

Trends in Patient Encounters with Rheumatologists in a Publicly-Funded Single Payer Healthcare System

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BACKGROUND

- Rheumatology workforces are challenged by too few physicians, increasing incidence and prevalence of MSK diseases (and complexity of co-morbid conditions) in aging populations, and expanding therapeutic options that increase demand for service.
- Understanding trends in rates of rheumatology encounters with new and existing patients will help to identify why patients have delays to rheumatology care and mobilize efforts to help meet patients' needs.

OBJECTIVES

- To describe trends in patient encounters with rheumatologists over time in Ontario, Canada.

METHODS

STUDY DESIGN & SETTING:

- We conducted a population-based study analyzing administrative health data from 2000 to 2015 in Ontario, Canada, where all 13 million residents are covered by a publicly funded healthcare system and access to rheumatologists is dependent upon referrals.
- During this time, Ontario had a stable rheumatology supply of 1 rheumatologist per 75,000 population (0.8 FTEs per 75,000).

DATA SOURCES:

- Adult rheumatologists 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)

ANALYSIS:

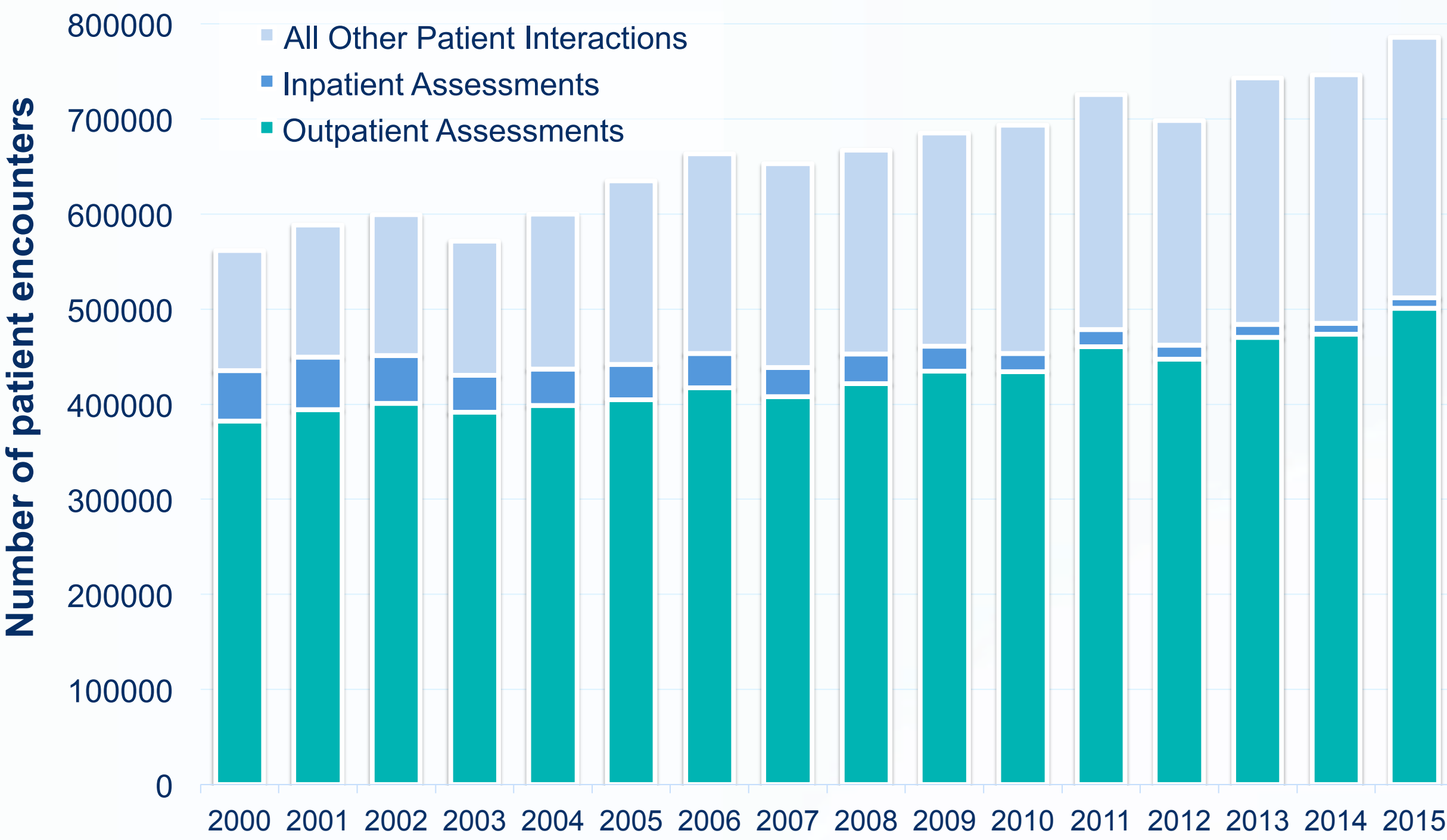
- We determined annual patient encounters (total & new patients) seen by rheumatologists.
- Using fee-for-service billing claims, we assessed patient encounters according to type:
 - Any interaction (including non-face-to-face services e.g. lab review)
 - Inpatient assessment (seeing patients who have been hospitalized)
 - Outpatient assessments (face-to-face consultations within a clinic)
- To identify new patients, we applied a 3-year washout period ensuring patients had no prior rheumatology contacts.
- Rates were calculated using the total population of Ontario residents 18 and older, each year, as the denominator.
- We assessed characteristics of patients (demographics & clinical diagnoses) under rheumatology care.
- Diagnosis codes assigned at each encounter were used to assess changes in the case-mix of patients under rheumatology care over time.

