Primary Care Workforce Planning: A Fit-for-Purpose Toolkit for the City of Toronto

Ontario Health Toronto & Canadian Health Workforce Network

Final Report

http://www.ontariohealthprofiles.ca/ontariohealthtoronto/index.php

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Our data partners: City of Toronto Planning Research and Analytics, City Planning Division; ICES; Ontario Ministry of Health (MOH) Health Analytics & Insight Branch; MOH Health Workforce Planning Branch, Capacity Planning & Capital; Canadian Institute for Health Information (CIHI); Statistics Canada

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Background and Methodology
Ontario Health Toronto and the Canadian Health Workforce Network partnered in 2017 to co-develop a comprehensive regional-level primary care workforce planning process and toolkit to respond to the following needs:

• To address disparities in access to integrated primary care in the City of Toronto, and to inform equitable distribution of primary care workforce resources

• To facilitate evidence-based decision making for Ontario Health and Ontario Health Teams

• To support the partnership between Ontario Health Toronto and the City of Toronto aiming to develop a detailed primary care capacity plan as a means of mitigating the impact of growing population needs on the health care system
Planning Considerations

Core Needs
- Population Needs-Based Approach
- Multi-Professional Planning
- Multiple Planning Scales (neighbourhood/subregion/city)
- Short-Term Planning Horizons (3-5 years)

Key Challenges
- High Population Mobility
- Population Growth
- Physician Retirement

The toolkit was tailored specifically to address Toronto’s unique social, geographic and economic contexts.

There is a focus on physicians and 13 allied health professionals (such as Nurse Practitioners, Physiotherapists, and Occupational Therapists).
Statement of Purpose
To build a body of evidence around the current (and projected future) states of population health needs and primary care service provision at a neighbourhood level within the City of Toronto.

Phase 1 – Toolkit Development (2017-2018)
- Targeted review and assessment of existing models
- Environmental scan and assessment of available data sources

Phase 2 – Toolkit Operationalization (2019-2022)
Operationalizing a first cycle of integrated, interprofessional, needs-based primary care workforce planning
Key Facilitators

Broad consultation and engagement with a focus on building partnerships and capacity

- Many partners including data partners e.g. OCHPP, City, ICES, MOH, CIHI
- Co-development of tailored and open-access methods, tools, and user guides
- Stakeholder consultation (frontline and expert) at every stage to make outputs relevant and useful
- Focus on building health workforce planning capacity for OH Toronto Health Analytics & OHTs
Overview of Planning Toolkit

The planning approach is iterative and interactive and includes horizon scanning, scenario generation, and quantitative workforce modelling activities, which inform policy analysis and decision-making.
The quantitative model uses data from multiple sources to assess alignment of population health needs with workforce service capacity for each neighborhood from 2016 to 2026.
## Inputs into Quantitative Model

