

# Community Health Status Assessment: Creighton and Flin Flon

By

Mamawetan Churchill River Health Region  
NOR-MAN Health Region  
Saskatchewan Ministry of Health  
Manitoba Ministry of Health and Healthy Living  
Saskatchewan Cancer Agency  
CancerCare Manitoba

1

## Presented to the Community Advisory Committee, November 19, 2008 by:

Dr. James Irvine,  
Medical Health Officer,  
Mamawetan Churchill River Health Region

Dr. Lawrence Elliott,  
Medical Officer of Health,  
NOR-MAN Health Region

Dr. Susan Roberecki  
Deputy Chief Medical Health Officer  
Manitoba Health and Healthy Living

2

## Purpose

- Provide a overall health status assessment of the populations of Creighton and Flin Flon (FF/CR)
- Compare with Manitoba, Saskatchewan and NOR-MAN Health Region and Mamawetan Churchill River Health Region

3

## Health assessment of the populations of Creighton and Flin Flon

- Combined
  - Creighton, SK
  - Flin Flon, SK
  - Flin Flon, MB
- Compared to:
  - Manitoba
  - Saskatchewan
  - NOR-MAN Health Region
  - Mamawetan Churchill River Health Region

4

## Purpose

---

- To provide information that will complement the work of the Human Health Risk Assessment (HHRA)
- Does not replace the need for the HHRA

5

---

● Community health status assessment is an assessment of the overall health of the population

---

● Human Health Risk Assessment is an assessment of the risk to human health from a particular contaminant or combination of contaminants

6

## Sources of information

- Vital Statistics Agency, Manitoba
- Vital Statistics Registry, Saskatchewan
- Saskatchewan Cancer Registry
- Manitoba Cancer Registry
- Canadian Community Health Survey, Statistics Canada
- Census Canada, Statistics Canada

7

## Confidence Intervals (also called 'error bars')

- 95% confidence intervals (CI) were calculated where appropriate
- CI give information on the range in which result will most likely be found
- For survey information, only a sample of the population is surveyed. By chance the people selected may not reflect the whole population perfectly accurately.
- The CI shows the range that the whole population answers will be true 95% of the time. (i.e. correct 19 times out of 20)

8

## Confidence Intervals (also called 'error bars')

- 95% confidence intervals (CI) were used for vital statistics and cancer incidence in order to compare the rates between populations
- Rates of illness in smaller populations (especially for uncommon or rare events) can jump up and down overtime. Calculating an average rate with confidence intervals allows one to be 'confident' that the rate is somewhere within that CI

9

## Confidence Intervals (also called 'error bars')

- The larger the population studied, the less variability there is by chance (the CI are narrow or tight)
- The smaller the population, the wider the CI reflecting that rates can go up and down readily by chance
- For less common events, the rates can go up and down more readily than common events, and CI will be wider for less common events

10

## Confidence Intervals (also called 'error bars')

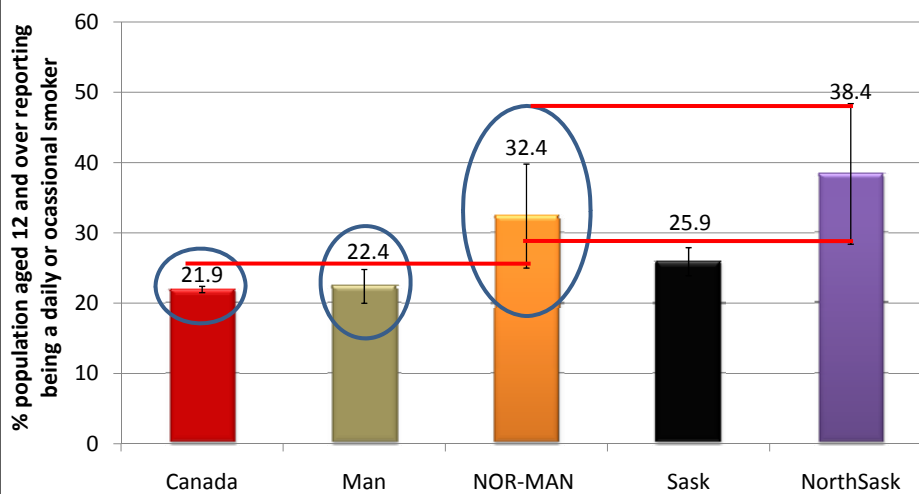
• For the following slide:

- The percentage of smokers in NorthSask is not significantly different than NOR-MAN (the error bars 'overlap')
- The percentage of smokers in North Sask is greater than in Saskatchewan (the lower part of the error bar for NorthSask is greater than the upper part of the error bar for Sask)
- The percentage of smokers in NOR-MAN is greater than in Manitoba and Canada

11

### Example of confidence intervals (CI)

Occasional or Daily Smokers, aged 12 years and over,  
off-reserve, Northern Regions, 2007



Source: StatsCan 2007 (CCHS), Prepared by PHU June 2008 (Error Bars = 95% CI's)

12

## Abbreviations

HHRA	Human Health Risk Assessment
CR	Creighton, Saskatchewan
FF	Flin Flon
FF, Man	Flin Flon, Manitoba
FF, Sask	Flin Flon, Saskatchewan
FF/CR	Combined FF Man, FF Sask and CR
CR FF Sask	Combined CR and FF Saskatchewan
Sask	Saskatchewan
Man	Manitoba
NOR-MAN	NOR-MAN Health Region
MCRHR	Mamawetan Churchill River Health Region
HR	Health Region
Age-Std	Age-Standardized

13

14

## Population

---

15

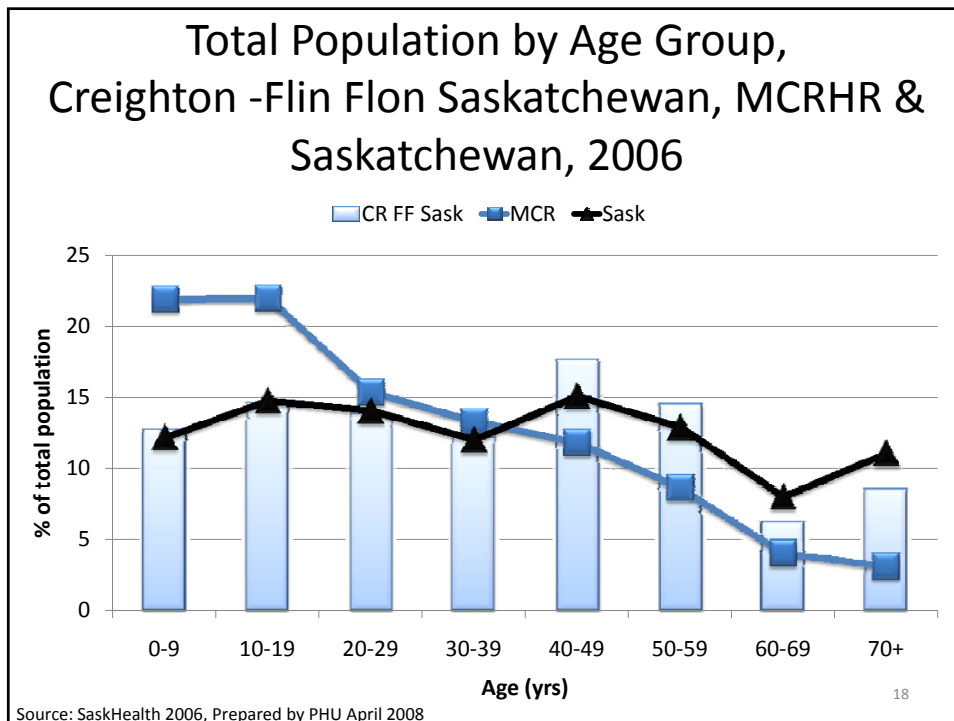
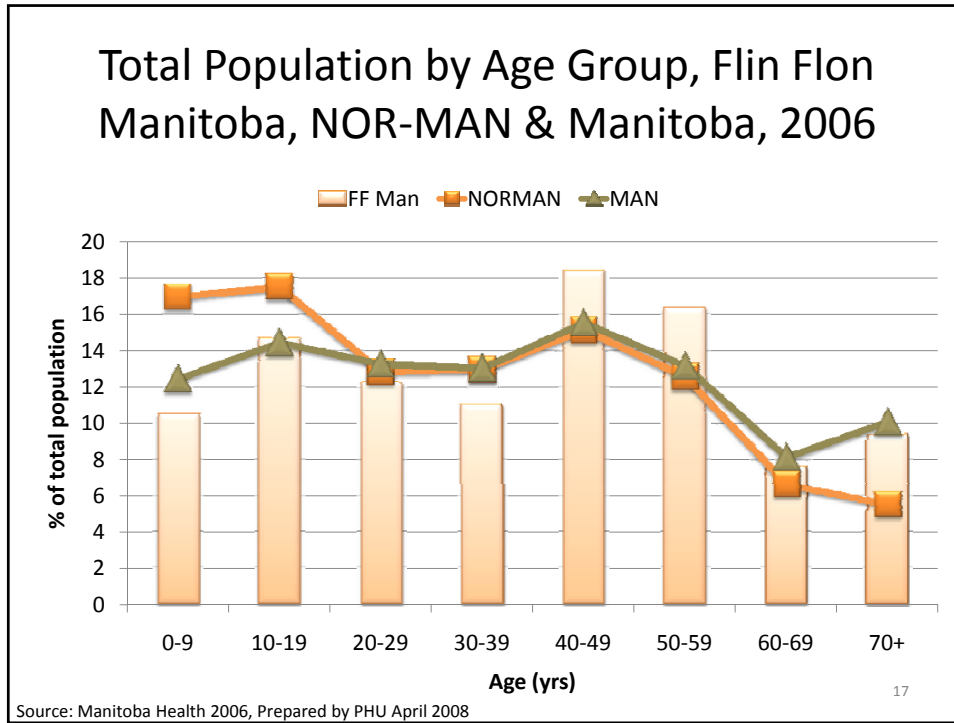
## Population Age Structure

---

- When comparing health status between groups, the population age structure can make a difference
- Populations with younger age structures would be expected to have lower rates of some illness such as cancer and chronic conditions (diabetes and heart disease) than populations with older age structures.

16



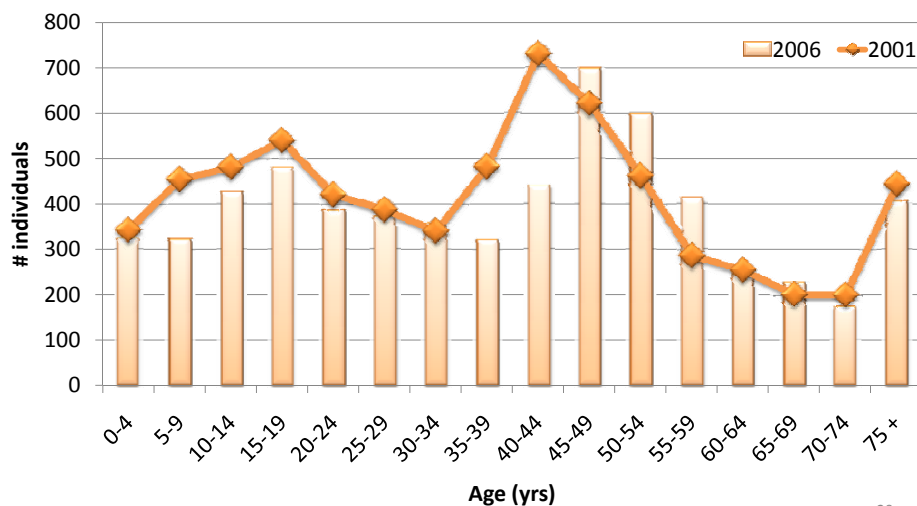


## Age-standardization

- The population age structure of Creighton and Flin Flon is different than the other four comparison populations
- Appropriate statistical adjustments are required in order to compare these populations (called 'age-standardization')
- Its like comparing 'as if' all the populations' age structures are the same

