Public Health’s Experience Pursuing Municipal Policy Changes to Create Supportive Environments for Health

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Abstract
Major changes in physical and social environments in recent decades are underlying causes of widespread physical inactivity, unhealthy eating, and sedentary behaviour – key risk factors in the development of diabetes and other chronic diseases. Increasingly, public health organizations are recognizing the importance of making improvements to the built environment to support the widespread incorporation of healthy behaviours into everyday life. Targeting public policies differs fundamentally from public health’s historical approaches that focused on awareness and education.

Leveraging public health’s strong history of evidence-informed decision-making, this work is informed by a review of the political science literature in applying policy analysis frameworks to public health policy issues. The Multiple Streams Framework and Advocacy Coalition Framework were used to increase public health staff understanding of the policy analysis process, and how to better inform the processes of agenda setting, policy formation and implementation. Through comprehensive action, we have secured high-level policy direction and established inter-departmental working groups to pursue operational policy implementation affecting workplace stair use, outdoor space design conducive to physical activity, and cafeteria food offerings. We are also accomplishing policy changes that incorporate consideration of the public’s health in land-use and transportation planning.

Our experience shows that evidence has been necessary to indicate what we wish to achieve, but alone is insufficient to achieve it. Overall, our ability to foster policy change has required executive leadership support within our organization, investment of resources including establishment of dedicated positions and external supports, as well as the relentless pursuit of our strategy.
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Public Health’s Experience Pursuing Municipal Policy Changes to Create Supportive Environments for Health

Introduction
Public health is an organized activity of society to promote and protect the health of the public.\(^1\) As a core public health function, health promotion involves building healthy public policy and creating supportive environments for health.\(^2\) Since most health determinants are outside the direct sphere of influence of public health organizations, public health must pursue strategies to influence the formation and implementation of public policies. The relative prominence of policy change efforts will likely increase as public health organizations pursue more upstream approaches to prevention such as creating supportive environments to prevent chronic diseases\(^3\) and seeking to reduce population health inequities.\(^4\)

The roots of modern public health were established in the mid-1800s in response to widespread epidemics of infectious diseases. The Sanitary Movement led to vital public policies including the establishment of safe water supplies, sewage systems, better housing with sunlight and ventilation, and public parks.\(^5\) These policies are now viewed as a normal aspect of modern life and have been responsible for much of the increase in life expectancy witnessed over the past 150 years. However, at the time, these policies were novel and the changes in community design and investment they required prompted considerable controversy.

In recent decades, chronic diseases have become the leading causes of death and disability in Canada and other Western countries. Their burden not only poses an increasing risk to the health and wellbeing of the public, but also threatens the sustainability of the publicly funded universal healthcare system. In only a generation, obesity rates have doubled across Canada.\(^6\) In Ontario, Canada’s largest province of 13.5 million people, the economic cost of obesity and inactivity was $7.9 billion in 2009.\(^7\) Driven by obesity, inactivity and an aging population, rates of diabetes are rising rapidly. In the Region of Peel, Ontario’s second largest upper-tier municipality, 1 in 10 adults have diabetes and if current trends persist, 1 in 6 adults will have diabetes by 2025, with a 2.6-fold increase in projected healthcare costs.\(^8\)

Table 1 shows selected evidence-based approaches for preventing chronic diseases with a particular emphasis on those applicable to community design and workplaces.\(^3\) These include improved land use and community walkability, as well as supports for stair use in workplaces. Although these policies work at different scales of design, both types contribute to building physical activity into people’s daily lives.
Table 1: Evidence-Based Population Approaches for Preventing Chronic Diseases – Community Design and Workplaces

<table>
<thead>
<tr>
<th>Setting/Item</th>
<th>Policy</th>
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| Community Design | • Improved land use design (e.g., integration of and inter-relationships of residential, school, work, retail and public spaces)  
|                  | • Improved traffic safety                                                                   |
|                  | • Improved neighbourhood aesthetics to increase physical activity in adults                  |
|                  | • Improved walkability, a composite indicator that incorporates aspects of land-use mix, street connectivity, pedestrian infrastructure, aesthetics, traffic safety and/or crime safety |
|                  | • Improved accessibility of recreation and exercise spaces and facilities (e.g., building of parks and playgrounds, increased operating hours, use of school facilities during non-school hours) |
| Workplaces       | • Comprehensive wellness programs with nutrition and physical activity                     |
|                  | • Increased availability of healthier food/beverage options and/or strong nutrition standards for foods and beverages served, in combination with vending machine prompts, labels or icons to make healthier choices |
|                  | • Point-of-decision prompts to encourage use of stairs                                     |
|                  | • Improving stairway access and appeal, potentially in combination with ‘skip-stop’ elevators that skip some floors (thereby making stair use necessary) |


Lists of evidence-based policies such as those in Table 1 are informative to public health organizations as to which policies to consider pursuing. However, they do not address how public health can most effectively achieve these types of policy changes to support better health of the population. The purpose of this paper is to describe the experience of a regional public health organization in Ontario, Canada that has pursued policy changes to create more supportive environments for health.

