

# The Unequal City 2015:

## Income and Health Inequities in Toronto



**Reference:**

Toronto Public Health. The Unequal City 2015: Income and Health Inequities in Toronto. April 2015.

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**Copies:**

This report and the companion technical report can be downloaded at:

<http://www.toronto.ca/health/>

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# EXECUTIVE SUMMARY

Toronto residents don't all have equal opportunities to be healthy. Major differences in health status exist between people because of their social and economic circumstances, and where they live, work, learn and play. Some people are more vulnerable to poor health because of their education, housing, work, income and experiences of racism, sexism and other kinds of discrimination.

In 2008, Toronto Public Health released *The Unequal City: Income and Health Inequalities in Toronto*. The report showed that there were differences in health between income groups in Toronto, that low income groups had worse health for most health status indicators, and that differences in health affected people in all income groups, not just the worst off. This report builds on those findings by:

- Providing updated information on differences in health between income groups in Toronto for 34 health status indicators
- Measuring how strongly income is related to differences in health
- Exploring how the relationship between income and health inequities has changed over time

The results of the analysis show that:

1. Low income groups in Toronto often have worse health. For the most recent years of data analyzed, 20 of the 34 health status indicators assessed for this report showed significant health inequities where low income groups had worse health.
2. Overall, health inequities in Toronto have not improved over time. For the first years of data analyzed, low income groups had worse health for 21 of the 34 health status indicators analyzed. Over approximately ten years, health inequities persisted for 16 indicators, became worse for four indicators and improved for one indicator.

There were exceptions to these overall findings, including indicators showing similar rates of health status across all groups, worse health status for higher income groups and decreases in health status differences across income groups over time.

However, the findings outlined in this report clearly point to the need to reduce health inequities. When compared to the health status of the highest income group:

- Men in the lowest income group are 50% more likely to die before age 75. The relationship between income and premature mortality has not changed over time and inequities have persisted.
- Women in the lowest income group are 85% more likely to have diabetes. The relationship between income and diabetes was significantly stronger in 2012 than it had been in 2003.
- Young women aged 15 to 24 in the lowest income group are twice as likely to be reported with chlamydia infection. The relationship between income and chlamydia incidence has not changed over time and inequities have persisted.
- Babies in the lowest income group are 40% more likely to be born with a low birth weight. The relationship between income and the rate of low birth weight births has not changed over time and inequities have persisted.

This report provides compelling evidence for strengthening efforts to develop healthy public policy, planning focused and responsive public health services and advocating for the needs of low income people. To address the root causes of health inequities in Toronto, a broad range of supports and resources are needed. These solutions require collaborative efforts from all sectors that have an impact on health.

Striving for health equity, whereby everyone can reach and contribute their full potential, is the right thing to do and it benefits the entire community.

Full results and detailed research methods are included in the *Technical Report*, available at [www.toronto.ca/health](http://www.toronto.ca/health).

# INTRODUCTION AND CONTEXT

## Toronto residents don't all have equal opportunities to be healthy

Toronto residents don't all have equal opportunities to be healthy. Major differences in health status exist between people because of their social and economic circumstances, and where they live, work, learn and play. Some people are more vulnerable to poor health because of their education, housing, work, income and experiences of racism, sexism and other kinds of discrimination.<sup>1</sup>

Toronto Public Health (TPH) works to give all Toronto residents the chance to live a healthy life. TPH reaches the people who are most vulnerable to poor health through programs and services that are focused, responsive, and accessible to Toronto's diverse residents. TPH advocates and develops policies for improving people's health in the city. TPH also monitors and reports on how different social and economic groups have different levels of health. This information is used for planning and evaluating initiatives that reduce health inequities and improve the health of all Toronto residents.

### **Toronto Public Health: A Healthy City for All**

#### **Mission:**

Toronto Public Health (TPH) reduces health inequities and improves the health of the whole population.

#### **Foundational Principle for Health Equity:**

TPH is a leader in reducing health inequities by working to address unfair and avoidable differences in health outcomes between groups. TPH collaborates to identify and respond to health needs of vulnerable populations by providing accessible services and advocating for policies that address the social determinants of health.

In 2008, TPH released *The Unequal City: Income and Health Inequalities in Toronto*. The report showed that there were differences in health between income groups in Toronto, that low income groups had worse health for most health status indicators, and that differences in health affected people in all income groups, not just the worst off.<sup>2</sup> This report builds on these findings by:

- Providing updated information on differences in health between income groups in Toronto for 34 health status indicators
- Measuring how strongly income is related to differences in health
- Exploring how the relationship between income and health inequities has changed over time

# Social and economic circumstances account for 50% of people's health

Although the public health care system is important and highly valued by Canadians<sup>3,4</sup>, it is the social and economic circumstances of people's lives that have the most profound influence on health.<sup>5</sup> Each person's level of health is the result of a combination of factors, starting with genetics and biology, but primarily influenced by the conditions of everyday life. This includes where a person lives and works, education, income, experiences growing up and discrimination such as racism and sexism. It has been estimated that social and economic circumstances account for 50% of all health outcomes, while health care accounts for 25%, genetics for 15% and the environment for 10% of all health outcomes.<sup>5</sup> The social determinants of health, including income, education, work, housing and discrimination, interact and work together to shape people's opportunities to be healthy. The unequal distribution of these determinants of health makes some people more vulnerable to disease and injury.

## What shapes people's health?



Source: The Standing Senate Committee on Social Affairs, Science and Technology (2009). A healthy productive Canada: A determinant of health approach. Final report of the Senate Subcommittee on Population Health.

## **While some differences in health are expected, others can be avoided**

Some differences in health are due to biological reasons such as age and sex, and cannot be changed. For example, older people naturally have higher rates of illness than younger people. Other differences in health are due to social and economic opportunities such as income and education, and can be changed. Unfair and avoidable differences in health related to social and economic disadvantages are known as health inequities. In Toronto and elsewhere, higher rates of illness among lower income groups are one of the most important and modifiable health inequities.

Social, economic and political systems have an important influence on the conditions that influence people's health. These systems and their laws, policies, programs and services can help keep people healthy and support people when they are sick. When these systems fail to give everyone the opportunity to be as healthy as possible, health inequities are the result.

## **Health status is closely linked to income**

In Canada and around the world, people with the lowest incomes and social status tend to have the worst health.<sup>6,7</sup> Health status usually improves with income level, so that people with higher incomes have better health than the income group directly below them. Income is closely linked to health status because it is closely related to many factors that affect health.

For many people, their income level determines the degree of control that they have over their life circumstances. People with lower incomes face barriers to good health including difficulty accessing quality food, housing and education. Low income people often struggle to make ends meet and experience material deprivation, isolation, and feelings of powerlessness on a daily basis. These difficult conditions can lead to chronic stress. Research shows that chronic and uncontrolled stress and strain can weaken people's immune systems, making them more vulnerable to disease and illness. Stress can also trigger unhealthy behaviours such as overeating, smoking, and alcohol and other drug use. People with low incomes have less resources and options to cope with, address and overcome the stress of their daily lives. Healthier choices are often more expensive and less accessible. Low income neighbourhoods tend to have more fast food restaurants, liquor stores and places to buy cigarettes, and fewer large grocery stores with healthy fresh foods.<sup>8</sup>

The relationship between income and health affects people in all income groups. Middle income groups have fewer barriers to good health than low income groups, and high

income groups have even fewer barriers. People with higher incomes have more resources to help them access higher levels of education, positive early life experiences, quality housing and nutritious food. People with higher incomes generally have more options for dealing with stressful situations and better access to resources that support healthy living, such as fitness clubs and smoking cessation aids. In some cases however, higher incomes are associated with poorer health behaviours such as unhealthy alcohol use.

