favourably to the region.

A similar pattern of clustering of injury indicators was found among Point Douglas, Downtown, and River Heights community areas in which all injury indicators compared less favourably to those of the region. However, in River Heights the pattern is not as extreme as in Point Douglas and Downtown.

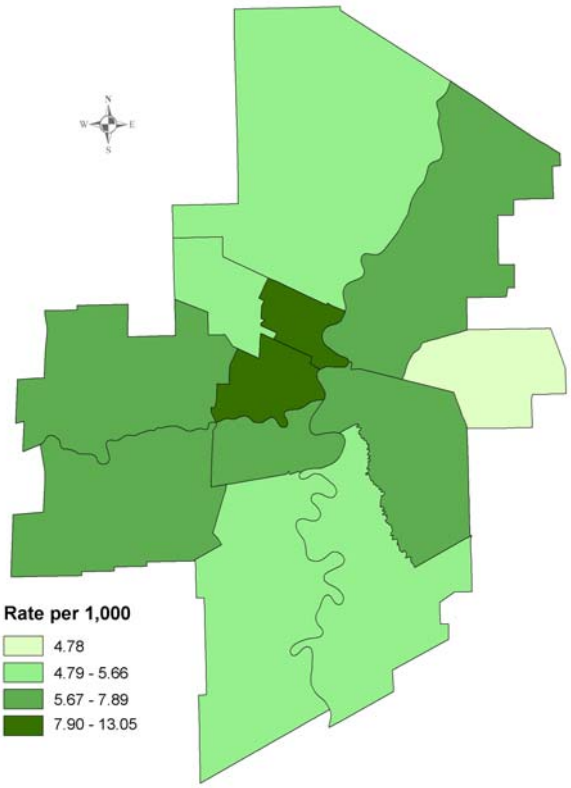
Figure 21
Injury



Injury

- The All Injury hospitalization rate includes all intents/manners of injury (unintentional, self-inflicted, assault, undetermined, and other violence).
- The highest rates of injury hospitalization occurs in Point Douglas and Downtown Community Areas.
- Rates at the neighbourhood cluster level were not available.

Figure 22
All Injury Hospitalization Rates, All Ages – Both Sexes, Crude Rate per 1,000 Population, 2000-2003



Mental Health

There are notable patterns of clustering of the mental health indicators among the Community Areas (Figure 23). There are at least three sets of similar patterns and three distinct patterns present.

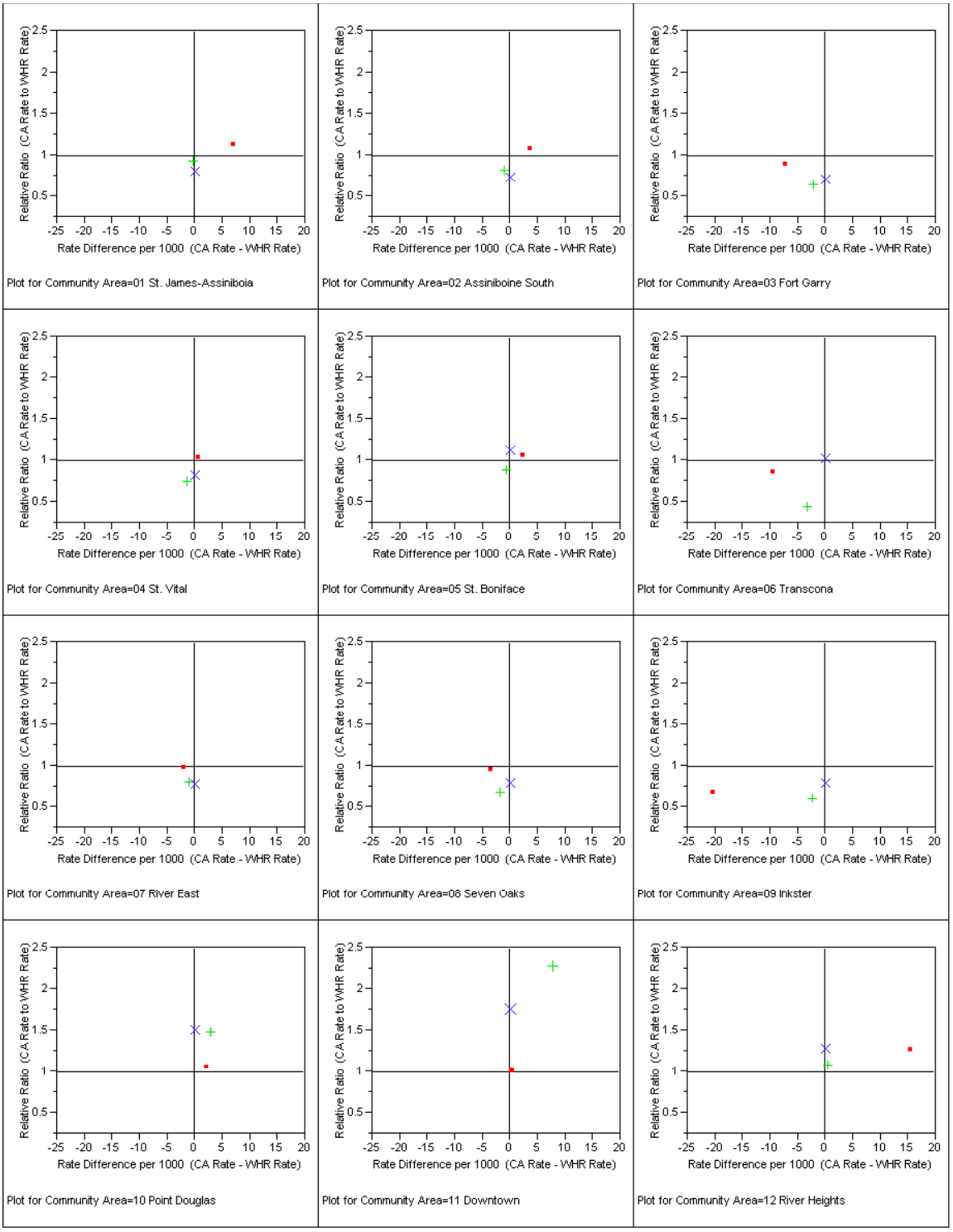
The first, pattern is common to Inkster, River East, Seven Oaks and Fort Garry community areas. This reflects a pattern where all indicators fare better than the region.

The second pattern, is common to St. James-Assiniboia, Assiniboine South and St. Vital community areas. This reflects a pattern where the rate of anti-depressant use was higher than that for the region, however suicide and hospitalization for mental health disorders rates were lower than those for the region.

The third distinct pattern is found in the Point Douglas and Downtown community areas. All Mental Health indicators compared less favourably to those of the region.

A few unique patterns were noted for Transcona, St. Boniface and River Heights community areas. For Transcona the suicide rate was slightly higher compared to the region, however the remaining indicators (anti-depressant use and hospitalization for mental health disorders) fared better than the WHR. St. Boniface also had slightly higher suicide rate but anti-depressant use was also higher compared to the regional rate; the rate hospitalization for mental health disorders was lower than that for the region. In River Heights all Mental Health indicators compared less favourably to those of the region, however anti-depressant use was found to be extremely high compared to that for the region.

Figure 23
Mental Health



Mental Health

- Hospitalization for Mental Health Disorders is highest in Point Douglas 10B and Downtown 11B.
- Higher rates are found in surrounding neighbourhood clusters: St. Boniface 5A,Downtown 11A, and River Heights 12B.
- Rates of anti-depressant use were based upon those who received two or more prescriptions for anti-depressants in the period of 1999/00-2000/01. The highest rates of anti-depressant use were found in St. James-Assiniboia 1B, St. Boniface 5A, Point Douglas 10B, Downtown 11B, and River Heights 12A and 12B.

Figure 24
Hospitalization Rates for Mental Health Disorders, All Ages – Both Sexes, Crude Rate per 1,000 Population, 2002/03 (fiscal year)

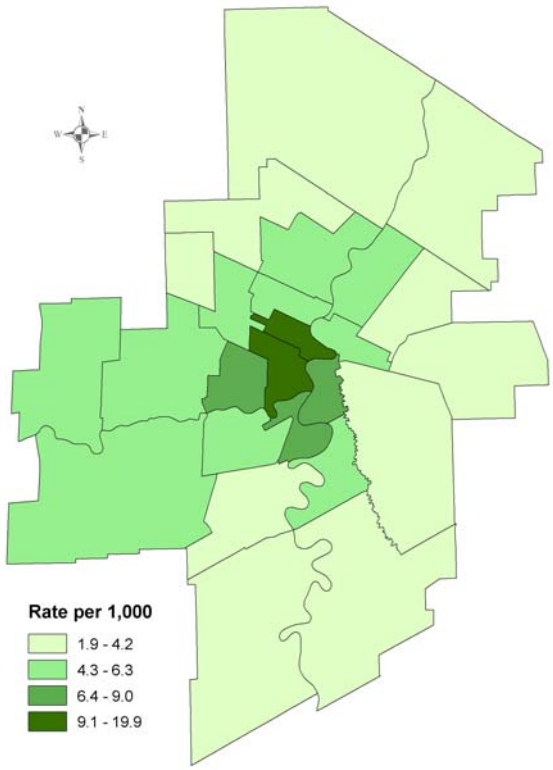
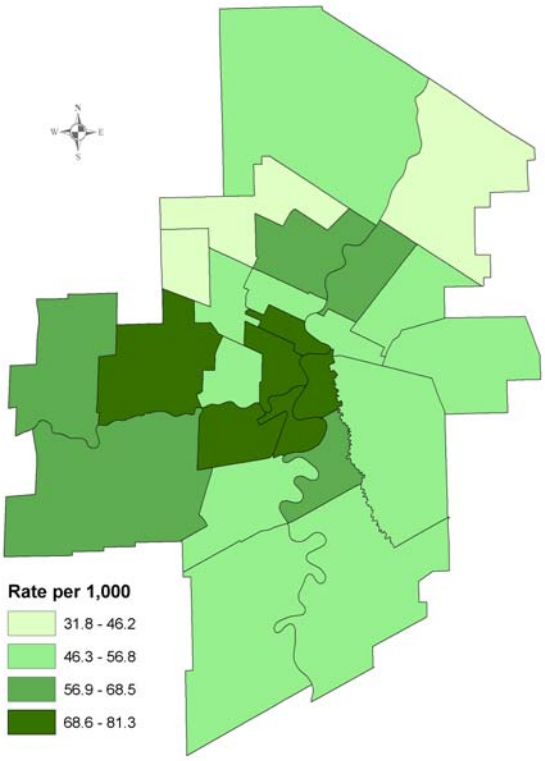


