STATEMENTS

Continuous Professional Development: The Ontario Experience in Professional Self-Regulation Through Quality Assurance and Peer Review

Zubin Austin, PhD, a Della Croteau, MCEd, b Anthony Marini, PhD, c and Claudio Violato, PhD c

a Leslie Dan Faculty of Pharmacy, University of Toronto
b Ontario College of Pharmacists
c University of Calgary

Continuous professional development has emerged as a significant issue for pharmacy educators across North America. As a result of major regulatory changes governing pharmacy practice, the province of Ontario has developed a comprehensive quality assurance and peer review program designed to systematically assess the patient care competencies of practicing pharmacists. Key program components include: (1) a 2-part registration process wherein pharmacists elect to pursue Part A, direct patient care, or Part B, non-direct patient care; (2) a learning portfolio to demonstrate lifelong learning; and (3) a practice review process with a remediation component. In the 5 years that the Program has been in place 86% of practicing pharmacists were able to self-direct their professional development, while 14% required peer assistance. Performance differences emerged based on the number of years since graduating, place of graduation, and site of practice. These results provide pharmacy educators with important information regarding the needs of practicing pharmacists, as measured through direct assessment of their clinical knowledge and skills.

Keywords: competency assessment, pharmacy practice, quality assurance, continuous professional development

INTRODUCTION

In order to practice pharmacy in most jurisdictions in North America, a candidate for licensure must have graduated from an accredited school of pharmacy, undertaken an in-service training period, and completed various national and local board examinations. Upon successful completion of these requirements, a license to practice pharmacy is issued. Most jurisdictions require demonstration of continuous professional development, usually measured through attendance at continuing education (CE) events or completion of self-guided lessons. Beyond this, and barring any calamitous disciplinary action, an individual is generally free to practice pharmacy in a relatively unfettered manner over a period of 40 years or more.

Requirements for continuous professional development are in place to provide assurance that practitioners maintain competence and remain current in their fields. The effectiveness of traditional CE is ambiguous at best, and is the source of much debate. Continuing education presented to health care professionals is generally didactic and content oriented rather than skills oriented, and ultimately has not proven to be the most appropriate vehicle for ongoing professional development. For close to 2 decades, studies have demonstrated the limited value of CE as a vehicle for continuous maintenance of competency. In a review of the continuing medical education in the US, Manning 1 concluded: “...conventional, formal [continuing education], unless focused on specific behavioral objectives, does not alter a physician’s practice measurably.” In a Canadian study of 120 physicians, Dunn et al 2 found no relationship between the quality of patient care provided and either the quantity or the type of continuing education activities they had undertaken. Similarly, a randomized trial by Sibley 3 showed that study participants failed to demonstrate any clinically or statistically significant improvement in the quality of the patient care they provided following attendance at a traditional CE event. More recently, Davis et al 4,5 reviewed the effects of formal CE on various physician populations involved in a variety of clinical aspects of practice and concluded

Corresponding Author: Zubin Austin, BScPhm, PhD. Mailing Address: Leslie Dan Faculty of Pharmacy, University of Toronto, 19 Russell Street, Toronto, ON, M5S 1A1 CANADA. Tel: 416-978-0186. Fax: 416-978-8511. E-mail: zubin.austin@utoronto.ca.
that didactic CE alone was of limited effectiveness in changing physicians’ performance or patient outcomes.

In spite of these findings, professional regulatory authorities throughout North America continue to require pharmacists to complete continuing education as evidence of continuous professional development. Such requirements may have little benefit on professional practice and do not provide assurances that the practitioner has the knowledge and skills necessary to provide safe and effective patient care. Developing assessment methods to ensure that all practitioners within a health profession are competent is a significant challenge for regulatory bodies, but one that is essential to meet if their mandate to protect the public is to be achieved.

In the United States, the American Board of Medical Specialties (ABMS) first considered this issue of maintaining and demonstrating ongoing clinical competency through systems of voluntary recertification and time-limited certification in response to the need for accountability and the rapidly changing environment of medical specialties. As early as 1974, the American Board of Internal Medicine (ABIM) held its first, voluntary recertification examination. In 1969, the American Board of Family Practice (ABFP) instituted time-limited certification that required physicians to undergo recertification (also time-limited) at specific intervals. Since then, most boards have implemented some form of recertification as a way of ensuring that their members continue to have the requisite knowledge and skills to practice their medical specialties in a safe manner.

Benson6 outlined 4 major goals of a model recertification process. By requiring all health care professionals to meet specified standards of practice throughout their careers (rather than just at the start), recertification would:

(1) improve the quality of patient care;
(2) define measurable standards of practice;
(3) foster a spirit of lifelong learning; and
(4) reassure the public that incompetent practitioners will be identified and dealt with appropriately.