## **In Toronto, 23% of people and 29% of children live with low incomes**

In 2010, 23% of people in Toronto lived with low incomes based on the after tax Low Income Measure (LIM).<sup>9</sup> Child poverty rates in Toronto are also among the highest in Canada, with 29% of all children under the age of 18 living in low income families in 2012.<sup>10</sup> Low income people are more likely to be immigrants, racialized, women and single parents.<sup>11</sup>

The gap between rich and poor people in Toronto has been growing steadily since 1980. Between 1980 and 2005, income inequality in Toronto increased by 31%\*, more than any other major Canadian city.<sup>12</sup> In 2012, 15% of all income in Toronto went to the 1% of people who earned the most.<sup>13</sup>

Some evidence has shown that societies with greater income inequality have worse health and social outcomes.<sup>14</sup> Although the relationship between population level income inequality and individual level health outcomes is not directly analyzed in this report, the trend of increasing income inequality in Toronto is an important part of the context. The growing income and wealth gap between the richest and poorest Toronto residents may help to explain some of the differences in health between income groups and how health inequities have changed over time.

## **This report provides a better understanding of health inequity in Toronto**

This report assesses current differences in health between income groups, measures the strength of the income and health relationship, and analyzes changes in this relationship over time. The information presented in this report provides a current and more comprehensive understanding of health inequity in Toronto.

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\* Income inequality was measured using the Gini coefficient measure of income inequality, based on total household income before tax and after transfers.

# KEY FINDINGS

In 2008, Toronto Public Health's *The Unequal City: Income and Health Inequalities* report showed that there was a clear link between income and differences in health in Toronto. Building on those findings, 34 health status indicators were analyzed for this report. A list of all health status indicators analyzed for this report is available in *Appendix A: Health Status Indicators*.

Rates of overall health and wellbeing, chronic diseases, communicable diseases, injury, reproductive health and health behaviours were calculated for different income groups in Toronto. Thirty-two (32) sex-specific indicators measured male and female health separately; two of these were for females only. Two (2) other indicators measured health for males and females together, for a total of 34 health status indicators. The analysis used data from 1999 to 2012 from the health care system, death records and broad-based government surveys, to determine:

- Current differences in health between income groups
- How strongly income is related to differences in health
- How the relationship between income and health inequities has changed over approximately ten years

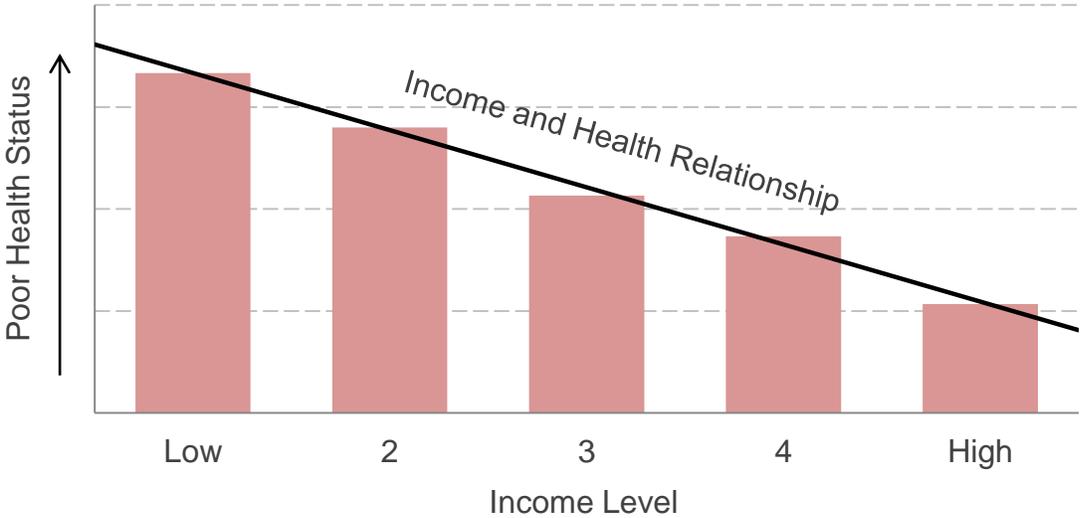
This analysis resulted in two key findings:

1. Low income groups in Toronto often have worse health. For the most recent years of data analyzed, 20 of the 34 health status indicators assessed for this report showed significant health inequities where low income groups had worse health.
2. Overall, health inequities in Toronto have not improved over time. For the first years of data analyzed, low income groups had worse health for 21 of the 34 health status indicators analyzed. Over approximately ten years, health inequities persisted for 16 indicators, became worse for four indicators and improved for one indicator.

This section presents key findings for all health status indicators that were analyzed for this report. The *Selected Highlights* section that follows describes the results for five selected health status indicators in more detail. **Full results and detailed research methods are included in the *Technical Report*, available at [www.toronto.ca/health](http://www.toronto.ca/health).**

# Low income groups often have worse health

The majority of health status indicators analyzed for this report showed significant\* health inequities where low income groups in Toronto had significantly worse health. In these situations, differences in health affected all income groups. The lowest income groups had the worst levels of health and health status generally improved for each level of higher income. This type of income and health inequity relationship is illustrated in the graph below. The bars show differences in the level of health between income groups. The overall relationship between income and health is shown by the straight line fit through the top of the bars.



For example, when compared to the health status of the highest income group:

- Men in the lowest income group are 50% more likely to die before age 75
- Women in the lowest income group are 85% more likely to have diabetes
- Young women aged 15 to 24 in the lowest income group are twice as likely to be reported with chlamydia infection
- Babies in the lowest income group are 40% more likely to be born with a low birth weight

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\* In this report, the terms "significant" and "significantly" refer to statistical significance, meaning that a difference between groups is likely to be real and not due to chance alone.

The results of the analysis also illustrate the impact of health inequities by estimating the change that would occur if all income groups had the same health status as the highest income group. In Toronto, this would mean:

- 932 fewer premature deaths per year
- 62,111 fewer people living with diabetes
- 1,720 fewer reported chlamydia cases among youth per year
- 611 fewer low birth weight babies per year

Results for the full set of related indicators follow below.

## Low income groups have worse health for 20 of 34 health status indicators

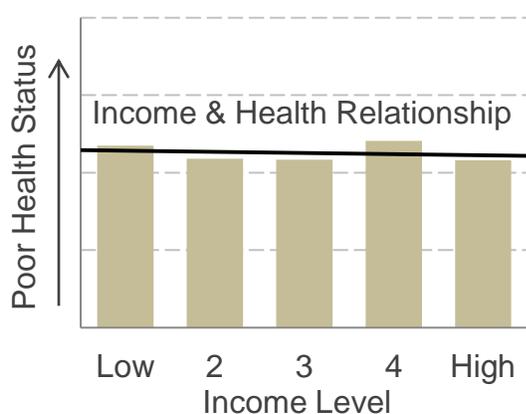
For the most recent years of health data analyzed, the following 20 health status indicators showed significant inequities where low income groups had worse health:

<b>Males</b>	<b>Females</b>	<b>Combined Male and Female</b>
• Cardiovascular Disease Premature Mortality	• Cardiovascular Disease Premature Mortality	• Readiness to Learn
• Diabetes	• Diabetes	• Singleton Low Birth Weight
• Fair or Poor Self Rated Health	• Fair or Poor Self Rated Health	
• Life Expectancy	• Physical Inactivity	
• Lung Cancer	• Premature Mortality	
• Physical Inactivity	• Teen Pregnancy	
• Premature Mortality	• Youth Chlamydia	
• Smoking	• Youth Gonorrhoea	
• Youth Chlamydia		
• Youth Gonorrhoea		

For some of the indicators that were analyzed, similar levels of health status were found across all income groups. For a smaller number of indicators, health status was significantly worse for higher income groups. These findings are described below.