Figure 25
Proportion of Residents Receiving 2+ Rx of Anti-Depressants, Crude Rate per 1,000 Residents, 1999/00-2000/01



Mortality

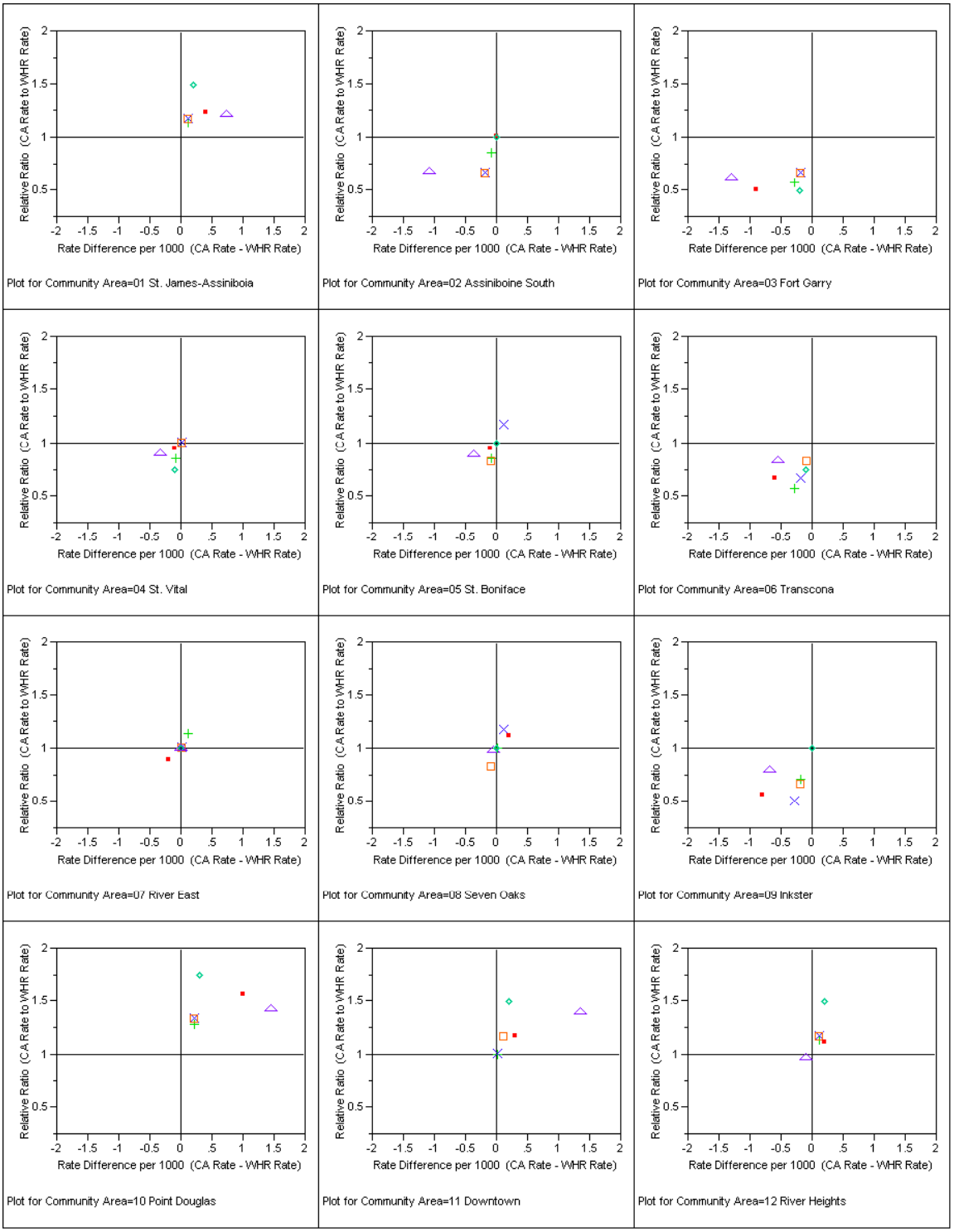
There were fewer notable patterns of clustering of the indicators in the mortality domain among the Community Areas (Figure 26).

Higher crude premature mortality rates, compared to that of the region, were found in Point Douglas, Downtown and St. James-Assiniboia community areas. In addition, a similar pattern was found among St. James-Assiniboia, River Heights, Point Douglas and Downtown, where the mortality rates for all the leading causes of death were higher compared to the WHR.

The rate of death for all leading causes of death was found to be lower in Assiniboine South, Fort Garry, St. Vital, Transcona and Inkster community areas compared to the WHR.

Unique patterns of mortality rates were noted in St. Boniface, River East and Seven Oaks community areas. St. Boniface had a higher mortality rate for Malignant Neoplasms of Digestive Organs compared to the region, while Seven Oaks had a higher death rate of Malignant Neoplasms of Digestive Organs and Ischemic Heart Disease compared to the WHR. In River East, most indicators were similar to the region except for cerebrovascular disease, which was higher and ischemic heart disease, which was lower.

Figure 26
Mortality



Mortality

Premature Mortality

- The patterns of crude premature mortality rates (PMR) are similar for males and females within the smaller geographies of the WHR. For both males and females, the highest crude PMR occurs in St. James-Assiniboia 1B, Point Douglas 10B and Downtown 11B.

Figure 27
Premature Mortality Rate (PMR) in the WHR, Crude Rate per 1,000 Female Population, 1995-1999

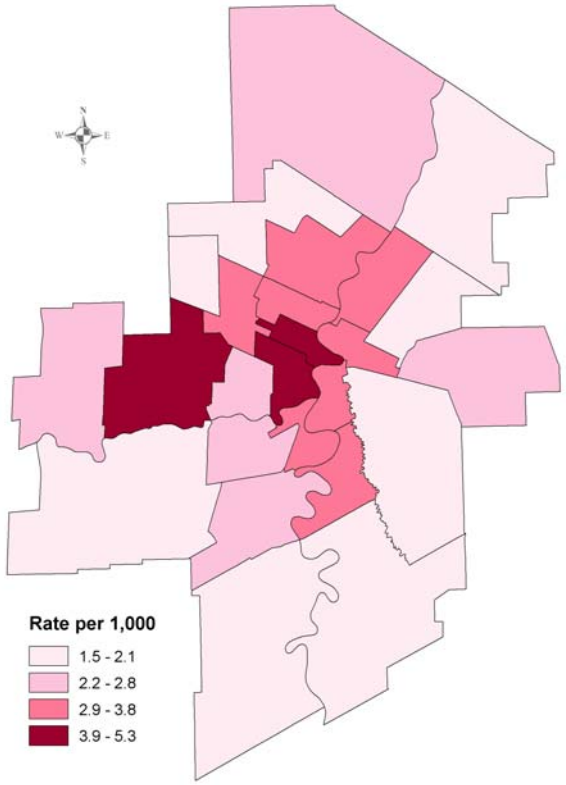
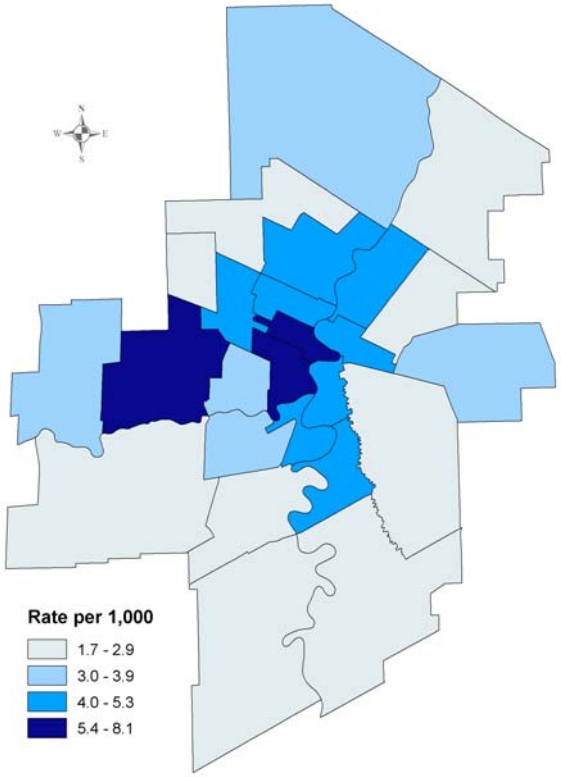


Figure 28
Premature Mortality Rate (PMR) in the WHR, Crude Rate per 1,000 Male Population, 1995-1999



Ischemic Heart Disease Mortality

- The No. 1 leading cause of death in the WHR is ischemic heart disease. The highest crude mortality rates for ischemic heart disease occurs in St. James-Assiniboia 1B, Seven Oaks 8C, Point Douglas 10B, Downtown 11B, and River Heights 12B.
- When the rates are age-adjusted (to account for underlying differences in the age distribution of the populations), the range of the rates is minimized. However, Point Douglas 10B and Downtown 11A retain the highest rates, in an addition to St. Vital 4B. This indicates that in Point Douglas 10B and Downtown 11A the underlying age structure of the population does not explain the higher rates found in these populations.
- However, for St. Vital 4B, age does appear to be a confounder of the crude mortality rates for ischemic heart disease. This may be indicative of a higher burden of illness for ischemic heart disease for this population.

