

Changes in Rheumatology Provision and Practice in Ontario, Canada

Jessica Widdifield^{1,2,3}, Sasha Bernatsky⁴, Vandana Ahluwalia⁵, Claire Barber⁶, Lih Eder⁷, Catherine Hofstetter, Bindee Kuriya³, Vicki Ling², Anne Lyddiatt, J Michael Paterson^{2,3}, Janet Pope⁸, Carter Thorne⁹

¹Sunnybrook Research Institute; ²Institute for Clinical Evaluative Sciences; ³Institute of Health Policy, Management & Evaluation, University of Toronto; ⁴McGill University; ⁵William Osler Health Centre; ⁶University of Calgary; ⁷Women's College Hospital; ⁸Western University; ⁹Southlake Regional Health Centre

BACKGROUND

- The global shortage of rheumatologists is an increasing concern.
- Statistics from physician surveys have projected changes in rheumatology workforce composition (aging, feminization, and generational trends), which have implications for the workforce clinical activity.
- In order to adequately document the issues and potential solutions, more detailed information is needed regarding clinical activity, demographic changes and the implications of these, in a population-based sample.

OBJECTIVES

- To describe changes in the number, demographics and clinical activity of Ontario rheumatologists over the past decade.

METHODS

SETTING:

- Ontario, Canada, where all 13 million residents are covered by a publicly funded, single-payer, universal healthcare system.

STUDY DESIGN:

- We conducted a population-based study using administrative health data from 2000 to 2013.

DATA SOURCES:

- Rheumatologists and their characteristics, were identified using a validated physician registry → ICES Physician Database (IPDB)
- Patients with rheumatology encounters were identified from the Ontario Health Insurance Plan(OHIP) Claims Database
- Adults 18 years and older (for annual population denominators) were identified from the Registered Persons Database (RPDB) derived dataset

INCLUSION CRITERIA:

- Active rheumatologists with fee-for-service billing claims/year

EXCLUSION CRITERIA:

- Pediatric rheumatologists
- Patients <18 years of age

ANALYSIS:

- We used rheumatology billing claims to quantify annual clinical activity levels expressed as full-time equivalents (FTE).
 - Physicians below the 40th percentile of total billings were classified as providing less clinical activity (<1 FTE); 40-60th percentile were classified as 1 FTE; and >60th percentile as >1 FTE.
 - As an alternate FTE measure (AMA definition), we determined the proportion of rheumatologist with patient encounters on ≥ 209 days of the year.
- Descriptive statistics were used to characterize the workforce demographics, clinical activity, practice sizes and practice volumes, stratified by FTE classification.
- Analyses were performed at ICES in Toronto, Ontario.

