

# Canadian Society of Clinical Pharmacology and Canadian Association for Population Therapeutics

2007



## Who We Are

- CSCP - The Canadian Society for Clinical Pharmacology is a non-profit scientific society comprised of individuals with interests focused on the investigation of and the proper therapeutic use of drugs in humans and is committed to the development of drug investigation in humans.
- CAPT - The Canadian Association for Population Therapeutics a non-profit scientific society that provides a national base for the advancement, exchange, and application of new knowledge among leading researchers, educators, and practitioners interested in the use, economics, and outcomes of medical drugs and other therapeutic interventions in populations.

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## Mission and Vision

- Clinical Pharmacology is the discipline engaged in optimal drug discovery, development and use, based on an in-depth knowledge of human pharmacology and therapeutics.
- Population Therapeutics advances the sound development of population-based studies of therapeutic interventions in the best interests of the individual patient and the public well-being.

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## Role of Our Societies

- Clinical Pharmacologists are particularly interested in individual variability in response to drugs and serve as an important resource to health care institutions and education programs, governments, and other organizations dealing with clinical pharmacology and therapeutics issues.
- Population Therapeutics scientists advance the development of population-based studies of drug and other therapeutic interventions and serve as an information resource for therapeutic decision-making and as shapers of public health policy.

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## Issues facing our discipline

- The drug safety agenda
- Medical education
  - Are physicians adequately prepared to prescribe new drugs?
- Information technology
  - The role of the EHR and EMR
- Human resources

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## Plan for today

- Brief presentations by each panel member
- The human resource situation for :
  - Pharmacosurveillance: Noralou Roos
  - Clinical Pharmacy: Lisa Dolovich
  - Clinical Pharmacology: Ted Toffelmire
  - Health Canada: Siddika Mithani
  - Industry: Kevin Fehr, GSK
- Discussions with you
- Creation of an action plan to examine how to enhance training to meet the identified needs

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## CIHR DISCONTINUES MID-CAREER AWARDS

## Awards Ending

Ontario	5-yr CIHR Senior Investigator	2005
	5-yr CIHR Senior Investigator	2005
	8-yr hospital career award	2004
Quebec	5-yr CIHR Senior Investigator	2006
Nova Scotia	7-yr CHSRF Senior Investigator	2007
BC	7-yr hospital career award	2004
	5-yr MSFHR Senior Investigator	2006



## Pharmacy Human Resources

Lisa Dolovich BSc Phm PharmD MSc

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## Pharmacy: Current Situation

- Approximately 30,000 licensed pharmacists in Canada  
Blueprint, 2007
- Third-largest segment of health care professionals in Canada  
Blueprint, 2007
- Approximately 90 pharmacists per 100,000 population  
Global pharmacy Workforce and Migration Report
- 70% work in community pharmacies, 15% in hospitals, 15% academia, industry, government and other areas  
Blueprint 2007

### Salaries:

- Average hospital staff pharmacist salary, \$64,820 to \$77,969 2005-2006 Hospital Pharmacy in Canada
- Average community pharmacist salary is approx \$80,000 (increase of about \$5,000 over 2005) Trends and Insights 2006<sub>10</sub>

## Pharmacist: evolving role

- Shift more attention to patient-centred, outcomes-focused care to optimize the safe and effective use of medications.
- Pharmacists will spend more time managing drug therapy in collaboration with patients, caregivers, physicians, and other providers.
- Pharmacists will have greater responsibility for prescribing decisions and monitoring drug therapy outcomes.
- Pharmacists will have greater authority to prescribe (e.g. initiate and modify drug therapy), to order and perform tests and have access to relevant patient information.
- Pharmacists will play a prominent role in health promotion, disease prevention, and chronic disease management.



