

The Life Course Approach to Analyzing and Visualizing Niagara's Top Health Issues

Lifecourse Theory

- Today's experiences and exposures affect tomorrow's health;
- Health trajectories are particularly affected during critical or sensitive periods which should not be missed;
- Biologic, physical, and social environments strongly affects the capacity to be healthy; and
- While genetics can offer both protection and risk factors, inequality in health reflects more than genetics and personal choice.

**Risk and Protective Factors
IF WE GET THIS RIGHT...**

**LIFE
COURSE**

Gestational Diabetes

Breastfeeding

Child Maltreatment

Positive Mental Health

Adequate Sleep

Nutrition

Injury

Physical Activity

Sedentary Behaviours

Alcohol

Drugs

Tobacco

Mental Illness

Diabetes

Cancer

Chronic Respiratory Diseases

Cardiovascular Disease

MSK/Arthritis

Dementia



**... WE CAN REDUCE THE IMPACT OF
THESE CONDITIONS.**

MATERNAL

INFANTS
(up to age 2)

CHILDREN
(2-12)

TEENS
(13-17)

ADULTS
(18-64)

SENIORS
(65+)

Why examine data across the Lifespan?





**“YEARS TO LIFE
LIFE TO YEARS”**

The data

- EMS transports (Frequency, EMS data 2013 - 2015)
- Infectious disease (Rate per 100,000 iPHIS 2011 - 2013)
- All ED visits AND ED Injuries (Rate per 100,000; IntelliHealth 2011 - 2013)
- Hospital discharges (Rate per 100,000; IntelliHealth 2011 - 2013)
- Mortality (Rate per 100,000; IntelliHealth 2009 - 2011)
- Chronic disease behaviours (Percent; Snapshots PHO 2013 - 2014)
- Self-reported chronic disease (Percent; Snapshots PHO 2013 - 2014)

Top Five EMS Transports to EDs in Niagara (2013-2015)

Niagara	1	2	3	4	5
0<1 years	Resp. Distress	Seizure/Post Ictal	General Illness/ Weakness	Other Medical/ Trauma	Newborn/Neonatal
1-4 years	Seizure/Post Ictal	General Illness/ Weakness	Resp. Distress	Soft Tissue Pain/ Trauma/Edema	Other Medical/ Trauma
5-9 years	Musculoskeletal Trauma	Seizure/Post Ictal	Soft Tissue Pain/ Trauma/Edema	Behaviour/ Psychiatric	Resp. Distress
10-14 years	Musculoskeletal Trauma	Behaviour/ Psychiatric	Soft Tissue Pain/ Trauma/Edema	Syncope	Seizure/Post Ictal
15-19 years	Musculoskeletal Trauma	Behaviour/ Psychiatric	Alcohol Intoxication	Soft Tissue Pain/ Trauma/Edema	Drug Overdose
20-24 years	Musculoskeletal Trauma	Behaviour/ Psychiatric	Abdominal Pain NYD	Soft Tissue Pain/ Trauma/Edema	Seizure/Post Ictal
25-44 years	Musculoskeletal Trauma	Abdominal Pain NYD	Behaviour/ Psychiatric	Soft Tissue Pain/ Trauma/Edema	GI Problems/Pain/ Vomiting/Nausea
45-64 years	General Illness/ Weakness	Musculoskeletal Trauma	Abdominal Pain NYD	Soft Tissue Pain/ Trauma/Edema	Ischemic Chest Pain
65-74 years	General Illness/ Weakness	Resp. Distress	Musculoskeletal Trauma	Abdominal Pain NYD	GI Problems/Pain/ Vomiting/Nausea
75-84 years	General Illness/ Weakness	Musculoskeletal Trauma	Resp. Distress	GI Problems/Pain/ Vomiting/Nausea	Abdominal Pain NYD
85+ years	General Illness/ Weakness	Musculoskeletal Trauma	Resp. Distress	Soft Tissue Pain/ Trauma/Edema	GI Problems/Pain/ Vomiting/Nausea

Top Five Emergency Department Visit Diagnoses in Niagara (2011 – 2013)