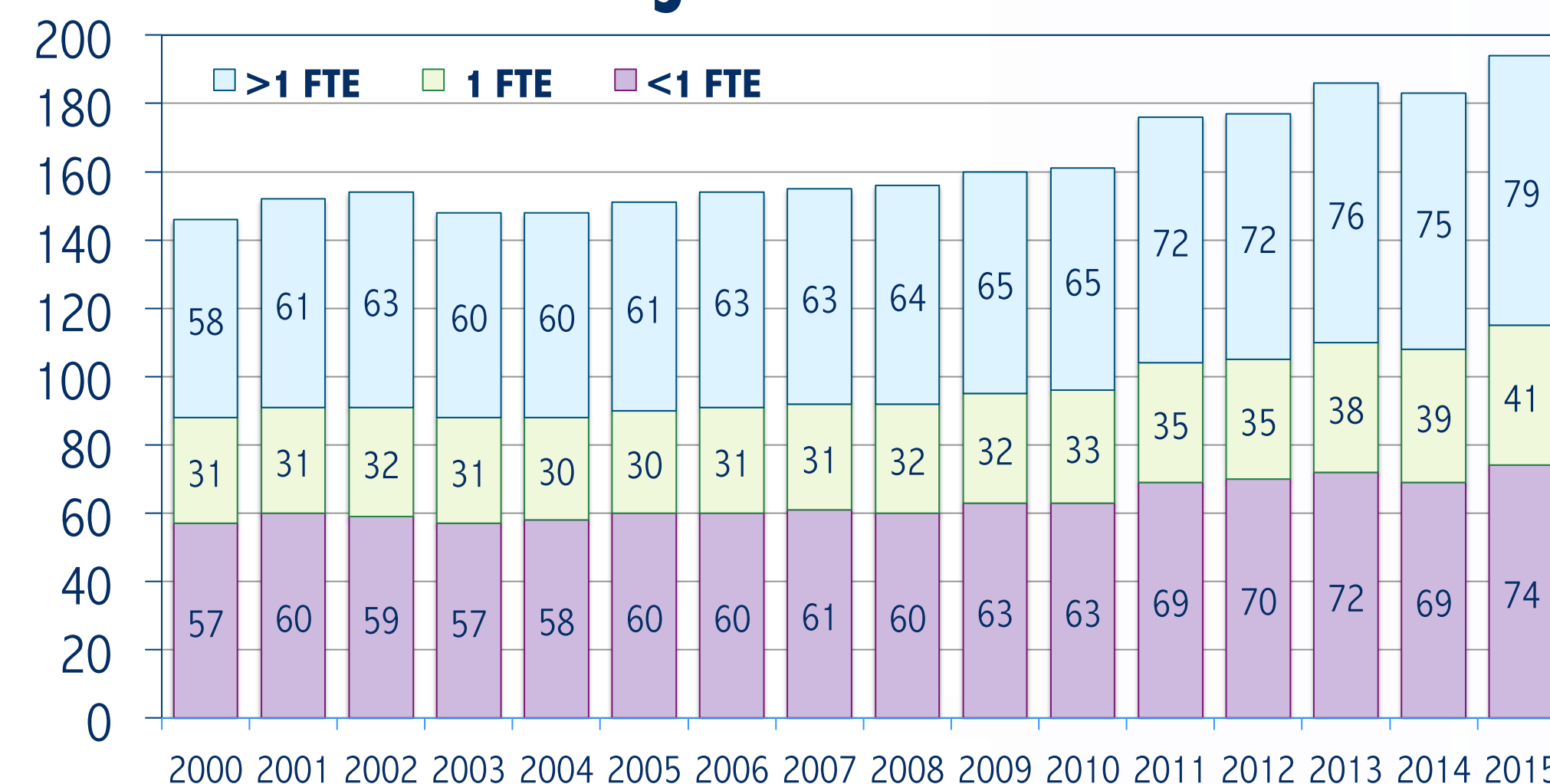
RESULTS

Numbers of Rheumatologists and clinical FTEs per Population

Year	ON population denominator	Number of rheum.	Number of ≥ 1 FTE rheum.	Number of rheum. per 75,000	Number of ≥ 1 FTE rheum. per 75,000	Number (%) of patients seen by a rheum.
2000	9,093,486	146	89	1.2	0.7	245,486 (2.7%)
2001	9,241,575	152	92	1.2	0.7	255,289 (2.8%)
2002	9,393,473	154	95	1.2	0.8	263,139 (2.8%)
2003	9,527,281	148	91	1.2	0.7	250,176 (2.6%)
2004	9,651,626	148	90	1.2	0.7	258,751 (2.7%)
2005	9,788,275	151	91	1.2	0.7	273,462 (2.8%)
2006	9,907,932	154	94	1.2	0.7	286,309 (2.9%)
2007	10,125,042	155	94	1.1	0.7	280,072 (2.8%)
2008	10,268,935	156	96	1.1	0.7	282,959 (2.8%)
2009	10,410,050	160	97	1.2	0.7	284,158 (2.7%)
2010	10,528,197	161	98	1.1	0.7	285,103 (2.7%)
2011	10,587,857	176	107	1.2	0.8	288,422 (2.7%)
2012	10,716,779	177	107	1.2	0.7	281,754 (2.6%)
2013	10,881,690	186	114	1.3	0.8	293,704 (2.7%)
2014	11,039,248	183	114	1.2	0.8	292,948 (2.7%)
2015	11,103,150	194	120	1.3	0.8	302,336 (2.7%)

