

Canadian Medical Physics Residency Programs

**Presentation to Graduate Students
COMP Montreal, 19 September 2013**

Brenda Clark

Residency Program Director, The Ottawa Hospital

**Association with CAMPEP
Board Member 2001-2007
President 2004-2007
GEPRC 2001 - present**

Clinical Training in N America

- 2 years of structure clinical experience
- AAPM Report # 90
 - Essentials and Guidelines for Hospital-Based Medical Physics Residency Training Programs
 - August 2006
 - Revision imminent
 - System calibrations, performance evaluations and quality control, safety and compliance tests (23 bullets)
 - Treatment planning and delivery (18 bullets)
 - Safety (19 bullets incl. FMEA)
 - Informatics (18 bullets)

Clinical Training in N America

CCPM (<http://www.ccpm.ca/>) Policy D.02.07

“Effective January 2016, applicants for certification in the Radiation Oncology Physics subspecialty must have completed **either** a graduate degree granted by a program accredited by CAMPEP, **or** a residency program accredited by CAMPEP.”

- Will apply for applications late 2015
- Applications in 2014 will be the last admitted under the old rules
- Potential applicants should already be in an accredited program

Clinical Training in N America

CCPM (<http://www.ccpm.ca/>) Policy D.02.07

“Effective January 2016, applicants for certification in the Radiation Oncology Physics subspecialty must have completed either a graduate degree granted by a program accredited by CAMPEP, or a residency program accredited by CAMPEP.

Notwithstanding this requirement, other applicants who do not meet this requirement may be considered in exceptional circumstances at the discretion of the College Board. “

ABR (<http://www.theabr.org/ic-rp-newcampep>)

“those applying for the first time in 2013 must have *completed* a **CAMPEP-accredited residency program**”

What is Accreditation?

Accreditation is:

- **voluntary, non-governmental, self and peer review**

Objectives:

- **to advance academic quality**
- **to demonstrate public accountability**
- **to encourage purposeful change and needed improvement**

Program Accreditation

Not to be confused with certification

- **Institutions & programs are accredited**
 - e.g. hospitals, universities
- **Individuals are certified**

Rationale

1. **Standardisation**
2. **Confirmation of established minimum (rigour and breadth) training**
3. **Assessment of facilities**
4. **QUALITY**

