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GENERAL INFORMATION

Microbiology and infectious diseases focuses on the diagnosis and treatment of infectious diseases; thus, it is concerned with human illness due to microorganisms. Since such disease can affect any and all organs and systems, this specialist must be prepared to deal with any region of the body.

The specialty of Medical Microbiology and Infectious Disease consists primarily of four major spheres of activity:

1. the provision of clinical consultations on the investigation, diagnosis and treatment of patients suffering from infectious diseases;
2. the establishment and direction of infection control programs across the continuum of care;
3. public health and communicable disease prevention and epidemiology;
4. the scientific and administrative direction of a diagnostic microbiology laboratory.

Source: Pathway evaluation program
GENERAL INFORMATION

Once you’ve completed medical school, it takes an additional 5 years of Royal College-approved residency training to become certified in medical microbiology and infectious disease. This residency training must include:

• 1 year of basic clinical training;
• 2 years of diagnostic laboratory residency in an approved department or division of microbiology, including bacteriology, immunology, mycology, mycobacteriology, parasitology and virology. In addition the resident must attain adequate experience in general hospital microbiology, including laboratory management, infection control, molecular biology, research and how microbiology relates to other hospital departments including administration;
• 1 year of approved residency in directly relevant clinical medicine (e.g. Internal Medicine or Pediatrics). This year must include six months of clinical practice centred around the management of patients with infectious diseases;

Source: Pathway evaluation program
GENERAL INFORMATION

• 1 further year of residency that may consist of: residency in the clinical microbiology laboratory, infectious diseases, infection prevention and control, research, public health, epidemiology, community medicine; or residency in other branches of laboratory or clinical medicine; or residency or research at a hospital or university centre recommended by the program director.

For further details on training requirements please go to:

Royal College of Physicians and Surgeons of Canada

Association of Medical Microbiology and Infectious Disease Canada

Source: Pathway evaluation program
## Total number & number/100,000 population by province, 2016

<table>
<thead>
<tr>
<th>Province/Territory</th>
<th>Physicians</th>
<th>Phys/100k pop’n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newfoundland/Labrador</td>
<td>5</td>
<td>0.9</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>15</td>
<td>1.6</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>9</td>
<td>1.2</td>
</tr>
<tr>
<td>Quebec</td>
<td>229</td>
<td>2.8</td>
</tr>
<tr>
<td>Ontario</td>
<td>188</td>
<td>1.4</td>
</tr>
<tr>
<td>Manitoba</td>
<td>21</td>
<td>1.6</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>13</td>
<td>1.1</td>
</tr>
<tr>
<td>Alberta</td>
<td>80</td>
<td>1.9</td>
</tr>
<tr>
<td>British Columbia</td>
<td>80</td>
<td>1.7</td>
</tr>
<tr>
<td>Territories</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>CANADA</strong></td>
<td><strong>641</strong></td>
<td><strong>1.8</strong></td>
</tr>
</tbody>
</table>

Source: 2016 CMA Masterfile
Number/100,000 population, 1995 to 2016

Source: 2016 CMA Masterfile
Number by gender & year, 1995 to 2016

Source: 2016 CMA Masterfile
Percentage by gender & age, 2016

**Gender**
- Male: 56%
- Female: 44%

**Age Group**
- 35 - 44: 31%
- 45 - 54: 23%
- 55 - 64: 26%
- <35: 8%
- 65+: 12%

Source: 2016 CMA Masterfile
Number by gender & age, 2016

- **65+**
  - Female: 22
  - Male: 49

- **55-64**
  - Female: 67
  - Male: 97

- **45-54**
  - Female: 58
  - Male: 86

- **35-44**
  - Female: 103
  - Male: 88

- **<35**
  - Female: 25
  - Male: 26

Source: 2016 CMA Masterfile
Percentage by main work setting, 2014

- Academic Health Sciences Centre: 61%
- Non-AHSC Teaching Hospital: 15%
- Community Hospital: 5%
- Free-standing Lab/Diag Clinic: 5%
- Nursing home/long term care facility/seniors’ residence: 4%
- Private Office/Clinic: 3%
- Community Clinic/Health-centre: 3%

Source: 2014 National Physician Survey. CFPC, CMA, Royal College
Percentage by practice organization, 2014

- 87% Hospital-based Practice
- 8% Solo Practice
- 4% Interprofessional Practice
- 1% Group Practice
- NR

Source: 2014 National Physician Survey. CFPC, CMA, Royal College
### Hours worked per week (excluding on-call), 2014

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours worked per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct patient care without teaching component</td>
<td>12.0</td>
</tr>
<tr>
<td>Direct patient care with teaching component</td>
<td>7.8</td>
</tr>
<tr>
<td>Teaching without patient care</td>
<td>3.8</td>
</tr>
<tr>
<td>Indirect patient care</td>
<td>5.4</td>
</tr>
<tr>
<td>Health facility committees</td>
<td>2.0</td>
</tr>
<tr>
<td>Administration</td>
<td>6.6</td>
</tr>
<tr>
<td>Research</td>
<td>5.7</td>
</tr>
<tr>
<td>Managing practice</td>
<td>1.5</td>
</tr>
<tr>
<td>Continued professional development</td>
<td>3.2</td>
</tr>
<tr>
<td>Other</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>TOTAL HOURS PER WEEK</strong></td>
<td><strong>49.5</strong></td>
</tr>
</tbody>
</table>

Source: 2014 National Physician Survey. CFPC, CMA, Royal College
On-call duty hours per month, 2014