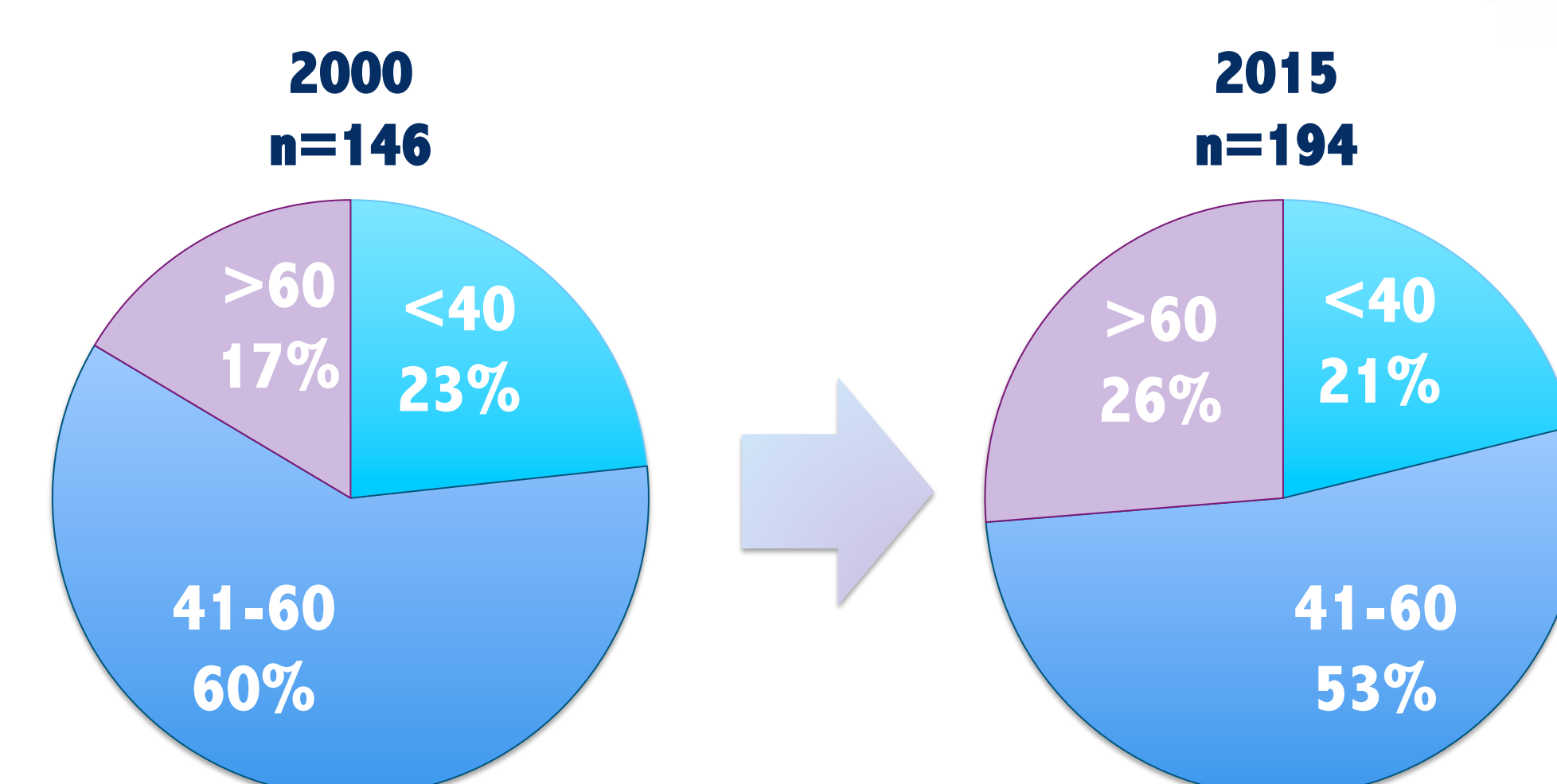
- In 2000, there were 146 rheumatologists in Ontario (89 of whom worked as ≥ 1 FTEs); this increased to 194 rheumatologists in 2015 (120 of whom worked ≥ 1 FTEs).
- Despite the increase, due to an increase in the population over time, the % of Ontarians seen by a rheumatologist annually remained stable (2.7%)
- Per capita supply also remained stable → 1.2 total rheum. per 75,000 population, but the supply of clinical FTEs was inadequate: 0.7 FTEs per 75,000.

