Designing an Integrated Local Data Management System

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The Wellesley Institute works to improve health equity in the
Greater Toronto Area through action on the social determinants
of health.

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Prior to the election in October of 2015, the Trudeau government's platform made bold promises to improve evidence-based policy by establishing new and innovative data infrastructure and evaluative frameworks across Canada. Its campaign materials guaranteed that a fixed percentage of federal program funds would be directed toward new approaches to measuring and evaluating complex social problems. To date, these funds have not been secured and no progress has been made beyond the restoration of the long-form census. Without a sufficient evidence base to connect health and social expenditures to population-level outcomes, decision-makers, policy-makers, researchers and analysts cannot begin to account for innovative health and social policy in Canada.

How do we understand the complex structural, regional, and local-level factors that contribute to spatial concentrations of poverty in our cities? How can we accurately identify the number of seniors living in Toronto that require in-home supports, or predict the long-term health and service needs of this rapidly growing population? How do annual income measures connect to the quality or availability of public services such as employment supports, education, or Medicare (Notten & Mendelsen 2016)? While there have been numerous efforts on the part of policy-makers to link population-level indicators of risk, inequality and well-being to the need for better programs and services, our governments lack sufficient data to answer these questions.

The problem of insufficient data infrastructure is one that a few analysts have raised since the Liberals took office (McEwen & Notten 2016; Hicks 2016). Some have argued in favour of establishing an arms-length Canadian Social Indicators Observatory with the funds that were initially promised by the federal Liberals. The formal take-up of these recommendations has yet to occur. So what can be done in the interim?

In Toronto, there is great potential for a local, agency-driven integrated Local Data Management System (LDMS) to improve the quality and accuracy of population-level data. Integrating data collected by designated staff in locally-based service provider agencies (including public service agencies, arms-length and independent community-based organizations, and private sector service providers), such a system has the potential to improve the quality, efficiency, and responsiveness of our municipal public services. Bridging across the city's fragmented health, housing and social service landscape, an LDMS, if tactically executed, could establish common data sets, outcomes, targets and evaluative measures that link population-level indictors (e.g. income measures, health status and labour trends) to the quality and availability of health and social service supports.

It stands to reason that the management and administration of an LDMS should be maintained by local service providers who deliver services within communities, and respond to changing and dynamic community needs on a day-to-day basis. Given that many health, employment and housing supports are provided by arms-length or independent community-based agencies and private and not-for-profit organizations, these groups are best-suited to recording accurate and up-to-date information. This information could be used to build a much-needed evidence base to support a health and social service system in flux. For instance, in line with the Toronto-Central Locally Integrated Health Network's (TC-LIHN) 2015 Strategic Framework, as well as the Ontario Liberals' recent introduction of Bill 2010 and the *Patients First Act* (2016), the TC-LIHN is currently transitioning to a more localized, community-based service delivery system at the sub-LIHN level. In order to understand both the demographic make-up and the health service needs of residents at lower levels of geography, decision-makers at the LIHN must rely on 2011 National Household Survey (NHS) data which poses non-response bias due to its voluntary nature.

While a number of alternative data sets exist at the city level, including Toronto Community Health Profiles Data (the result of a partnership between a group of epidemiologists, academic health researchers and medical geographers aiming to provide accurate small area community health data to community-based service providers across the city), no data set currently provides accurate and accessible demographic, socioeconomic, and population health information at low levels of geography (TTHAP 2015)

Better data could also support the delivery of more appropriate and cost-effective social services across the city's 31 Neighbourhood Improvement Areas (NIAs). At present, NIAs draw from the Neighbourhood Equity Index, based on data from the Centre for Urban Health Solutions' (C-UHS) Urban@Heart indices. Urban@Heart measures neighbourhood-level well-being across five domains: economic opportunities; social and human development; civic engagement; physical environment and local infrastructure; and, physical and mental health. The tool does not include housing indicators. Housing is not only a matter of shelter, but also of a social web of relations and services and facilities that are essential to the well-being of residents and communities.

The creation of a centralized, CBO-driven data tool is not a groundbreaking idea. In Philadelphia, a Citizen Relation Management (CRM) system collects data from residents and local governments to expedite service requests and provide access to city services. Residents can interact through a smartphone app, and local public sector agencies can use the software to resolve requests and guide changing operations (Accela 2015). The app links requests for services or repairs to GIS data in order to identify the location of the request. On a larger scale, Boston's CRM system uses *ecomterics*—or the "big data" measurement of neighbourhood characteristics—to examine civic response rates to 311 calls for housing services across the city, producing detailed comparative measures of housing maintenance issues (e.g., bedbugs, poor heating, chronic dampness) and landlord response rates by neighbourhood (BARI 2012).

