



AUGUST 31 2015

PROFESSIONAL QUALITY ASSURANCE AND COMPETENCY ASSESSMENT

A SCOPING REVIEW (VERSION 1)

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INTRODUCTION

Regulated Professionals across the globe are entrusted with the responsibility of providing their specialized services with high quality to members of the public, throughout careers that may last for decades. Requirement of successful completion of formal training and compliance with professional licensure requirements is intended to ensure these professionals are competent at entry-to-practice. However in the context of today’s landscape of rapidly evolving knowledge and advancing technology, the emphasis on this start-up competence assessment at entry-to-practice is increasingly being called into question [1]. This may be particularly important in the health professions; it has been stated that medical knowledge has a half-life as short as 5 years [2]. This suggests that not only is continuing education/continuing professional development a necessity to ensure ongoing competency of professional practice, but that it is actually the longest and most important component of the educational process. Moreover, there is a need for some standardized mechanism of measurement and reporting to provide the public with reassurance that professionals are adequately partaking in this process of maintaining competence over the decades in which they will be practicing.

In an effort to ensure ongoing competency of professionals, regulatory bodies across the globe often mandate continuing education or continuing professional development and implement various methods of assessing competency of professionals engaged in practice [3-7]. Regardless of the highly variable scopes of practice of professions, the goal of these mandates are quite aligned – to ensure professionals are engaged in a process of continuous development so that at all stages of their careers they continue to possess the knowledge, skills and judgement necessary to competently practice, thus ultimately ensuring protection of the public [8, 9].

Despite the common objective behind professional quality assurance, great variation exists in the systems in place across professions globally [3-7]. This may be attributed to a complex interplay of many factors, including differences in professional regulatory legislation, interpretation of emerging evidence, regulatory body resources and capacity, professional culture and values, and inconsistent interpretation of what actually constitutes “professional competence”.

Among this complex network, are we confident the systems in place are achieving their goals [10]? Do some methods appear to be superior to others, and if so, what are examples of these best practices? Can a system meet the needs of the public while fostering genuine engagement and endorsement among the professionals being monitored and assessed? These fundamental questions are only a few that regulatory bodies are continually asking of their quality assurance programs [11].

REVIEW OBJECTIVES

The objectives of this scoping review were threefold:

1. To conduct a global scan of quality assurance systems in place across an indicative sample of both health and non-health professions.
2. To evaluate competency assessment components of these systems with respect to:
 - Evidence to support efficacy
 - Perceived and proven benefits
 - Perceived and proven limitations
 - Practical implementation considerations (including cost-effectiveness and logistics)

3. To outline qualities of competency assessment methods that represent best or promising practices.

REVIEW SCOPE

As a means of generating a broad picture of the types of professional quality assurance systems implemented on a global scale, this review included both health and non-health professions in a number of uniquely regulated geographic regions. The scope of professions and geographic regions included in the review is as follows:

- Twenty-six regulated health professions in Ontario, Canada
- Sixteen non-health regulated professions in Ontario, Canada
- Select global scan of regulated professions
 - Professions: Medicine, Nursing, Pharmacy, Dentistry, and Law, Teaching, and Engineering
 - Regions: British Columbia, Massachusetts USA , California USA, the United Kingdom, Qatar, Australia, and New Zealand

The professions included in the select global scan were chosen for review as they are long established professions, each with a large member base. Law, Teaching, and Engineering were selected to add perspective from non-health professions. These geographic areas of practice were selected primarily for ease of information gathering as all are English-speaking regions. As professions are provincially regulated in Canada, British Columbia was included to provide an alternative Canadian perspective to Ontario's systems. Similarly, professional regulation is largely a federal responsibility in the United States, therefore Massachusetts and California were selected as a case study for the United States.

REVIEW METHODOLOGY

The grey literature, which includes websites of professional regulatory bodies and associations, was considered a rich and highly valued source of information for this review given its nature. These websites were combed for information regarding quality assurance program structure, position statements, program reports, presentations, and other pertinent documents. Hand searching of reference lists of documents identified in the grey literature was conducted. To supplement these resources, multiple focused MEDLINE and Scopus database searches were also conducted. All publication types, including review articles and commentaries, were deemed relevant for inclusion in this review. The only exclusion criterion for this review was foreign language material.

REVIEW FINDINGS

GLOBAL SCAN OF PROFESSIONAL QUALITY ASSURANCE SYSTEMS

This section of the review summarizes the professional quality assurance systems in place identified in the global scan of professions. Ontario’s health professions are reviewed together, followed by Ontario’s non-health professions, and lastly the professions and regions chosen for the select global scan. More complete program information may be found in the Appendices.

HEALTH PROFESSIONS – ONTARIO, CANADA

There are twenty-six self-regulated health professions in Ontario listed in Schedule 1 of the Regulated Health Professions Act, 1991 [12]. These professions are:

- Audiology and Speech-Language Pathology
- Chiropractic
- Chiropractic
- Dental Hygiene
- Dental Technology
- Dentistry
- Denturism
- Dietetics
- Homeopathy
- Kinesiology
- Massage Therapy
- Medical Laboratory Technology
- Medical Radiation Technology
- Medicine
- Midwifery
- Naturopathy
- Nursing
- Occupational Therapy
- Opticianry
- Optometry
- Pharmacy
- Physiotherapy
- Psychology
- Psychotherapy
- Respiratory Therapy
- Traditional Chinese Medicine

The Regulated Health Professions Act stipulates the requirement of a quality assurance program for each profession, defined as “a program to assure the quality of the practice of the profession and to promote continuing evaluation, competence and improvement among the members” [12]. The minimum requirements for this program are laid out in the Act, and “shall include:

- (a) Continuing education or professional development designed to,
 - (i) Promote continuing competence and continuing quality improvement among the members,
 Note: On a day to be named by proclamation of the Lieutenant Governor, clause (a) is amended by adding the following subclause:
 - (i.1) Promote interprofessional collaboration,
 - (ii) Address changes in practice environments, and
 - (iii) Incorporate standards of practice, advances in technology, changes made to entry to practice competencies and other relevant issues in the discretion of the Council;
- (b) Self, peer and practice assessments; and
- (c) A mechanism for the College to monitor members’ participation in, and compliance with, the quality assurance program.” [12]

This legislation lays out an explicit framework of expectations for these self-regulating health professions with respect to quality assurance. Despite this, execution of these minimal requirements across the province exhibits some variation in both continuing education/continuing professional

development requirements and assessment mechanisms. Each profession has its own Act and Regulations that further define the components of their quality assurance programs.

A complete report of the systems in place across Ontario’s self-regulated health professions may be found in table form in [Appendix A](#). Aggregate findings and trends are summarized below. Please note percentages reported are for twenty-four of the twenty-six Ontario self-regulated health professions, as two professions, Homeopathy and Psychotherapy, are still undergoing program development by their respective transitional councils.

Continuing Education or Professional Development Requirement

Each profession is mandated by legislation to include a continuing education or professional development component in their quality assurance programs. This component is fulfilled partially by requiring members to partake in activities intended to maintain competency of practice and promote professional improvement.

A great variety of appropriate activities are defined by regulatory bodies. This is to allow members to choose to participate in activities they identify with, they are interested in, that are relevant to their unique needs and practice environment as well as to allow for credit for activities they are already participating in during day-to-day practice. Different activity categories are defined by regulatory bodies. Some of these categories and representative examples of activities for each are listed below:

CATEGORY	REPRESENTATIVE EXAMPLES
SELF-DIRECTED ACTIVITIES	Journal reading, podcasts, courses, practice guideline development, manuscript writing, internet searching
GROUP ACTIVITIES	Conferences, rounds, journal clubs, small group learning, study groups, peer case review, root cause analyses, workshops
DIDACTIC ACTIVITIES	Presentations, podcasts, journal reading, in-service education
INTERACTIVE ACTIVITIES	Hands-on workshops, teaching, mentoring, preceptorship, simulation based programs
ASSESSMENT ACTIVITIES	Chart audit and feedback, simulation based programs, 360 degree review/multisource feedback, examinations
ACCREDITED/CERTIFIED/ ACTIVITIES	Structured programs and courses offered by approved organizations
UNACCREDITED/UNCERTIFIED ACTIVITIES	Unstructured programs, self-learning, study groups

Twenty-six percent of programs require that a portion of the activities be accredited/certified/verifiable with the intention of ensuring quality of the activity experience. Thirty-five percent of programs stipulate some type of minimum category involvement to ensure variety.

Continuing education activity involvement is quantified in a variety of ways by health professional regulatory bodies, with quantification defined either by number of activities completed, number of hours dedicated to activity involvement, or number of activity credits or units accrued. Seventy-five percent of professions mandate a minimum amount of activity participation, whereas the remaining 25% do not have this requirement.

Programs that utilize a credit or unit system employ two unique methods for credit/unit weighting. The first and most commonly used in 89% of programs is weighted by time spent on activity only, such as 1 hour = 1 credit. The second, used in the remaining 11% of programs is a more detailed system that takes into account multiple factors in addition to time commitment, such as activity type (interactive versus didactic), degree of activity difficulty, degree of assessment or outcome measurement inherent in activity, and activity accreditation status. Medicine and Dental Technology systems reward participation in more robust activities anticipated to have a greater impact on professional development by assigning greater weight to these activities, with the goal of stimulating uptake among members.

Of the professions with a defined minimum activity involvement, there is also variation in the extent of activity participation required per unit of time. On the basis of mean annual activity involvement measured in each program's own unit of measure (ie. number of activities, hours, units, credits), 15% of programs mandate an average between 1 and 10 measured units per annum, 30% mandate between 11 and 20, 40% mandate between 21 and 30, 10% mandate between 41 and 50, and 5% mandate greater than 60. An average of 25 measured units per annum is most frequently used. The greatest mandated involvement is in the Maintenance of Competency program created by the Royal College of Physicians and Surgeons of Canada, which requires an average of 80 credits per annum, for a total of 400 credits per 5 year cycle.

In addition to requiring some form of continuing education activity involvement, all of Ontario's health professions have adopted the 'continuing professional development' approach. Often continuing education and continuing professional development are inappropriately used as interchangeable terms, however they should be viewed as unique entities. Continuing education, as described above, is engagement in educational activities after completion of formal education with the goal of improving knowledge and skills [3]. Definitions of continuing professional development vary, however it may be considered "a self-directed, ongoing, systematic and outcomes-focused approach to learning and professional development" [3]. To elaborate, continuous professional development is an individualized and cyclical process whereby professionals self-identify their learning needs, take action to attempt to meet these needs, and evaluate their success in achieving these needs. Based on this definition, it may be seen that participation in continuing education is in fact one component in the cycle of continuing professional development. The process of continuing professional development acts to contextualize continuing education by relating activity participation to one's individual practice and needs.

The method of documenting and tracking continuous professional development employed by Ontario's health profession is via the use of a portfolio, referred to as a Professional Portfolio, Learning Portfolio, Professional Development Plan, or proprietary names. The nature of the portfolio varies, with some professions using an online portal, others using paper-based forms, and some having no formal structure, leaving the portfolio format up to the individual professional. Regardless of the platform, portfolios generally are structured based on a cycle, beginning with self-assessment, followed by development of a personal learning plan to address deficiencies or goals identified via self-assessment, implementation of the plan, and reflection to evaluate the outcomes of plan implementation. Continuing professional development cycle lengths vary with profession, with 1 year being the most common at 54%, and 3 year (25%), 2 year (12.5%), and 5 year (8%) cycles also used.

General observations regarding Ontario's health professions continuing education and continuing professional development programs demonstrate that some programs are highly structured whereas others take more of a free-form approach. Many hold on to input measurements (i.e. mandated number of hours of continuing education) as a perceived assurance of adequacy of participation. Despite this, there is evidence of attempts to move in the direction of output-based measurement via the reflective process inherent in continuing professional development. Interestingly, despite the subclause of the Regulated Health Professions Act regarding the requirement of programs to promote interprofessional collaboration [12], there is no clear or consistent evidence of specific program features designed to capture this element.

Self-Assessment Component

Self-assessment is a requirement of Ontario's self-regulated health profession's quality assurance programs. Self-assessment is usually one of the first required components of a continuing professional development portfolio. Findings of the self-assessment are used to guide development of a plan to facilitate correction of deficits and/or achievement of professional goals that are brought to light through the reflective process.

The depth of involvement varies considerably among the self-assessment methods in place across the professions. The majority of professional regulatory bodies use a basic questionnaire, tool or checklist that outlines a list of competencies or scope or practice items specific to the profession. Professionals are then required to self-identify if their current level meets or does not meet expectations for each item.

More involved self-assessment methods are used in Pharmacy, Physiotherapy, Chiropractic, Medicine and Dentistry. Pharmacy structures their self-assessment tool to address maintenance of competency and well as to stimulate reflection regarding areas for professional advancement. Physiotherapy, Chiropractic and Medicine encourage use of guided reflection as part of the self-assessment process. This constitutes collecting data or information from alternate sources to inform decisions regarding where improvement may be needed. Recommended alternate sources include peer or patient feedback, objective practice outcome measures, and review of current and relevant literature. Medicine has developed accredited self-audit programs that utilize critical inquiry and practice reflection exercises to facilitate the assessment process. Dentistry utilizes an online 200-question multiple choice and case study examination based on peer derived standards.

Peer and Practice Assessment Component

Peer and Practice assessment methods are arguably the most diverse component of quality assurance programs across Ontario's health professions.

With respect to selection criteria to participate in an assessment, 50% of professions select participants based on random selection of a proportion of members, 8% select members to participate if there is evidence of non-compliance with the quality assurance program or other practice related concerns, and 42% select participants using a mixed approach of these strategies. Medicine includes an additional unique age-related criterion, whereby practicing physicians must undergo assessment at the age of 70 and every 5 years thereafter. Kinesiology also is unique in mandating assessment for members who practice less than 1500 hours in the preceding 3 years.

Professions tend to use one of two general assessment frameworks – either a single level framework or a tiered or laddered framework. A single level assessment framework is used by 71% of professions. This framework stipulates that all members selected for an assessment undergo the same process. Tiered or laddered systems, used in the remaining 29% of professions, include an initial assessment that all selected members must undergo, followed by further assessment steps required by a subset of participants. The requirement to participate in further assessment steps is usually determined by findings from the initial assessment, such that individuals who show preliminary signs of failure to meet competency standards are subject to a more in-depth assessment process.

With respect to actual methods used, a great breadth of assessment methods are implemented across the professions. All professions use more than one method in their evaluation of a professional’s competency. The assessment methods, reported in descending frequency of use, are shown below:

ASSESSMENT METHOD	FREQUENCY OF USE (%)
CONTINUING PROFESSIONAL DEVELOPMENT PORTFOLIO REVIEW/AUDIT	100
PRACTICE SITE VISIT AND/OR INSPECTION	67
PATIENT CHART AUDIT AND/OR CHART-STIMULATED RECALL EXAMINATION	42
MULTISOURCE FEEDBACK/360 DEGREE REVIEW	35
OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) OR SIMULATION	23
DIRECT OBSERVATION IN PRACTICE	15
PRACTICE COLLEAGUE GROUP ASSESSMENT	8
	4

In all professions assessors are deemed ‘peers’ based on the criteria that they are also members of the profession. They are trained and appointed by the Quality Assurance Committee to complete the assessment. In the majority of cases steps are taken to ensure the assessor has a similar practice background to the member undergoing the assessment. Members are usually informed of who will be conducting the assessment, and in many cases have the opportunity to request an alternate assessor if a conflict of interest exists. There are, however, some distinct exceptions to this assessor model. The first being the Midwifery Practice Assessment, which is unique in that members selected to participate are required to complete the assessment as a group exercise with their immediate practice colleagues with no external assessor appointed. The second exception is in the Multisource Feedback assessment process, where alternatively to an appointed external assessor, practice colleagues, co-workers and patients who have a working relationship with the individual act as assessors. The last exception is present in Pharmacy and Nursing. These programs employ multiple case scenario stations as part of their objective structure clinical examinations, thus necessitating contribution from multiple assessors.

Conducting the assessment at the professional’s primary practice setting is common, and evident in 67% of quality assurance programs (note that Pharmacy and Dentistry also include premises inspections, however these are separate entities from their defined professional quality assurance programs and thus are not included in this percentage). Practice site-based assessment usually consists of a visit from a single peer assessor for approximately half a day. Practice-site based assessment is commonly employed as it allows for inspection of the premises and any equipment or instrumentation, and facilitates access to records for evaluation of recording keeping practices and chart audits.

As part of the peer and practice assessment all professions review portfolios of continuing professional development to some extent. In some cases this constitutes primarily of an audit of

continuing education credits, however a more in-depth review of goals, plans, and outcomes is more common. Pharmacy conducts a portfolio sharing session with a small group of peers as part of their Peer Review process.

Patient chart audit and/or chart-stimulated recall are implemented by 42% of professions. Between 8 and 10 charts are selected for a chart audit, and between 1 and 6 charts for chart-stimulated recall. These assessment methods involve assessment of a professional's provision of care to real patients under his or her care. Chart audits sometimes are conducted independently by an assessor, whereas in other instances the assessor asks questions to gain context and rationale behind decisions made. Chart-stimulated recall is described as a more formal, structured, and in-depth interview process between the professional and assessor, with the intention of stimulating deeper reflection and discussion regarding patients' care plans.

Written or oral examinations are implemented by 35% of professions. Written forms are almost exclusively computer-based, open book, case-based, multiple choice examinations. Less structured oral examinations are sometimes a component of peer and practice assessments. Examination content is often based on knowledge and application of jurisprudence, specifically professional regulations, standards of practice, policies, guidelines, and other practice documents. Pharmacy's written examination covers more broad content in order to assess clinical knowledge, and the content of Medical Laboratory Technology's examination includes standards of practice and application of professional knowledge, skill and judgement.

