OMA Ontario Medical Association

Data Supports for Health Human Resources Working Group

Report and Recommendations

FINAL

October 1, 2024

Overview

Executive Summary

There is broad consensus that Ontario is in the midst of a physician workforce crisis and that data are required to support decision-making around health human resources (HHR) issues. Without high-quality, integrated workforce data, it is difficult to generate intelligence that supports policy, advocacy, negotiations, and other organizational priorities, including thought leadership.

Even though the OMA has access to a vast array of data sources, our work has found that as a systemic organizational resource, OMA workforce data fall short. Some OMA workforce data elements meet or exceed minimum data standards for health workforce planning, but many do not. Of 130 workforce policy and planning questions examined, only 11 are answerable with current OMA workforce data assets, and 54 are not answerable at all. Strategic investments are required to remedy this situation.

We recommend that the OMA:

1. **Develop and adopt a fit-for-purpose organizational data strategy**
    - 1.1. The organizational data strategy should include the following components:
        - 1.1.1. Data Governance Framework
        - 1.1.2. Data Risk Management Framework
        - 1.1.3. Data Privacy and Security Plan
        - 1.1.4. Data Standardization Plan
        - 1.1.5. Data Architecture and Integration Plan
        - 1.1.6. Data Lifecycle Management Plan
        - 1.1.7. Provisions for Special Cases
    - 1.2. A senior staff member should be responsible for ensuring that the organizational data strategy is implemented and adhered to across the organization
    - 1.3. The organizational data strategy should be refreshed regularly
2. **Optimize the acquisition and use of data to achieve organizational objectives**
    - 2.1. Develop a data literacy communication and education plan for the OMA
    - 2.2. Integrate a data-driven focus on equity and diversity into OMA policy and strategy
    - 2.3. Work with the CPSO to expand existing data sharing agreements (DSAs)
    - 2.4. Work with the Ministry of Health to improve source data and to update DSAs
    - 2.5. Explore other opportunities to improve data assets through expanded partnerships and DSAs
    - 2.6. Review data and tools regularly to ensure ongoing strategic investments
3. **Invest in tools and capacity to support workforce analysis and decision-making**
    - 3.1. Optimize and leverage data and analytics proficiency
    - 3.2. Invest in managing and maintaining the OMA membership database
    - 3.3. Invest in tools to support workforce analysis
        - 3.3.1. OMA Physician Resources Integrated Model (PRIME)*
        - 3.3.2. Physician Capacity
        - 3.3.3. Physician Retirement
        - 3.3.4. Rurality
    - 3.4. Invest in skills and expertise to support workforce analysis

These recommendations are interdependent and come together as an ensemble. Adopting them will help the OMA move toward an organizational state in which leading practices guide the collection, governance, standardization, access, and use of data, and in which the OMA is able to use fit-for-purpose data that are comprehensive granular, reliable, standardized, timely, and longitudinal to support decision-making. Most of this work can be done internally and many of these recommendations are easy to implement, while others will require investment and executive level commitment.

The DSWG recognizes that the Board will consider these recommendations on a strategic level and will look to the management team for implementation. The report identifies multiple operational elements for each recommendation. The DSWG recommends that OMA management consider the operationally specific recommendations as a guide to inform a feasible implementation plan.

Investing in data supports for health human resources will allow the OMA to quantify the magnitude of the physician workforce crisis, continue developing constructive proposals for negotiations, assess the possible impact of policy interventions, focus on issues and solutions salient to early-career and late-career physicians, identify emerging physician workforce issues, and maximize the organization's influence in the health system, now and into the future.

Plain Language Summary

Data are needed to help health sector organizations like the OMA make good decisions.

Because the workforce is central to the health system, it is especially important that the OMA has the best possible workforce data.

The OMA uses many data elements and sources, and these are very good, but there is room for improvement.

After careful review, the DSWG is recommending that the OMA do three things to enhance its access to, and use of, high-quality data:

1. **Develop and adopt an organizational data strategy**
2. **Acquire and use data to achieve OMA objectives**
3. **Make investments to support workforce analysis and decision-making**

Each recommendation comes along with several detailed suggestions about what should be done to put the OMA in a strong position to respond to health workforce issues and problems.

Adopting these recommendations will ensure that the OMA is able to advocate, negotiate, make policy, and do other work for members in the best possible way.

Introduction

The OMA aims to be a data-driven organization, and to use intelligence to support its members, to improve their professional circumstances and support their personal well-being, and to generate solutions for health system challenges and achieve better care for patients. These goals cannot be achieved without robust, reliable, integrated data. Data are essential to produce intelligence, which supports decision making and positions the organization to develop and inform policy, support and inform negotiations, and effectively plan for the future.

Challenges

Numerous challenges stand in the way of adopting a consistent data-driven approach to physician workforce issues and policy, including:

- Some data simply do not exist
- Some data exist but are difficult to acquire and are not easily updated
- There is no standardized approach across institutions for collecting data on physician demographics, career trajectories, and practice patterns
- Concerns about data privacy and ownership create barriers to effective data sharing between stakeholders, slowing down efforts to develop a unified workforce strategy
- Data relevant to workforce planning are often scattered across multiple platforms and organizations, making it difficult to consolidate information into a comprehensive and actionable format
- Current datasets often lack the level of detail and granularity required to make precise workforce predictions or projections
- Integrating clinical data with workforce data is a significant challenge, limiting our ability to make informed decisions about workforce needs in relation to clinical outcomes
- Data necessary to understand the current and prospective challenges in the physician workforce and the health system are not regularly, or reliably, collected
- Data lag in time, and so do not present a current picture of existing challenges or opportunities in the health workforce landscape
- Due to encryption, Ministry of Health data streams are not linkable with internal OMA data, limiting the ability to answer more advanced analytical questions
- Data Sharing Agreements require that data be stored using on-premises servers, which are more expensive to maintain, and which have reduced processing power, limiting advanced modelling
- Privacy and security considerations need to be balanced with the ability to derive insights from data
- Data collection burden for members is already high and impacts the feasibility of collecting additional data in surveys or by alternate mechanisms
- Following best practices with respect to data in one area can create challenges in another area

In response to the many challenges outlined above, through the organization's priority idea generation process (see *Appendix – Background* for details), the OMA struck this Data Supports for Work and Health Human Resources Working Group (DSWG). The DSWG work is overseen by the Issues and Policy Panel (IPP), and it reports directly to the OMA Board.

Mandate

The mandate of the DSWG is to develop recommendations to inform the OMA on how to address the data support needs for work and health human resources. The focus of these recommendations will be on entry-to-practice and end-of-practice physicians.

We have chosen to interpret the mandate broadly and to make recommendations that will help the organization to optimize the body of evidence available to address a range of workforce issues, including those relating to all physician career stages. (Note: To maximize inclusivity, we refer to "early-career" and "late-career" stages throughout the report.) Issues specifically pertinent to early-career and late-career physicians are addressed through Case Studies. Please consult the *Appendix - Case Studies* for detailed presentation of case study examples.

Expertise

To do this work, considerable expertise was mobilized within and beyond the OMA (see *Appendix – Working Group* for details). The physician members of the DSWG collectively bring decades of experience and expertise in workforce planning, workforce research, computer science, big data mining, modelling, health informatics, and implementation science, as well as perspectives from a range of specialties, regions (including Northern Ontario), and career stages (including trainees). The in-house subject matter experts supporting the group also bring many years of experience and outstanding skills and expertise in data, policy, analytics, evaluation, and program development and implementation. The group consulted internally to leverage the expertise of the Senior Directors for Membership Services and for Equity, Diversity, and Inclusion (EDI), and externally with world-renowned experts in health workforce data and planning.

Approach

A systematic approach was taken to this work, involving an initial review and inventory of OMA workforce data assets, and comparison of data elements with an established Minimum Data Standard for health workforce planning to identify instances where OMA data *do not* meet the standard. A list of extant and aspirational data and tools was developed and conceptually stress-tested against policy and planning questions that an ideal health workforce dataset should be able to answer, with a view to identifying questions that cannot be addressed with current OMA data assets and highlighting high priority data and tools. Recommendations stem from these activities. Consultation with internal experts was integrated throughout the process to optimize the relevance, utility, and feasibility of the recommendations. Please consult the *Appendix - Methodology* for more details.

