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INNOVATIONS IN POLICY AND PRACTICE

Embedding health equity strategically within built environments

Cora Janzen[1] · Josh Marko[2] · Michael Schwandt[3]

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Abstract

Background Population health approaches are visible among multidisciplinary methods used in urban design and planning, but attention to health equity is not always an explicit focus. Population and Public Health—Saskatoon Health Region recognized the need for frameworks to prioritize, integrate and measure health equity within local built environments.

Setting A cross-department healthy built environment (HBE) initiative coordinated activities involving Health Promotion, Environmental Public Health, Public Health Observatory, and Medical Health Officers engaged with municipal, academic and community partners in Saskatoon, Saskatchewan.

Interventions The HBE team conducted evidence reviews and consulted with partners to identify common health equity issues in built environments and best and leading practices to address them. The HBE team then prioritized and undertook projects to model a health equity approach.

Outcomes Projects included the following: (1) developing a Health Equity in Healthy Built Environment Framework; (2) engaging in a partner campaign highlighting built environment and health equity during a municipal election; (3) producing a Health Equity Impact Assessment (HEIA) report on the City of Saskatoon's growth plan; and (4) developing a monitoring and evaluation framework for health equity outcomes. Other outputs include making new connections between local HBE and poverty reduction efforts and promoting social inclusion guidelines in consultation processes.

Implications Within a population health approach to HBE, an explicit focus on health equity can be a catalyst for engaging partners in cross-sectoral action for building inclusive physical and social environments.

Résumé

Contexte Les démarches de santé des populations sont visibles parmi les méthodes pluridisciplinaires utilisées dans l'aménagement et la planification des milieux urbains, mais l'équité en santé ne reçoit pas toujours une attention explicite. Le Service de santé publique et des populations de la Région sanitaire de Saskatoon a reconnu la nécessité d'avoir des cadres pour privilégier, intégrer et mesurer l'équité en santé dans les milieux bâtis à l'échelle locale.

Lieu Une initiative interservices de « santé du milieu bâti » (SMB) a coordonné les activités des effectifs de la promotion de la santé, de la santé publique environnementale et de l'Observatoire de la santé publique, des médecins hygiénistes et de partenaires municipaux, universitaires et associatifs à Saskatoon (Saskatchewan).

Interventions L'équipe de la SMB a mené des examens des données probantes et consulté ses partenaires pour cerner les problèmes d'équité en santé courants dans les milieux bâtis et trouver des pratiques exemplaires pour les résoudre. L'équipe a ensuite choisi et entrepris des projets pour faire la démonstration d'une démarche d'équité en santé.

Résultats Les projets ont consisté à : (1) élaborer un « cadre de l'équité en santé pour le milieu bâti; (2) au cours d'une élection municipale, mener en partenariat une campagne soulignant l'importance de l'équité en santé dans le milieu bâti; (3) produire un rapport d'évaluation de l'impact sur l'équité en matière de santé (EIES) du plan de croissance de la Ville de Saskatoon; et (4) élaborer un cadre de suivi-évaluation des problèmes d'équité en santé. D'autres extrants ont été l'établissement de nouveaux liens entre les démarches locales de SMB et de réduction de la pauvreté, et la promotion de lignes directrices sur l'inclusion sociale dans les processus de consultation.

✉ Cora Janzen
cora.janzen@saskhealthauthority.ca

[1] Health Promotion Department, Population and Public Health, Saskatchewan Health Authority, 101-310 Idylwyld Drive, Saskatoon, SK S7L 0Z2, Canada

[2] Public Health Observatory, Population and Public Health, Saskatchewan Health Authority, Saskatoon, SK, Canada

[3] Medical Health Officer, Population and Public Health, Fraser Health Authority, Abbotsford, BC, Canada

Conséquences Dans une démarche de SMB axée sur la santé des populations, un accent explicite sur l'équité en santé peut favoriser la participation de partenaires à une action intersectorielle pour créer des milieux physiques et sociaux intégrateurs.