Figure 29
No. 1 Cause of Death in the WHR: Ischemic Heart Disease, Crude Rate per 1,000 Population, Both Sexes, 1995-1999

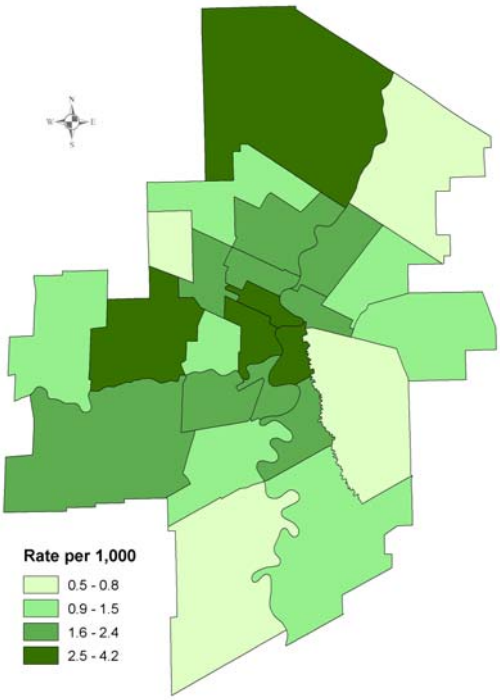
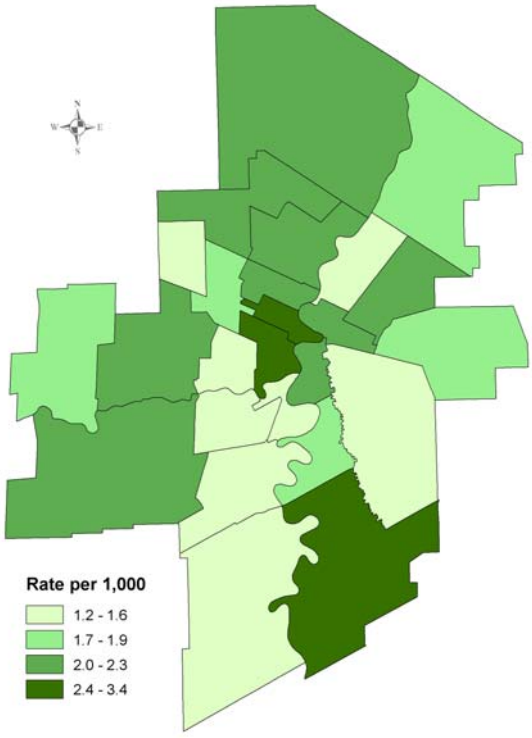


Figure 30
No. 1 Cause of Death in the WHR: Ischemic Heart Disease, Age-Adjusted Rate per 1,000 Population, Both Sexes, 1995-1999



Cerebrovascular Disease Mortality

- A similar pattern is seen among the smaller geographies for the No. 2 Leading Cause of Death: Cerebrovascular Disease crude mortality rates. The highest crude mortality rates for cerebrovascular disease occurs in St. James-Assiniboia 1B, Seven Oaks 8C, Point Douglas 10B, and St. Boniface 5B.
- When the rates are age-adjusted (to account for underlying differences in the age distribution of the populations), a different pattern emerges. However, Seven Oaks 8C retains the highest rate, in addition to River East 7C.This indicates that in Seven Oaks 8C the underlying age structure of the population does not explain the higher crude rates found in these populations.
- However, for River East 7C, age does appear to be a confounder of the crude mortality rates for cereobrovascular disease. This may be indicative of a higher burden of illness for cereobrovascular disease in this population.
- Age is also a confounder in the Point Douglas 10B, and St. Boniface 5B populations, as the explaining factor for the high crude rates.

Figure 31
No. 2 Cause of Death in the WHR: Cerebrovascular Disease, Crude Rate per 1,000 Population, Both Sexes, 1995-1999

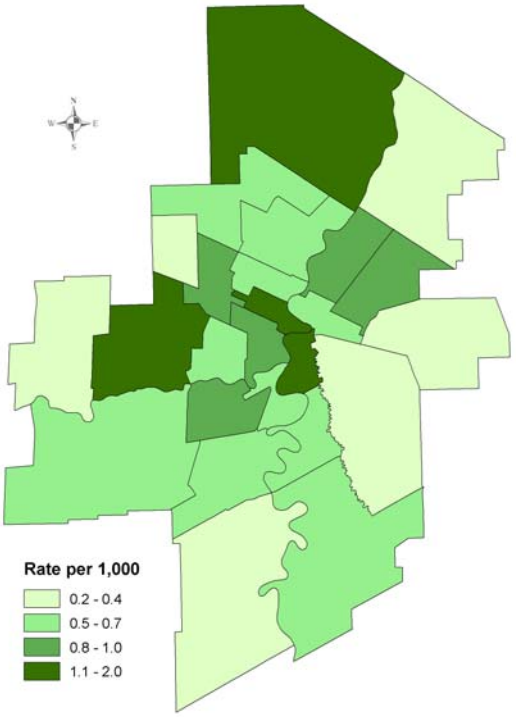
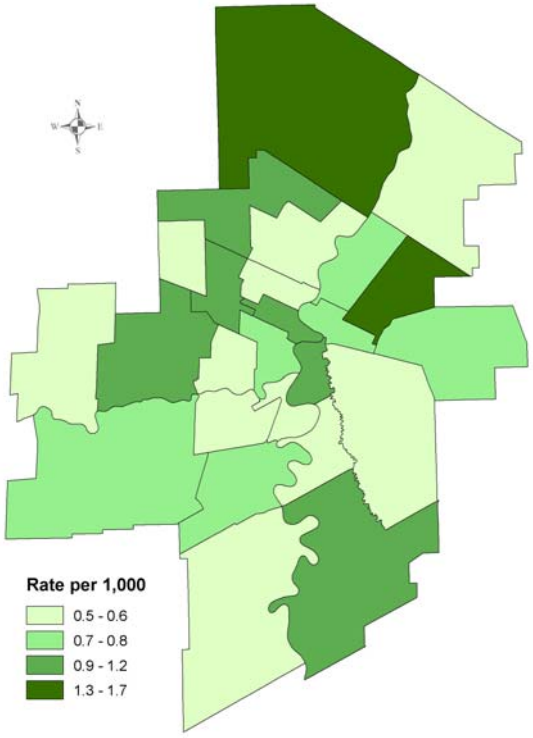


Figure 32
No. 2 Cause of Death in the WHR: Cerebrovascular Disease, Age-Adjusted Rate per 1,000 Population, Both Sexes, 1995-1999



Malignant Neoplasm of the Digestive Organ

- A similar pattern is seen among the smaller geographies for the No. 3 Leading Cause of Death: Malignant Neoplasm of the Digestive Organ crude mortality rates. The highest crude mortality rates for Malignant Neoplasm of the Digestive Organ occurs in St. James-Assiniboia 1B, Seven Oaks 8C, Point Douglas 10B, and St. Boniface 5B.
- When the rates are age-adjusted (to account for underlying differences in the age distribution of the populations), the pattern of rates changes little. Seven Oaks 8C, Point Douglas 10B, and St. Boniface 5B retain the highest rates, in addition to River East 7C.This indicates that in the first three neighbourhood clusters listed, the underlying age structure of the population does not explain the higher crude rates found in these populations.
- However, for River East 7C, age does appear to be a confounder of the crude mortality rates for Malignant Neoplasm of the Digestive Organ. This may be indicative of a higher burden of illness for Malignant Neoplasm of the Digestive Organ in this population.