Multisource feedback, sometimes referred to as a 360 degree review, is implemented by 23% of Ontario's health professional regulatory bodies. This assessment method constitutes collecting feedback from practice colleagues, co-workers practicing in other professions, clients, and a professional's own self-evaluation. Dietetics requires feedback from 6 colleagues and 9 clients, Medical Radiation Technology requires feedback from 6 colleague or coworkers and 15 clients, and Occupational Therapy requires feedback from 10 colleagues or coworkers and 12 clients. The number of participants required by Medicine is not evident on the publically accessible webpage. This feedback is collected using a unique questionnaire for each specific audience. Questionnaires from all sources are anonymously reported to regulatory bodies, and a summary report is supplied to the professional undergoing assessment. The report allows for comparison of feedback from all sources, and often is norm-referenced to allow professionals to benchmark their performance against a pool of their peers who have undergone the same process.

Some form of simulation-based assessment is present in 15% of Ontario's health professions. This takes the form of an objective structured clinical examination (OSCE) in both Pharmacy and in assessment of Nurse Practitioners. These examinations are composed of multiple stations, 5 in Pharmacy and 10-15 in Nursing, each simulating a unique clinical scenario intended to be representative of real practice interactions. Trained standardized patients are used in the interactions, and independent assessors evaluate professional's performance in each scenario. Scenarios undergo extensive development and testing to ensure appropriateness and relevancy. Simulation based program participation is an optional assessment component of continuing professional development in Medicine. Simulation programs may take many forms, and may be used to demonstrate clinical procedure skill and emergency response.

Direct observation in practice and demonstration of skills is an infrequent assessment tool implemented in Ontario's health professions, a component only in Medicine and Optometry professions. These professions are both tiered systems, with observation being part of latter assessment steps. In both instances observation is unconcealed, as the professionals being assessed are aware they are under observation.

General observations of assessment methods in place across Ontario's health professions indicate regulatory bodies take steps to generate a view among professionals that peer and practice assessment is an educational, rather than a punitive process. This is evidenced in two ways. Firstly, each profession provides specific feedback unique to each participant to highlight strengths, weaknesses, and recommendations for improvement. Secondly, assessment results are kept confidential by all Quality Assurance Committees and no regulatory bodies threaten revocation of licensure as a result of assessment findings. There are also attempts to ensure relevancy of the assessment to everyday professional practice, as evidenced by the fact that the majority of assessments take place in the professional's own practice setting. Not only does relevancy promote acceptance among professionals, but indicates fidelity of the assessment itself, as it is ultimately intended to evaluate one's ability to act competently in his or her daily professional role. Lastly, as previously noted, no professional is evaluated based on a single stand-alone assessment method, meaning input from various sources contributes to the determination of competency of a professional.

Remediation Component

All professions offer some type of remediation following identification of evidence to suggest a member has failed to meet competency standards. The majority of professions offer flexible remediation alternatives, tailored to address each individual's specific identified needs. In addition to this, the Ontario College of Pharmacy offers a group workshop and peer mentorship program to facilitate remediation.

Monitoring of Professional Quality Assurance Program Compliance

Quality Assurance Program compliance monitoring is quite similar across Ontario's health professions. The main difference observed is some professions verify compliance of all members each year, while others use a random auditing approach, and some professions use a combination of both.

Fifty-four percent of professions require all members to complete a declaration of program compliance annually with registration renewal. This approach relies on members' honest reporting. Twenty-nine percent of professions require all members to submit a summary log of continuing education/continuing professional development activities completed in the previous year or cycle.

Random audits of continuing education/continuing professional development records are conducted in 67% of professions. Half of the professions that use random record audits require members to submit their entire portfolio, including their self-assessment, whereas the other half does not include the self-assessment as part of the audit, such that the self-assessment is for the professional's personal use only.

Lastly, all professions have the results of their peer and practice assessments submitted to the Quality Assurance Committee for review.

NON-HEALTH PROFESSIONS – ONTARIO, CANADA

Sixteen non-health regulated professions in Ontario were reviewed. Fifteen of which are regulated on a provincial level, with Aviation regulated nationally. These professions are:

- Agrology
- Accounting
- Architecture
- Aviation
- Early Childhood Education
- Forestry
- Geoscience
- Human Resources
- Insurance
- Land Surveying
- Law
- Professional Engineering
- Social Work and Social Service Work
- Teaching
- Veterinary Medicine

A complete report of the systems in place may be found in table form in [Appendix B](#). A brief summary of findings is provided below.

The most frequent requirement noted across the professions is the requirement for some mandated continuing education activity involvement. The majority of professions have some minimum number of hours required, however this is not the case for Early Childhood Education, Social Work and Social Service Work, or Teaching. In contrast to the Ontario health professions, selection of activities is not often required to be guided via a continuing professional development program. This is a requirement for only one third of professions, and is encouraged for Human Resource professionals.

Formal peer and practice assessment is noted to be an infrequent requirement across the professions, required in only one third of cases. In the absence of formal systems, assessment is based primarily on self-declaration of compliance with continuing education requirements and periodic selection for random audits of records. Forestry requires participation in an informal peer review process with a colleague, however is soon transitioning to a more structured system with assessors appointed by their Association. Practice site visits and audits are implemented in Insurance, Law and Veterinary Medicine, and primarily focus on reviewing record keeping practices. Law has a tiered system with a spot audit program intended to proactively measure compliance and detect problems, a Practice Management Review intended to prevent competence deficiencies, and a Focused Practice Review to address existing competence deficiencies. Aviation is undeniably the profession with the most rigorous assessment process. A flight review with an instructor in an aircraft or simulator every 5 years and an annual examination of air regulations is required of all pilots wishing to act as pilot-in-command or co-pilot. In addition to these requirements, in order to meet the 2 year requirement of ‘completion of a recurrent training program’ pilots may also choose to complete a Pilot Proficiency Check, an assessment of a pilot’s knowledge and skill using an aircraft or simulator, or undergo other written examinations.

Generally when compared to Ontario’s health professions, the quality assurance systems in place across the non-health professions are decidedly less uniform and frequently less robust. This may stem from the fact that there is no over-arching legislation defining the requirement for and structure of a quality assurance program. As such, each individual profession’s legislation varies in depth and breadth of mandated quality assurance. There appears to be some anecdotal evidence of a correlation between the rigorousness of assessment and the ‘stakes’ of a profession’s scope. This is evidenced by comparing assessment in the health professions and Aviation to the other non-health professions.

SELECT GLOBAL SCAN OF PROFESSIONS

A complete report of the twenty-five professional quality assurance systems included in the select global scan may be found in table form in [Appendix C](#). A brief summary of findings is provided below.

Medicine

All regions studied mandate continuing professional development participation. This requirement is met either by complying with medical speciality accreditation body programs, regional physician regulatory body programs, or a combination of both. Each region requires some form of practice-based reflection. Peer involvement in activities and reflection is widely recommended, even required in some regions. Participation in assessment-based activities is required and awarded credits in 3 of 5 regions.

With respect to specific assessment methods, peer review of portfolios, chart audits, case evaluations, other forms of peer audit and feedback, multisource feedback, direct observation in practice, simulation, and examinations were identified as methods employed. Each region is noted to employ more than one form of assessment in their overall evaluation of a professional's competence. A unique additional decentralized quality assurance mechanism is required at each health facility in Massachusetts. Referred to as Qualified Patient Care Assessment Programs, these programs play a role in the assessment process by conducting regular internal audits.

Nursing

All regions studied mandate continuing education or continuing professional development, with nurse practitioners and other advanced practice nurses often having a greater requirement than registered nurses. Portfolio-based continuing professional development systems are used in 3 of the 5 regions studied to facilitate planning of and reflection on activities. The United Kingdom includes a requirement for members to obtain confirmation of compliance with requirements from a third party.

A variety of assessment methods were identified, and include peer review of portfolios, direct observation in practice, multisource feedback, chart audits, and examinations. Again, nurse practitioners and other advanced practice nurses are often required to undergo more detailed assessments than registered nurses, reflective of their greater scope of practice.

Pharmacy

All regions studied mandate a continuing education or continuing professional development requirement. Both Australia and New Zealand use a graded weighting system for credits. Australia's system awards one point for an activity that imparts knowledge with no assessment component, 2 credits for an activity that demonstrates knowledge or skills have improved via some form of assessment, and 3 credits for an activity that facilitates improvement in the quality of practice. Three programs take the continuing professional development approach, requiring some form of self-assessment, planning, and reflection to contextualize continuing education activities. New Zealand is unique in that it requires members to complete their portfolios with input from a learning peer at each stage of the cycle.

With respect to assessment methods, peer review of portfolios and practice site-based assessments are used in a number of regions. A unique method employed to assess community pharmacists in Australia is the mystery shopper program. This constitutes a trained standardized patient whose identity is concealed entering the pharmacy with either a symptom-based request, a direct medication request, or a blended request. Interactions are evaluated by an assessor and feedback is given immediately following. Audio recordings allow for evaluations to be independently validated. The decentralized quality assurance mechanism previously described for medical health facilities in Massachusetts is also a requirement in all Massachusetts pharmacies. Going by the name of Continuous Quality Improvement Programs, these programs are responsible for continuous monitoring to identify and evaluate quality-related incidents with the goal of improving patient care.

Dentistry

All regions studied mandate a continuing education requirement based on a minimum number of hours or credits of involvement. A requirement for annual declaration of compliance is common, and random audits of records are conducted in all regions. Interestingly, no regions contextualize continuing education via self-assessment, planning and reflection with a structured continuing professional development approach.

Formal assessment methods are not commonly implemented. In British Columbia members may choose to complete national dental examinations to count toward their continuing education credits, however this is not a requirement of all members. In Australia, examination may only be required for members who have not practiced for 5 or more years.

Law

All but one region studied mandates a requirement for continuing legal education or continuing professional development. Members are required to declare compliance and are subject to audits at random or at the request of their regulatory body. New Zealand is the only region studied to use a Portfolio based continuing professional development system with assessment, planning and reflection components. Massachusetts is one of few American states that does not have a mandated continuing education requirement, however their members are encouraged to participate.

With respect to assessment, British Columbia, Australia and New Zealand have a component of practice assessment primarily consisting of an on-site review of record keeping practices.

Overall Observations

When comparing the findings from the select global scan to the systems in place in Ontario, it is interesting to note that there were almost no professional quality assurance methods or approaches identified that were not already represented in at least one profession in Ontario. The two exceptions to this are the concealed mystery shopper direct observation of community pharmacists in Australia, and the decentralized quality assurance program approach used by both Medicine and Pharmacy in Massachusetts. This observation is quite telling as it suggests that Ontario's approach to professional quality assurance is consistent with and in all likelihood leads global standards.

EVALUATION OF PROFESSIONAL COMPETENCY INDICATORS AND ASSESSMENT METHODS

This section of the review is an evaluation of the professional competency indicators and assessment methods identified in the global scan of quality assurance programs. Each assessment method is evaluated on the basis of supporting evidence, benefits, limitations, practical considerations (where relevant), and examples of best practices. The main categories of assessment methods addressed are as follows:

- Self-Declared Continuing Education
- Continuing Professional Development Portfolio-Based Assessment
- Chart Review-Based Assessment – including chart audits and Chart-Stimulated Recall
- Multisource Feedback
- Direct Observation – including unconcealed observation and the mystery shopper technique
- Simulation-Based Assessment – including the OSCE and other simulation programs
- Traditional Examinations

SELF-DECLARED CONTINUING EDUCATION

Supporting Evidence

Self-declared participation in continuing education is not a formal assessment of each individual professional's competency. Rather, the rationale of this quality assurance method works by the inference that compliance with mandated continuing education is an indicator of competence [7].

A great number of studies have been conducted to evaluate outcomes of participation in various forms of continuing education among practicing professionals, with considerable evaluation in the field of medicine [5, 13-24].

Most frequently the outcome measured in these studies is change in professional behaviour or performance, however change in professional knowledge and downstream effects on patient health outcomes are also evaluated [14-18, 23, 24]. Various forms of continuing education activities have been shown to have a small positive impact on professional knowledge, however duration of retention of this knowledge is not clear [17, 25]. Impact on professional behaviour and patient health outcomes varies depending on the nature of the continuing education activity. There are quite consistent findings that printed educational material and solely didactic continuing education interventions have either no or very small, likely clinically insignificant, influence on professional behaviour change or improvements in patient health [14-16, 18, 24]. Multifaceted or mixed activity types, including combinations of didactic and interactive components, are often noted to be more likely to have a positive impact on professional behaviour or performance, and have some evidence to suggest impacts on patient health [5, 14-17, 24]. Continuing education interventions that involve multiple exposures are also shown to have a greater impact on professional performance than single exposure interventions [5, 22].

Despite the frequent practice of mandating a set minimum number of hours or credits of continuing education, no evidence was found to support a set amount of continuing education hours correlated to positive outcomes, in fact there is belief that the amount or frequency of activity involvement is not thought to have an effect on professional behaviour change [13].

A limitation of the published evidence of continuing education activities is the risk of publication bias. Although many meta-analyses and systematic reviews have been conducted, none have included funnel plots to determine if publication bias is in fact present [5]. In addition to this, interpretation of evidence regarding the impact of continuing education is extremely complex due to the high variability of activity types in use [5].

Despite the studies indicating that continuing education may have some small effect on professional knowledge and behaviour, the question still remains – are these changes consistently clinically significant, and is it appropriate to interpret these changes as an indication of professional competency [7]? Continuing education may not improve performance in incompetent individuals [1]. Ultimately, self-reporting of continuing education is only an *indicator* of competence, and is not an actual formal assessment of any one individual professional's competence. Interestingly, one systematic review noted that studies were more likely to note a positive impact when outcomes were measured at 6 months, whereas studies with negative findings measured outcomes at 12 and 18 months [24]. This suggests the impact of continuing education may have poor retention over time, further decreasing certainty of this method as a robust indicator of competence.

Benefits

The main benefit of using the traditional continuing education approach as an indicator of competency is its ease of use. Compared to other more involved assessment methods with greater complexity, resource demands, and costs, this method often only constitutes collection of professional members' declarations of compliance and periodic random audits of records to confirm compliance.

Limitations

A number of limitations of continuing education as an indicator of competency exist.

Bias

Historically many continuing education activities have been sponsored by industry, introducing a conflict of interest that may distort educational content [26]. Reporting of conflicts of interest is inconsistent across continuing education activities and bias is not always consistently recognized among professionals [26].

Practice Relevance, Acceptability, and Motivation

Formal continuing education workshops, programs, and courses have been noted to be designed to attempt to meet the needs of many participants from often quite diverse practices [27, 28]. Attempting to be generalizable to a wide audience risks limiting relevance and applicability to individual professional's practice settings. It is noted that frequently continuing education activities do not include a component of needs-based assessment prior to activity participation, however when it is included it is correlated with a positive impact on performance and patient health outcomes [24]. These findings indicate the importance of relevancy and applicability of continuing education to practice, although this is not often a focus of these activities.

Additionally, the mandatory nature of continuing education is only able to mandate that professionals attend, not that they be engaged [1]. Conversely, the mandatory nature of continuing education may inadvertently result in decreased acceptance and engagement among professionals due

to perceptions of condescension from being told what to do. Motivation to change is noted to be a strong predictor of change itself, and mandatory continuing education may not be appropriately fostering individual professional's motivation due to the impersonal, prescriptive nature of its structure [19, 24].

Employer-driven competency assessment systems and quality assurance models have evolved in several jurisdictions where regulatory bodies are less well structured (e.g. Qatar) or where profession-wide regulations regarding maintenance of competency do not facilitate regulatory body leadership in this area (e.g. Massachusetts and California). For example, in Qatar, the health human resources workforce is almost entirely internationally educated (>90%). Historically, Qatar has relied upon the regulatory apparatus of source countries to ensure safe and effective professional practice, as these internationally educated practitioners were required to retain registration in their home countries. The extraordinary heterogeneity of the Qatari workforce, coupled with the absence of a regulatory system or bodies, has resulted in employers taking more direct responsibility for design and development of competency assessment systems. The specific models (e.g. direct assessment, observations, examinations, peer review etc) are broadly similar, but used in a human resource management context rather than a regulatory one. Similarly, within the Veterans' Administration and Kaiser Permanente Systems in the US, quality assurance models are broadly similar to Ontario antecedents though used within an employee-employer context rather than a regulatory one.

Best Practices

Due to the overwhelming movement to transition to continuing professional development-based models in recent years [1], there is limited relevance of discussing best practices among traditional continuing education as a stand-alone entity. However, continuing education activities are still frequently a component of continuing professional development programs, thus warranting a brief discussion of best practices.

These points have been identified as potential strategies either theorized to or proven to optimize the benefits of continuing education:

- Ensure continuing education activities are of high quality – Adopting and implementing accreditation standards of continuing education programs is a common method used intended to ensure activities are unbiased, well designed, and use robust methods [29].
- Design continuing education activities based on professional needs assessment [30]– This may increase relevancy and promote engagement among participants.
- Strike a balance between professional autonomy and program structure – Continuing education programs that preferentially award more credits for participation in robust, multimodal activities may increase uptake in these activities without being perceived as being overly prescriptive [31].
- Incorporate planning, assessment, and feedback into continuing education activities [30] – This process may promote participant's engagement, reflection, and may ultimately facilitate achievement of desired activity outcomes.

CONTINUING PROFESSIONAL DEVELOPMENT PORTFOLIO-BASED ASSESSMENT

Supporting Evidence

Continuing professional development and the maintenance of a portfolio as part of this process has been implemented in many professions as a means of overcoming limitations inherent to the traditional continuing education approach [3, 28]. Continuing professional development is said to have a sound theoretical basis built upon the principles of adult learning and experiential, practice-based learning [32-34].

