Improving Diagnosis of Asthma and COPD in Canadian Communities

Shawn Aaron
The Ottawa Health Research Institute
University of Ottawa
The Canadian Respiratory Research Network (CRRN)
Objectives of Today’s Talk:

- We’ll discuss how asthma and COPD are diagnosed (or not diagnosed!) in Canada.
- We’ll define the terms: under-diagnosis and over-diagnosis.
- We’ll discuss strategies to potentially improve diagnoses of obstructive lung diseases in Canadians.
Question #1:

1. Approximately what percentage of Canadians diagnosed with asthma by a physician do not actually have asthma?
   a) 5%
   b) 10%
   c) 20%
   d) 30%
   e) 60%
Question #2:

2. Approximately what percentage of Canadians living with chronic airflow obstruction have been previously diagnosed with obstructive lung disease (asthma or COPD) by a physician?

a) <5%
b) 20-30%
c) 50%
d) 70%
e) 90%
Patient #1:

- 26 year old male, civil servant, non-smoker.
- Referred to my clinic for ‘chronic cough and frequent lung infections’.
- HPI: Cough with sputum X 1 year. Much worse when he gets a respiratory infection. Has had 4 chest infections in the past year. Each time treated with antibiotics.
Patient #1:

- Used to play hockey, had to quit because “I’m out of shape, too SOB”.
- Has seen GP x 4 visits. Has had 3 CXR’s - all unremarkable. Has had 4 courses of antibiotics. Last time was given a Ventolin puffer as well.
- Has never had spirometry.
<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>26 yr</td>
</tr>
<tr>
<td>Height</td>
<td>164 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>55 kg</td>
</tr>
<tr>
<td>Race</td>
<td>Caucasian</td>
</tr>
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<table>
<thead>
<tr>
<th>Spirometry</th>
<th>Pre-Bronchodilator</th>
<th>Post-Bronchodilator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best</td>
<td>LLN</td>
</tr>
<tr>
<td>FVC (L)</td>
<td>3.30</td>
<td>3.11</td>
</tr>
<tr>
<td>FEV₁ (L)</td>
<td>1.80</td>
<td>2.67</td>
</tr>
<tr>
<td>FEV₁/FVC</td>
<td>0.55</td>
<td>0.74</td>
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</table>

Flow  
_______
<table>
<thead>
<tr>
<th>Flow</th>
<th>Pred</th>
<th>PRE</th>
<th>POST</th>
</tr>
</thead>
</table>

Volume  
_______
<table>
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<tr>
<th>Volume</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
</table>

Graph showing pre-bronchodilator and post-bronchodilator flow-volume curves.
Patient #1: The Bottom Line

- This patient clearly has asthma.
- He has chronic respiratory symptoms plus variable expiratory airflow limitation.
- Despite symptoms lasting one year, he has not been diagnosed until now.
- This is an example of UNDER-DIAGNOSIS.
Patient #2:

- 44 year old female, notary.
- Referred to my clinic for ‘difficult to control asthma’.
- Chief Complaint- she is short of breath x 4 years. She has noticed some wheezing.
- Previously she was very active and doing long-distance biking, but for the past 2 years she is unable to walk more than 2 blocks ‘because of her asthma’.
44 yo patient with ‘asthma’:

- Past history- 4 ½ years ago she had a ruptured appendix/peritonitis and underwent a 6 hour emergency surgery and prolonged ICU stay.
- Her ‘asthma’ was diagnosed about 3 months after this.
- She has never had spirometry, but has been chronically treated with an ICS/LABA.
44 yo patient with ‘asthma’:

- On exam:
  - Patient is tachypneic, RR = 22, looks uncomfortable.
  - Wheezing over her upper airway, with inspiration and expiration.
  - Rest of exam unremarkable.
Her Spirometry