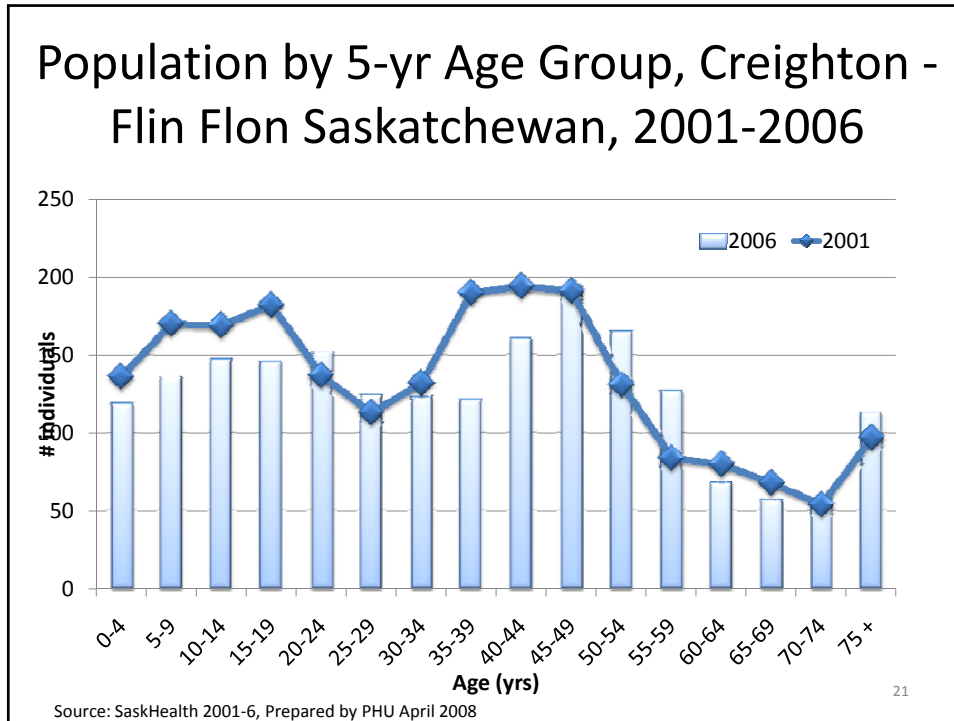
19

### Population by 5-yr Age Group, Flin Flon Manitoba, 2001-2006



Source: Manitoba Health 2001-6, Prepared by PHU April 2008

20



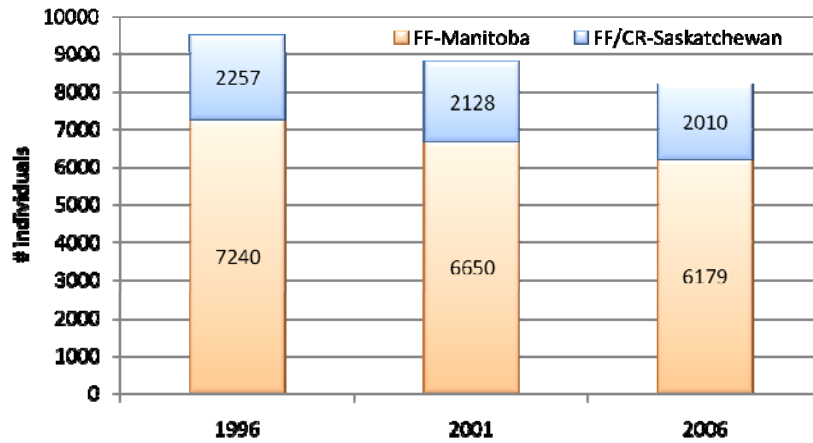
21

## Population Change

- The population of Creighton and Flin Flon:
  - Since 2001, there has been:
    - A small decrease in the number of children and adolescents as well 35-45 year olds
    - There is an increase in the number of 45 to 60 year olds

22

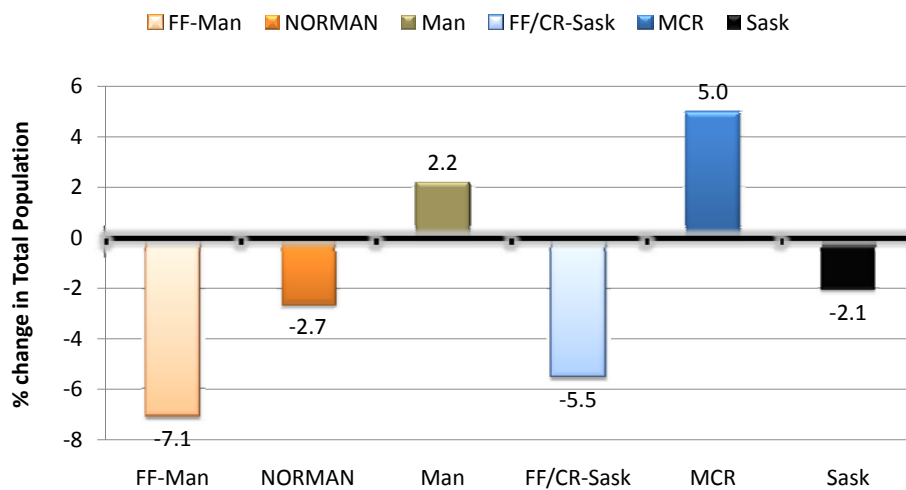
### Total Population Change, Flin Flon Manitoba and Creighton/Flin Flon Saskatchewan, 1996-2006



Source: Manitoba & SaskHealth 2006, Prepared by PHU April 2008

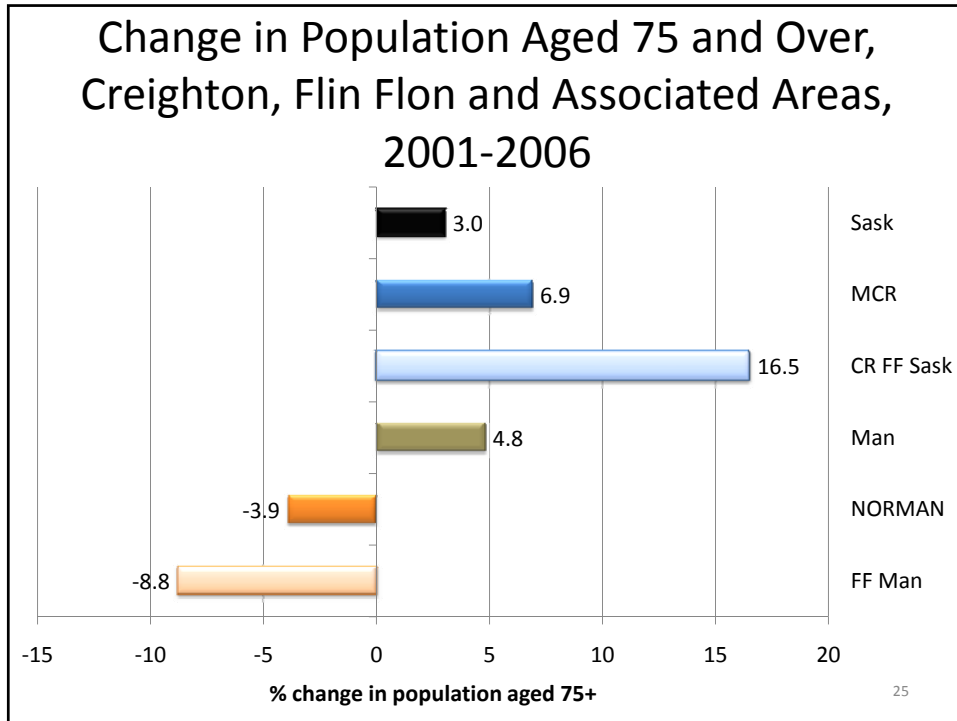
23

### Total Population Change, Creighton, Flin Flon and Associated Areas, 2001-2006



Source: Manitoba & SaskHealth 2006, Prepared by PHU April 2008

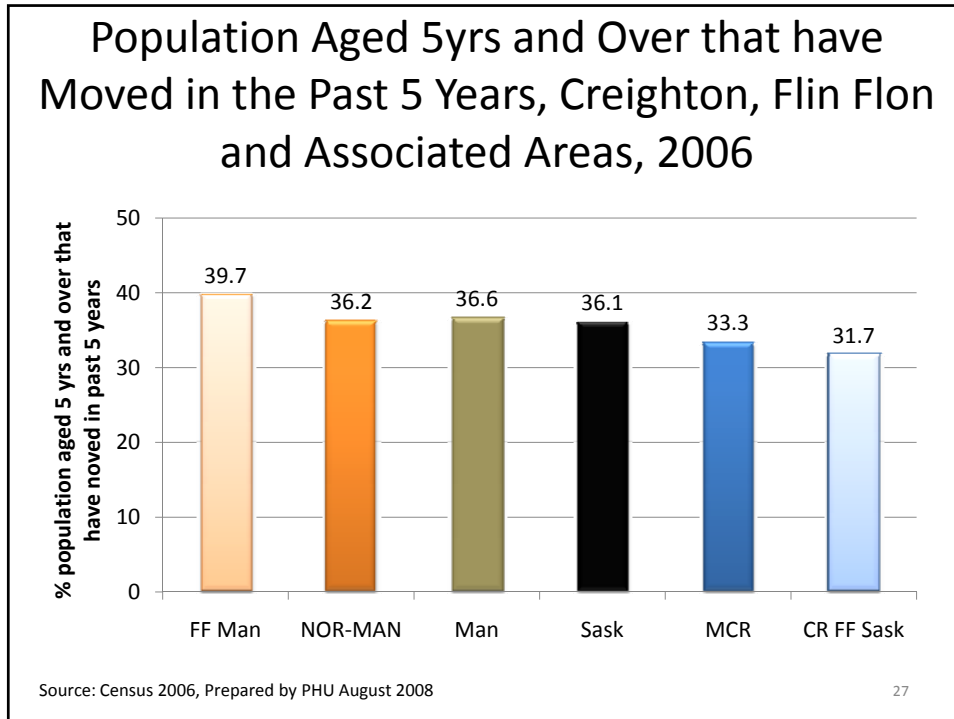
24



## Population Trends

- The population of Flin Flon and Creighton has been decreasing between 2001 – 2006
- The population of those aged 75 years or older has increased from 2001-2006 in Creighton (16.5% increase) and decreased in Flin Flon (8.8% decrease)

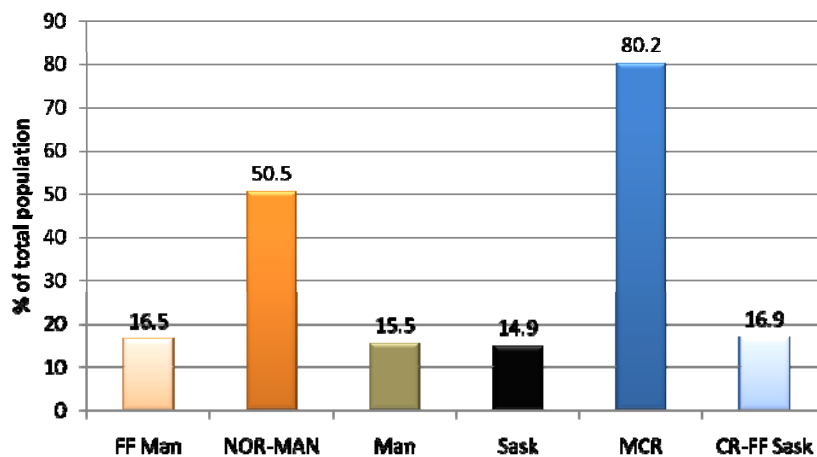
26



## Aboriginal Identity

- Creighton and Flin Flon have similar proportions of Aboriginal people in their population to Manitoba and Saskatchewan and a lower proportion compared to NOR-MAN and MCR Health Regions.

## Population Declaring Aboriginal Identity, Creighton, Flin Flon & Associated Areas, 2006



Source: Census 2006, Prepared by PHU April 2008

29

30

## Health Determinants

The things that determine or influence our health

31

## Health Status is determined by more than Health Services

- ❖ Incomes & social status
- ❖ Education
- ❖ Employment
- ❖ Environment
  - ❖ Human-made
  - ❖ Natural ecosystem
- ❖ Social supports
- ❖ Early childhood development
- ❖ Health services
- ❖ Health behaviours

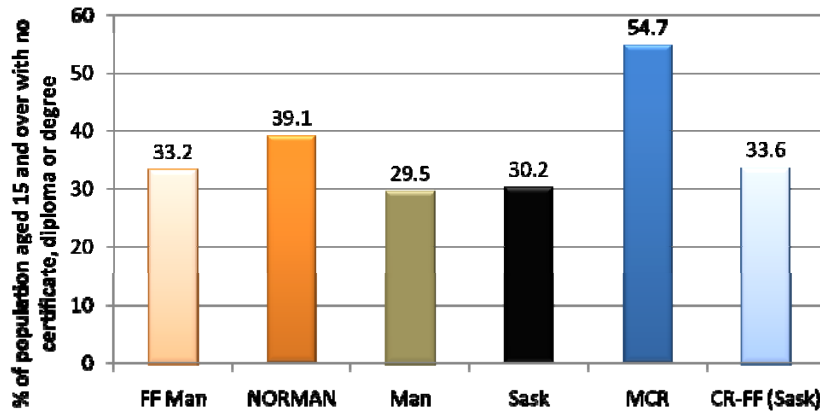


Source: Saskatchewan Provincial Health Council, 1996

32



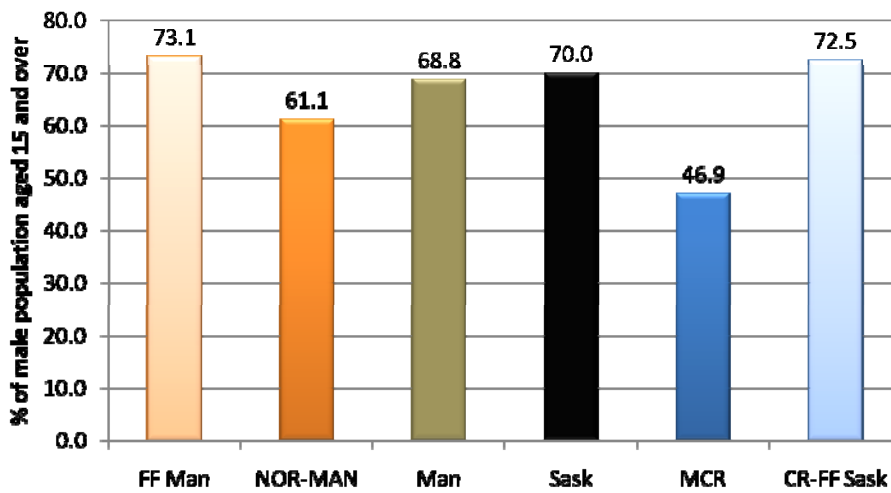
### Education: Population Aged 15 and Over with No Certificate, Diploma or Degree, 2006