## All income groups have similar health for 10 of 34 health status indicators

For the most recent years of data analyzed, the following ten health status indicators showed similar levels of health across all income groups:



### Males

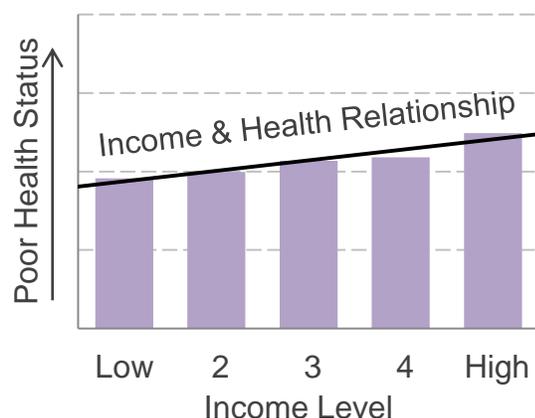
- Childhood Injury
- Colorectal Cancer
- Falls Among Older Adults
- Overweight and Obesity

### Females

- Childhood Injury
- Colorectal Cancer
- Life Expectancy
- Lung Cancer
- Overweight and Obesity
- Smoking

## Higher income groups have worse health for 4 of 34 health status indicators

For the most recent years of data analyzed, the following four health status indicators showed significant differences in health where high income groups had worse health:



### Males

- Unhealthy Alcohol Use

### Females

- Breast Cancer
- Falls Among Older Adults
- Unhealthy Alcohol Use

# Health inequities have not improved over time

Changes in the strength and nature of the relationship between income and health were assessed by calculating the Relative Index of Inequality (RII), a summary measure of the extent to which health varies with income. Data for the most recent 7 to 12 years were used, depending on its availability. Key findings from this analysis are presented in the following graphs and descriptions.

## Most income and health inequities for men have persisted

The income and health relationship stayed the same for the majority of health status indicators for males, but changed in a meaningful way for 3 of 15 indicators. Health inequities became worse for:

- **Diabetes:** Between 2003 and 2012, inequities in men's diabetes rates became more pronounced. Diabetes prevalence\* increased for all men in Toronto but this increase was greater for low income groups, resulting in a wider gap than was seen ten years earlier. This increase in the strength of the relationship between income and diabetes was statistically significant.
- **Smoking:** Over the most recent 12 years, differences in men's smoking rates between income groups have grown. From 2001 to 2004, male smoking rates were not significantly different across all income groups. From 2009 to 2012, smoking rates had improved among high income men but had not improved for low income men. During this 12 year period, differences in smoking rates between income groups became more pronounced, resulting in significant health inequities for the 2009 to 2012 period.

Differences in health between income groups decreased for:

- **Colorectal Cancer:** Over the 12 years analyzed, differences in men's colorectal cancer rates between income groups became smaller. From 1999 to 2001, men in higher income groups were more likely to get colorectal cancer. Twelve years later, male colorectal cancer incidence\*\* had improved across all income groups and had improved more for higher income groups, resulting in similar colorectal cancer rates across all income groups for the 2008 to 2010 time period.

The income and health relationship did not change for the other 12 male-specific health status indicators or the two indicators of combined male and female health that were analyzed. Several of these indicators showed improvements in health status for men overall in Toronto, but the majority continued to show health inequities where the lowest income groups had the worst health.

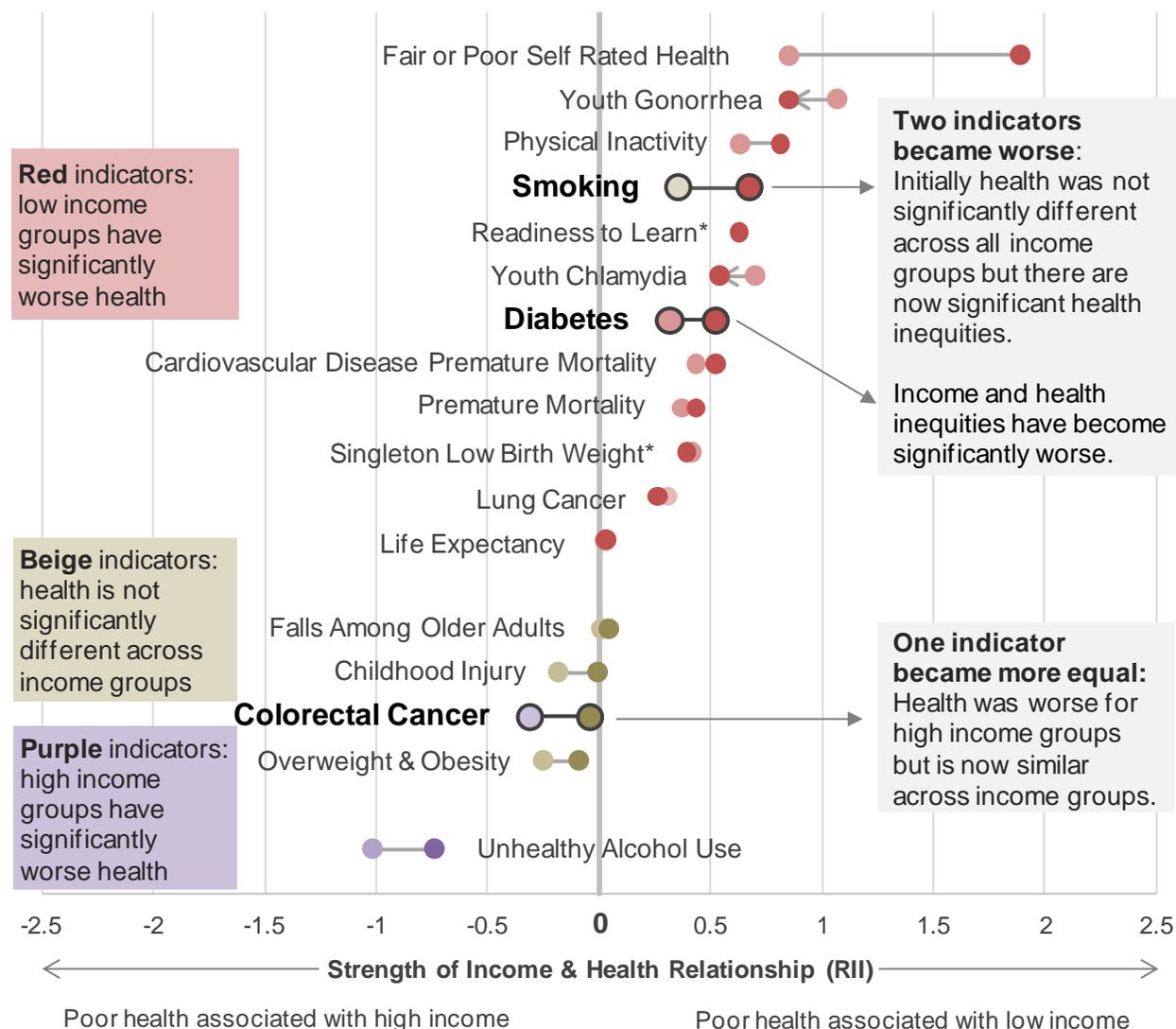
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\* Prevalence is defined as the proportion of people with the disease at any time during the year.

