

SPECIAL ARTICLES

Integrating Performance Assessment, Maintenance of Competence, and Continuing Professional Development of Community Pharmacists

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INTRODUCTION

The self-regulating health professions in Canada are mandated to ensure that licensed practitioners provide safe and effective care. To fulfill this mandate, regulatory authorities have been established within the provinces, with coordination of policies at the national level. For the profession of pharmacy, the provincial organizations are known as the Colleges of Pharmacists while the national organization is the National Association of Pharmacy Regulatory Authorities (NAPRA). This situation in Canada is similar to that in many westernized countries, including the United States, where there are State Boards of Pharmacy and the National Association of Boards of Pharmacy. Other countries have more centralized regulatory authorities such as the Royal Pharmaceutical Society of Great Britain.

Historically, health professions regulatory authorities focused on fulfilling their public protection mandate by ensuring that health care professionals were competent at the time of entry to practice. For Canadian pharmacists, the requirements for licensure include the need for candidates to have graduated from a pharmacy program accredited by the Canadian Council for Accreditation of Pharmacy Programs (CCAPP),¹ passed the Pharmacy Examining Board of Canada's (PEBC) Qualifying Examinations² and a Jurisprudence Examination, and completed a NAPRA-approved structured internship.³ Substantial effort and resources continue to be dedicated to ensuring that these requirements remain current and effective. This has resulted in modifications in the CCAPP accreditation criteria to include pharmaceutical care-based educational outcomes and teaching strategies that encourage lifelong

learning,¹ while the PEBC has expanded beyond written assessments to include competency-based objective structured clinical examinations (OSCE).²

In parallel to these enhancements in entry-to-practice requirements, regulatory authorities also developed systems to ensure the continuing provision of safe and effective care by practitioners. Initially such programs were limited to investigating and managing patient complaints against members. As the discovery of health-related information grew, however, new methods were needed to ensure that practitioners' knowledge was continuously updated and incorporated into practice. Continuing education (CE) was introduced to address this need, with a range of professions in multiple countries introducing mandatory CE as a requirement to maintain licensure or certification.⁴⁻⁶ The goal of mandatory CE was to assure the public of the continuing quality of care provided by practitioners.⁷ As experience was gained with mandatory CE, however, research evidence documented that mandatory CE was ineffective at influencing practice performance.^{8,9} This led the professions, including pharmacy, to pose questions such as: "Is a better system possible? Could a different model produce the desired, or better, outcomes? How, and by whom, can professional competence be assured?"^{10 (p6)} The purpose of this article is to present a new model for assurance of continuing competency of practicing pharmacists and to describe the research needed to validate this model.

One approach that has been suggested as a better method of ensuring maintenance of competence relative to mandatory CE is continuing professional development (CPD).^{10,11} Many international, national, and provincial pharmacy organizations, including several Canadian Colleges of Pharmacists, have supported CPD programs for this purpose.¹²⁻¹⁵ Rouse^{16(p2069)} defines CPD for pharmacists as "an ongoing, self-directed, structured, outcomes focused cycle of learning and personal improvement." The International Federation of Pharmacy (FIP)^{13(p2)}

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directly linked CPD to maintenance of competence in their 2002 statement that CPD is “the responsibility of individual pharmacists for systematic maintenance, development and broadening of knowledge, skills and attitudes, to ensure continuing competence as a professional, throughout their careers.” A fundamental aspect of CPD is that it is self-directed, with 2 steps in the traditional CPD cycle involving self-assessment and development of self-directed learning plans to redress learning needs. Many authors acknowledge the challenges practitioners face in these self-directed tasks. Rouse¹⁶ recognizes that pharmacists will require third-party assistance for both self-assessment and self-directed learning within the CPD cycle. National and provincial pharmacy organizations have responded to this need by developing self-assessment programs that pharmacists can use to identify learning needs for CPD.^{14,15} Critics of CPD, however, point to increasing evidence that practitioners continue to have limited ability to accurately identify and rectify practice deficiencies.¹⁷⁻¹⁹ Norman,¹⁸ in writing about CPD-based continuing competency programs in medicine in Canada, also emphasizes the lack of evidence that self-directed CPD is effective at ensuring maintenance of competence or improving practice performance. His conclusion is that, until such evidence exists, maintenance of competence programs must include a component of external judgmental assessment. The Citizen’s Advocacy Coalition⁴ draws similar conclusions in their report on Maintaining and Improving Health Professional Competence. They comment that, although self-assessment is likely to predominate in nascent continuing competency programs, the goal is to move to independent, third-party assessment over a period of time. The American Institute of Medicine’s report on Health Professions Education is even stronger in its recommendations, calling for legislation obliging all health professions boards to require their members to periodically demonstrate continued competency, and recommending that the boards move towards requiring rigorous tests for this purpose.²⁰