Source: Census 2006, Prepared by PHU August 2008

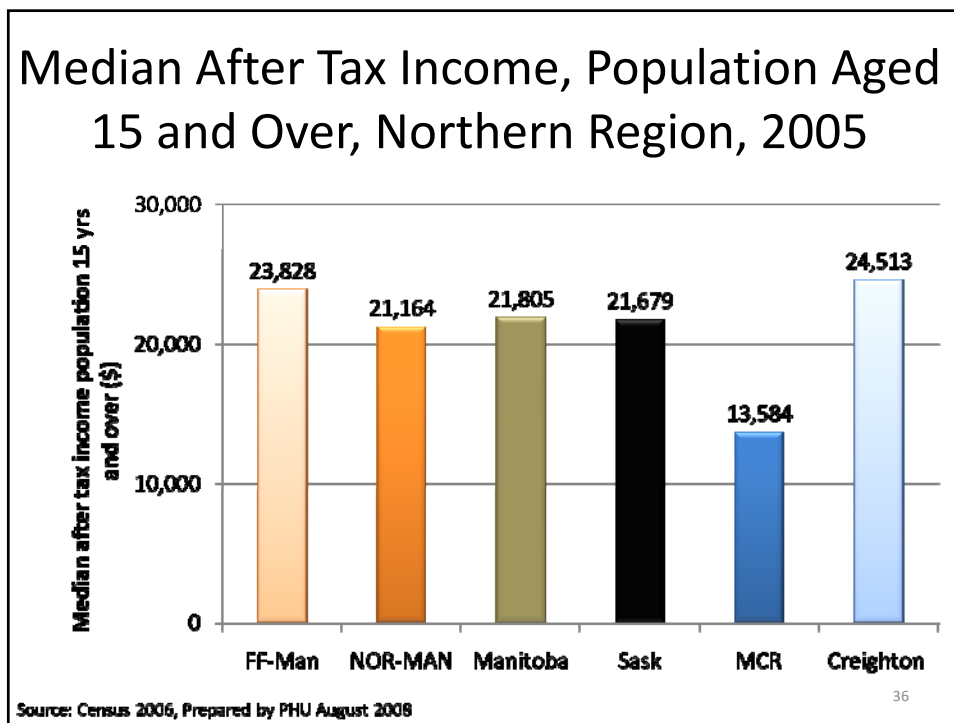
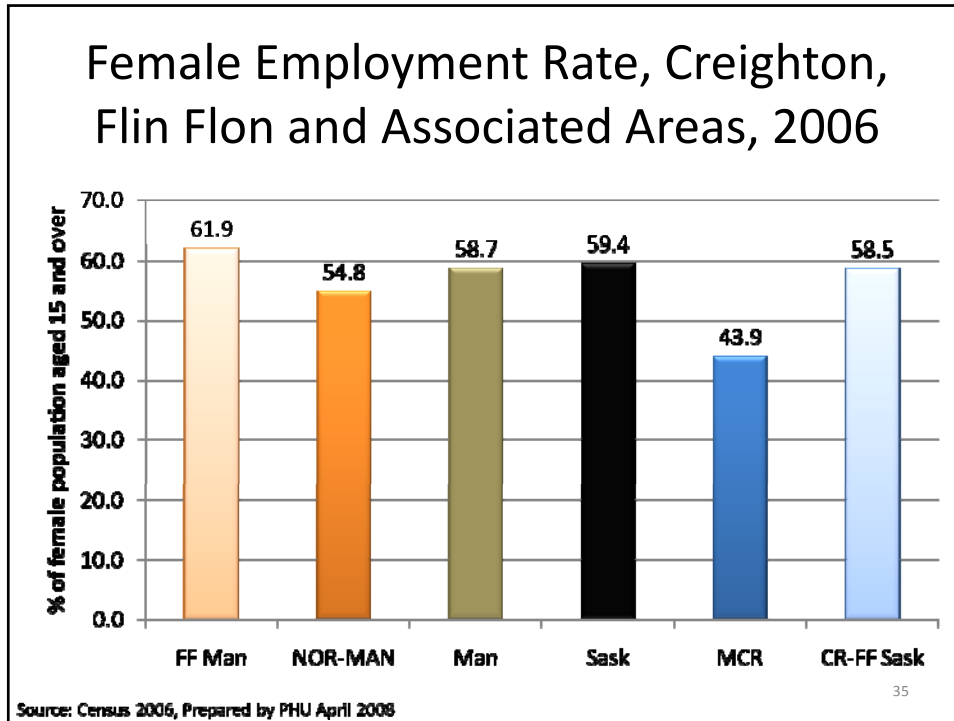
33

### Male Employment Rate, Creighton, Flin Flon and Associated Areas, 2006

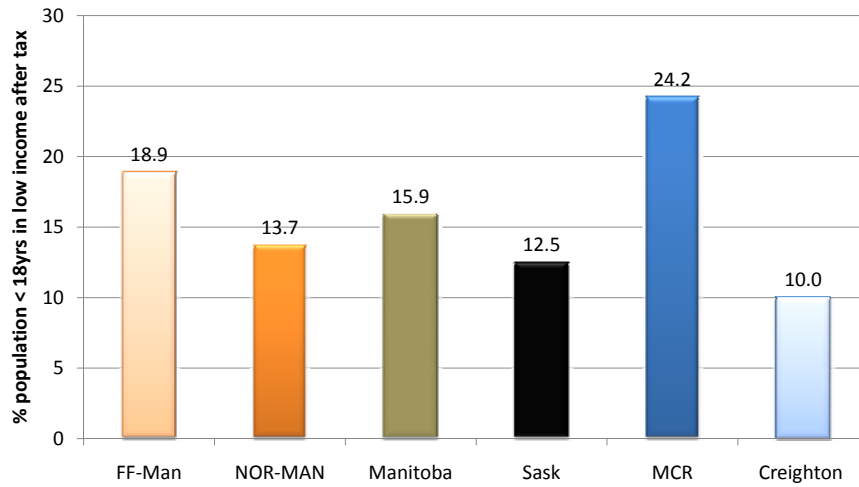


Source: Census 2006, Prepared by PHU April 2008

34



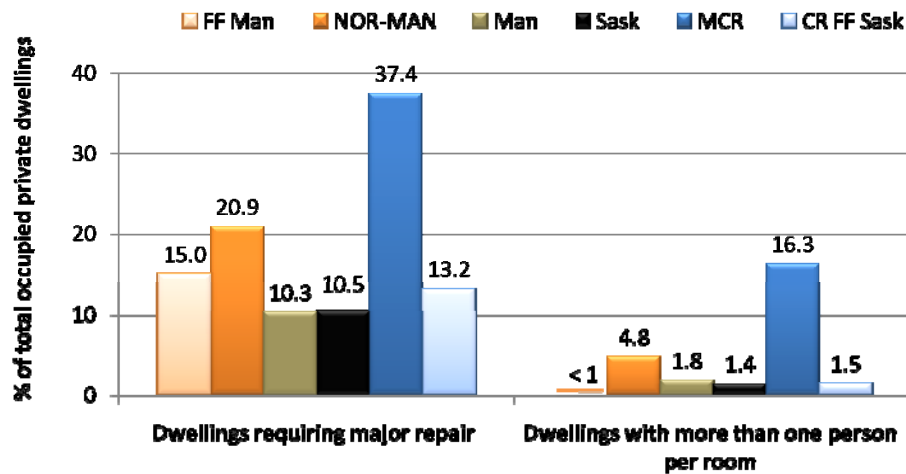
### Population Less than 18 yrs of Age in Low Income After Tax, Northern Regions, 2005



Source: Census 2006, Prepared by PHU August 2008

37

### Occupied Private Dwelling Characteristics Creighton, Flin Flon and Associated Areas, 2006



Source: Census 2006, Prepared by PHU August 2008

38

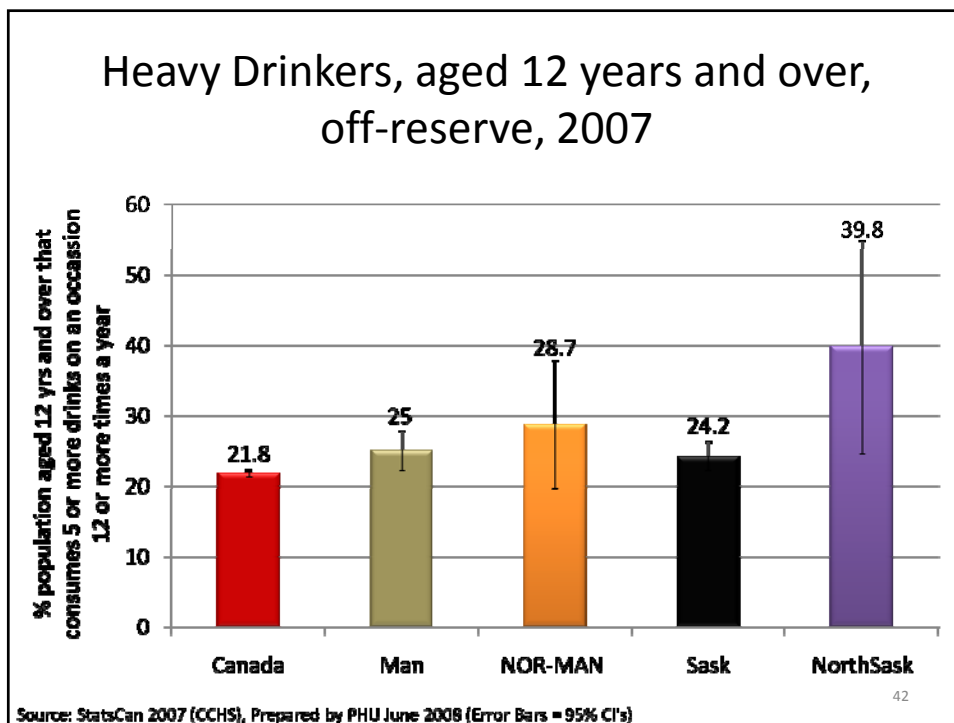
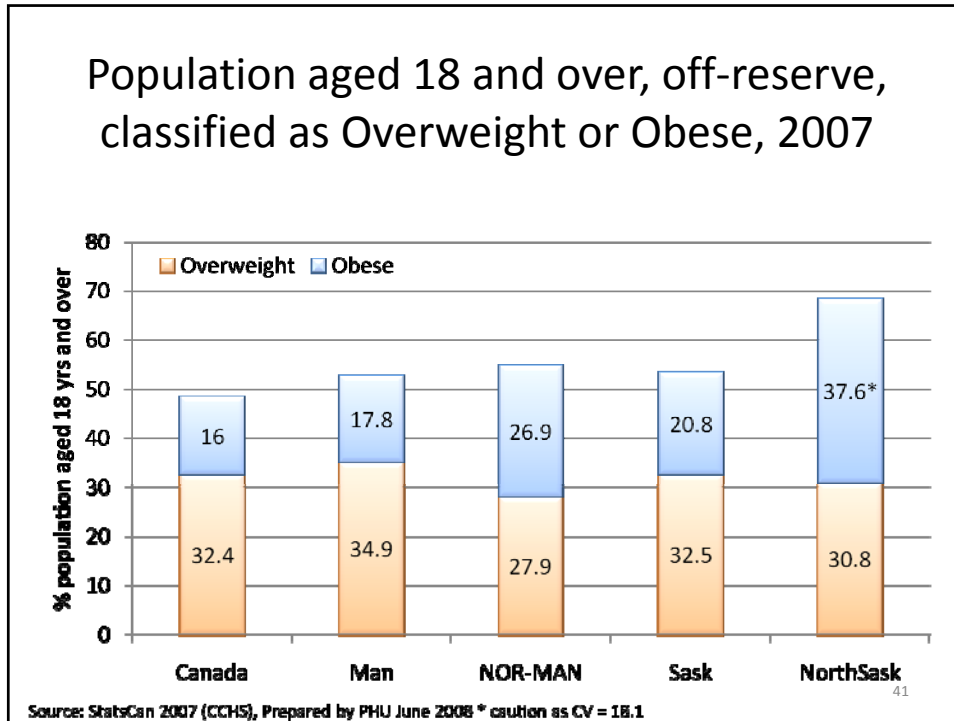
- Creighton and Flin Flon communities have similar (or slightly higher) education, employment, and income compared to Manitoba and Saskatchewan populations.
- Creighton and Flin Flon have fairly similar housing conditions in terms of crowding compared to Saskatchewan and Manitoba.

