Measuring and Mapping the Rheumatology Workforce in Canada
An update for: Royal College- National Speciality Societies
Human Resource for Health Dialogue
June 2nd 2017
Dr. Dianne Mosher
The burden of arthritis in Canada

• 1% of the Canadian population has rheumatoid arthritis (RA)
• Rates are expected to increase over the next 30 years
• RA is a leading cause of disability and is also associated with increased mortality
Arthritis Stakeholders from Across Canada have worked to Develop Tools to Improve Access to and Delivery of Care

- Tool for Developing and Evaluating Models of Care
- A pan-Canadian Approach to Inflammatory Arthritis Models of Care
- Inflammatory Arthritis Care Path
- System-Level Performance Measurement
- Manuscript on “A Pan-Canadian Core Dataset for RA”

Available at: http://arthritisalliance.ca
Measuring a Model of Care for Inflammatory Arthritis

- **Identification**: How many patients are not getting seen?
- **Specialized Access**: Are patients getting to the rheumatology clinic in a timely manner for diagnosis?
- **Medical Management**: Are patients being treated appropriately? Is treatment timely once diagnosis made?
- **Ongoing care**: Are patients getting lost to follow-up?

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**Patient self Management**

**WORKFORCE CAPACITY**

*Barber et al. J Rheum 2016 43(3):530-40 All rights reserve*
What is our workforce capacity?

Performance Measure 6: Rheumatologists per Capita

**Reporting:**
- Report the number of rheumatologists per 100,000 population
- Report the number of FTE rheumatologists per 100,000 population

**Measure description:** How many rheumatologists per 100,000 population

**Benchmark** 1/75,000

*Barber et al. J Rheum 2016 43(3):530-40*
How many rheumatologists are in Canada

• Literature review of published, unpublished and online databases searched to determine potential sources of data
  • Data sources included
    • Membership databases
    • Accreditation databases
    • Licensing databases
    • Physician directories
    • CIHI
    • National Workforce Surveys (National Physician Survey, Canadian Council of Academic Rheumatologists, CCAR etc.)
    • Provincial Workforce Surveys (BC rheumatology Society)
    • Other: e.g. the Arthritis Society, Alberta Rheumatology Website

Brophy et al. J Rheumatol 2016; 43; 1121-1129
<table>
<thead>
<tr>
<th>Source</th>
<th>Year</th>
<th>No. Rheumatologists Identified/surveyed</th>
<th>Survey Response Rate, n (%)</th>
<th>Study Results Adult/pediatric, N&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Mean Age, yrs</th>
<th>Sex, % male</th>
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<tbody>
<tr>
<td>National level — surveys of academic units</td>
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<td>CCAR</td>
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<td>144/24</td>
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<td></td>
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<td>139/23</td>
<td>48</td>
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<td>PedsCRA</td>
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<td>National level — database</td>
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<td>CIHI</td>
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<td></td>
<td>2011</td>
<td>381</td>
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<td>352/29</td>
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<td></td>
<td>2010</td>
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<td>336/27</td>
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<td>2009</td>
<td>347</td>
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<td>324/23</td>
<td>—</td>
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<tr>
<td></td>
<td>2008&lt;sup&gt;g&lt;/sup&gt;</td>
<td>300/—</td>
<td></td>
<td>—</td>
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<td>—</td>
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<tr>
<td>CMA&lt;sup&gt;h&lt;/sup&gt;</td>
<td>2015</td>
<td>428</td>
<td></td>
<td></td>
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<tr>
<td>RCPSC</td>
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<td>Provincial level — surveys</td>
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<tr>
<td>BCSR</td>
<td>2013</td>
<td>158</td>
<td>131 (83)&lt;sup&gt;i&lt;/sup&gt;</td>
<td>105/6</td>
<td>43</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>—</td>
<td></td>
<td>—</td>
<td>60</td>
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<tr>
<td>ACREU</td>
<td>2007</td>
<td>158</td>
<td>131 (83)&lt;sup&gt;i&lt;/sup&gt;</td>
<td>125/6</td>
<td>66</td>
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Brophy et al. J Rheumatol 2016; 43; 1121-1129 All rights reserve
Limitations of available sources for workforce information in rheumatology