Niagara	1	2	3	4	5
0<1 years	Acute Upper Resp. Infections	General S & S	Other Acute Lower Resp. Infections	Middle Ear & Mastoid Diseases	Head Injuries
1-4 years	Acute Upper Resp. Infections	Middle Ear & Mastoid Diseases	Head Injuries	General S & S	Int. Inf. Diseases
5-9 years	Acute Upper Resp. Infections	Head Injuries	Middle Ear & Mastoid Diseases	Digestive/ Abdominal S & S	Wrist & Hand Injuries
10-14 years	Wrist & Hand Injuries	Acute Upper Resp. Infections	Ankle & Foot Injuries	Head Injuries	Elbow & Forearm Injuries
15-19 years	Wrist & Hand Injuries	Digestive/ Abdominal S & S	Acute Upper Resp. Infections	Head Injuries	Ankle & Foot Injuries
20-24 years	Digestive/ Abdominal S & S	Wrist & Hand Injuries	Acute Upper Resp. Infections	Head Injuries	Ankle & Foot Injuries
25-44 years	Digestive/ Abdominal S & S	Wrist & Hand Injuries	Circulatory/ Respiratory S & S	Acute Upper Resp. Infections	Ankle & Foot Injuries
45-64 years	Exam/ Investigation	Circulatory/ Respiratory S & S	Digestive/ Abdominal S & S	Wrist & Hand Injuries	General S & S
65-74 years	Exam/ Investigation	Lens Disorders	Circulatory/ Respiratory S & S	Digestive/ Abdominal S & S	Benign Neoplasms
75-84 years	Lens Disorders	Circulatory/ Respiratory S & S	Exam/ Investigation	General S & S	Digestive/ Abdominal S & S
85+ years	Circulatory/ Respiratory S & S	Other Forms of Heart Disease	General S & S	Other Urinary System Diseases	Lens Disorders

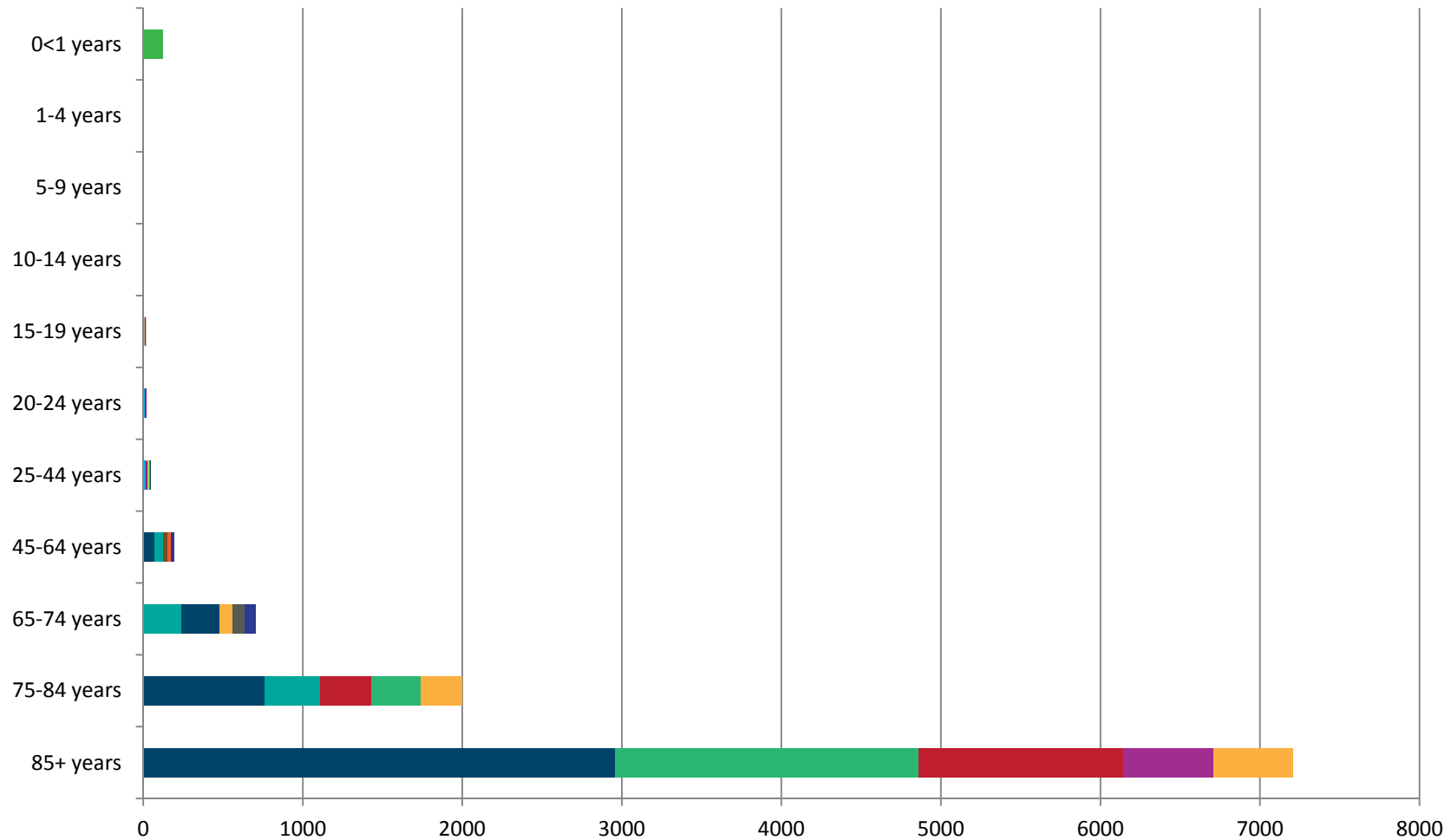
Top Five Hospital Discharge Diagnoses in Niagara (2011 – 2013)