Number of Rheumatologists per year according to FTE classification



- As of 2015, there were 74 rheumatologists classified as <1 clinical FTE.

Age distribution of the Workforce



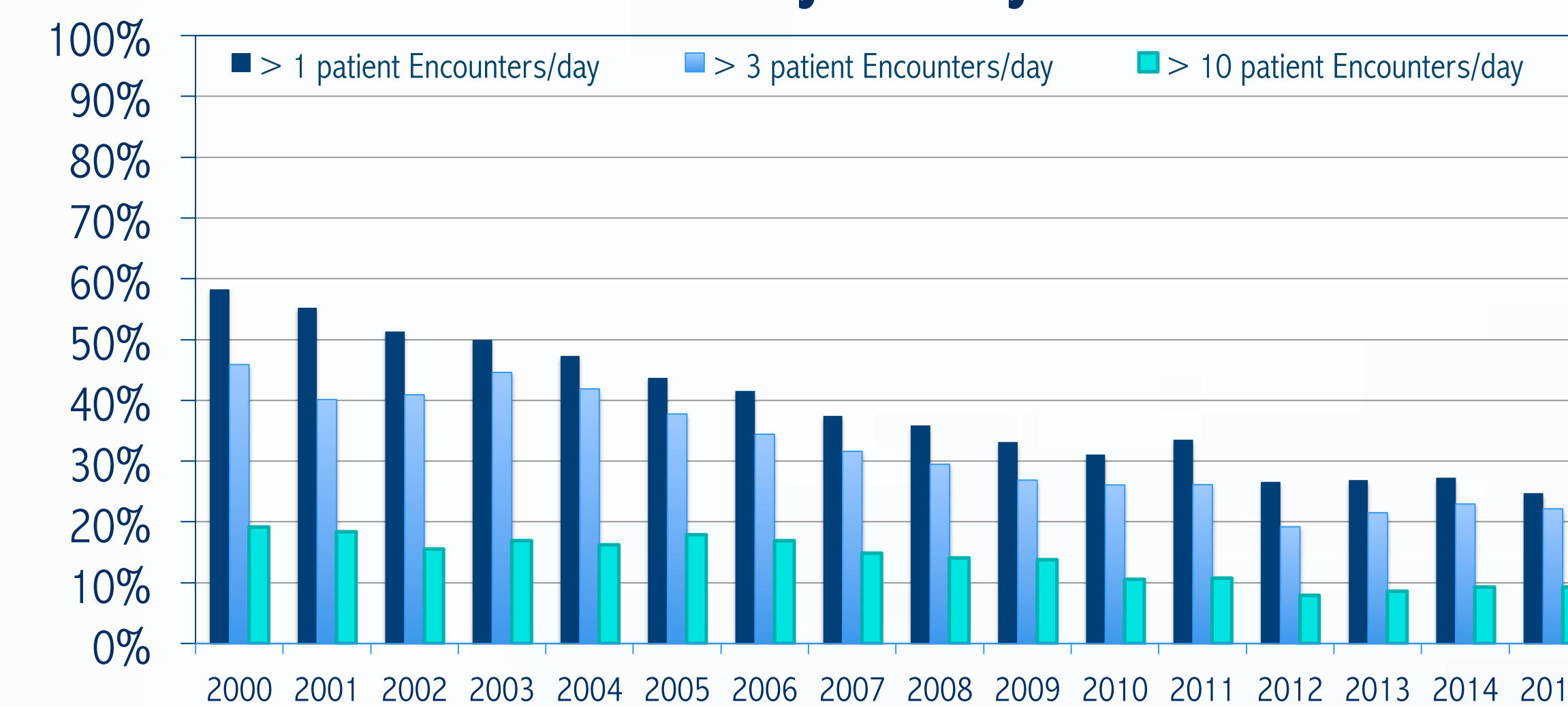
- The Ontario rheumatology workforce is aging: As of 2015, 1/4 of all Ontario rheumatologists will be exiting the workforce in the near future.
- Despite the increase in the total number of rheumatologists, the # new rheumatologists entering the workforce is not sufficient to meet the loss of 51 rheumatologists (26%) nearing retirement.