<table>
<thead>
<tr>
<th>Module</th>
<th>Data Elements</th>
<th>Description/Details</th>
<th>Data Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Health Profiles</td>
<td>Population Socio-demographics &amp; Health Status</td>
<td>Population characteristics that impact the need for primary care. Helps to consider the impact of changes in population characteristics on service requirements and answer the question: If population characteristics change, how will service requirements change?</td>
<td>Ontario Community Health Profiles Partnership (OCHPP)</td>
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<tr>
<td>Unmet Need</td>
<td>Primary care attachment, avoidable hospitalizations, low urgency ED visits</td>
<td>Characteristics related to neighbourhood-level unmet healthcare need, which can contribute to an adjustment of service requirements. Failure to consider unmet health care needs risks perpetuating current inequities.</td>
<td>OCHPP</td>
</tr>
<tr>
<td>Population Growth</td>
<td>Population Growth Projections</td>
<td>Using projections enables predicting service requirements for future populations. Allows focus on neighbourhoods with high population growth due to anticipated new vertical development.</td>
<td>City of Toronto (City Planning Division)</td>
</tr>
<tr>
<td>Spatial Patterns of Utilization</td>
<td>Utilization Matrix</td>
<td>Captures primary care utilization patterns and allows adjustment of service requirements to account for patients’ care-seeking behaviours</td>
<td>ICES (Data) OCHPP (Mapping)</td>
</tr>
<tr>
<td>Workforce Profiles &amp; Service Capacity</td>
<td>Physicians (IPDB)</td>
<td>Primary care physicians practicing in each neighborhood</td>
<td>ICES</td>
</tr>
<tr>
<td></td>
<td>Allied Health Providers (HPDB)</td>
<td>Chiropodists, dieticians, midwives, nurse practitioners, optometrists, occupational therapists, pharmacists, psychologists, physiotherapists, registered nurses, registered practical nurses, respiratory therapists, and speech-language pathologists practicing in each neighbourhood</td>
<td>Ministry of Health (Health Workforce Planning Branch, Capacity Planning &amp; Capital)</td>
</tr>
<tr>
<td>Service Requirements</td>
<td>Population Grouping Methodology Outputs</td>
<td>Estimates of primary care service requirements using the CIHI Population Grouping Methodology</td>
<td>Ministry of Health (Health Analytics &amp; Insights Branch)</td>
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</table>
Outputs and Health Human Resources (HHR) Toolkit
HHR Toolkit Outputs

Outputs available for:
- Neighbourhoods (140)
- Sub-regions (11); and
- City of Toronto

Static Outputs Hosted on the OCHPP website

Interactive Dashboards available by request to Ontario Health Toronto
1. **City Profile** package - collection of city-level outputs that include a snapshot of the primary care landscape across the city and a series of maps.

2. **Sub-Region and Neighborhood Profiles** packages include three static dashboards on neighborhood characteristics, service requirements and service capacity.

3. **Interactive Retirement Scenario Dashboard** tool for exploring different physician retirement scenarios that are relevant to primary care planning and decision-making.

4. **Interactive Population Growth Dashboard** tool for exploring different scenarios relating to population growth, population characteristics, and workforce characteristics that are relevant to primary care planning and decision-making.

5. **Technical Notes** - provide additional details on the data, indicators and limitations of the information.

6. **User Guide** - provides stepwise instructions on how to use the information in the Toolkit to understand the primary care landscape in an area and identify high needs areas that require additional resources and attention.

7. **More Information** - links to additional resources and publications related to the project.
Implications for Planning: Adjusting for patient mobility improves the accuracy of neighbourhood-level service requirement estimates.

Key Findings: 25% of primary care visits (2.4 million visits) in the city are for non-residents. In some neighbourhoods, patients access their primary care close to home, while in others, patients go elsewhere (range: 0 - 45%).
Neighbourhood Profiles

The Neighbourhood Profiles provide a snapshot of the primary care landscape in each neighbourhood, including current and future alignment between physician service requirements and service capacity, age distribution of residents, prevalence of key health conditions, estimated population growth, spatial patterns of utilization, Ontario Marginalization Index scores, indicators of unmet need for primary care, and a profile of the primary care workforce.
Service Requirements

Neighbourhood-level service requirements are a function of the number of visits to a primary care physician visits required by (1) neighbourhood residents, and (2) residents of other neighbourhoods in the City, adjusted for spatial patterns of utilization and population growth, along with (3) the number of visits utilized by patients from outside the City of Toronto.

Population Growth Module

Spatial Patterns of Utilization Module

Service Requirement Module

Bay Street Corridor

Examine the Sources of Service Requirements at a Neighbourhood Level

Total Service Requirements =

1. Resident Visits: Number of resident visits expected to be accessed in their neighbourhood of residence based on baseline spatial patterns of utilization.
2. Non-Resident Visits: Number of non-resident visits expected to be accessed in the neighbourhood based on baseline spatial patterns of utilization.
3. Non-City Utilizations: Number of visits expected to be utilized by non-city residents in the neighbourhood based on baseline spatial patterns of utilization.