In Canada such legislative changes began as early as 1991, when new health professions legislation in the province of Ontario required the regulatory authorities for all health professions to develop programs to assure the quality of practice of its members and to promote continuing competence.²¹ The Ontario College of Pharmacists¹⁴ responded by developing a peer review-based continuing professional development program that includes a mandatory third-party assessment of both knowledge and practice competence. As early as 1977, the College of Pharmacists of British Columbia also contained a third-party assessment in its original competency assessment program.⁵ The current program at the College of Pharma-

cists of British Columbia¹⁵ and the program for pharmacists in the province of Alberta²² continue to include third-party assessments ranging from written examinations to on-site assessments. In 1999, NAPRA’s Model Continuing Competence Program Framework for Canadian Pharmacists incorporated the need for third-party assessments.²³ Two of the principles of this national program were that, in order to fulfill the public protection mandate of the provincial Colleges of Pharmacists, a continuing competency program must:

- (1) include an assessment component that judges whether individual pharmacists have maintained their competence to practice, and;
- (2) assess all practicing pharmacists on a regular, cyclical basis.

The NAPRA model also identified a number of assessment formats that could be used within a continuing competency assessment program, but acknowledged that research was needed to determine the most appropriate structure and assessment formats.

NAPRA’s recommendations recognized that in pharmacy, as well as other health professions, the design of third-party assessments of practicing professionals has been challenging and implementation attempts have been met with substantial resistance by practitioners.²⁴⁻²⁷ Part of this resistance is because the external assessments used for practicing professionals often focus on practitioner’s competence rather than their performance.^{27,28} There is a critical difference between these 2 concepts: competence is defined as what health professionals are able to do in artificial, testing situations; performance is defined as what health professionals do during daily practice.²⁹⁻³² These differences are important for development of assessment programs for practicing professionals for 2 reasons. First, the primary purpose of assessment of practicing professionals is to ensure the continuing quality of their practice. Therefore, these assessments should focus on practitioners’ daily performance, rather than their underlying competence.^{32,33} This differs from the situation at entry-to-practice, where it is not possible to assess candidate’s daily performance. This is because, prior to licensure, candidates can not perform their responsibilities independently on a day-to-day basis. Only after they receive initial licensure can they begin independent practice and perform their daily activities. Entry-to-practice assessments, therefore, require the use of competency-assessment methods in testing environments that function as surrogate measures and predictors of performance in “real life” practice. These surrogate measures include written assessments of candidates’ knowledge or ability to apply their knowledge, their ability to demonstrate skills in simulated environments, and their competency

at providing integrated care to standardized patients (such as via OSCEs).³⁴⁻⁴¹ This situation differs from that which has been traditionally termed continuing competency assessment in which the focus is on assessing *practicing* health care professionals. Despite the term, the focus of continuing competency assessment is not competence but performance. In this situation, assessment of daily performance is possible and does not require the reliance on surrogate, competency-based assessments. These performance-based assessments have traditionally included practice audits, on-site assessments, evaluation of videotaped patient encounters, and the introduction of simulated patients into practice settings. If practitioners are to be assessed on a periodic basis, then such performance-based assessment formats allow them to be evaluated on their ability to put knowledge into practice, and are perceived as inherently more acceptable to practitioners.⁴²