- 53%: Up to 120 hrs/month
- 23%: More than 120, up to 180 hrs/month
- 12%: More than 180, up to 240 hrs/month
- 11%: More than 240 hrs/month
- 1%: No response

Time spent on call spent in direct patient care = 44 hrs./month

Source: 2014 National Physician Survey. CFPC, CMA, Royal College
Percentage by remuneration method

Primary payment method\(^1\) in 2013

- 90% + fee-for-service: 56%
- 90% + salary: 15%
- 90% + other*: 15%
- Blended: 12%
- NR: 2%

\(^*\) Other includes capitation, sessional, contract and other methods

Average gross fee-for-service payment per physician for Internal Medicine & subspecialties in 2014/15 (those earning at least $60,000) = $403,485\(^2\)

Average percent overhead reported by Internal Medicine specialists in 2010 = 22\(^3\)

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\(^1\) National Physician Survey, 2013, CFPC, CMA, Royal College
\(^2\) National Physician Database, 2014/15, CIHI
\(^3\) National Physician Survey, 2010, CFPC, CMA, Royal College
Professional & work-life balance satisfaction, 2013

- **Balance of personal & professional commitments**
  - Dissatisfied or very dissatisfied: 2%
  - Neutral: 31%
  - Satisfied or very satisfied: 24%
  - NR: 43%

- **Current professional life**
  - Dissatisfied or very dissatisfied: 2%
  - Neutral: 13%
  - Satisfied or very satisfied: 74%
  - NR: 11%

Source: 2013 National Physician Survey. CFPC, CMA, Royal College
Number of retirees during the three year period of 2013-2015

Source: CMA Masterfile – year over year comparisons
Note: “Retired” is based on giving up licence and therefore excludes those who have retired from clinical practice but are still licensed; those younger than 45 may include physicians who have temporarily given up their licence but return to practice at a later date.
## Total & Ministry funded postgraduate MD trainees in 2014/15

<table>
<thead>
<tr>
<th>Faculty of Medicine</th>
<th>Ministry funded</th>
<th>Total</th>
<th>Faculty of Medicine</th>
<th>Ministry funded</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUN</td>
<td>0</td>
<td>0</td>
<td>McMaster U</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Dalhousie U</td>
<td>0</td>
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<td>UWO</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U Laval</td>
<td>10</td>
<td>10</td>
<td>NOSM</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U Sherbrooke</td>
<td>14</td>
<td>14</td>
<td>U Manitoba</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>U Montréal</td>
<td>10</td>
<td>10</td>
<td>U Sask</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>McGill U</td>
<td>7</td>
<td>7</td>
<td>U Alberta</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>U Ottawa</td>
<td>4</td>
<td>4</td>
<td>U Calgary</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Queens U</td>
<td>0</td>
<td>0</td>
<td>UBC</td>
<td>5</td>
<td>5</td>
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<tr>
<td>U Toronto</td>
<td>4</td>
<td>4</td>
<td>Canada</td>
<td>67</td>
<td>72</td>
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</table>

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
Total & Ministry funded postgraduate MD trainees in 2014/15

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>MUN</td>
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<tr>
<td>U Ottawa</td>
<td>5</td>
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<td>U Calgary</td>
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<tr>
<td>Queens U</td>
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<td>UBC</td>
<td>7</td>
<td>9</td>
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<tr>
<td>U Toronto</td>
<td>11</td>
<td>26</td>
<td>Canada</td>
<td>51</td>
<td>80</td>
</tr>
</tbody>
</table>

* Includes Infectious Disease (Int Med) and Infectious Disease (Ped)

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
First year & exiting postgraduate-MD trainees in 2014/15

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER

IMG – International Medical Graduates
GCMS – Graduates of Canadian Medical Schools
PGY-4 & exiting postgraduate-MD trainees in 2014/15

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER

IMG – International Medical Graduates
GCMS – Graduates of Canadian Medical Schools
Postgraduate-MD trainees in 2014/15

- Total of 10 first year Medical Microbiology trainees representing 15% of all Medical Microbiology trainees.
- Total of 67 Medical Microbiology trainees representing 0.5% of all Ministry funded trainees
- Total of 5 visa trainees in Medical Microbiology.
- Total of 8 Medical Microbiology trainees completed postgraduate training in 2014.

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
Postgraduate-MD trainees in 2014/15

- Total of 19 PGY-4 Infectious Diseases trainees representing 37% of all Infectious Diseases trainees.
- Total of 51 Infectious Diseases trainees representing 0.4% of all Ministry funded trainees.
- Total of 17 visa trainees in Infectious Diseases.
- Total of 19 Infectious Diseases trainees completed postgraduate training in 2014.

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
Location of 2013 postgraduate-MD exits in 2015

Of the 15 exits in 2013, 13 (87%) were known to be practising in Canada.

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
Of the 16 exits in 2013, 14 (88%) were known to be practising in Canada.
Stress associated with finding employment at end of residency

Medical Microbiology & Infectious Diseases

Source: 2012 National Physician Survey of residents. CFPC, CMA, Royal College

NR/NA | Not stressful | Somewhat stressful | Very stressful

FM resident
- 7% NR/NA
- 43% Not stressful
- 42% Somewhat stressful
- 8% Very stressful

Other spec res
- 6% NR/NA
- 20% Not stressful
- 50% Somewhat stressful
- 25% Very stressful
Links to the Organizations Supplying Information for this Document

- National Physician Survey
- Canadian Medical Association
- Association of Faculties of Medicine of Canada
- Royal College of Physicians and Surgeons of Canada
- College of Family Physicians of Canada
- Canadian Institute for Health Information