The Future of Specialty Medicine: Generalism

Rocky Mountain ACP / AMA Annual Meeting
Banff Nov 2013
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University of Toronto
DISCLOSURES:

Financial:
none

Affiliations:
CSIM
ACP
Royal College
OMA
CSHM
OBJECTIVES:

1) Understand the major forces shaping medical specialization in CANADA since WWII

2) Appreciate the impact on postgraduate medical education

3) Recognize the changing needs of the Canadian health care system and resulting demands for generalists
Planning the Canadian Health Care System Post WWII:

Population: 12 million
~50% rural

Life expectancy: 66 M 70 F

Health Care Priorities:

– Child / Maternal health

– Communicable diseases
  - TB
  - Typhoid
  - Diphtheria
  - Measles
Health Care Priorities Post WWII:

Lobar Pneumonia:

Third most common cause death Teaching Hospital

- Work Up:
  - Sputum for serologic typing
  - Blood culture
  - WBC
  - X-ray ~ helpful / not essential
Health Care Priorities Post WW II:

Lobar Pneumonia

- Lots PO Fluids (3L)
- \(O_2\) nasal cannula or tent
- Pleurisy – Poultice or binder
- Sulfapyridine - 2mg IV load
  - 1mg IV q4h until fever breaks
- Specific anti-pneumococcal serum
- Mortality dropped 30% to 10%
Health Care Priorities Post WW II:

Heart Failure:

- Bed rest

- Digitalis leaf
  Load 0.1 to 0.2 ms  3-4x/day  x3-4 days

  Maintenance 0.1 to 0.2 gm / day

- Quinidine for A-Fib

- Nitrates

- Aminophyllin

- Venesection / pleurocentesis / paracentesis

- Mercupurin  1-2 cc IV or IM every few days
Health Care Priorities Post WW II

• Need better methods for Dx and Rx

• Focus acute illnesses

• Massive infusion research funding
  – Government
  – Foundations
  – Public

• Research funds linked specific diseases / organ systems

• Era of research in medical education
  = Era of subspecialization
Subspecialization Strategy

• Narrow focus facilitates mastery

• Allows control:
  – Clinical + Research Activities
  – Life Style
  – Technology = Financial Advantage

• Role self regulation

• Facilitates “Credentials Creep”
Royal College Physicians and Surgeon Canada (RCPSC)

- Established 1929
- Oversees Specialty Training in Canada
- Initially 2 Specialty areas
- Currently
  - Primary Specialties 29
  - Subspecialties 34
  - Areas Focused Competence 7
Canadian Postgraduate Landscape: Royal College Specialties

Figure 1. Historical recognition of medical specialties and subspecialties in Canada, 1919-2009
Caper Date: Total Number/Specialty 1989-2013

Internal Medicine

Cardiology
NO. MINISTRY FUNDED RIV RESIDENTS BY PROGRAM
(89-13)
NO. MINISTRY FUNDED RIV RESIDENTS BY PROGRAM (89-13)
NO. MINISTRY FUNDED RIV RESIDENTS BY PROGRAM (89-13)

Respirology

Rheumatology
NO. MINISTRY FUNDED RIV RESIDENTS BY PROGRAM (89-13)

Internal Medicine

Geriatrics
Resident Placements R4
Internal Medicine/General Internal Medicine

Total IM + GIM
GIM
IM
American Medicine is producing dangerously narrow minded practitioners ... ... ... .

(we) need to treat the whole of the patient, not just a body part

William Osler 1892
External Environment:

- Impact chronic illness
- Aging Population
- Financial constraints
- Physician Resources
EXTERNAL ENVIRONMENT:

High impact Chronic Illnesses:

- Hypertension
- Diabetes
- Mood Disorders
- COPD
- Heart Disease
- Arthritis
- Cancer
EXTERNAL ENVIRONMENT:

- IMPACT CHRONIC ILLNESS CANADIAN HEALTH CARE SYSTEM:
  
  - Over 70 % nights in hospital
  
  - Over 50% visits MDs
  
  - Over 60% community nurse visits
  
  - Demands will increase with aging population

HEALTH COUNCIL CANADA
2002-2007
Changing Patient Populations

Prevalence of chronic illness increases with age:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Avg Number of Chronic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-41</td>
<td>2.8</td>
</tr>
<tr>
<td>64+</td>
<td>6.5</td>
</tr>
</tbody>
</table>

- Solutions need primary care reform
- Hospital care challenge is now

FORTIN ET ALL
ANN FAM MED
2005;3;223-228
Chart 5
Proportion of population aged 0–14, 15–64 and 65+ in Ontario, 1971 to 2036

Beds Staffed and in Operation, Ontario, 1990 to 2010


Note: Bed numbers are as of March 31 each year. A slight increase in beds beginning in the early 2000’s is due to the gradual divestment of some Provincial Psychiatric Hospitals (PPHs) to the Public Hospital sector.
Who provides hospital care (Ontario)?