Balanced with this preference toward performance assessment rather than competence assessment is a second issue that differentiates these concepts: the recognition that practice performance is influenced by more than simply the competence of health professionals. Although it is readily acknowledged that competence is a prerequisite to good performance, recent literature has documented additional determinants of the performance of health professionals.²⁹⁻⁴⁴ Issues such as facilities and access to equipment, practice organization, government programs and initiatives, patient expectations, and policies developed by the practice facility have all been identified as determinants of the quality of performance of family physicians.^{30,45-47} Therefore, although the goal of third-party assessments of practicing health care professionals should be to evaluate the daily performance of practitioners, these assessment programs must also differentiate among the determinants of practice performance. Farmer⁴⁴ applies these principles in his theoretical model of performance assessment for practicing doctors, recognizing that poor performance may arise from 3 areas: the health care professional; the team/practice in which the health care professional works; or the overall health care system in which the health care professional practices. Farmer⁴⁴ provides only general statements about the types of performance-based assessments that could be used to differentiate these determinants of practice. Therefore, the initial challenge is to identify performance-based assessments that are feasible for assessment of practicing health care professionals on a regular basis and that can be structured into an assessment program that identifies external influences on pharmacists' performance that are important determinants of practice quality.

The second challenge is to incorporate these performance-based assessments into a CPD framework, a task

not undertaken in the programs described by NAPRA,²³ Rethans,³⁰ or Farmer.⁴⁴ Within a CDP framework, results of performance-based, third-party assessments could serve as a valid starting point for individual reflection-on-practice, followed by identification of specific learning needs. The following model addresses these 2 challenges by integrating 21st century performance assessment techniques with continuing professional development for community pharmacists.

FRAMEWORK FOR PROFESSIONAL PRACTICE ASSESSMENT

Figure 1 incorporates the principles of performance-based assessment, application to all practicing community pharmacists on a regular basis, differentiation of competence and performance, and acknowledgement of the team-based nature of care, all integrated into a CPD-based framework. The model assessment program begins with a third-party auditing and assessment of care and services provided in community pharmacies. Data obtained from this audit would identify pharmacies with high, acceptable, and below standard levels of performance (Figure 1, A). Staff at high and acceptable performing pharmacies would require no further mandatory third-party performance-based assessment until the subsequent assessment cycle was initiated. Pharmacists employed at these pharmacies would enter a CPD cycle (Figure 1, B and C). Performance-based feedback would be provided to these pharmacists to support further enhancement of their performance or to re-align areas of below-average performance. Staff at higher performing pharmacies would also be requested to undergo on-site assessments to establish determinants of quality performance and benchmarks for these determinants. These benchmarks would inform the diagnostic assessments required at pharmacies with lower than acceptable performance (Figure 1, D). This diagnostic assessment would determine if the measured performance level was related to the pharmacists' competence and/or to external determinants. This in turn would allow the development of specific strategies to resolve the performance problems. These include strategies aimed at remediation for target pharmacists (Figure 1, E), those addressing pharmacy-specific factors such as management systems or inappropriate resource allocation (Figure 1, F), and those focusing on global barriers such as limitations in scope of practice, reimbursement procedures, or patient resistance to pharmacists' provision of specific services (Figure 1, G).⁴⁸⁻⁵⁰ The cycle would be complete when the outcome of these strategies is evaluated as pharmacists re-enter the screening phase of the assessment program.