Context

Region of Peel
The Region of Peel is an upper-tier municipality with a population of 1.3 million that is located west of Toronto in Ontario, Canada. Its built form is predominantly suburban with a rapidly growing population projected to reach 1.9 million by 2031, which represents an 82% increase since 2001. With decades of car-dependent, sprawl-type development, Peel and surrounding municipalities of the Greater Toronto-Hamilton Area (GTHA) are facing the adverse effects of increased congestion, long commute times, loss of farmland, and traffic-related greenhouse gas emissions and air pollution. Furthermore, low density development is a barrier to the introduction of efficient public transit service. As a two-tier municipality, responsibilities for land use and transportation planning are split between the Region of Peel and its three constituent lower-tier municipalities (Mississauga, Brampton, and Caledon).
**Peel Public Health**

Peel Public Health is a municipal department of the Region of Peel with approximately 640 staff and a $82 million annual budget. The elected Regional Council functions as the department’s Board of Health governance body. The department receives its mandate to protect and promote the health of the public through the province of Ontario’s *Health Protection and Promotion Act* and accompanying *Ontario Public Health Standards*. Across Ontario, public health departments are jointly funded by the province and local municipalities on a 75:25 basis. Compared with other Canadian provinces, involvement of municipalities in the funding and governance of local public health is unique to Ontario. Being administratively embedded within the municipality means that public health reports to the same executive leadership and governance body as other municipal services including transportation and land use planning.

The decentralized nature of public health in Ontario enables organizational cultures to emerge that matches local needs. Given that the staff to population ratio is 1:2000, priority setting has been essential to the delivery of effective public health initiatives. Accordingly, Peel Public Health has emphasized the importance of public health sciences by developing strong expertise in epidemiology and evidence-based decision-making, with well-established linkages with academic centres. Furthermore, the department’s leadership has emphasized for many years the importance of policy-based approaches to optimize the health of the public.

**Expectations for Public Health Involvement in Policy and the Built Environment**

In recent years, the core functions of public health in Canada have become commonly accepted to include the monitoring and reporting of the health of the public, health promotion, the prevention of diseases and injuries, and health protection. These functions are reflected in Ontario’s public health legislation and more detailed standards. Specifically, the *Ontario Public Health Standards* include expectations for public health departments to “work with municipalities to support healthy public policies and the creation or enhancement of supportive environments in recreational settings and the built environment.”

There are several health-based reasons why public health is interested in the built environment to promote the public’s health:

- Building physical activity into daily life through greater transit use, walking and cycling
- Reducing air pollution and greenhouse gas emissions
- Improving transportation options for all by improving access to employment and services. Reducing need for a personal vehicle allows families to apply limited financial resources towards other expenses such as food and rent.

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**iii** Built Environment: Encompasses places and spaces created or modified by people including the transportation investments and land use patterns that make up our surroundings – i.e., the arrangement and design of buildings, roadways, trails, transit networks and parks.

**iv** People who use transit add, on average, 15 minutes a day of walking.
• Support all stages of the life cycle – aging in sprawl communities is challenging as driving privileges are lost with age and illness with few/any services within walking distance. Crossing multiple lanes of high volume roads is intimidating and dangerous.
• Greater social interaction
• Reduce pedestrian and cyclist injuries.

The Magnitude of the Shift
Achieving built environments that better support health represents a major shift in the design of communities and buildings. It involves a shift from subdivisions of low density, single family dwellings with high automobile dependency even for short trips, to more compact communities with a range of housing and services that support walking, cycling and transit use. In buildings, it includes a shift from placing the elevators in a central location and hiding the dimly lit stairs in back corners of the building, to making access to and use of the stairs easy and enjoyable.

Instead of single use zoning that fosters car dependency...

Compact, complete designs that provide a mix of housing types and services fostering walking, cycling and transit use.

Evolution of Involvement in Policy Change

Historical Involvement in Policy Work

The notion of advancing public health goals through the implementation of healthy public policy is not novel; many of the major accomplishments of modern public health ranging from water fluoridation to smoke-free indoor public spaces are examples of how public policy can create environments which support and promote the public’s health. However, the use of public policy to change the physical and social environments to promote behaviours such as physical activity and healthy eating is relatively new not only for public health organizations, but also their partners and decision makers. Many people, including elected officials, continue to view physical activity and healthy eating as personal choices. However, individuals’ decisions occur in the context of their social and physical environments. Major societal changes in recent decades have created environments where the healthy choice is not the easy choice. In fact, it is often the extremely difficult, if not impossible choice.¹⁴

Framing the Problem and Need for a Policy-Based Response

Over a period of years, Peel Public Health produced reports that were presented to Regional Council documenting the extent of the chronic disease health issues facing the adults and children of Peel.⁸ The organization’s 10-year strategic plan identified supportive environments for healthy weights as a strategic priority,¹⁵ which was adopted as an explicit priority of Regional Council.¹⁶ Peel Public Health subsequently produced a more detailed strategy highlighting that historical approaches to educate and motivate people to be physically active and eat healthy had been insufficient to achieve behaviour change on a wide-scale basis. Furthermore, the societal context had changed dramatically such that physical activity had been essentially engineered out of people’s lives and been coupled with abundant, cheap and convenient food that is energy-dense and low in nutrients.¹⁴ The report stated:

The increasing rates of obesity are the result of a normal response by normal people to an abnormal environment. Realistically, public health’s only hope for tackling the obesity epidemic is to invest in policies and programs that create supportive environments for healthy eating and active living. Until then, individuals’ decisions will be undermined by an environment where healthy choices are unavailable or difficult to make.¹⁴