Vision

The DSWG envisions an organizational state in which:

1. The OMA uses fit-for-purpose data to support decision-making.

High quality data underpin organizational intelligence, and investments in data and data infrastructure yield important insights that position the OMA as a key thought leader and advocate, and maximize the organization's influence in the health system.

2. The OMA's data assets are comprehensive, granular, reliable, standardized, timely, and longitudinal.

High standards for data allow the OMA to derive the most value from data and facilitate integration, evaluation, and continuous improvement in data assets and analysis over time.

3. The OMA adopts leading practices in the collection, governance, standardization, access, and use of data.

Adopting leading practices ensures data privacy and security, and credibility and accountability, within the organization and beyond.

A Principled Approach to Health Workforce Issues

The work of the DSWG is intended to help the OMA optimize the body of evidence available to analyze issues with a workforce dimension.

To guide its work, the DSWG identified aspirational characteristics of workforce data, leading practices in health workforce data management, leading practices for equity, diversity and inclusion data, and aspirational health workforce analysis capabilities. Please refer to the *Appendix – Principles and Best Practices* for a detailed presentation and discussion of these principles and practices.

The DSWG outlines a comprehensive, stepwise approach to studying health workforce issues. Please refer to the *Appendix – Recommended Approach to Workforce Issues* for a detailed overview of how an optimized organizational data strategy, data assets, and tools and capacity strengthen the ability of the organization to leverage data to support decision-making in response to a range of workforce issues.

The DSWG mandate includes a focus on entry-to-practice and end-of-practice physicians, and this was addressed through case studies that illustrate the application of a systematic approach to specific issues relevant to early-career and late-career physicians. Please see *Appendix - Case Studies* for a detailed presentation of examples.

Recommendations

We recommend that the OMA:

1. Develop and adopt a fit-for-purpose organizational data strategy

An organizational data strategy is required to identify current and emerging health system issues and the data needed to address them in a comprehensive, evidence-based way. An organizational data strategy promotes coordinated data management, safeguards data privacy and security, and supports risk mitigation. Making implementation of the strategy and adherence to it part of the core responsibilities of a senior staff member (such as a Chief Analytics Officer) ensures that an accountability mechanism and dedicated resources are in place to prioritize and champion the strategy. Regular review of the overall strategy and its components allows for proactive adjustment to meet future organizational needs and supports continuous improvement. The risks of failing to adopt and implement a coherent organizational data strategy include: inadequate leverage of data to achieve organizational objectives, data siloes, inconsistencies, security vulnerabilities, and missed opportunities to identify emerging issues of consequence for physicians.

Recommendations			**Effort & Investment**
1.1.	The organizational data strategy should include the following components:		
	1.1.1. Data Governance Framework	The Data Governance Framework supports accessibility and usability of data, development and evaluation of policy related to data, monitoring of system performance, and continuous quality improvement. The Framework also addresses internal accountabilities and data stewardship with the goal of supporting transparency while ensuring that confidentiality, privacy, and security are maintained appropriately. The Framework guides the education and training of staff and assures sufficient organizational capacity to support data management, analysis, and knowledge translation.	Modest
	1.1.2. Data Risk Management Framework	The Data Risk Management Framework takes a broad view of risk, identifying potential risks associated with the collection, acquisition, storage, stewardship and use of data, the probabilities of these risks, and their potential impacts. For each of the risks identified, the Framework includes strategies for management and mitigation, and references leading practices and detailed plans. The Framework provides general guidance on maintaining compliance with data sharing agreements, and identifies risks related to privacy and security, infrastructure, and staff capacity. Reference to key principles, such as purposeful data collection, avoidance of duplication, reduction of data collection burden, and identification of the strengths and	Modest

		limitations of individual data elements and triangulation of data sources to optimize accuracy, are essential components of the Framework.	
	1.1.3. Data Privacy and Security Plan	The Data Privacy and Security Plan addresses the risks identified in 1.1.2. and promotes compliance with legislation, regulation and leading practices. The Plan establishes clear accountability and stewardship requirements to respect and preserve confidentiality and data security. Leading practices and key principles of security (such as multi-layered protections and administrative, physical, and technical controls), protection of privacy and minimization of the risk of re-identification (such as aggregation and suppression of the contents of small cells), and incident response are included in the Plan. In cases where questions or uncertainties arise regarding data security or privacy, guidance from the OMA Privacy Officer should be sought.	Modest
	1.1.4. Data Standardization Plan	The Data Standardization Plan supports the conditions needed to link, integrate and manage data elements across the organization and longitudinally. The Plan supports optimization of data validity, reliability and comprehensiveness, identifies gaps and remediation measures, and strives to facilitate ready accessibility of data assets and intelligence.	Modest
	1.1.5. Data Architecture and Integration Plan	The Data Architecture and Integration Plan ensures that broad organizational data structures support integration of the organization's data assets in a way that optimizes the use of data to support decision-making.	Modest
	1.1.6. Data Life Cycle Management Plan	The Data Life Cycle Management Plan addresses considerations related to data acquisition, storage, and destruction. The Plan recognizes that life cycles of different data elements and data from different sources will be different, and accounts for the factors that are unique to each data element and source.	Modest
	1.1.7. Provisions for Special Cases	The organizational data strategy includes a process for identifying and addressing Special Cases. These cases may be related to information considered sensitive (such as Indigenous, equity and diversity, or Physician Health Program data), to emerging opportunities or threats (such as Artificial Intelligence), or to other as-of-yet unforeseen situations. Including provisions for Special Cases in the organizational data strategy ensures that the organization can be responsive to changing contexts and can address emerging or sensitive issues intentionally and respectfully. These provisions also facilitate the collaborative work with partners and experts necessary to build trust and maintain organizational credibility.	Moderate
1.2.	A senior staff member should be responsible for ensuring that the organizational data strategy is implemented and adhered to across the		Moderate

	organization. Executive level commitment to the strategy ensures that it is an appropriately resourced priority that is part of the organization's long-term plan.	
1.3.	The organizational data strategy and its components should be refreshed regularly.	Modest

Feasibility:
Implementation of these recommendations is highly feasible with modest investment and executive level commitment. Many of the individual components that should be included in the strategy (Recommendations 1.1.1. through 1.1.6.) are already embedded in OMA policy, process, and culture. Some consultation and compilation will be required to create a coherent and comprehensive strategy; this could be accomplished internally (contingent on staff resources and capacity) or through recruitment of external expertise. Identifying a senior staff member to take responsibility for the organizational data strategy (Recommendation 1.2.) and developing a process for identifying and addressing Special Cases (Recommendation 1.1.7.) will require some additional effort to accomplish but is eminently feasible.

2. Optimize the acquisition and use of data to achieve organizational objectives

Although OMA data assets are some of the most comprehensive in the country, they are still not robust enough to address many of the physician workforce issues underpinning current health system challenges. As such, acquiring and using high quality data to support policy, advocacy, workforce modelling, and other organizational activities should be a priority for the OMA. The risks of not pursuing additional data – through collection or data sharing – include: flawed or inaccurate projections and incorrect conclusions that hamper policy, advocacy and member service; and missed opportunities to identify and respond to emerging physician workforce issues.