Niagara	1	2	3	4	5
0<1 years	Length of Gest./ Fetal Growth Prob	Perinatal Resp./ Card. Disorder	H & H Disorders of Fetus & Newborn	General S & S	Int. Inf. Diseases
1-4 years	Int. Inf. Diseases	Influenza & Pneumonia	Chronic Lower Resp. Diseases	General S & S	Other Urinary System Diseases
5-9 years	Int. Inf. Diseases	Influenza & Pneumonia	Chronic Lower Resp. Diseases	Diseases of Appendix	Digestive/ Abdominal S & S
10-14 years	Mood (Affective) Disorders	Diseases of Appendix	Digestive/ Abdominal S & S	Int. Inf. Diseases	Diabetes Mellitus
15-19 years	Labour & Delivery Complications	Mood (Affective) Disorders	Diseases of Appendix	Fetus/amn. cavity & del. Problems	Diabetes Mellitus
20-24 years	Labour & Delivery Complications	Fetus/amn. cavity & del. Problems	Diseases of Appendix	Knee & Lower Leg Injuries	Gall, BT & Pancr. Disorders
25-44 years	Labour & Delivery Complications	Fetus/amn. cavity & del. Problems	Non-infl. Female GT Disorder	Gall, BT & Pancr. Disorders	Diseases of Appendix
45-64 years	Ischaemic Heart Diseases	Arthrosis	Other Forms of Heart Disease	Comp. of Surg.& Med. Care NEC	Other Intestinal Diseases
65-74 years	Arthrosis	Ischaemic Heart Diseases	Other Forms of Heart Disease	Chronic Lower Resp. Diseases	Comp. of Surg.& Med. Care NEC
75-84 years	Other Forms of Heart Disease	Ischaemic Heart Diseases	Arthrosis	Chronic Lower Resp. Diseases	Other Intestinal Diseases
85+ years	Other Forms of Heart Disease	Ischaemic Heart Diseases	Hip & Thigh Injuries	Chronic Lower Resp. Diseases	Influenza & Pneumonia