Figure 33
No. 3 Cause of Death in the WHR: Malignant Neoplasm of the Digestive Organ, Crude Rate per 1,000 Population, Both Sexes, 1995-1999

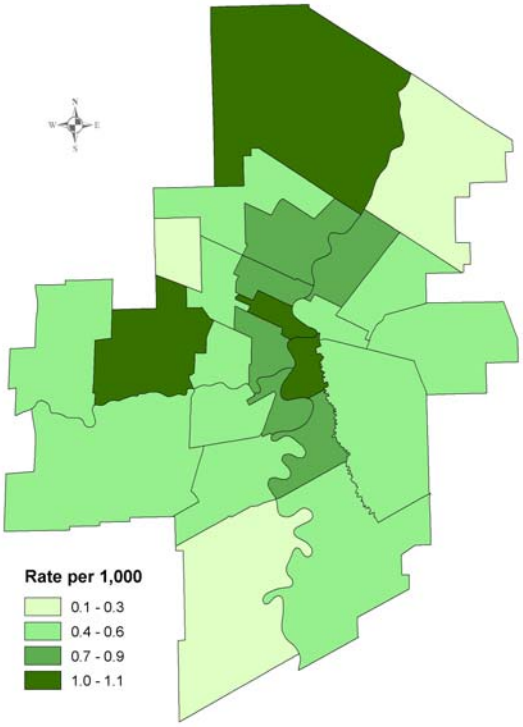
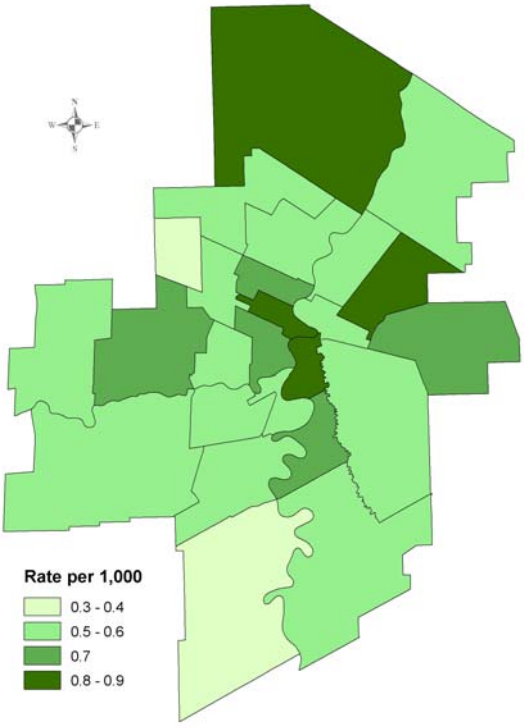


Figure 34
No. 3 Cause of Death in the WHR: Malignant Neoplasm of the Digestive Organ, Age-Adjusted Rate per 1,000 Population, Both Sexes, 1995-1999



Malignant Neoplasm of the Respiratory Organ

- A somewhat different pattern is seen among the smaller geographies for the No. 4 Leading Cause of Death: Malignant Neoplasm of the Respiratory Organ crude mortality rates. The highest crude mortality rates for this disease occurs in St. James-Assiniboia 1B, St. Boniface 5B, River East 7A, Point Douglas 10B, and River Heights 12B.
- When the rates are age-adjusted (to account for underlying differences in the age distribution of the populations), there is substantial change in the pattern of rates. Point Douglas 10B, and Downtown 11B retain the highest rates, in addition to River East 7D.This indicates that in the first two neighbourhood clusters listed, the underlying age structure of the population does not explain the higher crude rates found in these populations.
- However, for River East 7D, age does appear to be a confounder of the crude mortality rates for Malignant Neoplasm of the Respiratory Organ. This may be indicative of a higher burden of illness for this disease in this population.

Figure 35
No. 4 Cause of Death in the WHR: Malignant Neoplasm of the Respiratory Organ, Crude Rate per 1,000 Population, Both Sexes, 1995-1999

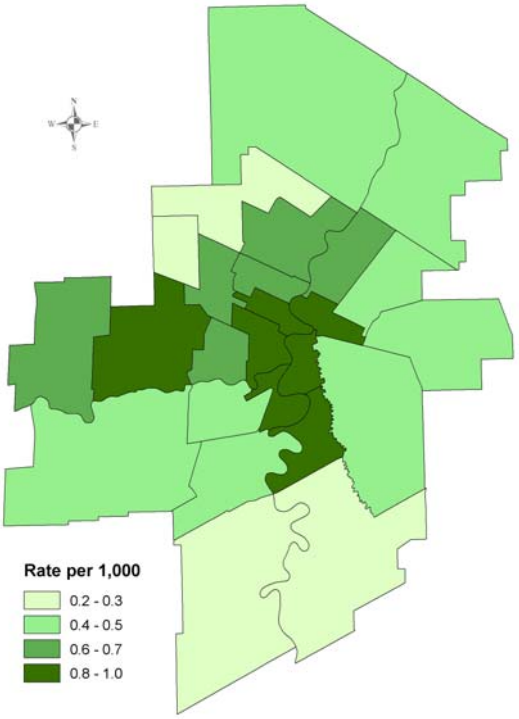
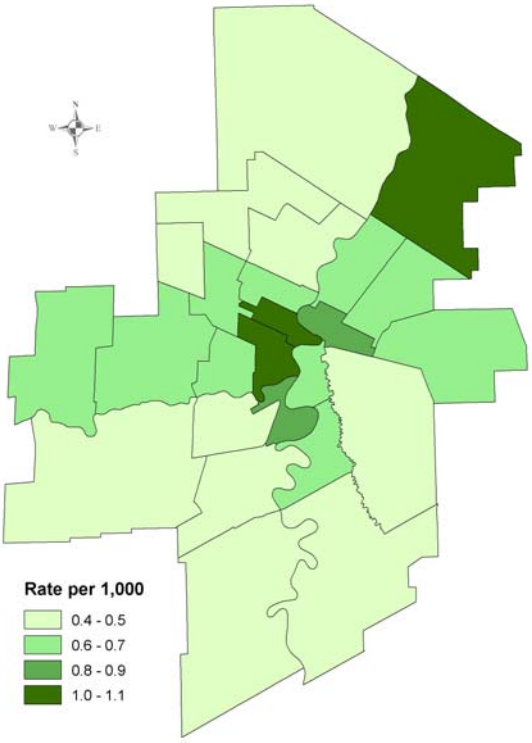


Figure 36
No. 4 Cause of Death in the WHR: Malignant Neoplasm of the Respiratory Organ, Age-Adjusted Rate per 1,000 Population, Both Sexes, 1995-1999



This report can be used to identify health disparities within the WHR in order to target populations for health improvement strategies. Those populations with greater health disparities have potential for large improvements in health. However, it cannot be forgotten that in populations with good health status, work still needs to be done to maintain and perhaps to further improve health. By doing this gains can continue to be made in overall health for all populations within the region.

Factors that Influence the Health Issues in these Populations

INTRODUCTION

There are many factors that contribute to the health and well-being of individuals and the entire population. These are often referred to as determinants of health and represent one component of the Population Health Assessment Framework.[1]

The determinants of health are social environments, gender, culture, health services, healthy child development, personal health behaviours, biology and genetics, physical environment, employment and working conditions, education and literacy, social support, and income and social status. Indicators are reported on for each of the 12 determinants of health in the Data Book, CHA Report 2004. Although the Data Book, CHA Report 2004 provides information on each of the determinants of health separately, it is important to recognize that the factors are often interrelated. For example, personal health behaviours, such as diet and smoking, differ considerably for persons with different education levels.

The determinants of health form the cornerstone of a population health approach. This moves the focus from the individual to the population. There is a large amount of research that has demonstrated the influence of the determinants of health on the health status of a population. The following section highlights the determinants of health for the region.

Income and Social Status

Income and social status is thought to the most influential health determinant. Higher social and economic status is associated with better health. This leads to better living conditions (for example, housing, food and transportation), which ultimately affect health. However, research suggests that the degree of control over one's life circumstances affects health at a biological level. This degree of control is usually mediated by income and social status. For each community area profile, the elements described in **Economic Characteristics** in the **Population Characteristics** section inform us of this important health determinant in the WHR.

Social Support Networks

People who have support from families and friends tend to have better health. This includes having someone to confide in and to count on in a crisis, as well as, feeling loved and cared for. Studies have shown that people with more social contacts have lower premature death rates. Each community area profile reports elements of *social support* under the **Family Structure** heading of the **Population Characteristics** section that pertains to its community area.

Social Environments

The concept of social environments expands the importance of social support (among individuals) to the community: the relationship of the individual to the community and vice versa. This includes one's sense of belonging and safety in a community, as well as, participation in the community. Volunteerism and community vitality are key themes of this determinant. Transience or mobility of a population is important to the stability of the social environment. A less mobile population is more stable, and provides opportunity to build strong community networks. Mobility status is determined in the Census by asking the question: "Have you moved in the past year or the past five years?" This is reported for each community area in the community area profiles.

Education and Literacy

It is well documented that education levels of a population are tied to economic characteristics, as those who achieve higher levels of education are more employable and tend to earn more income. In addition, literacy (the ability to interpret the written word and numbers) is considered to be a determinant of health, as it may influence

[1] See Population Health Assessment Framework, CHA Report 2004.

the ability to use health information, which is largely written. Literacy levels in a population can be indirectly measured through educational attainment levels. Level of educational attainment is reported for each community area in the community area profiles.

Employment and Working Conditions

Employment has a significant effect on all aspects of health and well-being. Unemployment, underemployment and stressful or unsafe working conditions are associated with poorer health. Some dimensions of employment and working conditions such as unemployment rates, labour force participation as well as, unpaid childcare and eldercare is presented for each community area in the community area profiles.