RESULTS

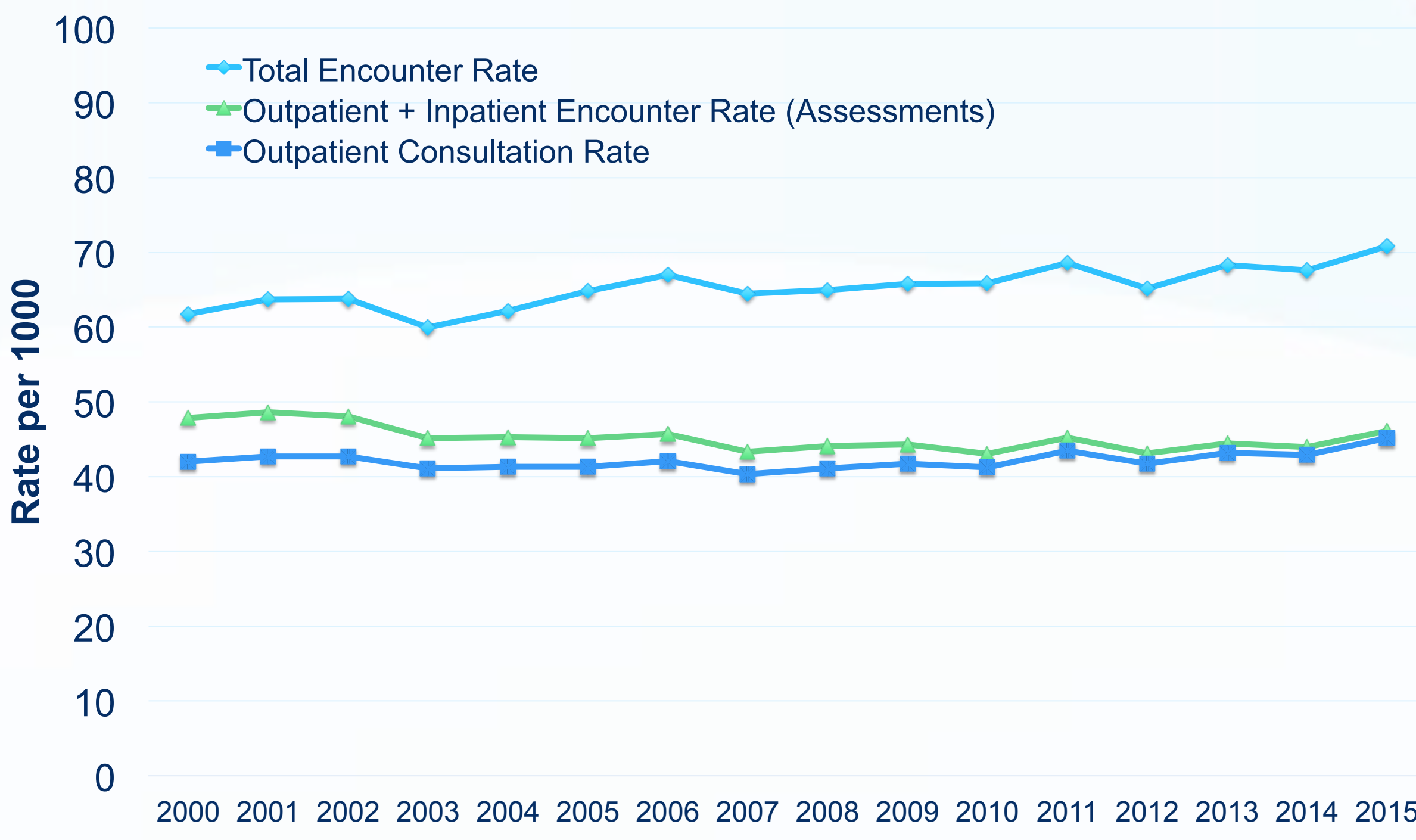
Number of Patients Seen by Rheumatologists Annually