The report identified four initial priority settings for policy change including preschools, schools, workplaces, and the built environment. Considering the number of workplaces across Peel, it was suggested initially to focus on Regional buildings where public health staff were located to serve as pilot sites prior to further dissemination. The report, Changing Course: Creating Supportive Environments for Healthy Living in Peel, was accepted by Regional Council thereby endorsing public health’s efforts to work toward physical and social environmental policy change.
Literature Review – Use of Policy Frameworks to Understand Public Health-Related Public Policy Processes

Reflecting the organization’s emphasis on evidence-informed decision-making, a literature review was conducted to gain greater understanding of the public policy process for public health-related policies. Key aspects of the literature review will be highlighted here; the full literature review is available elsewhere.17

Introduction

Peel Public Health’s existing evidence-informed decision-making model18 has proven to be useful for decision-making within the organization.19 However, Peel Public Health’s experience with a range of public policy issues, such as the fluoridation of drinking water, workplace food policies, and land-use approval processes, indicates that public policy decisions are influenced by much more than scientific evidence. The initial scan of the literature indicated that public policy is a product of, and constructed through, political and social processes.20 As such, evidence-based public policymaking is qualitatively different from evidence-based medicine.21 Policy decisions are based on many considerations including personal beliefs, values, external factors (e.g., recession, election), evidence, interest group pressure and institutional constraints.22

Existing public health policy tools have particular strengths with respect to the retrieval, synthesis and translation of evidence,22-25 as well as the pursuit of particular strategies to influence policies.26 However, much less attention is given to understanding the process of policymaking itself: “Effective policy change does not simply require good technical design or using evidence to generate policy...It requires clear attention to the processes by which change is brought about.”20

As noted by Oliver, “Science can identify solutions to pressing public health problems, but only politics can turn most of those solutions into reality.”27 Even though “health promotion is an inherently political enterprise…the politics of health promotion are rarely discussed.”28 This is reflected in a recent review of policy research in health promotion, which observed that many studies were atheoretical or utilized inappropriate types of frameworks.29 The review’s authors stressed that “a sound theoretical repertoire can offer an invaluable guide to policy advocacy practice.”29

Multiple existing theories of the policy process exist,30 although each answers somewhat different questions with no single framework offering a fully comprehensive description of the policy process.31 Existing policy frameworks have complementary strengths since policy dynamics are driven by a multiplicity of causal paths32 with some frameworks possibly better suited for a particular situation.31,33

The literature review was conducted to assess the extent to which policy process frameworks have been successfully applied to inform understanding of and/or action on a public health-related public policy. The review’s findings were intended to improve the rigour of the policy
analysis by public health organizations in order to lead to improved selection and implementation of strategies to influence public policy processes.

**Methodology**
The policy process frameworks under consideration was narrowed based on those deemed by Sabatier as the most promising, as well as those repeatedly encountered in a preliminary scoping of the literature. The five policy process frameworks chosen for inclusion included: Advocacy Coalition Framework; Institutional Analysis and Development Framework; Multiple Streams Framework; Punctuated Equilibrium Framework; and, Stages Heuristic.

A comprehensive search strategy of the published and grey literature was utilized to identify policy analysis case studies published since 2001 that applied one or more of the policy process frameworks of interest to a public health-related policy issue. Studies meeting these criteria were assessed utilizing a validated, qualitative assessment tool.

**Results**
A total of 21 studies met the review’s selection criteria and addressed a range of policy issues across the spectrum of public health practice including:

- chronic disease prevention (tobacco control, physical activity, obesity, alcohol);
- infectious diseases (global disease control, reporting of healthcare infections, drug policy);
- healthy development (childhood health promotion, emergency contraception);
- environmental health (urban policy, health impact assessments); and,
- health inequalities and social determinants of health.

Generally, the quality of the studies was modest with common methodological limitations including a lack of description of their data sources or their selection, arbitrary numbers of informants versus seeking redundancy in the data, limited types of data considered, and a lack of quality control of data collection. The approach to data analysis also appeared to be limited. Many studies suffered from a superficial or incomplete application of the policy process framework.

The most frequently applied policy process frameworks were the Multiple Streams Framework (MSF) and the Advocacy Coalition Framework (ACF). These were also the frameworks that provided greater understanding of the described policy process, although with different strengths. The MSF is particularly useful for ambiguous problems that are competing for attention with many other issues and for which solutions are not clear. Examples from this review included physical activity policies in schools, addressing health inequalities in the United Kingdom, and obesity prevention legislation.

In contrast, the ACF is particularly useful where two or more coalitions with differing, strongly held core beliefs are competing on an issue to have their positions be politically dominant (i.e., accepted, resourced, supported, etc.). Examples from this review included: tobacco control...
policy (individual choice and economic benefit vs. health of the public), drug policy (abstinence vs. harm reduction), and emergency contraception (anti-abortion vs. woman’s choice and health).

The implication is that deciding which framework to initially apply should be driven by the nature of the issue and context. There may be circumstances in which applying both the MSF and ACF may provide complementary perspectives on an issue. Unfortunately, this was not demonstrated in any of the reviewed studies, although was considered in at least one.

Overall, evidence was not a primary or sufficient driver of policy decisions in the case studies. Personal beliefs, values and external factors were more frequently the key drivers. Nevertheless, there were indications that evidence had contributed in a variety of ways. This included to achieve recognition of a problem (i.e., agenda setting), to refute opposing group’s messages, and to win over reluctant stakeholders. In addition, public health’s interest in pursuing policy change was based on evidence that particular policy options would improve health for an important health issue.