In most states and provinces in North America, pharmacists must meet requirements for attendance at CE events, but rarely (if ever) are required to demonstrate the impact this learning has had in their practice. Many jurisdictions have discussed the need for ongoing or direct assessment of the knowledge and skills necessary to maintain competency, and some have begun development of direct assessment mechanisms. For example, the province of British Columbia introduced a competency assessment program in the late 1970s as part of its public protection mandate.7,8

In 1991, in an effort to promote greater accountability among health care professionals, new legislation was introduced in Ontario that brought the issue of competency assessment to the forefront. As a result of a significant change in the laws governing all health care professions in the province, continuous professional development became a major issue for pharmacists in specialty, hospital, and community practices.

Background

Ontario is Canada’s largest province, home to approximately one third of Canada’s 32 million citizens. A large and geographically diverse province, Ontario has approximately 9000 registered pharmacists. As a Commonwealth country, Canada has inherited a parliamentary system of government similar to Great Britain. Division of powers between federal and provincial parliaments has resulted in health care professionals being regulated by a variety of national and local laws. As in the United Kingdom, pharmacy is a self-regulating profession, one that sets and maintains its own credible, useful standards for its members and ensures its integrity by enforcing these standards.

The practice of pharmacy is governed by the Ontario College of Pharmacists (OCP), not to be confused with the university-based Faculty of Pharmacy. The Faculty’s primary responsibility is the education of entry-level practitioners while OCP’s mandate is self-regulation and public protection. OCP is a creature of statute, with authority by the provincial government to set, maintain, and enforce standards of practice. All pharmacists in Ontario must apply for licensure with OCP and meet requirements (such as in-service training, successful completion of a pharmacy law examination, etc) prior to being granted a license to practice pharmacy.

The self-regulating nature of pharmacy in Canada is different from the United States, where professional governance is often the purview of state legislators who may not be aware of pharmacists’ unique concerns. In contrast, OCP is entirely self-funded (through annual membership levies for all licensed pharmacists and all accredited pharmacies) and assumes primary responsibility for public protection and enforcement of standards. OCP regulates the practice of pharmacy in the province of Ontario only; other provinces in Canada have similar regulatory bodies.
All self-regulating professions in Ontario (including medicine, nursing, chiropractic, dentistry, and 19 other groups) are defined in the Regulated Health Professions Act (1991) (RHPA). The RHPA was enacted in an era of heightening awareness of the need for greater public accountability among health care professionals and of significant concerns regarding the structure and functioning of self-regulating professional colleges. In an effort to balance the advantages of self-regulation with the need for greater public control and scrutiny of the process, the RHPA introduced several landmark concepts into the framework of professional regulation.

Among the major changes introduced with the RHPA was the notion that a self-regulating profession must develop a quality assurance mechanism to ensure the effectiveness of continuing professional development of its members. Cognizant of the limitations of the traditional CE system described above, the framers of the legislation mandated that the College, on a regular basis, must directly assess its members for competency to practice pharmacy. Until this time, pharmacists in Ontario (like those throughout most of North America) were only required to submit written records of attendance at continuing education events to prove their competency. With the RHPA, the College now assumed greater responsibility for actively assessing its own members. Under the self-regulation framework, all costs for developing and implementing this program were to be borne entirely by the College through the annual licensure fee levied upon each member of the profession. This “quality assurance” process is now a mandatory provision of the legislation governing the practice of 23 health care professions in Ontario.

**Quality Assurance**

Under the RHPA, each self-regulated profession was required to develop a quality assurance program for its members by December 31, 1996. Recognizing the value and importance of self-regulation, the specifics of this program were not mandated, since each profession has unique needs and circumstances.

Upon proclamation of the RHPA in 1993, the College changed its governance structure as prescribed by the legislation. Previously, as a self-regulating professional body, OCP was governed by its Councilors, who were pharmacists elected to the College by their peers to represent the various geographical districts of the province. Under the RHPA, the College Council is now required to have 49% of its members appointed (not elected) to Council by the government. By expanding the number and role of public members in the governance of self-regulated professions, the RHPA aimed to balance the need for public scrutiny and transparency with the benefits of professional autonomy.

Under the RHPA, the College was required to establish a Quality Assurance Committee to oversee development of a quality assurance process and to enforce policies. While the magnitude and seriousness of this task was clear, the structure for its completion was not. Few jurisdictions in North America had ever attempted such sweeping changes in professional regulation as in Ontario, and each of the self-regulated health professions faced a daunting challenge in meeting the timetable laid out in the legislation.