Year	ON population denominator (≥18y)	Number of Ontarians seen by a rheumatologist	Percentage of Ontarians under rheumatology care	Number of Ontarians seen in an Outpatient Rheumatology Clinic	Percentage of Ontarians under Outpatient Rheumatology care
2000	9,093,486	245,486	2.7%	172,864	1.9%
2001	9,241,575	255,289	2.8%	179,370	1.9%
2002	9,393,473	263,139	2.8%	182,111	1.9%
2003	9,527,281	250,176	2.6%	180,385	1.9%
2004	9,651,626	258,751	2.7%	185,891	1.9%
2005	9,788,275	273,462	2.8%	188,297	1.9%
2006	9,907,932	286,309	2.9%	195,043	2.0%
2007	10,125,042	280,072	2.8%	191,950	1.9%
2008	10,268,935	282,959	2.8%	196,687	1.9%
2009	10,410,050	284,158	2.7%	201,649	1.9%
2010	10,528,197	285,103	2.7%	202,618	1.9%
2011	10,587,857	288,422	2.7%	212,479	2.0%
2012	10,716,779	281,754	2.6%	219,466	2.1%
2013	10,881,690	293,704	2.7%	228,237	2.1%
2014	11,039,248	292,948	2.7%	229,026	2.1%
2015	11,103,150	302,336	2.7%	242,761	2.2%

Total Patient Encounters: Outpatient, Inpatient, Other interactions



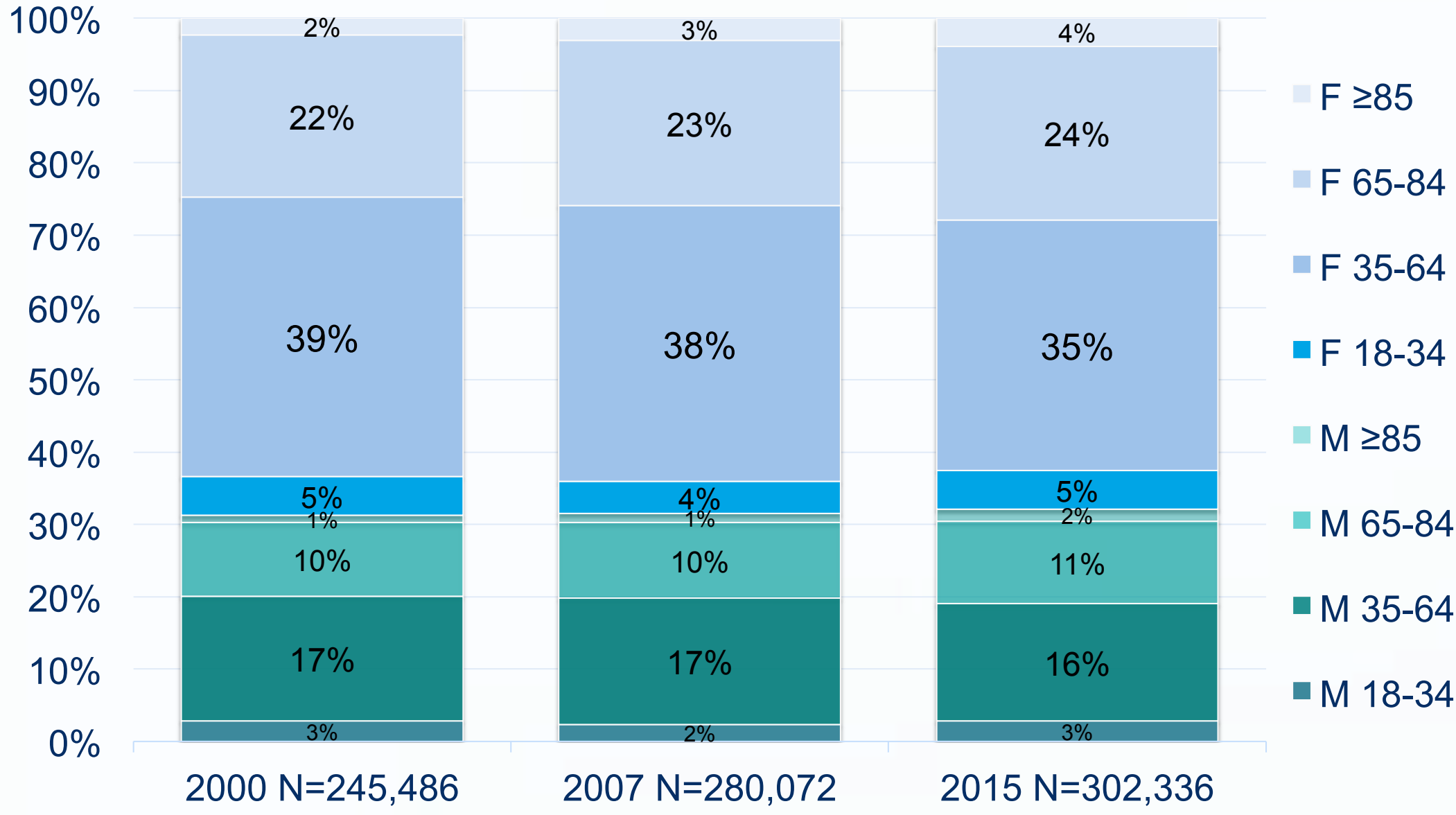
Total Rheumatology Encounter Rate per 1,000