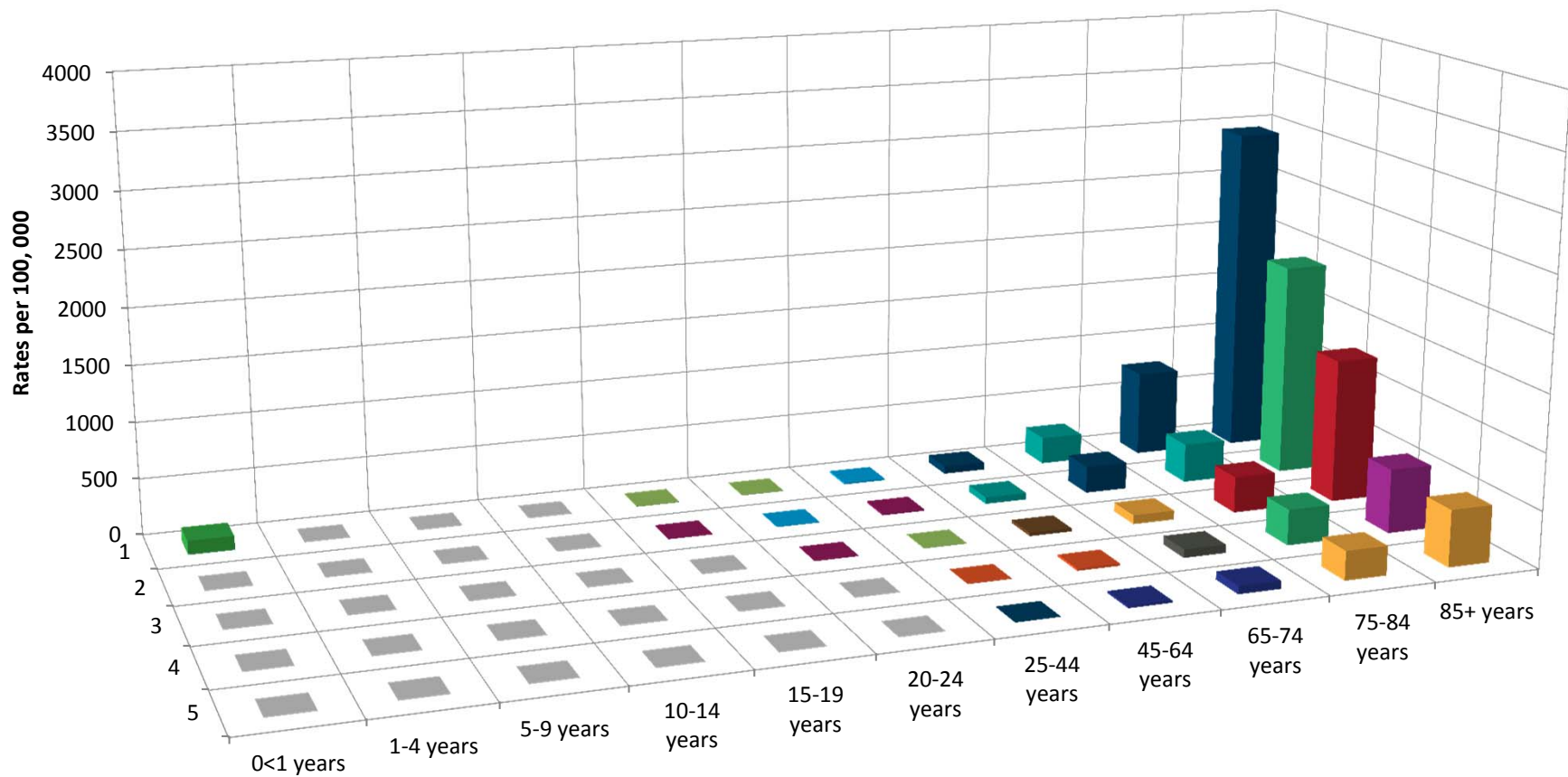
Top Five Causes of Death in Niagara (2009 – 2011)

Niagara	1	2	3	4	5
0<1 years	Congenital Malformation	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>
1-4 years	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>
5-9 years	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>
10-14 years	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>
15-19 years	Transport Accidents	Intentional Self-Harm	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>
20-24 years	Transport Accidents	Accidental Poisoning	Intentional Self-Harm	<i>Not Reportable**</i>	<i>Not Reportable**</i>
25-44 years	Accidental Poisoning	Intentional Self-Harm	Transport Accidents	Breast Cancer	Ischemic Heart Disease
45-64 years	Ischemic Heart Disease	Lung & Bronchus Cancer	Liver Cirrhosis	Breast Cancer	Colon, Rectal & Anal Cancer
65-74 years	Lung & Bronchus Cancer	Ischemic Heart Disease	Chronic Lower Resp. Infection	Lymph, Blood & Related Cancer	Colon, Rectal & Anal Cancer
75-84 years	Ischemic Heart Disease	Lung & Bronchus Cancer	Cerebrovascular Diseases	Dementia/ Alzheimer's	Chronic Lower Resp. Infection
85+ years	Ischemic Heart Disease	Dementia/ Alzheimer's	Cerebrovascular Diseases	Falls	Chronic Lower Resp. Infection