Fortunately, the RHPA provided sufficient latitude to each profession to develop its own model; a one-size-fits-all approach would clearly not be sustainable given the breadth of disciplines covered in the RHPA (21 colleges governing 23 health care professions). OCP immediately began a consultative process to determine and define pharmacy’s quality assurance process. Building on its strong tradition of self-regulation, and recognizing that the quality assurance process could only succeed with full participation and buy-in from the profession, pharmacists and public members from around the province were consulted. While the requirement for a quality assurance program was nonnegotiable, being involved in determining its mechanics was a significant factor in alleviating misapprehension about the process.

**Components Of Ontario’s Quality Assurance Program**

Following its consultative period, and consistent with the letter and spirit of the RHPA, OCP developed its quality assurance program model. This model consists of 4 parts:

1. a 2-part registration system;
2. learning portfolio to demonstrate lifelong learning
3. a practice review process with remediation; and
4. a process for remediation of inappropriate behavior or remarks of a sexual nature, involving patients or clients.

**Two-Part Register.** The College’s main role is to ensure that pharmacists practice pharmacy in a manner consistent with provincial legislation and standards of practice. In recognition of the evolution in pharmacy practice towards direct patient care, the College Council approved the development of a 2-part registration system. Each year, pharmacists must elect (ie, declare) themselves as “Part A” or “Part B” pharmacists. Phar-
Learning Portfolio To Demonstrate Lifelong Learning. Each pharmacist in Ontario (whether in Part A or Part B of the register) must maintain a personal record of continuous professional development and submit it to the College upon request. The learning portfolio is more than simply a static record of attendance at continuing education events; instead it is meant to be a vehicle for pharmacists to identify learning gaps and needs, seek out resources for meeting these needs, and document the outcome of their learning and its effect on their practice. The learning portfolio system recognizes that each professional’s development is unique, each individual’s needs are specific, and that a time-dependent measurement of continuing education does not necessarily translate into improved practice. The learning portfolio has been described as an important tool for practice-based learning in medicine, and provides a vehicle and framework for self-reflection. With the learning portfolio, each pharmacist defines his or her own needs based on the contingencies of his or her practice or interests, as long as these are consistent with the Standards of Practice that have been developed by OCP to reflect minimum expectations of professional practice in pharmacy. The College facilitates this process by providing documentation tools and information, but does not prescribe the type or quantity of continuing education required. Instead, pharmacists set their own learning objectives and outcomes based on their own practice needs. All pharmacists in the province must submit their learning portfolio for review upon request by the College.

The Practice Review Process And Remediation. Evaluating the effectiveness of continuous professional development is a vital role for self-regulating professions. While the 2-part registration and the learning portfolio are important components of identifying and addressing individual’s specific learning needs, they do not directly assess the clinical knowledge and skills that form the foundation of direct patient care. The Practice Review Process assesses pharmacists’ patient care abilities as defined in current Standards of Practice.

All pharmacists who declare themselves in Part A (direct patient care) of the register are subject to the College’s Practice Review Process; those who are in Part B are not required to participate. In 2001, approximately 8,500 pharmacists declared themselves to be in Part A, while 750 declared themselves to be in Part B of the register.

Each year, 20% of those in Part A are randomly selected for Phase I of the Practice Review Process. Approximately 1,600 to 1,700 pharmacists licensed in Ontario are required to complete Phase I each year. Every pharmacist electing into Part A will be selected to participate in Phase I at least once every 5 years.

Phase I Of The Practice Review Process

Phase I of the Practice Review Process involves completion of the Self-Assessment Survey and Summary of Continuing Education Activities. The pharmacist must submit the survey and summary to the College within 8 weeks of receipt. Failure to do so could result in disciplinary action by the College against the pharmacist. The survey and summary provide the College with useful information regarding pharmacists’ lifelong learning activities and self-perceived continuing education needs. As such, it is an important source of data for program planners, but more importantly provides an opportunity for pharmacists to assess their own learning and demonstrate how they are maintaining competency. The Phase I survey includes pharmacist self-assessment of their knowledge and skills in various therapeutic areas, identification of personal learning needs, and vehicles by which personal learning needs have been or are being addressed. It also includes self-assessment knowledge and skills in several key practice areas such as ethical/legal/professional responsibilities, drug distribution, practice management, and access, retrieval, evaluation, and dissemination of drug information.

