Health Quality Ontario

The provincial advisor on the quality of health care in Ontario

Peer Review:

A Diagnostic Imaging Quality Initiative for Ontario

Provincial Program Design and Implementation Recommendations

Ontario
Health Quality Ontario

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Executive Summary

Peer review is a powerful tool for providing ongoing feedback on performance, facilitating learning from mistakes, improving standards and identifying educational needs. In the field of diagnostic imaging, peer review plays a critical role in reducing discrepancy and error. With over 20 million diagnostic imaging procedures delivered each year in Ontario hospitals and Independent Health Facilities (IHFs), peer review would be a vital support to a comprehensive diagnostic imaging quality assurance program, with the ultimate goal being the delivery of high quality health care.

On December 3, 2013 , Ontario's Minister of Health and Long Term Care requested that Health Quality Ontario and its health partners "*lead the implementation of a province-wide physician peer review program in all facilities where diagnostic imaging services are provided, including mammograms and CT scans.*"

With the implementation of a province-wide peer review program in diagnostic imaging, Ontario has the opportunity to position itself as a global leader and contribute to the growing body of knowledge related to continuous quality improvement in imaging.

To develop this program, in 2014, Health Quality Ontario convened an expert panel to create a set of recommendations related to diagnostic imaging physician peer review. These recommendations are designed to establish the best conditions to assure and improve quality of care in diagnostic imaging through peer-to-peer learning, as well as to support radiologists and the organizations they work for.

The panel represented a cross-section of experts from across the system. Their activities included reviewing the current state of diagnostic imaging in Ontario and conducting literature reviews and a jurisdictional scan to inform their recommendations. The panel also established a set of common definitions, ensuring a shared understanding of peer review and its position within a broader quality assurance context. They also established the following goals for a diagnostic imaging peer review program:

- **Enhance the consistency and accuracy** of radiology services to improve quality of care for patients;
- **Support improved diagnostic image interpretation** skills through peer-to-peer learning;
- **Enable informed decisions about patient treatment**, enhancement of quality programming, physician training and continuing medical education;
- **Support maintenance of ongoing learning and education** and enable contribution to a culture of quality improvement, transparency and accountability in a non-punitive environment.

Over the course of several meetings, the panel also developed a set of principles to guide the design process for a diagnostic imaging peer review program, determining that a peer review program should be:

- **Integrated** within a broader quality framework and just one component of quality assurance;
- **Standards-based**, adhering to principles set forth by the Canadian Association of Radiologists;
- **Consistent** in terms of its application in all physician groups, facilities and modalities;

- **Focused on learning and education** and intended to improve learning within the profession;
- **Accountable**, with clearly defined responsibilities and a consistent regulatory framework;
- **Sustainable** in terms of its cost-effectiveness to implement and administer, and considerate of discrepancies in requirements for resource allocation between sites.

With these principles established, the panel developed a number of overarching recommendations which were shared with the radiology community through a consultation process that provided an opportunity for input and feedback. An Implementation Working Group was then struck to expand the recommendations to include guidance for diagnostic imaging services in hospitals and independent health facilities on how to implement and operationalize a peer review program. All of the recommendations are focused on enabling education and the development of a culture of quality.

These recommendations include that the program must be:
- Integrated, standards-based, consistent, focused on learning and education, accountable and sustainable;
- Mandatory;
- Governed locally with support from provincial oversight;
- Aligned with other provincial initiatives and integrated within a broader facility-level quality framework;
- Designed to maximize opportunities for learning and education;
- Supported in its focus on education and learning by provincial infrastructure;
- Implemented under the Quality of Care Protection of Information Act (QCIPA);
- Confidential in all aspects and, where appropriate, anonymous;
- Capable of addressing and managing significant discrepancies;
- Implemented in a phased and iterative manner;
- Implemented in a way that considers impact, risk and readiness;
- Implemented according to firm timelines that take into account varying facility infrastructures and needs;
- Scalable to other imaging specialties within a specific timeframe;
- Measured and reported on at facility and provincial levels to support program management and understand uptake;
- Supported by appropriate resources, tools and infrastructure.

The Working Group and panel (that transitioned into a Steering Committee providing oversight) developed their recommendations based on various planning assumptions. These included the importance of protection for peer review participants under the *Quality of Care Protection of Information Act, 2004 (QCIPA)*, ensuring that health care providers are not discouraged from taking part in the program. Also important was the determination that diagnostic imaging facilities who function without digital imaging would not be excluded from implementing peer review, to ensure the culture of quality is consistent across the system.

1.0   Background

1.1   Quality Improvement in Diagnostic Imaging

Since the introduction of the *Excellent Care for All Act* and Strategy in 2010, the Ontario government has taken a number of steps to improve the quality of Ontario's health care system, including the safety of care delivered. Efforts over the past decade have largely focused on addressing issues such as medication errors, health care–associated infections and postsurgical complications. Diagnostic error has received comparatively less attention. Increasingly, evidence supports the importance of focusing quality efforts in the area of diagnostics.[1]

> **"The surrogate indicator of radiological excellence that has become accepted is consistency of assessments between radiologists, and the technique that has become the standard for evaluating concordance is peer review."**
> - A workstation-integrated peer review quality assurance program: pilot study. O'Keeffe et al. BMC Medical Imaging 2013, 13:19

Several recent outlying occurrences of radiology misdiagnosis have been reported across a number of jurisdictions, including Ontario, reaffirming the critical role of quality assurance in the delivery of excellent patient care. Given that providers of diagnostic services are often required to make decisions under conditions of uncertainty, a certain degree of error may be inevitable. To reduce the likelihood of such errors, to reassure the public and to support physicians and the organizations in which they work in the provision of high quality care, it is necessary to identify the regulatory and statutory safeguards already in place and, where applicable, to determine what additional formal measures may be required. These situations serve as useful reminders of the need to continually examine current approaches and identify novel approaches to confirming and improving diagnostic accuracy, ultimately benefiting patient care and safety.

Many aspects of diagnostic radiology make it amenable to objective performance measurement and improvement. The field of radiology is largely digital, and imaging physicians are accustomed to teaching and learning from one another. The discipline has also demonstrated its ability to adapt to rapidly evolving technology. However, in designing an approach to quality management in diagnostic imaging, it is important to ensure that the program supports meaningful performance improvement rather than simply tracking individual error rates. It becomes a question of whether to study the *what, when, and how* of an event or to focus narrowly on the *who*.[2]

1.2   The Current State of Diagnostic Imaging in Ontario

More than 20 million diagnostic imaging (DI) procedures are delivered each year in Ontario hospitals and Independent Health Facilities (IHFs) by fully qualified diagnostic imaging specialists responding to requests from other physicians and authorized health professionals. These services are vital to diagnosing and following up with a broad range of diseases and patient care procedures, and are delivered at a high level of quality in both academic and community hospitals as well as Independent Health Facilities (IHFs).

The following administrative data received from the Ministry of Health and Long-Term Care (MOHLTC) Health Analytics Branch summarizes service volumes, modalities of treatment and

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[1] Newman-Toker, D. E. and Pronovost, P. J. (2009). Diagnostic Errors—The Next Frontier for Patient Safety. *Journal of the American Medical Association*, 301(10), 1060-2.

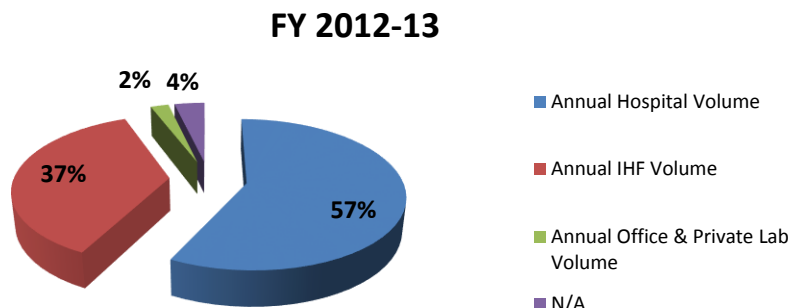[2] Larson, D. B. and Nance, J. J. (2011). Rethinking Peer Review: What Aviation Can Teach Radiology about Performance Improvement. *Radiology*, 259(3), 626-32.

other facility data related to radiology services in Ontario for the fiscal year of 2012/2013. It is important to note that this data does not definitively represent the volumes and locations of these services, particularly for those associated with IHFs, as the current data does not include IHF computerized tomography (CT) and magnetic resonance imaging (MRI) volumes (estimated to be relatively low) and existing data structures make it more challenging to calculate site-based volumes.[3] As part of implementation planning, a more detailed analysis conducted in collaboration with ministry partners will be required. However, this analysis presents an order of magnitude assessment of the total volumes and proportion delivered in hospitals as compared to IHFs.

Approximately 60%, of diagnostic imaging is performed in hospitals where the majority of CT and MRI scans are delivered.

Figure 1: Radiology Volumes by Location – MOHLTC Data (Fiscal Year 2012-13)

Total Volume of Radiology Services	*21,982,307*
Annual Hospital Volume	*12,507,972*
Annual IHF Volume	*8,190,749*

FY 2012-13

The top ten facilities contribute to a significant percentage of service volumes, and there is substantial overlap between the top ten hospitals performing CT and MRI and the top ten performing ultrasound and x-ray. In both cases, University Health Network, Credit Valley and Trillium (now Trillium Health Partners) and Sunnybrook Health Sciences Centre service the

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[3] *Note: Due to the caveats with the data provided, care must be taken in drawing conclusions related to the landscape of DI services.*

- The data received from the Ministry is based on the physician billing codes and thus include both in-patient and out-patient service volumes with hospitals.
- The data received from the Ministry does not have any service volumes for CT & MRI services provided by IHFs.
- The data includes entries with location type as "Not Assigned", which is due to the incomplete information filled in the forms when the services were provided.
- The IHF data provided is based on per site service volumes. However, it has been observed that the volume is not the true representation of the sites. An attempt has been made to collate the data for the sites with the same corporate clinic names.
- The Ministry data does not validate the ownership structure of the IHF sites which may lead to the lack of representation of certain organizations operating multiple IHF sites with different license names.

greatest volume. Among hospitals, the top ten facilities in terms of volumes provide almost 40% of all hospital-based diagnostic imaging.

Conversely, X-ray and ultrasound are the key services offered by IHFs. The top ten IHF sites in terms of volumes provide just over 40% of all x-rays and ultrasounds performed in IHFs. Details of this review are available on request.

Given that diagnostic imaging in Ontario takes place within several difference contexts and across facilities that hold varying regulatory requirements and accountabilities, any province-wide recommendations related to peer review should support the delivery of services *where they are delivered today* and should establish processes that are consistent and supportive of the overall culture of quality improvement. Similarly, implementation planning must address the differences in scale and infrastructure between large hospitals and smaller organizations like IHFs to facilitate full participation and coverage.