\*\* Incidence is defined as the proportion of new cases of the disease over the course of the year.

## Changes in health inequities for Toronto men

Over the 7 to 12 years of data analyzed, the income and health relationship did not change between the **initial** and **most recent** time points for 12 of the 15 indicators of male health, and the two indicators of combined male and female health\*.



Lighter shaded circles depict initial time point; darker shaded circles depict most recent time point.

Apparent large changes in the strength of the income and health relationship for some indicators, such as Fair or Poor Self Rated Health, are related to high sampling variability, and do not reflect meaningful changes.

\* Singleton Low Birth Weight and Readiness to Learn measure health for males and females combined. Readiness to Learn cannot be directly compared to previous years due to changes in the way it is measured. Low income groups had worse health for both the most recent and earlier measurements.

## Most income and health inequities for women have persisted

The majority of health status indicators for females did not show a change in the income and health relationship, but the relationship changed in a meaningful way for 4 of the 17 health status indicators. Health inequities became worse for:

- **Diabetes:** Between 2003 and 2012, inequities in women's diabetes rates became more pronounced. Diabetes prevalence increased for all women in Toronto but this increase was greater for low income groups, resulting in a wider gap than was seen ten years earlier. This increase in the strength of the relationship between income and diabetes was statistically significant.
- **Physical Inactivity:** Over the most recent 12 year period, differences in women's physical inactivity between income groups have grown. Physical inactivity rates improved for high income women but did not improve for low income women, leading to significantly greater inequities in physical inactivity.

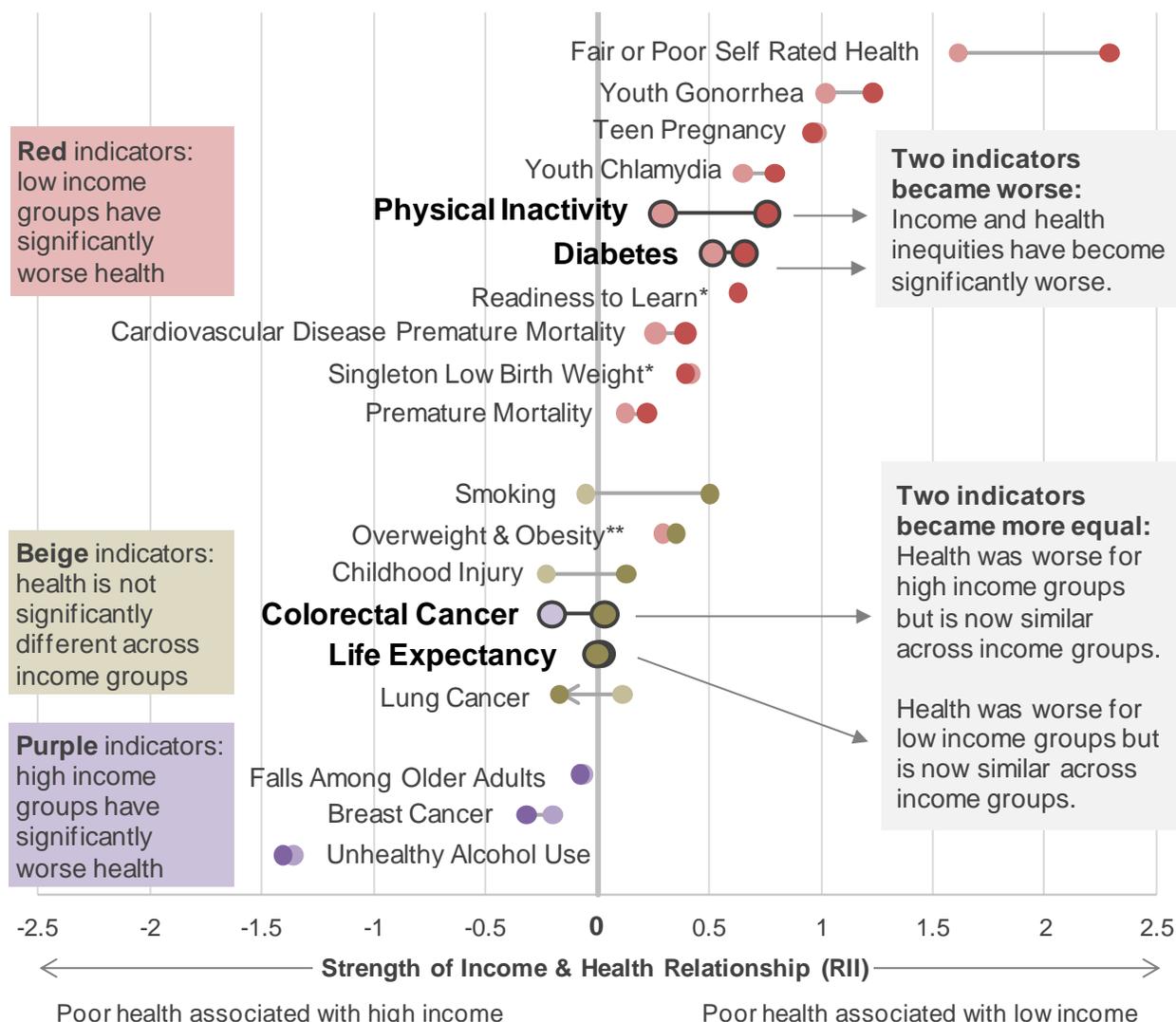
Differences in health between income groups decreased for:

- **Colorectal Cancer:** Differences in women's colorectal cancer rates decreased over the most recent 12 year period. From 1999 to 2001, women in higher income groups were more likely to get colorectal cancer. Twelve years later, women's colorectal cancer incidence rates had improved across all income groups and had improved more for higher income groups, resulting in similar colorectal cancer rates across all income groups for the 2008 to 2010 period.
- **Life Expectancy:** Inequities in women's life expectancy have decreased over the eight year period analyzed. In 2003/04, women in low income groups lived significantly shorter lives than women in higher income groups. Eight years later, women's life expectancy had improved across all income groups and had improved more for low income groups, causing life expectancy to be similar across all income groups in 2009/10.

The income and health relationship did not change for the other 13 female-specific health status indicators or the two indicators of combined male and female health that were analyzed. Several of these indicators showed improvements in health status for women overall in Toronto, but the majority continued to show health inequities where the lowest income groups had the worst health.

## Changes in health inequities for Toronto women

Over the 7 to 12 years of data analyzed, the income and health relationship did not change between the **initial** and **most recent** time points for 13 of the 17 female indicators of health, and the two indicators of combined male and female health\*.



Lighter shaded circles depict initial time point; darker shaded circles depict most recent time point.

Apparent large changes in the strength of the income and health relationship for some indicators, such as Fair or Poor Self Rated Health, are related to high sampling variability, and do not reflect meaningful changes.

\* Singleton Low Birth Weight and Readiness to Learn measure health for males and females combined. Readiness to Learn cannot be directly compared to previous years due to changes in the way it is measured. Low income groups had worse health for both the most recent and earlier measurements.