Phase II Of The Practice Review Process

Once selected for Phase I of the Practice Review Process, a pharmacist remains in a larger “pool” and is eligible for selection for Phase II. Each year, approximately 200 pharmacists are randomly selected from the
Phase I pool for Phase II of the Practice Review Process. (Phase I is not used as a ‘screening tool’ for Phase II since it relies upon self-reporting and its purpose is to encourage self-reflection.) Phase II of the process includes measurement of competencies defined by the Ontario College of Pharmacists. In particular, Phase II includes assessment of direct patient care competencies not currently reviewed by College field representatives on their periodic site visits to pharmacists’ places of practice.

Selected competencies form the framework for Phase II of the Practice Review Process. In particular, those competencies dealing with patient care that involve a direct assessment of pharmacists’ skills in the following domains:

- clinical knowledge,
- the ability to gather information from patients,
- patient management and education, and
- communications skills.

Phase II consists of 3 activities: the first activity is a 115-minute open-book written test of clinical knowledge consisting of 15 cases, each followed by 4 multiple choice questions for a total of 60 questions. The written test of clinical knowledge is designed to simulate typical daily practice. In daily practice, pharmacists frequently rely upon available drug information resources and textbooks. In an effort to enhance the validity of this component, the decision was made to allow pharmacists ready access to commonly used references. This is not solely an assessment of content (ie, declarative knowledge), but is also an assessment of the pharmacists’ ability to search and locate relevant information.

The second activity involves five 12-minute standardized-patient interview scenarios reflecting contemporary practice. These scenarios focus on generic pharmacy practice skills and do not require specialized knowledge of either a community or hospital setting, in particular, communicative competencies. Communication skills are assessed in 5 key domains: verbal expression, non-verbal expression, empathy, coherence, and organization of the interview, and overall communication of clinical knowledge.

The third activity is a 60-minute educational/sharing session on continuous professional development and the learning portfolio. In this session, small groups of pharmacists discuss their use of the portfolio and the process by which learning objectives can be established and self-monitored. Of particular interest to members of the group is the content of their peers’ portfolios that highlight the unique professional experiences in which pharmacists engage, and the formal and informal learning opportunities that exist. Perhaps the most surprising and frequent comment made by pharmacists is about the extent to which this session allows them to understand both the nature of their own practices and those of their peers.

Development Of Phase II Components

The components of Phase II of the Practice Review reflect direct patient care activities. Unlike entry-to-practice examinations, the pharmacists who undertake the Practice Review work in a wide variety of settings, have diverse educational and cultural backgrounds, and have been practicing for a wide range of years. Since the College only grants one type of pharmacist license, the decision was made to have a generic Practice Review, one that covers the transferable skill set required to provide direct patient care in any pharmacy setting. All pharmacists selected for Phase II are required to undertake the same practice review process, regardless of their site of practice, number of years since graduation, or educational background.

In preliminary discussion about Phase II with pharmacists, significant apprehension was expressed regarding how accurately their performance on the review would reflect their actual practice ability and skills. Particular attention would have to be paid to ensuring the validity of all Phase II components in order to ensure acceptance of the program by the profession.

In an effort to ensure both the validity and the reliability of the assessment, the College relied heavily upon practicing pharmacists from all practice settings. To develop individual questions and cases for the practice review, a rigorous peer-driven system of committees was established, with representation from all parts of the profession and the province. Pharmacists were asked to be volunteer members of 1 of 3 committees: writing teams, review teams, or standard-setting teams. Writing teams worked to develop cases (both for the written test of clinical knowledge and the standardized patient scenarios). Review teams were established to validate these cases and ensure that they adequately and truly reflected contemporary practice issues. Standard-setting teams established minimum performance levels for each test item based on the complexity and commonness of the case. Teams were constructed to achieve a balance between hospital and community pharmacists, as well as those who practiced in urban and rural areas. Such a balance was necessary to ensure each assessment item developed for Phase II was sufficiently generic to
focus on direct patient care knowledge and skills rather than on site-of-practice specific issues.

The 3 committees review each assessment item and each committee refers questions or issues to other committees. Although it is a rigorous and time-intensive process, this is essential for both the face validity and content validity of each item. Typically, a case scenario accompanied by multiple-choice questions for the written test of clinical knowledge requires 6 months to be developed and completed, while a case for the standardized patient interview component requires 9 months.

All assessments are criterion-referenced as opposed to “norm-referenced,” in which candidate performance is evaluated relative to that of the norm or of their peers group. Accordingly, the minimum score to pass is established a priori based on the Minimum Performance Level (MPL) approach. In this approach a number of expert judges (a representative sample of pharmacists) evaluate each item or clinical skill and task to be performed. This results in an MPL for each item. The sum of all of the individual items produces the MPL for the total test (ie, the minimum score to pass). This procedure for setting MPLs is very widely used and accepted for assessing board and licensing examinations in the health professions. Its main strength is that it establishes criterion-referenced minimum scores that are derived from a consensus of experts.

