



Bringing the Blueprint to Life in Pharmacy Education

Workshop June 3, 2010

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Session Objectives

- ▶ Engage AFPC members in discussion about implementing the Blueprint
- ▶ Provide Faculties ideas on implementing change

Blueprint Action Item 1.1: Ensure the core pharmacy curricula address the knowledge, skills and values required for future pharmacy practice to ensure new graduates are prepared to develop and practice in emerging roles.

- ▶ Review educational outcomes for pharmacy and identify knowledge and skills to be incorporated into pharmacy learning
- ▶ Develop curricula that reflect core competencies

Reference: Blueprint for Pharmacy Implementation Plan, p. 29
(Canadian Pharmacists Association, 2009)

Background Across Canada

Expanding Roles:

- ▶ Pharmacists – Practice to full extent of existing scope of practice
– Expanded scope of practice
- ▶ Pharmacy technicians – Regulation process underway
- ▶ Every province has legislation in place or in progress.

Payers:

- ▶ Need all health care professionals to step up
- ▶ Want transparency in drug pricing
- ▶ Know patient care services add value
- ▶ Want to shift payment model from product-focus to patient care-focus
- ▶ Want feasible, sustainable services
- ▶ Recognize the need for transitional strategies

Government Strategies:

- ▶ Ontario – Transparent Drug System for Patients Act (2006)
– Current negotiations
- ▶ British Columbia – Interim Agreement (December 2008)
– Transmission Agreement (December 2009)
– Negotiations underway for Long-term Agreement

- ▶ Alberta - Pharmaceutical Strategy Phase II (October 20, 2009)
- ▶ Saskatchewan - Business case for DPEBB (Spring 2010)
- ▶ Other Provinces

Changing Pharmacist/Pharmacy Relationship:

- ▶ Pharmacists provide service, pharmacies receive payment and employ pharmacists
- ▶ Community-based pharmacist roles are expanding beyond the dispensary
- ▶ Pharmacies need to drive costs out of their dispensaries

The Patent Cliff:

- ▶ Unprecedented savings from molecules coming off patent
- ▶ Canada:
 - 2010 ~ \$2.2 billion
 - 2011 ~ \$1 billion
 - 2012 ~ \$2 billion
- ▶ British Columbia:
 - 2010 ~ \$415 million
 - 2011 ~ \$188 million
 - 2012 ~ \$217 million

Demonstration Projects:

- ▶ Alberta Pharmacy Practice Models Initiative (PPMI)
 - March 2009 to June 30, 2010
 - 100 pharmacies, 180+ pharmacists
 - Payment for medication management
 - ID/Assessment of drug-related problems
 - Care Plan/Implementation
 - Follow-up/Evaluation
- ▶ British Columbia Medication Management/Pharmacy Practice
 - Summer 2010 to January 31, 2012
 - Details are coming

The Pharmacist Graduate of 2020

This model of the pharmacy graduate of the future was developed at UBC to help guide a process of curricular renovation. (See Appendix I for glossary of terms)

UBC Pharmacy Graduates of 2020 will...

Provide optimal drug therapy outcomes for Canadians through patient centered care.

Have:

- Expert knowledge in wellness and medication therapy
- Fundamental knowledge of basic sciences



Play a key role in:

- Health Promotion
- Disease Prevention
- Chronic Disease Management
- Home Care
- Personalized Health Care

Be compensated in a manner that reflects their expertise, the complexity of care provided, and patient outcomes.

Have skills to:

- Provide Medication Therapy Management
- Conduct physical assessments
- Utilize expanded prescriptive authority
- Administer select parenteral medications
- Provide immunization services
- Manage medication technology
- Conduct practice research and pharmaco-economic analyses
- Provide service-oriented care
- Provide education to fellow pharmacists and other health care professionals
- Provide education to the patients, caregivers and the public

Have competencies in:

- Leadership
- Global awareness
- Cultural sensitivity
- Life long learning
- Self direction
- Interprofessionalism
- Self discovery
- Information technology
- Responsibility and accountability
- Social/Emotional intelligence
- Drug literature critical appraisal
- Communication
- Critical thinking

What curriculum is needed to produce these Graduates?