1.3   Defining Peer Review

Given the range of definitions for and approaches to peer review across the health care context, the initial focus of the Expert Panel on Diagnostic Imaging Quality was to reach a consistent and shared definition, to agree upon the goals of a peer review program and to situate peer review within the context of an overall quality management framework.

The definition endorsed by the expert panel is one supplied by the Canadian Association of Radiologists (CAR), which describes peer review as a "generic term for a process of self-regulation by a profession or

> **"Peer review can either serve as a coach or as a judge, but it cannot successfully do both at the same time (and it has not been shown to do the latter very well in any case)"**
>
> ~ Rethinking Peer Review: What Aviation Can Teach Radiology about Performance Improvement (Larsen et. al)

a process of evaluation involving qualified individuals within the relevant field. Peer review methods are employed to maintain standards, improve performance and provide credibility. A peer review process in diagnostic imaging is typically used in the context of a radiology service's overall quality assurance program."[4] According to CAR, peer review offers significant educational value when the identification of discrepant cases becomes active learning and quality assurance opportunities for the purpose of individual and group improvement.

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[4] O'Keefe, M. M., Piche, S. L. and Mason, A. C. (2011). The *CAR Guide to Peer Review Systems* (Amended 2012). Retrieved June 2015 from: http://www.car.ca/uploads/standards%20guidelines/20120831_EN_Peer-Review.pdf

Though programs may vary in terms of how they are operationalized, the following core processes are involved in peer review:

Peer Review Process	Definition
1. Sampling and Assignment	• Select and deliver cases for peer review to participating physicians
2. Review and Provision of Feedback	• Score case and make notes related to score
3. Case Review and Discussion	• Collaborative review of selected peer review cases for learning and education amongst physicians
4. Learning and education	• Generate new knowledge and/or skills to improve quality
5. Measurement and Reporting	• Quantify and/or qualify activities and share results to improve quality
6. Management of Significant Discrepancies	• Flag and address cases that reflect possible issues that may have a negative impact on patient care

Several overarching principles of peer review have also been suggested. An effective program for peer review should aid in the identification of opportunities for quality improvement, helping to ensure competence and enhance patient outcomes. Cases should ideally be selected at random to provide broad representation of the work performed in a particular radiology department or facility. The evaluation process should be consistent, with all personnel made aware of and adhering to established rules and procedures. The process also should be timely in order to represent the current state of performance, and interpretations should be evaluated within a reasonable interval after the initial report. Peer review should be ongoing so that data can be tracked over time and analyzed to reveal trends. One of the most important success factors of any quality assurance program is participation. As with any performance evaluation process, to encourage full and effective participation peer review should be non-punitive, should have a minimal effect on work flow, and should allow for easy participation.[5]

The *features* of peer review are what distinguish it from other quality assurance processes. According to the CAR's 2012 Guide to Peer Review Systems (p.13), the following features are common to peer review:
- The process includes a reactive or proactive double reading with two physicians interpreting the same study;
- The process allows for the random selection of studies to be reviewed on a regularly scheduled basis;
- Examinations and procedures are representative of the work of each physician's specialty;
- The process allows assessment of the agreement of the original report with subsequent review (or with surgical or pathologic findings);
- There is an approved classification of peer-review findings with regard to level of quality concerns (e.g. a four-point scoring scale);
- Policies and procedures for action to be taken on significantly discrepant peer-review findings are in place for the purpose of achieving quality outcomes improvement;

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[5] Mahgerefteh, S., Kruskal, J. B., Tam, C. S., Blachar, A., and Sosna, J. (2009). Peer review in diagnostic radiology: current state and a vision for the future. *Radiographics,* 29(5), 1221-31.

- Summary statistics can be generated and comparisons shown for each physician by modality to help the coordinator assess performance standards;
- Summary data for each facility or practice by modality can be obtained to aid the departmental QA program;
- There should be a planned strategy for remediation and re-education on both individual and departmental levels when discrepancies arise.

Another important element of peer review is the establishment of a local committee to provide oversight to the process. This committee is comprised of physicians and an appointed chair who may or may not be the Chief or Quality Advisor. This committee supports the development and implementation of the peer review program locally, enables the review of significant discrepancies, and acts as a guide for the overall learning and education processes that are key to peer review success. Ultimate accountability for the program locally, however, rests with the qualified imaging physicians acting in their capacity as Department Chiefs (hospital) or Quality Advisors (IHF), regardless of whether they are members of the Committee.

The importance of developing and working from a shared definition of peer review is highlighted by the findings of a survey developed and distributed to hospitals and IHFs in May 2014. The purpose of the survey was to assess the current state of quality assurance (QA) adoption, specifically peer review programs for diagnostic imaging, in these facilities as well as to gain information on volumes and services.

According to the results of this survey, while some hospitals and IHFs report the adoption of peer review programs, the features of the majority of these programs do not appear to align with the elements of peer review that are currently recommended as part of the Canadian Association of Radiologists Guidelines for Peer Review. Still, that many of these programs are in operation reflects a receptivity in the field to the peer review process and represents a strong foundation for the development of a consistent approach to peer review implementation. Indeed, Ontario radiologists are at the forefront of efforts to introduce peer review into diagnostic imaging practices. Facilitated by the advent of digital imaging systems like Picture Archiving Communication Systems (PACS) and Radiology Information Systems (RIS) and by the deployment of digital imaging technologies, the development and increased availability of electronic peer review systems is a relatively new occurrence in diagnostic imaging environments. The type of peer review program envisioned for Ontario is one that takes place at the workstation, occurs between physicians and supports the learning and education of all physicians reading images, regardless of the imaging modality or location.

1.4   Peer Review within the Broader Quality Management Context

It is important to note that peer review is a key element of a comprehensive QA framework. Figure 2 illustrates peer review in the context of a broader quality framework. Peer review alone will not assure quality. However, as one of several QA tools it can support the development of a culture of continuous quality improvement and contribute to the implementation of broader quality frameworks.

Further, the interpretation of diagnostic images is part of a chain of activity related to patient safety and quality of care that includes management of technical issues, communication, pathology, action on the part of referring physicians and radiology technician expertise.

Figure 2: Peer Review in the Context of a Quality Management Framework

Framework adapted from Quality Management Program (QMP) framework. Cancer Care Ontario/ College of Physicians and Surgeons of Ontario with input from G. Ross Baker and associated literature.
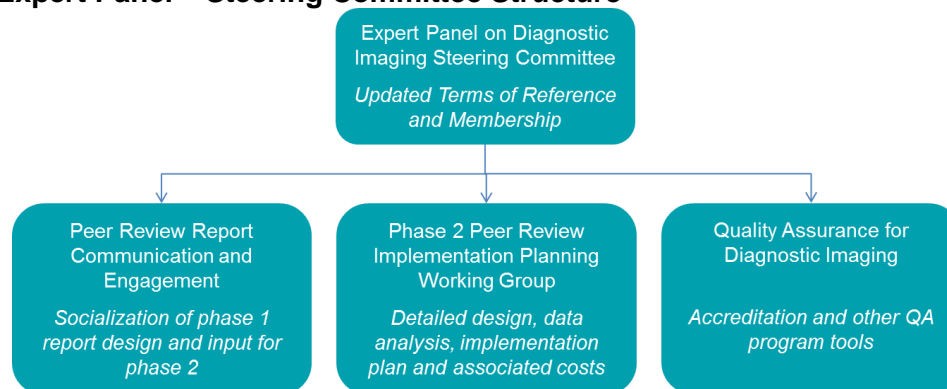
2.0   Approach

2.1   Mandate and Committee Structure

On December 3, 2013, the Ontario Minister of Health and Long Term Care requested that Health Quality Ontario and its health partners *"lead the implementation of a province-wide physician peer review program in all facilities where diagnostic imaging services are provided, including mammograms and CT scans."*

Following this announcement, the Expert Panel on Diagnostic Imaging Quality was convened to develop recommendations for the design of this peer review program (see Appendix 2 for Terms of Reference and Membership). The expert panel met on nine occasions between December 2013 and July 2014 to develop overarching recommendations for a peer review program in Ontario. Members followed a structured and iterative process to review the global literature and understand the Ontario context, to define program goals, principles and core design elements and to recommend next steps.

One of the key recommendations that emerged from the first phase of this work involved the establishment of an Implementation Working Group to develop recommendations on a number of outstanding design issues as well as to outline the recommended details for peer review implementation. The expert panel was reconstituted as a steering committee in order to oversee the activities of this working group, to lead communications and stakeholder engagement efforts, and to develop recommendations related to an overall quality assurance (QA) program for Ontario. Figure 3 depicts the Expert Panel on Diagnostic Imaging Quality Steering Committee and the various activities it has been tasked to oversee.

Figure 3: Expert Panel – Steering Committee Structure

Once constituted, the Implementation Working Group was responsible for outlining specific leadership, resource, infrastructure and technology requirements and for determining key enablers necessary for successful implementation of peer review across Ontario. The membership of the group was selected to reflect the operational nature of the skills required to complete this task and members were specifically chosen with a broad range of knowledge, expertise and experience from within both hospitals and IHFs (see Appendix 3 for working group Terms of Reference and Membership).

Between November 2014 and March 2015 the working group held four meetings in order to review and discuss approaches to implementation of a provincial peer review program and recommendations for this process. This report is a synthesis of the program recommendations from the expert panel and the subsequent detailed considerations of the implementation committee.

2.2   Jurisdictional Scan and Literature Review

A jurisdictional scan and two separate literature reviews were conducted to support the work of the expert panel.

The jurisdictional scan involved a review of seven peer review programs across North America, each varying in terms of operating models and stages of development. An initial scan of the literature covered 15 articles selected from a list of 56. The articles were filtered based on impact of the program and relevance to the Ontario context. In addition to this work, at the request of Health Quality Ontario, the Ministry of Health and Long Term Care's Heath System Strategy and Policy Division conducted a detailed review of the literature published between 2010 and 2014 on peer review, accreditation and quality assurance practices in relation to diagnostic imaging. Over 9,000 scholarly and grey literature publications were identified based on the inclusion criteria. After refining the literature search and assessment, 89 publications of clear relevance were included. (All documents available on request.)

> **"The call for peer review to be proactive, educational and non-punitive is supported by reasons that are advanced in the literature."**
> - Ontario Ministry of Health and Long-Term Care. Literature Review on Diagnostic Imaging: A Report on Discrepancy and Error, Peer Review, Accreditation and Quality Assurance. June 18, 2014

From this assessment of the current state, it was observed that approaches to peer review are still evolving, with few standards or leading practices established in health care systems. As

such, Ontario has an opportunity to contribute to the existing body of evidence as it advances a peer review program. Evaluation and reporting of any provincial initiative is recommended.

The guidance provided by these reviews across several elements of peer review program development and improvement is summarized below.