The MPLs for the clinical knowledge assessment, a test given in the traditional paper-and-pencil format, are established using a modified Angoff method, which has been the most prevalent method of determining minimum scores for credentialing examinations. The Angoff procedure requires that expert judges examine each test item and estimate the lowest probability that a minimally acceptable candidate would answer the item correctly. The MPL is calculated by averaging all of the judges’ probabilities. The MPL is the standard that is used to determine the cut-off score for the examination.

Similar to the written examination, the cutoff score or pass/fail score for the practical skills examination is established a priori based on the MPL method, but utilizing a somewhat different approach from that used for the written examinations. These assessments employ the Ebel procedure. In this approach a number of expert judges (practicing pharmacists) evaluate each skill and task to be performed on 2 dimensions: relevancy and difficulty. For relevancy, 3 levels are used: essential, important, and marginal. Similarly, 3 levels are used for difficulty:
easy, medium, and hard. Through a process of iterations and committee consensus, each clinical skill to be assessed is classified into 1 of the 9 cells on the relevancy by difficulty classification. A specific skill may be judged as essential and easy, for example, while another may be judged as important and difficult. Through this process, “Ebel” weighting is given to each skill. This results in an MPL for each item. The sum of all of the individual items produces the MPL for the total test (ie, the minimum score for pass/fail). This procedure for setting MPLs is widely used and accepted for assessing clinical competency in the health professions.

Given the nature of the assessment process, all pharmacists who participate in the development of test items are required to complete confidentiality agreements. However, they are strongly encouraged to describe the process of item development to their peers, so that all pharmacists will recognize the extraordinary steps taken to validate assessment items. To ensure procedural fairness and allow others an opportunity to participate, individuals are rotated off committees periodically.

Reliability of the assessment items has been established through a review of 5 years of data. For the simulated patient interview component, 2 assessors were initially used, despite the fact that the literature in medicine has long supported the use of single assessors for performance-based assessment. The decision to initially opt for 2 assessors was made to assuage pharmacists’ concerns regarding the fairness of the process and to improve the validity of the entire practice review. Within 2 years, after sufficient data had been gathered in the pharmacy context to support the simulated patient interview component as a reliable form of assessment for practicing pharmacists, the number of assessors per station was reduced to 1. This also served to reduce the level of intimidation experienced by pharmacists during this part of Phase II.

**Phase II Practice Review Procedures**

In order to prepare for the Practice Review, the College has developed several resources and supports, which are made available to all members of the profession. A Web-based practice version of the multiple-choice written test of clinical knowledge has been developed, using questions previously used in the process. To assist with learning and preparation, detailed answer keys have been provided to direct pharmacists towards appropriate educational resources. A videotape introducing patient interviewing and the simulated patient interview component to pharmacists is sent to each Phase II participant for review. In addition, significant efforts
have been made to publicize the process to all members through regular communication in the College’s journal, Pharmacy Connection.

The Practice Review is held centrally at the Ontario College of Pharmacists’ offices in Toronto. Each year, 4 Practice Review weekends are scheduled. Pharmacists who have been selected are reimbursed for travel and accommodation expenses to attend the Practice Review. On the day of the Review, each pharmacist spends approximately 5.5 hours participating in all components (including breaks, an orientation, and a debriefing session). During an administration weekend, there are 4 cohorts of 15 pharmacists. Each administration begins with an orientation session, during which procedural details are provided and those participating have an opportunity to meet one another and ask questions. Following the orientation, each cohort is divided and proceeds separately through the different components: a sharing of the learning portfolio, the written test of clinical knowledge, and the simulated patient interviews. At the conclusion of the day, there is a feedback session in which pharmacists are encouraged to share their perceptions of the process. Suggestions emerging from this feedback session have been instrumental in refining the Practice Review process.

Approximately 6 to 8 weeks after the Practice Review, all candidates are provided with an individualized statement of their results, which represents their performance relative to the standards previously established by their pharmacist-peers on the Standard Setting Committee. In addition, a summary of the cohort’s results is provided. All candidates are provided with a list of available resource materials to assist them in their continuing professional development activities. These materials include both text-based and video-based instructional modules that have been reviewed by College staff.

The Quality Assurance (QA) Committee of the College considers the results of the assessment on an individual basis. Pursuant to the RHPA legislation, all names and identifying features are masked so that members of the committee are not aware of the identity of the pharmacists being reviewed. Recall that pharmacists are assessed on 4 main components: clinical knowledge, gathering information, patient management and education, and communication skills.

Those who meet or exceed standards in all 4 components receive their individual results and the average results of their peers. These individuals progress to the Self-Directed category for continuing professional development and continue to take responsibility for their own ongoing learning.