Top Five Causes of Death, Niagara Region (2009-2011)



Top Five Causes of Death, Niagara Region (2009-2011)



- | | | | |
|---------------------------|--------------------------------------|--------------------------|----------------------------------|
| Ischemic Heart Disease | Chronic Lower Respiratory Infections | Cerebrovascular Diseases | Cirrhosis, Liver |
| Transport Accidents | Accidental Poisoning | Dementia/ Alzheimer's | Cancer of Lymph, Blood & Related |
| Intentional Self-Harm | Breast Cancer | Falls | Not Reportable |
| Cancer of Lung & Bronchus | Cancer of Colon, Rectum, Anus | Congenital Malformation | |

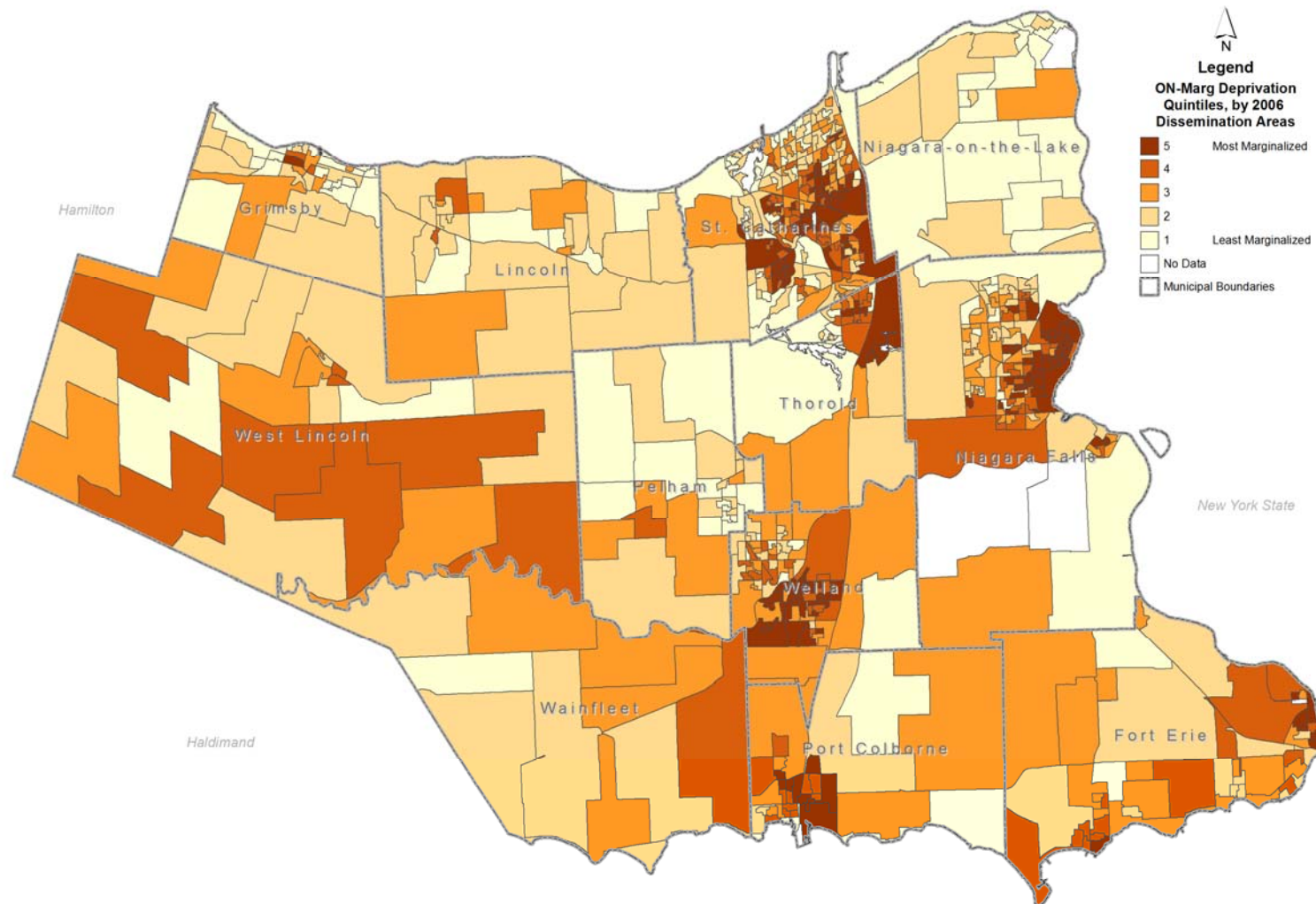
Top Five Self-Reported Conditions in Niagara (2011 – 2014)