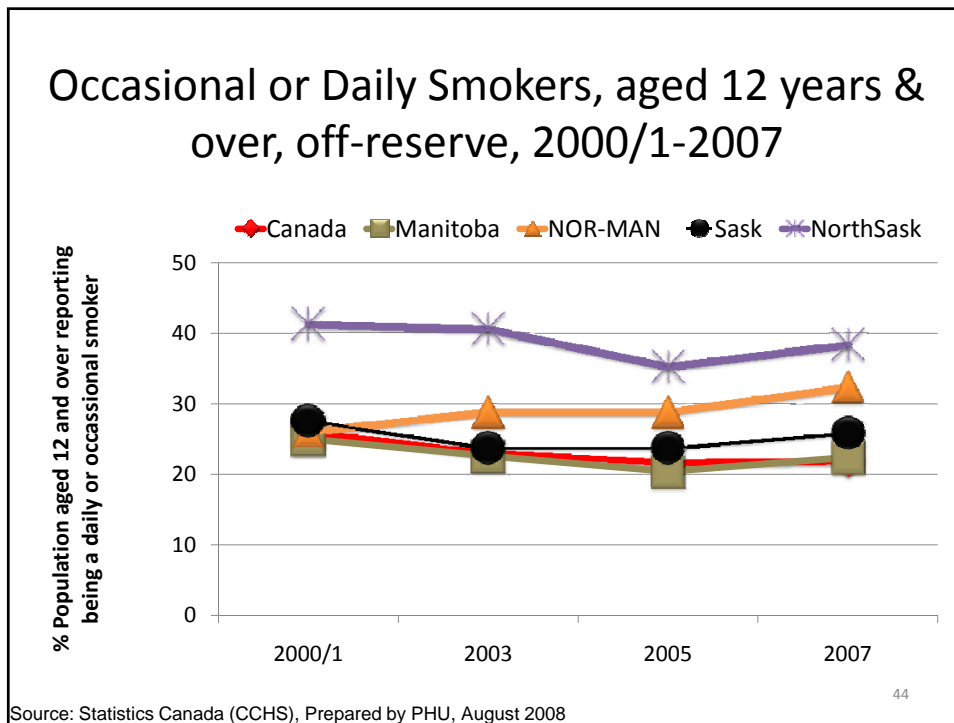
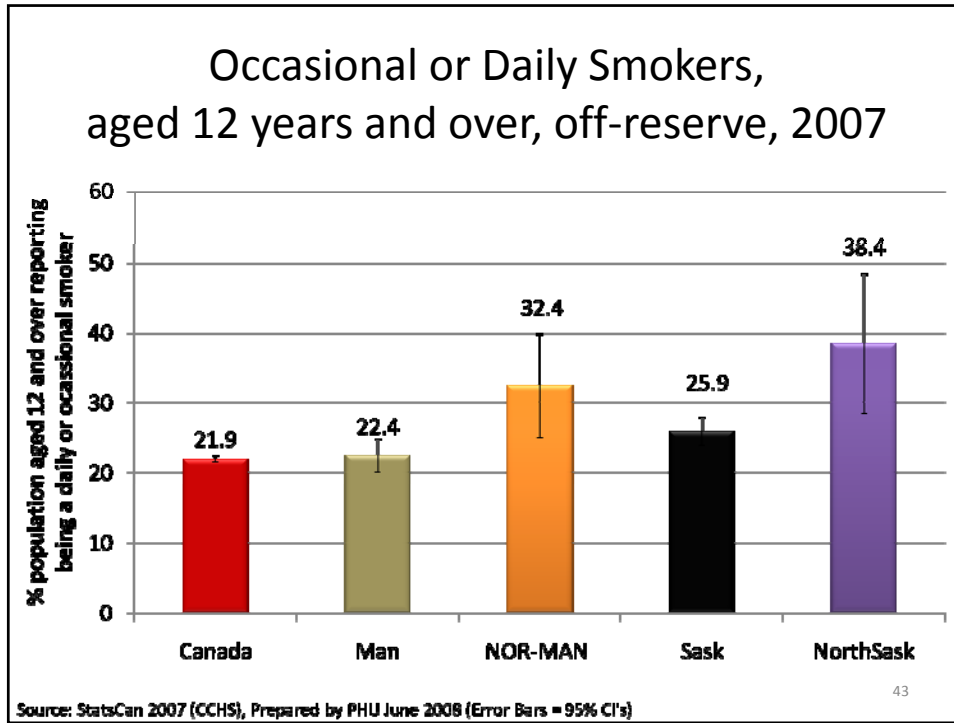
39

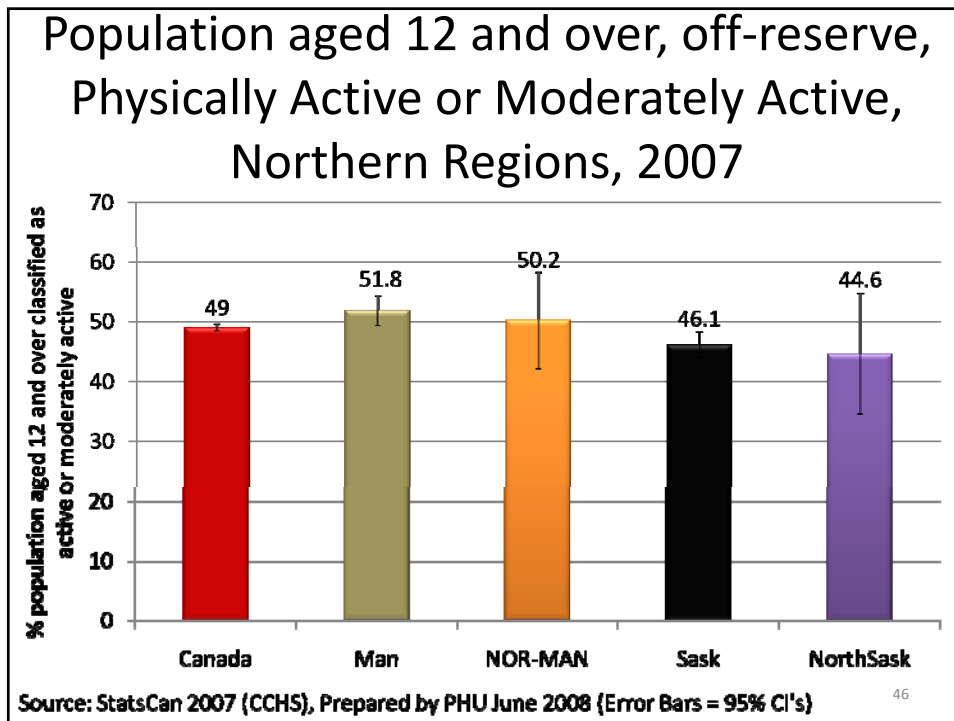
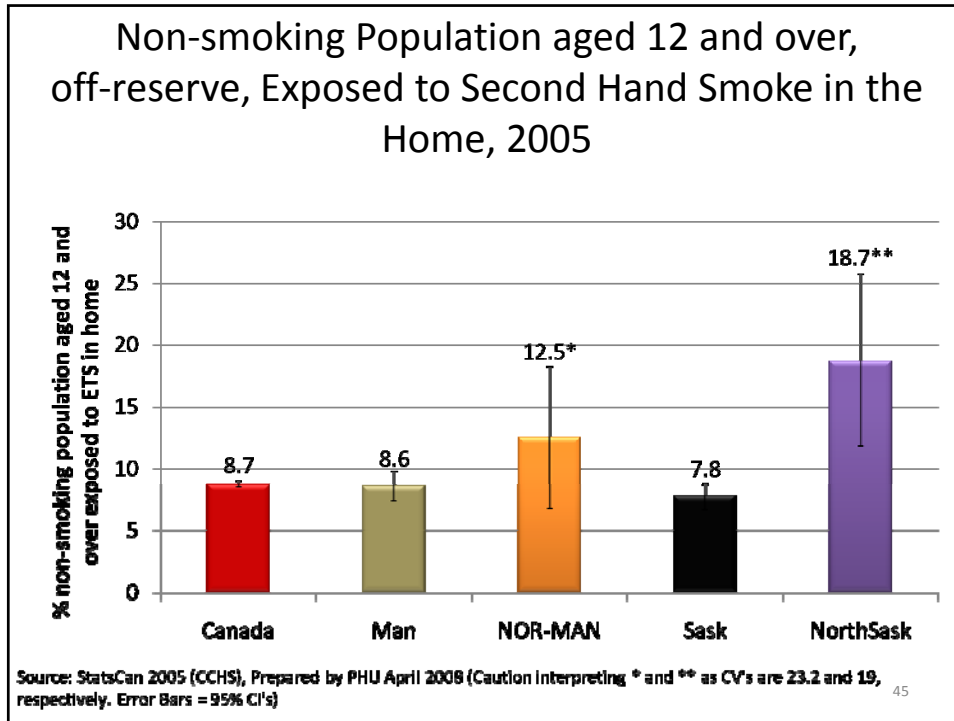
## Other determinants

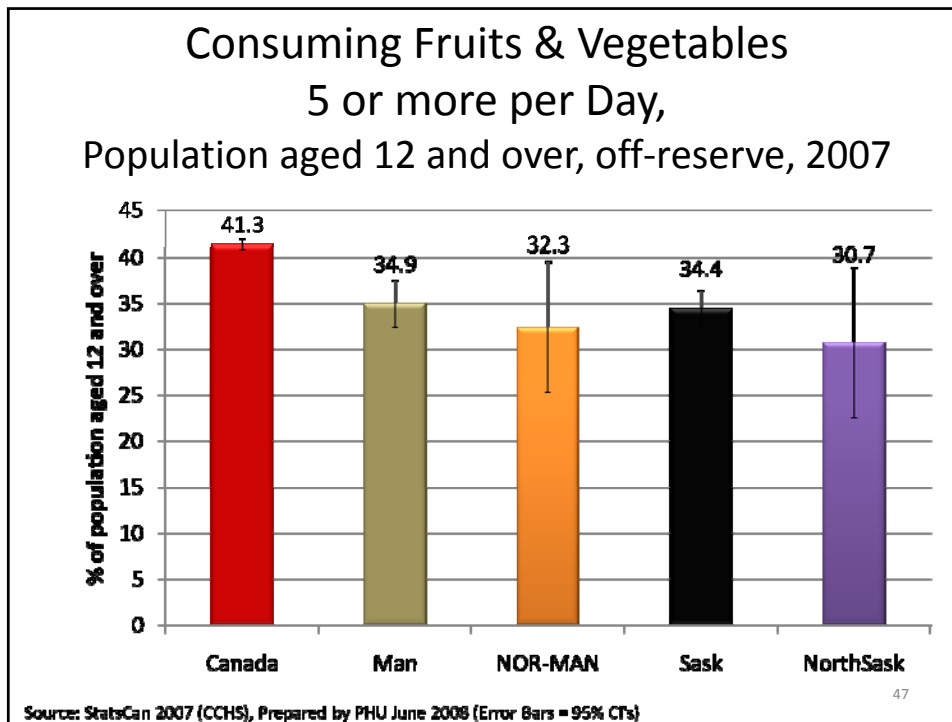
- For some of the non-medical health determinants, current information is not available specifically for Creighton and Flin Flon but is available for the MCR and NOR-MAN Health Regions.

40









- For off-reserve populations in NOR-MAN and MCR Health Regions, there are higher rates of people who are overweight and obese, are heavy drinkers, and are more exposed to second hand smoke compared to the general population in Saskatchewan and Manitoba residents but the differences are not statistically significant.

48



- 
- Rates of smoking in MCR Health Region are significantly higher than in Saskatchewan and in NOR-MAN Health Region compared to Manitoba.

49

## Comparison groups

---

- Based on population and health determinants indicators, the Manitoba population most closely resembles the Flin Flon / Creighton population followed by Saskatchewan, and then NOR-MAN Health Region