Characteristics of the Rheumatology Workforce

Rheumatologist Characteristics	2000 N=146	2007 N=155	2015 N=194
Demographics			
Female Gender	34%	38%	49%
Age, mean (SD)	48.5 (10.6)	51.53 (10.9)	51.7 (11.6)
Over age 60 years	16%	19%	26%
Urban location	72%	94%	96%
Academic Setting	n/a	37%	37%
Education / Training			
Canada Medical Graduate	74%	76%	66%
Activity Level			
% of rheumatologists with hospital encounters	87%	83%	71%
# of days with patient consultations, Mean (SD)	201 (72)	176 (69)	168 (67)
Median (IQR)	220 (178,243)	189 (143,224)	180 (137,208)

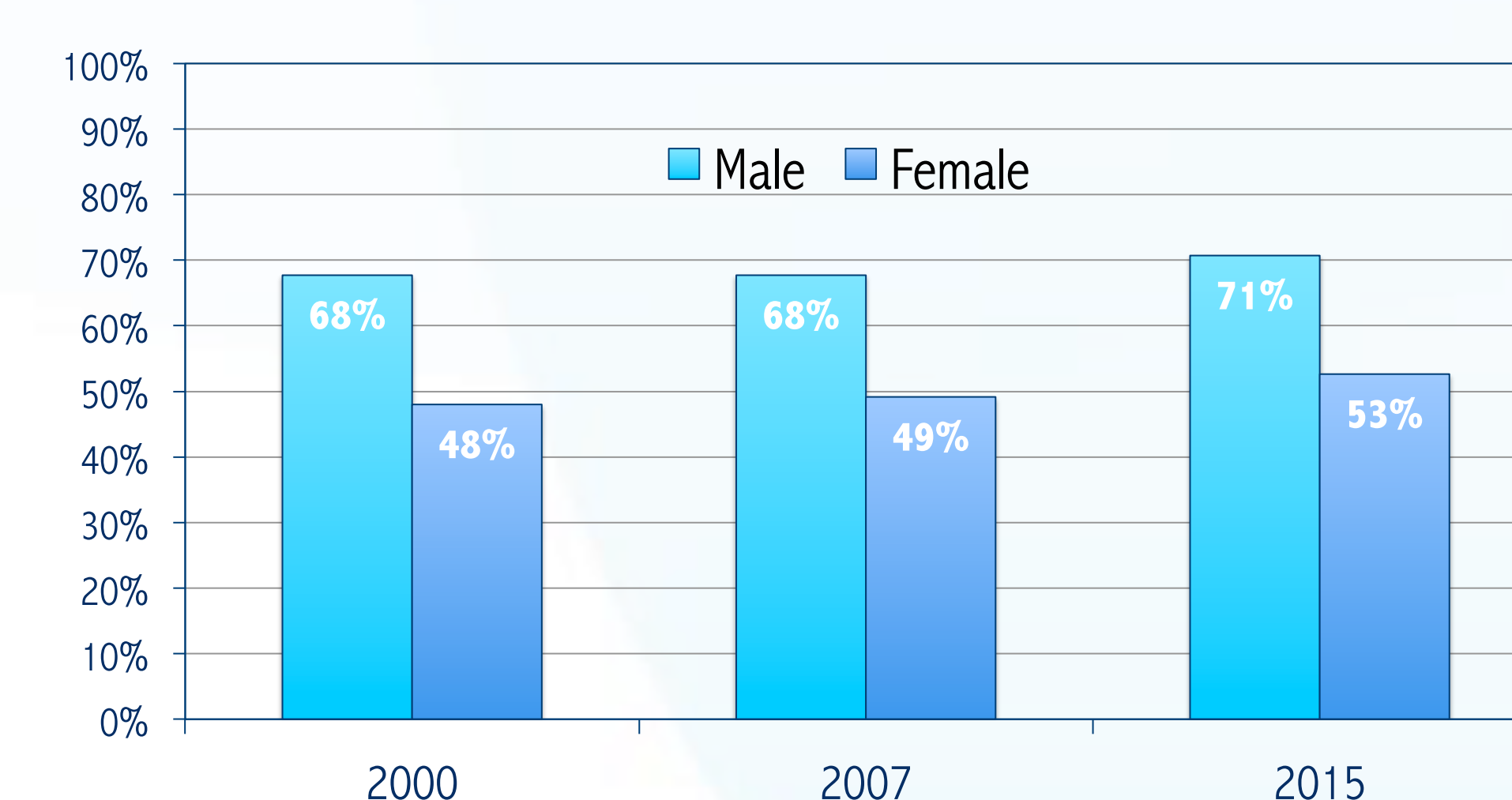
- In 2000, 34% of rheumatologists were female compared to 49% in 2015.
- During this time, the % of rheumatologists aged >60+ years increased (16 to 26%).
- The % of practices in urban locations increased from 72% in 2000 to 96% in 2015.
- 37% of practices resided in academic institutions → similar to the % classified as <1 FTE (many of whom likely to be professors, administrators, researchers)
- 1/3rd of the workforce in 2015 received medical training outside of Canada → a 10% difference from 2007 reflective of the training of new physicians entering the workforce.
- Annual number of days in which rheumatologists saw patients decreased over time.