Physical Environment

The physical environment that members of a population live and work in can have an effect on health. This determinant comprises two areas: the 'natural' environment (such as air, water, food and soil) and the 'built' environment (such as dwellings). Each community area profile presents 2001 Census information on the dwelling characteristics for the built environment of its community area.

Biology and Genetics

The human body is a complex biological system. Genetic and environmental factors begin interacting at an early stage in life, and continue to interact throughout one's lifespan. For some diseases, a strong genetic component is present and little can be done to change one's predisposition to certain diseases or health issues. However, environmental influences in the form of the determinants of health may improve health outcomes significantly, assisting an individual to reach his or her full health potential. An example of this is individuals with a strong family history of cardiovascular disease. Such individuals should be monitored for high blood pressure and abnormal lipid profiles. They can also be encouraged to maintain a healthy lifestyle to minimize the risk of developing cardiovascular disease at a young age. There are currently no indicators measured for this determinant in the CHA Report, 2004.

Personal Health Behaviours

This refers to the actions that a person can take to prevent disease and to live a healthy lifestyle. It is important to recognize that personal choices that affect lifestyle are influenced by social, economic and environmental factors. For example, exposure to recreation and recreational facilities contributes positively to personal health, economic, social and spiritual needs and healthy child development. Research suggests that an individual's mental health benefits from exercise and physical activity, as they reduce depression and anxiety and promote self-esteem. As a result, a population's health, well-being and quality of life, as well as its communities and environment, are enhanced. The reader is directed to the Data Book, CHA Report 2004 for information on selected indicators of personal health behaviours in the WHR.

Healthy Child Development

Healthy children grow up to become healthy adults. A child's development is greatly affected by experiences early in life. A loving secure environment helps children to develop trust, self-esteem and the ability to form positive relationships. These contribute to children's readiness to learn (education), and to their health especially as they grow and develop. The reader is directed to the Data Book, CHA Report 2004 for additional information on selected indicators of healthy child development in the WHR.

Health Services

The health services continuum of care includes treatment and secondary prevention of disease. Of the 12 health determinants, this one appears to have the least affect on a population's health and well-being. The Data Book, CHA Report 2004 contains information on indicators of health services in the WHR.

Culture

Culture affects health on several levels. Cultural values may influence individuals' socio-economic status. There may be loss or devaluation of culture and language (resulting in stigmatization and marginalization) and lack of access to culturally appropriate health care. In addition, language barriers may limit access to health information and health services. Together or alone, these realities may have an impact health. The elements described under **Ethnicity** in the **Population Characteristics** section in each community area profile provide information about this health determinant in the WHR.

Gender

This refers to the attitudes, behaviours, values, relative power and influence that society confers upon both sexes. Many health issues are influenced by gender-based social status or roles. For example, WHR suicide rates for males are much higher than those for females: the WHR suicide rates are also much higher than for those for Canada. The literature suggests that the gender difference for suicide in developed countries may be partly explained by the changes in gender roles for men and women.[2] There are many indicators listed in the Data Book, CHA Report 2004, which provide information on gender differences at the regional level.

METHODS

Within each community area profile, comparisons among the community areas were made for selected determinants of health. In particular, those CAs with a proportion or rate that was among the three highest or lowest was highlighted in the text. Those CAs that were neither among the three highest or lowest values, were termed 'mid-range'. In general, there were six community areas with mid-range values. An exception to this was unemployment rate, where there was only one lowest value, eight mid-range values that were also equal, and three highest values.

Spatial analysis was used to examine patterns of variability for selected health determinants at the level of the neighbourhood cluster within the region. The results are presented in this Overview, however no maps are presented in the individual community area profiles.

RESULTS

Please see next page.

[2] Hawton, K. (2000) *Sex and suicide.* British Journal of Psychiatry. 177: 484-485.

Income & Social Status

- Income disparities are apparent within the WHR. The lowest median family incomes (the areas of the map with the lightest shading) are found in the central geographies: River East 7A, Inkster 9B, Point Douglas 10A and 10B, and Downtown 11A and11B. Incomes increase towards the periphery of the region.
- Similar patterns are found for individual incomes for males and females within the region.

Figure 37
Median Total Family Income in the WHR, 2001

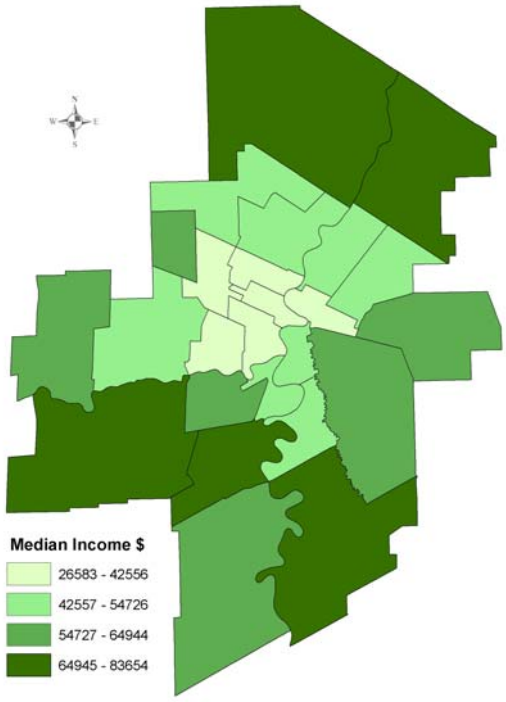


Figure 38
Median Total Individual Income for Males in the WHR, 2001

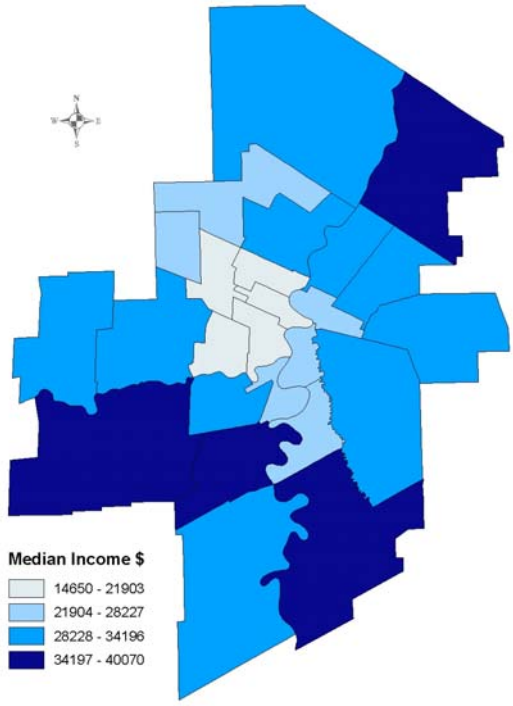
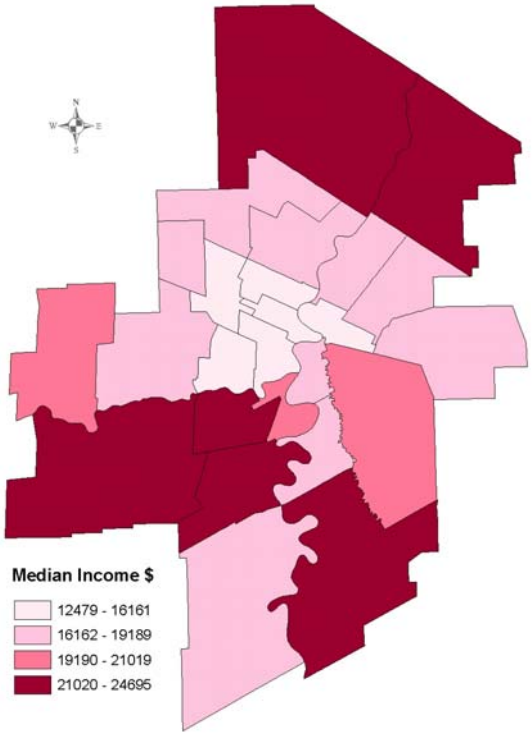


Figure 39
Median Total Individual Income for Females in the WHR, 2001



Poverty

- Poverty was measured by the incidence of low income (households living below the Low Income Cut-Off). The highest incidence of living below LICO occurs in Point Douglas 10B and Downtown 11B. Higher rates are also found in the surrounding neighbourhood clusters: River East 7A, St. Boniface 5A, River Heights 12B, Downtown 11A, Inkster 9B, and Point Douglas 10A.
- A similar pattern is found for the percentage of *tenant-occupied households that spend 30% or more of their households income on shelter costs*. The neighbourhood clusters where that have the highest percentage of households who spend 30% or more on shelter costs were found in Point Douglas 10A and 10B and Downtown 11A and 11B.

