SOCIAL CONNECTEDNESS
FELLOWSHIP PROGRAM

Policy Brief
Urban Heat in Montréal: Environment, Social
Connectedness, and Health Implications

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Social Connectedness Fellows 2019

Samuel Centre for Social Connectedness

www.socialconnectedness.org

August 2019

Issue and Evidence

A heat wave is a period of at least 3 consecutive days during which the temperature reaches or exceeds 30°C during the day. More than 400 deaths were attributed to heatwaves over the last 30 years in Montréal.[1] The number of days of extreme heat increase each year and they are occurring in the most populated areas.[2] With this in mind, Montréal must brace itself for more frequent and severe heat waves. The heat-related mortalities were not spread evenly throughout Montréal. Populations that live in areas with a strong urban heat island effect are at higher risk during heat waves.[3] The urban heat island effect refers to the phenomenon characterised by certain urban areas being more significantly hotter than their rural surroundings due to urbanization.[4] Some populations are more vulnerable to detrimental heat-related risks, including the elderly population (65 and older), people without access to air-conditioning, people suffering from chronic illnesses, people who are socially isolated, low income population, people living in areas with a strong urban heat island effect, infants and toddlers, workers, athletes, and people suffering from mental health illnesses.

There is an urgent need to mitigate the detrimental effects of urban heat by addressing its root causes and protecting Montreal residents through increased awareness and adaptive services. The following recommendations aim to protect vulnerable populations, address mental health

[1] Chan, Chee F, Julia Lebedeva, Otero José, and Gregory Richardson. 2007. "URBAN HEAT ISLANDS: A CLIMATE CHANGE ADAPTATION STRATEGY FOR Montréal." McGill School of Urban Planning. McGill University. https://www.mcgill.ca/urbanplanning/files/urbanplanning/CCAPUHIFinalReport-2007.pdf.
[2] Intergovernmental Panel on Climate Change. *Global Warming of 1.5 ºC.* October 2018. Accessed June 12, 2019. https://www.ipcc.ch/sr15/.
[3] Chan et al.
[4] Hsu, A., N. Alexandre, J. Brandt, T. Chakraborty, S. Comess, A. Feierman, T. Huang, S. Janaskie, D. Manya, M. Moroney, N.Moyo, R. Rauber, G. Sherriff, R. Thomas, J. Tong, Y. Xie, A. Weinfurter, Z. Yeo (in alpha order). The Urban Environment and Social Inclusion Index. New Haven, CT: Yale University. Available: https://datadrivenlab.org/urban/.

challenges and neighborhood inequalities, implement more sustainable urban planning measures, and improve the efficacy of existing policies and interdisciplinary collaboration. These recommendations were produced from the Urban Heat in Montréal workshop on 03 August 2019.

Stakeholders

Federal Government, Provincial Government, Municipal Government, Borough Councils, Community Organizations, Urban Planners, Building Developers, Researchers, Residents

Recommendations

Vulnerable Populations & Community Resilience

Indigenous people, caregivers (e.g. nurses, healthcare workers), new immigrants and refugees who may not be able to fully access the preventive measures in place due to language should be included in policies targeting vulnerable populations (e.g. Montreal Heat Response Plan). Pregnant women, especially those of lower socio-economic status, should be included as well as it has been found that there are higher chances of placental abruption during term births during heat waves and that this association is stronger for those who are socio-economically disadvantaged (Siyi He, Marianne Bilodeau-Bertrand and Nathalie Auger). Individuals with disabilities including children with intellectual and profound disabilities whose accessibility to parks and cooler areas is limited should also be included. Older males are already considered vulnerable but should be focused on more as they may be more hesitant to reach out for assistance.

Many of these vulnerable populations tend to be socially isolated, increasing their risk of the negative effects of heat waves. Therefore, it is crucial to foster social connectedness and

build community resilience to protect these populations. To begin with, provisions for community programs in all neighborhoods should be put in place so that people can build networks. These community programs could include friendship benches that bringing people together to address a basic need of people to discuss how they are doing. Boroughs and community organizations should also collaborate to retrofit existing community centres to make them multi-use, intergenerational, and accessible. A variety of community programs could be held by community organizations, like weekly neighborhood potlucks and an intergenerational buddy system where a young adult is paired with an older adult and regularly checks in on the older adult. A sharing economy also could be established by creating toy libraries, shared tool sheds, etc. Through these programs, the needs of vulnerable populations can be addressed and social connectedness can be fostered.

