Population Health Assessment:
Measuring the Health of Hamiltonians

November 13, 2017

Outline & Objectives

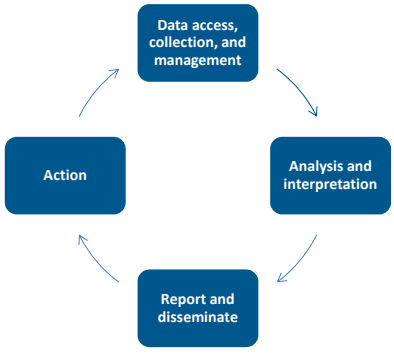
Outline:

1. Overview of population health assessment
2. Population health assessment products
3. Public health needs in Hamilton

Overview of Population Health Assessment (PHA)

What is Population Health Assessment?

Population Health Assessment (**PHA**) is the measuring, monitoring, and reporting of the health of the population (SPHPS, 2017).



Source: Population Health Assessment & Surveillance Protocol, 2016

We commonly use 20+ data sources! Select examples:

What data do we have?

Oral Health Information Support System (OHISS)

Hamilton PHS did **100,085 oral screenings** of school children since 2011

Integrated Public Health Information System (iPHIS)

There were **35,091 infectious diseases** reported to Hamilton PHS since 2005

Canadian Community Health Survey (CCHS)

1,493 Hamiltonians completed the 2013-2014 Canadian Community Health Survey.

Better Outcomes Registry & Network (BORN)

Data on **21,000 local births** is captured for the past 4 years

Why is PHA important?

Decision Making	• **Good decisions are based on good evidence.**
Planning and Evaluation	• **What services are a priority? Are the services working?**
Policy Development	• **Informs actionable healthy public policies.**
Strategic Spending	• **How can limited resources have the greatest impact?**
Accountability	• **Are we fulfilling our mandated requirements?**
Awareness and Advocacy	• **Used to popularize important issues.**

Evidence-Informed Decision Making

4 domains of evidence that inform decision making:

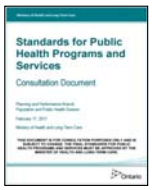
Population Health Assessment can identify local health issues in our community

Source: National Collaborating Centre for Methods and Tools

PHA is a priority and a mandate

Mapping Wellness: *"Local-level population health data can be used to make informed, evidence-based decisions to improve the health of communities, through targeted investment and planning."*

- **Dr. David Williams,** Chief Medical Officer of Health



Standards of Public Health Programs and Services (2017): PHA is a Foundational Standard of the MOHLTC's mandate.

- ***Boards of Health are required to do and use PHA.***
- *Greater emphasis on **health equity** assessment*

Patients First: support health system planning with LHINs

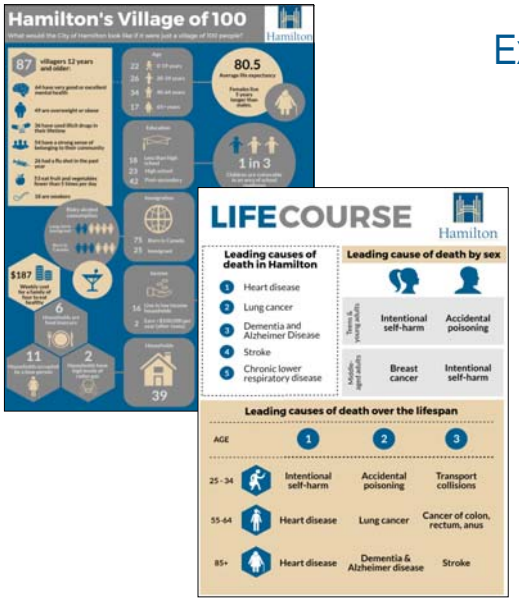
- Defined set of indicators to inform planning
- Local assessment to address information needs
- Knowledge and expertise to translate health information into health intelligence

Population Health Assessment (PHA) Products

Quiz:
How much do we know about Hamilton's health?