## Pharmacy Human Resources: Needs

### Shortage for current roles:

- Hospital pharmacist position vacancy rate is 13.3% (2005-2006 Hospital Pharmacy in Canada)
- 48% of community pharmacists and 42% of community pharmacy owners / managers state there is a shortage in pharmacy where they work (Trends and Insights 2006)

### Needs related to current and evolving roles

- Clear description of new pharmacist roles, responsibilities to make projections
- Understanding of factors determining pharmacist job satisfaction
- Recruitment and retention issues
- Roles, responsibilities and competencies for pharmacy technicians
- Address challenges faced by international pharmacy graduates



## Pharmacy Human Resources: Training

- Promote and increase intra professional and inter professional approaches
- Identify and apply evidence for improving the effectiveness and efficiency of education including CPD
- Incorporate management, leadership and change management skills
- Increase quality of experiential training
- Develop and secure sufficient number of training sites and preceptors
- Incorporate bridging programs for IPGs
- Accredited CPD and practice support programs for pharmacists seeking to implement new services, specialty practices or practice models
- Encourage life long learning skills
- Pharmacy technicians
  - define skills and competencies
  - accreditation system for training programs
  - certification



## Pharmacy Human Resources: other changes, recent initiatives

### Changes in other areas needed to support HR including:

- Ensuring financial viability
- Addressing legislation, regulation and liability



### Recent initiatives

- Moving Forward Pharmacy Human Resources project
- CIHI database
  - National supply-based database and reporting System
  - January 2005 to December 2007
  - Fields include type of employment, age gender, education province
- Blueprint for Pharmacy
  - A strategic action plan for the pharmacy profession to strengthen its alignment with the health care needs of Canadians and to respond to the stresses on the health care system.
  - Pharmacists and pharmacy organizations are working to articulate a common vision and implement a coordinated plan of action.



## Human Resource Issues in Clinical Pharmacology

Ted Toffelmire, MDCM, FRCPC  
Chair, RCPSC Specialty Committee  
for Clinical Pharmacology

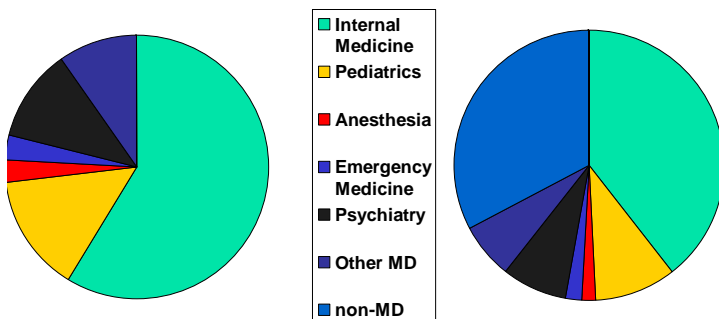
CSCP, 29 May 2007, Halifax

## In 2007, how many MD Clinical Pharmacologists are there in Canada?

- RCPSC knows of 30 (certificants = since 1991)
  - CSCP knows of 17 of these (57%)
- CSCP knows of 91 total (+13 = 104)
  - 20 received primary certificate before 1975
- CSCP knows of 51 non-MD Clinical Pharmacologists
- ≈155 CP positions OCCUPIED in Canada (%FTE?)

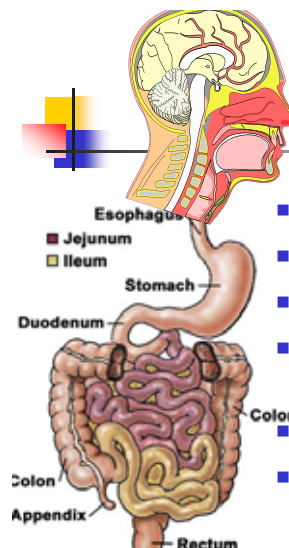
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## Canadian Clinical Pharmacologists' Entry Stream (1991 – 2006)