Keywords Health equity · Population and public health · Public health · Built environment · Healthy built environment · Municipality

Mots-clés Équité en santé · Santé publique et des populations · Santé publique · Milieu bâti · Santé du milieu bâti · Municipalité

Introduction

Health begins in our communities where we live, work, learn and play. The healthcare system and access to quality healthcare services is an important part of what goes into the complex formula of what makes us healthy. It has been estimated that healthcare services explains 10–20% of health over the life course (McGovern et al. 2014). The built environment is a modifiable determinant of health that can intersect with socio-economic factors to impact health (Clinical Systems Improvements 2014; Canadian Institute of Planners 2016). In addition, these can influence other health determinants, such as access to employment, education and healthcare which, in turn, have an impact on health. Therefore, creating and supporting health-promoting built environments has large potential to positively impact population health both directly and indirectly.

The built environment includes all of the physical parts of the world where we live and work, such as buildings, parks and infrastructure (Centers for Disease Control and Prevention, National Center for Environmental Health 2011; Canadian Institute of Planners 2016). Healthy built environments (HBE) are planned and built communities with services and resources that have a positive impact on people's mental, physical and social health (Interior Health Authority 2017). These include homes, communities, schools, workplaces, parks/recreation areas, business areas and transportation systems in rural and urban developments (Provincial Health Services Authority 2014). Municipal governments plan, fund and shape built environment features such as affordable housing, transportation networks, land use and neighbourhood design. These same items are of concern to health systems as they shape health outcomes. By engaging in relevant municipal processes, there is an opportunity for Population and Public Health (PPH) practitioners working in healthcare systems to provide a different perspective than what would traditionally be found within the municipal structure.

In Saskatchewan, PPH programs and services are embedded in the healthcare system through a provincial health authority structure. Within this system, PPH has a unique role and contributes to primary health care, the wider health system and the community as a whole, with a focus on improving the health of populations and improving health equity. Health equity is a principle which implies that all people can reach their full health potential and should not be disadvantaged because of their race, ethnicity, religion, gender identity, sexual/romantic orientation, age, disability, social class, where they live, socio-economic status or other socially determined circumstances (Saskatoon Health Region 2014).

PPH practice is evidence-based and incorporates population health promotion. It involves integrating concepts and action on a full range of health determinants by means of health promotion strategies at a population level (Government of Canada 2001). An example of population health-promoting services within HBE that aim to improve health equity includes advocating for healthy public policies such as affordable transit fares for people living on no, low and/or fixed incomes. By applying population health promotion approaches to a variety of municipal plans, projects and policies, potential negative health impacts can be mitigated as well as positive impacts enhanced.

Despite this attention on creating HBE and integrating population health promotion approaches, health equity is not an explicit focus in many cases. PPH in Saskatoon recognized the need to prioritize, integrate and measure health equity based on the health inequities observed within local environments. This was based on, and aligned with, the *Health Equity Position Statement* endorsed by the Saskatoon Health Region (SHR) as a commitment and means to support its vision, mission and strategic directions (Saskatoon Health Region 2016) as well as SHR health surveillance data that identified health inequities in a large number of health outcomes (Neudorf et al. 2009, 2015; Neudorf et al. 2016).

Setting

The former SHR, now part of the Saskatchewan Health Authority, includes a variety of healthcare services and portfolios, including PPH. SHR made up 30% of the provincial population (369,878 in 2017) (Community View Collaboration 2017). The SHR population is ethnically diverse, with 10% of the region's population Indigenous, evenly split between First Nations and Métis peoples, and 10% newcomers to Canada (Community View Collaboration 2017). The region is comprised of one larger city (Saskatoon), smaller urban centres (Warman, Martensville and Humboldt) and numerous towns, villages, rural municipalities and First Nations communities.

Within PPH, a cross-department HBE initiative involved departments of Health Promotion, Environmental Public Health,

Public Health Observatory, and Medical Health Officers (Box 1) as well as community, municipality and academia partners.

Cities are a common setting for health promotion as this presents an opportunity to impact a large number of people. Transportation and land use impact physical activity levels of the population and access to employment, education opportunities, goods, services, social connections, recreation, parks and nature as well as other day-to-day activities (Sreedhara et al. 2017). In addition, large health equity gaps in health outcomes often occur in cities (Canadian Institute for Health Information 2011). With this in mind, as well as the timing of key municipal plans, the initial focus in this work was on Saskatoon and to leverage existing relationships with the municipality.

Saskatoon had an estimated population of 246,376 in 2016 (Statistics Canada 2017a). And it is expected that Saskatoon will grow to half a million. The City of Saskatoon created a *Growth Plan* (City of Saskatoon 2016a) that focuses on social, environmental, economic and financial future and promotes quality of life. This plan became a key opportunity for PPH to focus the efforts of embedding health equity coupled with population health promotion approaches, and the municipality demonstrated openness for this.