Proportion of Rheumatologists with patient consultations on at least 209 days in the year



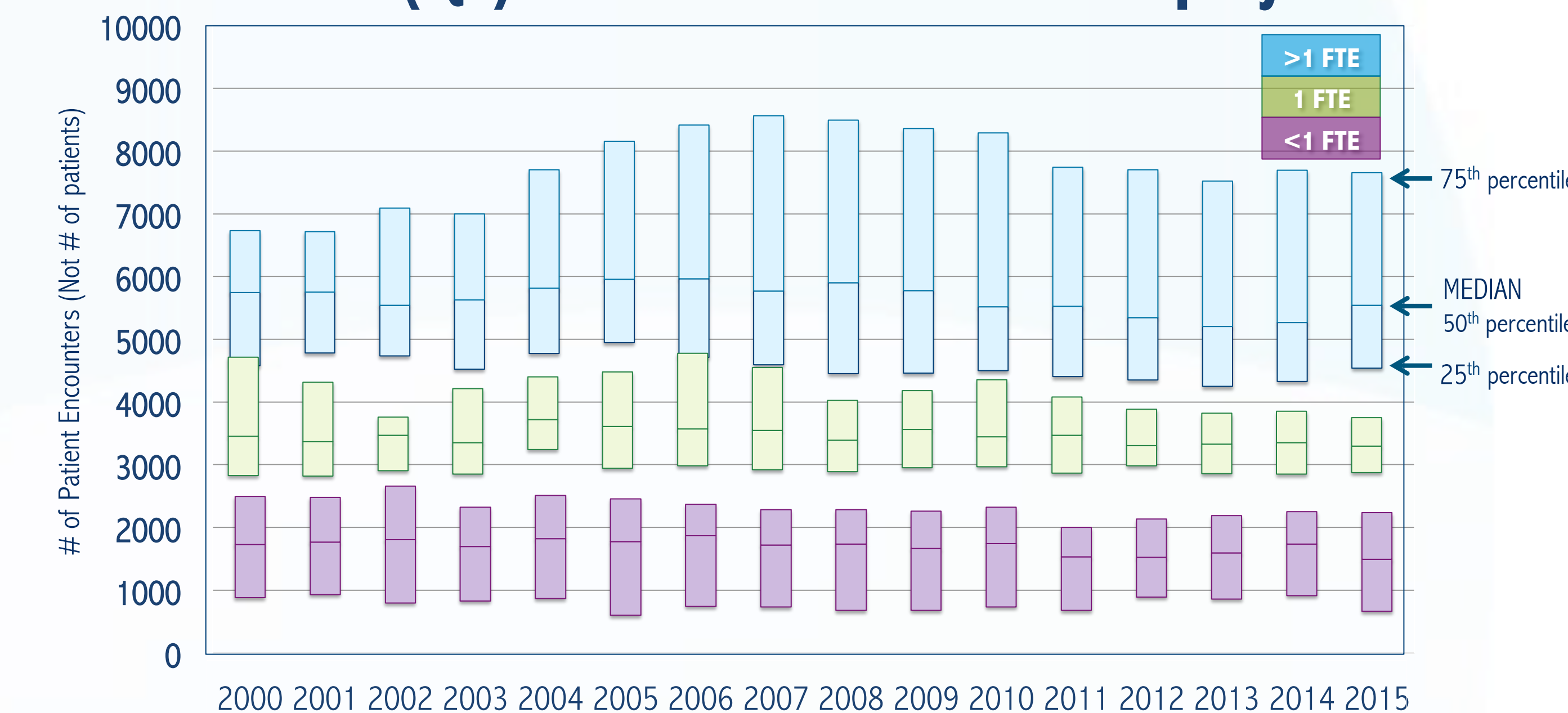
- The % of rheumatologists with patient consultations on at least 209 days/year (an alternative FTE benchmark) showed a downward trend over time. The overall % is low reflective of a large # of rheumatologists with limited clinical activity (<1FTE).