Recommendations		**Effort & Investment**
2.1. Develop a data literacy communication and education plan for the OMA	Data literacy refers to "the ability to derive meaningful information from data".[1] The OMA should invest in improving organizational data literacy by providing education and resources to the Board, physician leaders, staff, and interested members. Data literacy education focuses on the importance of data to the work of the organization, and the considerations associated with collection, protection, stewardship and use of data to achieve organizational objectives. Making promotion of data literacy one of the responsibilities of the staff member responsible for the organizational data strategy fosters an integrated and efficient approach to data. Uptake and impact of data literacy communication and education initiatives should be measured, and the plan reviewed regularly and adjusted based on feedback received.	Modest

2.2. Integrate a data-driven focus on equity and diversity into OMA policy and strategy	Despite strong evidence that a diverse and inclusive health workforce leads to improved quality of care and population health equity outcomes, we know very little about equity and diversity dimensions of the physician workforce. The OMA should commit to identifying, tracking, and remedying physician workforce equity gaps. To do this, the OMA should collect equity data from members. The following data elements are of interest: • Gender Identity • Language Ability • Race, National or Ethnic Origin • Indigenous Identity • Francophone Identity • Disability • Sexual Orientation and Expression • Religion • Country of Origin The CPSO collects data regarding Gender Identity (response options: Male/Female/Non-binary) and this information is shared with the OMA. The CPSO also collects data regarding Language Ability (prompt: "Language in which I provide medical services") but this information is not shared with the OMA. The other equity data elements of interest are neither captured directly by the OMA nor available through data sharing. Collecting additional and potentially sensitive information from members can increase data collection burden and generate concerns about privacy and confidentiality as well as legitimate questions about how the information will be used. As such, we recommend that organizational subject matter experts in EDI guide the management of equity data. This guidance should address equity data collection, stewardship, and use, and may include planning for sequential and progressive data collection, assigning priority to data elements based on their utility to support policy and decision-making, addressing concerns about confidentiality and re-identification, implementing a communication and knowledge translation plan, and developing processes to address data collection burden and ensure continuous quality improvement. Iterative review and evaluation of progress with respect to the capture of physician workforce equity data should be included in the plan. The goals of this work include: increasing the number of equity data elements collected directly or captured through data sharing; increasing the proportion of members with high quality equity and diversity information included in their profiles; and increasing the number of physician workforce questions with an equity dimension that can be addressed in an evidence-informed	Moderate

	way. Progress toward these goals may be measured as a function of these metrics. Indigenous physicians contribute to diversity and cultural safety in health care, which can lead to more appropriate care and better outcomes,[2] and Indigenous identity data are urgently needed to help assess progress being made toward the Truth and Reconciliation Commission Call to Action 23.(i): *Increase the number of Aboriginal professionals working in the health-care field*.[3] The plans, processes, and safeguards that need to be in place for equity data are even more salient for Indigenous identity data, and we recommend that guidance be sought from Indigenous physician leaders and/or an Indigenous advisory council on issues related to the collection, verification, storage, analysis and use of Indigenous data.	
2.3. Work with the CPSO to expand existing data sharing agreements (DSAs)	Physicians in Ontario provide a lot of information to the CPSO. Because the information is collected mandatorily annually at registration, and physicians must attest to the veracity of the information they provide, data from the CPSO are considered to be high quality and timely. However, only some of the data that are collected by the CPSO are shared with the OMA, even though some data elements (such as Language Ability) are publicly available on the CPSO website. Given that relations between the two organizations have been strained in the past, the OMA should work to strengthen its relationship with the CPSO with a view to expanding data sharing. The priority for an expanded DSA should be publicly available data elements that are not currently shared (such as language ability and hospital privileges). The possibility of sharing other data elements of interest (such as historical data, practice setting data, and capacity data) should be explored subsequently. The goal is to expand the DSA between the OMA and the CPSO to include additional data elements necessary to support OMA health workforce work. Progress toward the goal may be measured by monitoring the number of data elements added to the data sharing agreement.	Significant
2.4. Work with the Ministry of Health to improve source data and to update DSAs	Data streams from the Ministry of Health are used extensively at the OMA for workforce and health system analysis. Because improvements to source data (such as data collected through OHIP) would enhance analytic capabilities, the OMA should work with the Ministry to address shortcomings and inconsistencies in data collection through OHIP. This work should take place at bilateral tables, including the Physician Human Resources Working Group (PHRWG) and the Physician Services Committee (PSC), and through the Negotiations Task Force (NTF). Modernization of existing data sharing agreements would benefit the OMA by creating conditions that support more advanced	Significant

	modelling. The OMA should work with the Ministry to update data sharing agreements, making them flexible enough to accommodate changes in technology such as cloud storage and cloud computing. The goal of this work is to collaborate with the Ministry to improve source data and to update and modernize data sharing agreements for Ministry data streams. Progress toward the goal may be measured by the inclusion of the issue on agendas and workplans at bilateral tables, and by the subsequent updating of DSAs.	
2.5. Explore other opportunities to improve data assets through expanded partnerships and DSAs	Data sharing can be an efficient and effective way of capturing data that are not directly collected by the OMA. Data sharing optimizes available data while reducing data collection burden for members and making more diverse data elements available for use in analysis. As such, the OMA should explore opportunities to improve data assets through expanded partnerships and data sharing agreements. We recommend engaging with the following organizations: the Ontario Physician Reporting Centre (OPRC), the Council of Ontario Faculties of Medicine (COFM), Ontario Medical Schools, the Canadian Medical Association (CMA), the Institute for Clinical and Evaluative Sciences (ICES), the Canadian Institute for Health Information (CIHI), the Royal College of Physicians and Surgeons of Canada (RCPSC), the College of Family Physicians of Canada (CFPC), and other provincial/territorial medical associations. The goal of this work is to improve data assets through data sharing. Progress toward this goal may be measured by monitoring the number of additional data elements made available upon request or through data sharing agreements.	Moderate
2.6. Review data and tools regularly to ensure ongoing strategic investments	Regular review of the data and tools that facilitate workforce analysis and decision-making is necessary. The OMA should leverage the expertise of the OMA Physician Human Resources Committee (OHRC), which closely monitors physician workforce issues as well as the data landscape, to provide guidance with respect to the ongoing strategic investments that are needed to optimize the ability of the organization to respond to emerging, as well as emergent, workforce issues.	Modest

Feasibility:

Implementation of these recommendations is feasible. Recommendations 2.1. and 2.6. are internally focused and will be easy to accomplish with modest investment. Recommendations 2.2. and 2.5. are more elaborate and will require more investment to accomplish; however, the groundwork and organizational infrastructure required are already in place. Because Recommendations 2.3. and 2.4. are contingent on partnerships with other organizations and will require relationship-building to accomplish, they are associated with the most uncertainty and will require longer term investment.

3. Invest in tools and capacity to support workforce analysis and decision-making

Although data are important, without the tools and capacity needed to produce intelligence and communicate findings, their added value remains unrealized. Investments in tools to leverage data to address specific issues, and in staff with the expertise and capacity to deliver required outputs, should be a priority for the OMA. The risks of failing to invest in tools and capacity to support workforce analysis and decision-making include: missed opportunities to identify and study workforce issues and foster a culture of planning; and a potential loss of organizational credibility resulting from inability to convert data into intelligence to achieve organizational objectives.

<table>
<tr><th colspan="3">Recommendations</th><th>Effort & Investment</th></tr>
<tr><td>3.1. Optimize and leverage data and analytics proficiency</td><td colspan="2">The OMA has an opportunity to advance organizational priorities through strategic investments, thought leadership, champions, education, and advocacy grounded in analysis.