Figure 40
Incidence of Low Income- Percentage of Private Households Living Below the Low Income Cut-Off (LICO) in the WHR, 2001

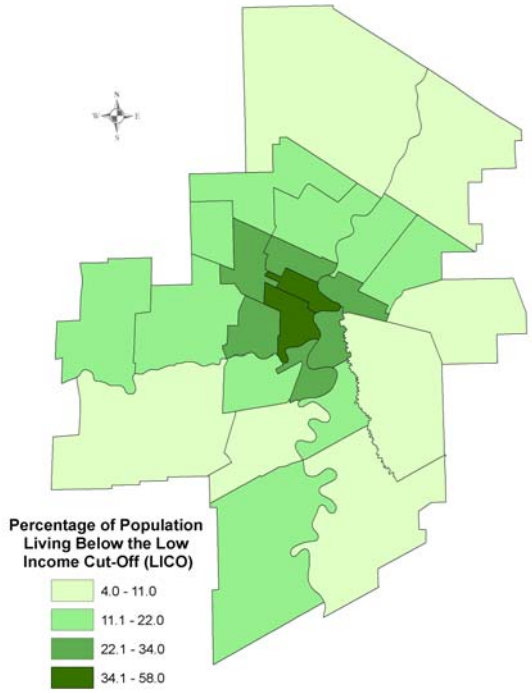
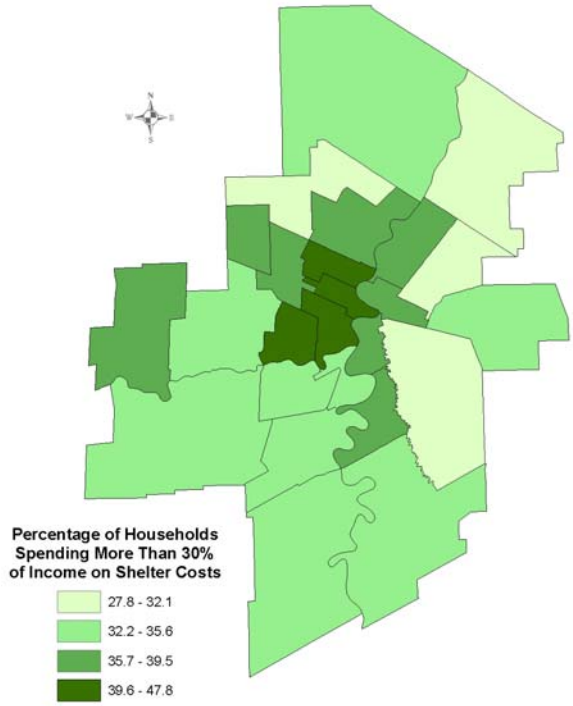


Figure 41
Percentage of Tenant-Occupied Households Spending 30% or More of Household Income on Shelter Costs in the WHR, 2001



Social Support Networks

- The neighbourhood clusters with the highest percentages of senior citizens living alone were found in: St. Boniface 5B, Point Douglas 10B, Downtown 11B, and River Heights 12A. This percentage appears to decrease among geographies that surround these four neighbourhood clusters.
- The neighbourhood clusters with the highest percentages of single-parent families were found in: River East 7A, Inkster 9B, Point Douglas 10A and Point Douglas 10B, and Downtown 11A.

Figure 42
Percentage Senior Citizens Living Alone in the WHR, 65 Years and Over, 2001

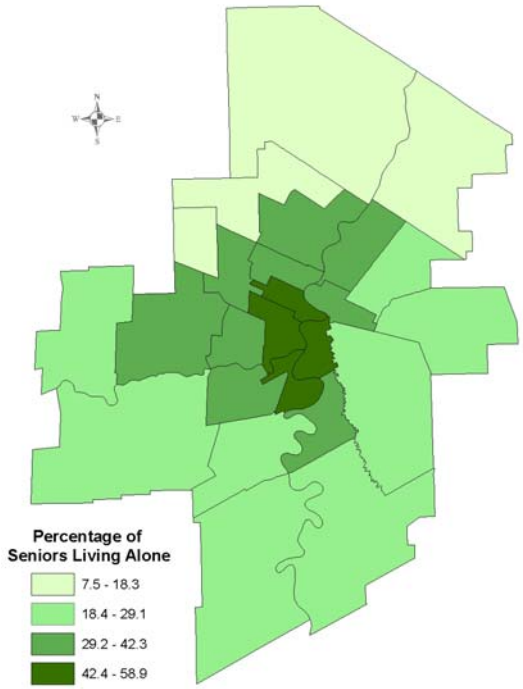
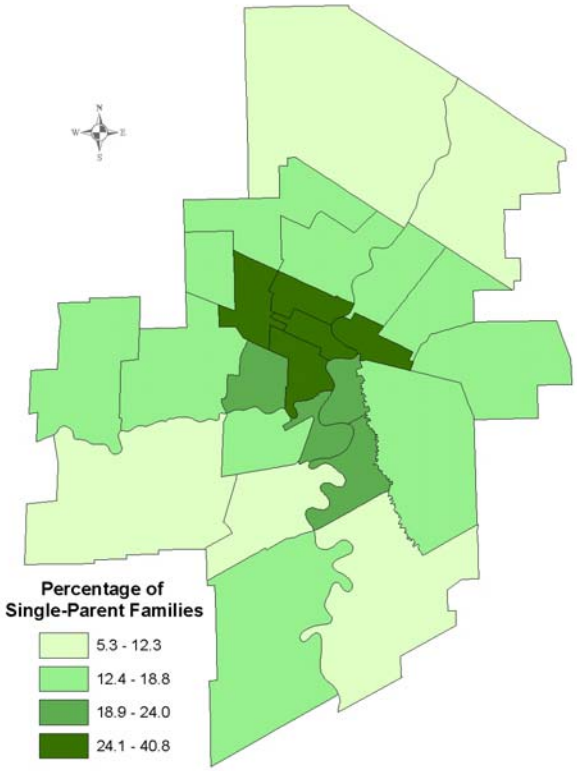


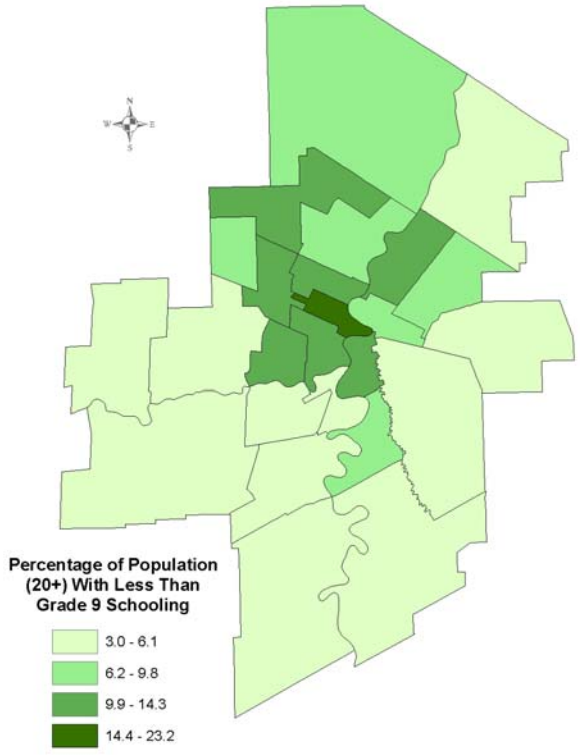
Figure 43
Percentage of Single-Parent Families in the WHR, 2001



Education and Literacy

- The neighbourhood cluster with the highest percentage of population 20 years of age and older with less than grade nine education was found in Point Douglas 10B. Several neighbourhood clusters also have higher percentages of those with less than grade nine education, these are: St. Boniface 5A, River East 7B, Seven Oaks 8A, Inkster 9B, Point Douglas 10A, and Downtown 11A.

Figure 44
Percentage of Population With Less Than a Grade 9 Education in the WHR, Age 20 Years and Over, 2001



Employment and Working Conditions

- The highest rate of unemployment for females occurs in Point Douglas 10B and the next highest rates are in the surrounding neighbourhood clusters: River East 7A, Inkster 9B and Downtown 11B.
- A different pattern is found for unemployment rates among males in the WHR. The highest rates of unemployment were found in Point Douglas 10B and Downtown 11B. The second highest rates of unemployment were found in surrounding neighbourhood clusters: St. Boniface 5A, River East 7A, Inkster 9B, Point Douglas 10A, and Downtown 11A.

Figure 45
Percentage of Unemployed Females in the WHR, 15 Years and Over, 2001

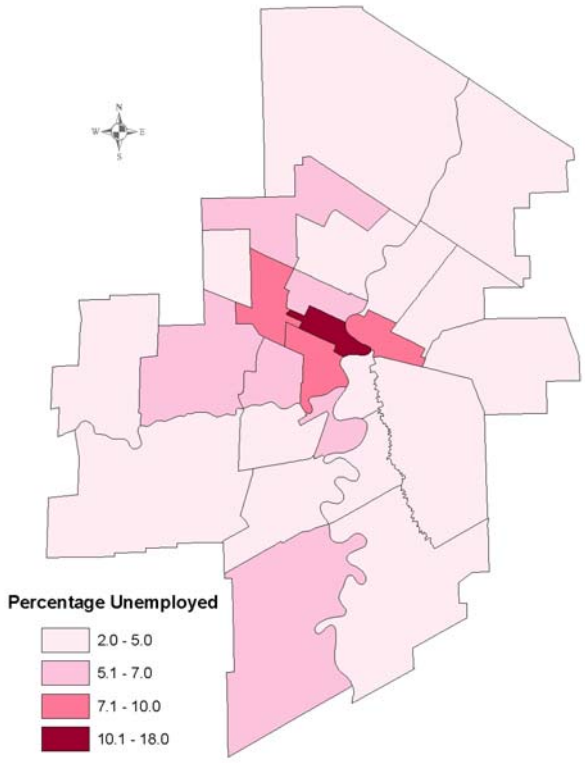
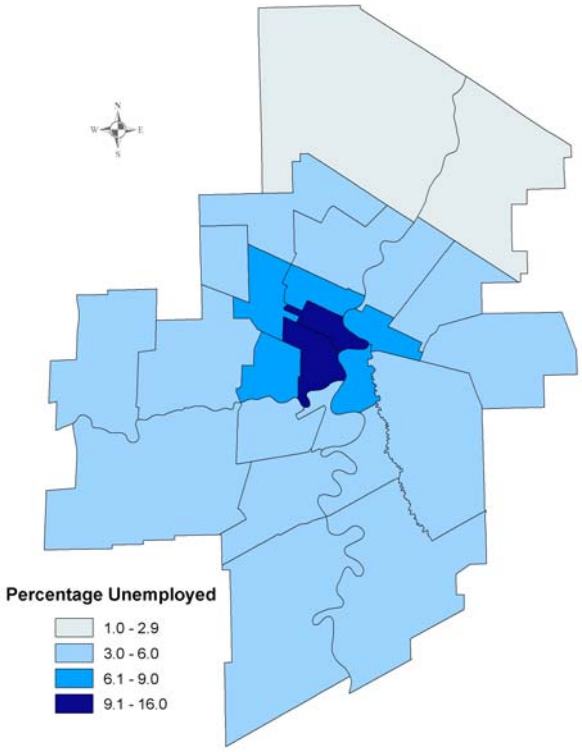


