A Novel Approach to Assess Wait~Times to Rheumatologists

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BACKGROUND

- Previous studies quantifying delays in assessment of patients by rheumatologists have studied patients from rheumatology clinics and thus include all patients who ultimately had access to rheumatologists.
- Electronic medical records (EMRs) are a rich data source that can be used for both research & quality improvement.

OBJECTIVE

- To estimate over-all wait times for initial rheumatology consultations for patients referred by their primary care physician.

METHODS

Setting:

- In Canada primary care physicians are front-line caregivers & coordinators with secondary care.

Study Population:

- We used the Electronic Medical Record Administrative data Linked Database (EMRALD), comprised of EMR data from primary care physicians in Ontario, Canada.
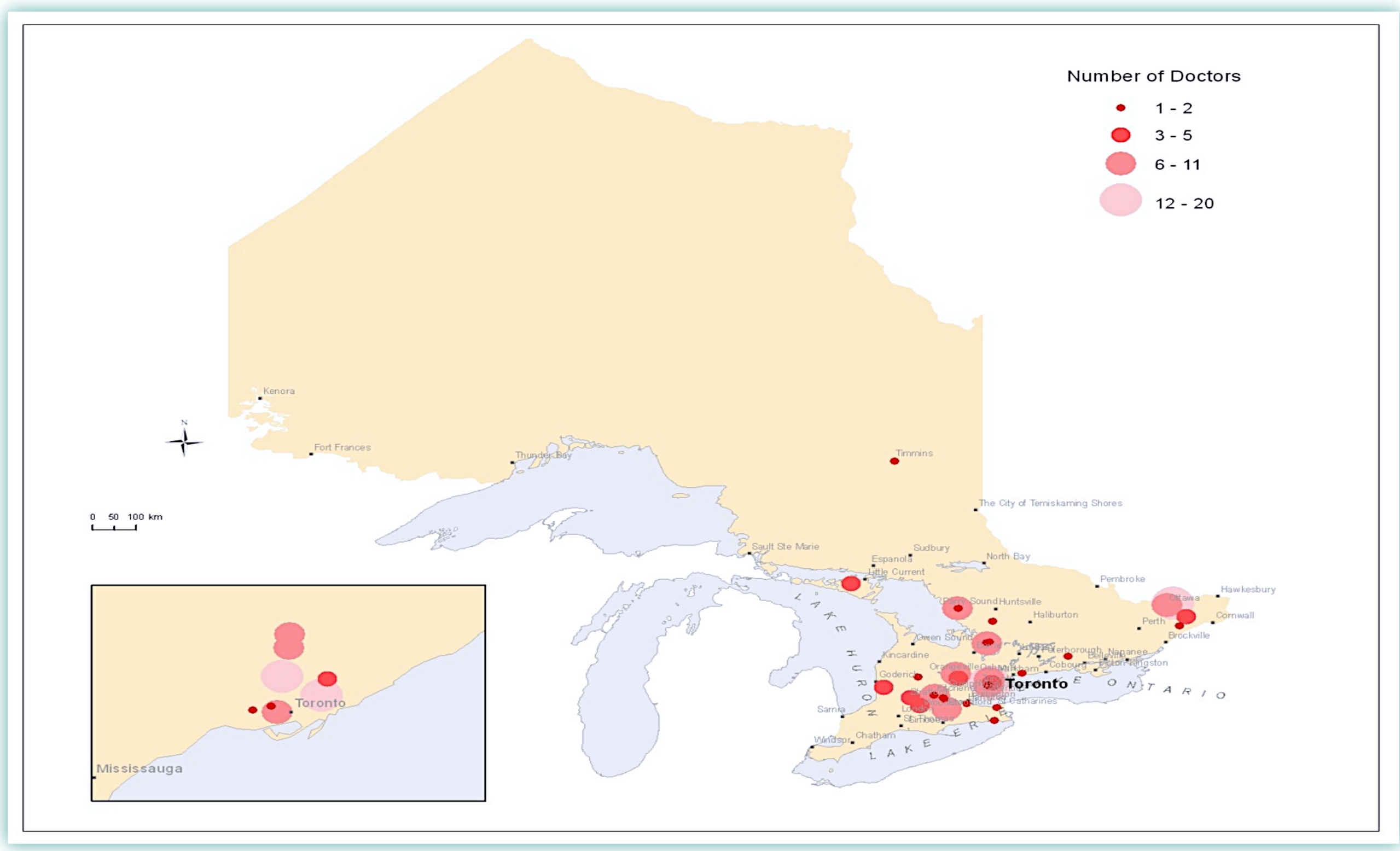
Comprehensive EMR data:

- All primary care visits, current & past medical history, laboratory test results, prescriptions, diagnostic tests, specialist consultation letters & hospital discharge summaries.

EMRALD coverage:

- 168 primary care physicians across Ontario:

    32 rural

    39 suburban

    97 urban

**Figure 1:
Distribution of EMRALD sites**

Health Administrative Data:

- Canadian provincial health insurance plans provide universal coverage for hospital and physician services, creating a large repository of health administrative data.
- The EMR dataset was linked to administrative data in a coded manner using encrypted health insurance numbers.
- Dates of rheumatology visits were identified using the Ontario Health Insurance Plan (OHIP) physician claims database (1990-2014).

PATIENT SELECTION

Inclusion Criteria applied to the EMR:

- ≥ 1 rheumatology referral identified from the EMR
- Valid health insurance number required for data linkage

Exclusion Criteria applied to administrative data:

- To identify only first-time referrals, administrative data were used to retrospectively confirm that patients had no rheumatologist visits prior to the EMR referral date.

Data Collection:

- We randomly sampled EMR patients with rheumatology referral letters
- Using a standardized data abstraction tool, the entire patient EMR was reviewed to categorize each patient according to their diagnosis:

Systemic inflammatory conditions	Regional musculoskeletal (MSK) syndromes
Mechanical /degenerative /arthritic conditions	Osteoporosis/osteopathies
Chronic pain	Other (e.g., abnormal diagnostic tests)

Analysis:

- Administrative data were used to identify the date of the first rheumatologist visit subsequent to the referral date recorded in the EMR.
- The time (in days) from the date the first referral letter was sent to the date of the first rheumatologist visit was determined overall and for each diagnostic category.
- Analysis were performed on de-identified data at the Institute for Clinical Evaluative Sciences (www.ices.on.ca) in Toronto, Ontario.

