



2006 CAPHC Conference

Meeting the Needs of Our Children & Youth:

“Using our Canadian Data To Determine Capacity”

Paediatric Chairs of Canada: Academic Workforce Database

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Concepts

- **Canada's children deserve the best health care possible**
- **Health care system evolving:**
 - ✓ Pressure to provide improved access,
 - ✓ Intense competition for resources,
 - ✓ Increasing acute care focus on complex & chronic illness,
 - ✓ Collaborative multidisciplinary care the norm,
 - ✓ Continued diversification/evolution of health disciplines,
 - ✓ Critical international workforce shortage
- **Workforce planning & education of new providers a priority**
- **Innovation, evaluation & improvement essential**
- **Quality, timely information critical to effective decision making**

Evolution of Paediatric Hospitals

First freestanding children's hospitals:

- **Hopital des Enfants Malades, Paris, 1815**
 - By 1880, 67 existed in Europe
- **New York Nursery & Child's Hospital, 1854**
 - **Children's Hospital of Philadelphia, 1855**
 - By 1895, 26 freestanding in USA
- **Hospital for Sick Children, Toronto, 1875**
 - By 2005, 16 children's hospitals in Canada

Evolution of Paediatric Hospitals

Trend to “non-freestanding” children’s hospitals in last 50 years

- **USA** (National Association of Children’s Hospitals & Related Institutions)
 - 113 registered hospitals – 49 freestanding, 64 “hospitals within hospitals”
 - 2002 NACHRI survey - 38 hospitals had > 100 partnerships
 - Survey of 29 freestanding hospitals between 1991&1996
 - 86% had pursued at least one type of integration strategy
- **Canada** - 16 children’s hospitals
 - Of 9 that were “freestanding”
 - 2 geographically, financially, clinically, administratively independent
 - 3 children’s and women’s, 4 merged with larger medical centers

Influencing Factors: Freestanding vs. Non-freestanding

- **Canada**
 - **Pressure to cut health care costs**
 - **Efficient/effective use of resources**
 - **Regionalization & hospital closures**
 - **Mergers/partnerships decrease duplication, focus on improved outcomes**
 - **Increase critical mass - unique, resource intensive, low volume services**

Philipps & Trask. *J. Pediatr.* 2006; 148:147-8.
Stang & Joshi. *Pediatr. & Child Health* 2006; in press.

Evolution of the Paediatric Discipline

- **American Board of Pediatrics founded 1933**
 - 1st subspecialty accreditation & certification (cardiology) 1961
 - Currently 14 accredited subspecialties
 - December 2002 certified a total 84,826 general paediatricians
 - Plus a total of 16,633 sub-specialists since 1961
- **RCPSC recognizes the discipline, 1937**
 - 1st paediatrician certified in 1946
 - 1st subspecialty accreditation & certification (cardiology) 1977
 - Currently 14 accredited subspecialties
 - January 2005, 2217 certified in paediatrics
 - Of these, 1114 are sub-specialists (16 academic med centers)

Am. Board of Paediatrics Annual Report 2005 & RCPSC Memberships and Communications

Paediatric Chairs of Canada (PCC): Workforce Planning

- **1993: Dr. J. Hall initiated annual workforce survey**
- **1998: PCC refines process, agrees on common definitions**
 - Accurate head count, unique allocation of activity (60% rule)
 - Four career activity profiles
- **1999/2000 survey of 16 academic medical centers:**
 - Total of 987 paediatricians
 - ✓ 125 hospital based general paediatricians
 - ✓ 862 in 26 sub-disciplines
 - ✓ 68% clinical specialist mentors
 - ✓ 17% clinical investigators
 - ✓ 8% clinical educators
 - ✓ 5% clinician administrators

Frewen, Scott. Paediatr. Child Health 2003; 8:155-157.

Scott, Frewen, O'Brodivitch, & the PCC. J. Pediatr. 2004;145(4):425-6.

PCC Workforce Planning

- **Learnings:**
 - **Paucity of educators and researchers**
 - **National paediatric human resource shortage**
 - ✓ **Contributing factors** – mandated decrease in resident training in the 1990s, sub-specialization, FFS model, aging workforce, feminization of workforce, altered work & lifestyle expectations, emerging needs,
 - **Urgent need:**
 - ✓ **Match educational input to required output**
 - ✓ **Data acquisition, benchmarking, productivity measures**
 - ✓ **Collaborative investment in system change to address problems**

Frewen, Scott. Paediatr. Child Health 2003; 8:155-157.