• Limited information on FTE clinical practice (esp. in non-academic settings)

• Paucity of information on the use of alternative models of care including:
  • Collaboration with other health care professionals
  • Use of travelling clinics
  • Telehealth
  • eConsultation
Stand Up and Be Counted

• Survey launched by the CRA in 2015

• Primary Objective:
  ➢ To measure and map the Rheumatology workforce in Canada and to estimate the number of Rheumatologist FTEs per 100,000 population

  ➢ Secondary objectives:
  ➢ To obtain demographic information and retirement projections on the Rheumatology workforce across Canada
  ➢ To obtain estimates of the uptake of EMRs in Rheumatology practices
  ➢ To obtain estimates on Rheumatologist participation in travelling clinics, Tele-Rheumatology and eConsultation
  ➢ To obtain information how we collaborate with allied health professionals in Rheumatology clinics
  ➢ To obtain information on how we deliver care to Canadian Indigenous Populations

Barber C.E.H. et al J Rheumatol 2017;44(2)
Methods

1. Literature Review
   • Identify existing Canadian surveys to identify gaps
   • National & Provincial surveys Thematic studies (Pediatrics and Indigenous Populations)

2. Questionnaire Development
   • Draft questions
   • Questionnaire reviewed by Rheumatologists across Canada: Adult and Pediatric, Academic and Community

3. Identify Rheumatologists
   • CRA membership
   • Cross-referenced with Royal College list, provincial colleges, websites, and local champions

4. Electronic Survey
   • Launched March 9th 2015
   • Complete August 23rd 2015

Barber C.E.H. et al *J Rheumatol* 2017;44(2)

University of Calgary Ethics ID: REB14-2135
Survey questions

Demographics
• Age, sex, years practicing, retirement plans, training & certification

Practice Setting
• Affiliation, call coverage, location, Tele-health, travelling clinics, eConsultation

Allied Health Professionals
• Types of AHPs in clinics & collaborative roles

Provision of Care for Canadian Indigenous Populations
• Proportion of patients in practice, Tele-health, traveling clinics

Rheumatological Diseases Treated
• inflammatory arthritis, pediatric patients, multi-morbidities, specialty clinics

Electronic Medical Records
• Use, hospital based, type

Barber C.E.H. et al J Rheumatol 2017;44(2)
Survey response rate

Survey Sent (N=695)*

Total Valid Responses (N=409)

Analysis Cohort (N=355): Response rate: 68%***

Adult Rheumatologists/Internists (N=304) Response rate***: 66%
Pediatric Rheumatologists (N=51) Response rate***: 93%

No response 273; Invalid response 15**

Excluded (N=54) as not currently practicing

*Includes ineligible individuals who are CRA members (retired, not in clinical practice, trainees).
** Responses deemed invalid if individual consented but did not answer a single question.
***Response rate 355/519=68% based on CRA estimated number of practicing rheumatologists (464 adult rheumatologists/internists, 55 pediatric rheumatologists

Barber C.E.H. et al J Rheumatol 2017;44(2)
### Demographics

<table>
<thead>
<tr>
<th>Median age (IQR)</th>
<th>50 (46, 55)*</th>
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<tbody>
<tr>
<td>Male (%)</td>
<td>47%</td>
</tr>
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</table>

#### Practice setting (n=353)

<table>
<thead>
<tr>
<th>Practice setting</th>
<th>Number (Percentage)</th>
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<tbody>
<tr>
<td>University-based</td>
<td>158 (45%)</td>
</tr>
<tr>
<td>Community-based clinic with academic appointment</td>
<td>59 (17%)</td>
</tr>
<tr>
<td>Solo-based community practice with hospital privileges</td>
<td>67 (19%)</td>
</tr>
<tr>
<td>Solo-based community practice no hospital privileges</td>
<td>21 (6%)</td>
</tr>
<tr>
<td>Group community practice with hospital privileges</td>
<td>34 (10%)</td>
</tr>
<tr>
<td>Group community practice no hospital privileges</td>
<td>8 (2%)</td>
</tr>
<tr>
<td>Other</td>
<td>6 (2%)</td>
</tr>
</tbody>
</table>