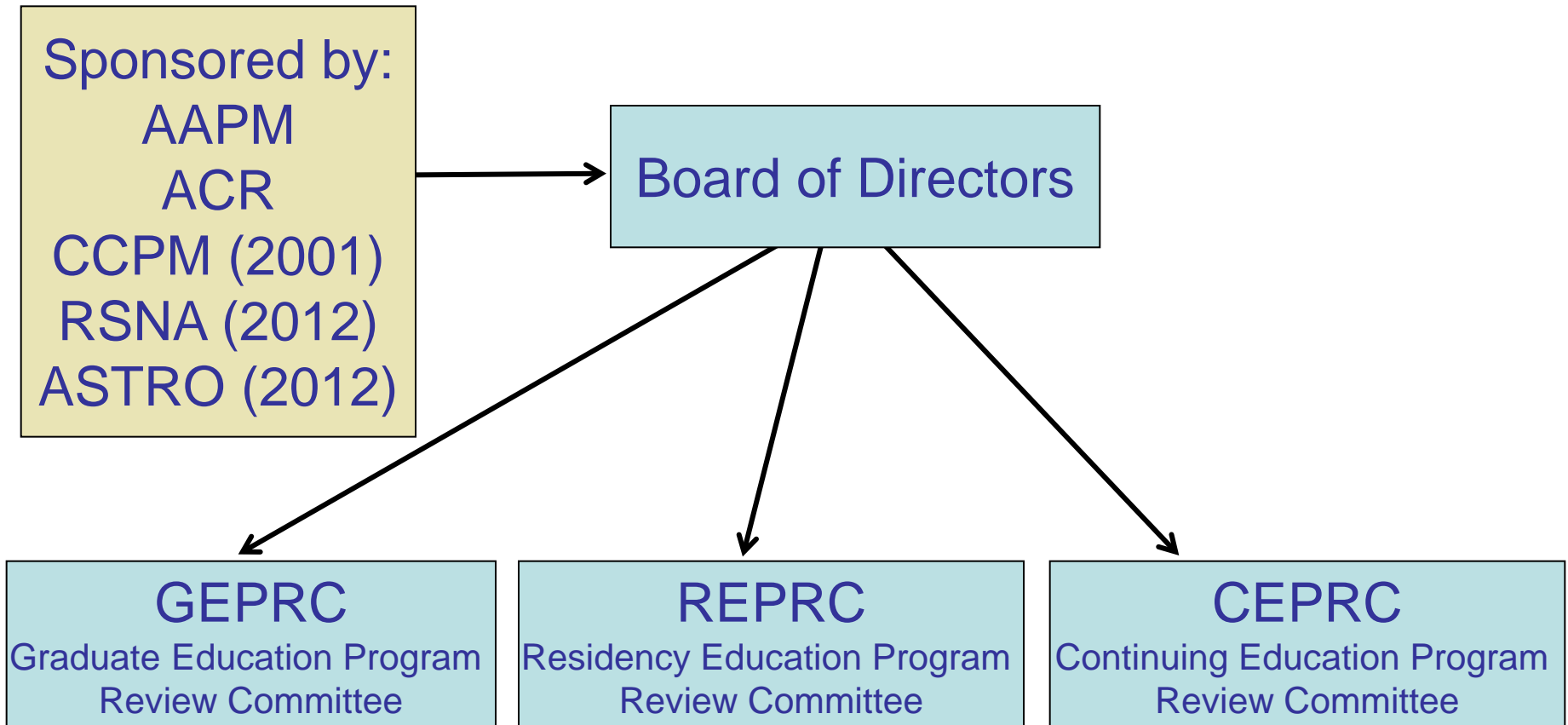
Standards

1. **Quality of program**
2. **Funding and support**
3. **Rigour and breadth**
4. **Number and competence of faculty**
5. **Teaching loads**
6. **Facilities**
7. **Supporting personnel**
8. **Students**
9. **Performance of graduates**