Based on Billing data:

- All Ontario MD’s: 24,000
- No MRP Billing: 12,000
- Providing MRP Services: 12,000
  - Practice Based/ Part Time: 7,550
  - Specialized Providers Services: 4,250
  - Full-time Hospitalists: ~ 200
Full-Time Hospitalists

94% of full-time Hospitalists are General Practitioners or Internal Medicine specialists.
Non-Full-Time Hospitalist MRP Physicians

72% of non-full time MRPs are General Practitioners or Internal Medicine specialists.
Medicine is learned by the bedside and not in the classroom

Sr. William Osler
Impact Chronic Illness:

• Biggest challenge facing health care systems world wide

• Additional resources will not be available

• Only effective strategies:
  – Life style modification
  – Improve comprehensive primary care in community

• Crisis hospital care now
  – Need structural changes
'This is a crisis'

Crowded and chaotic is the daily norm in the Royal Alexandra Hospital's emergency area.

Patients walking away from emergency rooms in frustration after failing to obtain timely treatment.
Practice Location (Community Size)

- Subspecialists
- GIM

*chi^2* significant at .001 or less
The Future of Medical Education in Canada (FMEC):
A Collective Vision for MD Education

An AFMC project

The Association of Faculties of Medicine of Canada
Physician-Population Ratios, Canada, 1981 to 2000

Physicians per 100,000 Population

Year


Crude Physician - Population Ratio
Patient Age-sex Adjusted Physician - Population Ratio
Real (Patient age-sex adjusted, physician age-sex adjusted) Physician - Population Ratio

Source: Southam Medical Database for physicians counts; National Physician Database for calculation of physician and population weights; Statistics Canada population estimates
Figure 1: Physicians per 1000 population (including residents)

Source: OECD 2008 Health Data; CMA Physician Resources Evaluation Template
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</thead>
<tbody>
<tr>
<td>Fam Med</td>
<td>36,024</td>
<td>37%</td>
<td>11%</td>
<td>38,259</td>
<td>41%</td>
<td>15%</td>
</tr>
<tr>
<td>Intern Med</td>
<td>7,506</td>
<td>38%</td>
<td>14%</td>
<td>8,366</td>
<td>39%</td>
<td>16%</td>
</tr>
<tr>
<td>Card</td>
<td>1,108</td>
<td>38%</td>
<td>12%</td>
<td>1,284</td>
<td>40%</td>
<td>15%</td>
</tr>
<tr>
<td>Clin IM/AL</td>
<td>150</td>
<td>43%</td>
<td>14%</td>
<td>170</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Endo</td>
<td>406</td>
<td>32%</td>
<td>12%</td>
<td>464</td>
<td>34%</td>
<td>12%</td>
</tr>
<tr>
<td>Gastro</td>
<td>575</td>
<td>34%</td>
<td>11%</td>
<td>687</td>
<td>34%</td>
<td>13%</td>
</tr>
<tr>
<td>Geri</td>
<td>220</td>
<td>31%</td>
<td>6%</td>
<td>248</td>
<td>33%</td>
<td>5%</td>
</tr>
<tr>
<td>Hemat</td>
<td>333</td>
<td>32%</td>
<td>12%</td>
<td>391</td>
<td>34%</td>
<td>13%</td>
</tr>
<tr>
<td>Inf Dis</td>
<td>217</td>
<td>23%</td>
<td>3%</td>
<td>271</td>
<td>28%</td>
<td>6%</td>
</tr>
<tr>
<td>Med Onc</td>
<td>401</td>
<td>32%</td>
<td>9%</td>
<td>485</td>
<td>32%</td>
<td>11%</td>
</tr>
<tr>
<td>Neph</td>
<td>517</td>
<td>22%</td>
<td>7%</td>
<td>609</td>
<td>24%</td>
<td>8%</td>
</tr>
<tr>
<td>Resp</td>
<td>601</td>
<td>38%</td>
<td>7%</td>
<td>685</td>
<td>39%</td>
<td>10%</td>
</tr>
<tr>
<td>Rheum</td>
<td>336</td>
<td>45%</td>
<td>10%</td>
<td>371</td>
<td>46%</td>
<td>13%</td>
</tr>
<tr>
<td>Gen Int</td>
<td>2,642</td>
<td>46%</td>
<td>23%</td>
<td>2,701</td>
<td>46%</td>
<td>26%</td>
</tr>
</tbody>
</table>
Physician Supply Canada by Age and Specialty