Scott, Frewen, O'Brodivitch, & the PCC. J. Pediatr. 2004;145(4):425-6.

PCC Academic Workforce Survey 2005/06

Table I – Sub-specialist distribution by discipline

Table II – Community general paediatric activity

Table III – Paediatric ED model of care & activity

**Table IV – Ministry & non-ministry funded
clerkship & general paediatric resident
trainees**

Table V – RCPSC subspecialty programs & trainees

Table VI – Utilization indicators for child health

Table I: Sub-Specialist Distribution by Discipline

- ✓ # in each of 27 disciplines / 100,000 pop. age 0-18 years for the nation, each province & academic medical center
- ✓ Total of 1306 paediatricians (514 women, 39%)
 - Distributed in 16 academic medical centers
 - 58.9% of the 2217 paediatricians certified by the RCPSC
 - Includes 176 hospital based general paediatricians
 - Includes 1,130 sub-specialist paediatricians
 - 50.9% of 2217 paediatricians certified by the RCPSC
- ✓ A 32% increase over 1999/2000 survey
 - Due to recognition of critical workforce deficits, new alternate funding plans, recruitment and retention of trainees

Table IV:

Ministry & Non-ministry Funded Clerkship & General Paediatric Resident Trainees

- Ten to twelve years post high school to train a paediatrician
- Canadian medical school graduations
 - 2004/2005 = 1912 (Canadian Med. Ed. Stats. 2004, Vol. 26)
- Canadian general paediatric resident trainees (R1-4)
 - 2005/06 *
 - ✓ 107 R1's provincially funded & registered with RCPSC
 - ✓ 373 R1-4 provincially funded & registered with RCPSC
 - ✓ 40 R1-4 not provincially funded, eligible for RCPSC accreditation
 - ✓ 12 R1-4 not provincially funded or eligible for RCPSC accreditation
 - ✓ ~14% of capacity supports FMG returning to country of origin

* Paediatric Chairs of Canada database

Projected Canadian Population Growth

Age Group	1980 Population	2005 Population	Estimated Population in 2031		
			Low Growth	Medium Growth	High Growth
0-17	7,006,395	6,967,853	6,526,400	7,750,000	8,958,300
% change		-0.55	-6.3	+11.2	+28.6
Projected Proportionate Growth of Paediatricians & Sub-Specialists					
# RCPSC Paediatricians		2217	2077	2465	2851
General Paeds (49%)		1087	1019	1209	1398
Sub-Specialists (51%)		1130	1059	1257	1453

Projected Number of General Paediatricians

✓ Assumptions:

- 50% of trainees choose General Paediatrics
- an average age of 28-30 years of age after training
- an average duration of practice of 25 years

✓ In 2031, with current medical school enrollment, # of residency positions and 50% choosing general paediatrics, there will be **1,338** general paediatricians

- Assuming moderate population growth this is slightly more (~10%) than the current [paediatrician to population aged 0-17] ratio

✓ Is this enough?

- Depends upon the service delivery model...
- It will not support American-style paediatric primary care

Table V: RCPSC Sub-specialty Programs & Trainees

- **Two (basic clinical) to five (MSc or PhD Clinician Scientist/Educator) additional years to train a sub-specialist paediatrician**
- **Currently 236 RCPSC eligible sub-specialist trainees**
 - **Proportion planning to stay in Canada after training complete unknown!**
 - **Assuming that all stay & an average duration of training of 3 years,**
 - **~ 1/3 or 79 will enter practice next year**
 - **Distributed in 14 RCPSC recognized disciplines**
 - **Yet we have 26 recognized subspecialty services...**
 - **Only 2 years of sub-specialty training provincially funded & only for trainees remaining in the province – funding gap at this level**
 - **Funded training capacity unrelated to national need**

Sub-Specialty Projections

Discipline	Current # In Practice	# Training	# in Practice in 25 Years *	# Needed If Moderate Growth	Variance (# of physicians)
Cardiology	74	18	150	82	+ 68!
Respirology	45	6	50	50	0!
Rheumatology	34	2	17	38	-21!

* Assuming current level of training continues, average duration of training of 3 years, everyone trained stays in Canada with an average duration of practice of 25 years.
! Beware of “first impressions”

Table VI: Utilization Indicators for Child Health

- **Utilization – the numerator for a physician productivity measure**
 - **Service activity / # of providers = mean productivity**
 - **Productivity benchmarks facilitate:**
 - ✓ **Workforce planning**
 - ✓ **Physician/program evaluation**
 - ✓ **Program impact, efficiency, effectiveness**
 - **Impact ~ patient outcome / program productivity**