Figure 46
Percentage of Unemployed Males in the WHR, 15 Years and Over, 2001

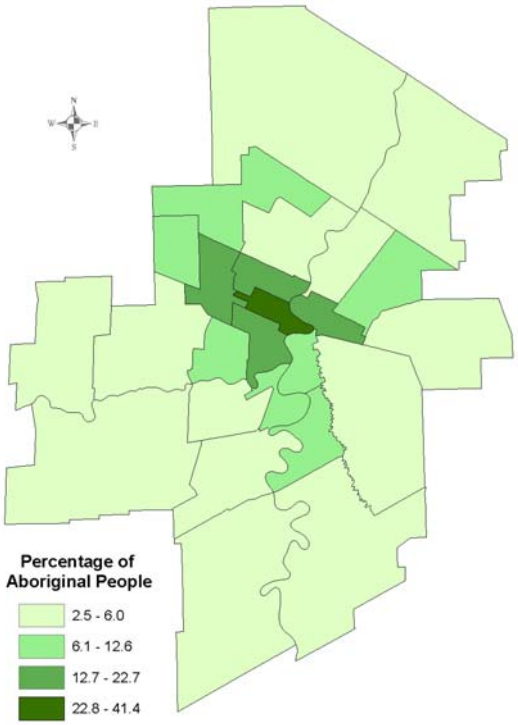


Culture

Aboriginal Population

- Point Douglas 10B has the highest proportion of persons with Aboriginal identity in the region. The surrounding neighbourhood clusters have the second highest proportion of persons with Aboriginal identity, these were: River East 7A, Inkster 9B, Point Douglas 10A, and Downtown 11B.

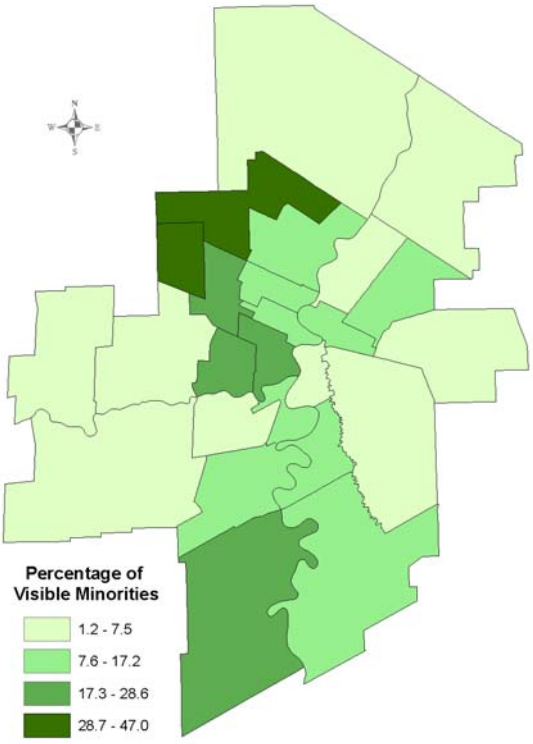
Figure 47
Percentage of Aboriginal Identity Persons in the WHR, Crude Rate per 1,000 Population, 2001



Visible Minority Population

- The neighbourhood clusters with the highest percentages of persons who self-identify as belonging to a visible minority are found in Seven Oaks 8A and Inkster 9A. The second highest rates were also found in Fort Garry 3B, Inkster 9B, and Downtown 11A and 11B.

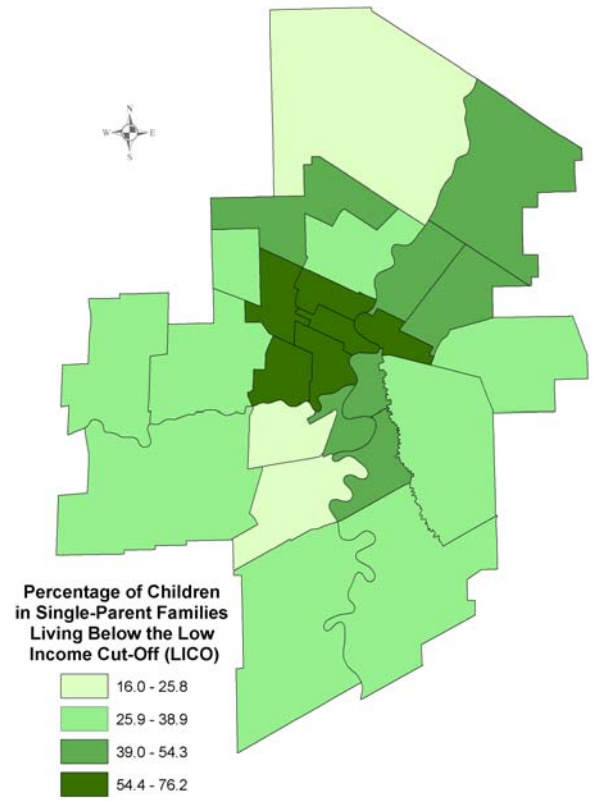
Figure 48
Percentage of Visible Minorities in the WHR,
Crude Rate per 1,000 Population, 2001



Healthy Child Development

- The geographies that have the highest percentages of children living in single parent families at or below the low income cut-off were: River East 7A, Inkster 9B, Point Douglas 10A and 10B, and Downtown 11A and 11B. Most of these neigbourhood clusters are where single parent families are concentrated (see Figure 43) and where the highest percentages of households who spend more than 30% their income on shelter costs (see Figure 40).

Figure 49
Percentage of Children in Single Parent Families at or Below the Low Income Cut-Off (LICO) in the WHR, 2001



Spatial analysis (mapping) of selected indicators of determinant s of health reveals the variability and disparities that exists in the smaller geographies within the region. This demonstrates the necessity of monitoring and reporting on the health determinants in population subsets of the WHR.

Underlying Population Health Issues

INTRODUCTION

The previous sections identified health issues by looking at the comparison of individual indicators and spatial analysis. In addition, some of the determinants of health were described for the twelve community areas. However, these comparisons do not look at how these indicators relate to one another. Health outcomes are often correlated to other health outcomes in addition to many determinants of health. Given the high inter-correlations among some health indicators, a statistical technique called factor analysis was used to study the relationships between health status indicators, determinants of health, and demographic variables in the Winnipeg Health Region. An advantage of the method is that it relies on the redundancy implied by high inter-variable correlation.

METHODS

Given the aim of the analysis was exploratory, rather than the testing of *a-priori* hypotheses, a total of 91 variables (indicators) representing the framework for Population Health Assessment for the Winnipeg Health Region were used in a factor analysis model. The objectives of the factor analysis included finding clusters of indicators and communities, and linking these clusters to the communities in which they were observed. Please refer to the Methods section for further technical details concerning the factor analysis model.

RESULTS

Factor analysis results were used to describe the underlying population health issues and combinations of indicators. Ten factors explained 93.1% of the total variance of the indicators, the remaining variance is due to unexplainable sources such as unique variation associated with specific indicators. The existence of distinct clusters or subsets of the indicators were found and identified with each factor. The presence of factors within the geographies of the WHR were also identified to describe unique underlying issues. This determines the existence of a statistical “link” between the factors underlying the indicators (variables) and the geographies where the indicators (variables) are observed.

The first two factors, which jointly account for 71.2% of the variance of all 91 variables, represent the overall dominant influence of health outcomes in the WHR. All other factors represented unique characteristics of the sub-geographies within the region. Each of the ten factors is linked to the Neighbourhood Clusters in which they are observed.