<table>
<thead>
<tr>
<th>Spirometry</th>
<th>Ref</th>
<th>Pre</th>
<th>% Ref</th>
<th>Post</th>
<th>% Ref</th>
<th>% Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVC (Liters)</td>
<td>3.22</td>
<td>2.42</td>
<td>75</td>
<td>2.43</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>FEV1 (Liters)</td>
<td>2.49</td>
<td>0.91</td>
<td>37</td>
<td>0.95</td>
<td>38</td>
<td>5</td>
</tr>
<tr>
<td>FEV1/FVC (%)</td>
<td>77</td>
<td>39</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEF25-75% (L/sec)</td>
<td>2.95</td>
<td>0.50</td>
<td>17</td>
<td>0.61</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>FEF50% (L/sec)</td>
<td>3.55</td>
<td>0.46</td>
<td>13</td>
<td>0.59</td>
<td>17</td>
<td>28</td>
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<tr>
<td>FEF75% (L/sec)</td>
<td>1.43</td>
<td>0.47</td>
<td>33</td>
<td>0.53</td>
<td>37</td>
<td>13</td>
</tr>
<tr>
<td>PEF (L/sec)</td>
<td>5.88</td>
<td>1.11</td>
<td>19</td>
<td>1.28</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>FIF50% (L/sec)</td>
<td>0.88</td>
<td>0.81</td>
<td>19</td>
<td>1.28</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>FEF/FIF50</td>
<td>0.53</td>
<td>0.73</td>
<td>38</td>
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</tbody>
</table>

Results consistent with Upper airway obstruction!
Bronchoscopy View of the Normal Larynx and Upper Airway

Normal Tracheal Diameter

= 20 mm
Bronchoscopic View of Patient’s Larynx and Upper Airway- Diffusely Narrowed Subglottic Obstruction:

Tracheal Diameter

= 4 mm!
After Bronchoscopic Airway Dilatation:
Patient #2: The Bottom Line

- This patient clearly does not have asthma, and she has never had asthma.
- Her problem has always been subglottic upper airway obstruction.
- This is a case of OVER-DIAGNOSIS of asthma (or alternatively we can label this a ‘mistaken diagnosis of asthma’).
## Definitions:

<table>
<thead>
<tr>
<th></th>
<th>Patient’s assigned diagnosis</th>
<th>Patient’s true disease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Correct diagnosis</strong></td>
<td>Asthma</td>
<td>Asthma</td>
</tr>
<tr>
<td><strong>Under-diagnosis</strong></td>
<td>No diagnosis has been assigned to the patient, or a disease or condition other than Asthma that causes respiratory symptoms has been assigned to the patient.</td>
<td>Asthma</td>
</tr>
<tr>
<td><strong>Over-diagnosis</strong></td>
<td>Asthma</td>
<td>A disease or condition other than Asthma that causes respiratory symptoms (ex. GERD)</td>
</tr>
</tbody>
</table>
Proving Asthma or COPD:

- To confirm a diagnosis of asthma patients must have evidence of variable airflow obstruction or bronchial hyper-reactivity (GINA 2018).

- To confirm a diagnosis of COPD patients must have evidence of chronic airflow obstruction (GOLD 2019).

- Diagnosing asthma or COPD without testing for airflow obstruction is like diagnosing diabetes without testing the patient’s blood sugar.
Patient #3: Me!

- 55 year old male, physician.
- Chief Complaint- nocturia x 3 months.
- HPI: I have to get up twice a night to pee. This is new.
- I see my family MD.
- He says: Hmm... Frequent urination and nocturia.... Sounds like Type II diabetes.... Take this glyburide and metformin and call me back if you don’t get better.
Patient #3: Would this ever happen in real life? Never!

- My doctor would be negligent if he/she didn’t do an objective test to prove diabetes.
- At the very least a serum glucose and HgBA1C would be ordered, prior to assigning a lifetime diagnosis of a chronic disease and prior to assigning treatment.
- BUT THIS IDENTICAL SCENARIO PLAYS OUT EVERY DAY FOR PATIENTS WITH SUSPECTED ASTHMA OR COPD.
Are Canadian MD’s doing tests to prove asthma before they make the diagnosis?

- Probably not!
- Study by Gershon et al.
Are Canadian MD’s doing tests to prove asthma before they make the diagnosis?

Gershon et al, Chest 2012

Results:

Only 42.7% (95% CI: 42.6-42.9%) of 465,000 Ontarians newly diagnosed with asthma received PFT testing between 1 year prior and 2.5 years following the time of diagnosis.

Conclusion: Less than half of Ontarians with newly diagnosed asthma received objective testing to confirm the diagnosis.
Over-Diagnosis of Asthma in Canada:

- What proportion of patients with an MD diagnosis of asthma do not have current asthma?