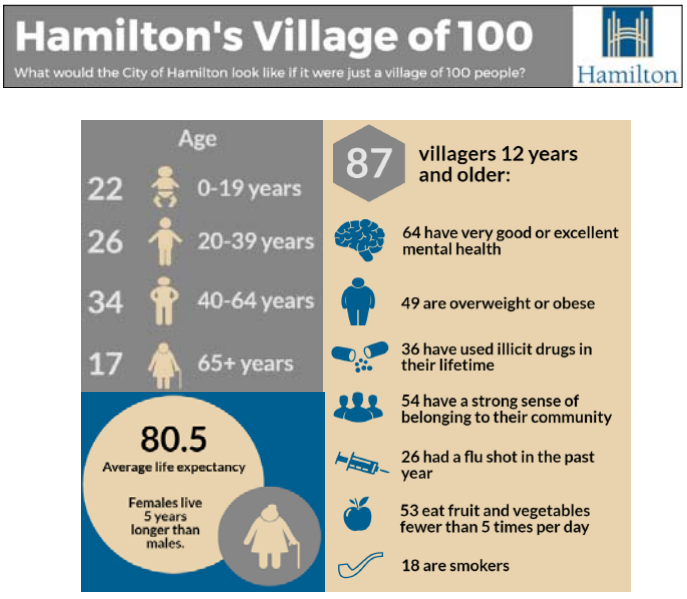
True or False?

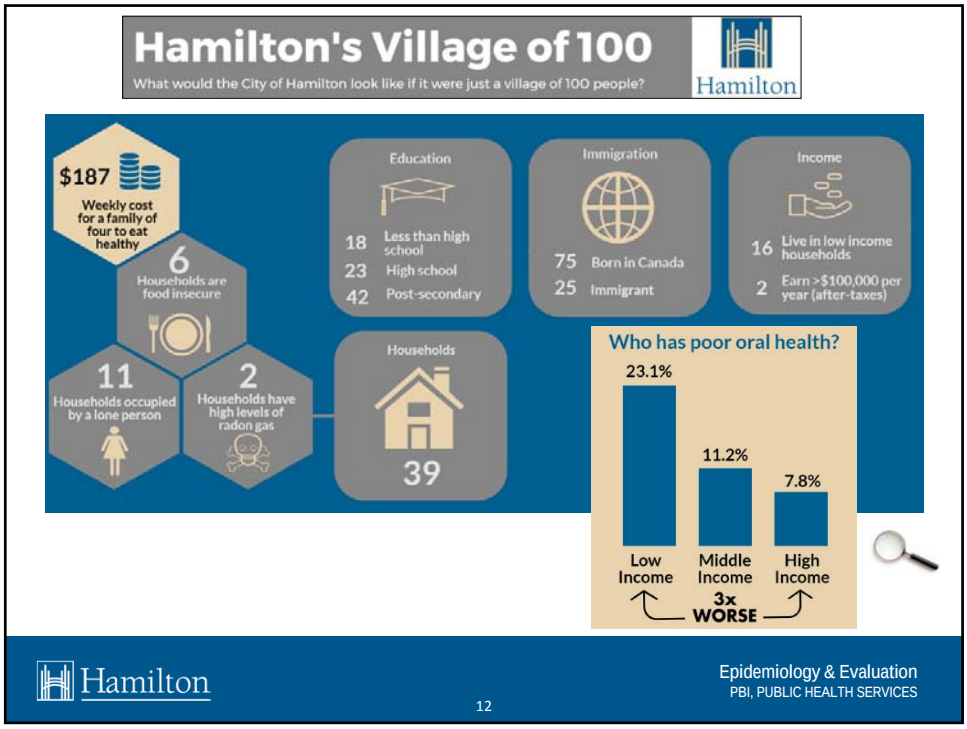
Over 20,000 yearly visits to Hamilton ERs for injuries due to falling	TRUE
Less than 30% of Hamiltonians have ever used an illegal drug	FALSE 43%
Suicide is the leading cause of death for Hamiltonians under 45	TRUE
Annually, over 50 local deaths are attributed to radon exposure	TRUE