Niagara	1	2	3	4	5
12-19 years	Overweight and obesity	Mood disorder	<i>Not Reportable**</i>	<i>Not Reportable**</i>	<i>Not Reportable**</i>
19-44 years	Overweight and obesity	Anxiety disorder	Asthma	Mood disorder	High blood pressure
45-64 years	Overweight and obesity	High blood pressure	Mood disorder	Anxiety disorder	Asthma
65+ years	Overweight and obesity	High blood pressure	Diabetes	Heart disease	Asthma

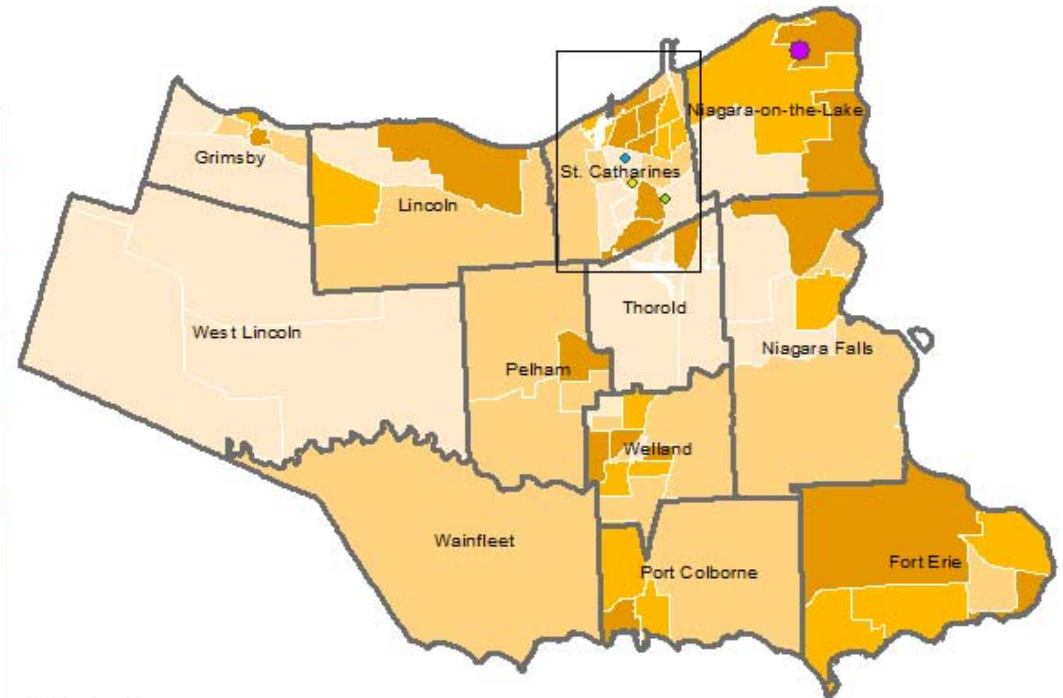
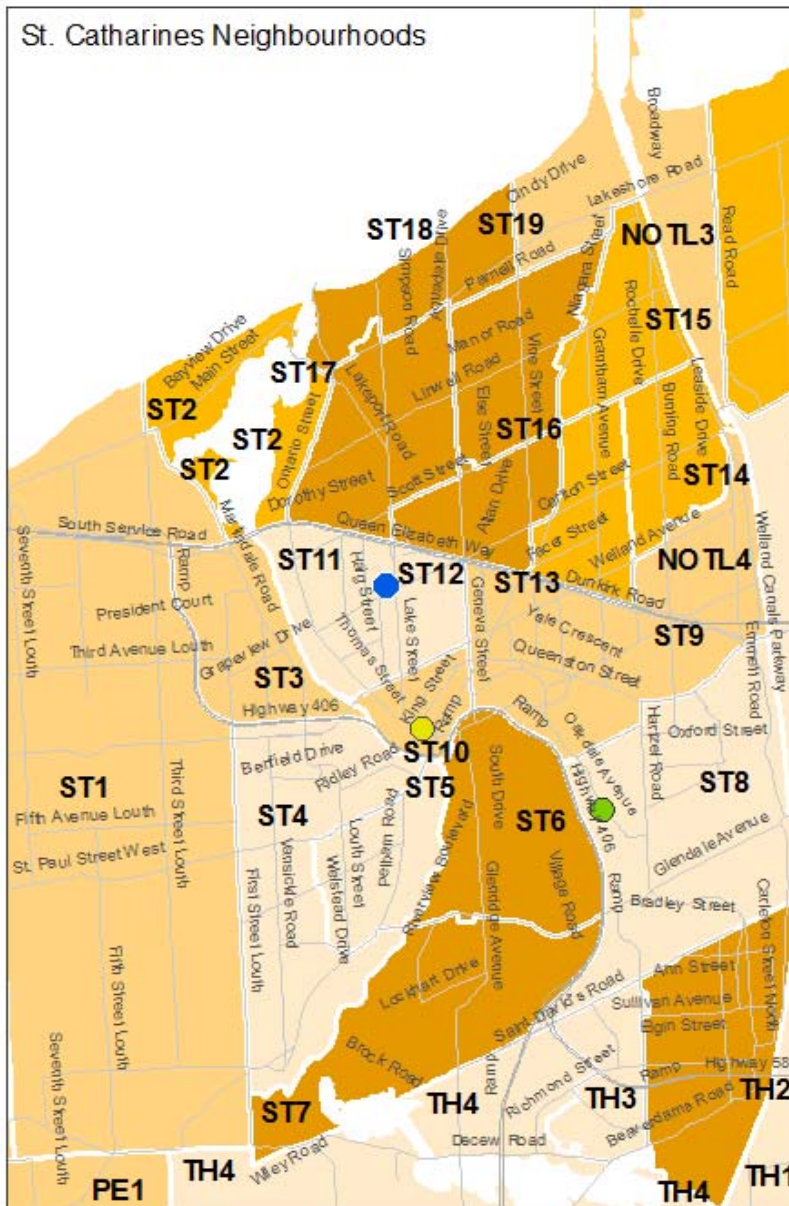
Top Five Self-Reported Behaviours in Niagara (2011 – 2014)