Figure 4: Synthesis of Guidance from Jurisdictional Scan and Literature Review

EDUCATION	GOVERNANCE	TECHNOLOGY	ACCREDITATION
• A peer review program should promote an environment of learning and improvement for imaging physicians by creating a platform to communicate with their peers • Peer review programs with a participation based focus are seen to have a higher adoption rate	• Peer review processes must be unbiased and balanced • Grading scales (qualitative and/or quantitative) are used to audit and validate data and create a repository for future references by imaging physicians • Independent quality committees made up of imaging physicians need to be established for the data review and discrepancy resolution • Local imaging physician groups should be responsible for setting up the processes for individual physicians based on the standards provided, with independent committees overlooking those departmental processes	• CT and MRI have been the key areas of interest for the implementation of the majority of peer review programs • Digital systems such as PACS and Radiology Information Systems (RIS) are key enablers for the peer review program implementation • Larger scale and participation of multiple organizations across a geography can lead to the development of a "centre of excellence" in radiology • Data availability and transparency are frequently used as motivational tools to improve performance but need to be carefully designed & implemented	• Accreditation can be an important lever for the adoption of the peer review program at the facility level • Currently accreditation is a lever being used by the American College of Radiology (ACR) to maximize adoption of the peer review program in radiology in the United States

2.3   Frameworks and Methodology

This initiative was undertaken with an understanding that peer review is a key component of a broader quality assurance program for diagnostic imaging, and that the outcomes of this work could be applied both to the conceptual framework of a provincial QA program and to other areas of clinical practice beyond DI. Further, this initiative builds on and aligns with other provincial quality management efforts, including programs in diagnostic pathology and the Quality Management Program (QMP) being co-led by Cancer Care Ontario and the College of Physicians and Surgeons of Ontario for mammography, colonoscopy and pathology.

Peer Review Program Design Approach
During the initial phase of its work, the expert panel developed several overarching recommendations and goals related to a provincial program for peer review, using a structured

approach to design outlined in Figure 5. The design activity was based on a foundation of evidence, established practices and an understanding of the characteristics of diagnostic imaging services and existing peer review programs currently operating both in hospitals and IHFs.

Figure 5: Ontario DI Peer Review Model Phase 1 Design Framework

Implementation Approach

Following the development of program design recommendations, the Implementation Working Group began the task of outlining a detailed approach to implementation of those recommendations.

The following design and implementation items and associated questions were referred to the working group by the Expert Panel Steering Committee for consideration:

		Questions
Design Elements	**Sample, Match and Provide Image and Report for Review**	• Should peer review be mandatory? • What is critical mass of radiologists to effectively implement peer review? • What guidelines and confidentiality requirements should be in place?
	Score and Provide Feedback	• Will both participants see the score and feedback? • How will the process differ between a lone facility and one spanning a network?
	Educate and Learn	• What is the educational capacity required to conduct peer review at a local, regional and/or provincial level?
	Identify and Review Discrepancies	• How will the Peer Review Quality Committee be structured and members chosen? • How will the program be protected (i.e. QCIPA) • What distinguishes peer review from other related quality processes?

	Measure and Report	• How will information be collected and reported? Who will information be reported to (e.g. information on program participation)?
	Share	• How will learnings from facilities and networks be shared?

Implementation Elements	**Implementation Requirements and Timeline**	• How long should implementation take?
		• Will the timeline be different for hospitals vs. IHFs?
		• What are the key related provincial initiatives to align with?
		• What are the IT/IM infrastructure requirements?
		   • Are integrated Radiology Information Systems (RIS) and Picture Archive and Communications Systems (PACS) requirements for participation?
		   • What software functionality will be required?

	Implementation Support, Governance and Skills	• How will PR be governed and managed? • What is the role for a regional and/or provincial organization? • What are the skills required to implement? • Who will oversee implementation?
	Implementation Investments	• What are the high level investments needed for successful implementation? • What are the costs associated with implementation?

3.0　　Program Design Recommendations

From its initial meetings, the expert panel developed the following overarching design recommendations, reflecting the key values and priorities of a peer review program and forming the essential foundation for implementation planning.

Design principles define and communicate the key characteristics of the product or program to a wide variety of stakeholders including clients, colleagues, and team members.

The following are the principles developed and adhered to by the expert panel in formulating design recommendations.

 "Peer review should identify opportunities for quality improvement, facilitate improved outcomes, and contribute to increased competence. Review of possible errors made by colleagues is a recognized learning opportunity for the reviewing physician, the interpreting physician, and those participating in discrepancy rounds or related educational activities."
~ *A workstation-integrated peer review quality assurance program: pilot study*. O'Keeffe et al. BMC Medical Imaging 2013, 13:19

Together with the program goals, they form the foundation upon which the program is built and delivered in Ontario.

Principles of Ontario's Peer Review Program	Details
Integrated within a broader quality framework	• Peer review is one of a number of quality assurance tools that supports maintaining standards and improving quality
Standards-based	• The peer review program will adhere to Canadian Association of Radiologists (CAR) principles for peer review
Provincial consistency and coverage	• Peer review elements will be consistent across the province, but the implementation approach will take the infrastructure and needs of the facilities into account • The program will be implemented at the facility level, but facilities may need to work in collaboration to meet the standards of the program • The program will apply to all interpreting physicians, all facility locations and all modalities
Learning and education focused	• The program is focused on education and learning, and contributes to an overarching quality educational agenda • The provision of feedback and education among peers is intended to improve overall learning within the profession
Accountable	• The program clearly defines roles, responsibilities and accountabilities • The program is supported by a consistent regulatory, medico-legal and privacy framework
Sustainable	• The program must be cost-effective and efficient to implement and administer • The program leverages existing local, regional and provincial resources • The program recognizes that various discrepancies exist between sites that may require resource allocations

The goals of the program represent the outcomes against which program success should be evaluated.

Program Goals
• Enhance the consistency and accuracy of radiology services to improve quality of care for patients • Support improved diagnostic image interpretation skills through peer-to-peer learning • Enable informed decisions about patient treatment, enhancement of quality programming, physician training and continuing medical education • Support maintenance of ongoing learning and education and enable contribution to a culture of quality improvement, transparency and accountability in a non-punitive environment

The program design recommendations are outlined below according to each of the subprocesses of peer review described in Section 1.2, Defining Peer Review**.**

Program Design Recommendations

Program Design Elements: Subprocesses	Recommendations
• Sampling and Assignment	• Peer review may be prospective (before a report is finalized) or retrospective (after a report has been submitted). • If the sampling is retrospective, it should be time-limited (close to the final submission date) in order to maximize patient benefit. • Sampling and assignment should be random, representative of radiologist work and peer-matched accordingly. • Confidentiality is required for all aspects of peer review. • Anonymity is required for cases reviewed for the purposes of learning and education. Anonymity between reporting and reviewing physicians may be of added value. • A certain degree of scale (number of physicians) and infrastructure is required to support sufficient sampling, which may require facilities to collaborate.
• Review and Provision of Feedback	• A consistent and timely approach to scoring and providing feedback as part of the peer review process is required. • A four-point system aligned with the ACR RadPeer scoring approach is recommended, with possible inclusion of a separate classification or score for "good catches" where difficult or subtle findings have been uncovered. These cases are of high teaching value. • Education and training on how to conduct peer review is required to ensure consistent application.

Program Design Elements: Subprocesses	Recommendations
	• Peer reviewers should be able to add notes to describe feedback as a companion to the score.
• Case Review and Discussion	• Cases will be reviewed locally at the facility/department level on a regular basis. • A local quality improvement review committee will review cases and may also develop the education approach for the facility or network (per CAR guidelines). • The Chief/Quality Advisor may or may not be part of this committee, but is responsible for ensuring the effective operations and actions of the committee and is ultimately accountable for the decisions of the committee or any issues that arise. • A balance must be struck between protecting health care professionals who participate openly in quality assurance activities and the requirement to protect patient safety. Existing legislative and regulatory frameworks governing the delivery of diagnostic imaging services must continue to evolve to address this issue, and must be consistently applied across all facilities where diagnostic image interpretation is taking place. For a detailed discussion of this issue refer to Section 4.2. • Physicians should be notified of their peer review scores. • Significant discrepancies will be flagged for the local review committee immediately for follow-up. • The local quality improvement review committee is responsible for determining the appropriate follow-up once a finding of a significant discrepancy has been confirmed.
• Learning and education	• Learning and education is the primary focus for the peer review program. • Structured educational rounds/peer review conferences derived from the case review process should take place on a regular basis. • Physicians are required to participate in these educational activities. • Learning points should be documented from these activities and reported on and shared.
• Measurement and Reporting	• Numbers of cases and review scores may be reported at the physician level and facility level to support program management. • Reporting at the provincial level is important to ensure transparency and to demonstrate that efforts are being made at the physician and facility level to support quality assurance. For detailed recommendations related to reporting see Section 5.5. • Measurement and reporting are important features of accountability. Ongoing reporting will be the responsibility

Program Design Elements: Subprocesses	Recommendations
	of Health Quality Ontario.
• Management of Significant Discrepancies	• Though its intended purpose is ongoing education and learning, peer review may surface issues that require follow-up with patients and interpreting physicians. • In cases where a significant discrepancy is identified, a prompt addendum to the original report may be required and a disclosure to the patient may be necessary to conform to clinical and professional standards. • The validation of a finding of a major discrepancy by the local quality improvement committee requires the Chief/Quality Advisor to determine the appropriate physician follow-up. • The review committee is obligated to send issues promptly outside the peer review program for appropriate follow-up with the Chief/Quality Advisor. The terms of reference of the local review committee must clearly outline its responsibility in this regard. • In all instances, patient care is the primary focus and clinical practice guidelines and standards must be consistently adhered to. • Existing local approaches to involving such bodies as the Medical Advisory Committee, the Board and other advisory bodies will continue to be mechanisms through which significant discrepancies will be addressed and, where required, be reported to the CPSO. • For detailed recommendations related to follow-up see Section 5.4.

4.0   Implementation Principles and Assumptions

4.1   Guiding Principles

Once its recommendations were formulated, the expert panel developed a set of implementation principles intended to be adhered to in this subsequent phase of work.