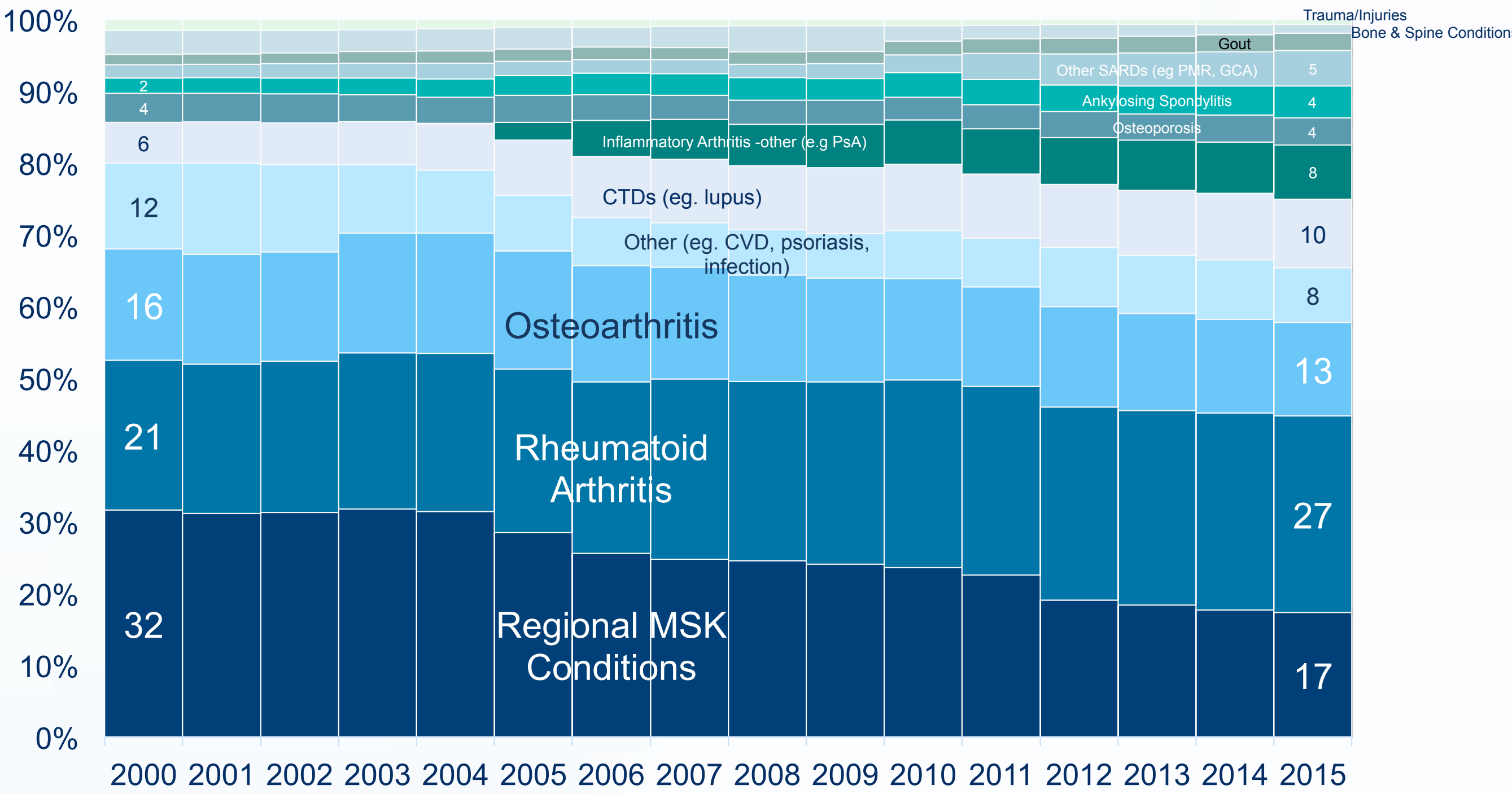
Patient Demographics among those under rheumatology care