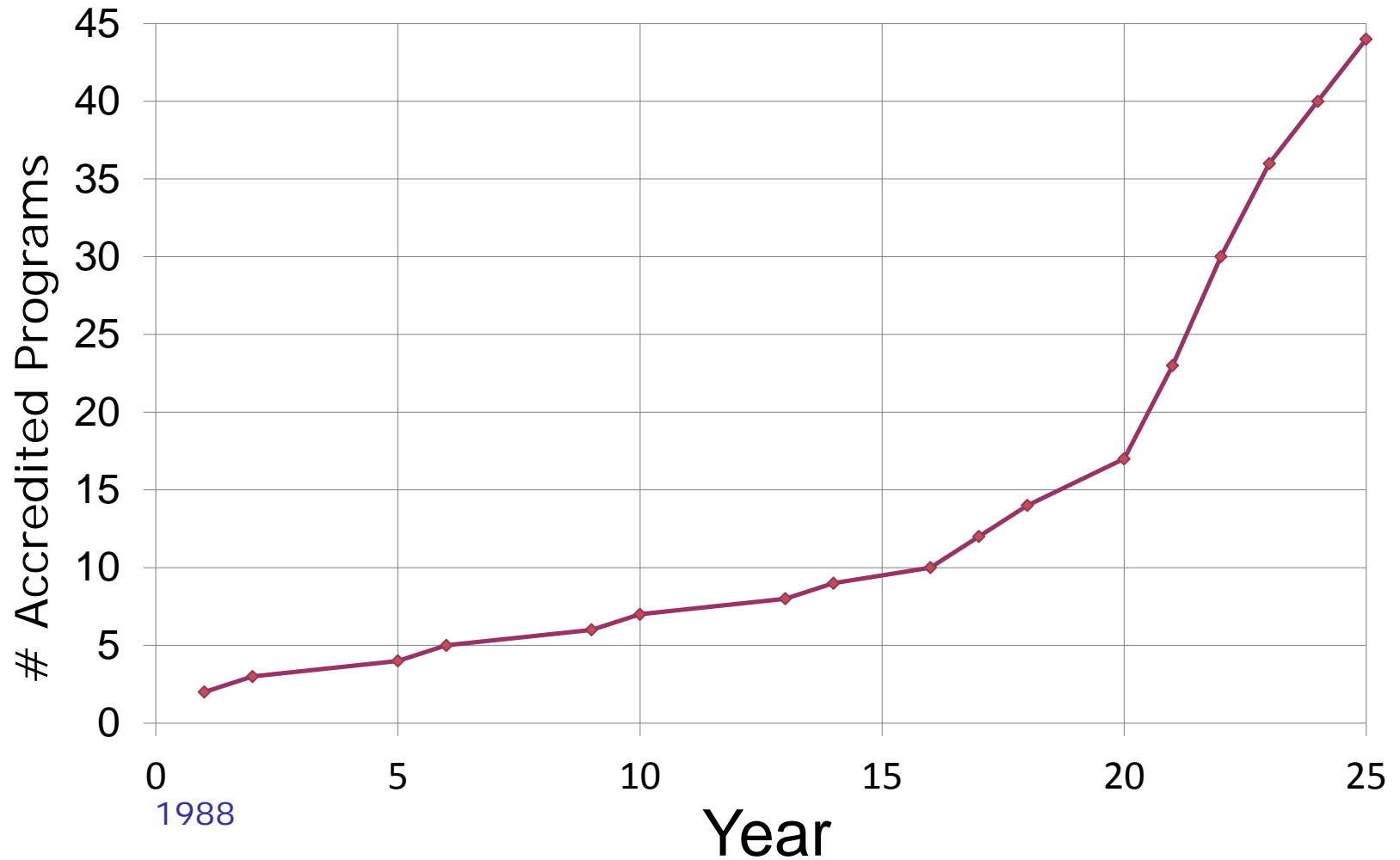
CAMPEP

Incorporated in 1995 - Springfield, Illinois

7 years after 1st program accredited!