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<tbody>
<tr>
<td>Number of Residents</td>
<td>24,010</td>
<td>26,287</td>
<td>28,565</td>
<td>30,842</td>
<td>33,119</td>
<td>35,397</td>
<td>37,674</td>
<td>39,951</td>
<td>42,228</td>
<td>44,500</td>
<td>46,783</td>
</tr>
<tr>
<td>Resident Visits</td>
<td>74,474</td>
<td>75,525</td>
<td>86,601</td>
<td>96,685</td>
<td>102,729</td>
<td>109,792</td>
<td>116,856</td>
<td>123,920</td>
<td>130,983</td>
<td>138,047</td>
<td>145,111</td>
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<tr>
<td>Proportion of Care Accessed Within Neighbourhood</td>
<td>32.7%</td>
<td></td>
<td></td>
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<tr>
<td>Resident Visits Adjusted for Spatial Patterns of Utilization</td>
<td>22,119</td>
<td>23,025</td>
<td>24,315</td>
<td>26,412</td>
<td>30,510</td>
<td>32,608</td>
<td>34,706</td>
<td>36,804</td>
<td>38,902</td>
<td>41,000</td>
<td>43,096</td>
</tr>
<tr>
<td>Non-Resident Visits</td>
<td>332,191</td>
<td>347,904</td>
<td>362,723</td>
<td>375,314</td>
<td>389,935</td>
<td>403,986</td>
<td>417,486</td>
<td>431,477</td>
<td>445,518</td>
<td>459,559</td>
<td>473,600</td>
</tr>
<tr>
<td>Non-City Utilizations</td>
<td>96,252</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Total Service Requirement</td>
<td>441,562</td>
<td>467,261</td>
<td>473,839</td>
<td>489,979</td>
<td>506,117</td>
<td>522,236</td>
<td>538,365</td>
<td>554,533</td>
<td>570,672</td>
<td>586,811</td>
<td>602,950</td>
</tr>
</tbody>
</table>
Neighbourhood-level service capacity is a function of the estimated number of visits provided by (A) comprehensive primary care physicians who are not expected to exit the workforce, plus the estimated number of visits provided by (B) comprehensive care physicians who are considered to be at risk of retirement, plus the estimated number of visits provided by (C) non-comprehensive care physicians.
Interactive Population Growth Dashboard

Mount Pleasant West

This tool can be used to explore 84 different scenarios relevant to primary care planning and decision-making.

It explores what happens to alignment when population characteristics and/or workforce capacity change.

Once neighbourhoods with populations at risk of being underserved due to population growth have been identified, planning can take place to ensure that appropriate resources are available.
This tool can be used to explore different physician retirement scenarios that are relevant to primary care planning.

Scenarios take into account the age structure of the physician workforce, age-related retirement probabilities, and age-related changes in service capacity.

Once neighbourhoods with populations at risk of being underserved due to physician retirement have been identified, planning can take place to mitigate the impact of retirement.
Considerations, Impact, Lessons Learned, and Next Steps
# Overview of Key Challenges & Strategies

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Description</th>
<th>Strategies</th>
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<tbody>
<tr>
<td><strong>Health System Transformation</strong></td>
<td>Changing roles of health system players over time (formation of Ontario Health &amp; establishment of OHTs)</td>
<td>Adapt to evolving landscape to meet multiple stakeholders’ needs</td>
</tr>
<tr>
<td><strong>What is Primary Care?</strong></td>
<td>To plan for primary care, we must be able to define and delineate primary care providers and activities</td>
<td>Adopt a holistic definition of primary care that reflects the interprofessional nature of integrated &amp; comprehensive primary care</td>
</tr>
<tr>
<td><strong>Data Availability &amp; Accessibility</strong></td>
<td>Difficulty accessing physician and allied health professional data that are high quality, granular, comprehensive, and timely</td>
<td>Advocate to close data gaps &amp; improve access to data, and adjust model to accommodate aggregate-level data &amp; third-party analysis</td>
</tr>
<tr>
<td><strong>Neighbourhood-Level Planning</strong></td>
<td>Mobility of patients and service providers across the City of Toronto and beyond</td>
<td>Mobilize available data to understand variability in patient flow across neighbourhoods</td>
</tr>
<tr>
<td><strong>Estimating Unmet Need</strong></td>
<td>Limited data are available to accurately and comprehensively estimate unmet need</td>
<td>Use quantitative indicators as a baseline for consultations</td>
</tr>
<tr>
<td><strong>Changing Landscape of Primary Care Planning</strong></td>
<td>Changes caused by the COVID-19 pandemic (virtual care, early physician retirement, and the changing roles of pharmacies)</td>
<td>Use inclusive data synthesis and scenario analyses to address new planning considerations</td>
</tr>
</tbody>
</table>
Impact Across System Stakeholders