Niagara	1	2	3	4	5
12-19 years	4 or less fruits and vegetables	Inactive during leisure time	Underage drinking	Illicit drug use	Cannabis use
19-44 years	Exceeds LRADG	4 or less fruits and vegetables	Inactive during leisure time	Current smokers	Illicit drug use
45-64 years	4 or less fruits and vegetables	Exceeds LRADG	Inactive during leisure time	Current smokers	Illicit drug use
65+ years	Inactive during leisure time	4 or less fruits and vegetables	Exceeds LRADG	Current smokers	<i>Not Reportable**</i>

The Ontario Marginalization Index (ON-Marg) for Priority Planning Areas



% of Population Aged 65+ in Niagara, by Neighbourhood



- ST1 Louth
- ST2 Port Dalhousie
- ST3 Martindale
- ST4 New Western Hill
- ST5 Old Western Hill
- ST6 Glenridge
- ST7 Brock
- ST8 Merriton
- ST9 Queenston
- ST10 St. Catharines Downtown
- ST11: The Haig
- ST12: Fairview
- ST13: Facer
- ST14: Carlton/Bunting
- ST15: Grantham East
- ST16: Grantham West
- ST17: Lakeport
- ST18: Lakeshore
- ST19: Port Weller

% population 65+

- 0-14.4
- 14.5-17.3
- 17.4-20
- 20.1-34.7

— Main road or highway

- Garden City Family Health Team
- McMaster Niagara Family Health Centre
- Niagara Medical Professional Centre
- Dr. Harb

Municipal boundaries are shown in grey

Neighbourhood boundaries are shown in white

Data Source: 2011 Census

Doing Business Differently

- **Flexibility**
- **Transformative Opportunities**
- **Efficiency and Innovation**
- **Alternate Service Delivery**