Pharmacists who have difficulty meeting standards in either clinical knowledge or communication skills and those who fall below on 2 or more of the 4 components being assessed are assigned to the Peer-Assisted category. These individuals are required to submit an educational plan of activities to the College within 4 to 6 weeks of receiving their results.

Pharmacists who have difficulty meeting standards in either gathering information or in patient management and education are assigned to the Self-Directed category. Experience with the program has shown that these areas are particularly amenable to remediation through self-study since they are more technical in nature. On the other hand, deficiencies in clinical knowledge and communication skills require a more interactive approach and ongoing feedback, necessitating the input of either College staff or more formal learning settings. For example, a recent workshop was offered to pharmacists who did not meet the standards established for clinical knowledge. During this workshop it became apparent that performance difficulties were not solely linked to a lack of content, but with the ability to systematically extract relevant information from available resources. The clinical knowledge examination is an open-book assessment, making information searching skills a critical variable.

The RHPA provides significant protection and confidentiality to pharmacists involved. The QA Committee has no authorization to revoke a pharmacist’s license to practice, but it can impose terms and conditions on a member’s status if an urgent public protection issue is identified. The QA Committee’s role is primarily educational, not punitive. In the event the Committee identifies an uncooperative individual, or one who has not been able to meet standards for the practice review in a reasonable period of time, it can refer the matter to other standing committees of the College for further investigation. Under the RHPA legislation, none of the data collected in the Practice Review process can be shared with other investigative or disciplinary branches of the College. In order to support the principle of education rather than punishment, as well as the role of continuous learning in maintenance of competency, preserving this “firewall” between the QA Committee’s role and the role of other committees to suspend or revoke a license is essential.
Overall Results Of The Program

The College has completed its 5-year review of the Practice Review Process. Among the other health professional Colleges in Ontario, it was among the first to have successfully piloted and implemented such a comprehensive process. To date, all pharmacists in the province have received a self-assessment survey, the majority have submitted their summary of continuing education activities through the learning portfolio, and over 1000 pharmacists have been randomly selected to participate in Phase II of the process.

Self-Assessment (Phase I) Survey Results

Aggregate data from the self-assessment surveys have been shared with professional associations involved in providing continuing education to pharmacists. Pharmacists in Ontario perceived their learning needs to be greatest in the following 5 therapeutic areas (arranged alphabetically, no order implied): AIDS and AIDS-related conditions, cancer chemotherapy, diabetes management, herbal remedies/homeopathy, and infertility. Pharmacists perceived their learning needs to be least urgent in areas such as arthritis, constipation/diarrhea, contraceptives, cough/cold remedies, hypertension, osteoporosis, pain management, and sunscreens.

Based on the OCP competencies, pharmacists in Ontario felt most comfortable and competent in the area of drug distribution (dispensing procedures) and least competent in the area of clinical/therapeutics knowledge base and in their ability to access, retrieve, evaluate, and disseminate drug information.

Generally, those pharmacists who graduated 15 or fewer years ago assessed themselves at a higher level of comfort with the areas of professional competency than did their more senior colleagues, with the exception of the drug distribution and practice management competencies. In these areas, it appears, pharmacists with more experience (ie, greater than 15 years since graduation) reported higher subjective levels of competency.

Despite the fact that the College only provides one license for all pharmacists, regardless of practice setting, most pharmacists acknowledge that there can be striking differences in practice between hospital and community settings. Perhaps surprisingly, pharmacists in community practice self-assessed their competency to be significantly higher than their hospital peers in 4 of 7 areas: ethical/legal/professional responsibilities, drug distribution, practice management, and clinical knowledge. Only in the area of access, retrieval, evaluation, and dissemination of drug information did hospital pharmacists assess themselves higher than community pharmacists, although the difference was not statistically significant.

Perhaps the most interesting data from the self-assessment survey relates to the place of graduation and comfort with the practice competencies. A comparison was made between those who graduated from pharmacy schools in North America (ie, Canada or the United States), with those who did not graduate from schools in North America (referred to as international pharmacy graduates or IPGs, who account for close to 25% of the pharmacy workforce in Ontario). Interestingly, IPGs rate themselves as being more comfortable on all competencies than do graduates of Canadian or American schools, despite the substantial differences in their education and background.

Phase II Practice Review Results

Over 1000 Part A pharmacists have participated in Phase II of the Practice Review. To date, results have been generally encouraging, and response from the profession has been supportive. Most participants in the practice review judge the process to be fair and reasonable despite the stress and anxiety they feel. In general, they recognized the value and importance of practice review as part of the mandate of a self-regulating profession and accepted its role in establishing maintenance of competence.

