

# Class 15 - HIA Assessment

A decorative graphic consisting of several horizontal lines of varying lengths and colors (teal, light blue, white) extending from the right side of the slide towards the center.

# Agenda

- Updates from site visits
- Assessment
- Farmer's Field example

# Site visits

- What have the interactions been?
- What's been helpful?
- What's been problematic?
- Reflections?

# What are we assessing?

- Baseline (existing) conditions in the affected population including health status, health determinants, and vulnerabilities to health effects
- Characterization of the anticipated health effects of alternative decisions
- An evaluation of the level of confidence or certainty in the health effects characterization

## PRINCIPLES FOR THE ETHICAL USE OF EVIDENCE IN HIA

- Utilize evidence from diverse sources, including available statistics, empirical research, professional expertise and local knowledge, and the products of original investigations
- Give greater weight to evidence from well-designed and peer-reviewed systematic reviews
- Consider evidence, both supporting and refuting, a priori hypotheses
- Justify the selection or exclusion of particular methodologies and data sources
- Make explicit the assumptions used in making judgments, particularly quantitative estimates of hazards or impacts
- Identify data gaps, uncertainties, and limitations of inferences
- Allow stakeholders to critique the validity of findings

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# Common sources of data

- **Existing population demographic and health statistics (e.g., census, surveys, vital statistics, surveillance programs, and agency reports)** to profile health status and health determinants
- **Environmental measures:** often used to assess public health assets and resources, including water bodies, land, farms, forests and infrastructure, schools, and parks.
- **Maps of demographics, health statistics, or environmental measures** to identify spatial relationships between places, populations, and environmental conditions and “hot spots” or spatial differences in the intensity of hazards
- **Empirical research, particularly epidemiological research, to provide evidence** to characterize relationships between health determinants and health outcomes and to quantify those relationships when possible
- **Qualitative methods, including focus groups and structured and unstructured interviews,** to help assessors access knowledge or perceptions about conditions, vulnerabilities, day-to-day experiences of community members, and experienced and perceived threats

# Assessment process

1. Evaluate and weigh evidence of causal effects
2. Baseline conditions data
3. Forecast quantitatively
4. Characterize your expectations
5. Assess uncertainty

Step	Effects of Automated Speed Enforcement on Pedestrian Injuries Frequency and Severity	Effects of Paid Sick-Leave Benefits on an Influenza Pandemic
<p><b>1. Evaluate and weigh evidence of causal effects</b></p>	<p>Access systematic reviews on automated speed enforcement and speed reduction</p> <p>Synthesize literature on the relationship between travel speed and collision frequency</p> <p>Synthesize literature on impact speed and collision severity</p> <p>Assess literature on roadway and behavioral factors that affect vehicle speed</p>	<p>Synthesize literature on the effect of social distancing measures on reducing pandemic influenza transmission in workplaces and schools</p> <p>Assess utilization of paid sick leave for short-term illness for self and offspring among current beneficiaries</p> <p>Evaluate demographic characteristics of populations with and without benefits</p> <p>Assess literature on the effect of paid sick days on compliance with social distancing strategies</p>
<p><b>2. Collect and synthesize data on baseline conditions</b></p>	<p>Enumerate the current resident population and age-specific subpopulations using, for example, census data for the urban area</p> <p>Collect and geo-code available roadway speed data (exposure data) from city monitoring</p> <p>Describe the distribution of urban speeds for road types categorized by speed limits</p> <p>Enumerate frequency of pedestrian injuries in most recent 5 year period and fatalities in most recent 10 year period</p>	<p>Enumerate the national resident population by age, labor participation status, and occupation</p> <p>Enumerate the availability of paid sick leave by occupation and household size</p> <p>Enumerate the population burden of infection from annual influenza epidemics and recent influenza pandemics</p>



# How do we characterize effects?

- the nature of the impacts (death, illness, discomfort, anxiety)
- the direction of change (increased or decreased)
- the magnitude of change (how many, how severely)
- distribution—which groups will experience impacts?

Estimation of the additional travel casualties caused by the opening of the National Botanical Garden of Wales

### Injury rates per 100 million kilometres

Estimated number of visitors per year	250,000
Estimated number of visitors arriving by car (85%)	212,500
Estimated vehicle journeys (2.5 visitors per car)	85,000
Estimated vehicle kilometres (mean journey length 150 km)	12,750,000

	Deaths per 100 million vehicle kilometres	Seriously injured per 100 million vehicle kilometres	Deaths per year travelling to garden	Seriously injured per year travelling to garden
Car occupants	0.5	5.8	0.063	0.74
Pedestrians	0.2	2.3	0.025	0.29

# Assessing quantitative evidence

- Dose-response or threshold
  - Expressing uncertainty
  - Finding established models (e.g., the HEAT tool, PREVENT, ARMADA, etc)
  - Choosing metrics
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- Very few HIAs do this (14 in the USA, 16/98 worldwide as of 2005) ... you don't have to

Step	Effects of Automated Speed Enforcement on Pedestrian Injuries Frequency and Severity	Effects of Paid Sick-Leave Benefits on an Influenza Pandemic
<p><b>4. Characterize expected health effects</b></p>	<p>Evaluate the likelihood (certainty) of changes in speed resulting in changes in injury burdens and injury severity</p> <p>Describe magnitude of changes in pedestrian injury collision frequency under each scenario</p> <p>Describe magnitude of changes in pedestrian fatalities under each scenario</p>	<p>Evaluate the likelihood (certainty) of changes in paid sick days resulting in changes in cumulative attack rates</p> <p>Describe the estimated magnitude of the burden of illness attributable to a novel pandemic influenza strain</p> <p>Using evidence on utilization, judge the effect of paid sick days with compliance with social distancing strategies</p> <p>Provide the range of effect of “stay at home” social distancing policies on reduction in cumulative incidence of flu based on available modeling scenarios</p>
<p><b>5. Evaluate the level of confidence or certainty in health effect characterizations</b></p>	<p>Consider the influence of the following uncertainty factors: representativeness of speed data; relationships between observed speeds and impact speeds; application of speed-injury collision exposure response function to pedestrian injury collisions; differences between intervention location and study environments</p> <p>Conduct sensitivity analysis under alternative assumptions (e.g., assume travel speed &gt; impact speed)</p>	<p>Describe the uncertainty in the following parameters: available data on sick leave utilization for specific illnesses; generalization of sick leave utilization from population currently with benefit to populations without benefit</p>

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