\*\* Although the RII value increased for Overweight and Obesity over time, the health inequities seen previously are no longer significant due to sampling variability in the data source.



# SELECTED HIGHLIGHTS

As outlined in the *Key Findings* section above, low income groups had worse health and health inequities had not improved over approximately ten years for the majority of health status indicators analyzed in this report. There were exceptions to these overall findings, including situations where health status was similar across all income groups, higher income groups had worse health, and differences in health status decreased.

This section provides a detailed look into five selected health status indicators:

1. **Premature Mortality**, an example where low income groups have worse health, rates have improved and health inequities have persisted
2. **Youth Chlamydia Infections**, an example where low income groups have worse health, rates have become worse and health inequities have persisted
3. **Singleton Low Birth Weight**, an example where low income groups have worse health, rates have stayed the same and health inequities have persisted
4. **Diabetes Prevalence**, an example where low income groups have worse health, rates have become worse and health inequities have become worse
5. **Colorectal Cancer Incidence**, an example where high income groups previously had worse health, rates have improved and rates are now similar across all income groups

The results for these five health status indicators are described in more detail in this section.

## **Premature death continues to be more common among low income groups**

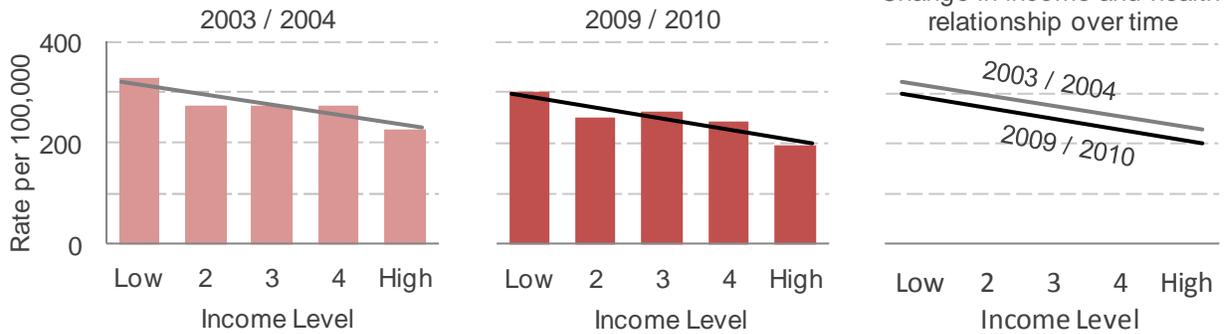
From 2003/04 to 2009/10, males and females in low income groups in Toronto experienced higher rates of premature death before age 75 compared to people in high income groups. For example, men in the lowest income group were 50% more likely to die before age 75 than men in the highest income group in 2009/10.

Between 2003/04 and 2009/10, there was a significant relationship between income and premature mortality across all income groups and inequities were stronger for males than females. During this eight year period the overall premature mortality rate in Toronto decreased. This decrease happened evenly across income groups, causing inequities in premature mortality to stay the same. Despite having lower premature mortality rates, low income groups are still doing worse than higher income groups. If all income groups were as healthy as the highest income group, Toronto would have approximately 932 fewer premature deaths per year.

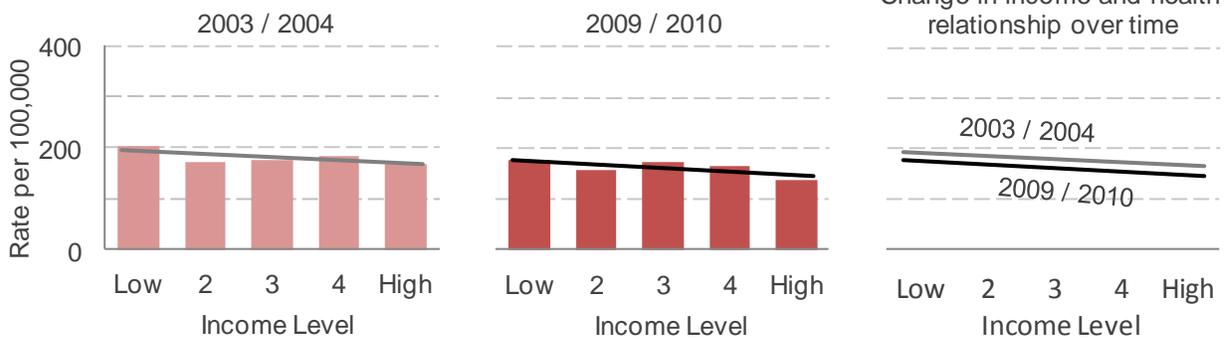
Premature mortality provides a good overall measure of health by measuring the number of people who die from all causes before the age of 75. While some premature deaths are completely unavoidable, many premature deaths are affected by people's daily living conditions. Differences in premature mortality rates by income group reflect differences in social and economic circumstances and lifestyles. These life circumstances and behaviours can often be addressed, improved or prevented. The overall decrease in premature death in Toronto is welcome, but these improvements have not eliminated differences between income groups. People in low income groups continue to be significantly more likely to die before age 75 than people in higher income groups.

**People in low income groups are more likely to die before age 75. These inequities in premature mortality rates have persisted since 2003**

**Male Premature Mortality (< age 75)**



**Female Premature Mortality (< age 75)**



Notes: Age standardized to the 1991 Canadian population. Income levels are quintiles which divide the population into 5 equal groups based on the percent of people living below the after tax low income measure (LIM) in each census tract.

Data Source: Ontario Mortality Data 2003-2010, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: September 2014.

## **Youth chlamydia is increasing and inequities have persisted**

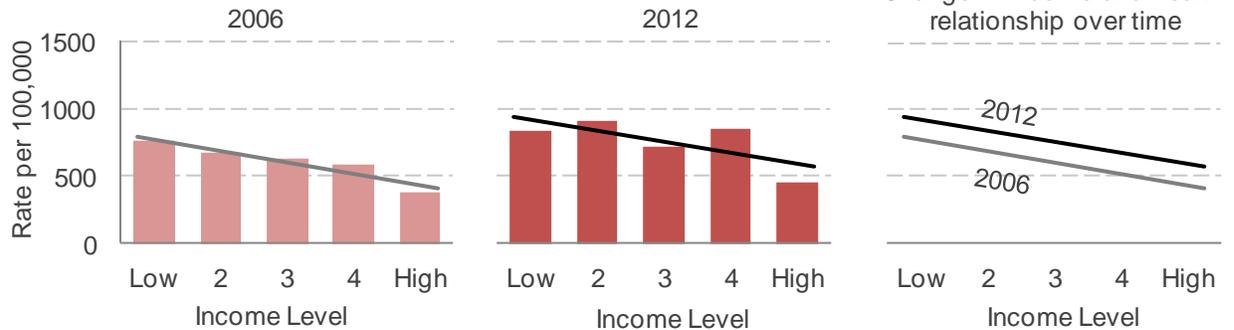
From 2006 to 2012, male and female youth aged 15 to 24 in low income groups in Toronto had substantially higher chlamydia incidence rates than youth in high income groups. For example, young women aged 15 to 24 in the lowest income group were twice as likely to be reported with chlamydia compared to young women in the highest income group in 2012.