Acceptability of portfolios among users has been reported to be quite high in some quality assurance programs [35]. This is thought to be a result of high content and face validity as professionals contribute the majority of content themselves [4].

Based on the nature of portfolios, the most frequently reported outcomes of participation are based on self-reported change. Knowledge improvement is noted to be the most common impact, however self-reported behaviour changes have also been documented [21, 35-38]. Over 90% of Respiratory Therapists in Ontario self-report practice change or improvement as a result of portfolio-based learning [35]. When compared to traditional continuing education, there is also evidence to suggest increased self-report of improvements in performance with the continuing professional development approach [21]. Only infrequently has the continuing professional development portfolio method been proven to result in benefit beyond the portfolio user [37].

Evidence of professional performance reflecting growth may be seen as an indicator of competency [39]. It has been proposed that review of professional portfolios of continuing professional development may be useful as an assessment of fitness to practice [40]. However, despite the goal of continuing professional development as a means of *continuing* competency, its use as a reliable *indicator* of competency is not consistently evident, particularly due to heterogeneity among portfolio designs and methods of assessment [7, 41]. Notably 37% of Dental Hygienists in Ontario are of the opinion that they are unable to demonstrate their competency with a portfolio [38]. There is a great need for validated portfolio assessment criteria for this method to be an adequate assessment of professional competency [37, 41].

Benefits

Many benefits of maintaining a continuing professional development portfolio have been proposed, of which include its relevancy and applicability to the individual user's unique practice, its positive impact on satisfaction and motivation among users, its fostering role in self-reflective practice and contribution to increased awareness of professional strengths and areas for enhancement, its ability to facilitate career planning and advancement, its contribution to learning retention, its focus on outcomes to act as a reminder of intended learning, its tangibility to allow users to track evidence of progress and outcomes, and its feasibility in both cost and time [35, 42-44]. Therefore in addition to its use as an assessment method of professional competency, it is an individualized tool that is intended facilitate the continuing professional development process itself.

It has also been proposed that portfolios can be particularly effective at assessing some aspects of competency not easily measured with other methods – specifically practice improvement, how

empirical evidence is used in making professional judgements, and how ethical dilemmas in practice are addressed [39].

Limitations

Self-Assessment Capacity and Honesty

The quality and ultimate success of the continuing professional development cycle hinges on the first part of the cycle, self-assessment, and is based on the assumption that professionals are capable of self-identifying practice-related deficiencies or areas requiring improvement. A number of studies have identified poor accuracy and validity of professional's self-assessments when compared to external objective assessment methods, and that this skill may in fact be particularly underdeveloped among the least competent [45-47]. This calls in to question the appropriateness and ultimate effectiveness of using unguided self-assessment as a springboard for ensuring professional competence [48].

Additionally, some participants may fear punitive measures from honestly reporting faults, particularly in relation to practice errors and near misses, thus risking decreased honesty in self-assessment [49].

Stakeholder Needs Misalignment

A concern has been raised in the literature related to the design of continuing professional development to cater to the individual needs of professionals. The concern lies in the argument that personal needs of the individual may not coincide with the needs of others in the same practice setting, moreover focus on individual needs may fail to meet greater systems-based needs of the profession and the public [10].

Acceptability

The main concern with continuing professional development portfolios among professionals is the time and effort required to maintain the portfolio [21, 36, 38], which was reported in one study to be more than with traditional continuing education [21]. Moreover, there is persistent uncertainty among some regarding the value of the time spent [50]. Despite efforts of continuing professional development to increase relevancy by individualizing and contextualizing continuing education activities, because it is often still a prescribed requirement with mandated minimum participation, lack of motivation to participate is still observed and is a strong negative predictor of practice change [51].

Best Practices

These are some program and assessment features that have either been postulated to or proven to improve quality of both continuing professional development and portfolio based assessment:

- Respect user privacy [49]– self-assessment should be for the user's eyes only and should not be included in a portfolio audit or review unless this is preferred by the individual. This will ideally promote sincerity in the process, and will translate into more authentic learning plans and ultimately more fruitful outcomes.
- Guide self-assessment [42, 52-54]– In order to facilitate and optimize accuracy of self-assessment, involve peer input and other objective measures of performance.

- Strike a balance between needs of the individual and system-based needs [10] – Although individualized continuing professional development portfolios are important, inclusion of some structure to ensure that the needs of the profession and the public are also being adequately addressed is reasonable and warranted.
- Flexibility – Allow for flexibility in portfolio reporting to improve uptake and lessen burden on users. Online platforms and smart phone apps may minimize the burden of the reporting process [55].
- Transition from an input-based to an outcomes-based continuing professional development program structure – Professional buy-in may be increased by removing prescribed minimum continuing education credit requirements and shifting focus to the outcomes and impacts of continuing professional development on professional knowledge, skills and behaviours [44].
- Define a reasonable continuing professional development cycle length – Particularly in the context of outcomes-based continuing professional development, a cycle length of 1 year has been demonstrated to be inadequate time for the majority of professionals to implement practice change to achieve all desired goals [38]. A longer cycle of 2 to 5 years may be more practical.
- Define validated criteria for portfolio based assessment [35, 37, 41] – In order for portfolio reviews to be a robust assessment method there needs to be well designed and validated criteria for assessment.
- Use portfolio reviews as a formative, teachable moment rather than a summative assessment of competency [41] – Portfolio sharing sessions with feedback rather than formal assessment may provide guidance to professionals regarding the utility of the portfolio and increase understanding of its benefits and relevance [36]. This may ultimately improve the continuing professional development experience and have downstream positive outcomes on competency.

CHART REVIEW-BASED ASSESSMENT

In this section both chart-stimulated recall and chart audit assessments are discussed.

Supporting Evidence

Chart review-based assessment is an opportunity for a professional to demonstrate or show how competency is portrayed through examples of his or her own practice [56].

Many aspects of competency are evaluable with this assessment type, and insight into behaviour, judgement, decision making practices and application of knowledge is even more evident with chart-stimulated recall specifically [4, 41]. Chart review-based assessment alone is not capable of adequately evaluating all aspects of competency, however, with limited evaluative capacity in the assessment of technical skills and client communication skills [57]. A small study among family physicians in Quebec comparing chart audit alone to chart audit combined with chart-stimulated recall demonstrated moderate to high concordance, however poor inter-rater reliability of chart audit alone [58]. This indicates that some important aspects of competency are not adequately and reliably evaluated with chart audit alone.

Benefits

A considerable benefit of chart review-based assessment are the perceived face-validity and relevancy among professionals as this assessment uses real cases and real client interactions [4]. Depending on the nature of professional practice, chart review-based assessment may also be capable of evaluating follow-up practices and continuity of care by reviewing single charts over multiple interactions or visits rather than at a single point in time [57].

Limitations

Only few limitations to chart review-based assessment have been proposed, and the majority of these limitations may be overcome with use chart-stimulated recall either in place of or in conjunction with chart-audit. One such limitation to chart-review based assessment is the difficulty in isolating the contribution of a single professional in practice settings that are highly collaborative [19]. The greater depth involved with chart-stimulated recall may help to elucidate this information, however. The quality of records influences the ability to evaluate competency (beyond record keeping and documentation practice that is), however chart-stimulated recall is proposed to overcome this issue to some degree [57]. Additionally, formal chart-stimulated recall can be a considerably time consuming process. This usually limits the number of separate cases that may be evaluated using this method, and calls in to question the generalizability of findings [41].

Practical Considerations

In order for chart review-based assessment to be a comprehensive process, assessors must work within a practice setting or scope comparable to the professional being assessed.

Best Practices

Combine chart audit and chart-stimulated recall – An approach that combines both audit of multiple charts and chart-stimulated recall of one or few charts may result in optimizing both generalizability and reliability of the assessment [58, 59].

MULTISOURCE FEEDBACK

Supporting Evidence

The majority of published literature evaluating multisource feedback (e.g. 360 degree systems) as an assessment method is in the field of medicine. Study outcomes have included evaluation of reliability, validity and generalizability of specific multisource feedback instruments as assessment tools [60-65], acceptability of the process among professionals [60, 65-67], measurements of professionals' intention to implement behaviour change as a result of multisource feedback [63, 65, 66] and measurement of change in behaviour or practice as a result of multisource feedback [63, 66, 68].

A number of psychometric analyses support multisource feedback as a reliable, valid, and generalizable assessment tool [60-65], however these outcomes are highly specific to the individual system tools being evaluated and may not be applied to multisource feedback as a whole. It is stated, however, that multisource feedback achieves an acceptable level of generalizability when responses are collected from 25-35 clients and 8-15 colleagues or coworkers [60].

Studies evaluating contemplation and intent to implement practice or behaviour change suggest that multisource feedback stimulates this inclination in 40-70% of participants [63, 65]. Frequently studies have evaluated self-report of practice change following multisource feedback, and reported rates range from 25-55% [62, 66, 69]. Factors found to be associated with self-reported change are receipt of negative feedback (feedback indicating that change is necessary), specific feedback, feedback that includes narrative comments, facilitated feedback (via a mentor, coach, appraiser or facilitator), feedback consistently reported across all sources, feedback recommended by clients specifically, feedback received that is consistent with other external information sources, and perceived credibility of the sources of feedback [62, 66, 68, 70].

Longitudinal studies measuring change over time have also been conducted by evaluating changes in multisource feedback results for individuals undergoing the process multiple times [61, 68]. One study among physicians in Alberta, Canada showed significant improvement in assessments from colleagues and co-workers, and a non-significant improvement from patient assessments for physicians undergoing multisource feedback twice [61]. A meta-analysis of 24 longitudinal studies indicated only a small effect size of multisource feedback on change, however this may be due to heterogeneity among programs, lack of discriminant validity in items in the feedback instruments, and insufficient study duration, among others factors [68].

The changes reported most likely to occur as a result of multisource feedback are communication with clients and colleagues, with changes in clinical knowledge/competence, collaboration, office systems, and stress management reported less frequently [62, 63, 66].

Benefits

Multisource feedback may be seen as serving a potential dual role in quality assurance – as an assessment of professional competency based on norm-referenced standards, and as a method to contextualize individual continuing professional development needs to ultimately stimulate behaviour or practice change. A potential beneficial role of multisource feedback is its use as a method to assist professionals in conducting self-assessment by way of guiding self-reflection with objective data. This may facilitate more accurate self-assessments, better designed continuing professional development learning plans, and increased likelihood of implementing improvements in practice [63].

Additionally, multisource feedback may contribute to a professional culture where open communication and feedback is more widely accepted and embraced [39].

Limitations

Despite the proposed benefits and supporting evidence, there are a number of potential limitations identified in the published literature associated with multisource feedback.

Evaluative Capacity

Multisource feedback is not equipped to evaluate all competencies of a professional. For example, a client is not likely to fully grasp and appropriately rate a physician's clinical knowledge [71], however, can shed considerable light on a physician's communication skills [63]. Likewise, a peer may not have adequate knowledge to accurately evaluate a colleague's record keeping practices [70], but may be able to critique his or her inter-professional collaboration. Multisource feedback is generally seen as a useful assessment of professional behaviours and attitudes, namely communication, collaboration, professionalism, and interpersonal skills [60]. Therefore, its use as a stand-alone competency assessment method would be inadequate [71]. It is best when combined with other objective methods better equipped to evaluate these other components that contribute to a professional's overall competency [70].

Acceptability

Focus groups and other forms of feedback indicate that acceptability among participants is integral to the success of multisource feedback [62, 66, 67]. Reports often comment that participants feel the process is a valuable learning experience [65], however in some instances participants have reported a lack of confidence that assessors have access to adequate resources to provide credible feedback, leading to feelings of skepticism and lower acceptance rates of feedback [62, 70, 71].

Assessor Bias

A number of biases have been identified in multisource feedback, two of which are leniency, or inflation of ratings, and halo, applying a global assessment across multiple domains [72]. It has been noted in a number of observational studies that self-ratings are lower than those from peers, co-workers, and clients [63-65].

An observational study of multisource feedback of military officers in Singapore evaluating rating bias noted leniency and halo were more common among subordinate assessors and less so among peers and superiors [72]. This is hypothesized to be partially due to a competing aim of assessors

to avoid negative consequences for themselves, rather than to simply aim to contribute to improvement of the individual under review. This sense of subordination may be felt by clients and some co-workers, thus influencing the truthfulness of their responses. Although multisource feedback systems aim to protect assessor anonymity by reporting results in aggregate, this does not seem to avoid this occurrence completely.

Leniency may also be a result of personal relationships between the assessors and the individual under review. It was noted in a number of studies that increasing duration of the relationship between rater and ratee is associated with higher scores [65, 73]. Although this may be due to greater wealth of information to contribute to the assessment, there is a greater likelihood that comfort, acceptance, even friendship are contributing to leniency.

A potential implication of this leniency is that professionals interpret this high praise as reinforcement of their current practice, indicating that no changes to practice need be made, potentially resulting in missed opportunities for betterment [70].

Practical Considerations

Generally multisource feedback is seen as a feasible assessment tool [60]. This is suggested by the large number of individual assessments that can be accommodated by a single regulatory body annually, which is often on the order of 200-400 [61, 63-65, 69, 73], the ability of individuals to access an adequate number of peers, co-workers, and clients to act as assessors [60, 61, 63-65, 69, 73], the high assessor response rates observed [60, 63, 64], and the short time commitment required of assessors (usually less than 10 minutes) [64, 65]. Despite these findings, multisource feedback would likely be difficult to implement for individuals working in rural or isolated settings. It is also evident that significant research, planning, testing, revising, and evaluation is required to ensure that a multisource feedback system is valid and likely to achieve its intended goals [60, 65]. Therefore, although seemingly simple, multisource feedback may ultimately require significant resources. Moreover, multisource feedback systems that conduct training of assessors and those that use mentors in the follow-up process may require additional resources.

Best Practices

It is expressed in the published literature that not all multisource feedback is the same, and therefore is not equally likely to stimulate practice change among participants [67]. There are a number of multisource feedback program features presented in the literature that are either hypothesized to or have been proven to be more likely to stimulate behaviour change. These are summarized below:

- Promote user acceptance [67]– A decision to make a change must come from within, and is much more likely to develop if a participant is accepting of the process. Design features likely to promote acceptance and subsequently facilitate behaviour change are:
 - Relevant content [67]– Customized assessments tailored to the unique scope of the practice of the professional group being assessed is preferred over standardized general tools (although this is debated).
 - Credible data [67]– Well designed, tested and proven systems increase buy-in among participants.

- Guide or train assessors [62, 66, 67]– Assessors who receive some guidance or training are more likely to have their feedback deemed credible by participants. This may also help to correct biases like leniency.
- Guide change with specific feedback [62, 66, 70]– The more specific and descriptive the feedback, the easier it is for participants to identify actions necessary to change behaviour. This is important in both selection of descriptive, targeted questionnaire items, as well as by providing a detailed report of results, which may include a narrative component to facilitate interpretation.
- Integrate participant accountability [66-68]– Include in the program structure a component that stimulates a sense of accountability, such as reviewing outcomes with a peer or mentor, or requiring individuals to document goals and evidence of achievement of goals following receipt of feedback.

DIRECT OBSERVATION

Direct observation reviewed in this section includes both concealed observation, as in the case of the mystery shopper technique, and unconcealed observation in practice.

Supporting Evidence

The concept of direct observation of a professional in their role is considered to have great content validity as assessments are within the professional's practice setting and include real interactions with clients (or simulated clients) and colleagues [74]. Concealed observation has even greater fidelity to actual practice as it enables assessors to evaluate what a professional does in day to day practice without the confounding impact of the Hawthorne effect [56, 75]. It has been stated to be the validated gold standard assessment method of quality of professional practice [41].

Unconcealed direct observation has been most often studied in the context of students and trainees, rather than practicing professionals [76]. Many tools have been developed for assessment of competency based on observations, however validity of these tools with respect to inter-rater reliability and correlation to other objective assessment methods is not consistent [76]. Commonly assessed skills are history taking practice, communication skills, medical examination technique, counselling practices, and global performance ratings [76]. Notably evaluation does not often include assessment of decision making process as complex real life scenarios do not often have a universally agreed upon 'right' or 'wrong' answer [77].

Outside of its use as a market research tool the majority of evidence for mystery shopping as a professional competency assessment tool has been to evaluate community pharmacy interactions with clients, particularly regarding over-the-counter medication related issues [78-86]. The Pharmacy Guild of Australia's mystery shopping program assesses pharmacists on their overall performance on a scale of 1 to 10 based on history taking practices and depth of advice given, with work underway to incorporate quality of advice given into the assessment [87]. Attempts to validate the program are made via a number of methods – development of scenarios by a reference group of many key stakeholders, comprehensive training of mystery shoppers, and recording and external validation of interactions [87].

Benefits

The main benefit of both direct observation techniques is the ability to evaluate individuals based on what they do, rather than simply what they know, or what they can show [56, 74]. The observation of real world events results in high content validity of these assessment methods.

Interestingly, longitudinal evaluation of the mystery shopper program in Australia indicates that aggregate scores of mystery shopper interactions are in fact improving over time, with mean scores increasing from 2.1 in 2005 to 4.6 in 2010, and mean scores increasing as a function of the number of mystery shopper visits at a specific pharmacy [87]. This suggests that in addition to being a robust competency assessment method, participation in the program may have some consequential validity by contributing to professional improvement [87]. This has also been noted among medical students when immediate follow-up was provided [41]. There is no similar evidence noted for unconcealed direct observation to suggest an effect on outcomes for clients [76].

Limitations

There are a number of potential limitations to direct observation methods of competency assessment.

