

Evaluation of Rheumatology Workforce Supply Changes in Ontario, Canada, from 2000 to 2030

Évaluation des changements dans l'offre de main-d'œuvre en rhumatologie en Ontario, au Canada, de 2000 à 2030

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TABLE 2. Practice volumes and practice sizes according to clinical FTE classification, median (IQR)

| Year: | All non-FTE rheumatologists ¹ | | | All FTE rheumatologists ² | | | All >1 FTE rheumatologists ³ | | |
|--|--|-------------------------------|-------------------------------|--------------------------------------|------------------------------|---------------------------------|---|---------------------------------|---------------------------------|
| | 2000 | 2008 | 2019 | 2000 | 2008 | 2019 | 2000 | 2008 | 2019 |
| N = | 57 | 61 | 91 | 31 | 31 | 46 | 58 | 63 | 93 |
| Patient encounters per year⁴ | 1,730 (879, 2,494) | 1,722 (730, 2,282) | 1,416 (777, 2,042) | 3,467 (2,842, 4,727) | 3561 (2934, 4559) | 3,095 (2,594, 4,072) | 5,752 (4,586, 6,733) | 5,776 (4,603, 8,561) | 5,339 (4,261, 7,131) |
| Patient encounters per month | 152 (87, 208) | 144 (69, 191) | 149 (81, 184) | 289 (237, 394) | 299 (245, 378) | 256 (225, 339) | 479 (382, 561) | 481 (384, 713) | 445 (355, 594) |
| Patient encounters per day | 10 (8, 13) | 10 (8, 14) | 11 (8, 13) | 17 (12, 19) | 16 (14, 20) | 15 (12, 19) | 22 (19, 26) | 24 (19, 31) | 22 (18, 27) |
| Unique patients per year ⁵ | 796 (411, 1,108) | 737 (380, 1,016) | 690 (381, 872) | 1,418 (1,160, 1,922) | 1,347 (1,174, 1,579) | 1,199 (1,020, 1,324) | 2,396 (1,709, 3,320) | 2,476 (1,830, 3,311) | 2,082 (1,638, 2,556) |
| New patients per year | 288 (144, 447) | 138 (71, 245) | 170 (83, 292) | 645 (420, 1,027) | 378 (239, 470) | 345 (234, 549) | 1,221 (868, 2,191) | 723 (500, 1,237) | 684 (477, 944) |
| New patients per month | 29 (12, 40) | 16 (7, 23) | 16 (8, 27) | 54 (35, 88) | 32 (20, 39) | 29 (20, 46) | 102 (72, 183) | 60 (42, 103) | 57 (40, 79) |

1 Identified as those with < 40th percentile of total billings.

2 Identified as those in the 40th to 60th percentile of total billings.

3 Identified as those > 60th percentile of total billings (thus providing more clinical service).

4 Annual practice volume.

5 Annual practice size (case load).

FTE = full-time equivalent; IQR = interquartile range.