Suggested additional skills/competencies from Workshop:

- ***Management***
- ***Social justice, social policy***
- ***Ethical reasoning***
- ***New service proposal***
- ***Broader understanding and use of technology***
- ***Confidence, responsibility, and accountability***

Small Group Discussions

Admissions

The Admissions group was asked to:

1. Brainstorm the pre-requisite attributes for applicants who will become the Pharmacist Graduate of 2020, including:
 - Previous training and relevant experience
 - Existing characteristics/proficiencies/practices
 - ▶ Cognitive: knowledge, problem-solving abilities
 - ▶ Affective: attitudes, values, beliefs, role expectations
 - ▶ Psychomotor: skills/capabilities; performance/practices
 - Preferred styles of learning
 - Demographics and diversity
2. Produce the following:
 - A list of the top 5 – 10 pre-requisite attributes
 - A list of 5 – 10 strategies for identifying these attributes in the applications/admissions process

Results from Workshop (1 group reporting)

Previous training/experience:

- ***Experience in pharmacy practice or other relevant work? (was noted as a sign of motivation)***
- ***Science background? Or more well-rounded academically?***
- ***Prior degree?***

It was noted that some diversity in the student body would be desirable, given that pharmacy schools are not only producing pharmacists, but also future academics, industry professionals, etc. This diversity is desirable along several dimensions, including academic background, geographic location (e.g. rurality index), and racial (e.g. attention to Aboriginal students).

Existing characteristics:

- ***Empathy, caring***
- ***Leadership***
- ***Critical thinking***

- **Self-motivated; willing to be a lifelong self-learner**
- **Self-reflective**
- **Effective communicator (verbal and written)**
- **Initiative**
- **Academic and emotional intelligence**
- **Globally aware, with a social conscience**
- **Technically savvy**

Preferred styles of learning:

Students don't like poorly designed PowerPoint presentations

Students do like: **Interactivity, engagement in the classroom**
 Case-based learning
 Application of science
 Working in teams

Strategies for selecting students:

- **Set quotas for diversity targets**
- **Consider using rank in class rather than GPA (given variability in grades from different locales)**
- **Use an interview process to assess communication skills**
- **Use interviews with caution to assess empathy and critical thinking, as these are "game-able"**
- **Communicate clearly to prospective applicants what the educational outcomes and practice expectations are**
- **Assess understanding of contemporary/future models of practice through a personal essay**
- **Use psychometric testing (e.g. as per University of Montreal)**

Other comments:

- **Link instructional strategies with admissions criteria**
- **Be willing to take risks**

Curriculum Content

The Curriculum Content group was asked to:

1. Brainstorm the curriculum content, including foundational knowledge and competencies and skills, required to produce the Pharmacist Graduate of 2020.
2. Produce the following:
 - A list of the top 5 – 10 key curricular content areas
 - A list of 5 – 10 strategies for including these content areas in future curricula

Results from Workshop (2 groups reporting)

Key content areas:

- ***Patient-centred care: clinical/physical assessment of the patient, evaluation and decision-making, therapeutic plan, implementation, and follow-up***
- ***Pharmacotherapeutics (using real patient cases)***
- ***Social and cultural issues***
- ***Communications***
- ***Interprofessionalism***
- ***Pharmacokinetics/pharmacodynamics (medicinal chemistry, pharmacology, toxicology, drug metabolism)***
- ***Pathophysiology***
- ***Pharmacogenomics/personalized medicine***
- ***Drug delivery***
- ***Public health, pharmacoeconomics, health care system, health policy, patient advocacy***
- ***Critical appraisal, literature evaluation***
- ***Law and ethics***
- ***Learning skills, knowledge translation and maintenance***
- ***Management skills, e.g. leadership***
- ***Critical thinking skills (to be a rational learner)***

Additional comments from Group 1:

We should rethink the notion of knowledge as linear and experts as being "right." We need to teach students what "is possible" instead of what "is." In terms of content, we typically end up with lists of

content areas. The content is often excessive, resulting in a focus on content rather than skills and attitudes and the "tyranny of coverage." On the positive side, the content is there to work with, but may need to be honed (e.g. by asking "What knowledge base is necessary for the contemporary pharmacist?"). On the negative side, we are not helping our students deal with ambiguity. We should think about moving away from a "one size fits all" approach.

Additional comment from Group 2:

We should bear in mind the complexity of pharmacy practice, in which practitioners must navigate dimensions of therapeutics in complicated cases (e.g. geriatrics), human ecology, the health care system (e.g. costs and policies), cultural issues, etc.