- Either because:
  1) They were misdiagnosed initially or
  2) They had asthma, but it is now in remission.
The Canadian Asthma Diagnosis Study- Primary Objectives:

1) To determine whether we could rule out a diagnosis of current asthma in randomly selected adult patients with recent physician-diagnosed asthma.

and

2) To determine whether these patients could be safely weaned off asthma medications and kept off meds for one year.
The Canadian Asthma Diagnosis Study - Secondary Study Questions:

3) How is asthma being diagnosed in Canadian communities? Are spirometry and other measures of airflow limitation being used to establish new diagnoses of asthma?
Reevaluation of Diagnosis in Adults With Physician-Diagnosed Asthma

Shawn D. Aaron, MD; Katherine L. Vandemheen, MScN; J. Mark FitzGerald, MD; Martha Ainslie, MD; Samir Gupta, MD; Catherine Lemière, MD; Stephen K. Field, MD; R. Andrew McIvor, MD; Paul Hernandez, MD; Irvin Mayers, MD; Sunita Mulipuru, MD; Gonzalo G. Alvarez, MD; Smita Pakhale, MD; Ranjeeta Mallick, PhD; Louis-Philippe Boulet, MD; for the Canadian Respiratory Research Network

**IMPORATANCE** Although asthma is a chronic disease, the expected rate of spontaneous remissions of adult asthma and the stability of diagnosis are unknown.

**OBJECTIVE** To determine whether a diagnosis of current asthma could be ruled out and asthma medications safely stopped in randomly selected adults with physician-diagnosed asthma.
The Canadian Asthma Diagnosis Study

- Multicenter, prospective, longitudinal cohort study of 701 Canadians with recently diagnosed asthma (diagnosed by an MD within 5 years).
- We recruited subjects through random-digit dialing.
- Subjects were not told the purpose of the study, in order to prevent possible selection/recruitment bias.
Canadian Participating Centres
Study Procedures

- Study participants were put through an extensive testing algorithm to confirm or rule out current asthma. The algorithm progressively weaned asthma medications.

- The participant’s community MD was contacted to determine how asthma had been initially diagnosed in the community.
Primary Outcome:

Completed all study assessments and conclusively evaluated for a diagnosis of asthma

N = 613

Current asthma confirmed
N = 410 (67%)

Reversible airflow obstruction at 1\textsuperscript{st} study visit (N=86).
Bronchial hyper-responsiveness at visits 2, 3 or 4 (N=287).
Acute worsening of asthma during medication tapering period (N=9).
Asthma diagnosed by study pulmonologist (N=28).

Current asthma excluded
N = 203 (33%)
Study Results after 12 months of F/U:

<table>
<thead>
<tr>
<th>Number Enrolled</th>
<th>Number who completed algorithm</th>
<th>Number with confirmed asthma</th>
<th>Number with asthma ruled out</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
<td>613</td>
<td>410 (67%)</td>
<td>203 (33%)</td>
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</table>

12 months clinical F/U with repeat bronchial challenge tests at 6 and 12 months.

<table>
<thead>
<tr>
<th>Number Enrolled</th>
<th>Number who completed algorithm</th>
<th>Number with confirmed asthma</th>
<th>Number with asthma ruled out</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
<td>613</td>
<td>432 (70%)</td>
<td>181 (30%)</td>
</tr>
</tbody>
</table>

(95% CI: 26-33%)
What’s happening in the community?

- Only 51% of 701 participants in our study had undergone tests of lung function in the community.

- Patients in whom current asthma was confirmed were more likely to have had airflow testing done at time of initial diagnosis (P=0.02).
Serious Misdiagnoses:

- 12 patients (2%) of the entire cohort had been misdiagnosed with asthma when they instead had a serious cardio-pulmonary disease responsible for their symptoms.
  - Coronary artery disease = 4
  - Subglottic stenosis = 2
  - Bronchiectasis = 2
  - ILD, Sarcoid, Pulm Hypertension, Tracheo-Bronchomalacia = 4
Are Our Study Results Consistent?

- We actually did a very similar study previously in 2005-2007, and the results were identical!