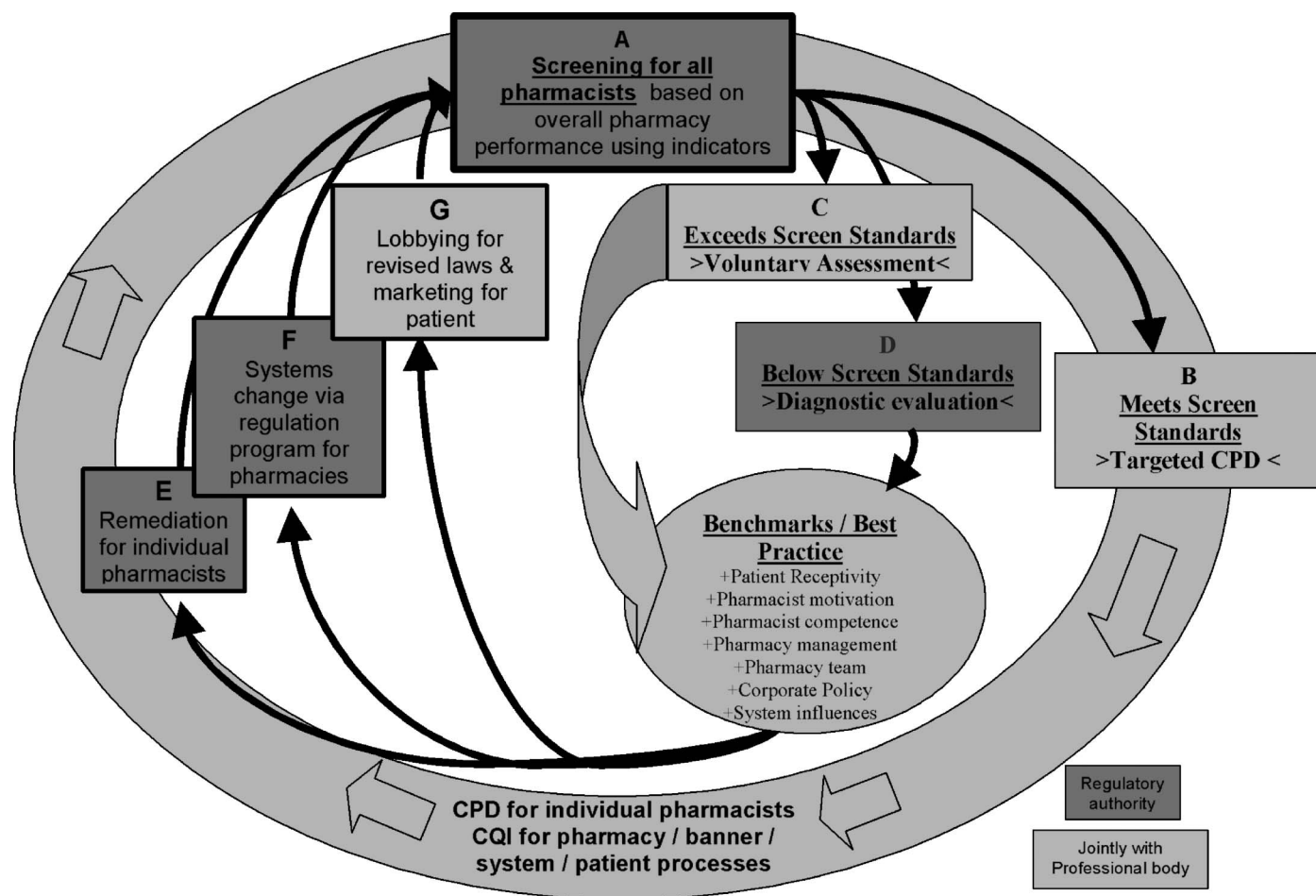


Figure 1. Framework for professional practice assessment.

Performance Based Screening: All Practicing Community-based Pharmacists

A third-party, performance-based assessment of the care and services provided by all pharmacists and support staff practicing in community pharmacies begins the assessment process (Figure 1, A). Traditional performance assessments such as on-site assessments are not recommended at this screening point as they are too resource intensive to be used for regular review of large numbers of practitioners. Instead, the screening assessment uses performance-based information contained in a range of administrative databases currently available within many provinces, states and/or countries.⁵¹ These databases are often generated as a by-product of reimbursement for health and pharmacy services. For example, in the province of Quebec in Canada, the government's health insurance plan maintains a database recording payment for all physician and emergency room visits, including unique patient and physician identifiers and the reason for the visit. A second database is maintained with all prescription medications dispensed at community pharmacies to government-covered patients. Again this