Box 1 About Population and Public Health departments in Saskatoon Health Region

Health Promotion Department—The department's long-term goal is to improve the overall health of the population and reduce health disparities by creating social and built environments and conditions for all people to thrive. This is done through initiatives that focus on social inclusion and health equity, challenge social hierarchies that divide people, frame well-being in culturally relevant ways, and build respectful relationships that include action for reconciliation. (In order to redress the legacy of residential schools and advance the process of Canadian reconciliation, the Truth and Reconciliation Commission made 94 calls to action (Truth and Reconciliation Commission of Canada 2015).)

Environmental Public Health—Carries out a legislated health protection mandate, through inspection and enforcement activities in HBE settings, including housing and recreational settings. A health equity lens has been added to traditional health protection activities, while also developing novel HBE work beyond legislated requirements, in response to community needs. This is done through initiatives that prioritize need and response based on social determinants of health in the housing inspection program, map findings by neighbourhood deprivation index, and prioritize interventions in areas of high social and material deprivation.

Public Health Observatory—Primarily an information support unit, the goals of the Observatory are to work in partnership with PPH departments, other programs in the health system and external partners, to improve health and health equity through surveillance, research and knowledge transfer and exchange aimed at informing decision-making, policy and service delivery.

Medical Health Officers—The Office of the MHOs includes physicians in the specialty of Public Health and Preventive Medicine who are responsible for the Public Health Act enforcement and other legislative responsibilities (health status monitoring, injury prevention, health promotion, communicable and non-communicable disease control, outbreak management, infection control and more). Other key roles include being advocates on Public/Population Health issues, leaders in emergency preparedness and planning, policy-making and program planning, and liaisons to intersectoral groups.

Interventions

The need for built environments that are health-promoting is evidenced by previous data released from SHR as well as information captured in many of the City of Saskatoon's strategic documents (Neudorf et al. 2015, 2016; City of Saskatoon 2016a, b). While over half of the population was classified as either *physically active or moderately physically active* (Statistics Canada 2017b), people in the lowest income quintile had the lowest physical activity rates (Neudorf et al. 2015). Rates of both pedestrian and motor vehicle injuries were highest among those living in the least advantaged areas (Neudorf et al. 2016).

PPH began to deepen its relationship with the City of Saskatoon in terms of transportation and land use in 2011/2012. Through focused engagement, PPH has been involved in municipal processes to provide PPH perspective and input regarding public health criteria for select City of Saskatoon policies, plans and projects. To expand the viewpoint of PPH and continue to add value to municipal processes, a focus emerged on how health equity can be coupled with population health promotion approaches in HBE work. To support this focus, PPH leaders and practitioners from Health Promotion, Environmental Public Health, Public Health Observatory, and Medical Health Officers (MHO) formed a project team, reviewed the literature and consulted with partners to identify relevant health equity issues (Table 1).

In addition to an in-depth review of literature regarding health equity issues in built environments, the practitioners reviewed other jurisdiction's models, frameworks and leading practices, such as those from Peel Region, Winnipeg Regional Health Authority and Provincial Health Services Authority in British Columbia. This, along with key foundational documents and a variety of learning opportunities such as webinars led by the National Collaborating Centres, provided information for PPH departments to formulate, prioritize and implement projects to integrate health equity within their HBE work. The interventions and timeline are outlined (Fig. 1) and discussed in more detail below in the "Outcomes" section.

Outcomes

Project 1: Developing a Health Equity in Healthy Built Environment Framework

In 2016, the PPH project team utilized the identified health equity issues in built environments as the foundation to create

Table 1 Identified health equity issues in built environments, PPH—Saskatoon Health Region