Proportion of rheumatologists classified as ≥ 1 clinical FTE by gender



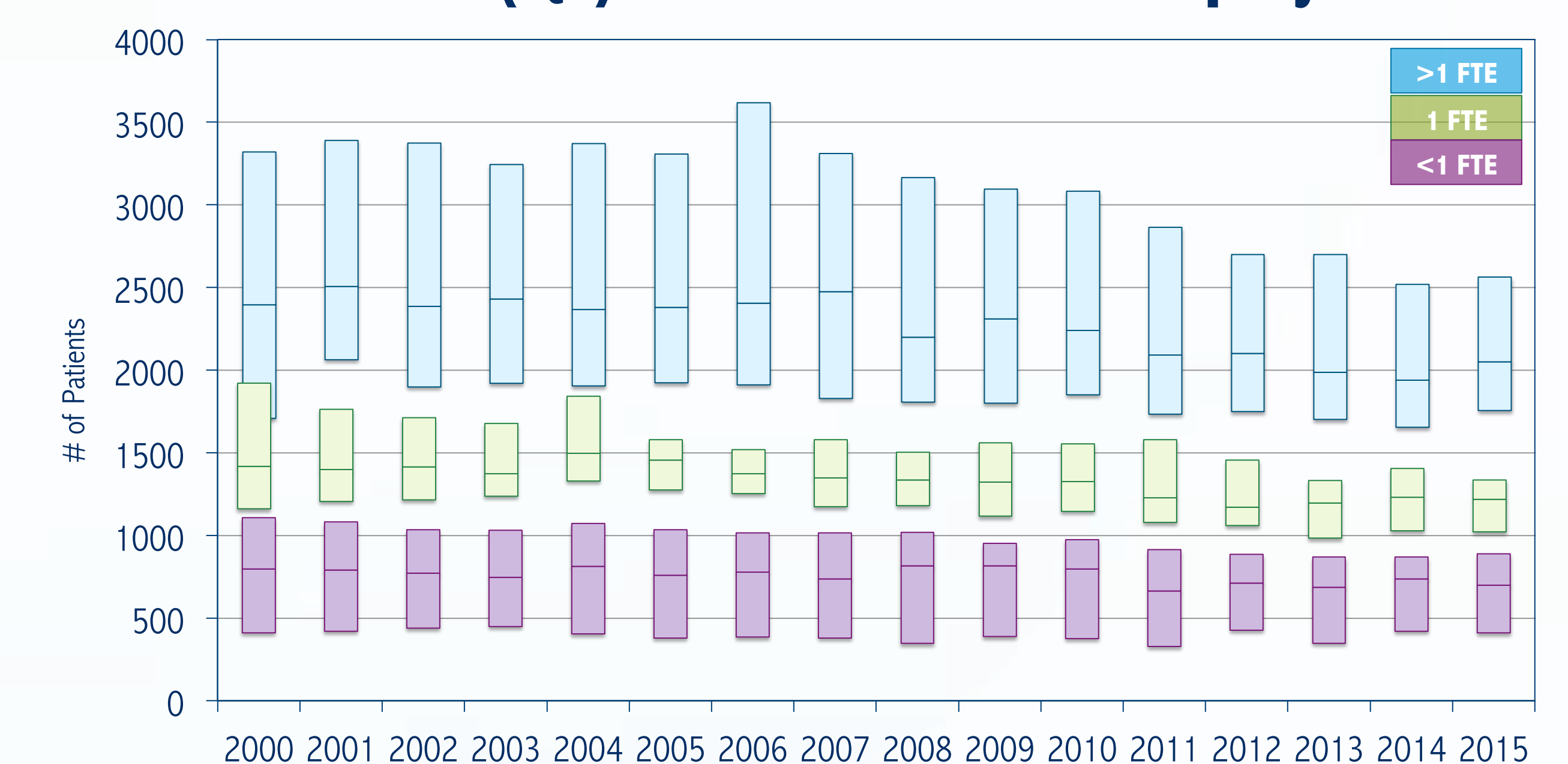
- Within each gender group, a higher % of males were classified as ≥ 1 clinical FTE; In 2015, 71% of male rheumatologists were classified as ≥ 1 clinical FTE vs. 53% of females.

Median (IQR) Number of Patient Encounters per year



- Practice volumes varied by clinical FTE status (as expected); In 2015, the average rheumatologist practicing as ≥ 1 clinical FTE (blue) had ~5500 total patient encounters per year, 460 encounters per month and 19-30 encounters per day.

Median (IQR) Number of Patients Seen per year



- Among ≥ 1 FTE groups, the median number of unique patients seen per year (practice sizes) appear to be declining illustrating that rheumatologists may be accepting fewer referrals due to clinic saturation.

CONCLUSIONS

- INADEQUATE RHEUMATOLOGY SUPPLY:** Although there has been an increase in the number of rheumatologists, the per capita supply and access to rheumatologists have remained unchanged. **IMPLICATIONS:** The Ontario rheumatology supply is insufficient to meet the present and future needs for patients with rheumatic diseases in Canada.
- CHANGING WORKFORCE COMPOSITION:** We observed changing workforce demographics (aging & greater feminization) and declining clinical activity over time. **IMPLICATIONS:** To the extent that similar trends are occurring in the USA & Europe, the implications of our study for the availability of rheumatology services beyond Canada are significant. Factors affecting clinical activity (including an aging and greater feminization of the workforce, clinic saturation, increasing care complexity, models of care, greater demands for continuing medical education and research activity) warrants further study.

Acknowledgments: This analysis was supported by a CIORA grant.

Correspondence: jessica.widdifield@utoronto.ca

ICES: www.ices.on.ca