The strategic selection of which questions to address with evidence was also important. For example, analysis of the development of provincial tobacco control legislation in Quebec utilizing the ACF showed that the health impacts of tobacco use were well established parameters to the policy debate. More evidence of this nature would have had limited impact on the policy debate. What was important however, was evidence that youth smoking was on the rise due to previously reduced taxes, the exposure of deceptive tobacco industry practices in U.S. courts, and countering the economic claims made by the tobacco industry.

Applying Literature Review Findings to Practice – Training
The findings from the literature review were used to produce a series of worksheets to support policy-related work in public health. A series of internal workshops were conducted to share the review’s findings and to practice applying the MSF and ACF frameworks to public health policy issues. Opportunities were sought to apply the frameworks to existing practice issues including seeking to influence the establishment of physical activity and healthy eating policies in Regional childcare facilities. A workshop was also conducted at the provincial public health conference with staff from multiple public health organizations. While the initial focus has been on these two frameworks, it is recognized that other frameworks exist and have additional strengths. At this point, utilizing one or more frameworks is preferable to having no framework, and as experience is gained, additional frameworks may be added to the organization’s repertoire.

Applying Literature Review Findings to Practice – Built Environment Policies
Reflecting upon the state of built environment policies is challenging since there is a range of scales of policies from those related to the detailed design features of a particular building to the overall design of a city or Region. Furthermore, there are multiple levels of policies. Provincial-
level policies define the planning context for municipalities, as well as determine the investment in major transit infrastructure. Unlike many countries, the federal government does not provide dedicated funding for public transit, but includes it as part of broader infrastructure funding initiatives. National guidelines strongly influence approaches to road design followed by transportation engineers. While recognizing the contribution of provincial and national policies, a municipally-based organization, Peel Public Health is predominantly focussed on municipal-level policies.

Of the two policy process frameworks highlighted by the literature review, the MSF appears to be more relevant since addressing the health impacts of the built environment is an ambiguous problem competing for attention. Figure 1 depicts application of the MSF to the built environment policy situation.

**Figure 1: Application of the Multiple Streams Framework to Built Environment Policies in the Peel and Ontario Context**

<table>
<thead>
<tr>
<th>Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Some media/public recognition of problem of ‘sprawl’, but mainly its consequences: traffic congestion (commute times, lost productivity); air pollution.</td>
</tr>
<tr>
<td>● Concern for inactivity, obesity and diabetes. But, more linked to personal behaviours (recreational activity &amp; food choices) and individual healthcare. Not typically linked to built environment.</td>
</tr>
<tr>
<td>● Recognition of sprawl’s link to congestion and health impacts mainly in technical audiences (e.g., professional planners, provincial growth plans, regional transit plan, scientific reports on obesity)</td>
</tr>
<tr>
<td>● Health impacts of sprawl not well quantified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Existing high level plans for change in community design and major investment in transit infrastructure. Understanding mainly in technical audiences (not public/media).</td>
</tr>
<tr>
<td>● Lack of clarity on how to achieve plans – feasibility of paying for transit expansion unclear; lack of guidance on how municipalities are to achieve land use targets</td>
</tr>
<tr>
<td>● Dominance of car-dependency in public perceptions and laws/policies</td>
</tr>
<tr>
<td>● Investment in transit seen as ‘cost’. Costs of building/maintaining roads and bridges seen as ‘normal’.</td>
</tr>
<tr>
<td>● Leading cities (e.g., NYC) have successfully implemented significant range of policies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Politics</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Increasing political interest in transit, although vague on funding and focus on single lines versus need for a network</td>
</tr>
<tr>
<td>● Public wants congestion fixed – make easier to drive</td>
</tr>
<tr>
<td>● Early shifts in housing preferences to more walkability – young adults and empty nesters</td>
</tr>
<tr>
<td>● Business group concerned with increasing costs of congestion – calling for transit investment</td>
</tr>
<tr>
<td>● Upcoming elections – municipal and provincial</td>
</tr>
<tr>
<td>● Upcoming scheduled reviews of major provincial policies; updating of municipal land use plans</td>
</tr>
</tbody>
</table>

The nature of the problem is ambiguous and relatively complex. ‘Sprawl’ can be viewed from many perspectives: economic, health, environmental, and social. From a landowner perspective,
it can be viewed as the individual right to profit from the sale and development of the property as one sees fit. Generally, the problem is framed in terms of single types of consequences of sprawl such as traffic congestion, air pollution, loss of farmland, etc. Concern for ‘sprawl’ itself is typically limited to technical reports or provincial plans, which are more likely to address the issue comprehensively. While health impacts are mentioned in such reports, these tend to be vague with a lack of detail and quantification. In the public domain, there is concern for inactivity, obesity and diabetes trends, but these are infrequently linked to sprawl and the built environment. The focus tends to be on personal choices, recreational activity and individual healthcare responses such as counselling and surgery.

The policy stream provides a mixed picture. There are existing plans for the GTHA to develop a major transit network and manage population growth by creating more compact communities. There are major feasibility barriers for both including lack of an explicit plan to fund the transit infrastructure on a sustained basis, as well as a lack of guidance on how municipalities are to achieve compact communities. Understanding of what is envisioned exists in technical audiences, but not the general public. Overall, the vision reflects a major paradigm change from decades of car-dependent development, which is reflected in the predominance of motor vehicle perspectives in existing policies, public perceptions and some technical/operational staff. Nevertheless, there are examples of other cities that have implemented improvements in public transit and community design.