Identified health equity issues in built environments[a]
• Stigma of living in a low socio-economic status (SES) area
• Segregation of living in a low SES area/neighbourhood
• Maintenance/service in low SES neighbourhoods
• Social isolation/not feeling connected to community (both mentioned within a housing context as well as older adults)
• Higher crime (violent, nuisance)
• Asthma in poor housing
• Less quantity and quality of active transportation infrastructure and public transit (therefore less support for economical, convenient ways to get to work without owning/operating a vehicle)
• Less quantity and quality of safe and affordable housing
• Higher transportation injury rates, crime
• Greater exposure to air and noise pollution
• Less desirable land use (in and/or adjacent to neighbourhood area)
• Less green/open space and parks and facilities
• More fast food and convenience stores (food deserts, food swamps)
• Less access to grocery stores
• Fewer community gardens
• Ugly/aesthetics/squalor/graffiti
• Higher burden of chronic disease
• Higher traffic exposure (volumes, speed); location close to arterial roads/major roads
• Aging infrastructure (sidewalks, etc.) and built with outdated infrastructure standards (newest, best practices are not incorporated)
• Low employment concentration so have far distances to travel to work
• Non-mixed use (outdated planning principles)—therefore residential areas segregated from services, retail/food, employment

[a] As identified through SHR—Population and Public Health evidence review process of healthy built environments

a *Health Equity in Healthy Built Environment Framework* (Fig. 2). The project team investigated a number of HBE frameworks that were publicly available and decided to develop a *Health Equity in Healthy Built Environment Framework* through adaptation of one employed in British Columbia (Provincial Health Services Authority 2014). The framework has an explicit inclusion of health equity, across the vision, goals and activities outlined in the framework and related documentation. Within the framework, four pillars of focus were identified: healthy food systems, healthy housing, healthy neighbourhood design and healthy transportation networks.[1]

A *Health Equity in Healthy Built Environment Logic Model* was also created for internal use and included proposed activities to help guide PPH departments and practitioners for implementing the framework and working within the content areas of the four identified pillars.

The outcomes included:

(1) Creation of the *Health Equity in Healthy Built Environment Framework* to guide PPH work.
(2) Strategizing and collective planning within PPH departments to create synergies and leverage content areas, expertise and relationships and identify further opportunities to achieve PPH priorities.
(3) Products, such as a logic model and policy vetting tool, were created to prioritize and guide departments' and practitioners' actions in HBE. This is especially valuable to PPH practitioners who were not involved on the project team.

Project 2: Engaging in a multi-sectoral partner campaign highlighting built environment and health equity during a municipal election

A liveable city is one that contributes significantly to a positive quality of life for its citizens and is active, attractive, vibrant, accessible, walkable, green, healthy, diverse and, above all, people-friendly (Liveable YXE 2016).

Liveable YXE is a community-driven initiative that raises awareness of the importance of urban quality of life through local democracy. It involved community groups coming together for the 2016 Saskatoon municipal election in a non-partisan project. Key goals were to engage civic election candidates in a conversation about urban liveability, highlight their positions on key contributing elements, and help citizens identify ward candidates' perspectives through a report card. The categories of contributing elements included active transportation, arts and culture, climate change, economy and finance, environment, equity, food, health, housing, public transportation and urban planning.

Practitioners from the Health Promotion Department along with Medical Health Officers provided specific report card questions and reviewed the report card with a health equity lens. Equity was a specific category in the report card and it also was a "golden thread" that ran through all the categories. Fiscal support was provided by the Health Promotion Department to the initiative for communications and promotion activities.

The outcomes included:

(1) The *Liveable YXE Report Card* (Liveable YXE 2016) identified the 2016 Saskatoon civic election candidates' positions on matters impacting urban liveability. Over 90% of candidates responded, including all four mayoral candidates. The report card served as a starting point for

[1] The original framework (Provincial Health Services Authority 2014) that PPH adapted for their purposes included a fifth area of healthy natural environments. PPH decided to integrate that area within their healthy neighbourhood design pillar given the structure of the local work as well as the limited capacity to focus on healthy natural environment as a separate pillar.