Patient Characteristics	2000 N=245,486	2007 N=280,072	2015 N=302,336
Age, years median (IQR)	58 (46, 70)	59 (48, 71)	61 (49, 71)
Males (all ages) n (%)	76,691 (31.2%)	88,275 (31.5%)	97,025 (32.1%)
18-34 years	6,969 (9.1%)	6,621 (7.5%)	8,533 (8.8%)
35-64 years	42,344 (55.2%)	48,812 (55.3%)	49,035 (50.5%)
65-84 years	25,052 (32.7%)	29,377 (33.3%)	34,474 (35.5%)
>85 years	2,326 (3.0%)	3,465 (3.9%)	4,983 (5.1%)
Females (all ages), n (%)	168,795 (68.8%)	191,797 (68.5%)	205,311 (67.9%)
18-34 years	13,299 (7.9%)	12,401 (6.5%)	16,374 (8.0%)
35-64 years	94,724 (56.1%)	106,812 (55.7%)	104,690 (51.0%)
65-84 years	55,154 (32.7%)	63,972 (33.4%)	72,579 (35.4%)
>85 years	5,618 (3.3%)	8,612 (4.5%)	11,668 (5.7%)
Ratio (females/males)	2.2	2.2	2.1

Distribution of Patients' Ages among those under rheumatology care



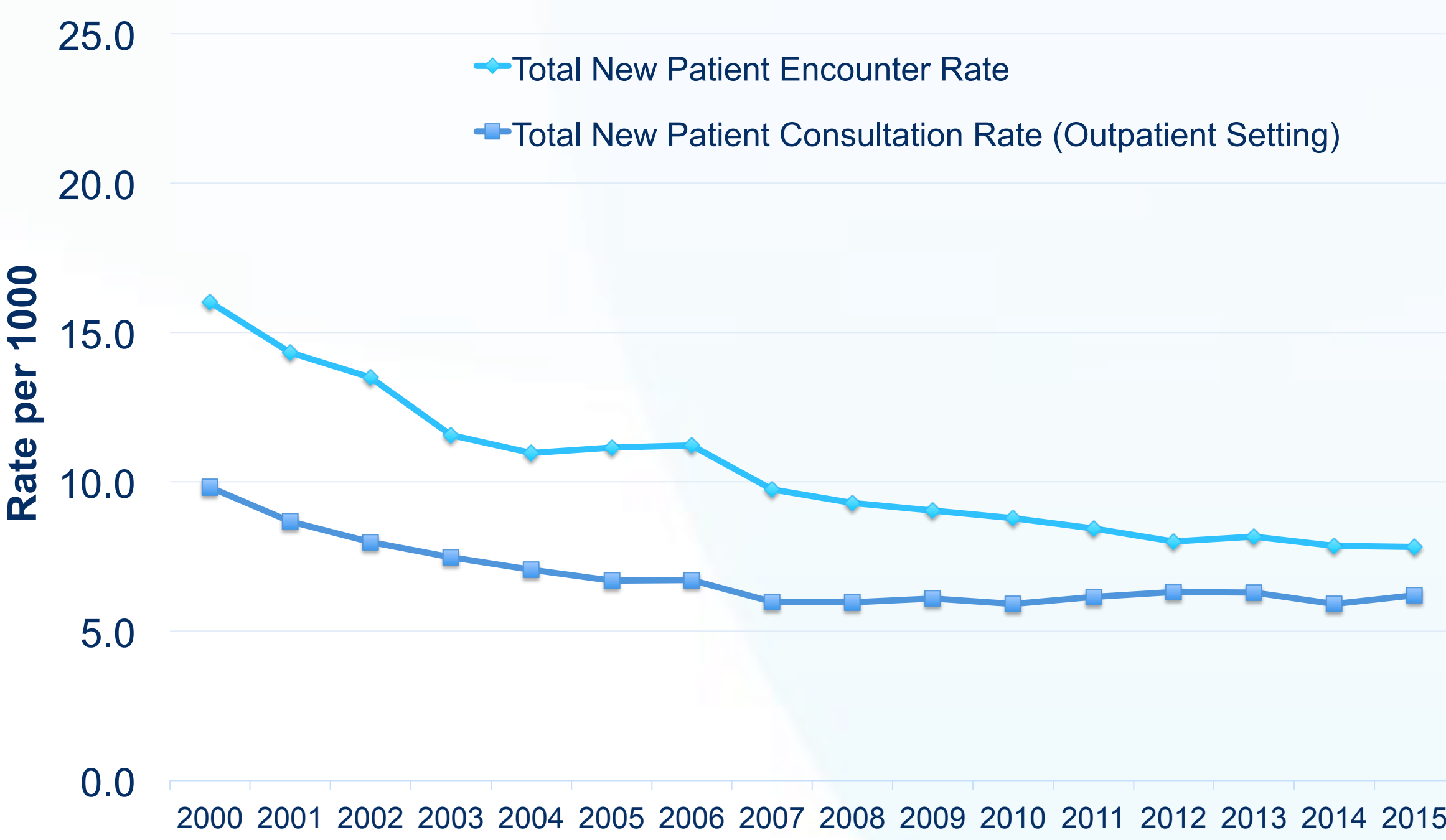
Distribution of Diagnoses assigned at rheumatology encounters



Number of New and Total Patient Assessments in Outpatient Care

Year	Total Patients	Total Outpatient Assessments	New Patients	Percentage of New Patients out of Total Patients	Percentage of New Patients out of Total Assessments
2000	172,864 (1.9%)	382,074	89,426	51.7%	23.4%
2001	179,370 (1.9%)	394,532	80,191	44.7%	20.3%
2002	182,111 (1.9%)	400,879	75,081	41.2%	18.7%
2003	180,385 (1.9%)	391,450	71,270	39.5%	18.2%
2004	185,891 (1.9%)	398,768	68,146	36.7%	17.1%
2005	188,297 (1.9%)	404,593	65,469	34.8%	16.2%
2006	195,043 (2.0%)	417,241	66,509	34.1%	15.9%
2007	191,950 (1.9%)	408,219	60,575	31.6%	14.8%