Strategies for including content areas in curricula:

- **Cases ("real life" situations, with all their complexity and ambiguity; include cases with no "right" answer)**
- **Experiential rotations**
- **Virtual simulations**
- **Integrated learning accelerated modules (ILAMs)**
- **Interprofessional experience**

To be effective, we need:

- **External expertise on curricular design and delivery (including content, use of technology, instructional design) to build capacity within the academy**
- **Faculty engagement**
- **Curricular framework and map (to where you want to go)**
- **Curricular integration (using matrix approach – everything is connected)**
- **To teach students how to learn (including how to use technology and how to appraise results; and to be emotional as well as rational learners)**
- **To promote a confidence-based learning approach (e.g. use confidence evaluation scale)**
- **To limit content to essentials**
- **To consider "concordance of scripts" (i.e. comparison of students' responses to practitioners' responses)**

Instructional Strategies

The Instructional Strategies group was asked to:

1. Brainstorm the instructional strategies for teaching foundational knowledge and developing the competencies and skills of the Pharmacist Graduate of 2020.
2. Produce the following:
 - A list of 5 priority strategies (existing or new) for teaching foundational knowledge
 - A list of 5 priority strategies (existing or new) for developing competencies and skills

Results from Workshop (1 group reporting)

Strategies for teaching foundational knowledge: (in priority order)

- 1. Case-based learning**
- 2. Self-direction in learning; pre-reading, instructional technology (e.g. audience response system)**
- 3. Contextual application (to facilitate translation from the classroom to practice); peer teaching; interprofessional education; research; student accountability (through Q & A)**
- 4. Learning journals (with reflection on practice and learning)**
- 5. Small group work; lecturing**

Strategies for teaching competencies and skills: (in priority order)

- 1. Simulation (e.g. using standardized patients, labs)**
- 2. Patient interaction (limited clinical exposure)**
- 3. Peer teaching and feedback; learning journals; questioning into decision-making process**
- 4. Experiential learning (full clinical exposure; extended client-pharmacist relationship)**
- 5. Interprofessional education; research proposal**

Other comments:

- ***Need to teach students how to assess risk in decision-making***
- ***Consideration should be given to the context, desired outcomes, etc. when selecting instructional strategies***

- ***Consider including an assignment, research project, or seminar on policy analysis***
- ***Consider having students dedicated to a single patient for a period of time (e.g. 1 term or 1 year) to navigate the health care system***
- ***We need to research our own teaching practice, with the goal of having research-driven educational development***

Assessment Strategies

The Assessment Strategies group was asked to:

1. Brainstorm assessment strategies (formative and summative) to evaluate students' foundational knowledge and students' competencies and skills consistent with the Pharmacist Graduate of 2020.
2. Produce the following:
 - A list of 5 priority assessment strategies (existing or new) to evaluate student learning of foundational knowledge
 - A list of 5 priority assessment strategies (existing or new) to evaluate student competencies and skills

Results from Workshop (1 group reporting)

Assessment strategies:

- ***Use both formative and summative assessment, with summative assessments at various points and more formative assessment than is done at present***
- ***Use integrative assessments (e.g. integrating subjects or tools)***
- ***Have comprehensive evaluations at the end of each year***
- ***Consider how to assess competencies such as professionalism and communication skills***
- ***Develop strategies for remediation if not all competencies are met***
- ***Establish mechanisms for recognizing accomplishments beyond expectations***
- ***Consider using OSCE format (with pass/fail grading?)***
- ***For assessing experiential performance, use portfolios (Note: There is a concern that many preceptors don't have the necessary experience. Can we identify "capstone" preceptors?)***
- ***Consider nature of experiential learning (e.g. 1 preceptor, 10 students or 5 preceptors per site assessing a group of students)***
- ***Consider using an interprofessional team of assessors (e.g. including nurse practitioners)***
- ***Have senior students assessing junior students***
- ***Use "360" approach to assessment***
- ***We need a culture shift away from finding the "extra half mark" to pass a student.***
- ***Assessment should focus on confirming the progress of students***
- ***Consider means of integrative assessment and self-assessment***

Other comments:

- ***Use a portfolio approach to assessment of core and non-core skill development***
- ***Include self-reflection in assessment***
- ***Frequent assessment is needed for early identification of weaknesses that can be addressed***
- ***Assessment strategies must address/match our instructional strategies***
- ***Assessment prior to implementing new instructional strategies is important***
- ***Reflections on experiential education indicate what was seen or observed, and can integrate ethics, decision-making, the execution of a therapeutic plan, etc.***

Instructional Technology

The Instructional Technology group was asked to:

1. Brainstorm instructional technologies that facilitate the delivery of foundational knowledge and development of competencies and skills consistent with the Pharmacist Graduate of 2020.
2. Produce the following:
 - A list of 5 priority instructional technologies (existing or new)

Results from Workshop (1 group reporting)

Instructional technologies:

- ***Use to support learning on demand (e.g. using web platforms such as WebCT, Sakai, Blackboard, ACE Angel (U of Waterloo))***
- ***Use knowledge mapping software (for faculty and students) and curriculum mapping software (for faculty)***
- ***Use e-portfolios for tracking learning and assessment of competencies***
- ***Use clickers in the classroom and on-line assessment to facilitate student-faculty interaction***
- ***Use videos to teach/illustrate some skills (e.g. complex communication scenarios, to support skills labs)***
- ***Consider how technology is evidence to support faculty promotion (i.e. look beyond hours in the classroom when evaluating teaching contributions)***

Other comments:

- ***IT support and instructor training are needed to ensure technologies are implemented optimally***
- ***Technology could be used to facilitate teamwork at a distance (e.g. through teleconferencing, Google Documents, etc.)***

Note: See also references to instructional technology in comments from the Curriculum Content and Instructional Strategies groups.

Selected Resources

Blueprint for Pharmacy Implementation Plan

http://www.pharmacists.ca/content/about_cpha/whats_happening/cpha_in_action/pdf/BlueprintImplementationPlan.pdf

Curriculum Review:

Curriculum Review: Guidelines for Faculty (Queen's University)

http://www.queensu.ca/ctl/goodpractice/help/curriculum_review.html

Re-Thinking Curriculum: References on Curriculum Review (Queen's University)

<http://www.queensu.ca/ctl/goodpractice/curriculumdevelopment/curriculum/references.html>

Instructional Strategies:

Matching Educational Methods to Objectives

Kern DE, Thomas PA, Hughes MT, eds. Curriculum Development for Medical Education: A Six-Step Approach. 2nd ed. Baltimore (MD): Johns Hopkins University Press; 2009.

Case-Based Learning (Queen's University)

<http://www.queensu.ca/ctl/goodpractice/case/index.html>

What is Community Service Learning? (Queen's University)

<http://www.queensu.ca/ctl/goodpractice/service/index.html>

What is Unique about Inquiry Courses? (McMaster University)

<http://www.mcmaster.ca/cil/inquiry/whats.unique.about.inquiry.htm>

Lab-Based Teaching Strategies (Queen's University)

<http://www.queensu.ca/ctl/goodpractice/lab/strategies.html>

Problem-Based Learning (Central Queensland University)

<http://pbl.cqu.edu.au/>

Assessment Strategies:

Assessment Primer (University of Wisconsin)

<http://www.flaguide.org/start/primerfull.php>

Selecting Methods of Assessment (Oxford Brookes University)

http://www.brookes.ac.uk/services/ocsd/2_learnch/briefing_papers/methods_assessment.pdf

Instructional Technology:

21st Century Skills for 21st Century Learners

<http://www.metiri.com/21/Metiri-NCREL21stSkills.pdf>

Course Redesign Integrating Technology (Queen's University)

<http://www.queensu.ca/ctl/goodpractice/technology/resources.html>

Appendix I

Pharmacy Graduate of 2020 – Glossary of Terms

Critical Thinking

- The thought processes used to evaluate information and the practice of using such conclusions to guide behaviour
- The process of critical thinking is associated with accuracy, logic, depth, fairness, credibility, and intellectual clarity

Cultural sensitivity

- An understanding of:
 - The diverse values, beliefs, traditions and behaviours of patients
 - Current cultural and social issues that impact the practice of pharmacy
- The presence of skills, values, and behaviours that enable the provision of services appropriately adapted to the cultural, language, socioeconomic and religious needs of patients and populations

Global Awareness

- An understanding of:
 - Current events and the inter-relationship between all people in the world
 - The importance of community development and public health around the world
- The presence of skills, values, and behaviours that enable effective communication and health care delivery independent of national boundaries

Information Technology

- A general term that describes any technology that helps to produce, manipulate, store, communicate, and/or disseminate information.