Dominant Factors: General Profile of Health

Factor 1: Low Socio-Economic Status Health Factor

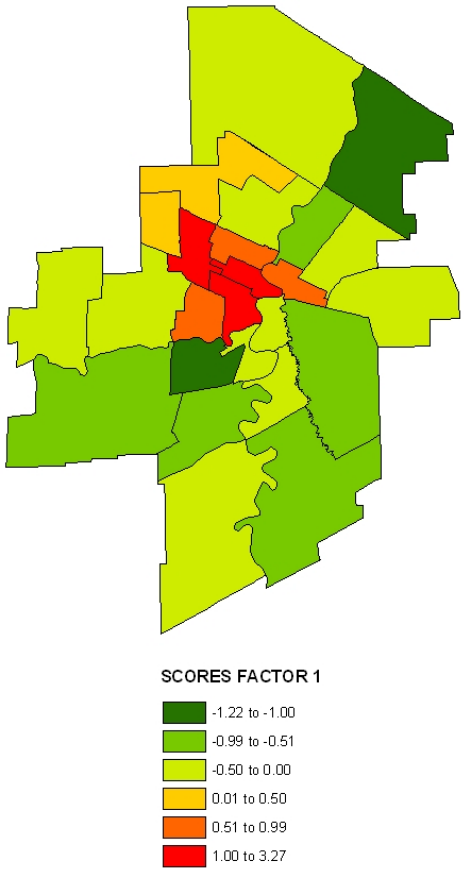
The first factor explains exactly 49.6% of the total variance and therefore represents the dominant influence of health in the region. This factor relates the socio-economic/demographic variables to variables representing health conditions, on one hand, and variables measuring the use of resources on the other. The first factor represents a poverty factor since is correlates to high unemployment, low individual incomes and years of education, and is characterized by higher-than-average younger male population, and single-parent families (females) exhibiting both high female fertility and teen pregnancies. It is also highly and positively correlated with high mortality rates, premature mortality, potential years of life lost, and death due to injury in both males and females. The above average mortality is also accompanied by the higher presence of sexually transmitted disease, Hepatitis C, Hepatitis B, Tuberculosis, respiratory problems and an extensive prevalence and incidence of diabetes amongst all ages (except, the incidence amongst the 70+ age group). Also, a strong absence of breast-feeding initiation is observed. Poverty is reflected in the populations residing in the core areas of the city. The Aboriginal population is represented in a higher proportion in the core areas of the city and is correlated with this factor (See Figure 50).

The use of resources by the low socio-economic status population indicates a relatively higher use of antibiotics, higher prescription rate, and higher hospitalization for injury followed by a slightly increased general use of hospitals and physicians. We also observe a lack of preventative care (i.e. immunizations and screenings) by the low socio-economic status population. The first factor is labeled a **Low Socio-Economic Status Health** influence.

This dominant underlying factor is associated with poverty characterized by a variety of health disparities and a higher use of resources at least on the part of some people in the neighbourhoods.

- The first factor, **Low Socio-Economic Status Health Factor**, explains 49.6% of the total variance, and represents the major overall influence in the region (Figure 50).
- There is a strong influence of Factor 1 in Point Douglas South (10B), Downtown East (11B), Inkster East (09B), Point Douglas North (10A), River East South (07A) and Downtown West (11A).
- The **Low Socio-Economic Status Health Factor** appears to be absent in River East North (07D), River Heights West (12A), Assiniboine South (002), Fort Garry North (03A), St. Boniface East (05B), St. Vital South (04B).
- The remaining neighbourhood clusters can be viewed as being more-or-less average, with respect to factor 1.

Figure 50

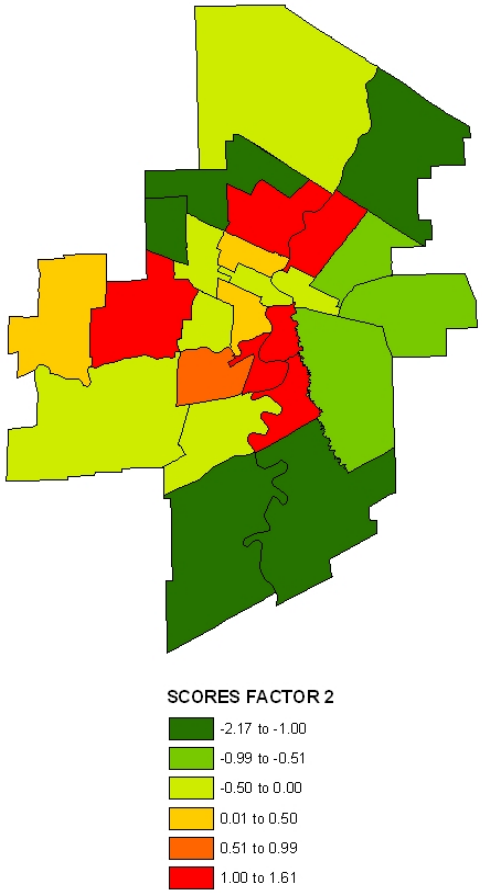


Factor 2: Older Adult Chronic Disease Factor

The second factor identifies an older population tending (but not exclusively) to be female, with an absence of visible minorities, a marked absence of 0-19 year-olds but neutral of 20-44 year-olds. The factor is mainly correlated with health conditions associated with an older population. The highest correlates are cancer rates, CT scans, total hip replacements, cataracts and cardiac catheterization, followed by cardiac conditions. The second factor is also correlated with mortality rates (especially for males) to a somewhat higher degree than the first factor, and almost as highly with premature mortality, confirming that it correlates variables associated with an older age, but not necessarily one with persons greater than 75 years of age. The second factor is uncorrelated with individual incomes, but a low correlation with family income indicates a certain lack of affluence. It also exhibits a slight correlation with single parent families and with the socio-economic index. This second factor is therefore termed an **Older Adult Chronic Disease** influence.

- The second factor, **Older Adult Chronic Disease factor**, explains 21.6% of the total variance, and represents the other major overall influence in the region (Figure 51).
- There is a strong influence of Factor 2 in St. James-Assiniboia East (01B), St. Boniface West (05A), River East West (07B), St. Vital North (04A), River Heights East (12B), and Seven Oaks East (08B).
- The Non-Affluent Older Adult Chronic Disease factor appears to be absent in Inkster West (09A), River East North (07D), Seven Oaks West (08A), St. Vital South (04B), Fort Garry South (03B) and River East East (07C).

Figure 51



Minor Factors: Specific Health Patterns

All other factors represent unique characteristics specific to the sub-geographies within the region. Factors 3 to 10 were found to correlate less with a smaller number of variables and hence profile smaller, more unique patterns within the Winnipeg Health Region. Each of the minor factors do not explain more than 5% of the total variance. As a result, for several of these factors it was difficult to clearly interpret and explain their meaning. These factors and their correlates to the variables are presented in the Appendix.

Other factors emerged that represent more specific variables. The following are examples:

Factor 5 correlates to a certain extent with the occurrence of hepatitis B virus, tuberculosis, use of physician services associated with a visible minority population. Factor 5 was mainly linked to Downtown East (11B), Inkster West (09A), River Heights West (12A), Seven Oaks West and Seven Oaks East (08A and 08B). Factor 6 reflects a high incidence followed by prevalence of diabetes among persons 70 year of age and older. Factor 6 was mainly linked to Transcona (006), St. James-Assiniboia West (01A), St. Boniface East (05B), River East West (07B), Assiniboine South (002) and Seven Oaks West (08A). Factor 7 reflects a correlation to young adults (20-44 years) and single parent families with few health issues who are slightly below average income. This factor was primarily linked to River Heights East (12B), River East South (07A), Fort Garry South (03B), Downtown West (11A), St. Boniface West (05B) and St. Vital North (04A).

This method helps to identify areas for further investigation.

Summary of the Key Issues

The overall health issues identified at the regional level are equally important to each Community Area (see Winnipeg Health Region Overview). The determinants of health reflect both strengths and challenges (e.g. social support, economic, and social environment) that connect to health status outcomes for each Community Area. Other modifiable determinants of health that were not measured at the CA level such as personal health behaviours are associated with the various health issues and should be considered in planning interventions and programs in these areas. Underlying population health issues identified how measures of health are related in communities.

Wide Variability

Mapping health status indicators and determinants of health reflect the variability that exists within smaller geographies throughout the region. This variation among Neighbourhood Clusters highlights areas that have a greater burden of illness, which is sometimes masked by looking at the larger CA or regional level. This variability identifies disparities of health in the WHR.

Common Patterns

There are similar patterns of the burden of illness among Community Areas in the WHR, as the indicators tend to cluster in patterns for each of the six domains. For example:

- The Point Douglas and Downtown community areas share a similar burden of illness for most of the six domains (chronic health conditions, infant and maternal health, cancer, communicable disease, injury, mental health and death) used in the comparison of indicators.
- Similar patterns of poor chronic health outcomes are found in St. James-Assiniboia, Seven Oaks, Point Douglas and Downtown community areas.
- A similar pattern for the rates of death for all leading causes of death was shared by the Assiniboine South, Fort Garry, St. Vital, Transcona, and Inkster community areas. In these community areas all compared favourably to the region for these rates.

Knowledge of the wide variability and common patterns of the population in community areas helps to:

- Target strategies and interventions
- Focus/align resources
- Identify/enhance partnerships
- Develop business and program plans
- Support policy development
- Develop regional and strategic plans

Notes to the Reader:

- It is important to note that the overall health issues identified at the regional level are equally important to the smaller geographies within the Winnipeg Health Region.
- The reader is directed to the individual population health profiles for the community areas and populations of special interest for further information on the health issues affecting these subpopulations.
- It is anticipated that this profile will support dialogue, decision-making and planning efforts in the region.