#### Funding for clinical time (n=352)

<table>
<thead>
<tr>
<th>Funding for clinical time</th>
<th>Number (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee for service</td>
<td>214 (61%)</td>
</tr>
<tr>
<td>Blended</td>
<td>76 (21%)</td>
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<tr>
<td>Alternative funding plan/salary</td>
<td>62 (18%)</td>
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</tbody>
</table>

* Provincial range of median age in years

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Rheumatologists bill differently depending on the province

<table>
<thead>
<tr>
<th>Billing as a rheumatologist n=355</th>
<th>N(%)</th>
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<tbody>
<tr>
<td>British Columbia</td>
<td>40 (78%)</td>
</tr>
<tr>
<td>Alberta</td>
<td>17 (33%)</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>6 (55%)</td>
</tr>
<tr>
<td>Manitoba</td>
<td>10 (91%)</td>
</tr>
<tr>
<td>Ontario</td>
<td>118 (87%)</td>
</tr>
<tr>
<td>Quebec</td>
<td>67 (97%)</td>
</tr>
<tr>
<td>Atlantic provinces</td>
<td>17 (74%)</td>
</tr>
<tr>
<td>Location not specified</td>
<td>2 (67%)</td>
</tr>
<tr>
<td>Total</td>
<td>275 (78%)</td>
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</table>
## Work characteristics

<table>
<thead>
<tr>
<th>Work characteristic</th>
<th>Median (IQR)</th>
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<tbody>
<tr>
<td>½ days per week doing clinical work</td>
<td>6 (4, 8)</td>
</tr>
<tr>
<td>½ days per week on paper work</td>
<td>2 (1,2)</td>
</tr>
<tr>
<td>Weeks worked per year</td>
<td>46 (44, 48)</td>
</tr>
<tr>
<td>Hours worked per week</td>
<td>50 (40, 60)</td>
</tr>
<tr>
<td>New patients seen per week</td>
<td>10 (5, 20)</td>
</tr>
<tr>
<td>Follow-up patients seen per week</td>
<td>45 (25, 60)</td>
</tr>
<tr>
<td>Proportion of practice comprised of patients with inflammatory arthritis</td>
<td>70% (50%, 80%)</td>
</tr>
</tbody>
</table>
Time allocation

Percent allocation of time: Median of 70% allocated to clinical duties (IQR 55, 90)

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Mapping rheumatologists (methods)

• National clinical FTE based on survey question asking respondents to report the % of time allocated to clinics (see previous slide)
• Because of an incomplete response rate, this % was applied to the number of rheumatologists practicing in each province from the CMA 2015 data (n=398)
• This was mapped
• Then the number of FTE rheumatologists (adult and pediatric combined) required in each province to meet the 1/75,000 threshold was determined
• The 1/75,000 is a CRA benchmark

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Legend refers to number of rheumatologists per 75,000

No province currently meets the benchmarks

Deficit number of FTE rheumatologists shown in text on top of the province

(range from 1-77)

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32% of Rheumatologists have plans to retire within the next 10 years.
Limitations to the survey

• Hard to identify some rheumatologists, total denominator a challenge

• Incomplete response rates meant we couldn’t directly map responders and had to use CMA data (which had a different denominator)

• Estimate of FTE based on self-report % clinical activities, we did not include other academic/research in our estimate

• Unclear what benchmark should be to serve a population: 1/75,000 has been suggested but not proven as a benchmark
Stand Up and Be Counted Conclusions

• There is a current shortage of rheumatologists in Canada with a deficit of approximately 203 rheumatologists
• There are only approximately 34 rheumatology residency positions
• Shortage may worsen in the next 10 years due to potential retirements in close to 1/3 of the workforce
Next steps

• Additional work done to look at predictors of workload (manuscript submitted)

• Workforce survey launched for allied health professions (Stand Up and Be Counted Too!) to better capture models of care in inflammatory arthritis

• Work underway currently to map service delivery for rheumatology in Alberta geographically to determine appropriate ratios of providers and also to evaluate gaps in service delivery in the province.

• Ongoing national work on models of care to define an economic case for different models and ongoing evaluation of different models of care across the country.