Implementation Principle	Details
Phased and Iterative	• Organize implementation into phases where each phase incorporates learning from previous phases
Aligned with related initiatives	• Where appropriate, program implementation must align with other related initiatives, including their timing and foci (e.g. CPSO Peer Assessment, QMP Mammography, eHO Diagnostic Imaging Repositories, CPSO IHF Clinical Practice Parameters)

Implementation Principle	Details
	• Peer review should be implemented as part of an overall quality management program
Consider impact, risk and readiness in developing implementation phases	• Provide support to all local initiatives ready to implement in adherence with this design standard • Focus on high risk modalities (CT and MRI) and larger volume centres where education and learning can have large-scale impact • Proceed to quickly connect in smaller and/or more isolated centres to achieve greater coverage geographically • Identify key readiness criteria and look to leverage existing initiatives to ensure key factors are in place • Special attention and support will be required to address the needs of smaller and/or more remote locations

Supported by appropriate and sufficient resources, tools and infrastructure	• Ensure that implementation includes the infrastructure required to support the following:
	   • Continued implementation leadership to guide and support adoption
	   • Education and learning program resources and infrastructure to support the development of these as part of implementation
	   • Comprehensive stakeholder engagement and communications plan and support
	   • Local/regional infrastructure, technology and resources to implement and support the program
	   • No specific technology solution to support peer review should be prescribed
	• Develop communication for patients and the general public to inform them of the intent, scope and benefits of the peer review program in a way that is meaningful and appropriate to meet their information needs and support the goal of transparency overall

4.2   Implementation Assumptions

The efforts of the Implementation Working Group were set against a backdrop of new and evolving provincial quality initiatives and broader health system transformation activity. Despite these factors, the working group focused on making strong and sound, consensus-driven judgments based on the information available. In order to facilitate this process, the working group began by stating its core assumptions related to peer review, and these form the underlying basis for the approach and recommendations developed.

Peer Review Supports a Culture of Quality and Continuous Learning
Successful peer review is education-focused and non-punitive. However, the challenges inherent to establishing peer review processes are largely associated with the development of a

culture of continuous quality improvement across a diverse and significant number of facilities. The implementation of peer review should focus on fostering this culture of continuous improvement and education, mindful that any indication of negative consequences stemming from peer review alone may undermine the adoption and efficacy of a peer review program. For these reasons, all implementation recommendations provided here are focused on enabling education and the development of a culture of quality.

Protection under the Quality of Care Information Act (QCIPA) is Essential to Peer Review
The *Quality of Care Information Protection Act, 2004* (QCIPA) was established to encourage health care providers to share information about the provision of health care within their organization in order to improve that care without fear that the information shared will be used against them.[6] Under QCIPA, a hospital or other eligible organization (e.g. IHF) can designate a Quality of Care Committee (QCC) for the purpose of studying, assessing or evaluating the provision of health care with a view to improving or maintaining the quality of health care offered at that facility or the level of skill, knowledge and competence of the persons who provide it. QCIPA ensures that information specifically prepared by or for a QCC, subject to various exclusions discussed below, is shielded from disclosure in legal proceedings and from most other disclosures. QCIPA is used largely by hospitals in Ontario today to support critical incident reviews and quality processes such as peer review, morbidity and mortality rounds.

QCIPA recognizes that a balance must be struck between the protection of a health care professional who participates openly in quality assurance activities and the necessity of protecting patient safety in cases where quality assurance activities surface potential patient risks. The working group concluded that, for the purposes of this report, all recommendations assume that QCIPA would apply to information generated from a peer review program, whether physicians are delivering imaging services in hospitals or IHFs. The working group members observed that not protecting the data generated through a peer review program would inhibit establishing a productive and appropriate learning environment and could compromise the mandate for province-wide peer review.

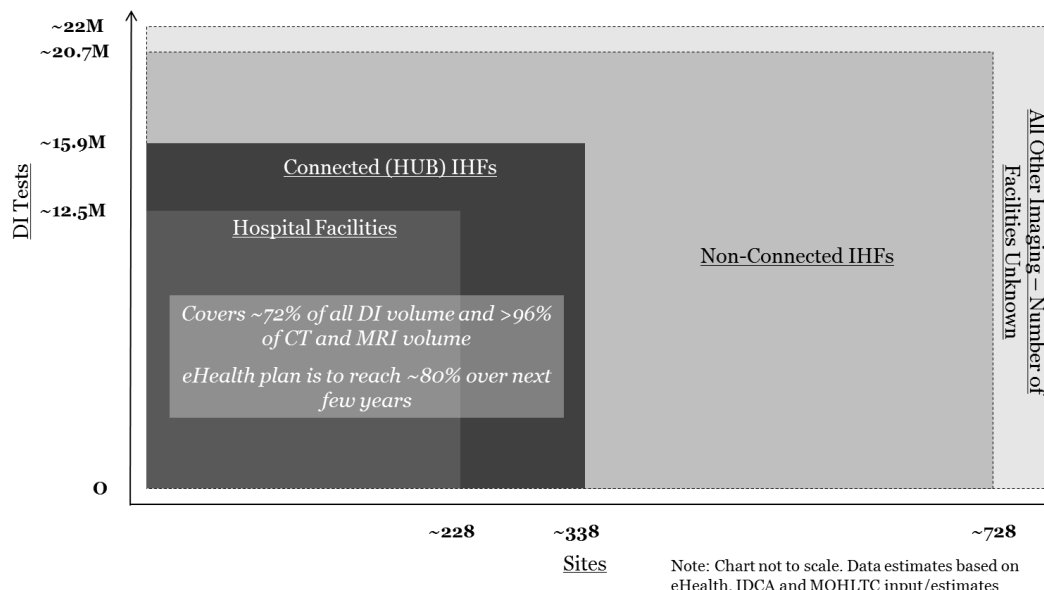***Non-Digital Peer Review Is Not Ideal but Is Possible***
As there is no one definitive data source on diagnostic imaging volumes and modalities that specifies facility types, the working group engaged with and collected data/estimates from eHealth Ontario, the Independent Diagnostic Clinics Association and the MOHLTC in order to assess the degree of digitization in Ontario. Given that digitization is viewed as an enabler for peer review, the current state of digitization was considered important from an implementation planning perspective.

It is estimated that approximately 72% of all DI volumes and more than 96% of CT and MRI volumes are connected to the Diagnostic Imaging Repository (DIR), and therefore images are able to be shared both within and across facilities. However, there are likely to be more than

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[6] QCIPA applies to hospitals, independent health facilities, long-term care homes, licensed medical laboratories and specimen collection centres. While QCIPA applies to Independent Health facilities, the Independent Health Facilities Act prevails over QCIPA. This means that disclosures mandated under the IHFA, including under its regulations including in connection with inspection/enforcement powers under that Act, would still be required despite QCIPA, e.g. information required by the IHF Director, or an assessor or inspector appointed under the IHFA, for the purposes of administering the IHFA (including compliance monitoring and enforcement, and including the CPSO Registrar, inspectors, and assessors where they are performing functions under the IHFA), and/or other functions as set out under the IHFA. All other restrictions on disclosure as set out in QCIPA, apart from those relating to disclosures required under the IHFA, would continue to apply to QCIPA.

350 IHF sites currently not connected to the DIR, which means they **_may_** not be connected to other facilities or may be operating analog (film-based) radiology practices (or portions of their practices; e.g. mammography).

Figure 6: Breakdown of Diagnostic Imaging by Facility Type in Ontario

Note 1: It is reported by the OAR that a number of hospitals are running analog programs for Mammography.

Note 2: Assumption of 155 hospital corporations making up 228 sites that conduct DI.

Note 3: It is estimated that there are ~500 DI sites in Ontario, made up of ~350-400 ownership groups.

While the working group encountered difficulty when generating implementation plans that included analog programs (e.g. randomization of images generated by software such as excel), the group concluded that a lack of digitization on its own should not be a reason to exclude facilities from peer review implementation and that a mandate for peer review should still apply to all 700+ facilities in Ontario that conduct diagnostic imaging. While it was recognized that this may place additional burden on certain smaller facilities, it was agreed that the improvement in quality offered by peer review should not be sacrificed at those organizations. Additionally, peer review could be seen as an incentive for facilities to upgrade their antiquated analog equipment to newer and higher quality equipment that may ultimately help to improve the quality of care for patients in Ontario.

Sufficient Resources are Required to Support Implementation
The success of peer review, from both a culture/change management and a quality point of view, will depend on the implementation being appropriately supported and funded, regardless of whether implementation is taking place at a hospital or IHF. Peer review must be seen within the larger quality improvement context and not as a simple initiative focused on diagnostic imaging services versus other areas of medical practice. The first phase of implementation of peer review is focused on radiologists, but the program and investments to implement it should be scalable to other specialties. Funding for peer review should be considered within the context of other quality initiatives currently planned.

5.0   Implementation Design

The recommendations outlined here leverage the expertise and knowledge of leaders in peer review implementation, and the foundation established by the Ontario Expert Panel on Diagnostic Imaging Quality in the program design phase. They are divided according to each of the design elements queried in Section 2.2, Frameworks and Methodologies.

5.1   Sample, Match and Provide Image and Report for Review

Mandated Participation

Peer review should be mandatory across all facilities and modalities and be part of an overall facility quality management program (assuming that the critical requirements for peer review implementation are in place). Where a quality mechanism exists for a specific modality (e.g. mammography) that does not have a robust peer review program already active, the modality should still be included as part of a peer review program. While it is recognized that radiologists are among those considered early adopters of peer review, an equivalent level of peer review should eventually apply to all other physicians providing imaging services as a subset of their medical practices.

The implications of this approach are important to understand. Though the initial implementation will primarily involve radiologists, alignment across all specialties that providing imaging services should be pursued. Additionally, the overall structure and the lessons learned from implementing peer review in diagnostic imaging should form the basis of peer review in other specialties, recognizing that there will be some practical aspects that will be different and need to be taken into account.

Where peer review for other specialties is already in progress at some centers, efforts should be made at the facility and/or regional level to align the programs. From a practical perspective, it is important to note that there will be some instances where non-radiologists will need to be part of the peer review process—for example, when an individual is integrated into a hospital or IHF radiology department. Similarly, investments in peer review software and quality management programs should not be focused exclusively on radiologists/radiology, but should be scalable to other specialties where future such programs may be applicable.

From a facility perspective, the peer review process itself will be completed by imaging physicians. However, program governance and operations should be included as part of a broader facility quality assurance program. The distinction is important: while all image-reading physicians will eventually be required to participate, the facility will be responsible for ensuring that the process operates within a quality assurance program/framework. Physicians will then be accountable for constructing programs themselves and providing relevant assurances to their facilities.

Critical Mass

In order to properly conduct a peer review program a critical mass of radiologists is required. Critical mass refers to a sufficient number of clinicians to allow for the appropriate peer-matching of radiologists (namely, matching individuals within similar specialties) and for the constitution of a Peer Review Quality Committee to oversee and guide the program at a local level.

In order to be considered to have critical mass, a program should be required to have access to at least one peer-matched physician to conduct reviews. Given the challenges associated with connecting peer-matched radiologists, especially within subspecialties, some physicians may need to engage in peer review outside of their facility (or across departments within facilities).

This will also be the case for sole practitioners operating out of IHFs. Ultimately, the limiting factor determining whether or not a facility will be able to constitute an internal peer review will be its capacity to achieve the CAR's recommended threshold of four radiologists for a Peer Review Quality Committee. Even those facilities that are able to peer-match internally will need to form networks with other facilities if a Peer Review Quality Committee cannot be established.