50

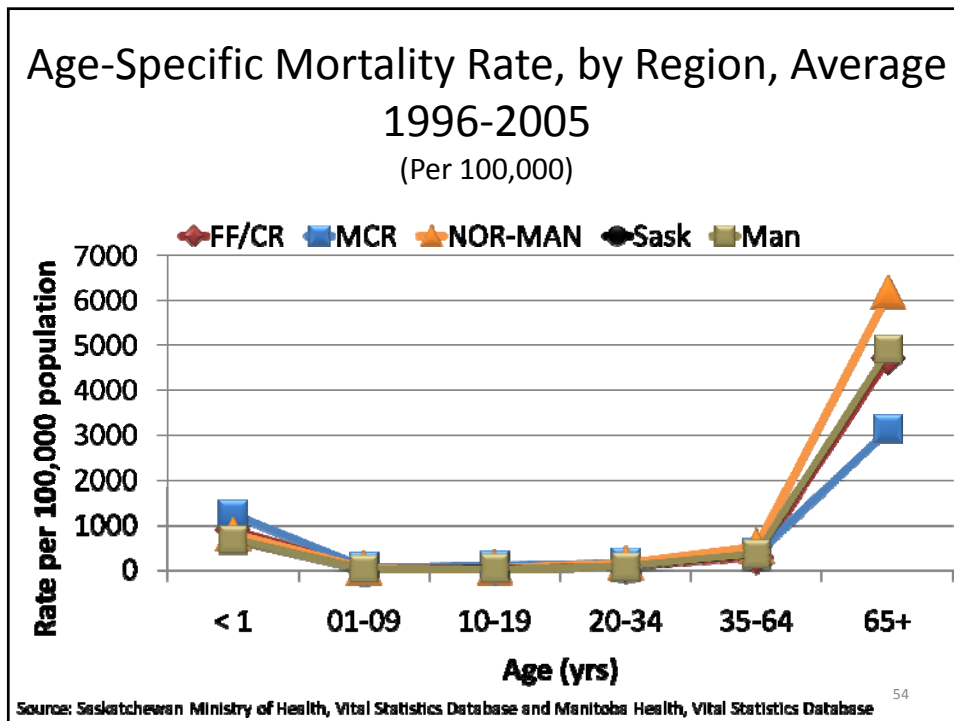
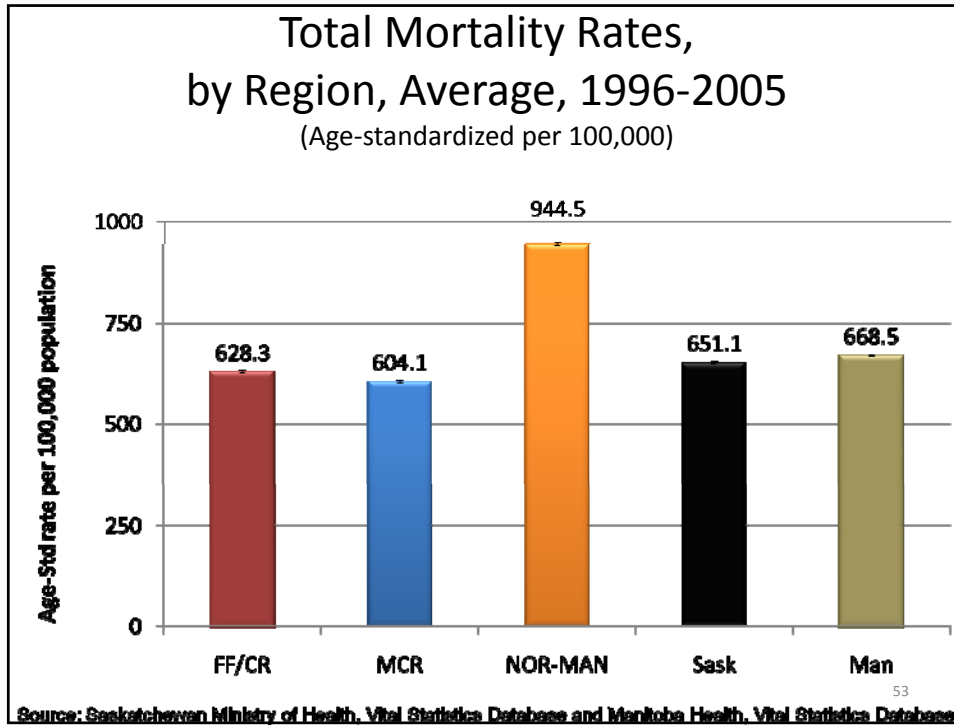
## Vital Statistics: Mortality

51

## Total Mortality Rate

- For all causes of death combined, the death rate in FF/CR is lower than the death rates in NOR-MAN and slightly lower than in Manitoba and Saskatchewan.

52

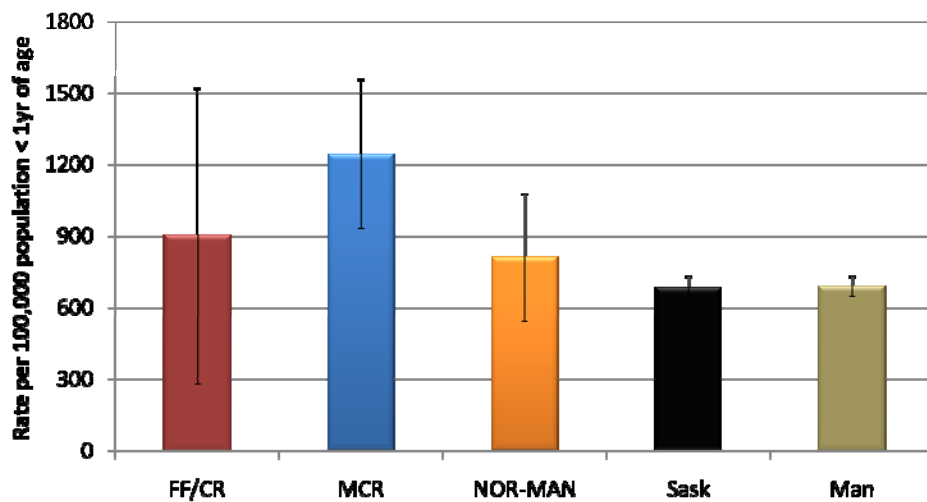


## Mortality by Age Group

- In assessing death rates at various ages:
  - There is little difference between groups for most age groups
  - Rates in Flin Flon / Creighton are lower than MCRHR in the 20-35 year age group and lower than NORMAN HR , Manitoba and Saskatchewan in the 35-65 year age group.
  - For over 65 years of age, rates in Flin Flon / Creighton are less than those in NOR-MAN and higher than in MCRHR and roughly the same as Manitoba and Saskatchewan.

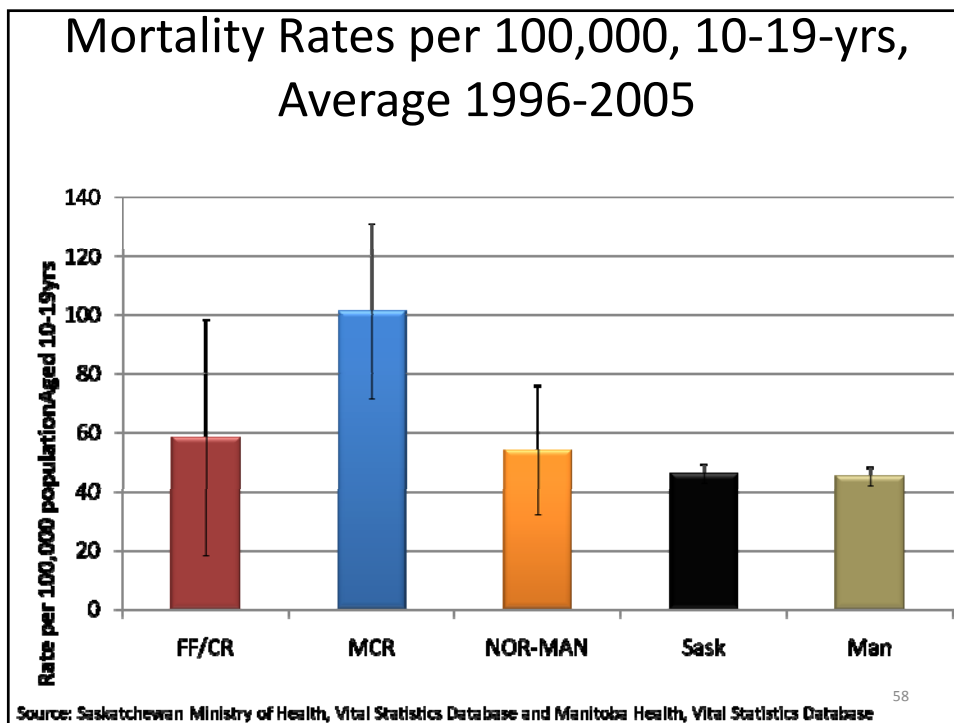
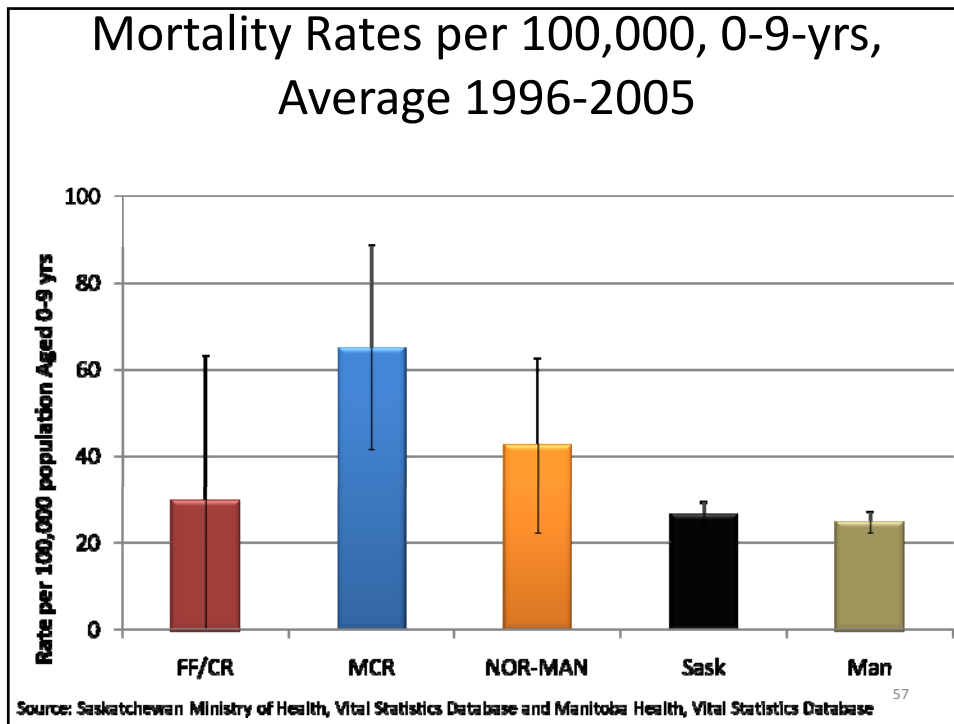
55

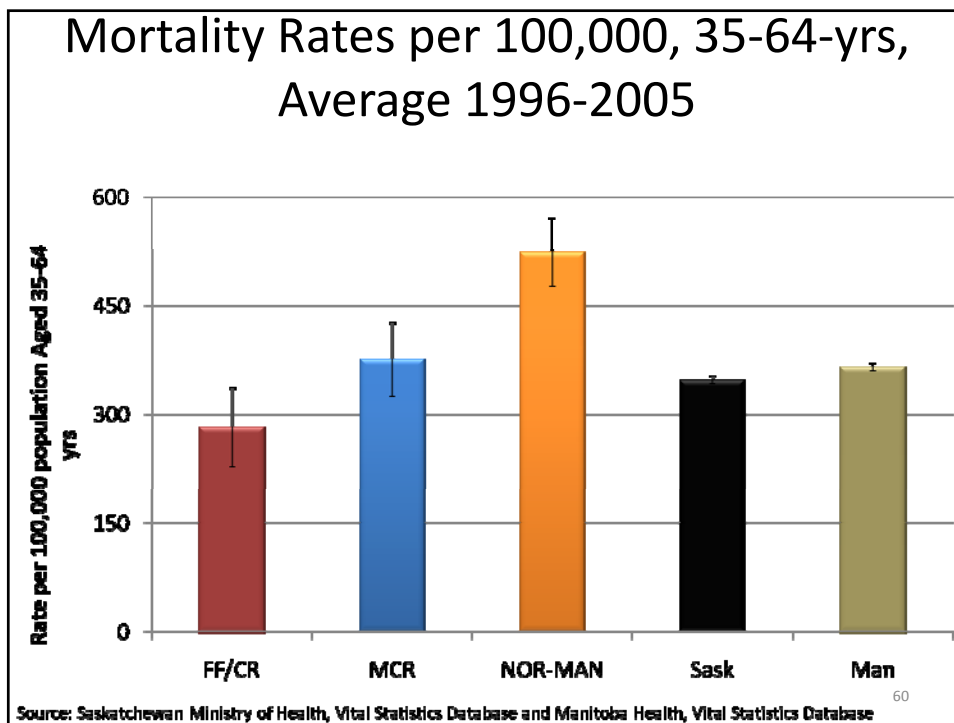
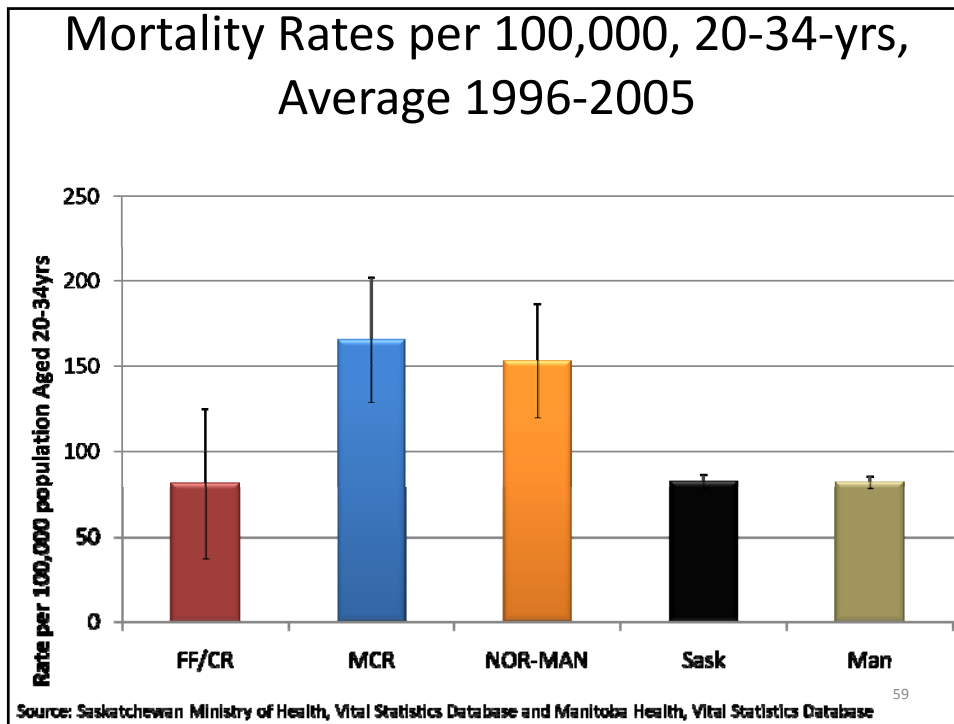
## Mortality Rates per 100,000, < 1-yr, Average 1996-2005