The main results of the assessments are summarized in Table 1. The means and standard deviations are reported in percentages, as are the minimum and maximum performance scores on each of the components of the assessment. Together with these data, the internal consistency reliability coefficient (Cronbach’s alpha) as well as the standard error of measurement (SEM) of each assessment is reported in Table 1. The means, reported in percentages, were high for the assessments components (ranging from 64.9 to 75.1) as might be expected with candidates of this level and assessments of this type. Similarly, the mean of the written component scores (Clinical Knowledge) was in the expected range (82.3).

The highest reliability coefficients were for the written component (Clinical Knowledge) and for Information Gathering, which rated 0.82 and 0.83, respectively. The smallest errors of measurement are for these 2 components as well (5.0 and 5.7, respectively). All of the reliability coefficients are in the adequate to good range, ranging from 0.67 to a high of 0.83, with the SEMs ranging from 5.0 to 8.7 (see Table 1).
Factors Affecting Performance

Table 2 contains a summary of differences between groups based on years of practice, place of graduation, and site of practice. An inspection of these results shows that on all 8 assessments, there was a clear trend toward lower performance as the number of years in practice increased (0-5 years, 6-15 years, 16-25 years, and >25 years). Conversely, candidates who had been in practice the fewest years performed better than their more experienced colleagues on all assessments.

For place of graduation (Table 2), graduates of Northern American institutions (Ontario, other provinces and the United States) outperformed graduates from all other institutions (Europe, Asia, Africa, and elsewhere) on all assessments. There were no differences in performance on any assessment among graduates of Ontario and any other Canadian and American institutions.

For site of practice, hospital-based pharmacists performed better than both community-based pharmacists and other (e.g., Directors of hospital pharmacies), with the latter 2 groups performing about equally across all assessment tasks (Table 2). The only exception to this was in Management Strategies in which there were no differences in performance between the 3 groups.

Based on results of the assessment, approximately 86% of participants in Phase II designated themselves as being in the Self-Directed category. Some of these individuals are now involved in the development of new test items and working as assessors, as a way of renewing the entire process. They have also become major advocates for the process and are important in establishing the validity of Practice Review with their peers in the field.

Approximately 14% of participants designated themselves as being in the Peer Assisted category. For each of these individuals, learning plans were developed and reviewed, and College staff monitors the pharmacist’s progress towards achieving learning objectives. In order for pharmacists to make the transition from Peer Assisted to Self Directed professional development, individuals in this group had to successfully meet the standards of any component in which deficiencies had been identified. This required scheduling of a re-assessment of some or all of the components of the Practice Review within a reasonable period of time.

Despite initial misapprehension on the part of hospital pharmacists regarding the validity of the Practice Review for the institutional pharmacy practice setting, they have actually performed significantly better on most components of the Review than did community pharmacists. In particular, hospital pharmacists were significantly stronger in the areas of clinical knowledge, gathering information from patients, and communication. Both community and hospital pharmacists demonstrated comparable ability in the areas of patient management and education. These results supported the notion that the assessment program was based on a core set of competencies that are relevant to both community and hospital pharmacists.

Of particular interest was the performance of international pharmacy graduates (IPGs). As a group, these individuals did not perform as well as their counterparts educated in North America. As a group, IPGs had more difficulties with both the simulated patient interview component and the written test of clinical knowledge. In part, these results may reflect differences in professional training emphasis found outside North America. While North American pharmacy education and practice have emphasized communicative competencies for many years, for those educated outside North America, such competencies may have received far less emphasis.

As a group, those in practice greater than 25 years have encountered significantly greater difficulty meeting standards in all 4 components (i.e., gathering information from patients, patient management and education, communication, and clinical knowledge) of the Practice Review than those practicing less than 25 years. In part, this may be attributed to the rapid evolution of pharmacy practice since many of these individuals received their pharmacy degrees. Moreover, the results suggest that this group may require more targeted involvement with respect to their continuing professional development needs. There is a similar trend, though not statistically significant, among those in practice 15-25 years.