Chlamydia rates have increased between 2006 and 2012, in part due to the introduction of less invasive and more accurate testing as well as increases in screening and testing of high risk groups. Over this 7 year period, reported chlamydia incidence rates have risen from 607 per 100,000 to 765 per 100,000 in males and from 1,452 per 100,000 to 1,820 per 100,000 in females. This increase has happened evenly across income groups, causing inequities in chlamydia incidence to stay the same. Between 2006 and 2012, a significant relationship between income and youth chlamydia incidence across all income groups has persisted. If all income groups had the same chlamydia incidence rate as the highest income group, there would be 1,720 fewer reported chlamydia cases among youth in Toronto each year.

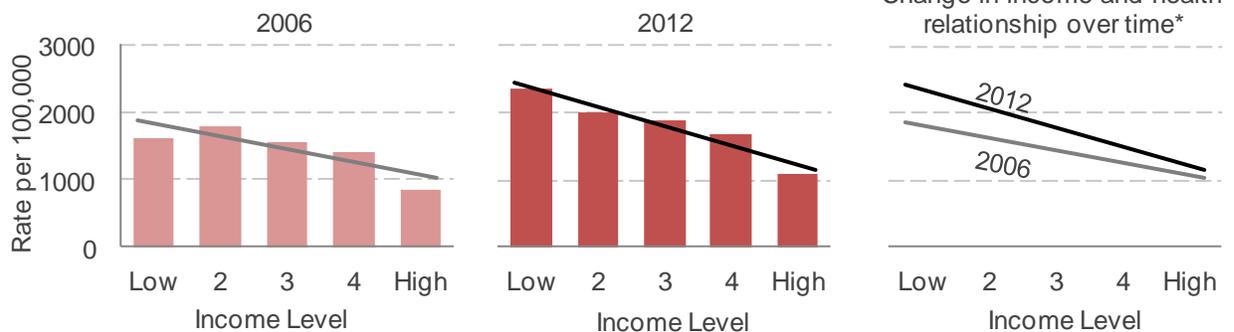
Chlamydia is the most frequently reported sexually transmitted infection in Toronto, and is most common among young adults. Preventing sexually transmitted infections, including chlamydia and gonorrhea, is important for preventing serious health complications including pelvic inflammatory disease and infertility.

## As reported rates of chlamydia among young adults rise in Toronto, low income groups consistently have higher rates

### Male Chlamydia Incidence (age 15 to 24)



### Female Chlamydia Incidence (age 15 to 24)



\*Although the income and health relationship for females shown above appears to be slightly stronger in 2012 than it was in 2006, this difference is not significant. Income and chlamydia incidence inequities remained similar for female youth over the 7 years of data that were analyzed.

Notes: Different scales are used for males and females. Chlamydia incidence rates are substantially lower for males than for females, making it more difficult to see trends for males if the scales were the same. Age standardized to the 1991 Canadian population. Income levels are quintiles which divide the population into 5 equal groups based on the percent of people living below the after tax low income measure (LIM) in each census tract.

Data Source: Integrated Public Health Information System (iPHIS), Toronto Public Health, extracted May 13 2013.

## **Health inequities in singleton low birth weight have not changed over time**

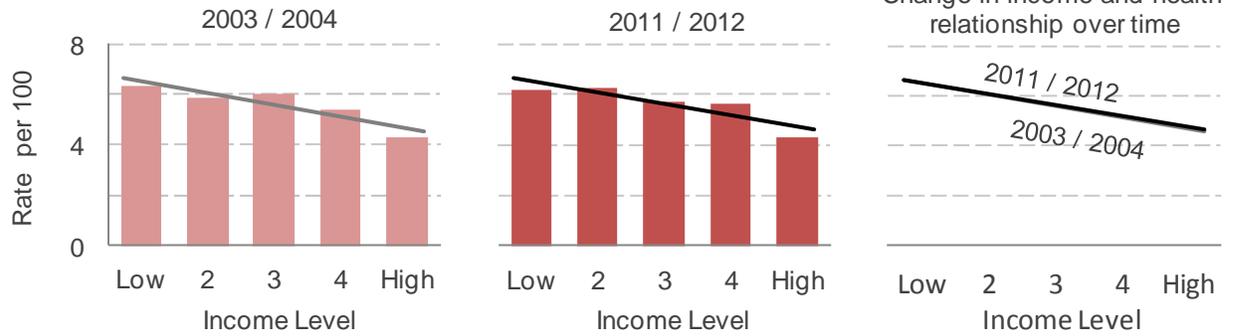
Between 2003/04 and 2011/12, low income groups in Toronto had consistently higher rates of singleton low birth weight babies compared with high income groups. Singleton low birth weight babies have a birth weight of less than 5.5 pounds (or 2,500 grams) regardless of gestational age, and are not born as a twin, triplet or other multiple. In 2011/12, singleton babies in the lowest income group were 40% more likely to be born with a low birth weight than babies in the highest income group.

During this ten year period, there has been no change in the overall singleton low birth weight rate and only slight changes to the rates within each income group. The relationship between income and the rate of low birth weight births has not changed over time and inequities have persisted. If all income groups had the same low birth weight rate as the highest income group, there would be 611 fewer low birth weight babies in Toronto each year.

Low birth weight babies include pre-term babies who have not had adequate time to develop and full-term babies below normal weight. Low birth weight babies are at higher risk for some health concerns while they are babies, childhood illness, delays in motor development, and chronic diseases in adulthood such as diabetes and respiratory disease. Inequities in the low birth weight rate reflect broader differences in maternal and infant health related to income in Toronto and may lead to other health inequities in the future.

## Low birth weight inequities have not changed over time

### Singleton Low Birth Weight



Notes: Income levels are quintiles which divide the population into 5 equal groups based on the percent of people living below the after tax low income measure (LIM) in each census tract.

Data Source: Inpatient Discharges 2003-2012, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: April 2014.

## **Diabetes inequities have become worse over time**

From 2003 to 2012, diabetes prevalence rates in Toronto were significantly higher for people in low income groups compared to higher income groups. In 2012, women in the lowest income group were 85% more likely to have diabetes compared to women in the highest income group.

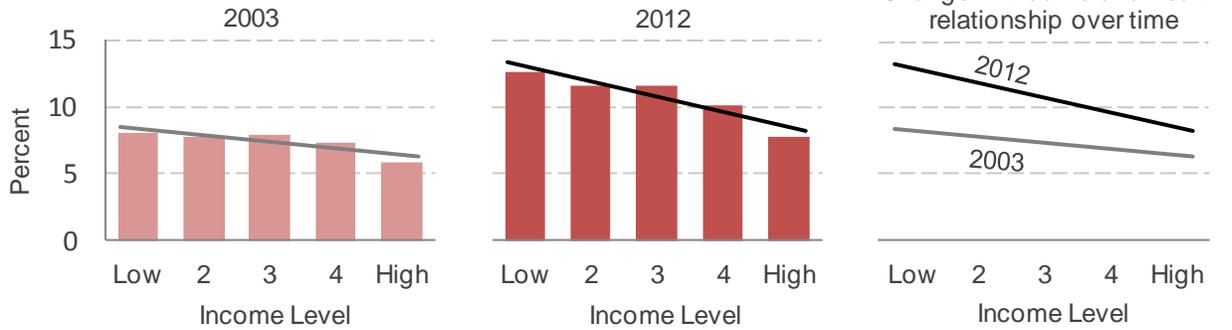
During this ten year period, diabetes rates increased across all income groups. These increases were greater for low income groups, resulting in a wider gap in diabetes inequities. The relationship between income and diabetes was significantly stronger in 2012 than it had been in 2003. If all income groups had the same diabetes rate as the highest income group, there would be 62,111 fewer people living with diabetes in Toronto.