<table>
<thead>
<tr>
<th>Medical Specialties</th>
<th>No</th>
<th>% &gt; 65</th>
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<td>2,642</td>
<td>23%</td>
<td>2,701</td>
<td>26%</td>
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Expected Need for Replacement Existing Specialists (2009-2013) Assuming Retirement Age 70

- GIM: 463
- CARD: 91
- ENDO: 41
- GAST: 43
- GERI: 8
- HEME: 28
- INF DIS: 4
- MED ONC: 26
- NEPH: 29
- RESP: 32
- RHEUM: 21

- Projected Need Medical Specialists
- Current Trainees by Specialty (Color)
Projected Need for Replacement Medical Specialists (2013-2018)
Assuming Retirement Age 70

- GIM: 682
- IM/AL: 188
- GAST: 33
- HEME: 56
- MED: 86
- ONC: 13
- RESP: 50
- 47
- 15
- 53
- 47
- 67
- 47
Conclusions:

• Never been greater need for general internists

• Academic medicine built on strategy of subspecialization

• Without major re-allocation of training positions, shortage of general internists will increase

• Disproportionate impact on smaller communities
Conclusions:

• Long term prognosis will depend on meeting needs of health care system

• Specific needs system
  – Reform hospital care
    – Hospital medicine model?
    – Alliance with Family Medicine
  – Improved chronic disease management community
  – Must address needs rural and remote communities
Hospitalist Specialties

- 82.3% General Internal Medicine
- 4.0% Internal Medicine Subspecialty
- 3.1% Internal Medicine Pediatrics
- 3.7% Family Practice
- 0.4% Pediatrics Subspecialty
- 6.5% General Pediatrics

Source: “2007-08 Bi-Annual Survey on the State of the Hospital Medicine Movement”
www.hospitalmedicine.org/survey.
Hospital Medicine Movement US

- Same demographic pressures
- Alternate Funding Arrangements
- Mainly General Internists (82%)
- Rapid Expansion Role (Now 61% Medicare Billing)

<table>
<thead>
<tr>
<th>Performance Metric</th>
<th>Number of Findings in Each Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improvemen t of Outcome</td>
</tr>
<tr>
<td><strong>Operational Metrics</strong></td>
<td></td>
</tr>
<tr>
<td>Hospital Case Cost</td>
<td>32</td>
</tr>
<tr>
<td>Productivity</td>
<td>0</td>
</tr>
<tr>
<td>Provider Satisfaction</td>
<td>5</td>
</tr>
<tr>
<td><strong>Mixed Metrics</strong></td>
<td></td>
</tr>
<tr>
<td>Length of Stay</td>
<td>40</td>
</tr>
<tr>
<td>Patient Satisfaction</td>
<td>0</td>
</tr>
<tr>
<td><strong>Clinical Metrics</strong></td>
<td></td>
</tr>
<tr>
<td>Readmission Rate</td>
<td>3</td>
</tr>
<tr>
<td>Mortality</td>
<td>4</td>
</tr>
</tbody>
</table>

Some studies compared hospitalists with multiple physician groups, and appear as multiple data points in our analysis (e.g. hospitalists, general internists and subspecialists). As a result, a total of 57 data points have been included in the table above.

Programmatic models of MRP care can yield operational efficiencies without negatively affecting health outcomes.
Hospitalists / Hospital Medicine:

• More efficient, less costly

• No loss quality

• Central role delivery care, QA/TQI
  - rapidly expanding

• Requires alternative (blended) funding
  - average $100,000/ FTE as salary
Questions?