Generalizability

Evaluation of the generalizability of direct observation assessment methods have not been widely conducted [74]. Although it is reasonable to consider even one below-standard observation to be an indicator of below standard competence, it may also be a result of external circumstances or simply be a fluke observation on a bad day. Likewise, it is unclear how many observations that meet standards are needed to be truly reflective of a professional's competence [41, 74]. This is particularly concerning in the setting of professional competence assessment when direct observation tends to be episodic.

Direct Observation Behavioural Effects

Inherent to the design of unconcealed observation is the concern that professionals may be on their best behaviour while under observation, thus risking decreased fidelity of this assessment method [75, 77]. The opposite effect is also possible, with professionals not performing in their usual manner while under observation as a result of self-consciousness [77]. These potential behavioural effects of direct observation are the main rationale for concealed observation assessment methods.

Mystery Shopper Ethical Concerns and Acceptability

Ethical-related concerns exist regarding mystery shopper use as an assessment method [88]. It has been proposed by some to be deceptive and an invasion of privacy without consent [89]. The mystery shopping technique has been stated to be a violation of one's professional autonomy and a waste of time that would otherwise be spent in the provision of professional services to the public [88, 90]. One strongly worded blog post from a pharmacist in Australia states he would feel 'professionally raped' if he were ever involved in a mystery shopping interaction [90].

The unique nature of the mystery shopper program in Australia may be considered to somewhat dissipate some ethical-related issues, however. Firstly, accreditation with the Pharmacy Guild of Australia is on a voluntary basis – if a Pharmacy owner feels a strong ethical aversion to the concealment method, then they may choose not to partake [91]. Additionally, individual professionals may choose to not work at a pharmacy that is involved with the program. Secondly is the program's intent is to be educational only. Assessment outcomes are only reported in aggregate and no professional is subject to disciplinary measures as a result of an unsatisfactory assessment [92]. Lastly, the program is structured such that immediately following the interaction, the standardized patient reveals his or her identity and feedback is provided. The program usually entails only one mystery shop visit per year, therefore professionals need not question if every other client entering the pharmacy is a mystery shopper [92].

Mystery Shopping 'Cheating'

It appears that the Pharmacy Guild of Australia mystery shopper program uses the same cases across multiple pharmacies and time periods [87]. Although no evidence was found to suggest this is in fact occurring, there is potential for pharmacy staff to spread knowledge of case content to other pharmacies, thus decreasing the fidelity of the assessment.

Mystery Shopper Feasibility

The mystery shopper technique may have limited feasibility for certain professional practice settings and scopes of practice. For example, assessment of health professionals who work in tertiary care would not be easily accessible for assessment, and it would not be possible to evaluate many procedural, diagnostic, and skills-based aspects of practice for many healthcare providers. It is probable that the majority of professional mystery shopper assessments in the literature are for over-the-counter community pharmacy requests primarily as a result of accessibility [86].

Practical Considerations

Feasibility of direct observation is only present if an extensive network of assessors are available. This becomes even more resource-demanding when efforts are made to implement rigorous training. Particularly with mystery shoppers there are comments of standardized patients and assessors driving across great distances to isolated locations in order to conduct assessments [93].

Best Practices

Listed here are some factors related to direct observation as an assessment method that are either postulated to or proven to improve the quality of the assessment process:

- Train assessors – Assessors who have undergone training have been shown in some studies of direct observation to have higher inter-rater reliability, thus resulting in more valid assessments [74].
- Voluntary participation in mystery shopper programs – To avoid some of the ethical arguments raised regarding this assessment method, offering it to professionals as an optional additional assessment method may minimize these issues and increase acceptability among professionals [41, 91].
- Tape record mystery shopper interactions – The impact of inconsistent recall among standardized patients on the accuracy of competency assessment may be minimized by recording interactions, thus allowing for external validation of assessments [85, 92].

SIMULATION-BASED ASSESSMENT

Discussion in this section refers to the use of standardized patients as part of the Objective Structured Clinical Examination (OSCE) approach as well as other simulation methods.

Supporting Evidence

First described and implemented in medical training in the 1970's, the OSCE has since expanded into a number of professions, namely Pharmacy and Nursing, and has been used as a tool for both high and low stakes assessment [94, 95]. A rather extensive evidence base indicates the OSCE is capable of being a reliable and valid assessment method [4, 95, 96]. However reliability is noted to be a function of many design-related factors, of which include the length of the examination, station construction, and heterogeneity of participants under evaluation, and generalizability is noted to be a function of the number of stations [41]. Detailed tips for OSCE design and organization have been recommended by the originators to optimize validity of the assessment method [97].

Interestingly it has been noted that OSCE scores often do not correlate with scores from traditional examinations, however rather than viewed as evidence of poor concurrent validity, this indicates that these methods are in fact assessing distinct components of competency, thus suggesting a complementary relationship between simulation-based assessment and traditional examination assessment methods [56, 98, 99].

Other forms of simulation may vary greatly, from computer-based virtual simulation to technologically advanced, high fidelity simulations [4]. Robustness of these other forms of simulation as competency assessment methods has not been consistently noted due to the high heterogeneity of methods [95].

Benefits

The main benefit of simulation-based assessment is the ability to evaluate professionals' skill and performance, rather than simply knowledge, which can be extrapolated to be a reflection of competence in actual practice [56]. Simulation is designed to recreate scenarios reflective of reality to result in high fidelity assessments.

With the OSCE approach, cases are standardized to facilitate reliable scoring and specifically designed to create a collection of scenarios thought to be representative of professional practice [77]. Additionally, the ability to control scenario design with simulation techniques allows for assessment of competency in both high stakes and low frequency scenarios if desired, whereas these are not easily evaluable via direct observation in practice [39, 100].

In addition to being an assessment tool, simulation is often also implemented as an educational tool in Aviation, Space, Military, the nuclear power industry, Nursing and Medicine [100]. Simulation-based assessment has been shown to result in improved acquisition of skills, thus potentially playing a contributory role in continuing competency [4, 100]. Preliminary evidence suggests improvement in quality of care as a result of simulation-based training of medical residents [101].

Limitations

Some limitations of simulation-based assessment have been raised in the literature and are listed here.

Fidelity

Despite attempts to create simulations highly reflective of reality, the goal of ultimate fidelity is unattainable as participants are keenly aware of the examination setting. Therefore similarly to direct observation in practice, simulations are at risk of both the Hawthorne effect and altered performance as a result of stress and self-consciousness. Additionally, standardization implemented in an effort to increase reliability of assessment may result in decreased fidelity as scenarios may feel contrived as a result [77, 102].

Applicability and Acceptability

Individuals practicing within the same profession often represent a highly heterogeneous group, with variable practice settings and areas of focus or speciality. This poses a unique problem for simulation designers, and it is likely to result in some scenarios being unrepresentative of individual professionals' practice settings. This may decrease face validity of the assessment in the eyes of the professional. However, if assessment measurement tools are constructed to evaluate core competencies expected of all members of a profession, the impact of this on ultimate competency assessment is likely minimal [96].

Practical Considerations

Simulation based assessment is highly resource-intensive, logistically complex, and costly, with increasing costs a function of fidelity of the simulation and the number of simulation scenarios conducted [103]. Robust program development requires significant planning and piloting, and necessitates involvement of many key players in various roles [96, 103]. A thorough budget evaluation is necessary prior to embarking on this form of assessment to ensure its ongoing sustainability. Feasibility may also be limited for professionals residing in isolated settings far from central sites where simulation testing is conducted. It may be necessary to reimburse these individuals for travel and accommodation costs to ensure both fairness and attendance [96].

Best Practices

The following are features of simulation-based assessment either postulated to or proven to improve its use as a competency assessment method:

- Thoughtful design and organization – Simulation-based assessment is only capable of being a valid assessment of competence if it is carefully and thoughtfully designed [97].
- Implement criterion-referenced grading – This ensures that adequacy of performance is based on a minimum peer-derived standard for competence, rather than a rank among peers [56, 96].
- Incorporate peers in the development process [96] – Not only will this contribute to face validity of simulation scenarios but is key to determining minimum standards for competence.
- Take a holistic approach to simulation scenario design – While the original OSCE was designed to evaluate individual aspects of competency in isolated scenarios, thoughtful design indicates that

combining assessment of multiple competencies into each scenario is an achievable goal, and may result in a more holistic assessment more reflective of actual practice competence [94, 96].

- Provide immediate feedback whenever possible– In order for simulation to also act as an educational tool for the promotion of continuing competency, feedback on performance via debriefing is key [100].
- Explore cost-containment strategies to ensure sustainability of the assessment model –
 - Combine simulation with other testing methods to increase cost-effectiveness – Due to the high resource demands and costs of simulation-based assessment, it may be preferred if it is used to assess only aspects of competency that are best evaluated with this method (i.e. skills, judgement), supplementing with more economical assessment methods to evaluate other aspects of competency (i.e. knowledge) [56].
 - Consider a lattered or tiered approach to assessment, with less resource-intensive assessment methods implemented first, followed by simulation-based assessment for the fraction who show preliminary indication of competency issues [56].

EXAMINATIONS

The discussion surrounding traditional examination as an assessment method will be limited to a brief high level summary in this review because the supporting evidence, benefits and limitations of this assessment method are well documented in the published literature [56, 95]. Traditional examinations are widely accepted as being an effective and fairly easy method to assess knowledge, and with the use of well written case-based questions may also be an indicator of knowledge application and higher order reasoning [39]. Valid knowledge assessment hinges on well-designed, clearly worded questions, with detailed rubrics and calibration among markers for questions with open-ended responses [39].

Concerns exist regarding examination predictive validity of actual practice due to its limited fidelity nature [104]. Interestingly, however, there is some evidence in the medical community that notes a correlation between performance on maintenance of certification examination with quality of patient care [105].

In terms of best practices, it has been suggested that open book examinations may be preferred in order to create an environment similar to real practice where references are always available [106]. Additionally, examinations may be best when combined with other assessment techniques more reflective of professional practice and more able to assess skills and judgement consistently.

ASSESSING COSTS AND LOGISTICS

One of the most challenging aspects of quality assurance and competency assessment highlighted in the literature relates to logistics: implementation, communication, sustainability, and costs. There is little formal academic literature detailing these issues; grey literature in this area emphasizes the unique contextual features of specific programs and cautions against direct comparisons to other professions, other contexts and other jurisdictions. Each profession, jurisdiction, and program faces unique challenges and pressures, and affords unique opportunities and resources to facilitate quality assurance and competency assessment programs that meet local needs.

A strong theme in the literature relates to the importance of ensure local needs – particularly those of the practitioners themselves – are not only addressed but also balanced against the broader public protection remit of regulatory bodies. Programs that disproportionately weight public protection at the expense of professional members’ interests (or vice-versa) are neither valuable nor sustainable. Increasingly, this has drawn attention towards the importance of engagement in the process by both professional members and the general public they serve. Mechanisms for creating this engagement are critical throughout all stages of the development, implementation, and delivery phases of a quality assurance program.

Several key themes emerged from the scoping review:

- a) Successful programs have built-in conscious engagement-building practices from the outset: The need to ensure buy in from professional members, regulatory body staff who will actually implement programs, councils or governance bodies which oversee regulatory bodies, and patient/consumer groups is critical to success. Developing systems that leverage engagement as part of the program development process itself – rather than simply a post-hoc validation or “check-in” process – appear to be most successful and important for sustainability.
- b) Central tension between standardization and local responsiveness: The regulatory context and culture of professions and jurisdictions is complex and highly nuanced; simply adopting successful best practices from other exemplar organizations appears rarely to be successful. While general ideas or approaches may be usefully adapted, the need for engagement and involvement from so many local stakeholders means that pre-packaged “solutions” to quality assurance and competency assessment can rarely be relied upon. Local practice contexts, professional cultures, and interpersonal/inter professional relationships must be carefully considered and included in any program development process.
- c) Professional and local cultures are important variables: Within the management literature, it is sometimes said that “Culture eats strategy for lunch”, the implication being that ideas and plans that do not account for the on-the-ground practical reality of an organization will rarely succeed. The literature alludes to the importance of designing processes and systems that are respectful of local and professional cultures, but is less helpful in providing mechanisms for actually identifying, measuring, describing, or applying these cultural insights into design and development of programs.
- d) The journey, not the destination: The objective of a well designed competency assessment program is usually the starting point for most regulatory bodies; over time, there is

recognition that this is not a definable or discrete endpoint, but rather a moving target that requires a mindset favouring incremental evolution rather than dramatic change. The literature from most professions indicates the complexity associated with regulatory work, and the need to balance incompatible objectives, impossible timelines, and extraordinary demands, all within practical budgetary and resource constraints. When competency assessment is viewed as a journey rather than an endpoint unto itself, these challenges become more manageable and realistic.

One of the most challenging aspects of this scoping review has been attempting to identify actual costs (inputs/outputs) associated with different models and approaches described previously. While it is clear some assessment methods (e.g. OSCEs) are simply more expensive to operationalize than other methods (e.g. standardized multiple choice tests of knowledge), there appears to be widespread variability in terms of reported direct and indirect costs associated with implementation and administration of competency assessment programs. This data is rarely reported, or reported in a manner that only accounts for specific direct costs (e.g. actors for simulation performances in an OSCE) rather than the indirect costs (e.g. staff time to maintain a secure case bank for OSCEs). It may be difficult to actually address issues associated with costs of different models described here through a literature review alone; preliminary discussions with key informants to actually cost-out different models has also been somewhat challenging as few staff members within regulatory bodies appear to have the full “picture” with respect to direct and indirect costs. Anecdotally, it appears that, in most circumstances, initial cost estimates for development and implementation of a new or revised competency assessment program underestimate both direct and indirect costs. On the indirect cost side, significant time and resource is generally required for communication to professional members and other key stakeholders which frequently will require redeploying of staff complement or other adjustments that may not be captured on balance sheets. On the direct cost side, use of external consultants, psychometricians, statisticians, educational psychologist or other experts who may not be traditionally staff-members within a regulatory body is generally required to initialize, develop, pilot, implement and sustain any program. Further work will be required to truly and more accurately discern direct and indirect costs associated with such programs.

DISCUSSION

A select global scan of professional quality assurance systems shows an overwhelming trend to transition to an outcome-focused continuing professional development framework to facilitate continuing competency. The health professions are at the forefront of this transition. Despite this, traditional input-based measures are frequently still implemented concurrently, with the intention of assuring variety and robustness of continuing education activity involvement as well as a minimum level of participation. Current evidence has not clarified what is the best approach; however a balance between input and outputs is likely the case.

A minority of professions appear to be stimulating a new trend to facilitate the self-assessment aspect of the continuing professional development cycle via integration of input from external, objective sources. As these approaches are infrequently implemented and in their infancy in many cases, the utility of this process is presently unclear, however there is great promise in this process.

Scrutiny of professional quality assurance competency assessment methods reveals no single assessment method is without faults. The majority of assessment methods, when implemented in isolation, are questioned regarding their ability to truly capture competency in its entirety [56, 77], and are ultimately only inferences of competency at best [77]. A select global scan of professional quality assurance systems indicates that current best practice is to abandon the notion that measurement of professional competency should be based on a single assessment method, and instead promotes taking a multimodal approach to the issue, including multi-trait, multi-method, and multi-informant assessment [39].

Additionally, a shift toward predominantly practice-based assessment indicates the growing intention of quality assurance to both optimize assessment fidelity and to promote acceptance among professionals by increasing relevancy to and integration with day to day practice [4].

Competency assessment of practicing professionals is an intricate construct, which may be regarded rationally as existing somewhere on a continuum of formative and summative assessment. Regulatory body quality assurance of professionals is slated with the responsibility of both confirming professional competency and facilitating continuing competency. Practice-based and performance-based assessment has been shown to have consequential validity in a number of cases, thus potentially playing a contributory role in facilitating continuing competency above and beyond the role of simply assessing competency. As only a fraction of professionals are selected to partake in formal competency assessment annually, efforts to integrate assessment-based continuing education activities into ongoing continuing professional development may extend the benefits to a wider range of practicing professionals.

Ultimately, validity of assessment methods are a function of their rigour of design and testing. However, if well designed, incorporating at least one of multisource feedback, chart-stimulated recall, direct observation, or simulation in the assessment of a professional's competency is likely to result in acceptable validity. The use of a toolkit of competency assessment methods has been proposed by a number of groups [104, 107]. This allows for flexibility in assessment method selection while at the

same time provides guidance regarding what component of competency is best evaluated with the assessment method – knowledge, skills, judgement, or combinations thereof [104, 107].

There are a number of limitations of this scoping review. The first is related to the rapidly changing landscape of professional quality assurance. Professional regulatory bodies are noted to be continuously assessing their programs and making changes in light of changing legislation, feedback from professionals participating in programming, and emerging evidence of quality assurance models. Many are piloting new systems or planning a restructuring in the near future. As such the detailed information of quality assurance systems currently in use listed in this review may quickly become dated. It is the responsibility of the reader to cross reference information listed here with updated regulatory body documentation if this review is used beyond 1 or 2 years from the date of this review. Secondly, due to the great number of regulated professions, geographical locations of practice, non-English language material, and frank enormity of the published and grey literature base, a fully comprehensive review of all available information was not feasible within the time and administrative constraints of this review. Attempts were made to include adequate breadth such that all unique methods were identified and sufficient depth such that the overall findings of the available literature were captured. Despite this, some important information may have been inadvertently excluded from this review.

CONCLUSIONS

A global scan of quality assurance systems indicates many recurrent themes among professional quality assurance programs. Best practice examples from the health professions indicate a shift to facilitated, outcomes-oriented continuing professional development and multimodal, practice-based and performance-based competency assessment. Ontario's regulated health professions are representative of best practices globally.