Confidentiality Requirements

Confidentiality within the peer review program is an absolute necessity. This extends from the review of cases to the transfer of data and the operations of the Peer Review Quality Committee itself. The principle of confidentiality aligns closely with the requirement for QCIPA protection for peer review under which the speculation and opinions shared between image-reading physicians are protected.

While other jurisdictions have attempted to introduce anonymity between physicians (namely, between reviewer and reviewee—not within the Peer Review Quality Committee) as a requirement of peer review programs, several programs already operating within Ontario do not make stipulations related to anonymity. It is important to note that not all working group members saw the value in anonymity, but all recognized that it was a principle that many would find important and that it could provide added value to the program.

The working group recognizes that anonymity will likely not be practically achievable in smaller facilities or even within larger facilities that have physicians familiar with each other's reporting styles. For this reason, it recommends that policies regarding anonymity be determined at the facility level and be instituted by the Peer Review Quality Committee as appropriate.

5.2 Score and Provide Feedback

Receiving Feedback

Reviewees need to be able to see reviewer scores and feedback for the program to be able to achieve its ultimate goal of education and learning. For this reason, both these items should be shared and used to foster a culture of education and learning without blame.

Differences between Facility Types

As mentioned, facilities (both hospitals and IHFs) that cannot achieve critical mass will need to form networks in order to peer-match with external radiologists and/or to establish Peer Review Quality Committees. Once physicians are peer-matched, a Peer Review Quality Committee is established and the program is running, lone facilities will have fundamentally similar processes/operations to those spanning networks. However, practically speaking, a network of facilities will need to manage a number of issues that are not likely to be encountered by lone facilities. These include:

- Managing a Peer Review Quality Committee that has members located at different facilities.
- Providing education to peer-matched physicians who are not physically co-located.
- Managing peer review physician info and reports across facilities and between members of the Peer Review Quality Committee.
- Applying QCIPA and other facility-based legislative, regulatory and policy requirements across facilities.

Resolving these issues is essential to facilitating the operations of a peer review program across a network. This report discusses an appropriate mechanism for supporting this in Section 6.2, Implementation Support, Governance and Skills.

5.3   Educate and Learn

Local Responsibilities and Approaches

As education and learning are the focus of the program, facilities should be responsible for organizing educational activities that result from the peer review process. Local Peer Review Quality Committees will act as conduits for establishing and delivering educational programs, including educational rounds, onsite sessions and other activities. Committees should use and share these learnings within and across networks of facilities, a process that can be facilitated through peer review software (e.g. by tagging images that have been anonymized for educational purposes). Educational activities should include rounds and regular touch points for learning, facilitated by technology (e.g. WebEx) where required. The working group recommends that CME credits be fully extended to all participants in the program and suggests that these must be recognized by the Royal College of Physicians and Surgeons.

In the early stages of implementation, a learning and educational framework should be created to help guide the Peer Review Quality Committees in developing both individual radiologist and facility-wide educational goals. By using a single framework, the educational effectiveness of the initiative can be analyzed and compared across the province over time.

Support for facilities in implementing an educational program will be critical and this issue is addressed in Section 6.2, Implementation Support, Governance and Skills.

Provincial-Level Responsibilities and Approaches

While local facilities will be responsible for organizing education and learning activities, organizations will require strong support at the provincial level for this work. This support should be facilitated through the Ontario Medical Association (OMA), the Ontario Association of Radiologists (OAR) and CPSO in the form of educational opportunities offered throughout the year (e.g. courses, conferences, CME credits) where learning can be shared and best practices better disseminated.

A provincial image repository containing educational items (stripped of identifying information) was identified as a potentially valuable feature. This database could allow province-wide access to images and educational materials (e.g. "good catches"). However, given the many challenges already inherent in implementation, creation of this repository should be seen as a valuable addition to the program in the future and should not be a focus during the first phase of implementation.

Ongoing oversight and support for this initiative at the provincial level is important once it is in its operational state. HQO, an arm's length agency dedicated to health care quality, should play an ongoing role in receiving and sharing reports on peer review implementation and participation and should enable integration of peer review into the quality agenda/priorities for provincial focus. A view of all operational roles and responsibilities follows in Section 5.7.

5.4   *Identify and Review Discrepancies*

Peer Review Quality Committee

Finding the right balance between the educational and quality focus of peer review and its simultaneous mandate to assess and potentially adjudicate discrepancies when they arise may present a challenge. For this reason, the working group emphasized the importance of the Peer Review Quality Committee in the operations of local peer review programs. This committee should be comprised of at least four radiologists or image reading physicians (who are peer reviewed themselves), one of whom is the appointed chair and may or may not be the

Department Chief or Quality Advisor. For each specialty joining a particular peer review program (e.g. cardiology), a new Peer Review Quality Committee may need to be established.

In terms of its responsibilities, this committee would support the development and implementation of the peer review program locally. It would review significant discrepancies and act as a guide for the overall learning and education processes that are key to peer review success. It is important to note that ultimate local accountability for the program rests with qualified imaging physicians acting in the capacity of Department Chief (hospital) or Quality Advisor (IHF), regardless of whether those individuals are also members of the committee. Each hospital or facility will need to identify an individual who will be responsible for ensuring that the peer review program is established according to guidelines. This individual may be the Vice President of Medical, Chief of Staff, Department Chief, Quality Advisor or the chair of the Peer Review Quality Committee.

The working group recommends that committee members and the committee chair be chosen on a rotational basis, with an appropriate mix of focus areas represented as suggested within the CAR guidelines. While the committee should meet on an ad hoc basis whenever discrepancies need to be addressed, overall it should convene no less than once per quarter to review the program and update/organize educational initiatives. Some organizations will also need to update their Medical Advisory Committee (MAC) scorecard to include future peer review participation metrics where applicable.

As it will likely be challenging for busy professionals to arrange to be physically in the same place to conduct these meetings, DI workstations and other technologies should be used (e.g. WebEx, Ontario Telemedicine Network technology) to effectively and efficiently manage committee operations.

Managing Discrepancies
The core objective of peer review—both in diagnostic imaging specifically and across all medical disciplines—is knowledge translation. Learning opportunities can arise from all manner of imaging examples, ranging from "good catches" through to interpretive errors. While education is the only objective of peer review, processes must be established for addressing cases identified through the peer review process that fall outside the norm of diagnostic accuracy. While dealing with these cases is not the role of peer review, how they are managed at the local/facility level is an important component of a comprehensive quality program. When a significant discrepancy is identified, a prompt addendum to the original report may be required and a disclosure to the patient may be necessary to conform to clinical and professional standards.

The Peer Review Quality Committee (with support from the Chief or Quality Advisor, where necessary) should be the table at which cases and data are reviewed (e.g. a trend of discrepancies), and this committee should be responsible for deciding if any action must be taken in accordance with established policies and procedures. The committee should use its discretion to promptly determine if and when a pattern of cases must be referred outside of the peer review process or if additional support planning is required by the physician in question. Additional follow-up may include education and learning or further review of the clinician's performance beyond the peer review finding.

It is expected that facilities will have established processes and mechanisms for dealing with cases that fall outside the norm. The development of local peer review program policies and procedures represents an opportunity for each facility to review the relevant statutory and

regulatory requirements and to reinforce all quality practices (e.g. management of critical incidences under the Public Hospitals Act and IHF Act).

As part of local implementation planning, policies and mechanisms will need to be identified and documented at each facility. Assistance may be to set out or implement such policies. This issue considered further in Section 6.2, Implementation Support, Governance and Skills.

5.5   Measure and Report

Measuring Activity and Reporting

Metrics related to the peer review program should be collected through peer review software and this collection should be standardized so that data is reported at the facility level in the same way across the system. As mentioned earlier, this data will be shared between members of the Peer Review Quality Committee, with the purpose of supporting an education and learning mandate.

Beyond the level of the Peer Review Quality Committee, reporting is desired in order to assess the practice of peer review and highlights key learnings. It is important at the provincial level to ensure transparency and confirm that efforts are being made at the physician and facility level to support quality assurance.

The working group recommends that measurement be focused solely on understanding the uptake of and participation in peer review and to confirm that it is achieving its educational objectives. A focus on public disclosure, on a particular score or on an assessment of physician 'performance' will negatively impact the success of peer review and this stands in direct contradiction to its educational aims. The literature in this area supports that individual physician scores are relevant at the facility level but would not contribute to building a robust peer review program if collected at the provincial level.

Data collection can be broken down according to quantitative and qualitative measurements below:

Quantitative
- Number of physicians participating in the program and number of cases reviewed;
- Number of facility-/network-level peer review conferences, including percent attendance.

Qualitative
- Summary of key learning points.

The working group recommends a pre- and post-implementation survey of all participants related to the perceived impact of peer review on quality/report accuracy by radiologists. This data will provide important learnings for the broader medical community and serve as an opportunity for Ontario to contribute to the body of evidence supporting the implementation of peer review. In the future, surveys of referring physicians could also be considered in order to assess the perceived impact on quality/report accuracy.

The working group recommends that provincial reporting fall under the oversight of Health Quality Ontario. HQO should ensure overall accountability for the initiative across the province and identify where enhancements/updates are necessary in conjunction with changes in the profession and attitudes of key stakeholders.

As peer review is implemented across the province and lessons are learned, an accountability and reporting framework should be developed and established to manage the ongoing

operations of peer review across Ontario, as well as its expansion to all image-reading specialties.

5.6   Share

Sharing of Learnings across the Province

The working group recommends that learnings should be shared within and across networks of facilities through a variety of means including CME events, publications, professional associations, as well as through the peer review software (by tagging images for educational purposes).

As part of their mandate, Peer Review Quality Committees should regularly review cases set aside for education and submit appropriately anonymized cases to designated educational bodies. This information should be used by the OMA and OAR to ensure ongoing education and knowledge sharing across the profession as described in Section 5.3 of this report, Educate and Learn.

Development and management of this repository should be considered within the strategic context of other quality management infrastructure to ensure alignment and maximum adoption in the future.

5.7   Peer Review Operational Governance and Support

Approach to Operational Governance

The working group was asked to consider both implementation governance as well as ongoing operational governance. Details of recommendations for implementation follow, as well as the possible approaches to managing peer review on an ongoing basis. It should be noted that the details of these roles need to be further considered following the implementation phase and must take into account the broader context of organizational roles and responsibilities as they evolve.

Peer Review Operational Governance

Peer review is a facility-based program and all accountability rests at the facility level. However, a number of other organizations may play an enabling and/or supporting role. Details of the end-state operating model should be informed by the implementation process. Possible roles are outlined below.