In the EU, a recent European Prize for Innovation in Public Administration was awarded to Helsinki's "Open Ahjo" program. Open Ajho is a paperless, centralized IT system for decision-making containing every document created in every government bureau in Helsinki; including the upcoming agendas and meeting minutes of all committees and boards. In 2013, the program became openly accessible to the public. This allows people to follow, for example, every decision the Education Department has made relating to their neighbourhood *(Cityscope,* April 13, 2014). What's more, each document is machine-readable, allowing web developers to build web-based or mobile apps with greater efficiency.

Despite the numerous potential benefits of an LDMS in Toronto, the creation of such a tool will depend on political willingness to fund and support a new, experimental approach – as well as new autonomous powers for local agencies that have yet to be established. However, Ontario's Liberal government has recently taken some promising steps toward supporting an integrated and accessible public database. In March of 2015, Premier Wynne appointed Karen Pitre as Special Advisor on Community Hubs to lead the Premier's Community Hubs Framework Advisory Group (MMAH, 2016). A nine-member panel was then formed from a cross section of representatives from community, health care, municipal government, and education sectors. The mandate of the panel was to review provincial policies, research best practices and develop a framework for adapting existing public properties to become community hubs.

On January 28, 2016, the panel released a number of action-oriented recommendations directed to the Province. They include:
  • establishing an accessible and comprehensive public properties database;

- establishing a coordinated system of planning that encourages partnerships and builds on 'what works';
- establishing a delivery system that provides integrated services to people in their communities, and
- establishing a community infrastructure/ public properties system that maximizes the use of public properties for community benefit (MMAH 2016).

In order to enact these recommendations, it was proposed that the Province work with the Treasury Board Secretariat's new Centre of Excellence for Evidence Based Decision-Making to engage local community service organizations in the development of an 'outcomes-based evaluation and measurement structure'. To do this, Provincial ministries would simplify transfer payment accountability requirements to increase funding flexibility and reduce administrative burden for service providers (ibid). This would be achieved, in part, through the creation of an integrated local data management system.

Less than two months after the MMAH put forward its Community Hub recommendations, Ontario's 2016 Long-Term Affordable Housing Strategy (LTAHS) was released on March 14, 2016. The strategy indicates promising directions for innovative, people-centred and co-ordinated approaches to the delivery housing services – setting aside up to $2.5 million over three years to support research, evidence and capacity-building at the local scale. Though funding has yet to be allocated across municipalities, a LDMS is well-suited to these aims. To strengthen program evaluation, the Ministry could also establish a more collaborative service review process that gives equal weight to input from service providers, internal evaluation specialists, and external experts (Galley et al. 2013).

It is possible that a more coordinated, appropriate and efficient local service delivery system could result from locally-administered data sets. To use the example of housing repairs, if one data officer was hired to staff a select community-based agency operating in a Toronto Community Housing (TCH) community — recording building maintenance, health hazard, safety and de-identified social and economic profile data — TCH staff would then be able to target their limited repair funds to immediate need. Applied to mixed-income developments and community hubs that are predominantly funded by private developers, a coordinated data set could also be used to establish community-driven "best practices" for private sector partners.

In the absence of existing data infrastructure that accurately links population-level outcomes to health and social service delivery, and in view of a regulatory environment that tends to favour local solutions offering cost savings, an LDMS tool presents a progressive step toward evidence-informed service delivery that effectively engages local and regional governments, agencies and community stakeholders. More broadly, provincial and federal governments can leverage these data sets to identify service gaps, improve targeted service delivery programs and promote better coordination across jurisdictional boundaries.

On the contrary, in making this claim, it must also be acknowledged that an analytic, evidence-informed understanding of the complex structural factors that shape population-level outcomes (e.g. long-term federal disinvestment in Canada's health and social services, the sorting processes of housing markets) won't emerge from an LDMS. To begin to address the social and economic determinants that give way to poverty, economic inequality and poor health outcomes, governments must make significant and long-term investments in housing and social service infrastructures. While community-level agencies are well-positioned to adopt a more autonomous role in data collection, the production of more accurate data will only help to channel necessary upper-tier public service investments.

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