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APPENDIX A - QUALITY ASSURANCE SYSTEMS OF HEALTH PROFESSIONS – ONTARIO, CANADA

Regulatory Body		Continuing Education or Professional Development Requirement	Self, Peer, Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Audiology and Speech-Language Pathology	<p>College of Audiologists and Speech Language Pathologists of Ontario</p> <p>www.caslpo.com</p>	<ul style="list-style-type: none"> Annual development of 3 Learning Goals reflective of current practice setting 15 Continuous Learning Activity Credits to help realize the Learning Goals <ul style="list-style-type: none"> 1 hour = 1 credit Categories: <ul style="list-style-type: none"> Group Learning Independent Learning 	<p>Self –</p> <ul style="list-style-type: none"> Online Self-Assessment Tool to evaluate if professional practice standards are being met <p>Peer and Practice–</p> <ul style="list-style-type: none"> Randomly selected members participate in the Peer Assessment Program Peer Assessor completes the following: <ul style="list-style-type: none"> Site visit (3/4 day) Review of Self-Assessment Tool and evidence to prove Professional Standards are being met Review of 10 patient files, Learning Goals and Continuous Learning Activity Credits collected 	<ul style="list-style-type: none"> Peer Assessor report submitted to Quality Assurance Committee for review following Peer Assessment Program participation
Chiroprody	<p>College of Chiroprodists of Ontario</p> <p>www.cocoo.on.ca</p>	<ul style="list-style-type: none"> 50 hours of Continuing Education Activities per 2 year cycle that directly relate to practice <ul style="list-style-type: none"> 1 hour = 1 credit Categories: <ul style="list-style-type: none"> Structured Lecture Style Programs (Minimum 20 credits) Other Educational Activities – lectures, workshops, self-directed independent learning activities, etc. (Maximum 30 credits) Document activities in log along with outcomes – “How useful was this course in bringing a positive change into your practice?” 	<p>Self –</p> <ul style="list-style-type: none"> Self-Assessment Tool to aid in summarizing strengths and opportunities to enhance the various skills, knowledge and abilities needed to perform role today and in the future <p>Peer –</p> <ul style="list-style-type: none"> Informal – Asked to compare performance to other members in areas of communication skills, record keeping, collaboration, research principles, and clinical theoretical knowledge Formal – Assessor for Practice Assessment acts as a peer mentor (see below) <p>Practice –</p> <ul style="list-style-type: none"> 1% randomly selected annually to participate in Practice Assessment Program Assessor completes the following: <ul style="list-style-type: none"> Site visit with practice review chart review of 10 patient charts and care plan review 	<ul style="list-style-type: none"> Up to 10% asked to submit log of Continuing Education Activities with supporting materials each 2 year cycle Assessor global evaluation submitted to Quality Assurance Committee following Practice Assessment

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Chiropractic	<p>College of Chiropractors of Ontario</p> <p>www.cco.on.ca</p>	<p>Professional Portfolio every 2 years, containing:</p> <ul style="list-style-type: none"> Professional Profile Self-Assessment Plan of Action Summary Sheet Continuing Education and Professional Development Log <ul style="list-style-type: none"> 40 hours Continuing Education Activities over 2 year cycle that must reflect areas identified as needing improvement in self-assessments, peer and practice assessments Categories: <ul style="list-style-type: none"> Structured activities (Minimum 20 hours) Unstructured activities (Maximum 20 hours) Current samples of advertising 	<p>Self –</p> <ul style="list-style-type: none"> Self-reflective questionnaire and plan of action summary sheet to reflect on current professional proficiency to facilitate development of a learning plan to address areas that need improvement <p>Peer and Practice –</p> <ul style="list-style-type: none"> Random selection for participation in Peer and Practice Assessment Program Assessor completes the following: <ul style="list-style-type: none"> Site visit Review of 10 patient files Review of Professional Portfolio Assessment of knowledge of regulations, standards of practice, policies and guidelines Random selection for participation in X-ray Peer Review Program (Program not yet finalized) 	<ul style="list-style-type: none"> Completion of 1 page summary log of Continuing Education Activities every 2 years Assessor report submitted to Quality Assurance Committee for review following Peer and Practice Assessment Program participation
Dental Hygiene	<p>College of Dental Hygienists of Ontario</p> <p>www.cdho.org</p>	<p>Annual Professional Portfolio completion, containing:</p> <ul style="list-style-type: none"> Personal data Education profile Employment profile Reporting on typical practice day Professional reading Continuing Quality Improvement Activity Plan including self-assessment, goal setting, activity planning to achieve goals 75 hours of Continuing Quality Improvement activities every 3 years – including but not limited to self-study, study groups, distance education, journal reading, continuing education courses and professional activities Continuing Quality Improvement Activities Evaluation, including documentation of information/ skills gained, and how/will learning make changes to practice or improve client care Additional Continuing Quality Improvement activities Professional Recognition Supporting Documentation 	<p>Self –</p> <ul style="list-style-type: none"> Self-assessment as part of Professional Portfolio prior to selection of Continuing Quality Improvement activities to identify gaps in knowledge, skills and practice <p>Peer and Practice –</p> <ul style="list-style-type: none"> Peer and Practice Assessment participation if a review of Professional Portfolio is deemed unsatisfactory or if concerns are identified from other information before it Assessor completes the following: <ul style="list-style-type: none"> Work environment assessment Patient chart audit 	<ul style="list-style-type: none"> Review of Professional Portfolios on an annual basis via stratified random sample or by request Assessor report submitted to Quality Assurance Committee for review following Practice Review participation

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Dental Technology	<p>College of Dental Technologists of Ontario</p> <p>www.cdto.ca</p>	<p>Professional Development Profile, containing:</p> <ul style="list-style-type: none"> Self-Assessment Forms Professional Development Records <ul style="list-style-type: none"> 90 quality improvement credits every 3 years Credit points assigned based on duration, depth of program, degree of difficulty/ involvement and degree of outcome measurement (For detailed breakdown see: www.cdto.ca/QualityAssurance/PDF/Credit_Point_System_Nov_26_2010.pdf) Categories: <ul style="list-style-type: none"> Technical activities Non-technical activities 	<p>Self –</p> <ul style="list-style-type: none"> Self-assessment tool for evaluation of competency with respect to standards of practice to determine strengths and weaknesses Summary of professional development goals and plan to address areas requiring improvement <p>Peer and Practice –</p> <ul style="list-style-type: none"> 2-5% members via random selection or referral due to complaints, discipline or deficiencies in professional development profiles participate in Peer Assessment Peer Assessor completes the following: <ul style="list-style-type: none"> Practice site visit Assessment of records and documentation Check of member's continuing education 	<ul style="list-style-type: none"> Declaration of quality improvement credits completed submitted by every member annually Summary of Professional Development Profile submitted by every member Random selection of 2-5% members every year must submit Professional Development Records and Self-Assessment forms every 3 year cycle Peer Assessor report submitted to Quality Assurance Committee for review following Peer Assessment participation
Dentistry	<p>Royal College of Dental Surgeons of Ontario</p> <p>www.rcdso.org</p>	<ul style="list-style-type: none"> Minimum 90 continuing education points in a 3 year cycle <ul style="list-style-type: none"> 1 hour = 1 point (bonus points awarded for some specific courses with hands-on training) Categories: <ul style="list-style-type: none"> Core courses (Minimum 15 points) Approved sponsor courses (Minimum 45 points) Other courses (Any remaining points) Documentation in continuing education e-portfolio 	<p>Self and Practice –</p> <ul style="list-style-type: none"> Practice Enhancement Tool <ul style="list-style-type: none"> Computer based self-assessment program to evaluate and assess practice, knowledge, skill and judgement based on peer-derived standards Consists of 200 multiple choice and case study questions Completed once every 5 years <p>Peer –</p> <ul style="list-style-type: none"> Practice Enhancement Consultant – may contact consultant to interpret and discuss Practice Enhancement Tool results for guidance regarding continuing education activities <p><i>Note: separate premises and patient record inspection programs for Sedation and/or General Anesthesia and Dental CT Scanner outside of the Quality Assurance Program</i></p>	<ul style="list-style-type: none"> Annual declaration of compliance with quality assurance program requirements for all members A percentage of continuing education e-portfolios will be selected at random for review every 3 year cycle (75 per month)

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Denturism	College of Denturists of Ontario cdo.in1touch.org	Professional Profile, containing: <ul style="list-style-type: none"> • Education • Professional history • Professional membership and service • Other professional activities • Documentation of 100 credits of continuing education every 5 years (minimum 10 per year) <ul style="list-style-type: none"> • 1 hour = 1 credit • Categories include clinical, practice management, jurisprudence, meetings/conferences, professional organizations, emergency training, study clubs, publication authorship, journals, teaching programs 	Self – <ul style="list-style-type: none"> • Self-evaluation via maintenance of professional profile Peer and Practice – <ul style="list-style-type: none"> • Practice Assessment participation may be required if failure to demonstrate efforts to maintain knowledge, skills or judgement • Assessor completes the following: <ul style="list-style-type: none"> • Site visit and inspection • Review of record keeping • Review of self-evaluation portfolio 	<ul style="list-style-type: none"> • Annual submission of continuing education hours • Records of continuing education and/or professional portfolio may be requested • Quality Assurance Assessor report submitted to Quality Assurance Committee following participation in Practice Assessment
Dietetics	College of Dietitians of Ontario www.collegeofdietitians.org	Continuing education learning activities <ul style="list-style-type: none"> • No explicit number of hours/credits/points • Categories: <ul style="list-style-type: none"> • Academic courses • Workshops, symposia, teleconferenced presentations • Self-directed learning • Scholarly Activity (publications, presentations, courses given) • Documentation demonstrating achievement of learning goals (written report, presentation given, publication written, new or revised policies and procedures, skills audit, survey results, grant proposal, new product developed, passing mark on an exam or final program transcript, new or revised educational pamphlet) 	Self – <ul style="list-style-type: none"> • Self-directed learning tool to identify areas of strength, those needing improvement, evaluation of previous year’s learning plan, and development of learning plan for the upcoming year Peer and Practice – <ul style="list-style-type: none"> • Peer and Practice Assessment participation based on random selection or if failure to comply with continuing education and professional development requirements • Consists of: <ul style="list-style-type: none"> • Step 1 – multi-source survey of 9 patients and 6 colleagues • Step 2 – behaviour-based interview and chart review if Step 1 falls below acceptable norm • Jurisprudence knowledge and assessment tool once every 5 years <ul style="list-style-type: none"> • Includes web-based learning based on practice scenarios with multiple-choice questions to assess knowledge application • Must achieve a score of at least 80% 	<ul style="list-style-type: none"> • Self-directed learning tool submitted annually by each member • Assessor report submitted to Quality Assurance Committee following participation in Peer and Practice assessment

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Homeopathy	Transitional Council of the College of Homeopaths of Ontario www.collegeofhomeopaths.on.ca	<i>Not yet in force.</i> <i>For general program information please refer to the Homeopathy Act 2007 Quality Assurance Program Regulations available at: www.e-laws.gov.on.ca/html/regs/english/elaws_regs_130032_e.htm</i>		
Kinesiology	College of Kinesiologists of Ontario www.coko.ca	Portfolio, consisting of: <ul style="list-style-type: none"> Two most recent self-assessments Two most recent Individual Learning Plans <ul style="list-style-type: none"> Consists of a minimum of 3 learning goals and strategy to achieve goals Record of Continuing Professional Development activities in line with Learning Plans <ul style="list-style-type: none"> Do not require accumulation or reporting of activity credits nor must activity be pre-approved by the College Learning is self-directed and selected on the basis of members' identification of the learning activity which will best meet their learning needs and the learning goals to be achieved 	Self – <ul style="list-style-type: none"> Annual self-assessment for planning of professional development throughout the year and reflection on the efficacy of these activities with respect to core competencies and professional standards and development of knowledge, skill and judgement Peer and Practice – <ul style="list-style-type: none"> Up to 1% annually must participate in Peer and Practice Assessment either by random selection, following failure to comply with self-assessment or continuing professional development activity data submission requirements, or practice less than 1500 hours in the previous 3 years Assessor completes the following: <ul style="list-style-type: none"> Site visit Review of Portfolio for completion and alignment of activities with learning goals 	<ul style="list-style-type: none"> Annual confirmation of completion of self-assessment and continuing professional development activity record May request submission of self-assessment, individual learning plan, or continuing professional development activity record Assessor report submitted to Quality Assurance Committee following participation in Peer and Practice Assessment
Massage Therapy	College of Massage Therapists of Ontario www.cmta.com	Professional Portfolio, consisting of: <ul style="list-style-type: none"> Self-Assessment Tool Documentation of 30 continuing education units per 3 year cycle <ul style="list-style-type: none"> 2 hours = 1 unit Categories: <ul style="list-style-type: none"> Activities directly related to self-assessment tool competencies and Scope of Practice (Minimum 20 units) Activities complementary to Scope of Practice Documentation of mandatory reading component <ul style="list-style-type: none"> 9 articles with corresponding questions per 3 year cycle 	Self – <ul style="list-style-type: none"> Self-Assessment Tool every 3 years Used to identify current level of knowledge and skill, areas requiring development, development plan of continuing education activity selection Documented in Professional Portfolio Peer and Practice – <ul style="list-style-type: none"> Requirement to participate in Peer Assessment by either random selection or if incomplete continuing education activity Peer Assessor completes the following: <ul style="list-style-type: none"> On site review of practice Review of professional portfolio Review of and reflection on selected client records 	<ul style="list-style-type: none"> Areas for development identified in self-assessment sent to the College as Target Level Submission Form Continuing education units reported to college Peer Assessor report submitted to Quality Assurance Committee following participation in Peer Assessment

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Medical Laboratory Technology	<p>College of Medical Laboratory Technologists of Ontario</p> <p>www.cmlto.com</p>	<p>Professional Portfolio completed annually, consisting of:</p> <ul style="list-style-type: none"> Professional Profile Self-Assessment Learning Goals (Minimum 2) Professional Development Logs <ul style="list-style-type: none"> Minimum of 30 hours of continuing education each year Activities include courses, conferences, workshops, clinical rounds, training, online programs, videos, volunteering, journals/textbooks, other Documentation of impact on professional practice and application to learning goals Optional Professional Development Journal Review Log 	<p>Self –</p> <ul style="list-style-type: none"> Self-Assessment as part of professional portfolio Determines opportunities to enhance knowledge, skill and judgement based on compliance with Standards of Practice <p>Practice –</p> <ul style="list-style-type: none"> Participation in Practice Review based on random selection or other criteria set out by the Quality Assurance Committee <ul style="list-style-type: none"> Must answer 25 case-based questions online related to standards of practice and application of professional knowledge, skill and judgement Participation in Competence Evaluation if knowledge, skill, and judgment are unsatisfactory based on a review of professional portfolio, the report of a Practice Review assessment, or any other written information 	<ul style="list-style-type: none"> Random audits of Professional Portfolios conducted throughout the year Practice Review results reported to Quality Assurance Committee
Medical Radiation Technology	<p>College of Medical Radiation Technologists of Ontario</p> <p>www.cmrto.org</p>	<p>Quality assurance portfolio completed annually (either online or in print), containing:</p> <ul style="list-style-type: none"> Practice Profile Self-assessment <u>Optional</u> Professional Development Plan Record of at least 25 hours of continuing education and professional development activities <ul style="list-style-type: none"> Activities include readings, seminars, webinars, conferences, courses, rounds, meetings, training, writing and delivering presentations, courses or clinical teaching, research, writing a professional journal article or paper, others Documentation of how learning is applied to practice 	<p>Self –</p> <ul style="list-style-type: none"> Self-assessment of indicators for a minimum of 2 of 8 practice standards <p>Peer and Practice –</p> <ul style="list-style-type: none"> A percentage of members selected annually by random selection or by request of the Quality Assurance Committee to participate in Peer and Practice Assessment, consisting of: <ul style="list-style-type: none"> Peer and practice assessment by means of a multi-source feedback system <ul style="list-style-type: none"> Consists of 1 self, 6 peer/co-worker and 15 patient assessments of practice based on standards of practice Peer and practice assessment by means of an assessor <ul style="list-style-type: none"> Consists of interview regarding components of practice based on standards of practice 	<ul style="list-style-type: none"> Declaration of compliance with quality assurance program requirements by each member annually Members may be requested to submit Portfolio for assessment Findings of multi-source feedback system submitted to Quality assurance committee Assessor Report submitted to Quality Assurance Committee following participation in Peer and Practice Assessment