database contains unique patient, pharmacy, and pharmacist identifiers and the date and quantity of each medication dispensed. In the Canadian province of British Columbia, the Pharmanet database also contains information on all prescription medications received by patients via both community pharmacies and emergency rooms. In the United States, private databases such as RxHub and public databases such as Medicare contain similar records. Each of the separate databases contains substantial information related to services and patient care. However, for the purposes of assessing quality of care the greater value is created when these databases are merged. Tamblyn et al^{52,53} evaluated the usefulness of integrated databases as a source of information for measurement of the quality of care provided by community-based physicians. Within Tamblyn's research environment, information related to diagnoses, medical procedures, medical and emergency room visits, and prescription medications allowed for measurement of indicators of physician's performance such as mammography screening rates, continuity of care, disease-specific prescribing rates, and contraindicated prescribing rates.

For pharmacy, indicators have been developed to identify patients at risk for drug-related morbidity or mortality.⁵⁴⁻⁵⁷ The Quebec Order of Pharmacists⁵⁸ also uses performance indicators during their on-site inspections of the quality of care provided by community pharmacies. However, the use of databases to access and measure indicators of pharmacist's quality of care has not been reported. Current work with the databases used by Tamblyn et al is evaluating the feasibility and validity of measuring indicators of pharmacist's quality of practice.^{52,53} Indicators being considered for measurement on a pharmacy basis include, for example:

- (1) the proportion of patients on HMG-Co reductase inhibitors who appear to be noncompliant with their therapy,
- (2) the proportion of patients on antibiotics that were dispensed with an inappropriate label instruction regarding the frequency of doses,
- (3) the proportion of patients whose medication history indicates overuse of $\beta 2$ agonists.

Once measured, performance on these indicators could be compared among pharmacies with similar characteristics. Although no conclusions about pharmacist's performance should be drawn based only on these indicators, consistent underperformance could be used to identify pharmacies requiring further evaluation. Since the data required to measure these performance-based indicators are routinely collected, these data could be used to routinely screen the quality of performance of all community pharmacists without mandated participation in structured assessment programs.⁵⁹ However, the validity of using such indicators as measures of quality of pharmacy practice remains to be evaluated, as does the validity of using pharmacy-based measures to reflect the performance of individual pharmacists employed at these pharmacies. Although the principle that high-quality individual pharmacist's performance is a prerequisite for the provision of quality care at community pharmacies is sound, this principle must be validated through further empirical research.

Practice Performance Meets Required Standards: Targeted CPD

The premise of using a performance-based screening assessment is that the majority of pharmacists would be employed at pharmacies where the quality of performance meets standards established by provincial or national organizations.²³ Based on evidence from the third-party performance-based screen these pharmacists could be "revalidated."²⁹ From a regulatory perspective, these pharmacists would require no further assessment for the duration of the cycle, but would be re-screened on a reg-

ular basis. From a professional perspective, however, it is at this point that CPD programs could offer invaluable opportunities for pharmacists to continue to improve their practice performance beyond the minimum standard required to provide safe and effective care (Figure 1, B). Performance-based feedback would provide an opportunity for individual pharmacists to develop targeted CPD. This would be particularly useful for those pharmacists' whose performance was identified as satisfactory overall, but with deficiencies on individual indicators. For example, using the example database indicators described earlier, overall performance could be judged adequate, with above-standard performance on the indicators related to antibiotic frequencies and compliance with statin therapies while performance on the indicator related to overuse of $\beta 2$ agonists might be borderline. If this feedback were provided to pharmacists, it could serve as stimulus for reflection within the CPD cycle, resulting in learning directed towards asthma management or reengineering of systems that support pharmacists' provision of care to asthma patients.