To do this, the OMA should:
1) Embed processes for members, physician leaders, and staff to explore policy-relevant questions in a data-driven manner across the organization;
2) Leverage the OHRC as a resource for guidance on physician workforce issues, analyses, and decision-making; and
3) Invest in knowledge translation by bringing workforce information to the membership through dashboards and visualizations.</td><td>Moderate</td></tr>
<tr><td>3.2. Invest in capacity to manage and maintain the OMA membership database</td><td colspan="2">The OMA membership database (OMA Application System and OMA Management System) is a crucial physician workforce data asset that has untapped potential. The OMA should leverage the experience and expertise of the Membership team for guidance on the current strengths and limitations of the member database and its architecture, and advice on capacity expansion and integration. The OMA should also invest in capacity to manage and maintain the database and its infrastructure, and to optimize its integration with other organizational data assets, and maximize its utility in support of analysis, policy, and decision-making.</td><td>Moderate</td></tr>
<tr><td rowspan="2">3.3. Invest in tools to support workforce analysis</td><td colspan="2">The following tools are needed to address timely physician workforce issues:</td><td></td></tr>
<tr><td>3.3.1. PRIME</td><td>The Physician Resource Integrated Model (PRIME)* is intended to provide quantitative insights into current and future physician supply and need. The outputs generated by PRIME fill an important gap in provincial physician workforce and health system planning and will be foundational to strategic decision-making. Estimates from PRIME are eagerly awaited by many members and physician leaders who are trying to make workforce decisions with insufficient information. The OMA should continue to invest in PRIME and should</td><td>Moderate</td></tr>
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		work to leverage outputs from PRIME in organizational policy and decision-making.	
	3.3.2. Physician Capacity	Physicians' contributions to the health system extend far beyond direct patient care. And yet, teaching, research, administration, and leadership are rarely captured quantitatively. The OMA should invest in developing a physician capacity modelling methodology that would leverage OHIP and membership data to capture the full range of physician activity. The methodology would generate more robust estimates of physician workforce capacity, provide a more accurate reflection of physician contributions to the health system, and support planning by reducing the risk of overestimating physician capacity. Outputs from this methodology should be integrated with PRIME and other workforce data and tools.	Significant
	3.3.3. Physician Retirement	Physician retirement and attrition impacts workforce sufficiency, particularly in the context of an aging physician workforce. The OMA should invest in developing a physician retirement predictor that can be used in conjunction with other tools, such as PRIME, to identify specialties, regions, and communities at risk of being underserved due to physician retirement, and to guide interventions that aim to maintain service levels.	Significant
	3.3.4. Rurality	The measurement and characterization of rurality is an important consideration for workforce analysis. The Rurality Index for Ontario (RIO) was developed at the OMA over 20 years ago and is widely used within the organization and by government. The OMA should conduct an assessment of whether RIO remains the most suitable tool for capturing rurality, and should aim to optimize the organizational approach to rurality by updating, enhancing, or replacing RIO.	Moderate
3.4. Invest in skills and expertise to support workforce analysis	Physician workforce analysis requires specific skills in addition to in-depth content expertise and knowledge of physician human resources issues along the continuum of practice. The OMA should build a well-rounded cadre of staff with a range of skills and experience that can be applied to workforce analysis. Expertise in analytics, predictive modelling and machine learning, as well as in health geography and geographic information systems, is necessary. Expertise in quantitative and qualitative research methods and in research communication and knowledge translation is also needed. In accordance with leading practices in workforce management, adequate staff capacity and a certain degree of redundancy are necessary to ensure optimized analytic support.		Moderate

Feasibility:
Implementation of these recommendations is feasible with concerted effort. Recommendations 3.1., 3.2., 3.3.1., 3.3.4., and 3.4. relate to the extension of existing OMA capabilities, resources, and programs of work, and can easily be accomplished with investment. Recommendations 3.3.2. and 3.3.3. are new undertakings that will require additional dedicated resources and will take time to accomplish.

** The OMA's **Physician Resources Integrated Model (PRIME)** is an innovation in physician workforce planning. The PRIME model is designed to guide and support health system stakeholders in identifying policies to align the capacity of the healthcare workforce to meet population health needs under current and different future scenarios. PRIME mobilizes the best available data related to population health, health services utilization, and the physician workforce. The model estimates the physician workforce that is required to meet the unique needs of patients, based on their demographic and epidemiological profiles, and the level of service achieved in the benchmark population. It can help identify relative shortages in physician services as the difference between what patients currently receive and what they would have received based on their needs only. The outputs of PRIME will be available through an interactive dashboard that allows users to focus on specific geographical areas or on specific physician specialties.*

Impact

There is profound impact to be realized by adopting and implementing the recommendations of this Working Group: many of the challenges that currently hamper a data-driven approach to physician workforce issues and effective health workforce planning will be addressed, and the OMA will be able to make evidence-informed decisions about the physician workforce, policy and negotiations initiatives, and emerging issues that impact physicians.

The first set of recommendations strategically modernizes OMA workforce data management, enabling the organization to optimize data governance, privacy and security safeguards, and opportunities for integration, while addressing potential risks and accommodating future developments in data and technology.

The second set of recommendations focuses on capturing data (through collection, linkage, sharing, and collaboration with the CPSO, MOH, and others) that support comprehensive workforce analyses and the generation of intelligence to inform policy, advocacy, negotiations, and other health system decision-making within and beyond the organization.

The third set of recommendations identifies the skills, expertise, capacity, and support needed to undertake robust workforce analyses that establish the OMA as a capable and trusted resource for members and others who need information and insights about the physician workforce and the health system.

The risks of not implementing these recommendations are substantial: inadequate leverage of data and intelligence to achieve organizational objectives, and missed opportunities to identify emerging issues of consequence for physicians and the communities they serve, which, at worst, could lead to a loss of organizational credibility as a key advocate for Ontario's physicians and patients.

Success

Success means the vision for this work laid out at the beginning of this report has been achieved, that is:

1. The OMA uses fit-for-purpose data to support decision-making.

2. The OMA's data assets are comprehensive, granular, reliable, standardized, timely, and longitudinal.

3. The OMA adopts leading practices in the collection, governance, standardization, access, and use of data.

In this aspirational state, the OMA will use and derive the most value from high-quality data to advance organizational priorities. The standards and leading practices embedded in the organizational data strategy will facilitate integration, evaluation, and continuous improvement in data assets and analysis over time, and ensure data privacy and security, and credibility and accountability, within the organization and beyond. Strategic investments in data, data infrastructure, and analytical capacity will yield important insights that maximize the organization's influence in the health system.

Conclusion

The OMA's ability to develop and recommend solutions for a fit-for-purpose and future-proofed physician workforce depends on high-quality data and analysis, and adequate organizational capacity. Investing in data supports for health human resources by adopting and implementing these recommendations will allow the OMA to generate intelligence that supports policy, advocacy, negotiations, and other organizational priorities, and will position the OMA as a thought leader and solidify its reputation as a key advocate for the profession, for the health system, and for patients.

Appendix

Background

As part of governance transformation, the General Assembly (GA) was formed with the mandate to set policy priorities and generate recommendations to address the opportunities and challenges facing the profession. The General Assembly is made up of the General Assembly Steering Committee, the Priority and Leadership Group (PLG), Panels and Working Groups.

Each year, priorities are identified by the PLG and approved by the Board of Directors. Panels scope the work and identify if a working group is required to meet the needs of the priority. Each panel defines working group composition by indicating the skills, background, knowledge, and expertise that will be needed to solve issues within their mandate. Recruitment is open to all members and is supported by the OMA's Nominations and Appointments Committee.

Each working group is tasked with developing well-vetted, evidence-based recommendations that address the issue and scope presented to them. The working group reports to the panel and presents their final recommendations directly to the Board. The approved recommendations will then be implemented by the OMA. Each working group is supported by the General Assembly team, a lead team of OMA staff determined by the expertise needed to address the priority, the panel, and additional experts or stakeholders as identified.

On February 7, 2022, the PLG met virtually to determine "Data Supports for Work and Health Human Resources (HHR) Planning" as the first Issues and Policy Panel priority of the General Assembly. Desired goals included identifying comprehensive and high-quality data to support physician workforce decision-making and help align the physician workforce with the needs of the population, now and into the future. Optimizing alignment of the physician workforce with the needs of the population will:

- Improve the patient experience and the health of the population
- Enhance the experience and sustainability of physician practice across the career trajectory
- Minimize the factors that contribute to physician burnout
- Improve the cost-effectiveness of the health system

The priority was presented to, and approved by, the Board of Directors on March 30, 2022.

Mandate

The mandate of the DSWG is to develop recommendations to inform the OMA on how to address the data support needs for work and health human resources. The focus of these recommendations will be on entry-to-practice and end-of-practice physicians.