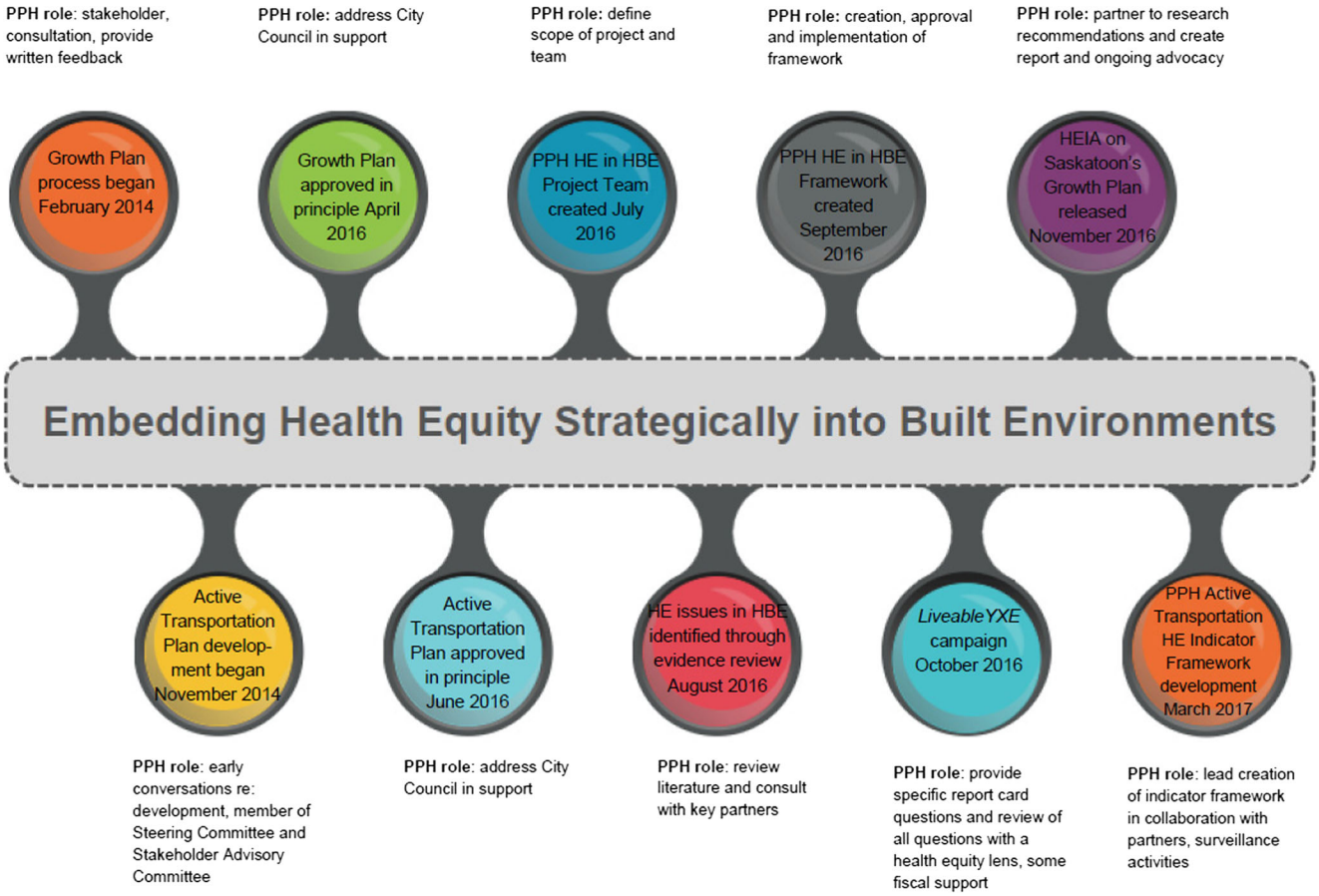

Fig. 1 Timeline and roles for embedding health equity strategically into built environments, PPH—Saskatoon Health Region

continued conversations on how the City can achieve its existing goals while also improving health equity through urban liveability.

(2) The campaign provided a starting point for community to highlight the role municipal government plays in achieving health equity for citizens.

(3) The act of the various community groups coming together under the topic of a liveable city was a catalyst, and the group continues to meet on a regular basis to address issues of liveability.

Project 3: Producing a Health Equity Impact Assessment

In 2014, the City of Saskatoon launched a process to develop their plan to guide growth of the city for the next 30 to 40 years. PPH engaged in a variety of developmental and stakeholder processes and provided written feedback at various stages through the *Growth Plan to Half a Million* (i.e., the *Growth Plan*) development. Saskatoon's *Growth Plan* includes several themes that form a new growth model: active transportation plan, corridor growth, transit, core area bridges, employment area and financing growth. The *Growth Plan* was adopted in principle by the City of Saskatoon in April 2016 (City of Saskatoon 2016a).