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Medicine	<p>College of Physicians and Surgeons of Ontario www.cpso.on.ca</p>	<p>Continuing Professional Development in accordance with requirements of the College of Family Physicians of Canada (CFPC), the Royal College of Physicians and Surgeons of Canada (RCPSC), General Practice Psychotherapy Association (GPPA), or other pending CPSO approval</p> <p>CFPC – MAINPRO+ program (Maintenance of Proficiency)</p> <ul style="list-style-type: none"> Requirement of 250 continuing professional development credits per 5 year cycle (Minimum 25 credits per year, minimum 125 certified credits per cycle) Credit value varies with activity Categories include certified and uncertified forms of: <ul style="list-style-type: none"> Group learning – conferences, rounds, journal clubs, events, etc. Self-learning – online programs, journal reading, manuscript preparation, podcasts, etc. Assessment – simulation based programs, practice audits, 360 degree review, teaching assessments, etc. 	<p>Self – CFPC –</p> <ul style="list-style-type: none"> Linking Learning to Practice exercise – helps to identify a question and guides user through a series of critical inquiry and practice reflection exercises <p>RCPSC –</p> <ul style="list-style-type: none"> Accredited self-assessment programs – tools that enable physicians to assess aspects of knowledge or practice and to identify opportunities to enhance competence through learning activities <p>GPPA – not explicitly defined on public webpage</p>	<ul style="list-style-type: none"> Declaration of compliance with continuing professional development RCPSC undergoes random selection for credit validation of continuous professional development activities
	<p>College of Family Physicians and Surgeons of Canada www.cfpc.ca</p>	<p>RCPSC – Maintenance of Competency (MOC) program with MAINPORT online documentation platform</p> <ul style="list-style-type: none"> Minimum of 400 credits of continuing professional development activities per 5 year cycle (minimum 40 credits per year, minimum 25 in each program category per cycle) Credit ratings vary per category and activity type Categories include: <ul style="list-style-type: none"> Group learning – accredited and unaccredited conferences, rounds, journal clubs, small group activities Self-learning – planned learning (courses, fellowship), scanning (journal reading, podcasts, internet searching), systems learning (practice guideline development, curriculum development, examination development, peer assessment) Assessment – knowledge assessment via accredited self-assessment programs, performance assessment (via simulation, chart audit and feedback, multi-source feedback, educational/ administrative assessments) 	<p>Peer and Practice–</p> <ul style="list-style-type: none"> Assessment activity participation as a part of continuing professional development programs offered by CFPC and RCPSC Participation in Peer Assessment process by random selection, age-related requirement every 5 years after age 70, or as part of a research project <ul style="list-style-type: none"> Consists of: <ul style="list-style-type: none"> Medical Records Review Physician Interview 	<ul style="list-style-type: none"> Peer Assessor report submitted to Quality Assurance Committee following participation in Peer Assessment process
	<p>The Royal College of Physicians and Surgeons of Canada www.royalcollege.ca</p>	<p>Minimum of 400 credits of continuing professional development activities per 5 year cycle (minimum 40 credits per year, minimum 25 in each program category per cycle)</p> <ul style="list-style-type: none"> Credit ratings vary per category and activity type Categories include: <ul style="list-style-type: none"> Group learning – accredited and unaccredited conferences, rounds, journal clubs, small group activities Self-learning – planned learning (courses, fellowship), scanning (journal reading, podcasts, internet searching), systems learning (practice guideline development, curriculum development, examination development, peer assessment) Assessment – knowledge assessment via accredited self-assessment programs, performance assessment (via simulation, chart audit and feedback, multi-source feedback, educational/ administrative assessments) 	<ul style="list-style-type: none"> Peer and Practice Reassessment – may be required if opportunities for improvement identified in initial peer assessment process to identify if physician has improved practice <ul style="list-style-type: none"> Consists of: <ul style="list-style-type: none"> Medical records review Physician interview 	
	<p>General Practice Psychotherapy Association gppaonline.ca</p>	<p>GPPA</p> <ul style="list-style-type: none"> Requirement of 25 hours of continuing education (group or self-learning) and 25 hours of continuing collegial interaction (committee meetings, clinical practice interactions) annually <ul style="list-style-type: none"> Must be Psychotherapy or Psychiatry related 	<ul style="list-style-type: none"> Peer and Practice Reassessment (Comprehensive) – may be required if significant concerns regarding knowledge, skills and judgement identified through peer assessment process <ul style="list-style-type: none"> May take up to 3 days to complete and typically includes: <ul style="list-style-type: none"> Direct observation Medical records review Multisource feedback 	

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Midwifery	College of Midwives of Ontario www.cmo.on.ca	<ul style="list-style-type: none"> 3 continuing education and professional development activities <ul style="list-style-type: none"> Activities include courses, conferences, workshops, rounds, presentations, research projects, self-study, teaching/preceptorship, writing articles, study groups, peer case review 6 peer case review sessions <ul style="list-style-type: none"> Must include 4 or more midwives from 2 or more practice groups 3 quality care evaluation records <ul style="list-style-type: none"> Completed by clients upon or after discharge from care Documentation of any action taken in response to feedback 	<p>Self –</p> <ul style="list-style-type: none"> Self-assessment questionnaire completed every 3 years, which includes: <ul style="list-style-type: none"> Professional credentials Practice profile Preferred learning styles Familiarity with legislation and regulations Profile of clients Strengths and weaknesses Priorities for improvement of skills and abilities Development of goals, plan to achieve goals <p>Peer and Practice –</p> <ul style="list-style-type: none"> 3 members and their practice colleagues randomly selected each year to participate in Practice Assessment as a group exercise (No external assessor is assigned) 	<ul style="list-style-type: none"> Annual declaration of completion of self-assessment questionnaire Annual reporting of continuing education activities Declaration of completion of practice assessment workbook, submission of practice assessment workbook summary sheet, and status report 12 months following completion
	Transitional Council – College of Naturopaths of Ontario www.collegeofnaturopaths.on.ca	<ul style="list-style-type: none"> Minimum 70 credits of continuing competency and professional development per 3 year cycle reflective of findings of self-assessment tool <ul style="list-style-type: none"> 1 hour = 1 credit Categories: <ul style="list-style-type: none"> Core activities (30 credits) including jurisprudence, prescribing and intravenous infusion therapy Self-directed activities (40 credits) Documentation in professional portfolio 	<p>Self –</p> <ul style="list-style-type: none"> Mandatory annual self-assessment <ul style="list-style-type: none"> Review of last Learning Plan to evaluate achievement of goals, self-assessment questionnaire for reflection of skills based on core competencies and standards of practice Learning plan tool to document learning needs arising from self-assessment and direction for activities to enhance competencies <p>Peer and Practice –</p> <ul style="list-style-type: none"> Up to 20% randomly selected each year to participate in Peer and Practice assessment Peer Assessor completes the following: <ul style="list-style-type: none"> Site visit (3-4 hours) Practice chart review of 8-10 patient files Premises review Professional Portfolio Review Chart Stimulated Recall of 1 patient chart Review of understanding, application of 10 competencies, standards, policies, guidelines 	<ul style="list-style-type: none"> Annual declaration of compliance with quality assurance program requirements for all members Submit continuing competency and professional development summary log at the end of the 3 year cycle Peer Assessor report submitted to Quality Assurance Committee following participation in Peer and Practice Review

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Nursing	College of Nurses of Ontario www.cno.org	<ul style="list-style-type: none"> Minimum of 3 learning activities to achieve each learning goal identified in self-assessment <ul style="list-style-type: none"> No specific activity types or hours of participation outlined 	Self – <ul style="list-style-type: none"> Self-assessment completed by all members annually <ul style="list-style-type: none"> Part A – practice reflection Part B – developing and maintaining a learning plan to meet learning goals (Registered Nurse – 2 goals per year, Nurse Practitioner – 3 goals per year) Peer and Practice – <ul style="list-style-type: none"> Each year a portion of members are selected to participate in Practice Assessment <ul style="list-style-type: none"> Consists of: <ul style="list-style-type: none"> Review of learning plan by Peer Assessor Objective multiple choice tests based on selected practice documents Some Nurse Practitioners selected for Chart Review and Interview <ul style="list-style-type: none"> Peer Assessor completes the following: <ul style="list-style-type: none"> Site visit (3-4 hours) Chart-stimulated recall and behaviour-based questions Some Nurse Practitioners selected for Practice Simulation assessment <ul style="list-style-type: none"> Objective structured clinical examination composed of 10-15 stations with standardized clients in a simulated clinical environment 	<ul style="list-style-type: none"> Declaration of compliance with Quality Assurance requirements annually with registration renewal for all members Peer Assessor report submitted to Quality Assurance Committee following participation in Practice Assessment

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Occupational Therapy	<p>College of Occupational Therapists of Ontario</p> <p>www.coto.org</p>	<p>Professional portfolio, containing:</p> <ul style="list-style-type: none"> Personal and professional background Prescribed regulatory education program modules Self-assessment tool Professional development, consisting of: <ul style="list-style-type: none"> Annual professional development plan <ul style="list-style-type: none"> Learning goals Strategies to achieve goals Evidence of progress Optional Learning log (learning activity details, report of learning, and impact on practice) Reflective journal Evidence of participation in learning activities Plans to obtain supervision, support, mentoring as needed 	<p>Self –</p> <ul style="list-style-type: none"> Self-assessment completed every 2 years Review of last professional development plan and documentation of goal status, self-assessment tool, competency checklists, identification and prioritization of areas of growth <p>Peer and Practice –</p> <ul style="list-style-type: none"> Annual random selection for completion of Competency Review and Evaluation <ul style="list-style-type: none"> Step 1- Portfolio review and multi-source feedback (10 co-workers, 12 clients) Step 2 – Practice assessment if members identified to require a more detailed evaluation (review of client records and interview including case based questions, situation based questions and chart review) 	<ul style="list-style-type: none"> Submission of response sheets following completion of prescribed regulatory education program modules (anonymous, data used by Quality Assurance Committee in aggregate) Submission of portfolio following selection for participation in Competency Review and Evaluation Assessor report submitted to Quality Assurance Committee following participation in Competency Review and Evaluation
Opticianry	<p>College of Opticians of Ontario</p> <p>www.coptont.org</p>	<p>Quality assurance competency enhancement participation by all members annually, consisting of:</p> <ul style="list-style-type: none"> Professional portfolio: <ul style="list-style-type: none"> Competency self-assessment Professional improvement plan requiring goal setting, plans to achieve goals, and learning goal evaluation following participation in activities 16 credits of continuing education documented in activity log annually <ul style="list-style-type: none"> 1 credit = 1 hour Categories: <ul style="list-style-type: none"> Accredited sources Non-accredited, self-directed (Maximum 8 credits) Jurisprudence and sexual abuse prevention self-evaluation tools completed every 3 years 	<p>Self –</p> <ul style="list-style-type: none"> Competency self-assessment based on professional competencies as part of professional portfolio <p>Peer and Practice –</p> <ul style="list-style-type: none"> Quality Assurance Competency Review and Evaluation participation via random selection, inadequate quality assurance activities <ul style="list-style-type: none"> Submission of Professional Portfolio Multisource feedback (self-survey, 9 patient surveys, 6 co-worker surveys) with scores compared to norm reference score If deficiencies noted in review and evaluation, participation in on-site practice assessment required <ul style="list-style-type: none"> Peer Assessor completes: <ul style="list-style-type: none"> Site visit and equipment inspection Behaviour-based interview and chart review 	<ul style="list-style-type: none"> Submission of Professional Portfolio and multisource feedback findings to Quality Assurance Committee following participation in the Quality Assurance Competency Review and Evaluation Peer Assessor report submitted to Quality Assurance Committee following participation in practice assessment

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Optometry	<p>College of Optometrists of Ontario</p> <p>www.collegeoptom.on.ca</p>	<ul style="list-style-type: none"> 70 credit hours of continuing education per 3 year cycle from an organized program of learning 50 minutes = 1 credit hour Categories: <ul style="list-style-type: none"> A – provided by a Category A provider and verifiable (Minimum 50 credit hours) B – provided by any provider and verifiable, can include study groups 	<p>Self –</p> <ul style="list-style-type: none"> Each member responsible for formulating a personal plan for continuing education activities No formal tool or structure for self-assessment <p>Peer and Practice –</p> <ul style="list-style-type: none"> Random selection or referral for failure to meet conditions for maintenance of certificate of registration to participate in Practice Assessment <ul style="list-style-type: none"> Peer review of 25 clinical records for first time patients If deficiencies identified in practice assessment or inability to provide patient records, must participate in Practice Evaluation, which may consist of any of the following: <ul style="list-style-type: none"> Requiring the member to answer questions that relate to practising optometry Requiring the member to answer questions that arise from a review of real or simulated patient charts Requiring the member to examine persons or clinical simulations exhibiting problems that relate to practising optometry Requiring the member to demonstrate the application of optometric techniques 	<ul style="list-style-type: none"> Annual report submission to document continuing education activities Random auditing of continuing education records Peer Assessor report submitted to Quality Assurance Committee following participation in Practice Assessment Report of Practice Evaluation results submitted to Quality Assessment Committee

	Regulatory Body	Continuing Education or Professional Development Requirement	Self, Peer, Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Pharmacy (Pharmacists and Pharmacy Technicians)	<p>Ontario College of Pharmacists</p> <p>www.ocpinfo.com</p>	<p>Learning Portfolio maintained by Part A and B pharmacists* and all pharmacy technicians, containing:</p> <ul style="list-style-type: none"> • Education action plan • Continuing education log <ul style="list-style-type: none"> • No set required number of activities or hours • Frequently Asked Question Log • Professional Portfolio <p><i>*Note RE: Two part register</i> <i>Part A: pharmacists who take part in a minimum of 600 hours of patient care over 3 years</i> <i>Part B: all other pharmacists</i></p>	<p>Self, Peer and Practice –</p> <p>Phase I Practice Review:</p> <ul style="list-style-type: none"> • 20% of Part A pharmacists and technicians randomly selected to complete Self-Assessment Tool annually <ul style="list-style-type: none"> • Assists members in identifying learning needs and creating a plan for learning • Voluntary annual self-assessment recommended <p>Phase II Practice Review:</p> <ul style="list-style-type: none"> • ~5% Part A pharmacists randomly selected to participate in Peer Review annually <ul style="list-style-type: none"> • Consists of: <ul style="list-style-type: none"> • Learning portfolio sharing session • Computer based open book clinical knowledge assessment –18 cases, each followed by 3 multiple choice questions • Standardized patient interviews – Interaction with standardized patients in 5 case scenarios • General feedback session • Those who fail to meet standards of peer review participate in Professional Skills Enhancement Workshop followed by practice review re-challenge <p><i>Note: separate quality assurance mechanism for <u>pharmacies</u> that consists of pharmacy inspections</i></p>	<ul style="list-style-type: none"> • Declaration of completion of self-assessment tool • Required to submit Learning Portfolio when requested or if selected to participate in Peer Review • Peer Review results presented to the Quality Assurance Committee

	Regulatory Body	Continuing Education or Professional Development Requirement	Self, Peer, Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Physiotherapy	College of Physiotherapists of Ontario www.collegept.org	Annual maintenance of Professional Portfolio, containing: <ul style="list-style-type: none"> Documented evidence of learning activities <ul style="list-style-type: none"> Formal courses, certificates/qualifications, conferences, critical incidence analyses, formal education programs, in-service education, rounds, mentoring, original published works, personal experiences, learning from patients, project work, reading, journal clubs, research and development, teaching, teleconferences No set number of credits or types of activity Include reflection on learning (encouraged to use guided reflection), application to practice, summary of improvement/change to practice Professional Issues Self-assessment 	Self – <ul style="list-style-type: none"> Professional Issues Self-assessment questionnaire <ul style="list-style-type: none"> Variable number of questions to test knowledge of professional responsibilities Peer and Practice – <ul style="list-style-type: none"> ~5% randomly selected annually to participate in Practice Assessment <ul style="list-style-type: none"> Peer Assessor completes the following: <ul style="list-style-type: none"> Practice setting visit (3-4 hours) Review of Professional Portfolio Review of record keeping Chart Stimulated Recall of 6 patient charts Jurisprudence education program once every 5 years <ul style="list-style-type: none"> 50-question scenario-based online module 	<ul style="list-style-type: none"> Annual declaration of completion of Professional Portfolio Peer Assessor report submitted to Quality Management Committee following participation in Practice Assessment
Psychology	College of Psychologists of Ontario www.cpo.on.ca	Professional Development Plan required every other year, consisting of: <ul style="list-style-type: none"> Documentation of differences between current and desired level of knowledge, skill or experience identified in self-assessment Plan to address differences Timeline Documentation of courses, workshops or activities completed 	Self – <ul style="list-style-type: none"> Self-assessment required every other year Assists in evaluating current level of knowledge, skills and experience to identify areas where further development or enhancement may be required Peer and Practice – <ul style="list-style-type: none"> Random selection annually to participate in Peer Assisted Review (12-15 members annually) Two members of the college complete the following: <ul style="list-style-type: none"> Site visit (1/2 day), tour of facility Review of Self-assessment guide and Professional Development Plan Interview and discussion Review of files 	<ul style="list-style-type: none"> Submit declaration of completion of Self-assessment and Professional Development Plan Peer Reviewer written summary submitted to Quality Assurance Committee following participation in Peer Assisted Review
Psychotherapy	Transitional Council – College of Registered Psychotherapists of Ontario www.crpo.ca	<p><i>Not yet in force.</i></p> <p><i>For general program information please refer to the Psychotherapy Act, 2007 Quality Assurance Program Regulations available at: www.e-laws.gov.on.ca/html/regq/english/elaws_reqs_130034_e.htm</i></p>		

	Regulatory Body	Continuing Education or Professional Development Requirement	Self, Peer, Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Traditional Chinese Medicine	<p>College of Traditional Chinese Medicine Practitioners and Acupuncturists of Ontario</p> <p>www.ctcmpao.on.ca</p>	<p>Professional Development Plan, consisting of:</p> <ul style="list-style-type: none"> • Documentation of top priority areas • Documentation of 15 hours of professional development activities annually, including: <ul style="list-style-type: none"> • Description of activity • Date completed • Length of activity in hours • Activity classification (seminar, professional reading, workshop, training course, other) • How activity helped member in his/her practice 	<p>Self –</p> <ul style="list-style-type: none"> • Self-Assessment annually to identify areas related to Standards of Practice a member would like to learn more about and to identify continuing education or professional development learning activities for the upcoming year <p>Peer and Practice –</p> <ul style="list-style-type: none"> • Selected randomly or if concerns arise with review of Self-Assessment and Professional Development Plan to participate in Peer and Practice Assessment • Assessor completes the following: <ul style="list-style-type: none"> • Site visit • Assessment of safe practice • Review of record keeping 	<ul style="list-style-type: none"> • Annual quality assurance declaration by all members to confirm program participation • A portion must submit Self-Assessment and Professional Development Plan for review • Peer Assessor report submitted to Quality Assurance Committee following participation in Peer and Practice Assessment