RESULTS

- Among 1086 patients with first-time referrals, 99% of referrals occurred between 2006 and 2013.
- The majority of referrals were for mechanical/degenerative conditions (33%) and systemic inflammatory conditions (30%).
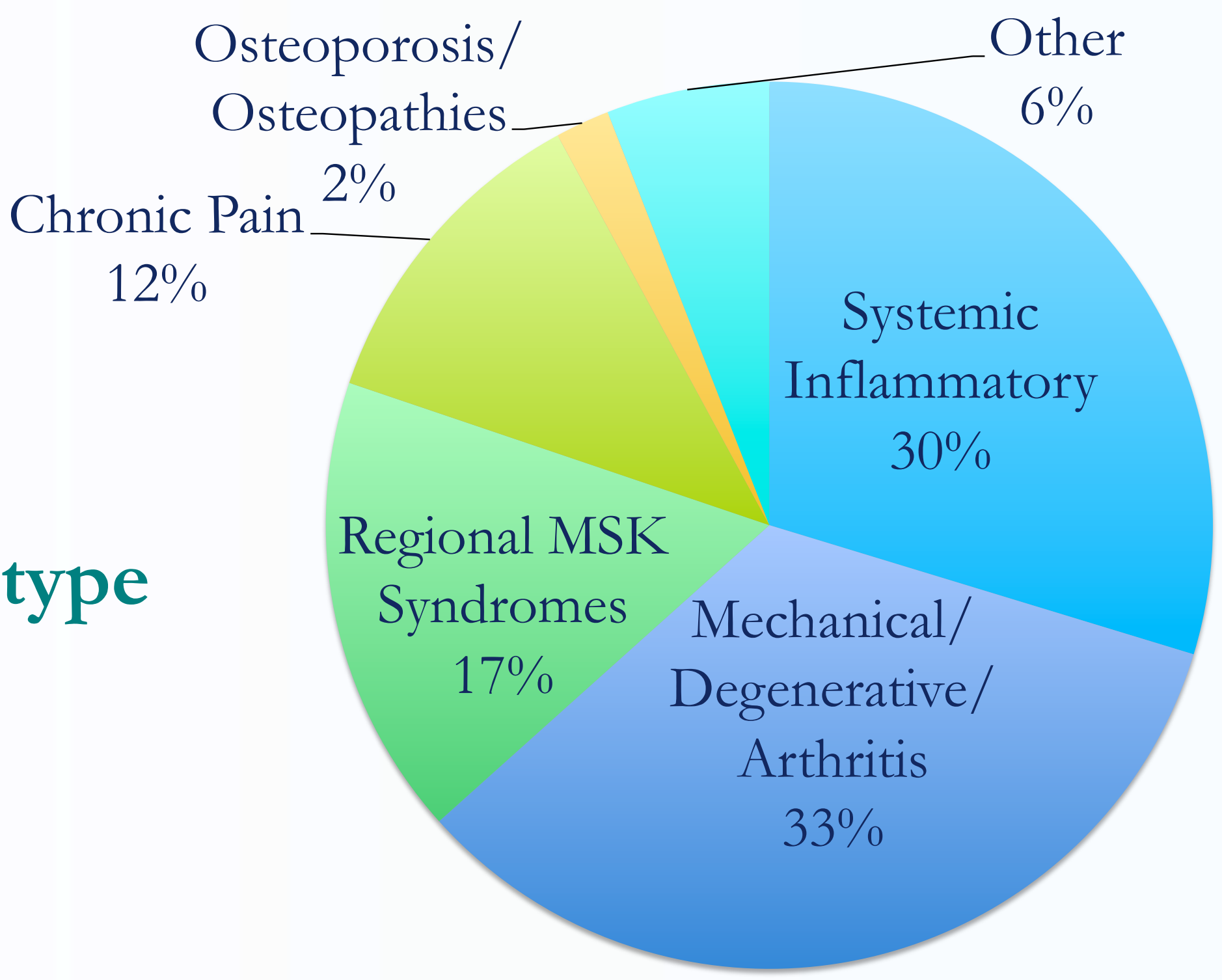

**Figure 2:
Frequency by referral type**

Table 1: Characteristics of referrals

	Overall	Systemic Inflammatory	Mechanical Degenerative	Regional MSK	Chronic Pain	Osteoporosis Osteopathies	Other
	N = 1086	n = 321 (30%)	n = 370 (33%)	n = 181 (17%)	n = 134 (12%)	n = 16 (2%)	n = 64 (6%)
Age, mean (SD) yrs	54 (16)	55 (16)	57 (15)	53 (15)	48 (14)	50 (19)	46 (16)
Female, n (%)	734 (68%)	173 (54%)	256 (69%)	127 (70%)	116 (87%)	15 (94%)	47 (73%)
Wait-time, median (IQR), days	61 (29-114)	47 (18-97)	70 (39-124)	56 (28-100)	69 (35-135)	112 (58-153)	58 (39-117)

SUMMARY OF FINDINGS

- The median wait time to see a rheumatologist for **any condition** was **61 days** post-referral.
- For patients with **systemic inflammatory conditions**, the median time to be seen was **47 days** (interquartile range 18-97).
- The median wait times for individuals with conditions deemed **non-urgent** (osteoarthritis, chronic pain) were roughly **2 weeks longer**.
- Overall, **36%** of patients were seen by a rheumatologist **within 6 weeks** from referral and **67% within 3 months**.
- 68 (6%) patients were waiting longer than 12 months to be seen.