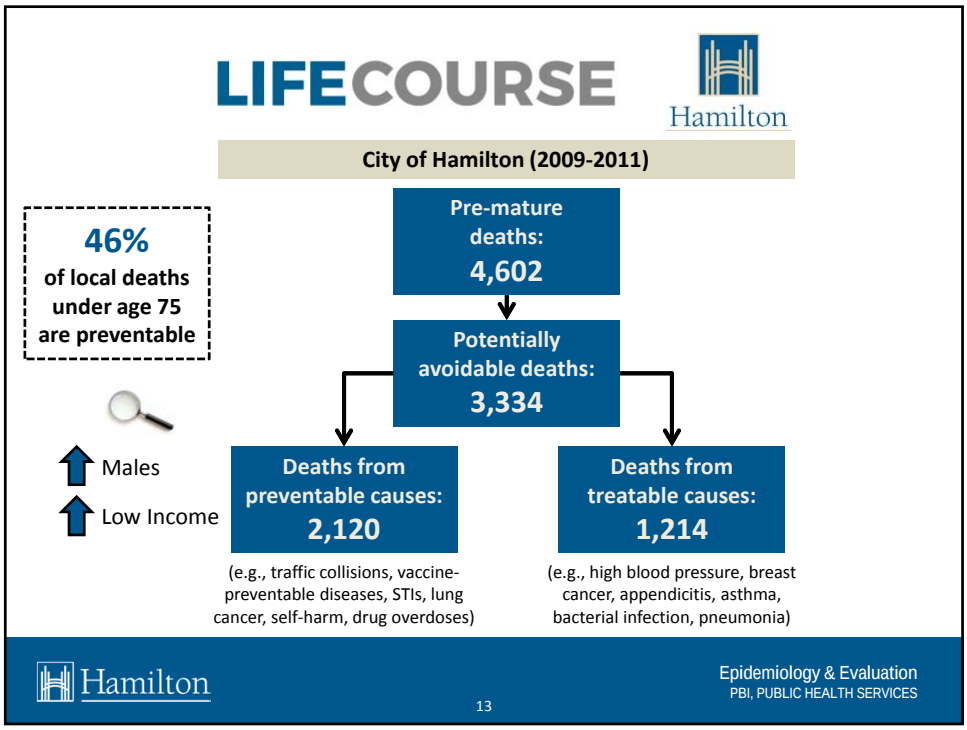


Examples of PHA products

- **Village of 100**: what would our community look like if it were just a village of 100 people?
- **LifeCourse**: what are the health problems at different stages of life in Hamilton?




Hamilton's Village of 100
What would the City of Hamilton look like if it were just a village of 100 people?
Hamilton
$187
Weekly cost for a family of four to eat healthy
6
Households are food insecure
11
Households occupied by a lone person
2
Households have high levels of radon gas
Education
18 Less than high school
23 High school
42 Post-secondary
Immigration
75 Born in Canada
25 Immigrant
Income
16 Live in low income households
2 Earn >$100,000 per year (after-taxes)
Households
39
Who has poor oral health?
23.1%
11.2%
7.8%
Low Income
Middle Income
High Income
3x WORSE


LIFECOURSE
Hamilton
City of Hamilton (2009-2011)
46%
of local deaths under age 75 are preventable
Pre-mature deaths:
4,602
Potentially avoidable deaths:
3,334
Males
Low Income
Deaths from preventable causes:
2,120
(e.g., traffic collisions, vaccine-preventable diseases, STIs, lung cancer, self-harm, drug overdoses)
Deaths from treatable causes:
1,214
(e.g., high blood pressure, breast cancer, appendicitis, asthma, bacterial infection, pneumonia)