Growth of Graduate Programs

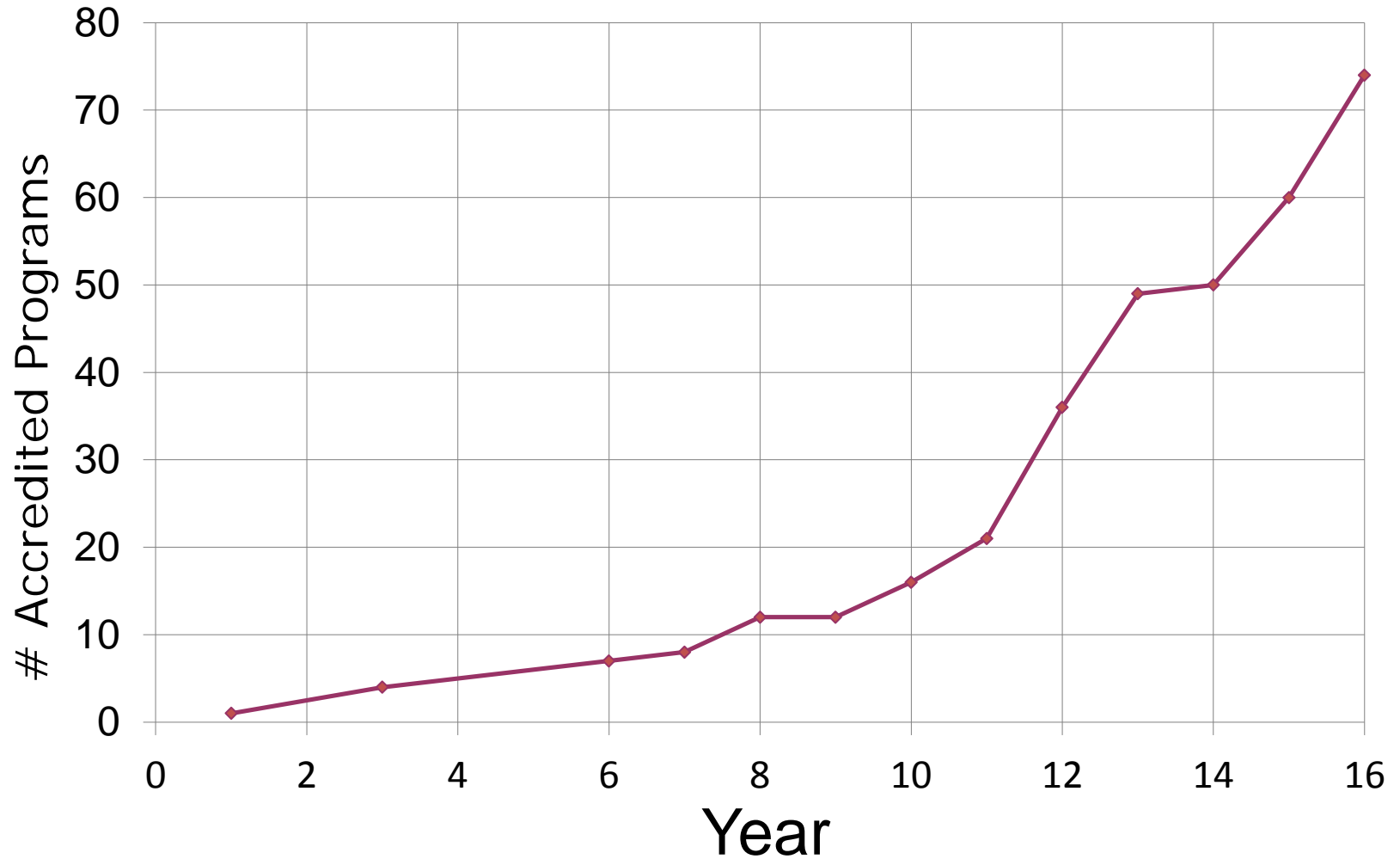


Accredited Graduate Programs

Current Total 44 Canada 10

- 1. McGill University 1993**
- 2. University of Alberta 2001**
- 3. University of BC 2004**
- 4. University of Calgary 2005**
- 5. University of Manitoba 2008**
- 6. University of Victoria 2009**
- 7. Carleton University 2010**
- 8. Western University 2010**
- 9. Université Laval 2011**
- 10. Ryerson University 2013**

