An Innovative Approach to Modeling Physician Retirement

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Background

- The physician workforce is aging and retirement represents an important source of attrition from the workforce
- Many planning models use simplified approaches to modeling retirement (such as universal exit from the workforce at age 65)
- A more sophisticated approach would result in more accurate estimates that are more useful for workforce planning and decision-making

Objective

- To develop a fit-for-purpose physician retirement modeling methodology to support local and regional workforce planning and decision-making

Approach

- We developed the methodology as part of **primary care physician workforce planning** in Toronto
- The model generates outputs for **158** neighbourhoods (**2019** to **2025**)

Methodology

Inputs

- Individual physician workforce profiles
- Individual physician service capacity
- Age-related changes in physician workload
- Age-related physician retirement probabilities
- Poisson distribution

Outputs

- Probability of 0-9 retirements, 2019-2025
- Number of at-risk primary care visits under 5 retirement probability threshold scenarios (15%, 20%, 25%, 30%, 35%)

Results

For Toronto Neighbourhood A:

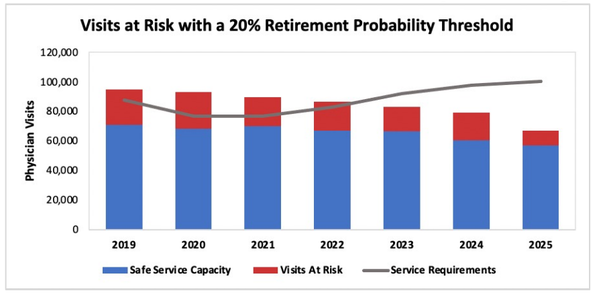
Physician Workforce Profile

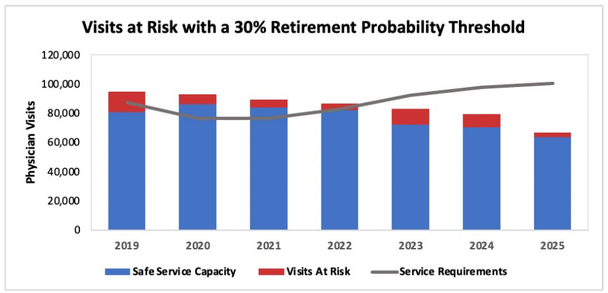
Year	MDs	Average Age
2017	22	56
2018	23	52
2019	21	52
2020	18	54

Probability of X Retirements

Year	X=0	X=1	X=2	X=3	X=4
2020	13%	27%	27%	18%	9%
2021	13%	26%	27%	18%	9%
2022	11%	24%	27%	20%	11%
2023	13%	26%	27%	19%	10%
2024	12%	25%	27%	19%	10%
2025	8%	21%	26%	21%	13%

Impact of Physician Retirement





Conclusion

- Effective retirement modeling is an important part of planning
- This methodology assesses the impact of physician retirement at the neighbourhood level
- Once neighbourhoods at risk of being underserved have been identified, planning can take place to mitigate the impact of retirement

Take Home Messages

1. **Considering both the probability and the impact of physician retirement is necessary**
2. **This methodology can identify communities at risk of being underserved due to physician retirement**
3. **The methodology is transferrable to other professions and settings**

Toronto Region Primary Care Workforce Planning Toolkit

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