LIFECOURSE

Hamilton

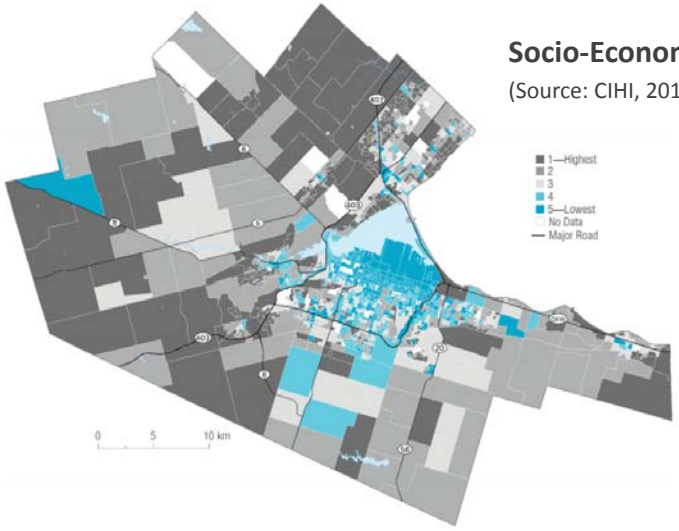
Leading causes of death in Hamilton

1. Heart disease
2. Lung cancer
3. Dementia and Alzheimer Disease
4. Stroke
5. Chronic lower respiratory disease

Leading cause of death by sex

	Female	Male
Teens & young adults	Intentional self-harm	Accidental poisoning
Middle-aged adults	Breast cancer	Intentional self-harm

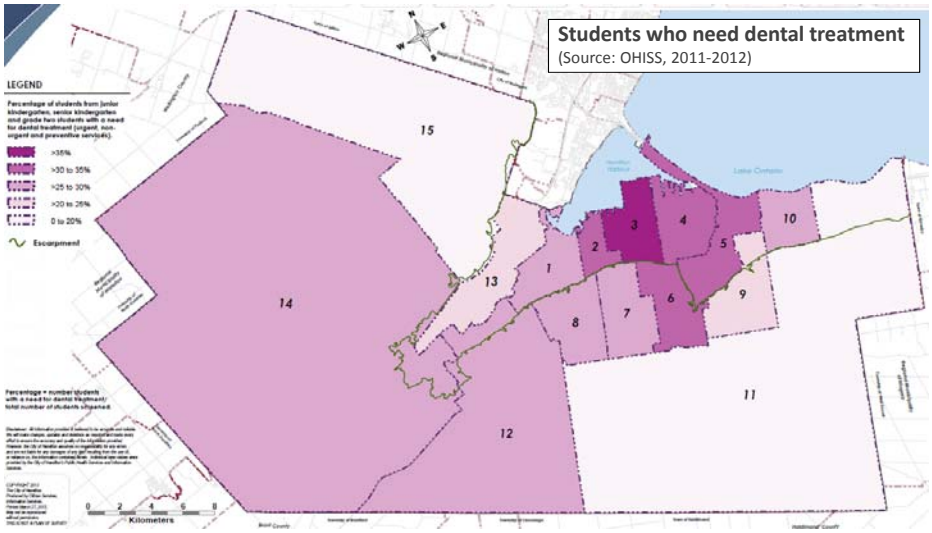
PHA supported by geographic information systems



Socio-Economic Status

(Source: CIHI, 2010)

PHA supported by geographic information systems



Hamilton

Epidemiology & Evaluation
PBI, PUBLIC HEALTH SERVICES

Community Health Profiles

- **What are the health needs of our communities or neighbourhoods?**
- **Limited amount of data for small geographies**

Epidemiology & Evaluation
PBI, PUBLIC HEALTH SERVICES

Evidence to Action: Hamilton's Opioid Response

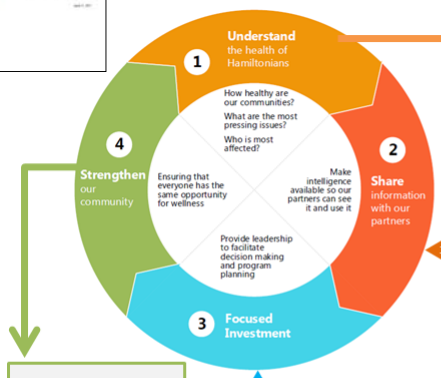
- Leading up to 2016, opioid use identified as an emerging local issue… this resulted in data-driven actions:

ACTION	ROLE OF DATA	DATA
Naloxone expansion; increased hours for needle exchange	Data collection and reporting of service utilization	>600,000 needles collected in 2015 compared to 50,000 in 2000
Opioid response strategy	Allows for data sharing between partners & alerts	Data sharing with HPS: 307 paramedic calls in Q1-3 of 2017
Communication and awareness campaign	Data informs key messages & used to raise awareness	52 Hamiltonians died of opioid overdoses last year
Monitoring system on our website	Data made available to the community	Week of Oct 9th: 28 ER visits for suspected drug overdoses
Began feasibility study of SIS	Data being used to determine need for SIS	Interviews with residents who have lived experience

Public Health Needs in Hamilton

Population Health Assessment and Surveillance Strategy
(Epidemiology and Evaluation Program)

Strategy for Hamilton



Needs Assessment

Mixed-Methods Approach:
- Comprehensive Indicator Profile
- Community Engagement (focus groups, forum, survey)
- Leadership and Expert Engagement (key informant interviews)

Priority Setting
- Program budgeting and marginal analysis (PBMA)
- Multi-Criteria Decision Analysis (MCDA)

Evaluation
- Process/Outcome Indicators
- Performance Measurement

Example: Evidence to Action

1. Peel Public Health found that neighbourhoods in Brampton had diabetes rates 40% higher than the rest of the region.

2. Peel worked with St. Michael's Hospital to find out why: diabetes was more common in neighbourhoods with wide streets and high-traffic intersections, which discourages walking.

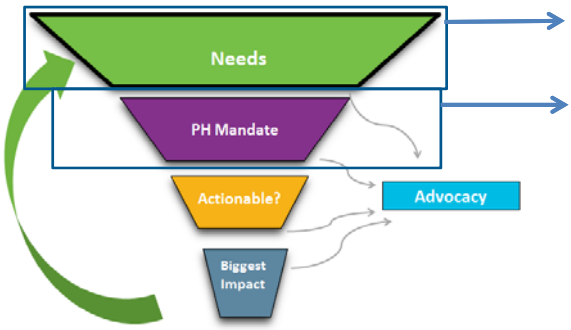
3. This allowed decision-makers to focus investment into modifying roads in these neighbourhoods (*greatest impact*).

4. Now those neighbourhoods will have greater opportunities for healthy living.

How is Hamilton using PHA?

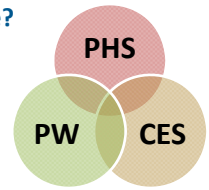
PHA is being used in the implementation of our new public health mandate:
Standards for Public Health Programs and Services **(SPHPS)**

- Plan and implement programs/services based on local need.
- PHA used to determine the magnitude of need in Hamilton.



What are the local needs in our community?

What are the local needs in our community that align with our Public Health mandate?



Comprehensive Community Profile

Data Strengths | Data Needs

Community History & Geography
- Historical Perspective & Relevant Events
- Geography

Demographics
- Population & Household Characteristics (e.g., age, language, immigration, education, dwellings)

Health Status
- Mortality & Morbidity
- Self-reported Health
- Health Conditions
- Other Health Outcomes

Health Behaviours
- Risk & Protective Behaviours (e.g., alcohol use, smoking, healthy eating, safe sex).

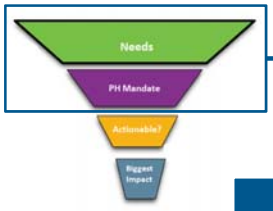
Health Care
- Patient Experience & Satisfaction
- Integration
- Primary Care Access, Contacts, Attachment, Awareness
- Service Utilization

Economics
- Employment & Cost of Living
- Low Income & Poverty
- Social Assistance
- Housing & Homelessness

Social and Cultural
- Connectedness
- Loneliness
- Culture & Religion

Crime & Laws
- Criminal Incidents and Severity
- Emergency Services
- Laws & Legislation

Environment
- Natural Environment
- Built Environment & Infrastructure
- Transportation



Results from SPHPS Review

LOCAL HEALTH ISSUES
(high need for an intervention & within the scope of public health)