Growth of Residency Programs

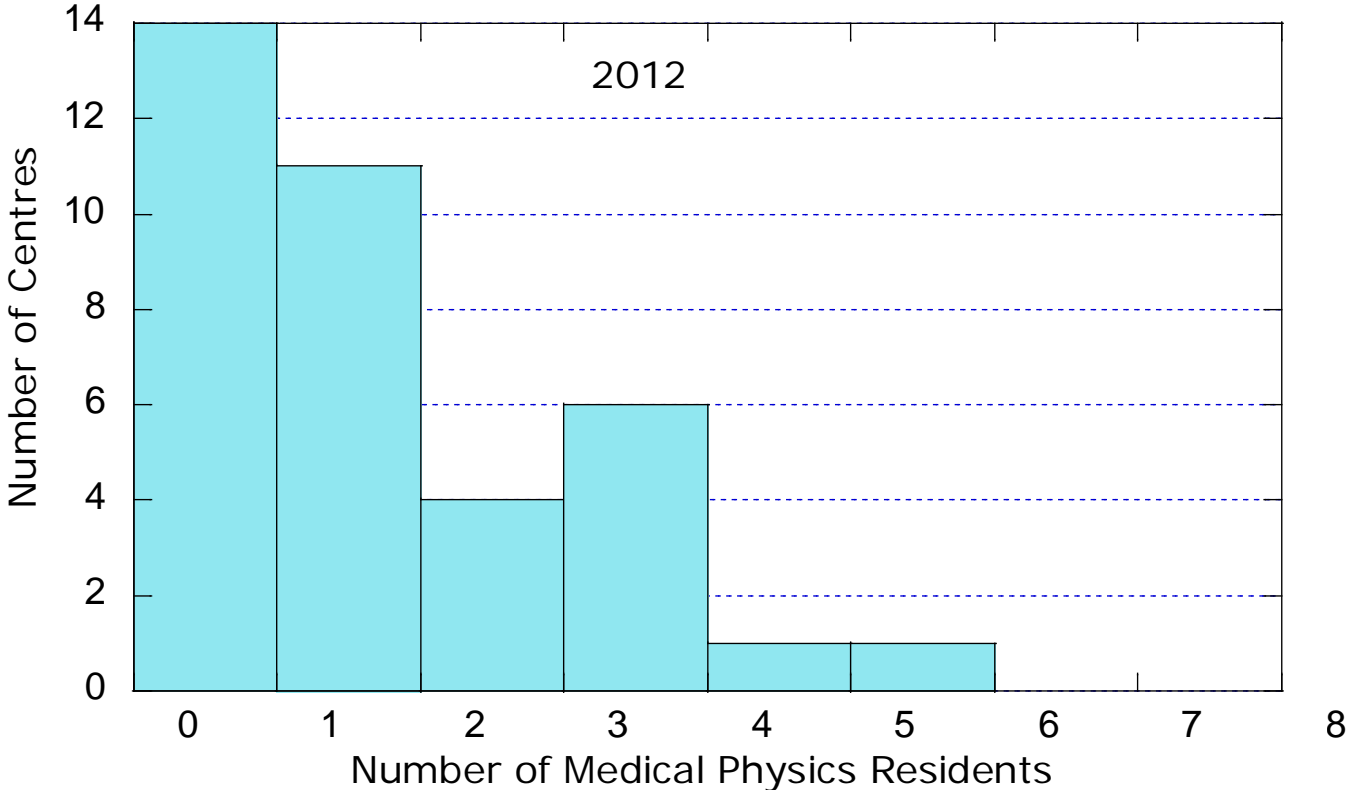


Accredited Residency Programs

Current Total 74 66 Therapy, 8 Imaging
Canada 9 8 Therapy, 1 Imaging

1. McGill University 2000
2. Cross Cancer Institute 2005 + 1
3. Tom Baker Cancer Centre 2005
4. London Reg. Cancer Prog. 2006
5. The Ottawa Hospital 2007
6. University of Toronto 2008
7. CancerCare Manitoba 2009
8. BC Cancer Agency 2011

Distribution of Canadian Residents



Canadian Medical Physics Staffing

The “4Rs” Model (Battista*)

$$N_{\text{end}} = N_{\text{start}} + N_{\text{recruit_external}} + N_{\text{recruit_residency}} - N_{\text{lost}}$$

Assumptions:

- 2.5%/year increase in cancer incidence
- 10 treatment hours per day
- 7 physicists/year attrition rate for 2010-2015, then reduced to 5 physicists/year
- 5 physicists/year out-of-province recruitment, reduced to 0 by 2020
- 7 physicists/year recruitment from Ontario residency program
- No change in clinical practice
- 5.5% increase in caseload for increased utilisation