In the politics stream, a number of shifts and opportunities are occurring with respect to commonly held opinions on transit and compact design. Public and business concerns regarding congestion have prompted greater political interest in transit. However, most of the focus has been on particular transit lines versus the need for a network and sustained funding. Among the public, surveys indicate shifting housing preferences for more walkable neighbourhoods particularly among young adults and ‘empty nesters’. Possible changes in political leadership and direction may occur with upcoming municipal and provincial elections, scheduled reviews of major provincial policies, as well as the updating of municipal land use plans.

A key concept in the MSF is that of a policy entrepreneur, which “are individuals or corporate actors who attempt to couple the three streams.” The challenge with the built environment is that it is difficult for any one party to couple the streams for a diverse range of policies with varying scales and political levels. Nevertheless, there are several groups including public health, planners, engineers and others who share a common goal of achieving compact communities. Working together they have the potential to opportunistically and incrementally encourage alignment of the streams.
Examining the situation utilizing the MSF, a number of observations can be made:

- Overall, there appears to be the possibility of change with respect to a number of existing plans and policies. The scope of the problem is sufficiently large that no one change will be sufficient, but will require accumulation of multiple policy changes over time. Therefore, there is a need to act when opportunities present themselves.
- Framing of the problem is challenging. It is complicated and the focus is often on one symptom and not how multiple effects are related. The health impacts are the least understood and quantified. There is a public health role to address these gaps to add to the rationale for change and to more strongly position public health as a stakeholder to enable ongoing advocacy efforts.
- There is greater political interest in transit, which may be a more obvious starting point in framing the problem. Doing so will indirectly implicate the need for compact designs, which are required to support frequent, efficient transit.
- While the vision for the solution exists for the GTHA, it is less clear on the ground how to make it happen. Potential to leverage experience from elsewhere to show feasibility and seek opportunities to address implementation issues.

Peel Public Health Actions and Experience
Peel Public Health has pursued a series of planned and opportunistic initiatives to advance built environment policies to promote the health of the public. This section first describes these initiatives, which is followed by reflections and learning from the experience to-date.

**Peel Public Health Actions**
Overall, five major types of inter-connected initiatives have been pursued and are depicted in Figure 2.

**Leveraging Existing Success – Partnering with New York City Center for Active Design**
Motivated by existing traffic congestion, obesity rates and projected population growth, New York City (NYC) has implemented a comprehensive range of public policies to improve the design of buildings, transportation routes, and access to healthy foods. In addition to achieving significant changes in a range of policies, they have been able to document improvements in population rates of physical activity and healthy eating.  

Peel Public Health sponsored a full-day symposium involving NYC experts from the Center for Active Design including architects, land use and transportation planners, and public health. Symposium participants included elected officials and executive management and staff from multiple municipal departments. The Healthy Peel by Design Symposium achieved its intent to generate political and administrative interest, demonstrate the feasibility of making policy changes, and model the collaborative involvement of different disciplines and departments. Afternoon workshops with NYC experts focussed on brainstorming concrete actions that could
be taken within Peel to address a range of policy areas including: actively designed buildings; healthy land use; food policy; and, parks and schools. These workshops became ongoing workgroups to pursue policy change (see below). An additional workshop focussed on the role of senior leadership and was attended by Regional and Municipal elected officials, as well as senior staff in health and planning.

**Fostering Inter-Departmental Collaboration – Post-Symposium Workgroups**

Harnessing the NYC symposium-related interest resulted in the formation of inter-departmental workgroups pursuing policy changes to support health. The enthusiasm among elected officials led to the creation of a Councillor committee to discuss opportunities and troubleshoot issues associated with the workgroups. Peel Public Health has provided secretariat support to the workgroups and the Councillor committee.

Public health has also led the workgroup on actively designed buildings. Reflecting existing evidence-based recommendations (see Table 1), the focus has been supporting increased stair use in two Regional buildings by increasing access to, and the aesthetics of, the staircases. This has been pursued through the use of point-of-decision prompts to encourage use of stairs, increasing access by reducing security pass requirements, and improving the lighting and look of the stairs through paint, artwork and installation of windows in entry doors.

While implementation of a policy to support greater stair use may appear simple, the challenge is that staircases have been designed primarily as an emergency exit. Achieving the desired changes has required negotiating and problem-solving with multiple municipal departments including property management, facilities’ staff and employee health and wellness. The latter were concerned about the risk of increased injuries. Approval of changes was also required from the fire marshal. After several months of work, the final changes are currently being implemented. Changes in stair and elevator use have been tracked through infrared monitors at strategic locations, direct observation, and staff surveys. In reducing elevator use, the stair program is also contributing to lower energy consumption and greenhouse gas emissions, which is another corporate initiative.