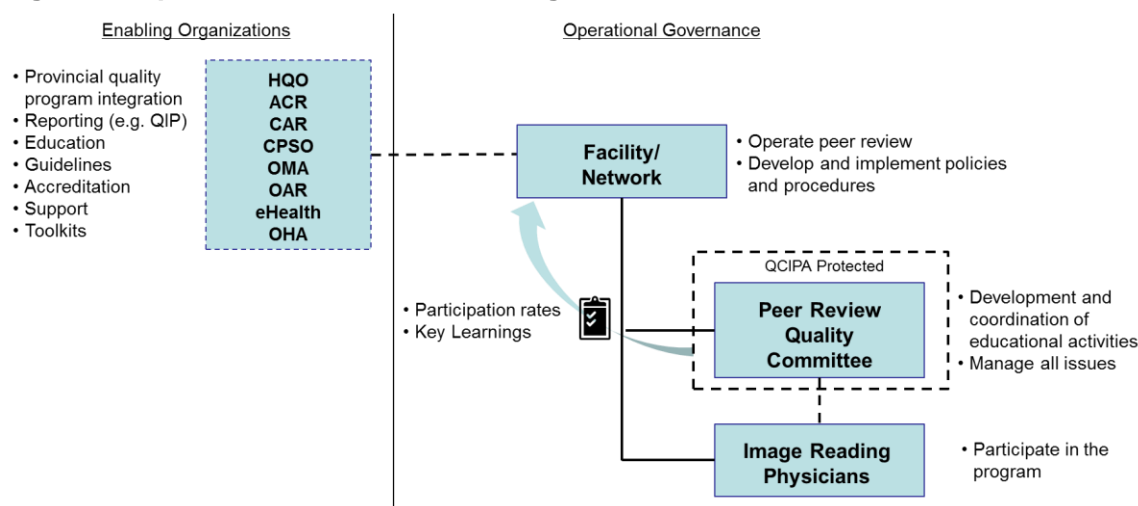| Group	Possible Role in Ongoing Operations of Peer Review
Health Quality Ontario	HQO will support integration across the quality agenda, serve as a reporting body on overall participation and success and provide general oversight, suggestions on program enhancements and support.
Canadian Association of Radiologists	CAR will continue to develop updates and recommendations for operating a peer review program and will have continued involvement in accreditation.
American College of Radiology	ACR will continue to provide education and leading practices to the broader community.

Facility/Network	The facility or network of facilities should be responsible for the operations and support mechanisms for peer review and all relevant policies and procedures.
Peer Review Quality Committee	The committee, solely composed of imaging physicians with a common medical training background, should be responsible for the coordination of all education activities and will address all issues related to interpretation of scores and managing discrepancies when they arise.
Image Reading Physicians	Peer-matched physicians will be required to participate in the peer review program according to the guidelines set by their respective Peer Review Quality Committees.
Ontario Association of Radiologists	OAR will support peer review participants with education and leading practices (through multiple means, including conferences) and will host support materials on the OAR website.
Ontario Medical Association	These organizations represent important system players who will need to play a role in supporting the program. This support should primarily include education, facility inspection (in the case of CPSO and IHFs) and may include accreditation.
The College of Physicians & Surgeons of Ontario	
eHealth Ontario	This organization should support the program through the development of tools and resources to enable effective ongoing operations based on lessons learned.

Facility-Level Operations

The working group identified a number of requirements that each facility should have in place in order to effectively operate peer review once implementation has been completed. These requirements will likely include:

- An executive sponsor (e.g. Chief of Staff in a hospital setting or licensee or quality advisor in an IHF setting) to provide ongoing leadership and to ensure that the facility planning/operational focus and strategy are aligned and that all stakeholders are held accountable.

- Support from facility staff to enable the ongoing operations of the Peer Review Quality Committee. Staff may be required to support the committee in organizing its activities and delivering education across the facility on an ongoing basis. This will need to be done without compromising the confidential nature of the committee's work. It is important to note that support resources will vary between healthcare facilities (e.g. PACS admin, Decision Support, IT).

Figure 7: Operational Governance Design

6.0 Implementation Recommendations

6.1 Implementation Requirements and Timeline

Factors Affecting Implementation

A number of factors affecting both hospitals and IHFs are key to implementing peer review across Ontario. Most importantly, timing of implementation must take into account the fact that facilities are at different points in their peer review journey and that a number of facilities are already operating or planning to operate fully-functioning peer review programs.

In developing recommendations for implementation, the working group considered the following differences between facilities:

- Whether the facility has or is planning to implement peer review in the near future;
- Whether the facility has a critical mass of physicians to peer-match and constitute a Peer Review Quality Committee;
- Whether the facility has PAC and RIS.

When mandating peer review across the province, it is important to state the implications for both hospitals and IHFs in abiding by the mandate. For hospitals, such a mandate may require:

- Networking across different RIS and PACs systems;
- Networking to constitute critical mass (including where sub-specialization is present);
- Investing in PACS/RIS/IT/current imaging equipment;
- Seeking advice and agreement from medical imaging physicians with respect to adoption of a suitable peer review system.

For IHFs, the implications are broader and will require facility owners to review their operations in depth in order to decide how to move forward. For IHFs, a mandate may require:

- Managing an analog film (non-digital) program;
- Investing in PACS/RIS/IT/current imaging equipment or operate a partially digital peer review program;
- Seeking advice and agreement from medical imaging physicians with respect to adoption of a suitable peer review system;
- Joining a network of IHFs;

- Joining a hospital peer review program.

Some of these implications will require facilities to spend significant time developing and executing appropriate implementation plans. For this reason, the working group has developed an overall timeframe that takes facility needs into account.

Implementation Timeline
The timeline for implementation developed by the working group is meant to be phased and iterative, whereby lessons learned over the implementation period are integrated into ongoing program operations. It is critical that, where appropriate, program implementation align with the timing and focus of other related initiatives (e.g. QCIPA, CPSO Peer Assessment, Quality Management Partnership Mammography Program, eHealth Ontario Diagnostic Imaging Repositories, CPSO IHF Clinical Practice Parameters, potential infrastructure investments, implementation support), and that any provincial initiative adjust its scope and timing based on real-time changes to these other programs. The working group felt strongly that a firm date should be set for implementation timing in order to signal the importance of this initiative and to set a clear expectation for stakeholders.

The intention of proposing this timeline is to ensure that facilities can plan strategically in terms of initiatives already underway and that those with ongoing programs can align to the recommendations/design standards of this report. Additionally, the timeline must give ample time for smaller and more remote facilities to prepare for implementing a program and to allow for the required provincial support systems and infrastructure to be put in place.
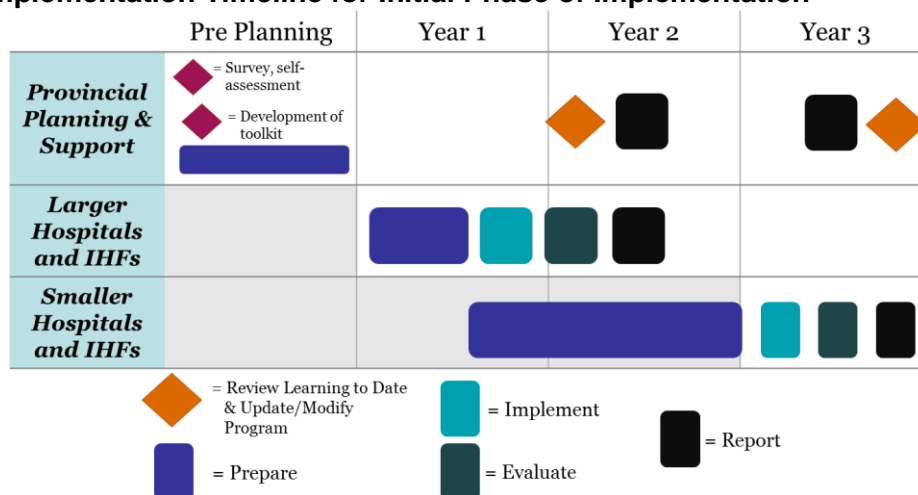
Taking these issues into account, the working group recommends that implementation should be conducted over a number of phases, with a maximum implementation period of three years (assuming an effective start date based on a MOHLTC mandate):
- Hospitals and IHFs with digital capacity and sufficient size to constitute Peer Review Quality Committees of four will be required to implement within two years. This group will largely include academic centres, large urban/suburban community hospitals and large groups of physicians located in IHFs that have a demonstrated readiness to implement peer review.
- Hospitals serving small communities, rural and/or remote areas with a small complement of radiologists and IHFs with low volumes and limited infrastructure will be required to establish networks and common approaches with other facilities and will be given three years within which to implement.
- The working group struggled with the idea of radiology being the only focus of implementation and many felt a strong mandate should be applied for all imaging specialties. For this reason, the working group recommended that no more than a four-year period should be given for all imaging specialties to be included in peer review.

The first phase of implementation (for radiology) should take place in three streams: one stream for provincial planning and support activities, and the other two for facilities in the two-year and three-year implementation streams.

In order to help place themselves within the implementation timeline, facilities should be asked to complete a provincially-managed self-assessment/survey in order to evaluate their current state.

Figure 8: Implementation Timeline for Initial Phase of Implementation

Provided that those working group assumptions detailed in Section 4.2, Implementation Assumptions, are in place, each facility should be required to proceed through a four-stage implementation process where they will:

1. Prepare for implementation, including (where necessary) requirements gathering, development of policies, design of committees and reporting mechanisms, physician peer-matching, execution of a request for proposal (RFP) process for software and technology implementation, networking with other facilities, and development of facility-specific educational frameworks.
2. Implement peer review into ongoing facility operations, which should include software and technology integration, testing, implementation of program into workflow and establishing operations of the Peer Review Quality Committee.
3. Evaluate the program's success and determine where modifications are necessary. Findings from this phase should be consolidated and shared across the system so learnings, leading practices and modifications (required and recommended) can be aligned/implemented across the province.
4. At the end of the implementation period, facilities should be able to report that they have achieved the mandated implementation of peer review and that they are in compliance with all requirements.

IT/IM Requirements

Ideally, facilities should work to implement peer review software with existing RIS and PAC systems to enable peer review. However, PACS and RIS are not a requirement (e.g. peer review can be carried out in a completely analog system with randomization of images performed in an excel file). While digitization is recognized as a key enabler of peer review and a component of improved patient quality, it is not essential. As peer review will take place at a local level, those facilities that do not have connected digital environments will be required to manage any inter-facility image transfers made necessary by the absence of local critical mass.

Software Requirements

A number of peer review software options are currently available in the marketplace. The working group has provided the following recommendations on which software features are either essential or desirable. This should help facilities with decision-making related to technological procurement and any RFP processes with vendors.