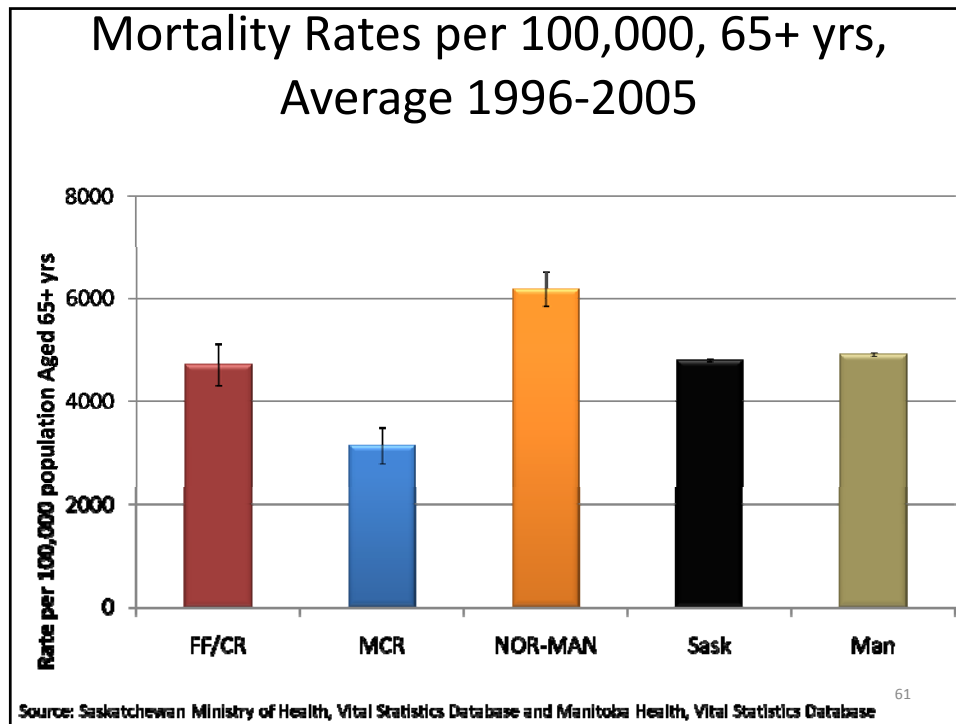


Source: Saskatchewan Ministry of Health, Vital Statistics Database and Manitoba Health, Vital Statistics Database

56







### Lower rates of circulatory and cancer deaths

- Death rates for circulatory disease (e.g. heart disease and stroke) are lower in FF/CR compared to NOR-MAN, Saskatchewan and Manitoba
- Death rates for cancers are lower in FF/CR compared to NOR-MAN and Manitoba.

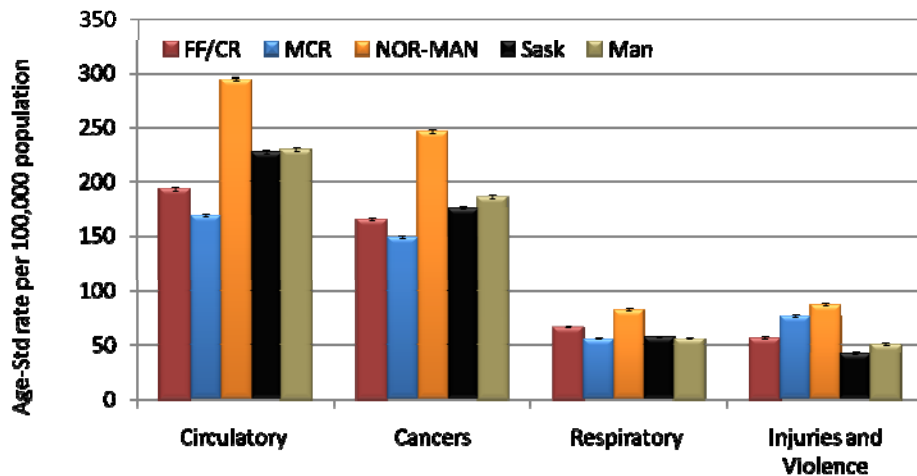
62

## Higher rates of injury and respiratory deaths

- Death rates for respiratory diseases are higher in FF/CR than in Manitoba and Saskatchewan but lower than in NOR-MAN Health Region
- Death rates for injuries and violent deaths are higher than in Manitoba and Saskatchewan but lower than NOR-MAN and MCR HR.

63

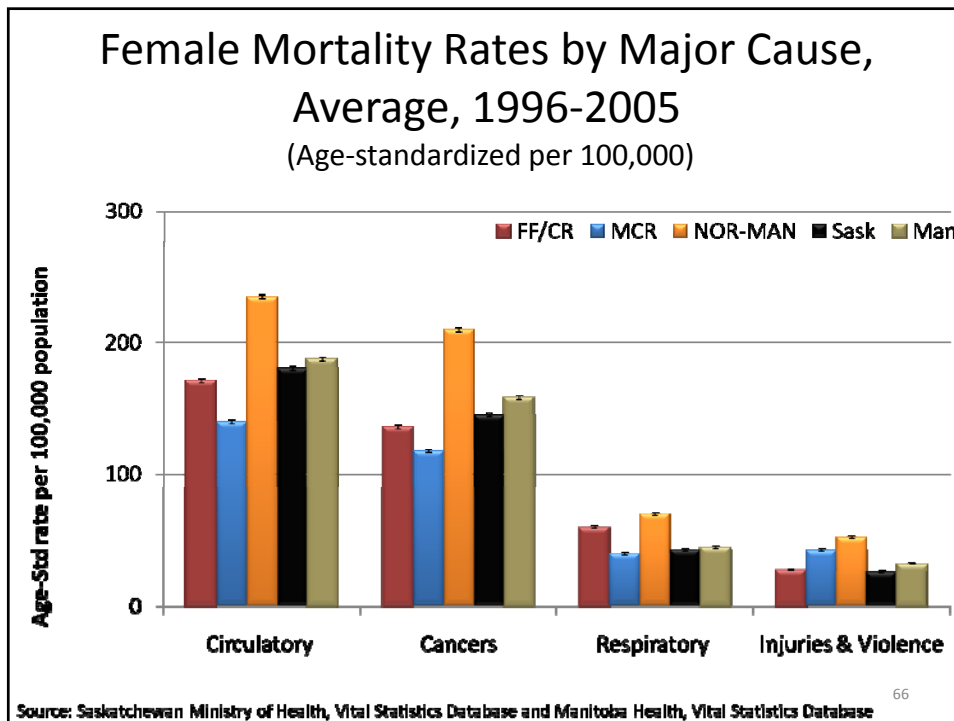
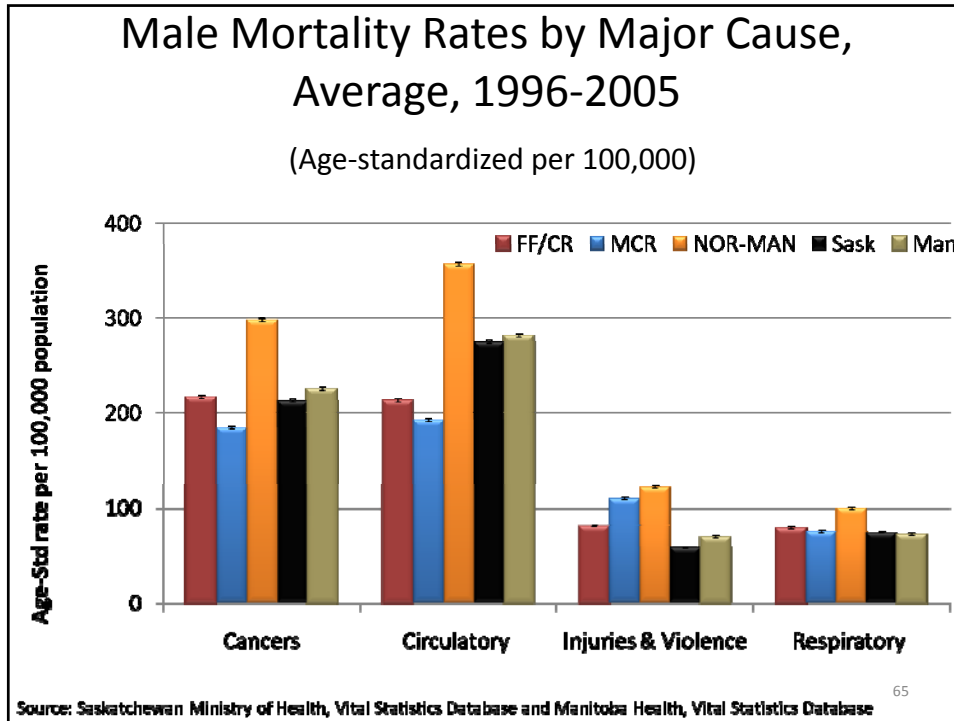
### Mortality Rates by Major Cause, Average, 1996-2005 (Age-standardized per 100,000)



Source: Saskatchewan Ministry of Health, Vital Statistics Database and Manitoba Health, Vital Statistics Database

64





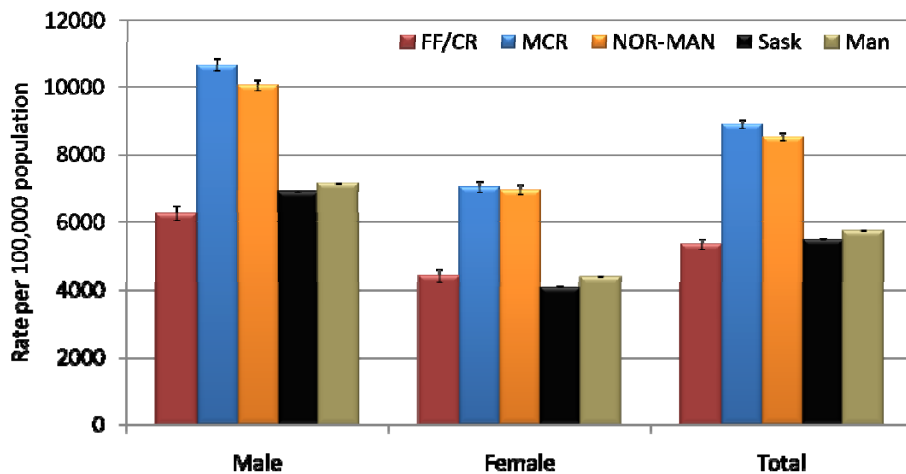
## Potential Years of Life Lost (an indicator of premature deaths)

- Premature death rates (PYLL) for males and females combined are lower in FF/CR than in Manitoba, NOR-MAN and MCRHR

67

## Potential Years of Life Lost (PYLL) Rates by Sex, Average, 1996-2005

(A reflection of 'premature deaths' or deaths occurring before 75 years of age)



Source: Saskatchewan Ministry of Health, Vital Statistics Database and Manitoba Health, Vital Statistics Database

68

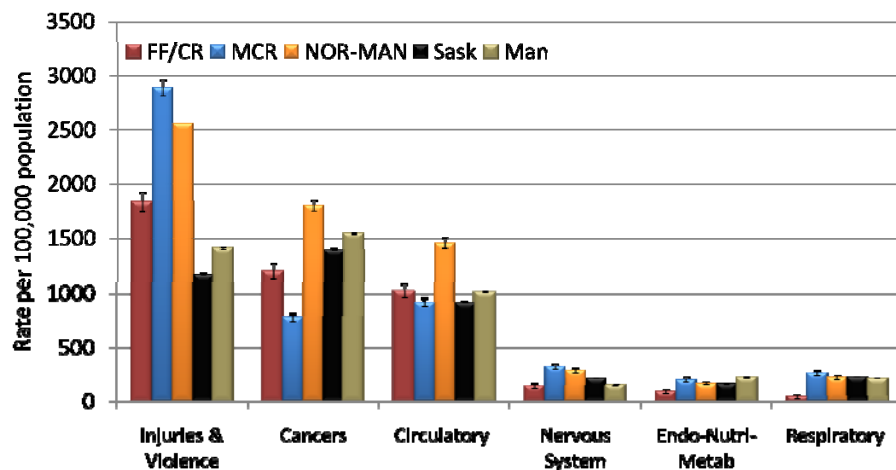
## Potential Years of Life Lost (an indicator of premature deaths)

- The most common causes of premature deaths in FF/CR, NOR-MAN and MCRHR are injuries followed by cancer and circulatory disease.
- Premature death rates for injuries are higher in FF/CR than Manitoba and Saskatchewan
- Premature deaths (PYLL) from respiratory disease are lower in FF/CR than in NOR-MAN, MCRHR, Manitoba and Saskatchewan.