Figure 3: Proportion of patients seen by wait-time and by type
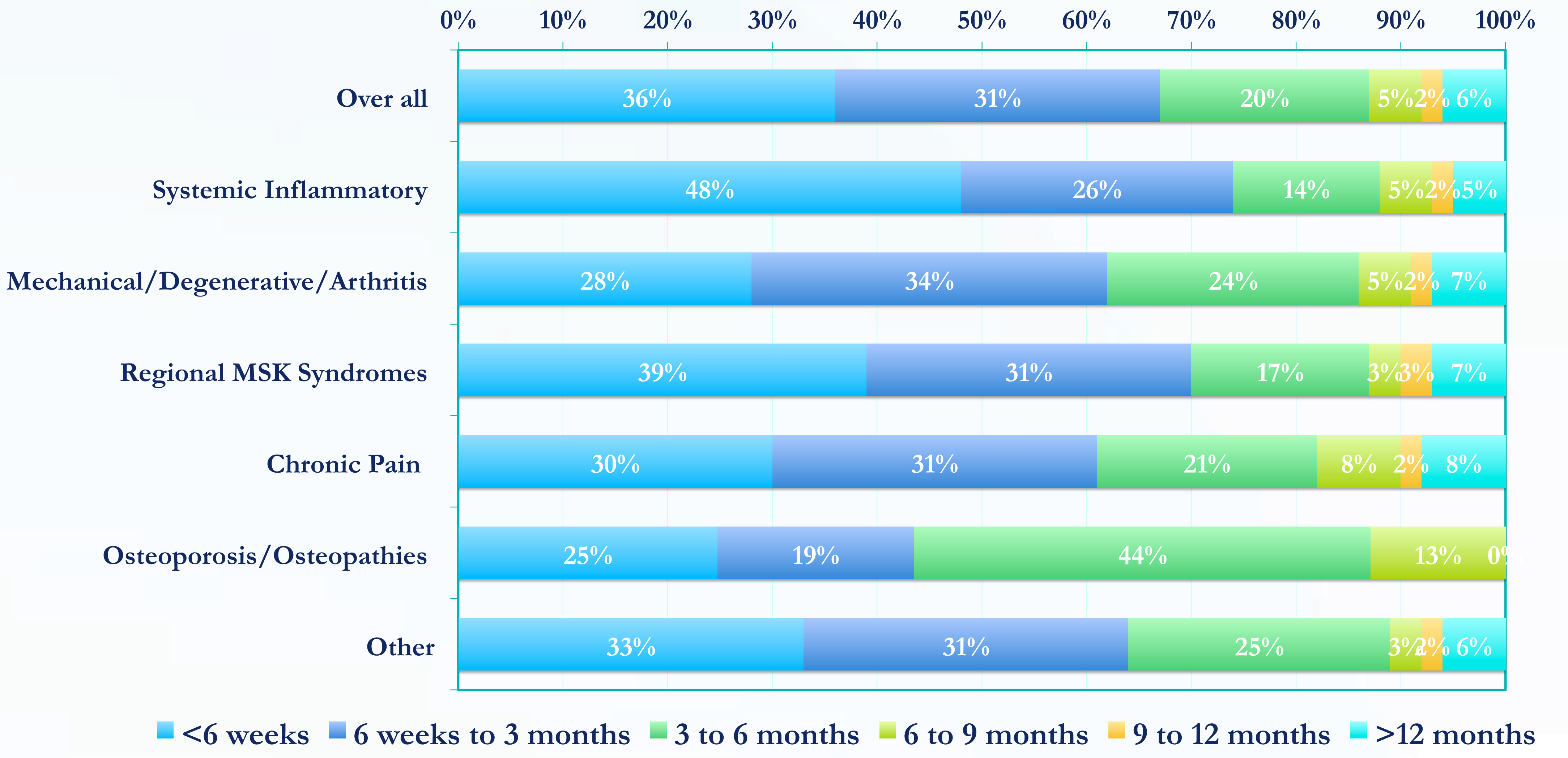
CONCLUSION

- **Using EMRs from a representative sample of Ontario primary care practices revealed longer wait times to see a rheumatologist than previous Canadian reports that sampled patients from urban rheumatology clinics.**
- **33% of patients were still waiting >3 months to be seen**
- **Systemic inflammatory conditions were seen earlier compared to other types of referrals.**
- **An analysis of wait times along each component of the care pathway is currently underway.**