Current & Forecasted Physician Workforce (PWF): Do health systems & local estimates differ?

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Learning Objectives:

1. Recognize PWF planning is of vested interest to many levels of health care system: complex, high stakes and often implicit message of adequacy or surplus;

2. Distinguish between modelled PWF estimates based on licensed head counts and local reviews of rosters, contracts and activities;

3. Recognize differences between two approaches may be sizable, may vary by specialty, and is relevant to HCP wellness and patient care.
Does Canada have enough physicians?

A profile of physicians in Canada, 2018

- 89,911 physicians in Canada (3.8% increase)
- 92% urban
- Average age: 50 years
- 58% female
- 42% male
- 241 doctors per 100,000 population
- 26% international graduates

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th># Physicians</th>
<th>Population</th>
<th>MD/1000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>85159</td>
<td>3650000</td>
<td>2.33312329</td>
</tr>
<tr>
<td>Ontario</td>
<td>29698</td>
<td>1400000</td>
<td>2.13557143</td>
</tr>
<tr>
<td>Quebec</td>
<td>20254</td>
<td>830000</td>
<td>2.44024096</td>
</tr>
<tr>
<td>BC</td>
<td>11612</td>
<td>475000</td>
<td>2.44463158</td>
</tr>
<tr>
<td>Alberta</td>
<td>9910</td>
<td>420000</td>
<td>2.35952381</td>
</tr>
</tbody>
</table>
Canada: Enough Physicians? Too Many? Too few?
Is counting heads good enough?

**CZ/UC DoM:**
Roster ~ 360 (++caveats)
Total FTE ~ 320;
mean cFTE ~ 0.66:
Total cFTE ~ 210
Approach:

Reviewed 10 Internal Medicine divisions:
• “Institution” based:
  • GIM, GI/Hepatology, Hematology, ID, Nephrology, Respirology
• Community based:
  • Dermatology, Endocrinology, Geriatrics, Rheumatology

Outcomes:
• Current:
  • Number of physicians on rosters
  • Total FTE
  • Total clinical FTE
• Future:
  • 3 year projected needs
  • especially total clinical FTE
• Time-based Units:
  • 5 hour ½ days; 230 working days/year
Approaches:

**Health systems estimates:**
- **Current:**
  - CPSA rosters (#MDs)
  - Health systems estimates of total and clinical FTE
- **Future (cFTE):**
  - Population-based, health-services-need forecasting software model;
  - Used 3 of 10 year forecast

**Local Dept/Divisional estimates:**
- **Current:**
  - CZ Dept rosters & contracts
  - Roster/activity reviews with Division Chiefs
  - Members’ annual reports
- **Future (cFTE):**
  - Recent 3 year trends: patient volumes, IP/OP clinical utilization, waiting lists;
  - EB survival estimates
## Findings: Division A

<table>
<thead>
<tr>
<th>Current (Feb 2019)</th>
<th>Health System Estimate</th>
<th>Local Dept/Divisional Estimate</th>
<th>Percentage difference (H/L)</th>
<th>Absolute Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # Physicians</td>
<td>146</td>
<td>87</td>
<td>+68%</td>
<td>59 MDs</td>
</tr>
<tr>
<td>Total FTE</td>
<td>103</td>
<td>78</td>
<td>+32%</td>
<td>25 t-FTE</td>
</tr>
<tr>
<td>Clinical FTE</td>
<td>75</td>
<td>51</td>
<td>+47%</td>
<td>24 c-FTE</td>
</tr>
</tbody>
</table>
## Findings: Division B

<table>
<thead>
<tr>
<th>Current (Feb 2019)</th>
<th>Health System Estimate</th>
<th>Local Dept/Divisional Estimate</th>
<th>Percentage difference (H/L)</th>
<th>Absolute Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # Physicians</td>
<td>56</td>
<td>48</td>
<td>+17%</td>
<td>8 MDs</td>
</tr>
<tr>
<td>Total FTE</td>
<td>38</td>
<td>36</td>
<td>+6%</td>
<td>2 t-FTE</td>
</tr>
<tr>
<td>Clinical FTE</td>
<td>24</td>
<td>23</td>
<td>+4%</td>
<td>1 c-FTE</td>
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</tbody>
</table>
Findings: Division C – The Future (3 years)

<table>
<thead>
<tr>
<th>Three year projection (2019-22)</th>
<th>Health System Estimate</th>
<th>Local Dept/Divisional Estimate</th>
<th>Percentage difference (H/L)</th>
<th>Absolute Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # Physicians</td>
<td>+1</td>
<td>+5</td>
<td>20%</td>
<td>4 MDs</td>
</tr>
<tr>
<td>Total FTE</td>
<td>+1.04</td>
<td>+5.0</td>
<td>21%</td>
<td>4 t-FTE</td>
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<tr>
<td>Clinical FTE</td>
<td>+0.81</td>
<td>+4.4</td>
<td>18%</td>
<td>3.6 c-FTE</td>
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</table>
Aggregate PWF Findings:

**Current estimates:**
- Number of physicians:
  - HS differed from local estimates by 44% (159 MDs)
- Total FTE:
  - HS differed from local estimates by 32% (105 t-FTE)
- Clinical FTE:
  - HS differed from local estimates by 42% (90 c-FTE)

**Future 3 year projections:**
- Clinical FTE need:
  - HS differed from local estimates by 44% (11.4 vs 20.3 cFTE/yr)
Potential explanations for discordance:

**Numbers of MDs:**
- Practice permit inaccuracies
- Designation of MD types/stages of training

**Total/Clinical FTE:**
- Central assumptions and defaults
- Public health vs private clinical activities
- Non-clinical roles

**Health Services needs:**
- Modelling caveats (‘black box’)
- Data accuracy/comprehensiveness
- Time horizon
- Disease management successes, complexity measurement
Optimizing HHRs: Formulae with >1 solution
PWF Deliberations:

1. Important to distinguish between health systems-based, aggregate estimates and locally measured rosters that may more accurately reflect available clinical PWF.

2. The differences between these two approaches may be sizable and vary by specialty;

3. Constructively critique workforce forecasting to ensure accurate estimates of clinical FTE and clinical utilization data. Dialogue among levels of our health care system is helpful for sustainable PWF planning.
Stock and Flow

Figure 2: Overview over the model structure

Source: Modelling the ambulant health-care sector in Germany.