69

## Potential Years of Life Lost Rates, by Cause, Average, 1996-2005

(a reflection of the rate of 'premature deaths' before age 75 years)



Source: Saskatchewan Ministry of Health, Vital Statistics Database and Manitoba Health, Vital Statistics Database

70

<b>Potential Years of Life Lost</b>			
<b>Condition</b>	<b>FF/CR lower than:</b>	<b>FF/CR same as:</b>	<b>FF/CR higher than:</b>
Injury	NORMAN MCRHR		Manitoba Saskatchewan
Circulatory	NORMAN	Manitoba MCRHR	Saskatchewan
Cancers	NORMAN Manitoba Saskatchewan		MCRHR
Respiratory	Manitoba Saskatchewan NORMAN MCRHR		
Endocrine	Manitoba Saskatchewan MCRHR NORMAN		
Nervous System	MCRHR NORMAN Saskatchewan	Manitoba	

71

## Deaths from Respiratory Disease

- Premature deaths (PYLL) from respiratory disease are lower in FF/CR than other groups
- Death rate from respiratory disease are higher in FF/CR
- Respiratory deaths tend to be more of an issue in FF/CR for the oldest age groups in comparison to the other groups

72

## Cancer

---

73

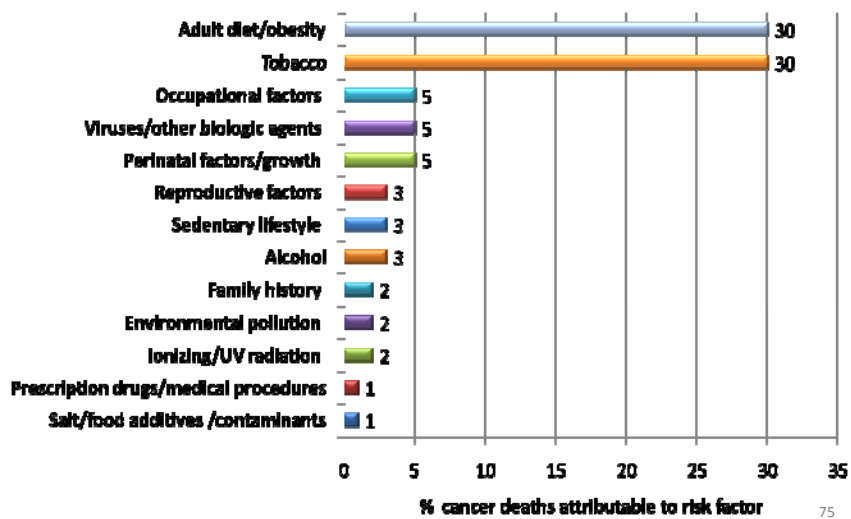
## Cancer Risks

---

- Cancer has multiple causes or 'risk factors'
- Tobacco, diet and obesity are thought to cause about 60% of the cancer causing death in developed countries.
- This study of cancer incidence cannot determine the cause of specific types of cancers seen in Creighton and Flin Flon

74

### Percent of Cancer Deaths Attributed to Various Risk Factors in Developed Countries



Prepared by PHU, Jan 2008. Adapted from Adami et al. 2001; Canadian Cancer Society & Cancer Care Ontario, 2003

75

76

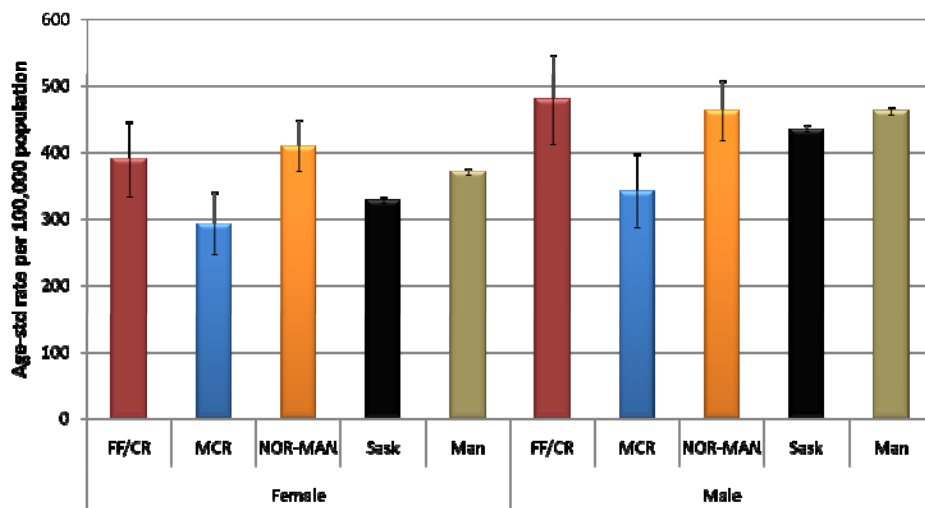
## All Cancers Combined (other than non-melanoma skin)

- There is no significant difference in the cancer rate for females in FF/CR compared to those in Manitoba, NOR-MAN HR or MCRHR.
- There is no significant difference in the cancer rate for males in FF/CR compared to those in Manitoba, Saskatchewan or NORMAN HR.

77

### Total Cancer Incidence Rate, by Sex and Region, 1996-2005

(Other than non-melanoma skin: Age-Standardized Rate per 100,000)



Source: Saskatchewan Cancer Agency, Cancer Care Manitoba

78

## Total number of cancers by site Flin Flon and Creighton 1996 to 2005

Cancer Site	Number
Lung	67
Female Breast	43
Colorectal	40
Prostate	39
Bladder	17
Non-H Lymphoma	17
Kidney	14
Leukemia	13
Brain	Less than 5

In assessing cancers in small populations especially for uncommon events, small changes can have a large impact on the rate (so the Confidence Intervals or 'error bars' will be large).

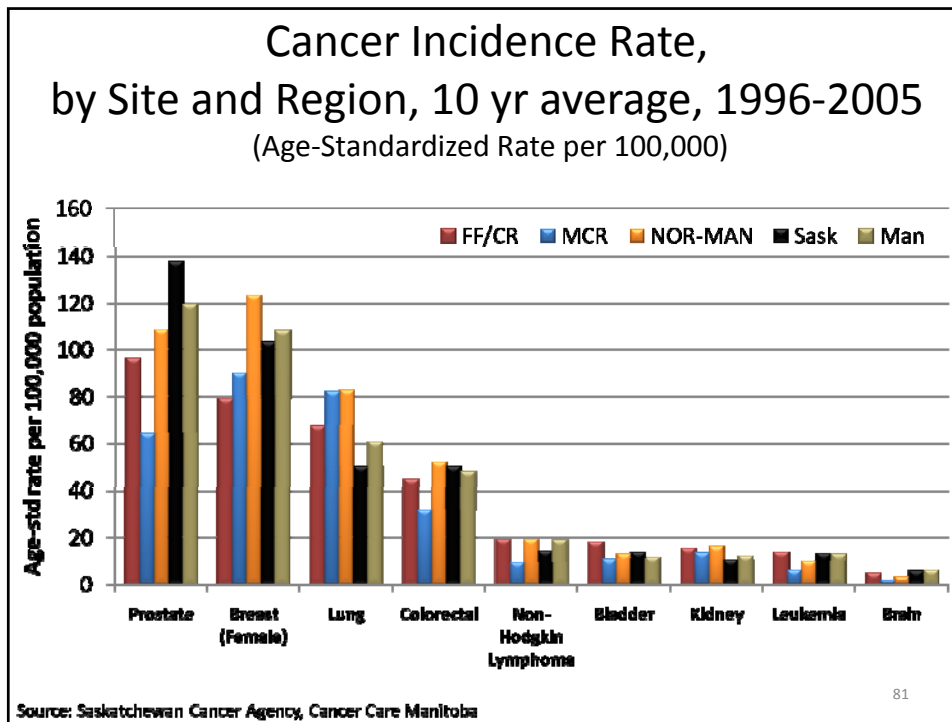
79

## Types of Cancer

- Lung, breast, colorectal and prostate cancers were the most common cancers in FF/CR during this 10 year period.
- This is similar to cancers in Canada, Manitoba, Saskatchewan, NOR-MAN and MCR Health Regions.

80



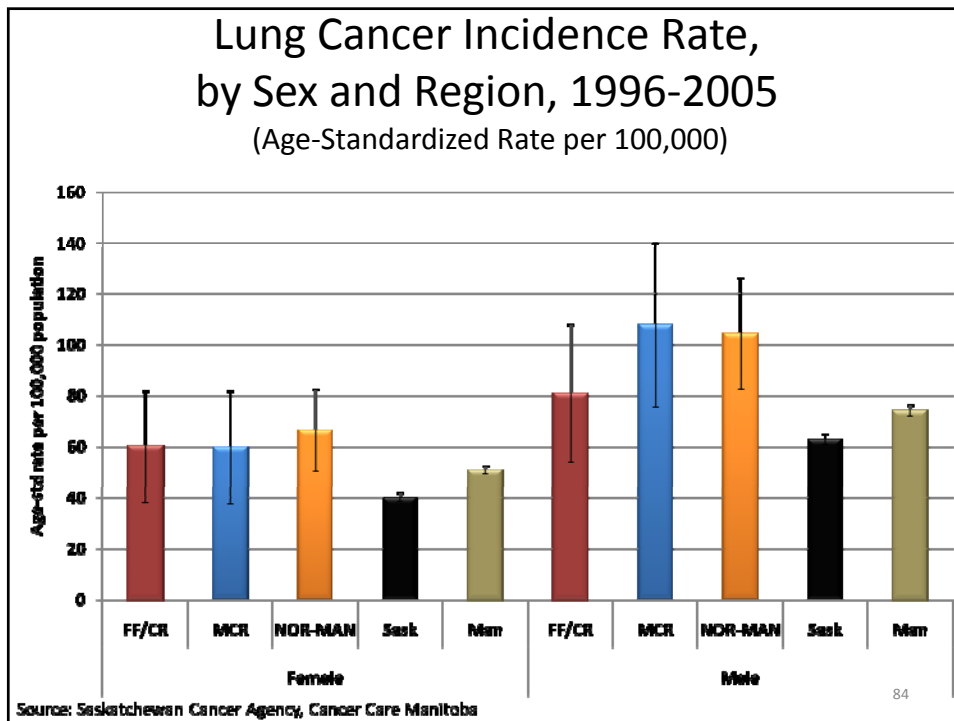
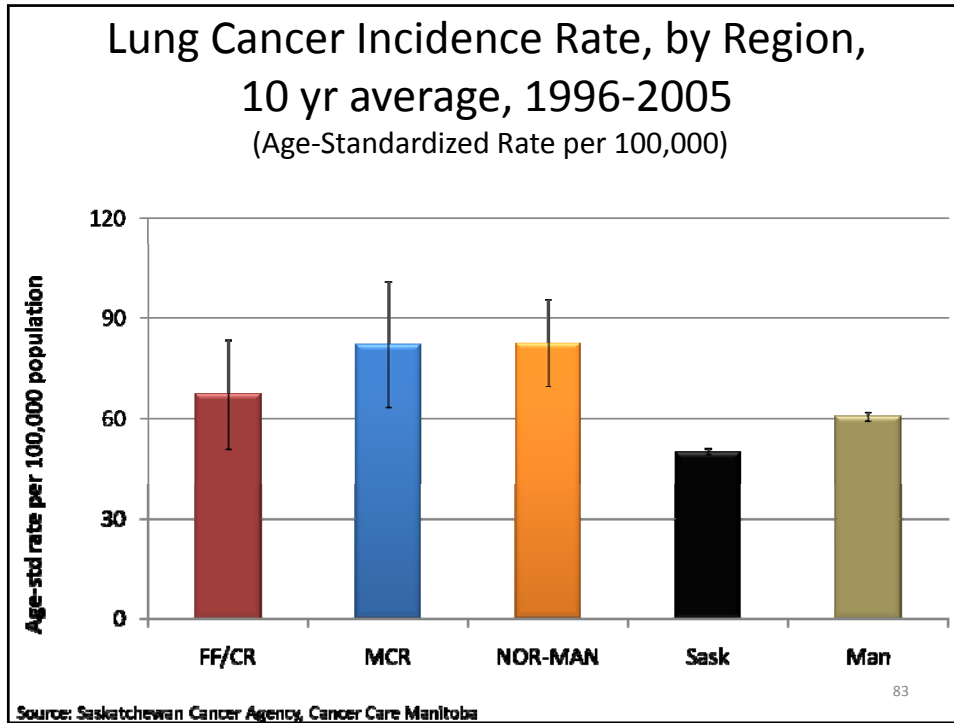


81

## Lung Cancer

- There is no significant difference in lung cancer rates in males and in females in FF/CR and MB, SK, NM and MCR HRs.
- However, lung cancer rates for males are higher in NOR-MAN HR compared to MB and in MCRHR compared to SK.