TABLE 4. Regional variation in rheumatology supply and access across Ontario

| Year | Number of rheumatologists per 75,000 residents ¹ | | | Number of > 1 FTE rheumatologists per 75,000 residents ² | | | 2019 | | | | | |
|-------------------------|---|------|------|---|------|------|--|--|--|--------------------------------------|-----------------------------------|--|
| | 2000 | 2008 | 2019 | 2000 | 2008 | 2019 | Number of patients in each LHIN seen by a rheumatologist in any area of Ontario (%) ³ | Number of patients seen by rheumatologists within each LHIN (%) ⁴ | Rheumatology volume rate per 1000 ⁵ | LHIN local service rate ⁶ | LHIN patient outflow ⁷ | Mean (SD) distance (km) to rheumatologist ⁸ |
| All Ontario | 1.2 | 1.2 | 1.5 | 0.7 | 0.7 | 0.9 | 326,651 (2.8%) | 326,814 | 73.5 | 70.0% | 30.0% | 37.2 (94.6) |
| 1 Erie St Clair | 0.6 | 0.3 | 0.6 | 0.6 | 0.3 | 0.6 | 10,373 (1.9%) | 7,186 (2.2%) | 45.5 | 68.7% | 31.3% | 52.4 (57.0) |
| 2 South West | 0.8 | 0.8 | 1.4 | 0.3 | 0.5 | 1.0 | 15,535 (1.9%) | 17,804 (5.4%) | 73.9 | 87.3% | 12.7% | 35.6 (44.7) |
| 3 Waterloo Wellington | 0.8 | 0.4 | 0.7 | 0.8 | 0.4 | 0.4 | 13,935 (2.1%) | 9,764 (3.0%) | 40.2 | 63.8% | 36.2% | 35.4 (34.7) |
| 4 Hamilton/Niagara | 1.3 | 1.4 | 2.0 | 1.1 | 1.0 | 1.5 | 58,021 (4.8%) | 61,236 (18.7%) | 139.9 | 89.9% | 10.1% | 19.6 (22.1) |
| 5 Central West | 0.5 | 0.6 | 0.7 | 0.2 | 0.5 | 0.5 | 21,607 (2.8%) | 9,929 (3.0%) | 34.6 | 37.1% | 62.9% | 28.2 (20.8) |
| 6 Mississauga | 0.7 | 0.7 | 1.7 | 0.6 | 0.6 | 1.4 | 39,089 (3.9%) | 50,969 (15.6%) | 106.6 | 70.4% | 29.6% | 18.0 (14.2) |
| 7 Toronto Central | 3.5 | 3.5 | 4.1 | 1.4 | 1.3 | 1.5 | 33,609 (3.1%) | 53,746 (16.4%) | 129.4 | 72.5% | 27.5% | 6.7 (10.4) |
| 8 Central | 1.2 | 1.1 | 1.3 | 1.0 | 0.9 | 0.9 | 50,352 (3.2%) | 48,314 (14.8%) | 74.8 | 60.8% | 39.3% | 14.7 (17.7) |
| 9 Central East | 1.1 | 0.9 | 1.0 | 0.8 | 0.7 | 0.7 | 33,508 (2.5%) | 24,694 (7.6%) | 49.6 | 53.3% | 46.7% | 29.4 (32.7) |
| 10 South East | 0.8 | 1.3 | 1.6 | 0.6 | 0.2 | 0.9 | 11,408 (2.7%) | 9,908 (3.0%) | 64.0 | 79.3% | 20.7% | 44.0 (53.5) |
| 11 Champlain | 1.8 | 1.6 | 1.6 | 0.7 | 0.9 | 0.7 | 23,301 (2.1%) | 24,138 (7.4%) | 61.0 | 97.8% | 2.2% | 47.6 (83.4) |
| 12 North Simcoe/Muskoka | 0.3 | 0.7 | 0.9 | 0.3 | 0.7 | 0.7 | 8,161 (2.0%) | 6,875 (2.1%) | 40.1 | 54.1% | 45.9% | 43.3 (41.7) |

| Year | Number of rheumatologists per 75,000 residents ¹ | | | Number of > 1 FTE rheumatologists per 75,000 residents ² | | | 2019 | | | | | |
|---------------|---|------|------|---|------|------|--|--|--|--------------------------------------|-----------------------------------|--|
| | 2000 | 2008 | 2019 | 2000 | 2008 | 2019 | Number of patients in each LHIN seen by a rheumatologist in any area of Ontario (%) ³ | Number of patients seen by rheumatologists within each LHIN (%) ⁴ | Rheumatology volume rate per 1000 ⁵ | LHIN local service rate ⁶ | LHIN patient outflow ⁷ | Mean (SD) distance (km) to rheumatologist ⁸ |
| 13 North East | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 4,188 (0.9%) | 0 (%) | 0.0 | 0.0% | 100.0% | 353.8 (170.8) |
| 14 North West | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 3,564 (1.8%) | 2,251 (0.7%) | 20.2 | 62.3% | 37.7% | 306.4 (420.1) |

¹ 18 years and older for population denominator

² Rheumatologists who were < 1 FTE were removed.

³ % = numerator is number of unique patients in the LHIN with at least one rheumatology encounter, and denominator reflects residents aged 18 and older residing in the LHIN

⁴ % = denominator is the total number of patients in Ontario seen by rheumatologists in all of Ontario

⁵ Rheumatology volume rate according to the rheumatologists' LHIN: the numerator is the annual total number of rheumatology encounters, and the denominator is the number of individuals residing in the LHIN (higher rates reflect higher volumes).

⁶ LHIN local service rate (proportion of patients seen by a rheumatologist residing within their own LHIN): the numerator is the number of unique patients seen by rheumatologists residing in the same LHIN as the rheumatologist, and the denominator is the total number of unique patients seen by rheumatologists in that LHIN (regardless of where the patient is from); a lower percentage reflects rheumatologists servicing more patients from other LHINs.

⁷ LHIN patient outflow = 100% – the number of unique patients with a rheumatology encounter who reside in that LHIN who saw a rheumatologist in the same LHIN out of the total number of patients with rheumatology encounters who reside in that LHIN; a higher percentage reflects more patients travelling to other LHINs.

⁸ Linear distance (in kilometers) from the centre of the patient's postal code area to that of the rheumatologist.

FIGURE A1. Patient encounters according to rheumatologists' LHIN (2019)