CMAJ Research

Overdiagnosis of asthma in obese and nonobese adults

Shawn D. Aaron MD, Katherine L. Vandemheen BScN, Louis-Philippe Boulet MD, R. Andrew McIvor MD, J. Mark FitzGerald MD, Paul Hernandez MD, Catherine Lemiere MD, Sat Sharma MD, Stephen K. Field MD, Gonzalo G. Alvarez MD, Robert E. Dales MD, Steve Doucette MSc, Dean Fergusson PhD, for the Canadian Respiratory Clinical Research Consortium

CMAJ 2008
Conclusions:

1) Among adults with recent physician-diagnosed asthma a current diagnosis of asthma could not be established in 33.1% who were not taking daily asthma medications or had medications weaned.

2) Asthma is sometimes improperly worked up in the community. Improper work-up is associated with failure to confirm current asthma.
Physicians should order pre and post BD spirometry to try to confirm asthma prior to assigning a patient with a lifetime diagnosis of asthma.

Physicians should periodically reassess asthma control and try to taper and potentially discontinue medications in patients with asthma who are asymptomatic with normal spirometry.
Let’s Shift to Under-Diagnosis of Asthma and COPD:
Prevalence of Under-Diagnosis of COPD

- Multiple studies done in the community have found consistent results.
- 10-12% of adults > 40 yo have persistent post BD airflow obstruction.
- However only 20-30% of these subjects have been previously diagnosed with COPD.
- Studies collectively suggest that 70% of COPD is undiagnosed.

Risk Factors for Under-Diagnosis of COPD:

<table>
<thead>
<tr>
<th>Underdiagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underuse of spirometry in making diagnosis (17)</td>
</tr>
<tr>
<td>Codiagnosis of asthma (16)</td>
</tr>
<tr>
<td>Male sex (7)</td>
</tr>
<tr>
<td>Lower education levels (7)</td>
</tr>
<tr>
<td>Ethnic minority background (9)</td>
</tr>
<tr>
<td>Minimization of symptoms and underreporting of symptoms to physicians (9, 16)</td>
</tr>
</tbody>
</table>
Prevalence of Under-diagnosis of Asthma

• Multiple population-based studies done in the community have found consistent results.

• 7-10% of the pediatric and adult population have current asthma.

• However 20%-70% of patients with asthma in the community remain undiagnosed.

Risk Factors for Under-Diagnosis of Asthma:

<table>
<thead>
<tr>
<th>Under-Diagnosis</th>
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</thead>
<tbody>
<tr>
<td>Patient under-reporting of symptoms</td>
</tr>
<tr>
<td>Low SES</td>
</tr>
<tr>
<td>Poor/Absent spirometry</td>
</tr>
</tbody>
</table>

So Many Problems… How do we start to tackle them?

- Let’s start by answering some fundamental questions through research.
- Can we find subjects with undiagnosed asthma or COPD in Canadian communities?
- Once we find them, can we do something for them to improve their health status and health outcomes?
The UCAP Study: A Broad Overview

- 16 study sites.
- 5 year study.
- Funded by CIHR Foundation grant.
- First-in-human clinical trial to determine if case-finding and early diagnosis of previously undiagnosed COPD or asthma improves patient outcomes.
The UCAP Study:

Four Studies Rolled into One Package:

Study #1) Cross Sectional Study to identify symptomatic subjects in the community with undiagnosed COPD and Asthma using case-finding strategies.

Study #2) Case-control Study to determine factors associated with undiagnosed COPD and asthma.
The UCAP Study:

Four Studies Rolled into One Package:

Study #3) The world’s first randomized controlled clinical trial (RCT) to determine if early intervention improves health outcomes.

Study #4) Economic assessment of the case-finding and early treatment strategy.
The UCAP Case-Finding Study:

- In total 4000 adult subjects will be recruited using random-digit dialing:
  - 3000 symptomatic subjects who have never been previously diagnosed with asthma or COPD but who screen positive for COPD or asthma symptoms by telephone questionnaire.
  - 1000 controls.
Age: 65  Gender: Male  Height(cm): 174  Weight(kg): 62.5  BMI: 20.64
Race: Caucasian