**Medical physics staffing for radiation oncology: a decade of experience in Ontario, Canada*

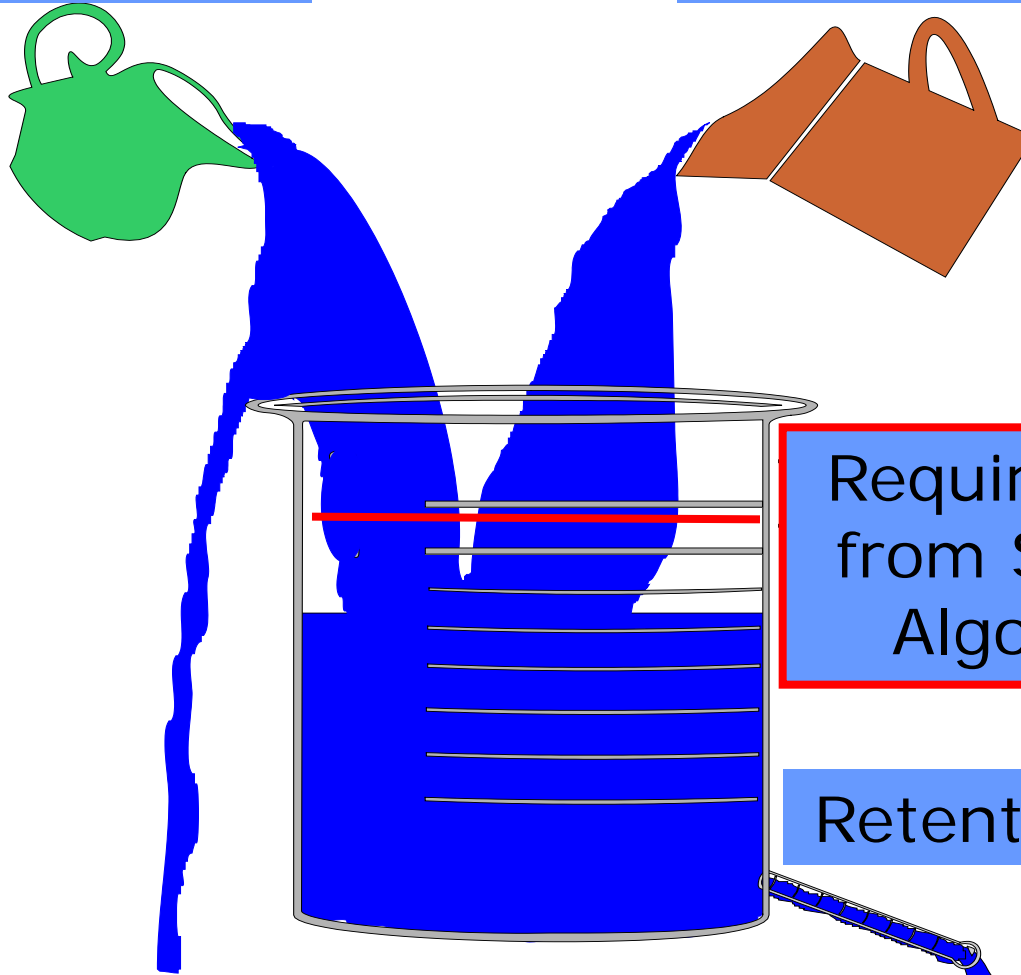
J.J. Battista et al.; J App. Cl Med Phys, 13(1), 93-110, 2012

*2012 Editor in Chief Award of Excellence for an Outstanding General Medical Physics Article

The "4Rs" Model (Battista)