Diabetes is a common chronic condition related to the production and use of insulin in the body. Treating and managing diabetes has substantial financial costs for those afflicted and the health care system. Diabetes can lead to serious complications such as blindness, kidney failure, stroke, and heart disease, and is a leading cause of death in Toronto.

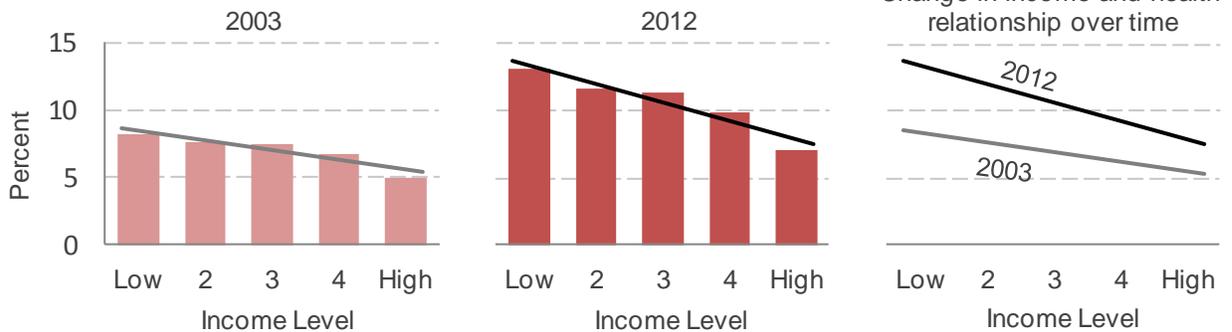
While not all diabetes is avoidable, leading a healthy lifestyle including regular physical activity and a healthy diet can lower a person's risk of developing diabetes. People with low incomes often face barriers to healthy behaviours that help prevent diabetes and other chronic diseases. Healthy food and physical activity can be costly and difficult for low income people to access. People with higher incomes tend to face fewer barriers to leading a healthy lifestyle.

**People in low income groups are more likely to have diabetes. These inequities have become worse over time**

**Male Diabetes Prevalence**



**Female Diabetes Prevalence**



Notes: Age standardized to the 1991 Canadian population. Income levels are quintiles which divide the population into 5 equal groups based on the percent of people living below the after tax low income measure (LIM) in each census tract.

Data Source: Numerator - Ontario Diabetes Database, Institute for Clinical Evaluative Sciences (ICES). Denominator – Registered Persons Database), Ministry of Health and Long-Term Care and ICES.

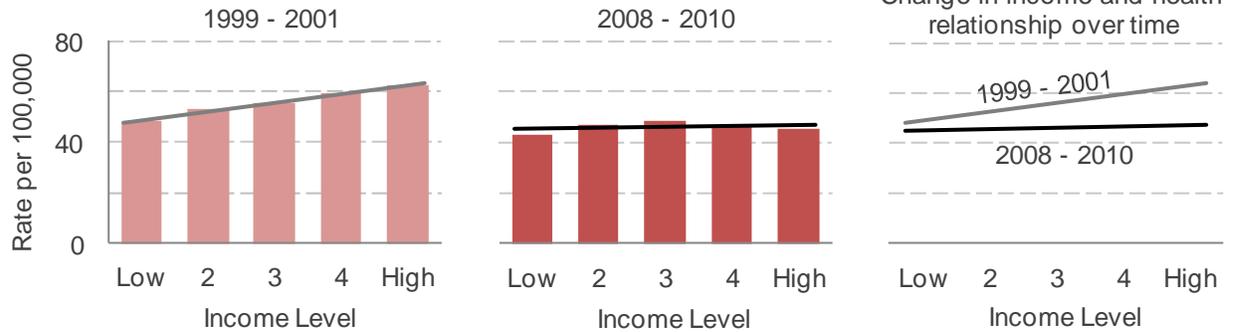
## **Differences in colorectal cancer between income groups have decreased over time**

From 1999 to 2001, people in high income groups in Toronto were more likely to get colorectal cancer compared to people in low income groups. Over the most recent 12 years, the differences in colorectal cancer incidence rates between income groups decreased. Colorectal cancer rates decreased across all income groups, but the greatest change was for higher income groups. This has resulted in a more even distribution of health across income groups. In 2008 to 2010, colorectal cancer incidence rates were similar across all income groups.

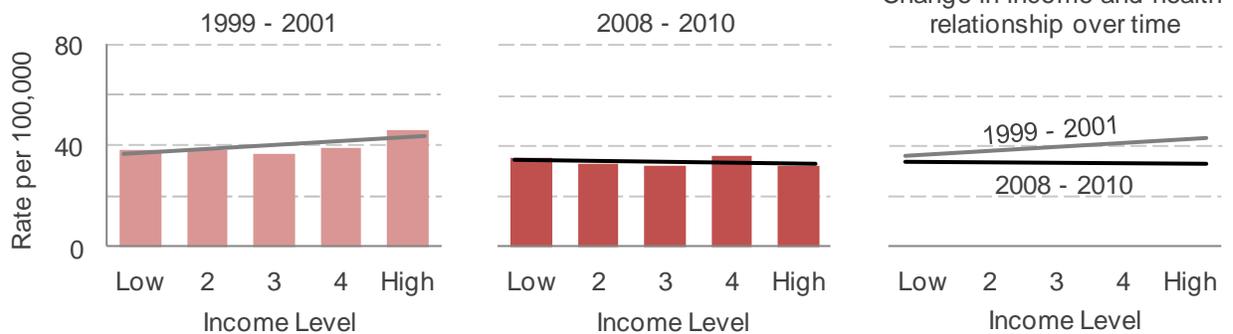
Colorectal cancer is one of most commonly diagnosed cancers in both males and females in Toronto. It is the second highest cause of cancer deaths in Toronto for males and the fourth highest for females. The changes seen in colorectal cancer incidence over time demonstrate two encouraging trends which represent the ideal outcome for every indicator of health: 1) the incidence of this disease is declining across all income groups, and 2) there are no significant differences in health between income groups.

## Rates of colorectal cancer incidence were previously higher among high income groups, but are now similar across income groups

### Male Colorectal Cancer Incidence



### Female Colorectal Cancer Incidence



Notes: Age standardized to the 1991 Canadian population. Income levels are quintiles which divide the population into 5 equal groups based on the percent of people living below the after tax low income measure (LIM) in each census tract.

Data Source: Cancer Care Ontario (Ontario Cancer Registry), 1999-2010, extracted May 2014.

# IMPLICATIONS

## What do these findings tell us?

*The Unequal City 2015* report describes the current relationship between income and health in Toronto for 34 health status indicators and measures changes in this relationship over approximately ten years. While there is extensive evidence showing a clear link between income and health, this report is the first to analyze how health inequities have changed over time in Toronto.

*The Unequal City 2015* report presents two key findings:

1. Low income groups in Toronto often have worse health. For the most recent years of data available, low income groups had significantly worse health than higher income groups for 20 of 34 indicators of overall health and wellbeing, chronic disease, communicable disease, reproductive health and health behaviours.
2. Overall, health inequities in Toronto have not improved over time. Twenty-one health status indicators showed health inequities in the first years of data analyzed. After approximately ten years, health inequities had persisted for 16 health status indicators, become worse for four indicators and improved for one indicator.