These findings are consistent with recent literature regarding predictors of continuing competence in pharmacy practice in British Columbia, based on their experience of competency assessment of pharmacists.11

CONCLUSIONS

The Ontario experience of professional self-regulation through quality assurance and peer review continues to evolve. Key to its success to date has been the substantial efforts made to ensure validity of all aspects of the process, under the direction of an external consultant with expertise in psychometrics and assessment. Face and content validity were established by involving practicing pharmacists, not simply academics or
### Table 1. Descriptive Statistics and Reliability of the OCP Practice Review Assessments

<table>
<thead>
<tr>
<th>Assessment Domain</th>
<th>Mean (SD)</th>
<th>Min</th>
<th>Max</th>
<th>Alpha Coefficient</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gathering information</td>
<td>75.1 (13.9)</td>
<td>20.6</td>
<td>100</td>
<td>.83</td>
<td>5.7</td>
</tr>
<tr>
<td>Management strategies</td>
<td>72.3 (15.1)</td>
<td>9.1</td>
<td>100</td>
<td>.67</td>
<td>8.7</td>
</tr>
<tr>
<td>Clinical knowledge</td>
<td>82.3 (11.8)</td>
<td>28.3</td>
<td>100</td>
<td>.82</td>
<td>5.0</td>
</tr>
<tr>
<td>Knowledge &amp; skills</td>
<td>64.9 (14.7)</td>
<td>20.0</td>
<td>100</td>
<td>.67</td>
<td>8.4</td>
</tr>
<tr>
<td>Empathy</td>
<td>69.0 (14.5)</td>
<td>23.3</td>
<td>100</td>
<td>.70</td>
<td>7.9</td>
</tr>
<tr>
<td>Coherence</td>
<td>66.1 (14.7)</td>
<td>20.0</td>
<td>100</td>
<td>.75</td>
<td>7.4</td>
</tr>
<tr>
<td>Verbal expression</td>
<td>75.5 (13.8)</td>
<td>23.3</td>
<td>100</td>
<td>.80</td>
<td>6.2</td>
</tr>
<tr>
<td>Nonverbal expression</td>
<td>73.9 (12.9)</td>
<td>33.3</td>
<td>100</td>
<td>.74</td>
<td>6.6</td>
</tr>
</tbody>
</table>

* A measure of internal consistency reliability. All coefficients reported based on final practice review in 5-year cycle.

SD is standard deviation; SE is standard error of measurement.

### Table 2. Factors Affecting Performance on the Eight Assessment Components (N = 1036)

<table>
<thead>
<tr>
<th>Assessment Domain</th>
<th>Years in Practice</th>
<th>Place of Graduation, Mean (SD)</th>
<th>Site of Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-5</td>
<td>6-15</td>
<td>16-25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ontario</td>
<td>USA/Pro</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Comm.</td>
<td>Hospital</td>
</tr>
</tbody>
</table>

| Clinical knowledge        | 136 (11)          | 132 (14)                      | 128 (15)        | 113 (20)*            |
| Gathering information     | 138 (24)          | 136 (27)                      | 134 (26)        | 135 (26)*            |
| Manage strategies         | 134 (21)          | 131 (24)                      | 128 (25)        | 114 (28)*            |
| Knowledge & skills        | 141 (22)          | 138 (27)                      | 132 (27)        | 116 (30)*            |
| Empathy                   | 150 (23)          | 145 (29)                      | 139 (27)        | 127 (29)*            |
| Coherence                 | 144 (22)          | 141 (28)                      | 134 (27)        | 118 (29)*            |
| Verbal expression         | 161 (20)          | 158 (27)                      | 151 (26)        | 140 (27)*            |
| Nonverbal expression      | 160 (22)          | 156 (24)                      | 148 (24)        | 137 (26)*            |

*P<0.01
Comm. = Community Practice
The legislation that guided development of the program also contributed substantially to its success. By positioning quality assurance as an educational and remedial activity, not a punitive one, it was possible to construct a peer review process that balanced the needs of the public with respect for professional self-regulation.

Data from 5 years of this program are being reviewed. In addition to the significant differences found between the performance of hospital and community pharmacists in some areas, other interesting findings have emerged. Those who graduated more than 25 years ago have greater difficulty in meeting all standards, compared to pharmacists in other age groups.

In addition, international pharmacy graduates (IPGs) have had more difficulty in meeting standards on all 4 assessment areas than did their peers who were educated in North America.

In the future, additional components may be added to the peer review process. There has been some discussion of including patient-satisfaction data and simulated interview scenarios involving other health care providers. An important area for further development is research to determine the impact of this program on professional practice in the field, and whether this model of competency assessment actually affects the day-to-day practice of pharmacists.

The results of the Quality Assurance process provide pharmacy educators at all levels with important information regarding the needs of practitioners with respect to continuing professional development. Further research is necessary to identify the value of specific educational interventions in addressing learning needs of particular cohorts identified in the practice review.

Overall, the process of developing this program has been helpful for the profession, the public it serves, and the College that represents both. By balancing the twin needs of professional self-regulation and public accountability, the Practice Review process provides both the profession and the public with an effective vehicle for ensuring maintenance of competency within pharmacy.

REFERENCES