Improving the physical space surrounding one of the buildings was envisioned to increase physical activity at breaks and during the lunch period, as well as through ‘walking meetings’. Initial discussions were perceived to be successful, but resulted in minimal equipment installed in an unsheltered grass field adjacent to the building. More extensive engagement was required and involved accessing expertise from the NYC Center for Active Design and a local landscape architect to create a more inviting space with a marked walking path and to plan an outdoor area with trees, outdoor exercise equipment and ping pong tables. Negotiations with facilities, transportation, legal, risk management and employee health and wellness have been required to achieve the changes. Project funding was acquired from third party sources helping to maintain engagement. An evaluation plan to document behaviour changes has also been developed.
Addressing the lack of access to healthy, flavourful foods in the building cafeteria is also being pursued. A major challenge has been that existing vendor selection processes have focussed on providing a food service for a defined cost with limited attention to health. Public health staff have worked closely with the facilities’ staff that lead the vendor process to adapt the selection process to meet flavour, quality and nutrition expectations. To complement public health’s nutrition expertise, assistance was sought from a culinary school to address the technical feasibility of providing healthy, flavourful foods in a cost-effective manner. The culinary expert’s opinion was that this was not only feasible, but would also provide an opportunity to utilize fresh produce from local farms.

Assessing Health Impacts of Developments
To better support healthy and sustainable development, Peel Public Health identified the following shared goals with local area municipalities: mixed land use, compact design and transit-oriented communities. However, achieving these outcomes required influencing the planning policy and development application processes. To that end, Peel Public Health has pursued increasingly explicit amendments to the Regional Official Plan to enable health impact assessments to be conducted as part of the development application process. In doing so, upper- and lower-tier planning staff can now require developers to report on how their proposed development plan will support walking, cycling and transit use.

Earlier collaborations led to mostly narrative comments on development applications. This presented inherent challenges of an unstandardized process for both the developers submitting comments and the municipal planning staff reviewing them. In response, Peel Public Health partnered with leading academics to review the planning and health literature to identify the aspects of the built environment that have the greatest impact on physical activity. These findings were summarized in the Healthy Development Index (HDI), an evidence-based quantitative tool for evaluating development applications, which if required, is defendable from a scientific research perspective for planning decisions appealed by developers.

Through implementing the HDI with local planners and consulting with planning experts, there was a recognized need to organize and present the content in a manner that was congruent with existing planning profession tools. Therefore, the HDI was reformatted into the Health Background Study Framework (HBSF). The current HBSF defines the 6 core land use elements, provides standards to be achieved for each, and systematizes the requirements into a Health Assessment format (checklist). This approach has facilitated consistent application and specificity in requirements, while also supporting municipalities to be locally responsive in their decision making.

Working with upper- and lower-tier municipal planning staff, Health Assessments are being piloted in the review of development applications to optimize the health promoting potential of communities across Peel region. Its use is also being reinforced as a selection criterion for the re-
development of a major Regional affordable housing site. Reflecting feedback from planning staff, amendments to the Official Plan are being pursued to strengthen the use of health-based criteria in municipal projects and development applications.

**Developing Internal Expertise and Partnerships**

Land use and transportation planning are highly technical fields. To improve the ability of Peel Public Health to partner and engage other departments and external stakeholders, Peel Public Health has established planning positions that are jointly accountable to public health and the transportation planning department. Joint positions are also planned with lower-tier municipal planning departments since many transportation and land use planning decisions occur at this level. Not only do these joint positions provide a source of technical expertise within public health, but it provides a mechanism for a planner or engineer to work with their operational peers in the other departments seeking opportunities for policy changes to support health.

This collaboration has resulted in improvements in Regional policy processes. For example, the Road Characterization Study involved a re-thinking of the design of Regional roads from ‘one-size-fits-all’ for motor vehicles to a range of designs for multiple users including pedestrians and cyclists that can be tailored to local land use contexts. Doing so provides transportation engineers with a larger and more diverse toolbox to design roads that better support walking, cycling and transit use and complements more compact community designs.

Another example is the development of a set of Active Design Guidelines for Affordable Housing, which will guide development of the Region’s affordable housing projects to support greater activity of residents in and around affordable housing buildings. These guidelines are also being incorporated into the redevelopment of a major Regional affordable housing site and are being profiled to provincial decision-makers in an effort to see them implemented for affordable housing developments province-wide.

One of the challenges encountered with examining opportunities to support activity in association with Regional buildings is that their location and design may not be conducive to walking or cycling. For example, the main building where public health staff are located is surrounded by busy roads and a lack of proximity to residences. Recognizing the need to expand future office space to serve a rapidly growing population, a set of principles for Peel Offices are in development and public health’s involvement has resulted in provisions for employees to be provided opportunities to work actively and have access to healthy food choices, as well as promoting the use of walking and cycling, and proximity to local parks and recreational facilities.

**Addressing Broader Policy Contexts**

While the focus of Peel Public Health is primarily on the health of the people of Peel, policies made outside Peel influence what can occur within Peel. For example, the health and policy issues faced by Peel Public Health are shared across the broader Greater Toronto-Hamilton Area.
(GTHA), which has a combined population of over 7 million people. Key transit planning and associated land use policies need to be addressed on a GTHA-wide basis.

As such, Peel Public Health has worked with neighboring public health leaders to recently prepare a report that highlights the health-based concerns with transportation and land use planning. In addition to providing a venue for Medical Officers of Health to speak collectively regarding their concerns, the report addressed the gaps in health impact information providing estimates of the number of premature deaths and number of cases of diabetes that would be prevented each year with investment in public transit and community designs that support greater walking and cycling. The report received immediate media coverage, but its greater impact will be in bolstering the argument of proponents for transit investment and better land use planning by providing additional rationale and urgency for those policies. The report may also facilitate public health’s greater involvement and influence in upcoming reviews of major GTHA growth plans.