Upstream, a community-based organization, approached PPH in June 2016 to collaborate on a Health Equity Impact Assessment (HEIA) of the City of Saskatoon's *Growth Plan*. A HEIA is a decision support tool which identifies how a program, policy or plan will impact the health of population groups in different ways and provides clear recommendations to policy-makers on how to capture these benefits and mitigate harms (Ontario Ministry of Health and Long-Term Care 2013). Active transportation, transit and corridor growth were included within the HEIA analysis as they were the most relevant to PPH and were core initiatives that the City was moving forward with in the immediate future. The HEIA method used was based on Ontario Ministry of Health and Long-Term Care (2013) and the Wellesley Institute (2009) work.

The outcomes included:

(1) Report titled, *Growing Healthier: A Health Equity Impact Assessment for Saskatoon's Growth Plan* (Sharpe et al. 2016).

(2) By applying a health equity lens to a municipal plan, the relationship between community health and well-being and the municipal sector's responsibilities were highlighted. Upon receiving the report, a mayoral meeting with the Chief

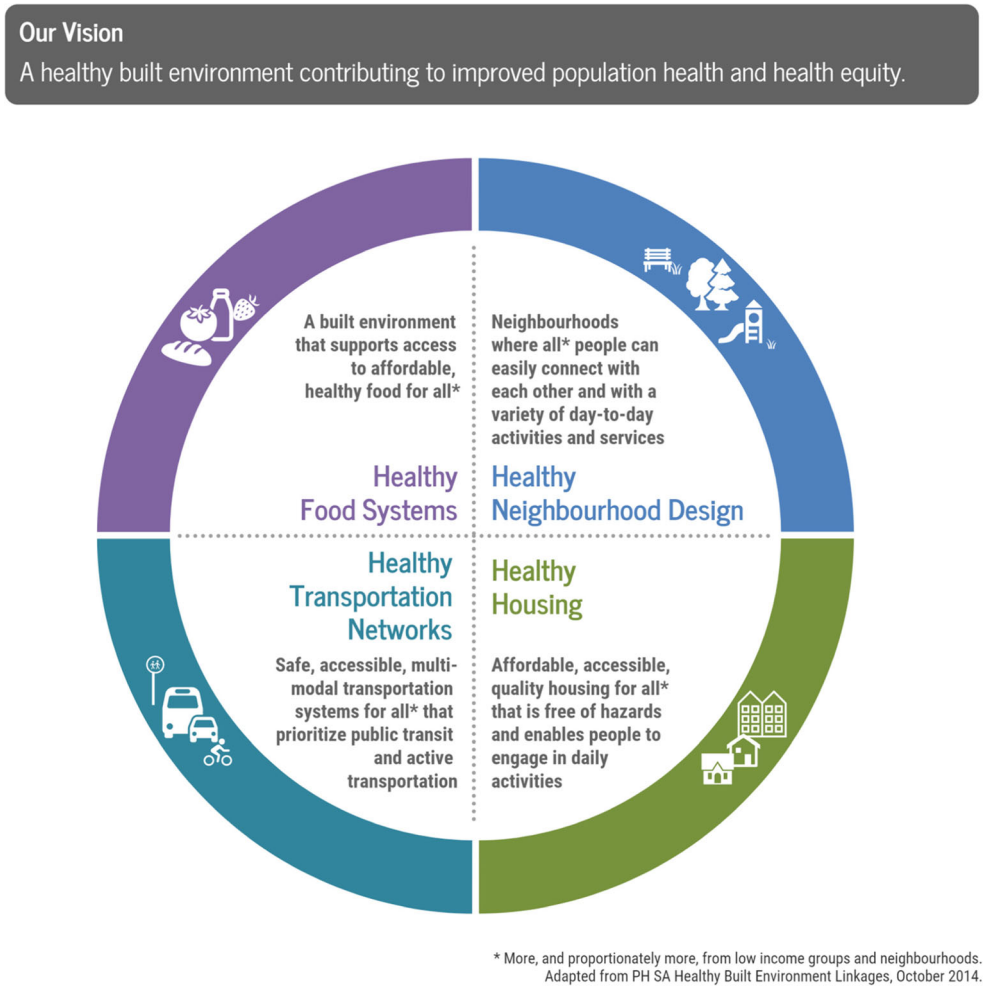

Fig. 2 Health Equity in Healthy Built Environment Framework, PPH—Saskatoon Health Region

Medical Health Officer and PPH Director occurred to identify new linkages between City administrators and SHR staff.