Feature	Essential or Desirable?
Randomized selection of cases based on key criteria (e.g. modality, subspecialty)	**Essential**
Ability to assign at least 2% of randomized cases to physicians	**Essential**
Ability to score and provide comments	**Essential**
Reporting of individual and aggregate results to radiologist and quality committee or other groups	**Essential**
Automatic notifications (e.g. when image is available for review or a discrepancy is identified)	**Essential**
Anonymous review process across facility(ies)	**Desirable**
Ability to time case selections based on time of day	**Desirable**
Voluntary error submissions	**Desirable**
Integrated standardized scoring framework	**Desirable**
Scalability to other specialties	**Desirable**
Seamless integration into workflow	**Desirable**
Peer-to-peer chat (anonymous)	**Desirable**
Ability to tag images for future education purposes (stripped of identifying data)	**Desirable**
Cross-PACS scalability	**Desirable**

Other software features are available from the current complement of vendors; however, the core essential features have been identified above and should be included as part of the requirements gathering process for facilities.

6.2   Implementation Support, Governance and Skills

Facility-Level Implementation Requirements

The working group identified a number of requirements that each facility should have in place in order to effectively prepare for and implement peer review. These requirements will likely include:

- An executive sponsor to provide leadership (working with the Chief and/or Quality Advisor) to ensure that facility planning and operational focus, budget, strategy and activities remain on track, and that all stakeholders are held accountable.
- An implementation lead(s) that should be responsible for managing program implementation timelines and liaising with external stakeholders (e.g. HQO, MOHLTC, implementation lead at other facilities where needed).
- Support from project management staff to assist imaging physicians in organizing committees, policies and structures to manage peer review. Staff may also be required

to support the Peer Review Quality Committee in organizing its activities and conducting education across the facility without compromising the confidential nature of the committee's work.
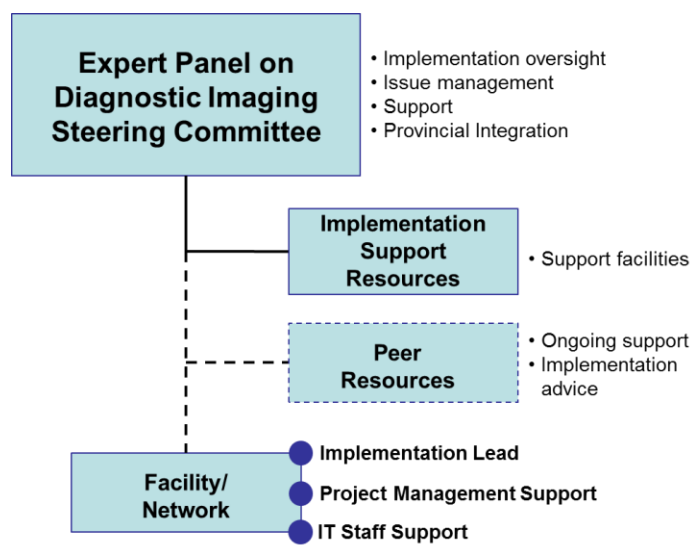
- In most cases, dedicated time for IT staff to help develop requirements based on existing IT platforms will be required.

Peer Review Implementation Governance and Tools

The working group recognizes the need to ensure that the appropriate governance and support tools are in place (for those that need them) in order to realize the effective implementation of peer review across the province. The following non-facility roles and responsibilities associated with supporting province-wide implementation have been recognized.

Group	Implementation Role
Expert Panel on Diagnostic Imaging Steering Committee	The existing Expert Panel Steering Committee should be extended to provide oversight during the implementation phase. The committee should also manage issues and support overall provincial integration.
Implementation Support Resources	Provincial and local resources will be needed to provide support for implementation as well as to provide on-the-ground guidance and support to facilities in the process of implementation. This should include: • Developing/administering the survey; • Creating implementation toolkit; • Helping facilities match; • Helping to establish committees; • Developing educational programming.
Peer Resources	Where possible, subject matter experts across Ontario able to assist facilities in implementation should be identified to ensure ongoing adoption of leading practices. This should follow the process of a 'train the trainer' model, where facilities that have successfully implemented peer review should designate 'super users' or experts who can be called upon to advise and support local facilities with implementation.
QMP Regional Lead	QMP proposes that small hospitals, IHFs and out-of-hospital premises (OHPs) be supported by a regional lead to address the lack of infrastructure/critical mass within these smaller facilities (the details of what constitutes 'small' will be addressed in QMP implementation). These regional leads could also be tasked with providing support to small facilities in the implementation of peer review.

Figure 9: Implementation Governance Design

Most importantly, the working group determined that a toolkit should be developed immediately to assist facilities—both hospitals and IHFs (addressing the specific needs of each practice setting)—in implementation. This document will be critical in helping facilities that need to begin the implementation planning process (and are not confident in determining a starting place), as well as those that are currently prepared to institute peer review but are waiting for provincial guidance on how to proceed.

The following is a suggested table of contents for the toolkit. This toolkit will need to emphasize the importance of adopting a consistent approach to managing discrepancies in accordance with the legislative, regulatory and policy requirements of each organization (e.g. Public Hospitals Act).

DI Peer Review Implementation Toolkit:
- Local Peer Review Quality Committee – Structure and Terms of Reference
- Draft Facility Policy/Framework
- Approach to Establishing Critical Mass
  - Peer-Matching
  - Quality Committee Operations
- Engagement and Communication Plan Template
- Change Management and Sustainability Plan
- Implementation Roles and Responsibilities (including details of the Lead(s) role)
- Guidelines for Managing Privacy and Confidentiality (including Terms of Reference)
- Terms of Reference to Manage QCIPA Implementation in Peer Review
- Procurement: Software and Hardware Specification Sheets
- How to Conduct Peer Review
  - Manual vs. Software
  - Scoring and Evaluation Templates
  - Education Framework, Tools and Templates
- Managing Significant Findings/Discrepancies and Potential Critical Incidents
- Case Studies: Successful Implementation

An eLearn module could also be considered as a delivery mechanism for these materials. However, recognizing that different peer review software systems will be in place, any such modules must be vendor neutral and process oriented.

6.3   Implementation Investments

Implementation and Ongoing Cost Categories

The working group identified a number of investments that will likely need to be made to support the implementation of peer review, both at the facility and provincial level.

	Investment Category	Category Description
Facility Level	**Peer Review Software**	For the purchase of software (may also require hardware purchase e.g. server; however, investment can be shared and scaled)
	Digitization and/or Connection to DIR	For facilities not currently digital and/or connected to the DIR
	Cross PACS Integration	For images to be shared across facilities with different PACS
	Software Customization and Installation	Customizing the software based on facility needs and connecting to facility backend
	Implementation Support	For peer-matching physicians, developing committee structure and overall change management support
	Ongoing Costs and Maintenance	For managing and organizing the program and managing software/data. Peer review vendors generally charge a percentage of the initial investment (on a yearly basis) in order to cover ongoing software support, access to updates, etc.
Provincial Level	**Provincial Coordination**	May include data gathering, facility-matching for networking, developing educational and implementation materials, regional coordination, etc.

In addition to one-time implementation costs, peer review should be supported on an ongoing basis as part of facility quality assurance programs. This includes:

- Physicians sitting on the Peer Review Quality Committee and being involved in review meetings, ongoing education and reporting;
- Actual review of images as part of the program;
- Coordination of the program;
- Operations review meetings and reporting.

7.0   Conclusion

The proposal documented above represents the best advice for a provincial peer review program from Ontario clinician and health system leaders. The recommendations are based on a combination of learning from the international literature and experience with peer review in imaging, as well as expert opinion from radiologists practicing in diverse settings across Ontario

and health system leaders from organizations that are heavily engaged and invested in improving health quality across the province.

At the end of the process the consensus remains that the implementation of a provincial peer review program would benefit both the profession of radiology and its patients. The focus on education and learning is key to building a peer review program that will meet the stated objectives of:

- Enhancing the consistency and accuracy of radiology services to improve quality of care for patients;
- Supporting improved diagnostic image interpretation skills through peer-to-peer learning;
- Enabling informed decisions about patient treatment, enhancement of quality programming, physician training and continuing medical education;
- Supporting maintenance of ongoing learning and education and enable contribution to a culture of quality improvement, transparency and accountability in a non-punitive environment.

A staged approach to implementing peer review across the province is recommended, with appropriate supports for facilities as they evaluate their capacity to support a program. Ontario is gradually developing expertise in the implementation and adoption of peer review and has the potential to be an international leader in this area.

Appendix 1 – Summary of Recommendations

If instituted, a peer review program in diagnostic imaging should be:

Recommendation	Details
1. Integrated, standards-based, consistent, focused on learning and education, accountable and sustainable	a) In all instances, patient care should be the primary focus and clinical practice guidelines and standards must be consistently adhered to. b) Integrated within a broader quality framework and just one component of quality assurance; c) Standards-based, adhering to principles set forth by the Canadian Association of Radiologists; d) Consistent in terms of its application in all physician groups, facilities and modalities; e) Focused on learning and education and intended to improve learning within the profession; f) Accountable, with clearly defined responsibilities and a consistent regulatory framework; g) Sustainable in terms of its cost-effectiveness to implement and administer, and considerate of discrepancies in requirements for resource allocation between sites.
2. Mandatory	a) Peer review should be mandatory for all facilities and modalities in Ontario, and requirements should be consistent regardless of setting.
3. Governed locally with support from provincial oversight	a) Each facility should establish a Peer Review Quality Committee comprised of at least four radiologists or image-reading physicians. b) Committee members and the committee chair should be chosen on a rotational basis, with an appropriate mix of focus areas represented as per the Canadian Association of Radiologists (CAR) guidelines. c) This committee should convene no less than once per quarter to support the development and implementation of the peer review program locally, review significant discrepancies and determine learning and education associated with the program according to CAR guidelines. d) Those facilities that are unable to meet the numbers required for peer-matching of physicians or for constitution of a committee should form networks with other facilities. Committees operating across networked facilities would function in similar ways to those located at single facilities but would need to develop approaches to meeting with and educating peers who are not co-located, transferring images, sharing physician

Recommendation	Details
	information and reports and aligning legislative, regulatory and policy requirements across facilities. e) Local accountability for the program should rest with a qualified imaging physician acting in the capacity of Department Chief (hospital) or Quality Advisor (IHF), regardless of whether this individual is a member of the committee. This individual should be responsible for implementation planning and ensuring that operational focus, budget, strategy and activities remain on track and that all stakeholders are held accountable. f) Provincial oversight and support for the initiative should be provided by HQO, which should play an ongoing role in receiving and sharing reports on peer review implementation and participation and enable integration of peer review into the provincial quality agenda. g) The Expert Panel on Diagnostic Imaging Steering Committee should continue to operate and provide oversight during implementation of the project, managing issues and providing guidance on provincial integration.
4. Aligned with other provincial initiatives and integrated within a broader facility-level quality framework	a) At the facility level, peer review must be situated within the larger quality improvement context and should be part of each site's overall quality management program. Where peer review for other specialties is already in progress, efforts should be made to align the programs. b) At the provincial level, program implementation should align with the timing and focus of other related initiatives (e.g. QCIPA, CPSO Peer Assessment, IHF inspection program requirements), and should adjust its scope and timing based on real-time changes to these other programs.
5. Designed to maximize opportunities for learning and education	a) Learning and education is the primary focus of any peer review program and a successful program should foster a culture of quality improvement and be non-punitive. b) Reviewees should be able to see reviewer scores and feedback in order to learn from scores, contributing to a culture of quality improvement and learning without blame. c) Education and training on how to conduct peer review is required to ensure consistent application. d) Sampling and assignment should be random, representative of radiologist work and peer-matched accordingly to provide optimal opportunities for learning, and a consistent and timely approach should be taken to scoring and feedback to ensure the current state of performance is represented. e) Sampling may be prospective or retrospective, but if retrospective it should be time-limited in order to maximize educational opportunities and benefits to patients.