Practice Performance Meets Required Standards: Setting of Benchmarks

Before the root causes of performance problems at underperforming pharmacies could be identified, the determinants of quality practice would have to be identified and benchmarks for these determinants established.^{43,47} To accomplish this, pharmacists at higher performing pharmacies would be requested to undergo detailed, diagnostic assessments (Figure 1, C). This step in the framework recognizes the differences between competence and performance, and measures the influence on pharmacist's performance of determinants beyond competence.

Although a number of studies have investigated determinants of pharmacists' performance, none has estimated the contribution of these determinants according to their source and nature.⁶⁰⁻⁶³ Factors influencing pharmacists' performance can readily be grouped into categories such as those defined by Van de Hombergh,^{45,46} Ram,⁴⁷ and Rethans,³⁰ or those used to characterize barriers and facilitators to knowledge translation.^{48-50,64} Grimshaw and Eccles⁴⁹ define 4 levels of interventions related to the quality of health care.⁴⁷ These are the level of the individual health professional; the healthcare group or team; the organization providing health care; and the larger healthcare system or environment in which individual organizations are embedded. Using these basic levels, along with Green's⁶⁵ predisposing, enabling, or reinforcing categories, qualitative interviews with pharmacy stakeholders identified

theoretical determinants of the quality of pharmacists' practice (Figure 2). According to the principles of Green's PRECEDE model,⁶⁵ determinants classified as motivating often relate to perceptions such as a pharmacist's perception of patient receptivity to expanded services or perceptions of the ease of reimbursement for these services.⁶³ Enabling or reinforcing determinants relate to, for example, the patient's true receptivity for these services and the actual ease of reimbursement. Each of these determinants could support or undermine whether a pharmacist provides a service and the quality of the service provided, both of which contribute to the quality of care provided by the pharmacist. For example, a patient nonreceptive to a pharmacist providing warfarin dosage adjustment could both discourage the pharmacist from offering this service to the patient and influence the quality of

service by providing incomplete information to the pharmacist.

Ongoing elucidation of the determinants of quality pharmacy practice would be followed by development of assessment tools to measure the degree of impact of these factors on pharmacists' performance. Tools could range from patient surveys to pharmacy practice management assessment.^{33,45,66} Based on current literature primarily from the profession of medicine, Figure 2 also provides broad suggestions for primary assessment tools that could be used for each of the factors.^{67,68} Although a number of these tools have been developed for use in pharmacy^{69,70} or other professions, substantial research is necessary to modify and validate these tools for use in a performance practice assessment program for community pharmacists.

Factors Influencing Pharmacists' Practice Performance*			
	Motivating Factors	Enabling Factors	Reinforcing Factors
Patient	Perception of patients' receptivity to pharmacists' services.	Patient willingness to provide time and information.	Patient feedback or willingness to pay.
Individual Pharmacist	Pharmacist motivation to provide services.	Pharmacist competence	Pharmacist reward for services (eg, pay / support for education).
Team / Pharmacy <ul style="list-style-type: none"> • Pharmacy technicians • Pharmacy owners 	Perception of team / owner support of pharmacist provision of services.	Team / management systems support of pharmacist provision of services (eg, # of support staff, job descriptions, work flow, physical layout, training)	Pharmacy / pharmacy staff reward for pharmacist provision of services.
Organization <ul style="list-style-type: none"> • Chain (corporate policies) 	Perception of corporate management support of pharmacist provision of services.	Corporate management support of pharmacists providing the services (eg, vision, mission, advertising, recruiting)	Chain reward for pharmacist provision of services (eg, increased clientele / profit).
Health Care System <ul style="list-style-type: none"> • Profession of pharmacy • Other health care providers • Regulators • Policy makers 	Perception of profession and health care system support of pharmacist provision of services.	Health care system support of pharmacists (eg, laws, regulations, reimbursement, access to information such as therapeutic indication for prescribed medications)	Health care system reward (eg, lower costs, improved patient outcomes, increased physician time for care provision).