The approach will help providers, planners, stakeholders:

- Understand more about the **patients they are serving, where they come from**, and what their **primary care needs** are

- Estimate the **primary care resources (MDs, NPs, allied health professions) needed** to care for patients

- Identify **emerging needs that could be addressed by OHTs**, taking into account population growth, demographic shifts, provider retirement, and changing practice patterns

- **Inform strategies to transform care** by testing a range of relevant scenarios

- **Build capacity for primary care planning** on the part of Ontario Health Toronto, OHTs and system stakeholders
Key Insights and Lessons Learned

The following are crucial for comprehensive primary care workforce planning in Toronto and in Ontario:

- Given patient mobility, **collaborative planning** amongst Sub-Regions and OHTs is needed (care seeking patterns in one area can be influenced by what is happening in other areas)

- Given the complexity of workforce and population trends, a **holistic view** of various factors at play in a certain area is required when doing primary care planning

- Given the rapidly changing primary care landscape, a **comprehensive and timely primary care census and database** will help to maximize the public good that results from health workforce planning

- Objective data in the toolkit can be complemented and supplemented with additional **local knowledge and information** to get a fuller picture of local primary care needs

- Engagement with frontline providers and relevant stakeholders to validate results is important

- Planners should consider innovative ways to address primary care gaps and exercise **flexibility and ingenuity** in developing solutions

- Updated policies that respond to the need for health workforce planning and support the development of **planning capacity, literacy, and engagement** are urgently needed
Conclusions and Future Directions

- This project is a case study in leading practice health workforce planning that responds to an urgent need for “intelligence” to support better health system decision-making.

- Ontario Health Toronto and relevant stakeholders e.g. OHTs will use the processes, data, and outputs, with input and validation from local and frontline stakeholders.

- Still remaining: Ongoing refinement, data updating (with 2021 Census information, updated population projections, primary care utilization patterns, and more current workforce information), evaluation, and operationalization of the allocation module.

- Spread and scale: Share the toolkit and the model with other agencies/groups doing primary care workforce planning.
More Information
More Information

Review the Outputs

Outputs are posted on the Ontario Community Health Profiles Partnership website:
http://www.ontariohealthprofiles.ca/ontariohealthtoronto/index.php

Read our Publications

Co-developing an integrated primary care workforce planning approach at a regional level: overarching framework and guiding principles
Ivy Lynn Bourgeault, Caroline Chamberland-Rowe & Sarah Simkin

An integrated primary care workforce planning toolkit at the regional level (part 1): qualitative tools compiled for decision-makers in Toronto, Canada
Caroline Chamberland-Rowe, Sarah Simkin & Ivy Lynn Bourgeault

An integrated primary care workforce planning toolkit at the regional level (part 2): quantitative tools compiled for decision-makers in Toronto, Canada
Sarah Simkin, Caroline Chamberland-Rowe & Ivy Lynn Bourgeault

Contact Us

Ontario Health Toronto
Health Analytics
OH-TorontoHealthAnalytics@ontariohealth.ca

Canadian Health Workforce Network
Caroline Chamberland-Rowe, Sarah Simkin, Ivy Bourgeault
www.hhr-rhs.ca