Interactions with planners and transportation engineers surfaced a key barrier to applying tailored approaches to road design that considers multiple users. The existing geometric design guidelines are the primary reference used by transportation engineers across Canada and were last updated in 1999. A review process has been established to update the guidelines. Working with engineer contacts, Peel Public Health has become involved in the review process to provide a health-based perspective to road design. In addition to sitting on the Geometric Design Review Steering Committee, Peel Public Health has worked with engineers from across Canada to document a series of case studies in which front-line engineers have needed to utilize ingenuity and perseverance to find design approaches to resolve practical issues. The intent is to show the everyday challenges being faced by front-line engineers that will be informative to the current review of the geometric design guidelines.

**Synergies Among Policy Initiatives**

Figure 2 summarizes the foregoing initiatives highlighting some of their synergies. For example, the internal partnerships with planning and transportation departments has not only led to the creation of joint positions that have produced major guidelines, but has created internal expert capacity supporting the application of the HBSF in assessing developments. These partnerships have also facilitated support for the establishment of amendments to the Official Plan enabling the creation and use of the HBSF. These relationships have also enabled public health’s involvement in the review of national engineering guidelines for road design.
Reflections on the Experience To-Date

In conducting the literature review, a number of authors were encountered that were critical of health researchers and practitioners having an overly simplistic perspective regarding the role of evidence in policymaking. One commentator has bluntly stated that public health practitioners’ disappointment or frustration with policy decisions based on ‘politics’ and ‘ideology’ rather than science reflects “an inadequate theory of government decision making and indeed of the nature of political power.”

For a field of practice that prides itself on evidence-informed decision-making, there is a need to reconcile on the one hand, evidence as being foundational for public health decision- making, with on the other hand, the intent to optimally influence public policy to improve the health of the public. This distinction is important. Key decisions that public health makes such as identifying what are important health issues by measuring the population’s health status or identifying possible actions that could be effective to improve health need to be evidence-informed. This rigour contributes to public health’s credibility.
A problem emerges however, if the public health model of evidence-informed decision-making applied internally within the public health world is applied externally to the world of public policy. For the latter, evidence is but one element and even then may be used in a particular context. For example, from the ACF perspective, evidence is often used selectively to support the existing beliefs of a particular coalition in competition with a separate coalition with different core beliefs. In the MSF, evidence may be used to assist framing a problem or demonstrating the feasibility of a proposed solution. Both of these perspectives on the contribution of evidence to policymaking differ from a knowledge translation-type model that implicitly assumes that the ‘right’ decision will follow if the evidence is summarized and presented in an appropriate manner.

To make explicit this distinction between the role of evidence to identify a desired policy to improve the public’s health versus how public policy is made and may be influenced, Peel Public Health has begun utilizing the following conceptual framework (see Figure 3). The framework purposely avoids depicting a linear process, but allows for the iterative interaction between evidence, analysis and action.

**Figure 3: Conceptual Framework for a Public Health Approach to Understanding and Influencing Public Policy**

Applying this framework to the built environment, Peel Public Health has comprehensively described the nature of the health problem and its underlying causes facing the people of Peel and reviewed evidence-based recommendations for policies to improve the health of the public. To improve the rigour of its policy analyses, Peel Public Health sought guidance from the literature regarding established theories of the policy process that had usefully been applied to understand public health-related public policies.

In applying the MSF to the built environment policy context, insight was gained into the magnitude of the challenge and identified potential opportunities where public health could
contribute to the achievement of health supporting policies. While some of those opportunities are evidence-related, others were not. For example, the development of the Health Background Study Framework (HBSF) involved an academic team and was based on the best available evidence to devise the design elements and standards to guide development decisions. However, creation of a tool differs from establishing the policy and process for it to be applied. Reporting to a common governance board has enabled public health to identify policy options within the Council’s direct influence that would not only support better health, but also address other Regional priorities such as managing growth, managing transportation demand and reducing greenhouse gas emissions. Close collaboration with the land use planning department has been pursued recognizing the common goal of achieving compact communities. Their support has been critical with Council for establishing policy change, as well as in implementation since it is their staff that identify for which developments the HBSF will be applied.

It was recognized that improving confidence in the technical feasibility of built environment policy changes was critical for both municipal politicians, as well as operational managers and staff. As such, active partnership with the NYC Center for Active Design provided not only tangible evidence of successful policy implementation, but also subsequent improvements in physical activity and health eating behaviours. Hosting a major event highlighting the NYC experience generated considerable interest and enthusiasm and was empowering for participants to consider new courses of action.

The risk to such initiatives is to lose momentum after the enthusiasm of the event passes and people becomes overwhelmed with their day-to-day pressures. In response, Peel Public Health has provided secretariat support to the workgroups, led and/or actively participated in them, and maintained contact with interested Regional councillors to sustain focus on the initiative. Involvement of political leaders was also encouraged during major events such as opening the staircases of municipal buildings.