ID: 01-0073  Tech. ID: J.Biggs RN  Physician: Dr. S. Aaron

<table>
<thead>
<tr>
<th>Spirometry</th>
<th>Ref</th>
<th>(Normal Range)</th>
<th>Pre</th>
<th>% Ref</th>
<th>Post</th>
<th>% Ref</th>
<th>%Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVC Liters</td>
<td>4.43</td>
<td>(3.4 - 5.5)</td>
<td>3.34</td>
<td>75</td>
<td>3.89</td>
<td>88</td>
<td>16</td>
</tr>
<tr>
<td>FEV1 Liters</td>
<td>3.21</td>
<td>(2.4 - 4.0)</td>
<td>1.23</td>
<td>38</td>
<td>1.70</td>
<td>53</td>
<td>38</td>
</tr>
<tr>
<td>FEV1/FVC %</td>
<td>73</td>
<td>(63.9 - 82.0)</td>
<td>37</td>
<td>44</td>
<td></td>
<td></td>
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<tr>
<td>FEF25-75% L/sec</td>
<td>2.59</td>
<td>(1.1 - 4.1)</td>
<td>0.32</td>
<td>12</td>
<td>0.53</td>
<td>21</td>
<td>64</td>
</tr>
<tr>
<td>FEF25% L/sec</td>
<td>6.41</td>
<td>(3.8 - 9.0)</td>
<td>1.08</td>
<td>17</td>
<td>1.81</td>
<td>28</td>
<td>68</td>
</tr>
<tr>
<td>FEF50% L/sec</td>
<td>3.75</td>
<td>(3.3 - 4.2)</td>
<td>0.37</td>
<td>10</td>
<td>0.68</td>
<td>18</td>
<td>82</td>
</tr>
<tr>
<td>FEF75% L/sec</td>
<td>1.10</td>
<td>(0.5 - 1.7)</td>
<td>0.17</td>
<td>16</td>
<td>0.17</td>
<td>15</td>
<td>-5</td>
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<tr>
<td>PEF L/sec</td>
<td>8.49</td>
<td>(6.3 - 10.7)</td>
<td>3.33</td>
<td>39</td>
<td>3.79</td>
<td>45</td>
<td>14</td>
</tr>
<tr>
<td>FIF50% L/sec</td>
<td>6.66</td>
<td>(4.1 - 9.3)</td>
<td>0.22</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIF L/sec</td>
<td>7.01</td>
<td>(4.3 - 9.7)</td>
<td>0.25</td>
<td>4</td>
<td></td>
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</tr>
</tbody>
</table>

Flow

Volume

Pred ——— Pre ——— Post
The UCAP Case-Finding Study:

- The burden of undiagnosed COPD and asthma will be assessed in those subjects found to have undiagnosed disease:

- Major outcomes are:

  1) healthcare utilization (physician, ED, or hospital visits) for respiratory-related illness in the previous year.

  2) Absenteeism from work or school for respiratory illness in the previous year.

  3) QOL.
UCAP- Flow of Subjects from Case-Finding to RCT:

Screen subjects over telephone for respiratory symptoms

Do pre and post bronchodilator spirometry
Assess burden of symptoms and QOL

Spirometry shows reversible airflow obstruction = ASTHMA (~10%)
Usual Care
Enhanced Asthma Intervention

Spirometry shows persistent airflow obstruction post bronchodilator = COPD (~10%)
Usual Care
Enhanced COPD Intervention

Spirometry does not show airflow obstruction (~80%)
The UCAP RCT:

- The world’s first RCT of early treatment of previously undiagnosed asthma or COPD.
- The RCT will flow out from the case-finding study.
- Objective: To determine whether early treatment of previously undiagnosed airflow obstruction will affect patients' health outcomes, health care utilization, productivity loss, and quality of life.
- Study Design: Randomized, parallel clinical trial.
- Patients and Study PI’s are not blinded, but study outcome assessor is blinded.
The UCAP RCT: Intervention

- 550 Patients who are discovered in the case-finding study to have undiagnosed asthma or COPD will be randomized to:

A) **Control group receives usual care** – spirometry is formally interpreted, and the report is given to the patient and sent to the family MD.

B) **Intervention group receives an early, comprehensive treatment strategy** based on international guidelines.

- Treatment will involve two visits to the study Respirologist and asthma/COPD educator spaced 4 months apart. Treatment will include: Smoking cessation (using the Ottawa model), immunizations, disease education, and pharmacologic therapies as required.
The primary outcome will be the rate of patient-initiated healthcare utilization events for respiratory illness over a one year prospective follow-up period.