Interprofessionalism

- Skills associated with the knowledge, understanding and mutual respect between different professional disciplines

Leadership

- The process of social influence where one person can effectively enlist the aid and support of others in the accomplishment of a common task
- Characteristics associated with leadership include: motivational, inspirational, honourable, with clear sense of purpose, and accepting of authority and responsibility

- Pharmacists who demonstrate leadership takes on roles of influence on committees and within organizations for the betterment of patients, the profession, the health care system and society

Life Long Learning

- A personal commitment to seek out new knowledge, develop skills, and participate in educational endeavours over the course of a lifetime
- As professionals, pharmacists are expected to be committed to life-long learning

Medication Technology

- A general term that describes any technology that improves the accuracy and safety of medication ordering, dispensing and administration

Medication Therapy Management (MTM)*

- Is the patient care practice for pharmacists based on the philosophy of Pharmaceutical Care
- Is the patient-centered practice in which the practitioner assumes responsibility for a patient's drug-related needs and is held accountable for this commitment
- Is made up of a distinct group of professional activities and responsibilities including*:
 - Performing or obtaining necessary assessments of the patient's health status
 - Formulating a medication treatment plan
 - Selecting, initiating, modifying, or administering medication therapy
 - Monitoring and evaluating the patient's response to therapy, including safety and effectiveness
 - Performing a comprehensive medication review to identify, resolve, and prevent medication related problems, including adverse drug events
 - Documenting the care delivered and communicating essential information to the patient's other primary care providers
 - Providing verbal education and training designed to enhance patient understanding and appropriate use of his/her medications
 - Providing information, support services and resources designed to enhance patient adherence with his/her therapeutic regimens
 - Coordinating and integrating medication therapy management services within the broader health care-management services being provided to the patient

*Definition approved by the Academy of Managed Care Pharmacy, the American Association of Colleges of Pharmacy, the American College of Apothecaries, the American College of Clinical Pharmacy, the American Society of Consultant Pharmacists, the American Pharmacists Association, the American Society of Health-System Pharmacists, the National Association of Boards of Pharmacy**, the National Association of Chain Drug Stores, the National Community Pharmacists Association and the National Council of State Pharmacy Association Executives.

Personalized Health Care

- Is the application of factors specific to an individual patient (including genomic and molecular data) to customize and optimize the health care that individual receives
- Facilitates the discovery and clinical testing of new products, and helps determine an individual's predisposition to a particular disease or condition.
- Is health care which is preventative, predictive, personal, and involves the patient's participation

Pharmacoeconomic Analyses

- The description and analysis of the costs of drug therapy to the health care system and the public.
- Identifies, measures, and compares the costs and consequences of drugs and services.

Practice Research

- A research discipline that studies a service or activity as it is used in the practice of providing health care to a patient

Prescriptive Authority

- The legal authority to set down a rule or direction related to medication or other health treatment

Responsibility and Accountability

- Responsibility is the moral and social duty to perform or complete a task that has a consequent penalty for failure
- Accountability is the acknowledgment and assumption of responsibility for actions, products, decisions, and policies including the administration, governance, and implementation within the scope of the role or employment position and encompassing the obligation to report explain and be answerable for resulting consequences

Self Direction

- The ability to perform tasks and initiate actions competently without direction or guidance from others
- Characteristics associated with self-direction include being forward-thinking, internally motivated and driven independently without external control or constraints

Self Discovery

- Becoming aware of one's true potential, character, motives and limitations

Service-Oriented Care

- Maintaining the needs of the recipient as a priority when providing care
- Ensuring the needs of the recipient are heard and understood in the course of providing care
- Managing the health care needs of patients and patient populations in an altruistic manner

Social/Emotional Intelligence

- Social intelligence includes:
 - A well-developed awareness and understanding of what is happening in the world
 - The ability to understand and manage one's human relations and social happenings
- Emotional intelligence is the perception of emotion, the ability to reason using emotion, the ability to identify, assess, understand and manage emotions of oneself or others
- People with high social/emotional intelligence are able to identify, understand and relate to the emotions present in any given interaction, and empathetically use this information to guide thinking and actions