*Shading represents different assessment tools that could be used to evaluate each of these factors as follows:





-  Questionnaires^{69,70}
-  Assessments of knowledge, clinical reasoning & skill
-  Time & motion analysis (on-site assessment)
-  Practice management assessment⁴⁵

Figure 2. Model for analyzing and assessing factors influencing pharmacists' practice performance.

Once these assessment tools have been validated, they may be used to develop benchmarks of quality practice and standards for minimum practice for each of the specific determinants of pharmacists' performance. The benchmarks would be used for CPD, while the standards for minimum practice would be used in the diagnostic assessment of pharmacists employed at community pharmacies with measurable performance problems.

Practice Performance Does Not Meet Required Standards: Diagnostic Assessment

Point D in Figure 1 indicates the point at which pharmacists employed at community pharmacies with measurable performance problems would be required to undergo diagnostic assessment.³⁰ The goal of this assessment would be to determine the root cause(s) of performance problems and would use the minimum standards and tools from the benchmarking process.³² Recognition of the influence of external determinants avoids presuming that performance problems are caused solely by pharmacist incompetence. Efficient use of remedial resources also requires that the nature of the performance problem be identified, followed by determination of the most effective strategies to overcome the specific problems.

Remediation and Pharmacy Systems Change

The APhA recognizes the importance of differentiating the contributions of pharmacists' competence and external factors on overall performance, arguing that they are not convinced that errors are necessarily due to incompetent practitioners. Maine suggests that "in addition to continuing a dialogue about practitioner competence assessment, we need to think seriously about the adequacy of site practice inspection and regulation."⁷¹ This identifies a key opportunity within the profession of pharmacy in that it is one of the few, if not only, professions that regulates both practitioners and practice sites. Points E and F in Figure 1 emphasize this critical opportunity. At present, pharmacy inspectors are an accepted part of community pharmacy practice. If critical practice or management-based determinants of performance could be identified, then the role of these existing pharmacy inspectors could be expanded to assess overall performance and the relative influences of these determinants. Regulatory authorities could effect change in pharmacists' performance through both remediation of individual pharmacists, and creation and enforcement of expanded regulations for pharmacies.

External Systems Change

In addition to the pharmacist and pharmacy specific determinants, Figures 1 and 2 also identify influences related to patients and the health care system. Solutions to

overcome barriers from these sources would involve actions and organizations beyond the regulatory authorities (Figure 1, G). Marketing by pharmacy chains or professional organizations could help improve receptivity of patients towards pharmacists' provision of services such as disease state monitoring or primary care. In a similar manner, receptivity of physicians, scope of practice regulations, and reimbursement policies could be modified by joint efforts of regulatory authorities and professional organizations. The assessment cycle would be complete when the impact of the strategies selected could be evaluated, and the outcomes of the assessment program documented, as pharmacists reenter the performance-based screening phase of their performance-based assessment program.

SUMMARY

Although a number of regulatory authorities are developing programs intended to ensure that health professionals continue to practice in a safe and effective manner, the design and implementation of these programs has been challenging. For the pharmacy profession, a novel framework is proposed that is performance based, applies to all community pharmacists, recognizes the powerful influence of external factors on an individual pharmacist's ability to perform to his/her highest level of capability, and can be effectively integrated with CPD. The framework expands upon current best practices in health professions assessment, and in doing so identifies a number of research questions. First, the use of databases as a source of performance data is central to the proposed framework and the validity of using such indicators as measures of quality of pharmacy practice remains to be evaluated, as does the validity of using pharmacy-based measures to reflect the performance of individual pharmacists employed at these pharmacies. Second, further research is needed to gain a better understanding of the varied source and nature of determinants of quality community pharmacy practice. Third, the tools and formats to assess the impact of these determinants on the daily practice of community pharmacists must be developed or modified from those used by other health professions. Fourth, the most effective strategies to overcome specific barriers documented to impact quality community pharmacy practice require evaluation. Finally, as with any assessment program, the efficiency and outcomes of the program must be evaluated to determine the impact on the quality and safety of community pharmacists' practice.

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