Residents

Recruitment

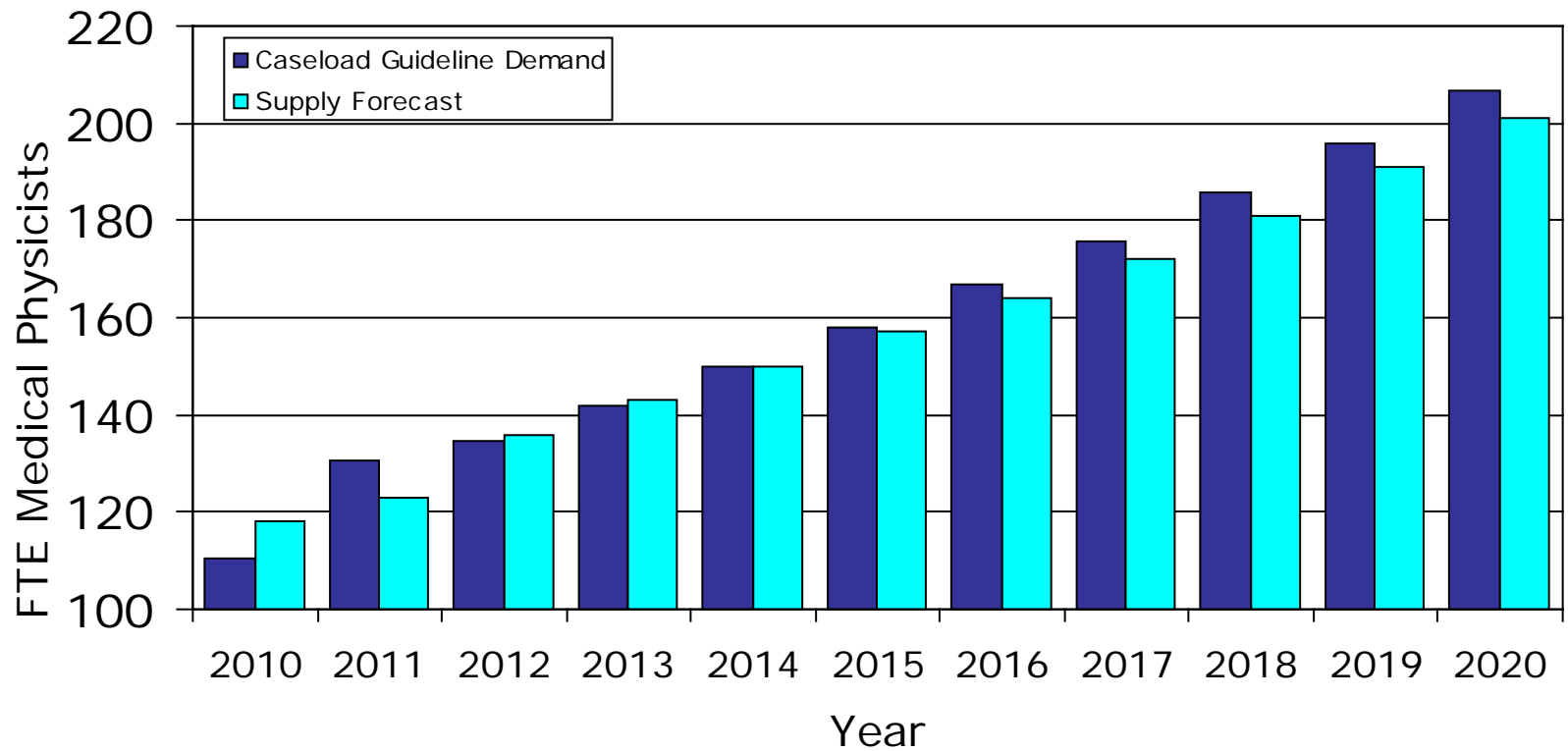


Requirements
from Staffing
Algorithm

Retention

Results - 4Rs Prediction Ontario

5.5%/yr caseload growth for increase in utilisation



Residency Program Eligibility 2013

CAMPEP Policies and Procedures , Section G.01 Residency Program Accreditation

- .03 Appropriate didactic preparation for entry into a CAMPEP-accredited residency program may be demonstrated by:
 - a. Graduating from a CAMPEP-accredited graduate program
 - b. Successfully completing a CAMPEP-accredited certificate program

- .04 Applicants with other didactic preparation may be considered on an individual basis.
 - a. An individual applicant for a residency program may request evaluation by the residency program director of individual courses taken outside a CAMPEP-accredited graduate or certificate program for eligibility. By approval of the course, the residency program director takes responsibility for verifying the quality of the course and for identifying these courses in the annual program report.
 - b. An individual applicant for a residency program may request evaluation by the GEPRC of individual courses taken outside a CAMPEP-accredited graduate or certificate program for eligibility. The fee for this evaluation is \$250 per course.
 - c. Applications from individuals with other didactic preparation may be reviewed on an individual basis.

CAMPEP Annual Report - Canada

2012 (excluding UBC)

- Graduate Students Enrolled 74 MSc, 90 PhD
- 27 MSc Graduates (ave 1m to 1st employment)
 - ✓ 4 Entered therapy residency
 - ✓ 0 Entered imaging residency
 - ✓ 7 Accepted junior physicist position
 - ✓ 9 Entered another degree program
 - ✓ 1 Accepted a position in industry
 - ✓ 0 Still seeking a position
- 12 PhD Graduates (ave 0.5m to 1st employment)
 - ✓ 4 Entered therapy residency
 - ✓ 0 Entered imaging residency
 - ✓ 3 Accepted junior physicist position
 - ✓ 3 Accepted a post-doctoral fellowship
 - ✓ 1 Still seeking a position

Canadian RO Physics Residents

2012

- 46 residents
- 32 (70%) in CAMPEP accredited programs
- 26 in Ontario (57%)
 - 11 U of T (PMH, TSRCC, Southlake, Durham, CVH)
 - 3 London
 - 3 Hamilton
 - 3 Ottawa
 - 1 each Kingston, Sudbury, Th Bay, Windsor, Kitchener
- 9 in Quebec
- 5 in Alberta
- 3 in British Columbia
- 2 in Manitoba
- 1 in Nova Scotia

Summary

Good news

- Most graduates find positions within 1 m
- Entry into the profession is being strengthened
- Requirement for radiation treatment increasing

Not so good news

- Residency positions scarce
- Priority given to graduates from accredited programs
- Priority given to applicants with PhD