Methodology

The DSWG designed the following stepwise workplan to discharge its responsibility to provide recommendations to the Issues and Policy Panel and the OMA Board:

1. **Comprehensive inventory and review of all OMA workforce data assets, data collection, governance, and stewardship processes.**

   The list of workforce data assets (see *Supplemental Materials* for details) includes 79 data elements. Of these, 12 originate from the CPSO; 18 originate from the Ministry of Health data stream or other data partners, and are encrypted or in aggregate and are not linkable with other OMA data elements such as membership data; 6 are aspirational but may be captured through data sharing; 16 are aspirational and are not available through data sharing; and 7 have an equity, diversity, or inclusion dimension.

   Data elements were categorized as relating to Identification & Registration, Location & Demographics, Education & Training, Capacity, Other, Tools, Data Not Linkable at the Individual Level, Patient-Level Data, and Other Health System Data.

   In generating the list, we also reviewed processes related to data collection, governance, and stewardship, along with linkage issues.

2. **Comparison of OMA workforce data assets with an established Minimum Data Standard (MDS) for health workforce planning.**

   The MDS is being developed as part of a partnership between researchers at the Canadian Health Workforce Network (CHWN) and the Canadian Institute for Health Information (CIHI) through a Canadian Institutes of Health Research (CIHR)-funded project (see *Supplemental Materials* for details).[4,5] (The OMA is a member organization of the Canadian Health Workforce Network.) The DSWG applied to become a demonstration project partner, garnering early access to the MDS and an opportunity to provide feedback on, and contribute to, the MDS.

   The MDS is organized in three modules – Capacity, Education, and Identification – with a set of "Core" data elements, and a second set of optional "Core +" data elements, for each. There are 37 Core data elements and 31 Core + data elements.

   We assessed whether each data element was relevant to the profession of Medicine (the MDS is an interprofessional standard) and relevant to the OMA. We then assessed whether OMA data elements meet, exceed, or fall short of the comparable MDS data element.

3. **Identification of instances where OMA workforce data assets do not meet the standards; these represent a starting point for recommendations.**

4. **Generation of a list of policy and planning questions that an ideal health workforce dataset should be able to address.**

   We generated a list of 130 policy and planning questions (see *Supplemental Materials* for details). The questions were divided into 9 categories: Patient-Focused Demographics & Care Needs; Physician-Focused Demographics & Care Provision; Virtual Care & Technology; System Characteristics & Policy Impacts; Practice Activity, Style & Capacity; Medical Education & Career Pathways; Crisis Response & Health System Resilience; Mental Health & Burnout; and Locums.

5. **Conceptual stress-testing of OMA workforce data assets against the list of policy and planning questions.**

   When we stress-tested OMA workforce data assets against the list of 130 policy and planning questions, we found that 11 questions (8%) were absolutely answerable, 65 questions (50%) were potentially answerable, and 54 questions (42%) were not answerable with current workforce data.

6. **Identification of questions that cannot be addressed with current OMA workforce data assets provides another foundation for the development of recommendations.** The data and tools that would allow these questions to be addressed represent high priorities for investment.

7. **Issues pertinent to early-career and late-career physicians are addressed through Case Studies.**

Principles and Best Practices

To guide its work, the DSWG identified aspirational characteristics of workforce data, leading practices in health workforce data management, leading practices for equity, diversity and inclusion data, and aspirational health workforce analysis capabilities:

- In Table 1, we summarize the characteristics of high quality and robust workforce data.
- In Table 2, we compile leading practices and principles with respect to collection, governance, standardization, access, and use of data for the purposes of workforce analysis, policy-making, and advocacy.
- In Table 3, we highlight leading practices with respect to the approach to equity, diversity and inclusion data elements, along with considerations for education, communication, and change management.
- In Table 4, we identify key workforce analysis capabilities that will enable the OMA to capture, predict, and project metrics pertinent to the health system and the physician workforce, such as physician capacity (multi-dimensional), physician retirement probability, and other relevant workforce indices.

Table 1: Characteristics of High Quality and Robust Data

Data Characteristic	**Principle**
Fit-for-purpose	Data assets match the needs of the organization.
Comprehensive	All necessary data elements are included.
Granular	Data are available at the level of detail required to support decision-making at an appropriate scale.
Timely	Up-to-date data inputs (real-time, if possible) produce more reliable outputs.
Reliable	Data are consistently accurate and can be trusted to support decision-making.
Standardized	Standardized data collection and formatting enables comparison and linking with data from other sources.
Linkable	Data assets are integrated and can be linked internally and to external data sources to facilitate analysis.
Longitudinal	Repeated observations at different points in time are necessary for trend analysis and forecasting.

Table 2: Leading Practices in Health Workforce Data Management

Practice	Principle
Collection	• Data collection must be purposeful • Data should enhance the OMA's data holdings • "Original" or "first source" data collection should be reserved for data that cannot be accessed through an existing source, linkage, or partnership • Only information that is required (a minimum dataset) should be collected • Data collection should take place using standardized methods (questions and responses)
Governance	A data governance framework ensures: • data privacy and security • accessibility and usability of data • data quality and reliability (through standardization) • evaluation and monitoring of data system performance • consistent data management practices across the organization • staff education and training
Standardization	Data standardization is required to: • link, integrate and manage data longitudinally • identify data system gaps • facilitate real-time accessibility to data • ensure data validity, reliability and comprehensiveness • ensure interoperability internally and with external data sources
Access	• Access to data should be appropriate to user role • Existing Data Sharing Agreements (DSAs) should be leveraged to facilitate access to information • New DSAs should be pursued to facilitate access to new or better information • DSAs should be flexible enough to accommodate changes in technology such as cloud storage and cloud computing
Use	• Data analytics should support policy and decision-making, both routinely and in response to emerging and emergent health system challenges • Information should be made available to members through dashboards, with appropriate supporting information on interpretation and limitations

Table 3: Leading Practices for the Approach to Equity, Diversity and Inclusion (EDI) Data

Practice	Principle
Define Clear Goals	Establish specific, measurable objectives for EDI initiatives. This helps in tracking progress and identifying areas for improvement.
Collect Comprehensive Data	Qualitative insights are crucial in EDI data collection. Gather demographic data along with qualitative data to understand the full scope of diversity. Methods could include additional questions on the annual membership renewal, member surveys, focus groups, and other feedback mechanisms.
Sampling	The OMA member database captures information about all physicians in Ontario, and as such total population sampling is often possible. To the extent that sampling a segment of the membership is required (for example, to target surveys to particular groups of physicians as relevant to purpose), adopt a sampling strategy that ensures that data are collected from a diverse and representative sample of the population to avoid over- or under-representation of any one group.
Educate Members	Recognize the hesitancy that members of equity-deserving groups may have about sharing information, and work to build trust and confidence in the organizational approach to the collection and use of equity data. Communicate with members about EDI initiatives – their importance and their goals – along with the need for data to support them. Provide a mechanism for members to ask questions and offer feedback.
Educate Collectors	Train those involved in data collection to recognize and mitigate their own biases. Regularly audit data collection processes to identify and address potential biases.
Educate Users	Provide supportive explanatory material to accompany data or dashboards made available to users – which could include staff, physicians, and other external health system stakeholders – that describes the general methodology, provides notes on limitations and interpretations, and cautions about potential biases.
Confidentiality vs. Anonymity	Ensuring that personal data are anonymized or de-identified to protect individual privacy is an essential practice in any data collection process. Anonymization can be difficult when collecting EDI data, particularly in cases where it may be crucial to share identifiable data to action initiatives. For example, improving the OMA's response to challenges facing Ontario's physician workforce, such as gender pay equity and compensation in general, recruitment and retention initiatives, or complaints mechanisms, may require individually-identifying data, or data that identify a specific group of physicians, to better understand which areas require the appropriate response. The best practice for EDI data collection emphasizes confidentiality, with reassurances of data privacy and security, but not anonymity.