	Regulatory Body	Continuing Education or Professional Development Requirement	Self, Peer, Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Respiratory Therapy	<p>College of Respiratory Therapists of Ontario</p> <p>www.crto.on.ca</p>	<p>Portfolio Online for Respiratory Therapists (PORTfolio), consisting of:</p> <ul style="list-style-type: none"> • Personal Profile • Self-assessment • Learning log <ul style="list-style-type: none"> • Minimum of 12 learning activities annually in addition to activities undertaken as part of learning goal • May include in-services, grand rounds, re-certifications, journal reading, online searches, conferences, discussion with colleagues, webinars • Learning goal <ul style="list-style-type: none"> • 1 every 12 months • Steps include: <ul style="list-style-type: none"> • Planning • Implementing plan • Evaluation of what was achieved 	<p>Self –</p> <ul style="list-style-type: none"> • Self-assessment as part of PORTfolio to assist members in identifying learning goals <p>Peer and Practice –</p> <p>Lattered approach:</p> <ul style="list-style-type: none"> • ~8.5% of members randomly selected annually to complete Professional Standards Assessment and submit PORTfolio for review <ul style="list-style-type: none"> • Online open book assessment with 60 multiple choice questions • Must obtain score of 70% of above the 6th percentile for a given year • If above not completed to standard, feedback is provided and a second attempt allowed • If above not completed to standard, must participate in a Specified Continuing Education or Remediation Program, which may include: <ul style="list-style-type: none"> • Customized educational tool utilizing a mentor, course, educational program, or other educational tool • If above not completed to standard, then, depending on individual areas for improvement, may be required to resubmit PORTfolio and Professional Standards Assessment, complete oral or written assessment, or participate in Practice Assessment, which may include: <ul style="list-style-type: none"> • Requiring member to answer questions about the member’s practice • Interviewing or surveying the member or the member’s employer, employees, colleagues, supervisors, peers or patients • Inspecting the premises where the member practices, including reviewing information respective patient care or the member’s records of the care of patients or of equipment maintenance and quality control • Reviewing the member’s records of professional development and self-assessments • Requiring the member to participate in simulations, peer assessments, practice setting reviews, case studies or other 	<ul style="list-style-type: none"> • Annual declaration of maintenance of PORTfolio • Random selection for submission of Portfolio and participation in Professional Standards Assessment • Reports and findings following participation in lattered Quality Assurance model

APPENDIX B – QUALITY ASSURANCE SYSTEMS OF NON-HEALTH PROFESSIONS – ONTARIO, CANADA

	Regulatory body	Continuing Education or Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Agrology	Ontario Institute of Agrologists www.oia.on.ca	Professional Development Log, containing: <ul style="list-style-type: none"> Documentation of continuing competency activities required annually 	<ul style="list-style-type: none"> No formal system 	<ul style="list-style-type: none"> Audits of Professional Development Logs
Architecture	Ontario Association of Architects www.oaa.on.ca	Continuing education requirements by membership type: <ul style="list-style-type: none"> Architect - 70 hours of learning (minimum 25 hours of Structured Learning) Non-Practising Architect- 35 hours of learning (no Structured Learning minimum required) Licensed Technologist OAA - 35 hours of learning (minimum submission hours of Structured Learning) Technologist OAAAS - 15 hours of learning (minimum 5 hours of Structured Learning) 	<ul style="list-style-type: none"> No formal system 	<ul style="list-style-type: none"> Report continuing education annually
Aviation	Transport Canada Civil Aviation www.tc.gc.ca/eng/civilaviation/opssvs/general-personnel-current-1810.htm	Recency and Currency Requirements: <ul style="list-style-type: none"> 5 year requirements – needed to act as pilot-in-command or co-pilot <ul style="list-style-type: none"> Flown as pilot-in-command or co-pilot in the previous 5 years Completed flight review with instructor Written and passed the Pre-Solo Test of Air Regulations (PSTAR) exam within previous 12 months 2 year requirements – needed to act as pilot-in-command or co-pilot <ul style="list-style-type: none"> Completion of a recurrent training program within previous 24 months Ways to meet standard: <ul style="list-style-type: none"> Flight review with an instructor Safety seminar by Transport Canada Self-paced study program in Transport Canada Aviation Safety Newsletter Complete training program or Pilot Proficiency Check Complete requirements for issue or renewal of a licence permit or rating Complete written exam for a licence, permit or rating 6 month requirements – needed in order to carry passengers <ul style="list-style-type: none"> Completed 5 takeoffs and landings in the same category and class within the previous 6 months 		
Accounting	Chartered Professional Accountants Ontario www.cpaontario.ca	<ul style="list-style-type: none"> 120 hours every 3 year period of continuing professional development <ul style="list-style-type: none"> Minimum 20 hours annually 50% must be verifiable 	<ul style="list-style-type: none"> No formal system 	<ul style="list-style-type: none"> Submit declaration of completion of continuing professional development annually Members selected annually for auditing of compliance

	Regulatory body	Continuing Education or Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Early Childhood Education	College of Early Childhood Educators www.college-ece.ca	Continuous Professional Learning Portfolio every 2 year cycle, containing: <ul style="list-style-type: none"> Self-assessment tool Professional learning plan Record of professional learning <ul style="list-style-type: none"> No set number of hours or specific activities Must reflect on goals, strategies and learning 	<ul style="list-style-type: none"> Self-assessment tool as part of Portfolio Checklist designed to assist in identifying areas for growth and leadership development based on code of ethics and standards of practice 	<ul style="list-style-type: none"> The College reserves the right to audit a member's learning portfolio if necessary
Forestry	Ontario Professional Foresters Association www.opfa.ca	<ul style="list-style-type: none"> Personal practice focus and learning plan – no specific format Minimum 60 hours of continuing education every 3 years 	<ul style="list-style-type: none"> Competency recording questionnaire Peer review <ul style="list-style-type: none"> Dialogue between two members about professional responsibilities as a means of evaluating a member's performance of professional continuing education and reporting obligations Transitioning to a more structured system with assessors appointed by the Association 	<ul style="list-style-type: none"> Annual declaration of participation in continuing education required components
Geoscience	Association of Professional Geoscientists of Ontario www.apgo.net	<ul style="list-style-type: none"> Continuing professional development every 3 years, with: <ul style="list-style-type: none"> Review and appraisal Informal continuing professional development plan 240 hours of continuing professional development activities per 3 year period (at least 80 hours per year) <ul style="list-style-type: none"> Minimum of 5 hours in at least 3 of 6 categories Categories: <ul style="list-style-type: none"> Professional practice Formal training Participation Presentations (as presenter) Contribution to knowledge 	<ul style="list-style-type: none"> Self-review and appraisal to identify training needs at each member's career stage 	<ul style="list-style-type: none"> Summary of continuing professional development hours declared annually Auditing of ~5% of member's continuing professional development records per year via random selection or in cases of non-compliance or other issues

	Regulatory body	Continuing Education or Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Human Resources	Human Resources Professionals Association www.hrpa.ca	<p>Continuous Professional Development Log, containing:</p> <ul style="list-style-type: none"> Personal professional development plan (Not mandatory but encouraged) Documentation of 66.67 hours of professional development activities every 3 year cycle <ul style="list-style-type: none"> Reportable hours accrued vary with activity type Categories: <ul style="list-style-type: none"> A – continuing education (maximum 66.67 hours) B - leadership activities (maximum 46.67 hours) C - instructional activities D - completion of work projects/initiatives E - research, publication (maximum 33.33 hours) 	<ul style="list-style-type: none"> No formal system 	<ul style="list-style-type: none"> All members submit logs every 3 years Random audit of 3% of logs annually
Insurance	Registered Insurance Brokers of Ontario www.ribo.com	<ul style="list-style-type: none"> 10 hours of continuing education annually Categories: <ul style="list-style-type: none"> Management (Minimum 5 hours) Technical 	<ul style="list-style-type: none"> Random spot checks every 3-5 years <ul style="list-style-type: none"> Review of books, records, and daily operations 	<ul style="list-style-type: none"> Annual declaration of compliance with continuing education Spot checks of records
Land Surveying	Association of Ontario Land Surveyors www.aols.org	<p>Participation in professional development program every 3 years</p> <ul style="list-style-type: none"> 36 hours formal activities – Courses with instruction by an expert in the subject 66 hours professional activities – attendance at sponsored meetings, participation in professional committees, making presentations, published articles, raising public awareness of the profession, self-study 	<ul style="list-style-type: none"> No formal system 	<ul style="list-style-type: none"> Submission of annual continuing professional development report online Audits of records

	Regulatory body	Continuing Education or Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Law (Lawyers and Paralegals)	<p>The Law Society of Upper Canada</p> <p>www.lsuc.on.ca</p>	<p>12 continuing professional development hours annually</p> <ul style="list-style-type: none"> Categories: <ul style="list-style-type: none"> Accredited Professionalism Hours (Minimum 3 hours) Substantive Hours (Maximum 9 hours) 	<ul style="list-style-type: none"> Law firm spot audit – Proactive compliance measurements and problem detection tool <ul style="list-style-type: none"> Participation ~ once every 5 years by random selection or if indicators of issues <ul style="list-style-type: none"> Measures integrity of law firm financial filing Assesses ongoing compliance with financial record-keeping requirements Assesses ongoing compliance with rules of professional conduct Review of client files Practice Management Review – goal of preventing competence deficiencies <ul style="list-style-type: none"> 420 reviews per year Risk based random selection process Assessment of basic practice management systems in the lawyer’s office Client service and communication, file management, technology, professional management, time management, personal management Focused Practice Review – addresses existing competence deficiencies <ul style="list-style-type: none"> 80 conducted per year 	<ul style="list-style-type: none"> Random annual continuing professional development audits of compliance Reviewer’s Report submitted to Professional Development and Competence Committee following participation in Spot Audit, Practice Management Review, Focused Practice Review
Professional Engineering	<p>Professional Engineers Ontario</p> <p>peo.on.ca</p>	<p><i>Not yet in place. Pending report from the Continuing Professional Development, Competency, and Quality Assurance Task Force (Anticipated completion December 2015)</i></p> <p><i>Terms of reference available at: peo.on.ca/index.php/ci_id/27872/la_id/1.htm</i></p>		

Regulatory body		Continuing Education or Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Real Estate	Real Estate Council of Ontario www.reco.on.ca	<ul style="list-style-type: none"> Mandatory participation in online self-directed continuing education program every 2 year cycle <ul style="list-style-type: none"> Real Estate Council of Ontario Update Course (4 modules) 2 modules of electives <ul style="list-style-type: none"> Contain audio, visual, interactive elements and scenarios 	<ul style="list-style-type: none"> No formal system, however assessment may be embedded in the online modules (not clear from publically accessible webpage) 	<ul style="list-style-type: none"> Declaration of identify at the end of each online course
Social Work and Social Service	Ontario College of Social Workers and Social Service Workers www.ocswssw.org	<ul style="list-style-type: none"> Continuing Competence Program annually, consisting of: <ul style="list-style-type: none"> Review of practice (optional Work Sheet) Self-Assessment Tool Activity log <ul style="list-style-type: none"> Not based on a set number of hours or credits 	<ul style="list-style-type: none"> Self-assessment tool based on standards of practice as part of continuing competence program 	<ul style="list-style-type: none"> Annual declaration of Participation in the Continuing Competence Program
Teaching	Ontario College of Teachers www.oct.ca	<p>Expectation that all members will participate in ongoing learning</p> <ul style="list-style-type: none"> Participation linked to pay grade and opportunities for career advancement Many learning activities, courses and opportunities offered by various organizations Additional Basic Qualifications and Additional Qualifications <ul style="list-style-type: none"> Qualifications earned by taking courses or programs Listed on certificate of qualification and registration 	<ul style="list-style-type: none"> No formal system 	<ul style="list-style-type: none"> No formal system
Veterinary Medicine	College of Veterinarians of Ontario www.cvo.org	<ul style="list-style-type: none"> Continuous professional development via 3 steps: <ul style="list-style-type: none"> Assess and plan Act and log Summarize and report <ul style="list-style-type: none"> 150 hours over 3 years Including workshops, webinars, online learning modules, consultation with the practice advice service, continuing professional development online tools 	<ul style="list-style-type: none"> 20% randomly selected annually for a Medical Records Review and Assessment Consists of: <ul style="list-style-type: none"> Self-assessment of Medical Records Peer review of Medical Records 	<ul style="list-style-type: none"> Report annually on continuing professional development activity hours

APPENDIX C – SELECT GLOBAL SCAN OF PROFESSIONS

PROFESSION - MEDICINE				
Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
British Columbia, Canada	<p>College of Physicians and Surgeons of British Columbia</p> <p>www.cpsbc.ca</p>	<ul style="list-style-type: none"> Must comply with the requirements of either the Royal College of Physicians and Surgeons of Canada or the College of Family Physicians of Canada For more information on these programs, please see Medicine entry in Appendix A (Ontario, Canada) <p><i>Note: In addition to the practitioner-specific components, the College has other quality assurance programs for specific facilities and services. These include the Diagnostic Accreditation Program, the BC Methadone Program, the Non-hospital Medical and Surgical Facilities Program, and Prescription Review Program</i></p>	<p>Physician Practice Enhancement Program</p> <ul style="list-style-type: none"> Random selection to participate, although practice colleagues also required to participate. Risk prioritized selection such that collegially unsupported, solo practitioners, and/or those aged over 70 prioritized to participate. Three components: <ul style="list-style-type: none"> Peer and Practice Assessment of Recorded Care Multisource Feedback Office Inspection of Premises and Processes 	<ul style="list-style-type: none"> Annual declaration of compliance with continuing medical education Peer Assessor report of Physician Practice Enhancement Program report submitted for review
Massachusetts United States	<p>Massachusetts Board of Registration in Medicine</p> <p>www.mass.gov/ma/ssmedboard</p> <p>Massachusetts Medical Society</p> <p>www.massmed.org</p> <p>American Board of Medical Specialties</p> <p>www.abms.org</p>	<ul style="list-style-type: none"> 100 continuing medical education credits every 2 years Categories: <ul style="list-style-type: none"> Category 1 – accredited – lectures, seminars, self-study, self-assessment programs, online courses, etc. Category 2 – (Maximum 60 credits) – medical teaching, articles, publications, books, exhibits, journal clubs, discussion with colleagues, peer review, chart audit, etc. Members of a national board of a medical speciality required to partake in Continuing Medical Education (hours vary by board, minimum 25 hours annually) as part of Life Long Learning and Self-Assessment <ul style="list-style-type: none"> May claim 60 credits in category 1 of state-required credits 	<ul style="list-style-type: none"> Requirements for a Qualified Patient Care Assessment Program at health facility, includes internal audits Members of a national board of a medical speciality required to undergo assessment as part of Maintenance of Competence. (Assessments vary by board) <ul style="list-style-type: none"> Self-Assessment Cognitive Expertise - Secure examination (multiple choice) of knowledge, skills, and judgement ~every 10 years Practice Performance Assessment, some examples include: <ul style="list-style-type: none"> Case summaries Multisource feedback Case evaluation and simulation 	<ul style="list-style-type: none"> Random audits of continuing medical education records

PROFESSION - MEDICINE

Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
United Kingdom	<p>General Medical Council</p> <p>www.gmc-uk.org</p>	<p>Continuing professional development, consisting of:</p> <ul style="list-style-type: none"> • Self-assessment to identify continuing professional development needs • Planning of activities • Participation in activities <ul style="list-style-type: none"> • No set number of hours or activities • Domains (recommended to seek variety): <ul style="list-style-type: none"> • Knowledge, skills and performance • Safety and quality • Communication, partnership, teamwork • Maintaining trust • Reflection on learning and impact on performance and practice – recommended to include research, audit, patient and colleague feedback to • Recommend to include peer involvement <p>May choose to follow a specific scheme in place by a medical royal college, however not a necessity</p>	<ul style="list-style-type: none"> • Revalidation every 5 years based on recommendation made by a responsible officer who reviews appraisal findings and all available evidence • Appraisal annually <ul style="list-style-type: none"> • Discussion of whole practice with appraiser, including review of continuing professional development records, quality improvement activity, significant events, feedback from colleagues and patients, and review of complaints and compliments 	<ul style="list-style-type: none"> • Receipt of recommendations for revalidation by responsible officers
Australia	<p>Medical Board of Australia</p> <p>www.medicalboard.gov.au</p>	<p>General registration practitioners</p> <ul style="list-style-type: none"> • 50h of continuing professional development per year • Must include: <ul style="list-style-type: none"> • Practice-based reflective elements – one of clinical audit, peer review, performance appraisal • Knowledge enhancement activities – i.e. courses, conferences, online learning, reading, research, publication, teaching/supervising <p>Members of an accredited specialist college must meet standards set out by their college</p> <p>E.g. The Royal Australasian College of Physicians</p> <ul style="list-style-type: none"> • 100 credits of continuing professional development • Categories: <ul style="list-style-type: none"> • Educational development, teaching, research • Group learning • Self-assessment • Structured learning projects • Practice review and appraisal • Learning plan and reflection on learning encouraged 	<p>General practitioners</p> <ul style="list-style-type: none"> • Practice-based reflective elements: <ul style="list-style-type: none"> • Clinical audit – comparison of actual clinical practice to standards of practice • Peer review – meetings with peers with presentation of one's own work to one's peers for review • Performance appraisal – activities that allow practitioner to review practice or performance <p>Members of The Royal Australasian College of Physicians</p> <ul style="list-style-type: none"> • Optional Peer Review 	<ul style="list-style-type: none"> • Declaration of compliance with continuing professional development standards • Random audits of records