Addressing Mental Health Challenges

When we look at health holistically, it is imperative to keep mental health in mind. In cases of extreme heat, there are increased risks from poor mental health and adverse behaviours. To address these risks, there should be campaigns that create awareness about stress reduction strategies, like meditation, that can have a positive effect on mood. Moreover, to prevent and manage the increase risky and violent behaviors during extreme heat events, there should be increased police vigilance, a risky behavior awareness campaign with a harm reduction perspective, and youth support from community centres like the YMCA.

Awareness should be created about the heat related complications associated with taking certain medications. This can be done by medical professionals who can provide

accessible and comprehensive tools that advise which medications will limit heat tolerance and how to adjust medications in case of dehydration and aggravation of conditions.

Addressing Neighborhood Inequalities

In Montreal, neighborhoods that are lower income tend to suffer from worse health outcomes during extreme heat events. Thereby, policies at the municipal level must actively address these inequalities. For example, the government could allocate funding to creating pop-up clinics during heat waves in these neighborhoods. These clinics should have accessibility to female professionals because many women are more comfortable addressing their medical concerns with a female professional. Additionally, funding should be allocated to increasing green and blue spaces equitably across neighborhoods. New and existing initiatives to expand green spaces must protect against gentrification by, for instance, freezing rent prices for low income residents to prevent them from being pushed out. Finally, we urge the municipal and borough governments to put forth by-laws that require white roofs in more lower income neighborhoods as white roofs are one of the most cost-effective ways to reduce the urban heat island effect.

Urban Planning and the Environment

At the city level, we suggest that policy makers and urban planners follow the example of Los Angeles which has succeeded in making all new roads white roads. Community organizations could set up gatherings to paint existing roads white. We recommend that all developers and urban planners require the incorporation of passive cooling and good airflow into new construction plans. New construction projects should also consider building up instead

of out, balancing green space expansion, in order to avoid urban sprawl. The design of cities will have environment, health and social implications for years to come so interdisciplinary collaboration is key. For example, the municipal government could require the presence of public health officials and other stakeholders in urban design committees.

In order to decrease the use of cars which create the waste heat and air pollution, Montréal should incentivize the use of public and active transport. For example, the city could create a rewards program for residents who use public transport and provide discounted public and active transport (e.g. BIXI) through partnerships with companies.

Efficacy of Existing Policies

We strongly advocate for strengthening the existing policies such as Sustainable Montreal 2016-2020 and the Montreal Heat Response Plan 2019 and new policies by actively involving residents of Montreal in the decision-making process, increasing accessibility of information and having transparent policy evaluations.

Borough councils and community organizations can increase participation and engage new demographics in consultations by being more proactive in their promotion. For example, a council or community organization may set up a tent at neighborhood events, advertise information about consultations in several streams of media, or incentivize going to consultations with low cost benefits. City councillors should also be made more accessible through weekly 'office hours' that occur after work hours in order to address resident concerns outside of formal consultations. The municipal government could also create an easy to use app that can field questions and concerns from residents.

Increasing accessibility to information provided by a policy increases its efficacy exponentially. Community organizations can inform local community leaders of relevant policies in order to increase the residents' understanding. Policies should also be translated into different languages by the municipal government in order to inform and empower populations who don't speak English or French (e.g. immigrants, refugees, asylum seekers). Information should also be incorporated into signboards and events around the city to increase awareness.

More frequent evaluations of policies to determine their performance will also greatly increase policy efficacy. The municipal and borough councils should have periodic checks of policies like Sustainable Montréal 2016-2020 that lead to modifications to address subpar performance if necessary. The progress of these policies should be kept transparent and open to the general public on the city website to keep the government accountable and to keep the public informed. The policy evaluations could be outsourced to community organizations for cost-effectiveness and in order to increase collaboration between stakeholders.

Interdisciplinary Collaboration

Climate change needs to be addressed through a human rights lens. Community organizations should run campaigns expressing the right to have cool communities, especially during heat waves. Addressing climate change from a health perspective increases its sense of importance and urgency. In order to bring stakeholders together, the municipal government and community organizations should work together to create a three tier collaboration where each government hospital or healthcare centre is tied with a climate organization and a human rights organization. Furthermore, climate policy should include health impact assessment in the

process. Moving forward, collaboration between researchers, community organizations, and the government is essential in creating practical and impactful policy recommendations.

Interdisciplinary communication during the planning process of policies will help address the root causes of environmental, social and health issues rather than reacting individually to the fallout. There are economic benefits as well. Collaborating is less expensive as stakeholders can plan correctly in a wider lense instead of doing clean up later.

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