Table 4: Aspirational Health Workforce Analysis Capability

Analytic Capability	**Principle**
Characterization of Physician Capacity	In an ideal state, we would understand a physician's capacity in terms of Full Time Equivalent (FTE), the clinical services they deliver, and the non-clinical activities they participate in. Historically, non-clinical activities have not been considered in health human resource planning; however, as physicians take on more research, academic, and leadership roles, their time available for clinical service delivery is reduced. Furthermore, although capacity is important, understanding the *type of services* being provided allows planners and policymakers to make better decisions about meeting population demand. For example, family physicians have a broad scope of practice that can translate into many different variations in practice patterns. This variation can create challenges for health workforce planning given data are lacking on which combination of services are being provided in each region by each physician. This type of capacity analysis would have to be completed for each physician discipline because practice differences amongst different specialists would make generalization difficult.
Longitudinal Analysis of Career Trajectory	One of the challenges in health workforce planning is characterizing the trajectory or evolution of a physician's practice over time. Without an understanding of the changes that occur throughout a physician's career, workforce projections will not be accurate. A physician's practice can change in a number of ways, including changes to the number and type of OHIP and non-OHIP billable clinical services, and changes to non-clinical services such as research, academics and leadership activities. For each physician in the workforce, it is necessary to capture data points at different time periods (for example, every 3-5 years) to generate a longitudinal dataset of every physician's practice. The analysis of this dataset would show how a physician's FTE changes throughout their career. Rather than assuming that physicians provide the same clinical services on the first and last days of their practices, modelling can account for practice changes associated with career trajectory. From the longitudinal data set we would also understand when physicians begin to retire.
Iterative and Incremental Model Development	This data collection and analysis process needs to be part of a continuous cycle where the models are regularly updated. As society and medicine change, so will physicians' practices; therefore, what we observe today likely will not be the case in 10-20 years, or even sooner.

Recommended Approach to Workforce Issues

Introduction

The work of the DSWG is intended to help the OMA optimize the body of evidence available to analyze issues with a workforce dimension. The DSWG recommendations address organizational data strategy, a range of data assets, and the tools and capacity needed to leverage data to support decision-making. The recommendations are intentionally broad in scope, and adoption of them will strengthen the ability of the organization to respond to a range of workforce issues, as follows:

Step 1: Define the Problem and Context

Issues and questions form the foundation of analysis. For early-career and late-career physicians, the process includes:

- **Define Scope and Context:**
  - Clearly define the issue's scope, ensuring alignment with the OMA's strategic goals.
  - ***Example:*** *For early-career physicians, what factors influence practice location choices?*
- **Prioritize Key Issues:**
  - Engage stakeholders to identify and prioritize the most critical questions.
  - ***Example:*** *What factors predict where a physician will choose to practice?*
- **Frame Questions Across Career Stages:**
  - Develop questions tailored to different career stages to capture a comprehensive view.
  - ***Example:*** *For late-career physicians, what are key retirement trends and attrition factors?*
- **Identify Practice Patterns and Challenges:**
  - Explore questions related to practice patterns and challenges across career stages.
  - ***Example:*** *What are the challenges impacting productivity and/or job satisfaction?*
- **Focus on Attrition and Retirement:**
  - Address key questions on attrition and retirement to forecast workforce trends.
  - ***Example:*** *How can average retirement age inform succession planning?*
- **Consider Priority Workforce Issues:**
  - Identify issues with broad implications, like expanding primary care capacity.
  - ***Example:*** *What are the barriers to entry for new primary care physicians?*
- **Engage Stakeholders Early:**
  - Involve relevant stakeholders, such as the OHRC, to align issues with organizational priorities.
  - ***Example:*** *What are the key considerations relevant to physician retention?*

Step 2: Identify and Gather Relevant Data

Identify and compile the specific data elements and sources necessary to comprehensively address the defined issues, ensuring that quantitative and/or qualitative data relevant to the career stage and context of the physicians are included.

- **Define Data Needs:**
  - Align data collection with the key questions identified in Step 1.

    - ***Example:*** *Gather data on geographic distribution and incentives for practice location.*
- **Categorize Data by Career Stage:**
    - Structure data according to career stages for targeted analysis.
    - ***Example:*** *Collect data on residency locations and first practice sites for early-career physicians.*
- **Link Data to Organizational Sources:**
    - Integrate OMA membership data with external data streams for comprehensive analysis. (Note that Ministry of Health data streams are not directly linkable with internal OMA data.)
    - ***Example:*** *Explore workarounds that would allow linkage of membership data with billing data to assess workload patterns.*
- **Identify Aspirational Data Tools:**
    - Consider developing tools like a Physician Capacity Assessment Tool to predict workforce needs.
    - ***Example:*** *Use a Physician Retirement Predictor to forecast retirement trends.*
- **Validate Data Quality:**
    - Ensure data accuracy and completeness before proceeding to analysis.
    - ***Example:*** *Validate that attrition data accurately reflect changes in physician practice patterns.*

Step 3: Analyze and Interpret the Data

Analyze the gathered data to uncover trends, patterns, and insights, using quantitative and/or qualitative methods to inform actionable conclusions that directly address the identified issues.

- **Which Questions are Answerable?**
    - Determine which key questions can be effectively answered with the available data.
    - ***Example:*** *Answer "What factors predict where early-career physicians choose to practice?"*
- **Assess Current State, Desired State, and Gap:**
    - Analyze the current situation, define the desired outcome, and identify gaps.
    - ***Example:*** *Compare current vs. desired distribution of early-career physicians in underserved areas.*
- **Formulate and Test Hypotheses:**
    - Develop and test hypotheses to guide targeted interventions.
    - ***Example:*** *Test whether loan repayment programs increase the likelihood of choosing rural practice.*
- **Evaluate Intervention Scenarios:**
    - Model different intervention scenarios to identify the most effective approach.
    - ***Example:*** *Compare financial vs. non-financial incentives for retaining rural physicians.*
- **Identify Key Insights for Policy:**
    - Extract actionable insights for policy recommendations aligned with OMA's goals.
    - ***Example:*** *Recommend scaling mentorship programs to improve physician retention.*
- **Prepare Data for Organizational Use:**
    - Present findings in a format usable by OMA committees, staff, working groups, and leadership.
    - ***Example:*** *Create a dashboard visualizing attrition rates.*

Step 4: Develop Actionable Recommendations

Translate the findings into clear, actionable recommendations that inform policy and decision-making, with a focus on addressing the specific needs and challenges identified in the analysis.

- **Identify Policy Implications:**
  - Determine how findings impact current policies and where new ones are needed.
  - ***Example:*** *Recommend policy adjustments to improve incentives to practice in underserved areas.*
- **Develop Advocacy Strategies:**
  - Create strategies to communicate recommendations to stakeholders.
  - ***Example:*** *Propose advocacy for loan forgiveness programs to support underserved areas.*
- **Implementation Plan:**
  - Outline a detailed plan for putting recommendations into action.
  - ***Example:*** *Roll out mentorship programs in pilot regions before broader implementation.*
- **Monitoring and Evaluation:**
  - Establish metrics to monitor the effectiveness of interventions and adjust as needed.
  - ***Example:*** *Track retention rates before and after implementing incentives.*
- **Stakeholder Engagement:**
  - Engage stakeholders to ensure buy-in and collaboration throughout the process.
  - ***Example:*** *Host webinars to present findings and gather feedback from physicians.*
- **Sustainability and Long-Term Impact:**
  - Ensure recommendations are sustainable and consider their long-term impact.
  - ***Example:*** *Secure commitment to ongoing evaluation of policy relevance.*
- **Organizational Integration:**
  - Integrate findings across OMA committees to align with broader strategic objectives.
  - ***Example:*** *Use data insights to develop wellness initiatives that reduce burnout.*

Case Studies

The following case studies illustrate the utility of the work for the purposes of systematically examining specific issues, such as those relevant to early-career and late-career physicians.

Case #1 – Improving Early-Career Physician Retention in Underserved Areas

Step 1: Define the Problem and Context

Problem: Inadequate retention of early-career physicians in underserved areas can exacerbate healthcare disparities. Understanding the factors that influence practice location choice is key to addressing this issue.

- **Key Questions:**
  - What factors predict whether early-career physicians will choose to start practices and stay in underserved areas?
  - How do financial incentives and mentorship influence retention?
- **Context:** Underserved communities in Ontario face physician shortages, making access to care difficult for patients and working conditions difficult for physicians who remain in these communities. This a priority for the OMA.
- **Stakeholder Engagement:** Involve the OHRC and NTF to align with strategic goals.