PROFESSION - MEDICINE

Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
New Zealand	Medical Council of New Zealand www.mcnz.org.nz	50 hours of continuing professional development annually Should include: <ul style="list-style-type: none"> • Continuing medical education (minimum 20 hours) <ul style="list-style-type: none"> • Activities include – conferences, courses, workshops, self-directed learning, journal reading, supervising, teaching, research, giving presentations • Collegial relationship meetings (minimum 8 hours) • Audit of medical practice participation (minimum 1) • Peer review (minimum of 10 hours) <ul style="list-style-type: none"> • Examples include: <ul style="list-style-type: none"> • Joint review of cases • Review of charts • Practice visits to review practitioner performance • Multisource feedback • Discussion groups • Mortality and morbidity meetings Programs provided by specific colleges’ recertification programmes	<p><i>Some requirements vary slightly depending on vocational scope</i></p> Peer review - as previously described	<ul style="list-style-type: none"> • Audit of minimum 15% of members annually for compliance with continuing professional development

PROFESSION – NURSING (REGISTERED NURSES AND NURSE PRACTITIONERS)

Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
British Columbia, Canada	<p>College of Registered Nurses of British Columbia</p> <p>www.crnbc.ca</p>	<p>Registered Nurses and Nurse Practitioners</p> <ul style="list-style-type: none"> Professional Development Plan based on self and peer assessments <ul style="list-style-type: none"> Registered Nurse - Minimum 1 activity annually Nurse Practitioner – Minimum 3 activities annually Evaluation of effect of the previous year’s professional development on practice May document in Quality Assurance portfolio 	<p>Registered Nurses and Nurse Practitioners</p> <ul style="list-style-type: none"> Self-assessment questionnaire based on standards of practice Peer feedback No set structure, however recommended that feedback be in a deliberate and thoughtful way and to include discussion of self-assessment <p>Additional Requirements for Nurse Practitioners</p> <ul style="list-style-type: none"> Critical review of client documentation On site peer review of practice 	<ul style="list-style-type: none"> Annual declaration of completion of quality assurance program requirements
Massachusetts United States	<p>Massachusetts Board of Registration in Nursing</p> <p>www.mass.gov/dph/boards/rn</p>	<ul style="list-style-type: none"> 15 contact hours of continuing education within 2 years <ul style="list-style-type: none"> ‘contact hour’ value varies with activity type Selection of activities the responsibility of each individual, however guidance in the form of a checklist is provided to aid in identifying programs that are designed to facilitate augmenting knowledge, skills and attitudes of practice Advanced Practice Nurses require additional continuing education mandated by certifying organization <ul style="list-style-type: none"> E.g. American Academy of Nurse Practitioners – 75 contact hours every 5 years (increasing to 100 hours in 2017 with a minimum of 25 hours in pharmacology) (www.aanpcert.org) 	<ul style="list-style-type: none"> No formal system from the Board Advance Practice Nurses assessment being phased in across all certifying organization in 2015 as part of implementing the Consensus Model for APRN Regulation: Licensure, Accreditation, Certification & Education (www.ncsbn.org/Consensus_Model_for_APRN_Regulation_July_2008.pdf) 	<ul style="list-style-type: none"> Declaration of compliance with continuing education Submit evidence of continuing education completed upon request
United Kingdom	<p>Nursing and Midwifery Council</p> <p>www.nmc-uk.org</p>	<p>Portfolio, containing:</p> <ul style="list-style-type: none"> Evidence of undertaking at least 40 hours of continued professional development every 3 years <ul style="list-style-type: none"> Minimum of 20 hours of participatory learning Practice-related feedback from at least 5 sources Reflection on learning and feedback received 	<ul style="list-style-type: none"> Collect practice-related feedback from at least five sources Obtain confirmation from a third party about compliance with revalidation requirements and the absence of unaddressed concerns of practice 	<ul style="list-style-type: none"> Declaration of completion of Continuing professional development Annual Audit of a random sample of portfolios

PROFESSION – NURSING (REGISTERED NURSES AND NURSE PRACTITIONERS)

Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Australia	<p>Nursing and Midwifery board of Australia</p> <p>www.nursingmidwiferyboard.gov.au</p>	<ul style="list-style-type: none"> Minimum number of Continuing Professional Development hours (20-40 hours) depending on registration status Activities may include courses, conferences, seminars, workshops, courses, learning activities, self-directed learning, others 	<ul style="list-style-type: none"> Assessment required for internationally qualified nurses, nurses undergoing re-entry to practice following lapse of recency of practice, and those requiring demonstration of fitness to practice <ul style="list-style-type: none"> Self-assessment Peer assessment – May include observation of performance, document auditing, interview of individual, colleagues and clients, testing 	<ul style="list-style-type: none"> Random audits of Continuing Professional Development log
New Zealand	<p>Nursing Council of New Zealand</p> <p>http://www.nursingcouncil.org.nz/</p>	<p>Recertification Audit</p> <ul style="list-style-type: none"> 60 hours of professional development followed by reflection on professional development as component of recertification audit <ul style="list-style-type: none"> Endorsed by employer, manager or nurse educator <p>OR</p> <p>Participation in a Professional Development and Recognition Programme</p> <ul style="list-style-type: none"> Nurses showing continued competency via this method can be exempt from Recertification Audit 29 different programmes offered by employers and professional organizations Requires completion of a Professional Portfolio 	<p>Recertification Audit Assessment</p> <ul style="list-style-type: none"> Two competence assessments every 3 years One must be conducted by a council-approved assessor or a peer, the other may be a self-assessment May include: <ul style="list-style-type: none"> Direct observation of practice Interview to ascertain nursing care in different scenarios Review of nurse evidence – self-assessments, examples of practice, documentation, reports from other nurses and other health professionals <p>OR</p> <p>Assessment as part of Professional Development and Recognition Programme</p> <ul style="list-style-type: none"> Assessors give individual feedback on practice/evidence 	<ul style="list-style-type: none"> Annual declaration of completion of continuing competence requirements Recertification Audit of 5% of members per year

PROFESSION - PHARMACY

Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
British Columbia, Canada	The College of Pharmacists of British Columbia www.bcpharmacists.org	Professional Development and Assessment Program: <ul style="list-style-type: none"> • Learning and practice portfolio with 15 hours of learning documented in a minimum of 6 learning records annually • Record components- Plan, Act, Reflect • No need for accredited or structured activity as long as documented properly 	<ul style="list-style-type: none"> • Optional self-assessment component of Professional Development and Assessment Program • Pharmacy Review and Pharmacy Practice Review <ul style="list-style-type: none"> • Practice visit and assessment (Rolled out January 2015 to replace a knowledge assessment examination previously used) 	<ul style="list-style-type: none"> • All members submit learning records annually • Audits of records
Massachusetts United States	Massachusetts Board of Registration in Pharmacy www.mass.gov/dph/boards/pharmacy	<ul style="list-style-type: none"> • Record of 30 continuing education hours every 2 years <ul style="list-style-type: none"> • At least 2 credits in pharmacy law annually • At least 5 credits must be live annually 	<ul style="list-style-type: none"> • Continuing education courses are required to evaluate participants' attainment of learning objectives • All pharmacies are required to have a decentralized Continuous Quality Improvement Program to identify and evaluate quality-related events and improve patient care 	<ul style="list-style-type: none"> • Declaration of compliance with continuing education requirements • Audits of continuing education records upon request
United Kingdom	General Pharmaceutical Council www.pharmacyregulation.org	Record of Continuing Professional Development <ul style="list-style-type: none"> • Minimum of 9 entries per year • Reflect on and record how each task has helped develop or improve quality of practice (at least 3 of 9 must start at 'reflection') 	<ul style="list-style-type: none"> • No mechanism presently, however a new model of continuing fitness to practice is under development that will include a peer assessment component and use of external performance indicators (planned implementation for 2018) 	<ul style="list-style-type: none"> • Declaration of participation in Continuing Professional Development program requirements • Auditing of Continuing Professional Development records ~every 5 years

PROFESSION - PHARMACY

Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Australia	<p>Pharmacy Board of Australia www.pharmacyboard.gov.au/</p> <p>The Pharmacy Guild of Australia www.guild.org.au</p>	<p>The Pharmacy Board of Australia</p> <ul style="list-style-type: none"> Requirement of 20 continuing professional development credits annually (increasing up to 40 with new program roll-out) Categories: <ul style="list-style-type: none"> Information without assessment (1 credit per activity) Knowledge or skills improved with assessment (2 credits per activity) Quality of practice improvement facilitated (3 credits per activity) <p>The Pharmacy Guild (Voluntary accreditation for community pharmacies):</p> <ul style="list-style-type: none"> At least 3 hours of refresher training annually with evidence of completion/participation 	<p>The Pharmacy Board of Australia</p> <ul style="list-style-type: none"> Assessment as a part of continuing professional development group 2 and 3 involvement <p>The Pharmacy Guild:</p> <ul style="list-style-type: none"> Self-assessment tool completion every 2 years On-site practice assessment and inspection every 2 years Mystery shopper assessment at least once annually 	<p>The Pharmacy Board of Australia</p> <ul style="list-style-type: none"> Declaration of compliance Audits of compliance <p>The Pharmacy Guild:</p> <ul style="list-style-type: none"> Mystery shopper performance reported in aggregate
New Zealand	<p>Pharmacy Council of New Zealand www.pharmacycouncil.org.nz</p>	<p>Record of 70 Continuing Professional Development credits over 3 years</p> <ul style="list-style-type: none"> Minimum 20 credits each year Categories: <ul style="list-style-type: none"> Group 1 - 1 point (maximum 50%) Group 2 - 2 points Group 3 - 5 points per goal (minimum 2 goals) More credit for activities that show knowledge gained (via assessment) and benefits to practice (outcomes of learning) A learning peer provides input for all 4 Continuing Professional Development cycle steps (Reflection, Planning, Action and Outcome) as part of completion of each significant learning goal 	<ul style="list-style-type: none"> Informal self-assessment via reviewing practice at the beginning of every 3 year cycle to ensure competency and to identify gaps that need to be addressed. Professional development plan encouraged but not needed. Informal peer assessment via learning peer input on Continuing Professional Development 	<ul style="list-style-type: none"> Annual Declaration of Continuing Professional Development activities

PROFESSION - DENTISTRY

Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
British Columbia, Canada	College of Dental Surgeons of British Columbia www.cdsbc.org	<ul style="list-style-type: none"> Maintain a record of 90 credits of continuing education every 3 years <ul style="list-style-type: none"> 1 credit = 1 hour Activities include lecture, instruction, and participation 	<ul style="list-style-type: none"> Encouraged to use standards of practice as a self-reflection tool to plan continuing education activities May choose complete national examinations to count toward continuing education activities 	<ul style="list-style-type: none"> Audits of continuing education records
Massachusetts United States	Massachusetts Board of Registration in Dentistry www.mass.gov/dph/boards/dn	<ul style="list-style-type: none"> Maintain a record of 40 continuing education units every 2 years Minimum of 20 hours that has significant intellectual or practical content Activity types: <ul style="list-style-type: none"> Educational and scientific course, examination, specialty board membership (up to 100%) Self-instruction (Maximum of 50%) Papers, publication, scientific presentations (Maximum 50%) Instruction of a continuing education course (Maximum 50%) Teaching or research activities (Maximum 25%) Professional meeting presentations (Maximum 20%) General attendance at multi-day conference (Maximum 5 units) Pro bono services (Maximum 5 units) Non-clinical practice-related (Maximum 10%) 	<ul style="list-style-type: none"> No formal system, however continuing education courses must include evaluation of a participant's attainment of course objectives 	<ul style="list-style-type: none"> Annual declaration of compliance with continuing education Audits of continuing education records upon request
United Kingdom	General Dental Council www.gdc-uk.org	<ul style="list-style-type: none"> 250 Continuing Professional Development hours per 5 year cycle <ul style="list-style-type: none"> At least 75 hours verifiable (concise educational aims and objectives, clear anticipated outcomes, quality controls) Activities - lectures, seminars, courses, individual study and other activities Optional Personal Development Plan 	<ul style="list-style-type: none"> No formal system 	<ul style="list-style-type: none"> Must report on continuing professional development activities annually Audits of continuing professional development records
Australia	Dental Board of Australia www.dentalboard.gov.au	<ul style="list-style-type: none"> Maintain a record 60 hours of Continuing Professional Development every 3 years <ul style="list-style-type: none"> 80% must be clinically or scientifically based 	<ul style="list-style-type: none"> Members may be required to undergo examination if they have not practiced in 5 years 	<ul style="list-style-type: none"> Annual declaration of participation Record audits of continuing professional development

PROFESSION - DENTISTRY

Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
New Zealand	Dental Council www.dcnz.org.nz	<ul style="list-style-type: none"> • Must participate in 80 hours verifiable Continuing Professional Development every 3 years <ul style="list-style-type: none"> • Must include 12 hours of peer contact activities • Activities include - conferences, courses, workshops, web-based with outcomes, postgraduate study, in-service training, seminar presenting 	<ul style="list-style-type: none"> • No formal system 	<ul style="list-style-type: none"> • 10% of members required to submit continuing professional development records annually for audit

PROFESSION - LAW				
Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
British Columbia, Canada	The Law Society of British Columbia www.lawsociety.bc.ca	<ul style="list-style-type: none"> 12 hours of continuing professional development in accredited activities annually <ul style="list-style-type: none"> Minimum of 2 hours must pertain to professional responsibility and ethics, client care and relations, or practice management Activities include courses, study groups, section meetings, teaching, writing, mentoring 	Compliance Audits <ul style="list-style-type: none"> Random selection or if problem indicators once every ~6 years 3-4 day process Review of records 	<ul style="list-style-type: none"> Annual reporting of continuing professional development hours Summary report of compliance audit findings submitted to the Law Society
Massachusetts United States	Massachusetts Board of Bar Overseers massbbo.org	<ul style="list-style-type: none"> No mandated continuing legal education requirement Encouraged to take part in educational offerings, networking opportunities, and volunteering 	<ul style="list-style-type: none"> No clear system evident 	<ul style="list-style-type: none"> N/A
United Kingdom	Solicitors Regulation Authority www.sra.org.uk	<ul style="list-style-type: none"> Individuals must determine the learning and development needed to ensure delivery of competent legal service and measures taken to maintain competence Recent change from a system requiring 16 hours of training annually 	<ul style="list-style-type: none"> No clear system evident 	<ul style="list-style-type: none"> Declaration of compliance with continuing professional development requirements
Australia	South Australian Bar Association www.sabar.org.au Law Society of South Australia www.lawsocietysa.asn.au	10 units of continuing professional development annually <ul style="list-style-type: none"> 3 units required – practical legal ethics, practice management or business skills, professional skills Categories: <ul style="list-style-type: none"> Seminar, workshop, conference – 1 unit = 1 hour Viewing, listening, preparing recorded material – 1 unit = 1 hour (maximum 5 units) Publishing, editing, refereeing article – 1 unit = 1000 words (maximum 5 units) Attendance at meetings – 1 unit = 2 hours (maximum 3 units) 	<ul style="list-style-type: none"> Annual trust account examination by an external examiner 	<ul style="list-style-type: none"> Lodge certificate of compliance annually Auditing of continuing professional development activities by request
<i>Note: New Australian National Legal Services Board in 2015 for New South Wales, Victoria (pending)</i>				
New Zealand	New Zealand Law Society www.lawsociety.org.nz	Continuing professional development program involvement annually, consisting of: <ul style="list-style-type: none"> 10 hours of continuing professional development <ul style="list-style-type: none"> Structured programs with identified aims related to learning requirements May include conferences, seminars, teaching, tutoring, training programs, study groups, distance learning, webinars Plan and Record <ul style="list-style-type: none"> Identified learning needs Action plan Reflection on outcomes Reflection on future needs 	<ul style="list-style-type: none"> Trust Account Inspection or Review <ul style="list-style-type: none"> Risk-based selection process Examination of all issues related to the operation of a trust account 	<ul style="list-style-type: none"> Declaration of compliance with continuing professional development annually Random auditing of continuing professional development records

EMPLOYERS				
Location	Regulatory Body	Continuing Education or Continuing Professional Development Requirement	Self, Peer and Practice Assessments	Mechanism for Monitoring Member Participation/Compliance
Qatar	Supreme Council of Health, Government of Qatar	<p>Employer-led model in which large employers (e.g. Hamad Medical Centre) responsible for recruitment, hiring, training, monitoring and competency assessment of all health professionals</p> <ul style="list-style-type: none"> - Unique situation given extremely heterogenous health care professional workforce - HCPs required to maintain licensure in “home” country for duration of employment in Qatar - Differences in “home” country practices related to QA and CPD make it difficult for employers to compare and assess practitioners, so most employers have developed their own models and methods as health human resources planning tools rather than as regulatory requirements 	<ul style="list-style-type: none"> • Highly varied depending upon employer context and ability to support program • High reliance on compulsory continuing education and 360 degree feedback tools • Complaints driven process in which complaints from patients, peers, other practitioners etc drives an inspection/review process focused on practitioner’s competence – non-standardized and non-proceduralized nature of this assessment raises questions regarding procedural fairness 	<ul style="list-style-type: none"> • Employer driven • Employment in Qatar for international workers is linked to visa/immigration: without employer support, visa is terminated – therefore strong incentive for professional to avoid any competence-related issues
California	Kaiser Permanente Health System Veterans’ Administration Health System	<p>Beyond regulatory requirements for individual professions, large health systems in California undertake independent, decentralized forms of competency assessment used as health human resources management tools rather than regulatory requirements</p> <ul style="list-style-type: none"> - Strong emphasis on 360 feedback systems involving patients, peers, colleagues, etc - Annual performance appraisal systems involving supervisor-practitioner dialogue, goal setting, etc. - Employment-related expectations for attendance at continuing education events 	<ul style="list-style-type: none"> • Focused on employment-based practice, attainment of individual and departmental goals/objectives, • Structured feedback systems linked to performance pay incentives, clinical ladders, promotions, etc. 	<ul style="list-style-type: none"> • Declaration of compliance with continuing professional development standards • Performance appraisal systems • Centralized approach with Kaiser and “Healthstream Competency Centre”