2008	196,687 (1.9%)	421,871	61,333	31.2%	14.5%
2009	201,649 (1.9%)	434,601	63,546	31.5%	14.6%
2010	202,618 (1.9%)	434,304	62,174	30.7%	14.3%
2011	212,479 (2.0%)	460,309	65,151	30.7%	14.2%
2012	219,466 (2.1%)	447,380	67,648	30.8%	15.1%
2013	228,237 (2.1%)	470,367	68,539	30.0%	14.6%
2014	229,026 (2.1%)	473,788	65,214	28.5%	13.8%

New Patient Encounter Rate per 1,000 residents



CONCLUSIONS

- There was a 23% increase in the number of patients seen by rheumatologists from 245,486 patients in 2000 to 302,336 patients in 2015.
- The percentage of Ontario residents under rheumatology care remained unchanged over time (2.7%).
- The majority of rheumatology encounters occurred in outpatient settings and the volume of inpatient encounters declined over time.
 - reflective of the declining number of rheumatologists with hospital affiliations.
- The rheumatology patient population is predominately female, and aging.
- The total number of new patients seen annually declined over time.
 - The significant decline in new patient consultation rates over time helps illustrate the growing supply-demand mismatch in rheumatology care.
 - An increasing fraction of rheumatology encounters were with established patients, which may be limiting access for new consultations and increasing wait times.
- We also observed a shift in the patient case-mix over time with rheumatologists seeing more systemic inflammatory conditions.

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