Step 2: Identify and Gather Relevant Data

Data Needs: Collect data on geographic distribution of physicians, measures of medical underservice, financial incentives, mentorship participation, and retention rates.

- **Data Sources:**
  - Data regarding population characteristics and needs
  - OMA membership data
  - Ministry of Health data
  - Focus on early-career physicians (1-5 years into practice)
- **Validation:** Ensure data accuracy and completeness before analysis.

Step 3: Analyze and Interpret the Data

Analysis: Examine data to identify trends and answer key questions.

- **Answerable Questions:** Which factors influence physician retention in underserved areas?
- **Gap Analysis:** Identify the gap between current retention rates and desired retention rates.
- **Hypothesis Testing:** Test if combined financial incentives and mentorship improve retention.
- **Intervention Scenarios:** Compare the effectiveness of financial vs. mentorship incentives.

Step 4: Develop Actionable Recommendations

Recommendations: Propose strategies to enhance retention in underserved areas.

- **Policy Implications:** Enhance financial incentives and mentorship opportunities.
- **Advocacy:** Advocate for increased funding and targeted communication to medical trainees and early-career physicians (physicians having completed residency training or joined the workforce within the past 5 years).
- **Implementation:** Pilot combined incentive programs in selected underserved areas.
- **Monitoring:** Track retention rates and adjust programs based on outcomes.
- **Integration:** Apply successful strategies across other underserved areas.

Case #2 – Supporting Late-Career Physicians Approaching Retirement

Step 1: Define the Problem and Context

Problem: The retirement of late-career physicians can lead to significant workforce gaps, particularly in specialties with fewer practitioners. Understanding the factors that influence retirement decisions is crucial for developing strategies to retain experienced physicians in the workforce longer.

- **Key Questions:**
  - What factors predict when and why physicians decide to retire?
  - What supports could encourage physicians to delay retirement or transition to part-time roles?
- **Context:** Many regions in Ontario face potential shortages as a significant portion of the physician workforce nears typical retirement age.
- **Stakeholder Engagement:** Engage the OHRC and other relevant committees to ensure alignment with workforce planning objectives.

Step 2: Identify and Gather Relevant Data

Data Needs: Gather data on physician age, retirement rates, factors influencing retirement decisions, and availability of transition support programs.

- **Data Sources:**
  - OMA membership data
  - Retirement trends documented in the literature
  - Ministry of Health data
  - Identify typical retirement patterns amongst older physicians and associated factors
  - Qualitative exploration of factors influencing retirement decisions
- **Validation:** Ensure the data accurately reflect retirement patterns and contributing factors.

Step 3: Analyze and Interpret Data

Analysis: Analyze data to uncover patterns and insights that inform retention strategies.

- **Answerable Questions:** What are the key predictors of retirement, and how do these vary by specialty or region?
- **Gap Analysis:** Compare current retirement trends with the desired state of retaining more late-career physicians in the workforce.
- **Hypothesis Testing:** Test whether factors like flexible work arrangements, access to locum support, or reduced administrative burdens delay retirement.
- **Intervention Scenarios:** Evaluate the potential impact of offering phased retirement options or part-time work arrangements.

Step 4: Develop Actionable Recommendations

Recommendations: Develop strategies to retain late-career physicians in the workforce longer.

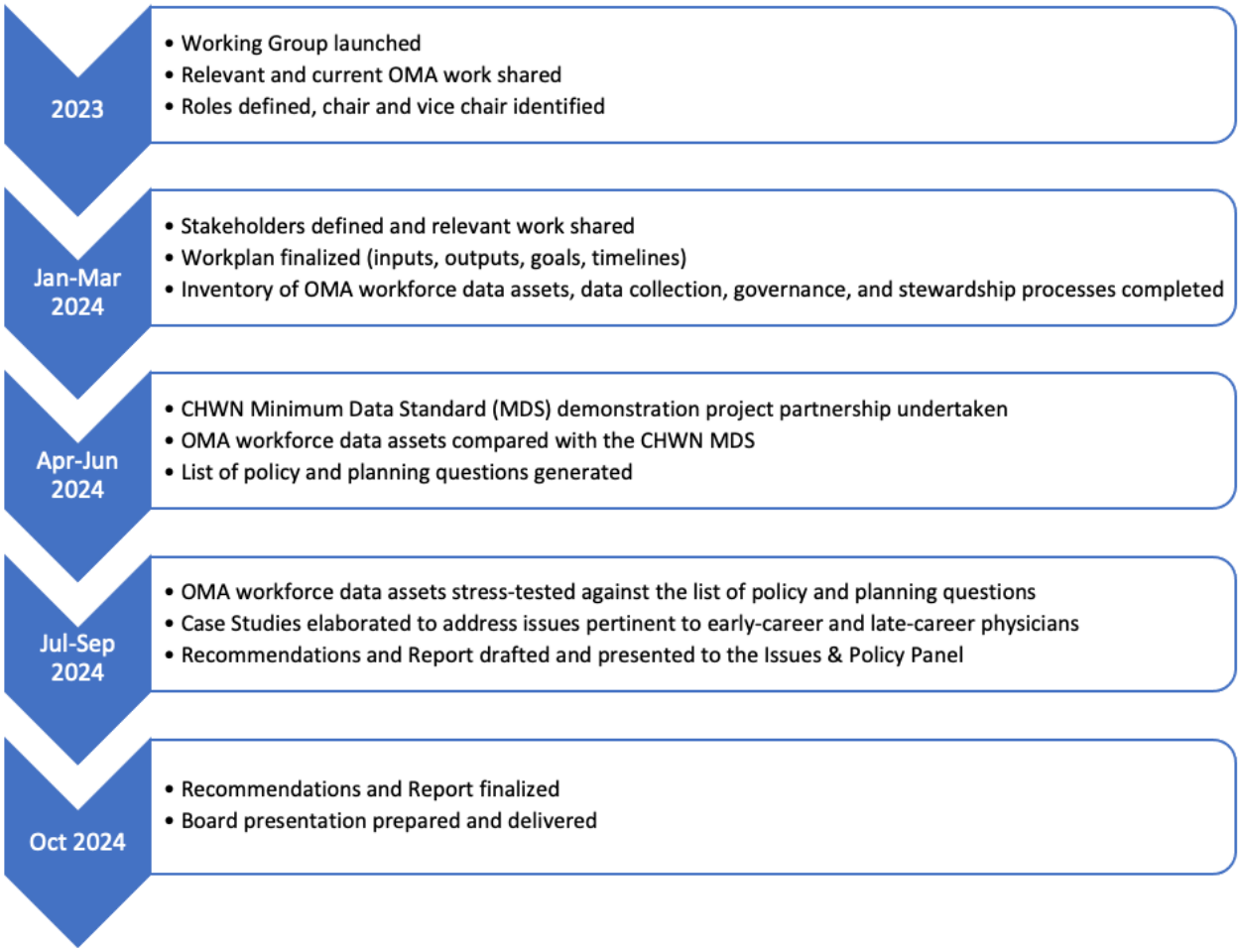
- **Policy Implications:** Propose policies that offer flexible work arrangements, reduced administrative duties, or phased retirement options.
- **Advocacy:** Advocate for government support to fund transition programs that keep experienced physicians in practice longer.
- **Implementation:** Pilot flexible retirement models in specialties or regions facing the most critical shortages.
- **Monitoring:** Track the effectiveness of these interventions through retention rates, physician satisfaction, and workforce capacity.
- **Integration:** Apply successful retention strategies across other regions and specialties to mitigate the impact of retirements.

Workplan

The DSWG was the first Working Group to be launched as part of the OMA's new General Assembly structure. In launching the group, new processes were drafted with consideration given to identifying the most relevant subject matter experts, supports and internal stakeholders. These processes were very new to all OMA teams, and there were resource and capacity challenges to overcome to support the DSWG and set it up for success. The timeline for establishing the DSWG and identifying a chair and vice chair, along with defining roles, activities, and a workplan was longer than anticipated. Further, one member resigned, and it was decided it would be more efficient to proceed with the work with the remaining members than to recruit and onboard a new member.