Mental health resiliency & addictions	Healthy weights Physical Activity	Oral health	Food safety in the home	Falls Road safety	Breastfeeding Child nutrition Positive parenting	Air pollution Radiation exposure Extreme weather	STIs (HIV, Syphilis) Hepatitis B Hepatitis C Immunization
Suicide is the leading cause of death for young adults	74% of adults (45-64) are overweight or obese	>19,000 cavities in JK/SK/Gr 2 students	>100,000 foodborne illnesses in Ontario; 42% from the home	>20,000 ER visits due to fall injuries per year	1 in 3 babies are not breastfed at 6 months	40% of residents live in a traffic-related air pollution zone	Increasing Hep B cases and low vaccination for Hep B

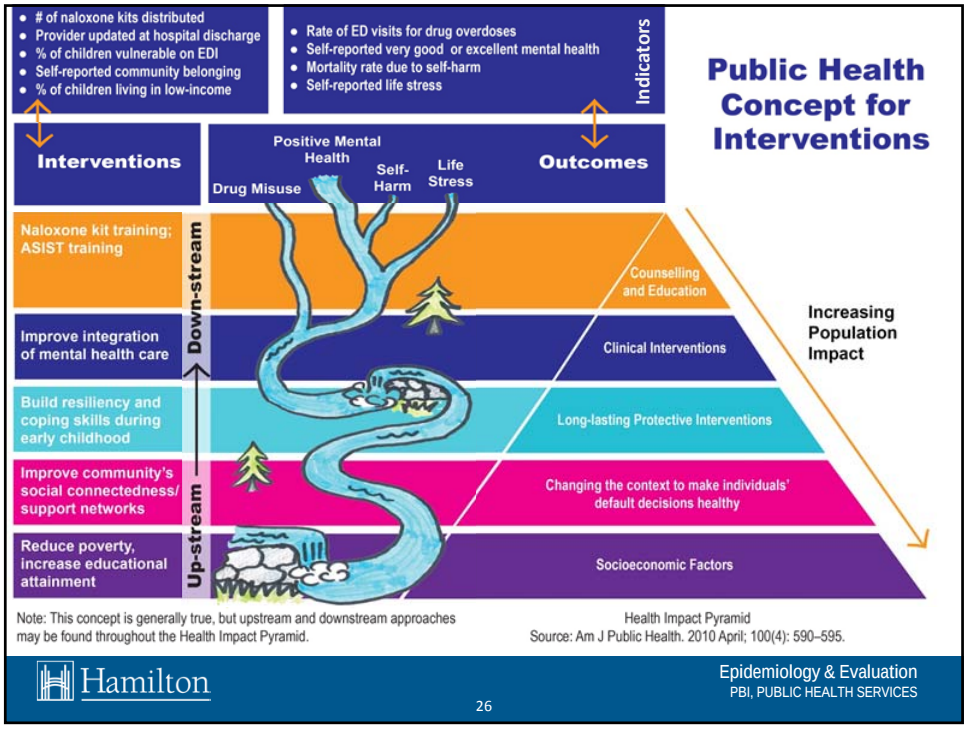
Results from SPHPS Review

Priority Populations:

- Population is disadvantaged with respect to one or more determinants of health *or* population is at risk for adverse health outcomes.
- Public health interventions may be reasonably considered to have a substantial impact at the population level

Examples:

Local Health Issue	Mental health	Healthy weights & risk factors	Food safety in the home	Falls	Road safety	Extreme weather	STI (syphilis, HIV)	Oral Health
Local Priority Population	Females under 20 Males 45-64 Low income	Youth Males Low income	Seniors Children	Seniors Children	Males 20-44	Males Low income High dependency	Males 20-54 Men who have sex with men (MSM)	Low income



Next Steps

Develop evidence-based public health interventions to address the local health issues identified by PHA in the *Standards* review.

Work with city departments and community partners to share data and collaborate on PHA projects.

Implement *Population Health Assessment & Surveillance Strategy* developed by PHS.

Take Away Messages

PHA is mandated and a priority

PHA is important for decision-making and strategic spending

Work with others & provide intelligence to our community

This work is just beginning: it will be evolving and growing…

Thank you