Peel Public Health has sought to formalize policy direction from Regional Council through Council resolutions. These create accountability for operational staff, as well as Regional Council. Table 2 summarizes resolutions passed by Council following the NYC symposium. The Table also includes amendments to the Regional Official Plan for development and application of the HBSF. Supporting amendments among lower-tier municipalities have also been established. Based on the experience and feedback to-date, the approach to applying health-based criteria such as the HBSF is being refined and made more explicit.
Table 2: Region of Peel Municipal Policies to Create More Supportive Built Environments

| Post-NYC Symposium Resolutions | • Work with cafeteria food vendors at Peel buildings to increase awareness of and access to healthy food in cafeterias and vending machines  
| | • Develop a nutrition policy to encompass all foods served or sold in Regional and Municipal buildings in Peel  
| | • Region be a model employer for healthy living by considering design, facilities and service improvements in Regional buildings to promote physical activity and reduce sedentary behaviour among its workforce  
| | • Region advocate for local, provincial and federal policy changes that create supportive environments for healthy living  
| | • Councillor committee be established to provide advice on initiatives such as those implemented by NYC to decrease childhood obesity  
| | • Work with Peel school boards and Regional and Municipal planning staff to have test projects to increase the number of children active in school and who walk or bike to school  
| | • Create a supportive environment to reduce sedentariness and increase activity by phasing in bike parking, mobile meetings, treadmill desks, stair use signage and other relevant programs and policies such as those developed by NYC  

| Official Plan Amendments | Initial  
| | • Prepare an assessment tool to evaluate public health impacts of development  
| | • Work jointly with area municipalities to raise awareness of health impacts related to planning  
| Updated  
| | • May require health impact studies as part of complete development applications  
| | • May develop public health indicators to analyze effectiveness of Official Plan policies  
| Proposed (draft)  
| | • Incorporate healthy built environment elements into the various levels of municipal and regional land use plans (e.g., secondary, site plans)  
| | • Strengthen consistency of use of health assessments in regional/municipal projects and development applications.  

Institutionalizing a healthy by design perspective has also been pursued with the development of various guidelines for roads, affordable housing and the development of new buildings and office furniture. The intent is to normalize the consideration of health throughout the various planning decisions that are made every day. Continued involvement in the application of tools and guidelines is a means to ensure their appropriate use and to generate feedback on their performance so that they can be continuously improved.

A key message from NYC’s Center for Active Design was that a considerable portion of their team’s time was spent problem-solving implementation issues. Essentially every policy change that they made triggered numerous formal and informal rules that had to be adjusted. Peel Public
Health’s experience has been similar in that senior decision makers may support a policy direction, but the concerns of operational staff need to be addressed requiring hands-on involvement. For example, workplace health and wellness staff’s concerns regarding injury risks from staff falling on the stairs needed to be addressed by the Medical Officer of Health providing written assurance that the concerns of staff developing chronic diseases from inactivity and sedentary habits was a much larger health issue than the potential for tripping on the stairs.

If public health had not being actively involved in addressing implementation issues, the likely result is that the inertia of the status quo would prevail. At the Peel workplace, preliminary attempts to request improved food selections in the cafeteria and an improved outdoor space resulted in small modifications to the status quo that fell far short of the fundamental change required to create a supportive environment where the healthy choice is the easy choice. It has only been with sustained, dedicated effort has the policy change and its implementation been possible.

Another key message from NYC is the importance of measurement. Not only does it provide reassurance to project leads and elected officials that implementation is achieving what it intended, but also that the doomsday scenarios that are raised to stop changes to the status quo did not in fact occur. An additional reason for a strong focus on measurement is that many of the changes are occurring as pilots that if successful, will be disseminated to other settings. As such, decision makers will need to know the costs and benefits of change.

Much of the work is highly technical and Peel Public Health has accessed a range of external expertise including planners, landscape architects, and culinary management experts. The use of joint positions with other municipal departments has served a dual role of providing in-house expert advice to public health staff, as well as a means to identify potential areas for policy change to promote health. Staff in these positions have played key roles in the development of new guidelines for characterizing different types of roads, for active design in affordable housing sites, and in the application of the HBSF. For the latter, the intent is not merely to rate a development plan, but to also be able to make explicit suggestions for improvement of the plan to better support walking, cycling and transit. Doing so requires significant planning expertise.

Creating a built environment that better supports health by design is a long term initiative. Some early successes include changes to the Regional Official Plan to require health impact assessments (HBSF), establishment of various guidelines and processes, and policy changes at individual worksites. As policy changes at various levels accumulate, the expectation is that community and transportation planning decisions will routinely and increasingly support the public’s health.

Public health is by no means the only system actor nor working in isolation. The policy and process changes that are being pursued are highly complementary to what land use and transportation planners have been seeking for years. Considering the magnitude of the challenge,
the pace of change has been slow. Public health is adding its voice, rationale, energy and resources to assist achieving common goals more quickly.

In addressing built environment policies at multiple levels, Peel Public Health’s work has required:

- Strong public health executive leadership and support including allocation of dedicated resources
- Grounding in evidence to have confidence in and rationale for what is being pursued
- Entrepreneurial spirit to seek opportunities and to challenge the status quo
- Persistence in the face of numerous barriers
- Application of a range of strategies to gain political support and build collaborative working relationships with other disciplines and departments. These have been facilitated by being part of municipal government with a common administrative and governance structure.

**Conclusion**
Over a hundred years ago, public health worked with others to make fundamental changes to the design of urban environments to protect and promote the health of the public. Today, the design of communities and transportation systems needs to be fundamentally changed in order to address a convergence of health, traffic, economic, demographic, and environmental concerns. Public health is supplementing its evidence-based approaches to apply theories of the policy process to better understand and influence built environment public policies. A comprehensive set of actions are being utilized to support change for a range of municipal policies and processes.
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