## Why do these findings matter?

*The Unequal City 2015* report demonstrates that Toronto residents don't all have equal opportunities to be healthy and that income continues to play an important role in health inequities. Striving for health equity, whereby everyone can reach and contribute their full potential, is the right thing to do and it benefits the entire community.

The findings outlined in this report provide compelling evidence for strengthening efforts to develop healthy public policy, planning focused and responsive public health services and advocating for the needs of low income people. In order to address the root causes of health inequities in Toronto, a broad range of supports and resources are needed. These solutions require collaborative efforts from all sectors that have an impact on health.

For most people, health begins outside of a doctor's office or hospital. Broad social and economic factors that influence health are largely responsible for driving the health inequities described in this report. Addressing the root causes of health inequities requires the support of the government, and non-profit and private sectors. Stakeholders in each of these areas have a vital role to play in ensuring that people have access to good jobs, sufficient income, quality education, adequate housing and nutritious food. Intersectoral collaboration is essential for coordinating and identifying opportunities to advance health equity.

The health system also has an important role to play in addressing health inequities. Reducing barriers to health care access can help to ensure that low income people have equitable access to high quality care. Health service providers can also help to address health inequities by integrating the social determinants of health into their practice. For example, some health care settings in Toronto have case managers, social workers and other staff who help clients to access social, economic and other supports they need to be healthier. These supports might include transportation to appointments, income supports, food programs, shelter and housing supports. By improving access to health care and to the social determinants of health, the health system can help to reduce health inequities in Toronto.

Toronto Public Health is committed to reducing health inequities through its programs, services, advocacy, monitoring and reporting. This report will inform future action on health equity at TPH, including targeted services, strengthened advocacy and monitoring, intersectoral leadership within the City of Toronto and engagement with key partners.

# REFERENCES

1. Mikkonen, J., & Raphael, D. (2010). Social determinants of health: The Canadian facts. Retrieved from <http://www.thecanadianfacts.org/>.
2. Toronto Public Health. (2008). The Unequal City: Income and health inequalities in Toronto. Retrieved April 2015 from [http://www1.toronto.ca/city\\_of\\_toronto/toronto\\_public\\_health/health\\_communications/about\\_us/files/pdf/unequalcity\\_20081016.pdf](http://www1.toronto.ca/city_of_toronto/toronto_public_health/health_communications/about_us/files/pdf/unequalcity_20081016.pdf).
3. Romanow, R. J. (2002). Building on Values: the Future of Health Care in Canada. Final report of the Commission of the Future of Health Care in Canada. Retrieved April 2015 from <http://publications.gc.ca/collections/Collection/CP32-85-2002E.pdf>.
4. Nanos, N. (2009, November). Canadians overwhelmingly support universal health care; think Obama is on right track in United States. *Policy Options*, 12–14.
5. The Standing Senate Committee on Social Affairs, Science and Technology; the Honourable Wilbert Joseph Keon, Chair, and the Honourable Lucie Pepin, Deputy Chair. (2009). A healthy productive Canada: A determinant of health approach. Final report of the Senate Subcommittee on Population Health. Retrieved from [www.parl.gc.ca/Content/SEN/Committee/402/popu/rep/rephealth1jun09-e.pdf](http://www.parl.gc.ca/Content/SEN/Committee/402/popu/rep/rephealth1jun09-e.pdf).
6. Canadian Institute for Health Information. (2008). Reducing gaps in health: A focus on socio-economic status in urban Canada. Retrieved from <https://secure.cihi.ca/estore/productFamily.htm?pf=PFC1090&lang=fr&media=0>.
7. Commission on Social Determinants of Health. (2008). Closing the gap in a generation: Health equity through action on the social determinants of health. Final report of the Commission on Social Determinants of Health. Retrieved from [http://www.who.int/social\\_determinants/thecommission/finalreport/en/](http://www.who.int/social_determinants/thecommission/finalreport/en/).
8. Pampel, F. C., Krueger, P. M., & Denney, J. T. (2010). Socioeconomic Disparities in Health Behaviors. *Annual Review of Sociology*, 36, 349–370. doi:10.1146/annurev.soc.012809.102529
9. Statistics Canada. (2010) Table F-18 annual income estimates for census families and individuals (T1 Family File). Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.
10. Polanyi, M., Johnston, L., Anita, K., Said, D., & Kerr, M. (2014). The hidden epidemic: A report on child and family poverty in Toronto. Retrieved April 2015 from <http://www.torontocas.ca/app/Uploads/documents/cast-report2014-final-web71.pdf>.
11. City of Toronto (2011). Profile of Low Income in the City of Toronto. Retrieved April 2015 from

[http://www1.toronto.ca/city\\_of\\_toronto/social\\_development\\_finance\\_administration/files/pdf/poverty\\_profile\\_2010.pdf](http://www1.toronto.ca/city_of_toronto/social_development_finance_administration/files/pdf/poverty_profile_2010.pdf).

12. McDonough, L., Dinca-Panaitescu, M., Procyk, S., Cook, C., Drydyk, J., Lafleche, M., & McKee, J. (2015). The opportunity equation: Building opportunity in the face of growing income inequality. Retrieved from <http://www.unitedwaytoronto.com/document.doc?id=285>.
13. Statistics Canada. (2012). Table 204-0002 High income trends of tax filers in Canada, provinces and census metropolitan areas (CMA), specific geographic area thresholds. Retrieved February 06, 2015, from <http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=2040002&paSer=&pattern=&stByVal=1&p1=1&p2=-1&tabMode=dataTable&csid=>.
14. Wilkinson, R. G., & Pickett, K. E. (2010). The spirit level: Why equality is better for everyone. London: Penguin.

# Appendix A: Health Status Indicators

## Males

1. Cardiovascular Disease Premature Mortality
2. Childhood Unintentional Injury Hospitalizations (Childhood Injury)
3. Chlamydia Infection Among Young Adults (Youth Chlamydia)
4. Colorectal Cancer Incidence
5. Current Smoker (Smoking)
6. Diabetes Prevalence
7. Exceeding the Low Risk Drinking Guidelines (Unhealthy Alcohol Use)
8. Fair or Poor Self Rated Health
9. Fall-Related Emergency Department Visits Among Older Adults
10. Gonorrhea Infection Among Young Adults (Youth Gonorrhea)
11. Life Expectancy
12. Lung Cancer Incidence
13. Premature Mortality
14. Overweight and Obesity
15. Physical Inactivity

## Females

16. Breast Cancer Incidence
17. Cardiovascular Disease Premature Mortality
18. Childhood Unintentional Injury Hospitalizations (Childhood Injury)
19. Chlamydia Infection Among Young Adults (Youth Chlamydia)
20. Colorectal Cancer Incidence
21. Current Smoker (Smoking)
22. Diabetes Prevalence
23. Exceeding the Low Risk Drinking Guidelines (Unhealthy Alcohol Use)
24. Fair or Poor Self Rated Health
25. Fall-Related Emergency Department Visits Among Older Adults
26. Gonorrhea Infection Among Young Adults (Youth Gonorrhea)
27. Life Expectancy
28. Lung Cancer Incidence
29. Premature Mortality
30. Overweight and Obesity
31. Physical Inactivity
32. Teen Pregnancy

## Combined Male and Female

33. Readiness to Learn
34. Singleton Low Birth Weight