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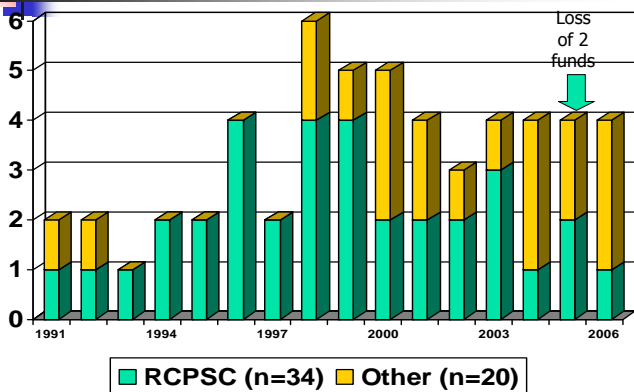
## Basic Kinetics of Clinical Pharmacologists



- Formulation ≈ Training
- Absorption ≈ Employment
- Distribution ≈ Distribution
- Flux between compartments ≈ Flux between departments
- Modifications ≈ Career focus
- Elimination ≈ Retirement from CP

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## Canadian-Trained CP's $K_a$



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## SUMMARY: Basic Kinetics of Clinical Pharmacologists in Canada

Finish Training	$\approx 4 / \text{yr}$ (57% of $C_0$ )
Employment	$K_a \approx 1.5 / \text{yr}$
Distribution	$V_d \approx$ mostly academic $C \approx 104$ (or 155)
Flux between departments	low
Career focus	all areas
Retirement from CP	$CI < 20$ in next 5 years?
Mean $t_{1/2}$ (Clin Pharm)	? 16 years

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## Human Resource Issues in Clinical Pharmacology Health Canada Perspective

May 29, 2007

Canadian Therapeutics Congress

Dr. Siddika Mithani  
Veterinary Drugs Directorate  
Health Canada

Veterinary Drugs Directorate

Canada

## Functions of Reviewers

Functions performed by reviewers of human therapeutic products involves a combination of:

- in depth scientific assessment;
- risk management; and
- communication of biomedical safety, efficacy and quality data regarding drugs or medical devices for human use.

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## Scientific and regulatory contexts

- gather, collates, integrates and summarizes information from disparate unorganized sources for the purpose of issue definition relevant to safety and efficacy of drugs
- application of appropriate knowledge of international requirements and their influence/impact on Canadian regulatory process
- appropriate framing of issues for evaluation after undertaking appropriate data collection and related analysis

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Veterinary Drugs Directorate

Canada

## Critical thinking and evaluation skills

- identify strengths and weaknesses in data (methodology, statistical analysis, interpretation, conclusions)
- identify gaps in available knowledge, validity of conclusions
- use inductive and deductive reasoning, appropriate analysis as well as judgement (in a regulatory context) on available and/or unavailable data to make meaningful inferences or draw new insights
- qualitative and quantitative analysis ; comparative risk/benefit analysis of relevant therapeutic product options in a regulatory context

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Veterinary Drugs Directorate

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## Human Resource Issues in Clinical Pharmacology: An Industry Perspective

Kevin O'Brien Fehr  
4<sup>th</sup> Canadian Therapeutics Congress  
May 29, 2007

### Current situation:

- Difficult to hire Canadian-licensed MDs in pharma industry
- Difficult to find in depth clinical pharmacology expertise
- Positions filled by basic science PhDs, PharmDs, foreign trained MDs, M. Biotech
- Net result: protocols written off shore, and don't meet needs of Canadian patients



### Perceived Gaps:

- Different culture
- Negative perception of industry
- Lack of business experience
- Difficulty communicating with non-scientific colleagues
- Often need training on broader issues: medical governance, drug safety, epidemiology, pharmacoeconomics



### Possible interventions:

- Introduce positive role models from industry
- Promote industrial collaboration early in training
- Encourage industrial secondments during training
- Allow for training in industrially-relevant areas (e.g., business development, marketing, finance)
- Encourage development of leadership behaviour