Key secondary outcomes (measured over one year):
- Absenteeism from work or school.
- Quality of life (SGRQ and SF-36).
- Lung function.
- Smoking cessation rates.
- Respiratory symptoms (CAT).
The UCAP Economic Assessment Study:

- Objective: to evaluate the cost-effectiveness of the case-finding and treatment strategy at the community level.
<table>
<thead>
<tr>
<th>Site</th>
<th>Status</th>
<th># Enrolled Case Finding</th>
<th># Eligible RCT</th>
<th># Randomized RCT</th>
</tr>
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<tbody>
<tr>
<td>01 Ottawa</td>
<td>Enrolling</td>
<td>338</td>
<td>74</td>
<td>70</td>
</tr>
<tr>
<td>02 Vancouver</td>
<td>Enrolling</td>
<td>117</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>03 Halifax</td>
<td>Enrolling</td>
<td>36</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>04 Montreal</td>
<td>Enrolling</td>
<td>91</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>05 Hamilton</td>
<td>Enrolling</td>
<td>25</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>06 Winnipeg</td>
<td>Enrolling</td>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>07 Quebec City</td>
<td>Enrolling</td>
<td>55</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>08 Calgary</td>
<td>Enrolling</td>
<td>43</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>09 Edmonton</td>
<td>Enrolling</td>
<td>25</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>10 Toronto</td>
<td>Enrolling</td>
<td>18</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>11 Kingston</td>
<td>Enrolling</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
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<td>Enrolling</td>
<td>43</td>
<td>6</td>
<td>5</td>
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<td>Enrolling</td>
<td>3</td>
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<td>15 Barrie</td>
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<td>16 Toronto East</td>
<td>Ethics Pending</td>
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<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>805</strong></td>
<td><strong>140</strong></td>
<td><strong>126</strong></td>
</tr>
</tbody>
</table>
The UCAP Study:

Conclusion:

- UCAP will be the definitive study to determine the burden of undiagnosed obstructive lung diseases in Canadian adults, and to determine if case-finding and early treatment of these subjects provides benefit.

- We will find out if guidelines-based therapy of newly discovered undiagnosed asthma or COPD will improve clinical outcomes for affected patients.

- As such, the study has the potential to profoundly impact the lives of ~10% of adult Canadians who are estimated to have undiagnosed obstructive lung diseases.
Acknowledgments:

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[Logos of various institutions]
# My Vision for McGill’s DOM:

#1 Objective: We need to ensure that we create and maintain a faculty that is engaged, academically productive, and valued.

This in turn will lead to our members striving for excellence in research, teaching and clinical care.
My Philosophy and Style of Leadership:

1) Open and transparent.
2) Collaborative, collegial and inclusive.
3) COMMUNICATION/TRANSPARENCY is key.
4) No backroom deals- ‘open-book management’.
5) Provide people with resources, incentives and rewards to work harder and be more academically productive.
My Philosophy and Style of Leadership:

1) When I arrive I will ask questions and meet with the Departmental Leaders and also its Members ‘at the coal face’.

2) I will find out what is working well at McGill’s DOM and I will work to provide resources, incentives and rewards to keep successful individuals and programs successful.

3) I will find out what is not working well – I’ll consult with members to come up with the most workable solutions for problem issues.
Some challenges that I will address:

1) Achieving unity and integration of the DOM and each Medical Division across the various hospital sites.

2) Ensuring we maintain a steady stream of high-quality clinician/researchers and clinician/educators for recruitment to our faculty.

3) Ensuring that our clinical care is innovative, that it both ‘pushes the envelope’ and provides evidence-based care to the population.
Potential measures to address the challenges:

- Establish department wide events to try to bring DOM members together (ex. Awards and Appreciation Night, Departmental Winter Gala).
- Provide resources to ensure collaboration across hospital campuses- ‘quick wins (research, education, or clinical initiatives) to get people to work together’.
- Provide resources to support young potential academic recruits.
Potential measures to address the challenges:

• Consider a slight revamp of the practice plan to ensure we reward member’s academic productivity using an objective points-based system.

• Create ‘translational research/clinical teams’ whereby bench researchers (Pillar I) and clinical researchers (including Pillars II, III and IV) align with clinicians and policy-makers in systems-based teams to deliver research innovations and evidence-based care directly to patients at McGill.
• Thanks for your attention.

• Questions?