(3) The HEIA is a cornerstone for ongoing advocacy opportunities to encourage the adoption of the recommendations through a variety of municipal projects and community-based initiatives.

(4) Internal (PPH) and organizational (SHR) learnings occurred regarding communication channels and sensitivities to perceived advocacy during an election process, even though the goal of communicating the HEIA was not to influence municipal election outcomes.

Project 4: Developing a healthy built environment monitoring and evaluation framework for health equity outcomes

The City of Saskatoon approved the *Active Transportation Plan* (City of Saskatoon 2016b) in principle in June 2016 and identified that a monitoring strategy is essential. Led by the Public Health Observatory, PPH developed a set of indicators in collaboration with the City of Saskatoon and University of Saskatchewan to complement the City's monitoring strategy. The PPH framework captures ongoing measurement of determinants of health, proximal behavioural risk factors and health outcomes, potentially affected by the *Active Transportation Plan* (in terms of measurable elements of policy, spending and infrastructure).

Adapting the Multiple Exposures Multiple Effects Framework (World Health Organization 2016), a set of indicators has been identified under the three categories of policy, planning and infrastructure; health behaviours and exposures; and health outcomes. Within each of the categories, equity is integrated by examining each indicator with a socio-economic lens, that is, stratifying measures by area-based deprivation, gender, age and other elements potentially impacting equitable health benefits related to the plan.

The indicators, which are currently developed, focus on active transportation; however, PPH desires to create a full set of PPH monitoring and evaluation indicators for each of the *Health Equity in Healthy Built Environment Framework* pillars.

The outcomes included:

1. *Active Transportation Health Equity Indicator Framework.*

2. Creating synergies with municipal government and academia for monitoring HBE items, evaluating progress and demonstrating value added of collaborating with PPH.
3. Opportunity for municipal government to use health and health equity data, which they would not traditionally access or consider in their policy/plan/project evaluation and/or decision-making.

Implications

There were many benefits to engaging in cross-departmental and cross-sectoral collaborations. First, the ability to access expertise in a variety of skill, content and process areas was invaluable (e.g., PPH practitioners with logic model development and knowledge translation expertise). Second, the synergistic leveraging of resources, knowledge and contacts by all departments involved identified new strategic links between the PPH departments as well as with community partners, which expanded and deepened collaborative work. As an example, new partnerships between HBE and poverty reduction work are beginning for the purpose of developing a local poverty reduction plan. Third, working with an upstream focus to improve health equity and health outcomes of the community by creating a HBE provides benefits to the wider healthcare system that can improve client access to care as well as reduce the need for care. As an example, new links are being made within the healthcare system and identifying synergies with primary health care and clinical care teams, such as connected community care.

Initiatives embedding health equity in HBE in this context have encountered challenges and limitations, which are valuable opportunities for learning and optimizing future work. For example, conversations with the municipal government regarding HEIA recommendations related to the City of Saskatoon's *Growth Plan* were not as comprehensive as anticipated. Consequently, the advocacy plan was adjusted and PPH continues to engage with various projects and City personnel (both administrative and political) to support the relevant HEIA recommendations on an ongoing basis. Second, the HBE framework was intended to apply to all SHR geography and population, but a rural focus for health equity in HBE work has yet to be realized. While there has been initial engagement in rural community plans (e.g., official community plans), to date, integrating a health equity focus has not occurred due to a lack of capacity in PPH and the awaiting of clearer direction as the result of transitioning into one provincial health authority. The third challenge identified is that the pace of fully implementing the *Health Equity in Healthy Built Environment Framework* has slowed due to an increased internal focus, with health regions amalgamating into one provincial health authority in late 2017.

To foster better health for all within HBE work, we believe that health equity must be at the forefront of a population health promotion strategy and multi-pronged health equity approaches are needed. This allows for a deeper dive into root causes and implementing solutions that will focus on closing the health equity gaps observed in communities. This also allows the opportunities for empowering vulnerable or priority populations to participate in municipal planning and decision-making processes and considers their unique needs when planning interventions (Centre for Disease Control 2017). In our experience, including an explicit focus on health equity can act as a catalyst for engaging cross-sectoral partners, who traditionally do not consider health equity implications as part of their mandate. Our HBE framework is being used to expand health equity touchpoints across many institutions and create a strong opportunity to build inclusive physical and social environments.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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