82

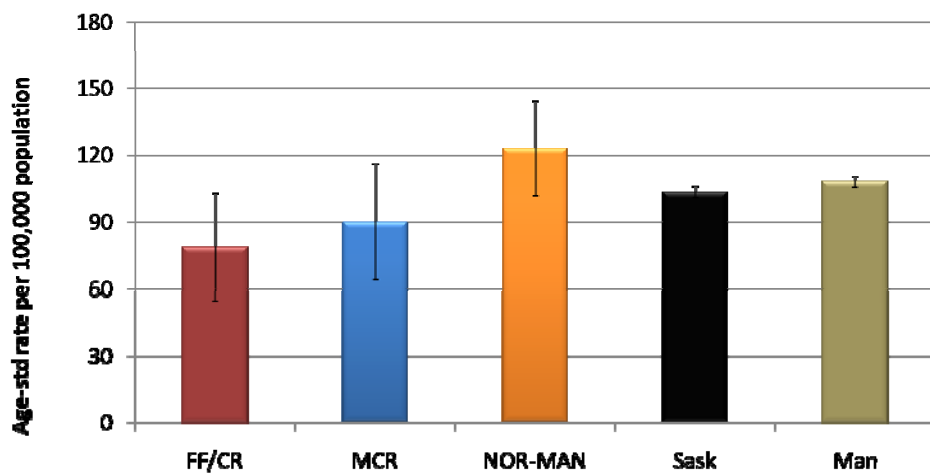


## Breast Cancer

- Breast cancer incidence rates for women in FF/CR are lower than rates for women in Manitoba

85

Female Breast Cancer Incidence Rate,  
by Region, 10 yr average, 1996-2005  
(Age-Standardized Rate per 100,000)



Source: Saskatchewan Cancer Agency, Cancer Care Manitoba

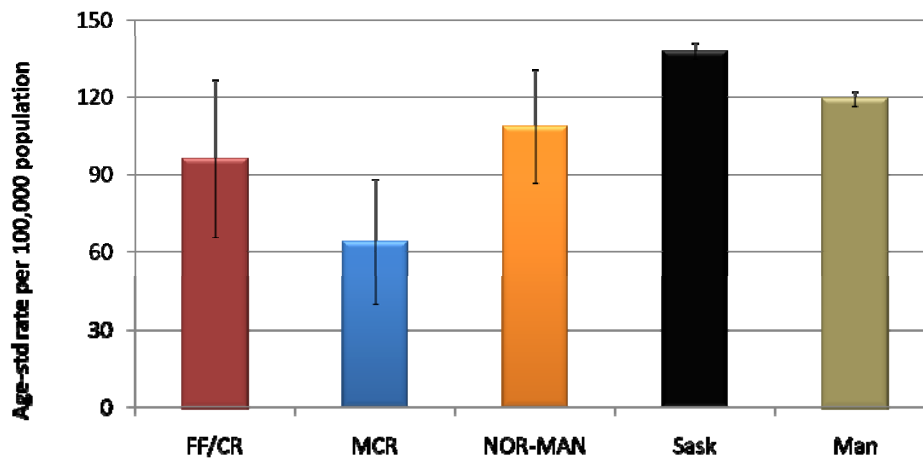
86

## Prostate Cancer

- Prostate cancer incidence rate in FF/CR males is lower than for males in Saskatchewan but similar to males in Manitoba and Canada.

87

Prostate Cancer Incidence Rate,  
by Region, 10 yr average, 1996-2005  
(Age-Standardized Rate per 100,000)



Source: Saskatchewan Cancer Agency, Cancer Care Manitoba

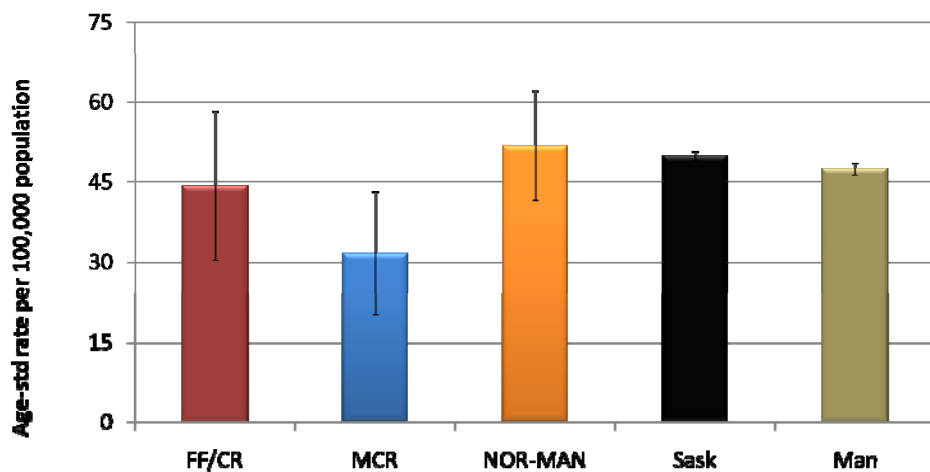
88

## Colorectal Cancer

- There is no significant difference in the cancer incidence rate for colorectal cancer for people in FF/CR compared to the other comparison groups.

89

Colorectal Cancer Incidence Rate,  
by Region, 10 yr average, 1996-2005  
(Age-Standardized Rate per 100,000)



Source: Saskatchewan Cancer Agency, Cancer Care Manitoba

90

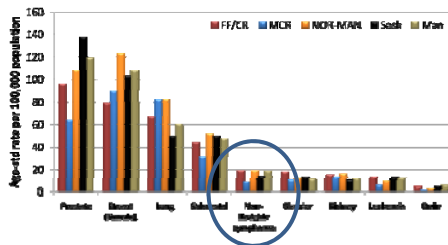
## Non-Hodgkin's Lymphoma

- There is no significant difference in the cancer incidence rate for non-Hodgkin's lymphoma for people in FF/CR compared to the other comparison groups.

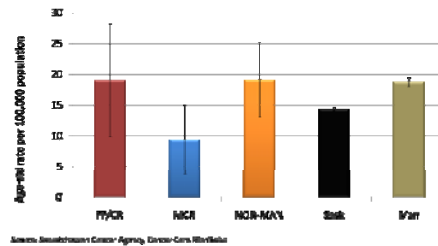
91

### Cancer Incidence Rate, by Region, 10 yr average, 1996-2005 (Age-Standardized Rate per 100,000)

Cancer Incidence by Site



Non-Hodgkin's Lymphoma  
Incidence Rate



92

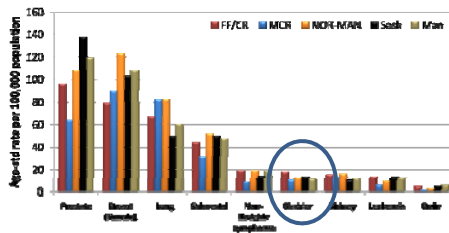
## Bladder Cancer

- There is no significant difference in the cancer incidence rate for bladder cancer for people in FF/CR compared to the other comparison groups.

93

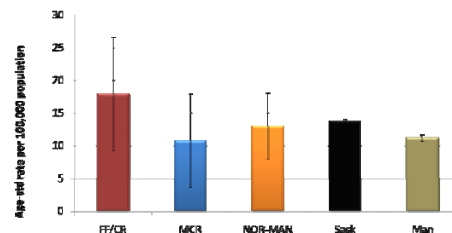
### Cancer Incidence Rate, by Region, 10 yr average, 1996-2005 (Age-Standardized Rate per 100,000)

Cancer Incidence by Site



Source: Saskatchewan Cancer Agency, Cancer Data Website

Bladder Cancer  
Incidence Rate



Source: Saskatchewan Cancer Agency, Cancer Data Website

94

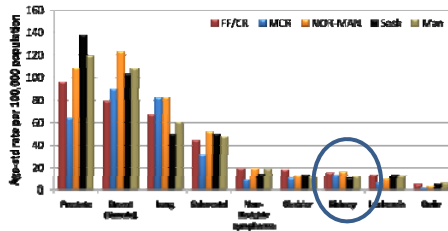
## Kidney Cancer

- There is no significant difference in the cancer incidence rate for kidney cancer for people in FF/CR compared to the other comparison groups.

95

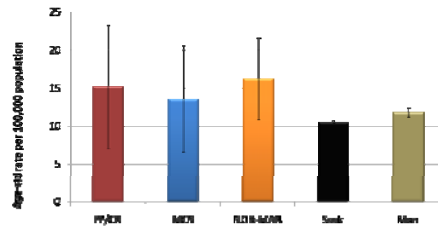
### Cancer Incidence Rate, by Region, 10 yr average, 1996-2005 (Age-Standardized Rate per 100,000)

Cancer Incidence by Site



Source: Saskatchewan Cancer Agency, Cancer Data Reports

Kidney Cancer Incidence Rate



Source: Saskatchewan Cancer Agency, Cancer Data Reports

96



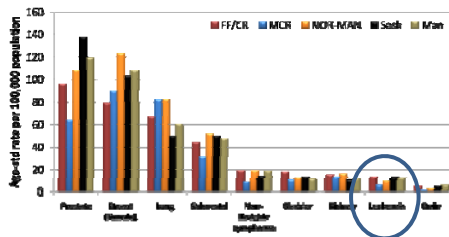
# Leukemia

- There is no significant difference in the leukemia incidence rate for people in FF/CR compared to the other comparison groups.

97

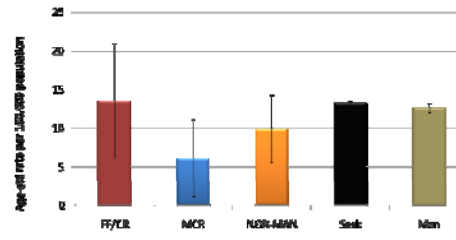
## Cancer Incidence Rate, by Region, 10 yr average, 1996-2005 (Age-Standardized Rate per 100,000)

Cancer Incidence by Site



Source: Saskatchewan Cancer Agency, Cancer Data Reports

Leukemia Incidence Rate



Source: Saskatchewan Cancer Agency, Cancer Data Reports

98

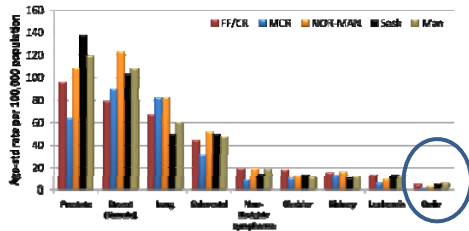
## Brain Cancer

- There is no significant difference in the cancer incidence rate for brain cancer for people in FF/CR compared to the other comparison groups.

99

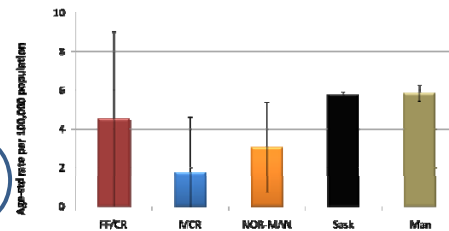
### Cancer Incidence Rate, by Region, 10 yr average, 1996-2005 (Age-Standardized Rate per 100,000)

Cancer Incidence by Site



Source: Saskatchewan Cancer Agency, Cancer Data Reports

Brain Cancer Incidence Rate



Source: Saskatchewan Cancer Agency, Cancer Care Manitoba

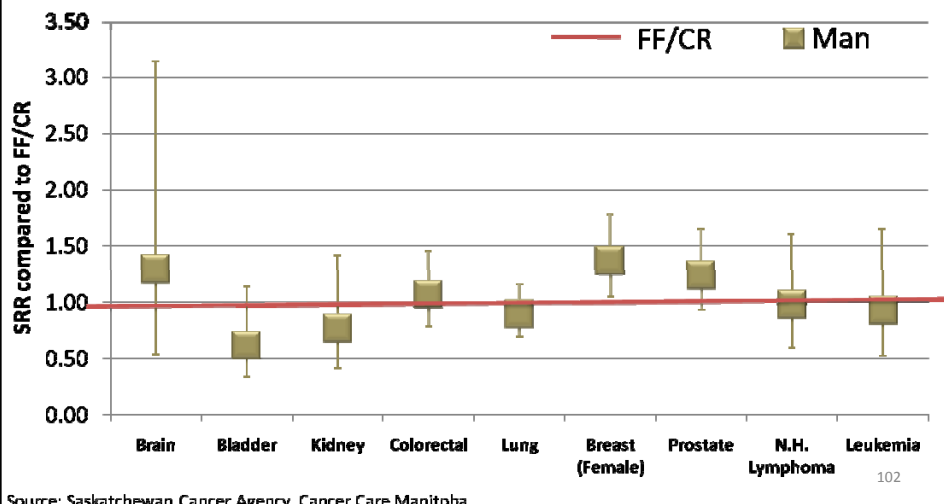
100

## Summary of Cancer Sites

- The following graph shows the comparison in rates between FF/CR and Manitoba.
- Error bars overlapping the red line indicates no difference in rates between FF/CR and Manitoba.
- Breast cancer rate is slightly higher in Manitoba than FF/CR (the lower end of the error bar is above the FF/CR rate)

10  
1

Comparisons of Cancer Rates for Manitoba compared to Creighton and Flin Flon by Site, 1996-2005  
(Standardized Rate Ratio)



## Conclusion

- Overall health status of the population of Creighton and Flin Flon is generally as good as or better than the provincial averages for most indicators studied

10  
3

## Notable Differences: Not So Good News

- Premature deaths due to injuries in FF/CR are higher than in Manitoba and Saskatchewan
- Death rates due to respiratory conditions are higher for the oldest age groups than in Manitoba and Saskatchewan. However, premature deaths due to respiratory conditions are **lower** in FF/CR than in Manitoba and Saskatchewan

10  
4

## Notable Differences: Good News

- Overall death rates and overall premature mortality rates are lower in FF/CR than in Manitoba and Saskatchewan
- Overall death rates for circulatory disease are lower in FF/CR than in Manitoba and Saskatchewan

10  
5

## Notable Differences: Good News

- Premature deaths due to cancer are lower in FF/CR than in Manitoba and Saskatchewan
- There were no specific types of cancer determined to have significantly higher rates in FF/CR than in Manitoba or Saskatchewan
- Breast cancer rates are lower in FF/CR than Manitoba
- Prostate cancer rates are lower in FF/CR than Saskatchewan

10  
6

- 
- The health indicator information from this report will also be used by the NORMAN and Mamawetan Churchill River Health Regions for their planning and review of community health services and health promotion strategies.