As the first working group launched in the OMA's governance transformation, many lessons have been learned that will prove beneficial to subsequent working groups, and will be communicated to OMA leadership. Once the workplan was defined, the chair strategically planned and led the work, and supported members in meeting timelines and scope on an aggressive schedule to make up for the protracted initiation phase.

DSWG Workplan and Timeline



Working Group

Dr. Sarah Simkin (Chair)
Sarah Simkin is a family practice anaesthetist and health workforce researcher based in Ottawa. She has served on the OMA Physician Human Resources Committee (OHRC) since 2018, is currently OHRC Co-Chair, and sits on the bilateral OMA-MOH Physician Human Resources Working Group. She is the Health Workforce Planning theme co-lead for the Canadian Health Workforce Network and is a co-investigator on the CIHR-funded minimum data standard project *Inclusive, Integrated and Enhanced Data and Digital Infrastructure Platforms for More Timely and Responsive Health Workforce Planning and Decision-Making*. In collaboration with Ontario Health Toronto, she has been leading Integrated Primary Care Workforce Planning for the City of Toronto since 2017, and she is an Assistant Professor at the University of Ottawa. She has extensive experience using pan-Canadian and Ontario-specific health administrative datasets and other data to address a diverse range of health workforce issues and questions, including physician practice patterns, mental health experiences of professional workers, and physician attrition and retirement.

Dr. Michael Balas (Vice-Chair)
Michael Balas is a resident ophthalmologist at the University of Toronto, distinguished by his unique ability to merge health sciences with advanced technology. His interdisciplinary expertise in both medicine and computer science drives his innovative approach to addressing complex challenges in healthcare. As President of Docforce, Michael leads the development of a cutting-edge platform that revolutionizes the way Canadian physician workforce data is utilized, enabling more informed and strategic decision-making in health human resources. Previously, he was Chair of the Health Human Resources Task Force of the Canadian Federation of Medical Students (CFMS). Furthermore, Michael is heavily involved in research, which is marked by its diversity and depth, and underpinned by a strong foundation in data science and analytics. His work spans several critical domains, from artificial intelligence and medical education to genomics and large-scale epidemiological studies. He has made significant contributions to understanding surgical learning curves, demographic trends in ophthalmic care, and the impact of procedural timing on patient outcomes. In addition to his work in clinical and surgical research, Michael is deeply committed to equity in healthcare. He has conducted impactful studies examining disparities within the healthcare system, particularly focusing on gender-based differences. Michael Balas continues to push the boundaries of interdisciplinary research, striving to shape the future of healthcare through innovation and a deep commitment to improving patient care.

Dr. Anthea Paul
Anthea Paul is a recent graduate in family medicine from the enhanced skills program in Women's Health from the University of Toronto. She completed residency in family medicine at the University of Ottawa. She is an assistant professor at Queen's University. She works with refugee and uninsured populations along with other vulnerable populations in Scarborough, Ontario and has joined her parents in their community-based family medicine practice also

based in Scarborough. Anthea has an interest in medical education and works with the Medical Council of Canada for MCCQE exam evaluation, NAC exam evaluation and with the University of Toronto/Queen's university in medical education. She has served the OMA including the Data Supports for Health Human Resources Working Group, OMA Women, and Civility, Diversity and Inclusion Committee. Her Masters research at Oxford University, UK was focused on big data and clinical fertility intervention. Further research evolved to include county-wide forensic data organization and detailed analysis leading government policy and public health programming/ intervention adopted by the Clark County Coroners Office, Las Vegas, Nevada.

Dr. David Savage

David Savage is an emergency physician at the Thunder Bay Regional Health Sciences Centre and an Associate Professor at NOSM University. He is also the Interim Site Director at ICES North. He completed his PhD at the University of Toronto in systems modelling and decision making before his medical training at NOSM University. David holds adjunct faculty positions at Lakehead University and Saint Mary's where he co-supervises Masters and PhD students. His research focuses on health human resource planning (HHRP), predictive analytics in the emergency department (ED) and improving rural health outcomes. David's HHRP research at ICES has focused on using OHIP billing data to better understand the number and type of services that family physicians are providing across the province of Ontario and the impact of rurality.

Dr. Steven Wong

Steven Wong is a General Internal Medicine specialist at St Joseph Healthcare Hamilton and Assistant Professor with McMaster University. He has additional training as Epic certified physician builder, physician analyst, Epic data model, and Masters in Health Informatics. He works as the Associate Chief Medical Information Officer at St Joseph Healthcare Hamilton and has been involved in numerous health information technology projects and data projects. This includes virtual care implementation pre- and during COVID with associated remote patient monitoring, standing up a physician quality analytics platform from requirements engineering to implementation, and corporate data governance.

Dr. Pamela Liao [resigned]

Pamela Liao is a family physician focused in geriatrics, rehab and palliative medicine in Toronto. She has served on a number of OMA committees including OMA Women and the Member Services Committee. She has also held physician leadership positions at the OMA as Chair of the Section on Palliative Medicine, General Assembly Delegate, and District 11 Delegate.

Activity

To meet their mandate to deliver recommendations, the Working Group followed a detailed month-by-month workplan that included the following:

Working Group Meetings:

- April 20, 2023
- June 8, 2023
- August 15, 2023
- January 25, 2024
- February 29, 2024
- March 28, 2024
- May 9, 2024
- June 26, 2024
- September 5, 2024

Consultations:

- George Marusic: Review of all OMA data assets
- Kathleen Clements: Overview of OMA's Physician Human Resources Committee (OHRC) and bilateral Physician Human Resources Working Group (PHRWG)
- Jasmin Kantarevic and the OMA Economics, Research and Analytics Team: Introduction to Physician Resources Integrated Model (PRIME) and updates on PRIME
- Ina Nesbitt: Review of the OMA Membership Database
- Dr. Ivy Bourgeault: Introduction to the Canadian Health Workforce Network Minimum Data Standard
- Dr. Katherine Zagrodney: Next steps for the Canadian Health Workforce Network Minimum Data Standard
- Jai Sahak: Discussion of EDI data issues
- Dr. Jane Purvis: Perspective of the Issues and Policy Panel

Independent Work:

- Review of data assets and Minimum Data Standard
- Review of data and tools, and the compendium of policy and planning questions
- Development and review of presentations for the Issues and Policy Panel and Board
- Preparation and review of report

Total Time Commitment:

In addition to coming together for Working Group meetings, we have worked independently and in teams to complete this work. We have come together for 55 hours of meetings and devoted more than 320 hours collectively to this work.

Budget:

- Honoraria for six 2-hour meetings per fiscal year (6 members, 1 resigned)
- Honoraria for six 30-min agenda-setting meetings for the chair and vice chair
- Honoraria for the chair and vice chair roles have a premium applied, per OMA policy

Key Success Factors

The following factors have been identified as being important to the success of this Working Group:

- Depth of expertise of Working Group members in relevant subject matter areas
- Depth of engagement and support for the work amongst members
- Balanced representation from a range of specialties, regions (including Northern Ontario) and career stages (including trainees)
- Willingness of members to devote time to independent work
- Skilled leadership and guidance from the chair
- Accommodations to allow all members to participate fully
    - Additional individual meetings with the chair for members who were not able to attend regularly scheduled meetings
    - Meetings planned further in advance to accommodate scheduling constraints
- Highly experienced staff support and Subject Matter Expertise
- Skilled administrative and technical support
- Leverage of external networks and connections to support the work
- Clear vision of the end goal, and the intermediate steps needed to get there
- A focus on equity and accountability, and the commitment to inclusivity, ensuring all members had opportunities to contribute their knowledge and voice their opinions.

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Supplemental Materials

1. Inventory of OMA Workforce Data and Tools
2. Compendium of DSWG Policy and Planning Questions
3. OMA Physician Resources Integrated Model (PRIME) Poster
4. Canadian Health Workforce Network Minimum Data Standard Poster