Recommendation	Details
	f) A four-point system aligned with the ACR RadPeer scoring approach is recommended, with possible inclusion of a separate classification or score for "good catches" where difficult or subtle findings have been uncovered as these cases are of high teaching value. g) Local Peer Review Quality Committees should be responsible for organizing educational activities that result from the peer review process, including educational rounds, onsite sessions and other activities. Committees should use and share these learnings within and across networks of facilities and should regularly submit anonymized cases to designated educational bodies. h) Physicians should be required to participate in local educational activities. Learning points from these activities should be reported on and shared.
6. Supported in its focus on education and learning by provincial infrastructure	a) Continuing Medical Education credits should be fully extended to all participants in the program and these must be recognized by the Royal College of Physicians and Surgeons. This information should be used by the OMA and OAR to ensure ongoing education and knowledge sharing across the profession. b) At the provincial level, a learning and educational framework should be created to help guide Peer Review Quality Committees in developing both individual radiologist and facility-wide educational goals. Using a single framework early in implementation will allow for analysis and comparison of educational effectiveness across the province and over time. c) The OMA, OAR and CPSO should offer educational opportunities throughout the year (e.g. courses, conferences, CME credits) where learning can be shared and best practices disseminated. d) Once the first phases of implementation are complete, a provincial image repository containing anonymized educational items should be developed to allow province-wide access for learning purposes.
7. Protected under QCIPA	a) Information generated from peer review programs should be protected under QCIPA, regardless of whether imaging services are delivered in hospitals or IHFs. b) Existing legislative and regulatory frameworks governing the delivery of diagnostic imaging services should continue to evolve to address this issue, and should be consistently applied across all facilities where diagnostic image interpretation is taking place.

Recommendation	Details
8. Confidential in all aspects and, where appropriate, anonymous	a) Confidentiality is required for all aspects of peer review, including the review of cases, transfer of data and operations of the Peer Review Quality Committee itself. b) Anonymity is required for cases reviewed for the purpose of learning and education. c) Anonymity between reviewers and reviewees may be desirable, but is not a requirement. Policies and procedures regarding this should be developed at the facility level and instituted by the committee as appropriate.
9. Capable of addressing and managing significant discrepancies	a) Facilities should have established processes and mechanisms for dealing with cases that fall outside the norm in accordance with relevant statutory and regulatory requirements, and should identify and document these processes as part of implementation. b) When detected, significant discrepancies should be flagged for immediate review by the Peer Review Quality Committee, which will be responsible for determining the appropriate follow-up. Follow-up actions may include an addendum to the original report and disclosure to the patient in accordance with clinical and professional guidelines. c) The committee should use its discretion to promptly determine if and when a pattern of cases must be referred outside of the peer review process to the Chief/Quality Advisor, who will be responsible for determining the appropriate physician follow-up. The committee's terms of reference should clearly outline its obligation to ensure issues are promptly referred outside of the program for follow-up.
10. Implemented in a phased and iterative manner	a) Each facility should be required to proceed through a four-stage implementation process where they will: prepare, implement, evaluate program success and make modifications, and report on the process provincially. b) Lessons learned over the implementation period should be integrated into ongoing program operations. A pre- and post-implementation survey should be given to all participants related to the perceived impact of the program on quality/report accuracy. This data will provide important learnings and contribute to the body of evidence supporting the implementation of peer review.
11. Implemented in a way that considers impact, risk and readiness	a) Initial implementation should focus on high risk modalities (CT and MRI) and larger volume centres where education and learning can have greater impact. b) The provincial government should work to connect smaller and/or more isolated centres early in the process to achieve greater coverage geographically.
12. Implemented according to firm timelines that take into account varying	a) A firm timeline should be set for implementation timing in order to signal the importance of this initiative and to set a clear expectation for stakeholders, with a maximum implementation period of three years.

Recommendation	Details
facility infrastructures and needs	b) Facilities should be placed within one of two implementation timeline streams based on facility infrastructure and needs. Facilities should be asked to complete a provincially-managed self-assessment in order to evaluate their current state and place themselves within the appropriate implementation stream. c) Hospitals and IHFs with digital capacity and sufficient size to constitute a Peer Review Quality Committees of four should be required to implement within two years. d) Hospitals serving small communities, rural and/or remote areas with a small complement of radiologists and IHFs with low volumes and limited infrastructure should be required to establish networks and common approaches with other facilities and will be given three years to implement.
13. Scalable to other imaging specialties within a specific timeframe	a) The first phase of implementation should be focused on radiologists, but the program and investments to implement it should be scalable to other specialties. All imaging specialties should be included in peer review in a timeframe of no more than four years following initiation of implementation. b) Any investments in peer review software and quality management programs should ensure they can be appropriately scaled.
14. Measured and reported on at facility and provincial levels to support program management and understand uptake	a) At the facility level, the focus of measurement should be to support local program management and education activities. Numbers of cases reviewed and review scores should be shared between members of the Peer Review Quality Committee and may be reported at the physician and facility level. b) At the provincial level, the focus of measurement should be understanding uptake, confirming educational effectiveness and allowing for enhancements. Ongoing reporting should be the responsibility of Health Quality Ontario. c) Metrics should be collected through peer review software in a standardized way to allow for consistent reporting across the system. d) Quantitative metrics should track participation (e.g. number of physicians taking part, number of cases reviewed) and educational activities (e.g. number of facility-/network-level peer review conferences, percent attendance). Qualitative metrics should include summaries of key learning points.
15. Supported by appropriate resources, tools and infrastructure	a) Peer review implementation should be appropriately supported and funded, regardless of whether implementation is taking place at a hospital or IHF. b) Where possible, facilities should work to implement peer review software with existing RIS and PAC systems, as digitization is a key enabler of peer review. However, these systems are not a requirement.

Recommendation	Details
	c) A provincial toolkit should be developed immediately to assist facilities in implementation. It should address the specific needs of both practices and emphasize the importance of adopting a consistent approach to managing discrepancies in accordance with the legislative, regulatory and policy requirements of each organization. d) Subject matter expert across Ontario should be identified to assist facilities in implementation as part of a "train the trainer" model where "super users" at facilities that have successfully implemented may be called upon to advise and support other facilities. e) An accountability and reporting framework should be developed and established to manage the ongoing operations of peer review across Ontario, as well as its expansion to all image-reading specialties.

Appendix 2 – Expert Panel Terms of Reference and Membership

1.   Background

On December 5, 2013 the Minister of Health and Long-Term Care released a statement announcing that:

"Working with our health partners, Health Quality Ontario will lead the implementation of a province-wide physician peer review program in all facilities where diagnostic imaging services are provided, including mammograms and CT scans.

Peer review has been found to be an effective method for enhancing safety and accuracy in diagnostic imaging in many jurisdictions around the world.

Going forward, we will also be looking at additional ways to strengthen health care quality assurance, which may include an accreditation program."

The short term goal of the expert panel is to focus on peer review, and in the medium term to consider a broader DI quality assurance program that would consider diagnostic imaging in multiple settings, including various modalities, and be relevant to different providers. There is also the potential to undertake a conceptual framing of a broad based provincial QA program based on the learnings from the diagnostic imaging project.

2.   Role

The Expert Panel on Diagnostic Imaging Quality will provide a forum for discussion and development of recommendations to government for the implementation of a practical province-wide physician peer review program for diagnostic imaging. Through its leadership, this table will facilitate collaboration with the aim of achieving consensus on the core components of a peer review program and recommendations for a phased implementation. The Expert Panel will also provide advice to Health Quality Ontario on a broader quality assurance program in DI, which may involve additional approaches to ensuring continuous quality improvement such as accreditation.

The Expert Panel shall:
   a. Determine the core components of a best practice model for a peer review program for diagnostic imaging;
   b. Provide recommendations for province-wide implementation;
   c. Provide advice to Health Quality Ontario on elements of a broader quality assurance program in diagnostic imaging

3.   Responsibilities:

To fulfill the role of the expert panel, members are responsible for the following:

- Examine best practices in quality assurance in DI;
- Provide constructive input on recommendations to be reflected in a report to government;
- Provide leadership to support the objective of improved quality in diagnostic imaging;
- Keep members of the expert panel apprised of news, updates, and activities that have implications for the group mandate

4.   Membership:

- Membership of the Expert Panel on Diagnostic Imaging Quality includes:
- Anthony Dale, President and CEO, Ontario Hospital Association
- Dan Faulkner, Deputy Registrar, College of Physicians and Surgeons of Ontario
- Ray Foley, Executive Director, Ontario Association of Radiologists
- Rocco Gerace, Registrar, College of Physicians and Surgeons of Ontario

- Gerald Hartman, President, Independent Diagnostic Clinics Association and President & CEO, True North Imaging
- David Jacobs, Chair of the OMA Section on Diagnostic Imaging, Ontario Medical Association and Executive Vice President, Ontario Association of Radiologists
- Maggie Keresteci, Senior Director, Health System Programs, Ontario Medical Association
- Ivana Marzura, Service User Representative
- Tara McCarville, Vice President, Quality, Enterprise Risk & Business Intelligence, Trillium Health Partners
- Mark Prieditis, President, Ontario Association of Radiologists
- Ron Sapsford, Chief Executive Officer, Ontario Medical Association
- Michael Sherar, President and CEO, Cancer Care Ontario
- Colleen Taylor, Board Member, Independent Diagnostic Clinics Association and VP Operations, True North Imaging
- Joshua Tepper, President and CEO, Health Quality Ontario
- Lawrence White, Radiologist-in-Chief, Joint Department of Medical Imaging, UHN, Mount Sinai Hospital, and Women's College Hospital
- **Chair:** Joshua Tepper, President & CEO, Health Quality Ontario
- **Support:** Melissa Tamblyn, Consultant & Cathie Easton, Executive Assistant to Dr. Joshua Tepper

Guests may be invited to present to the group on specific topics.

5.   Attendance and member alternates:
To maintain continuity and consistency in discussion and group composition, members will strive to attend all meetings in person or by teleconference. If unable to attend a meeting, members are encouraged to provide written feedback if required. Members may appoint a delegate to represent them at sub-committees.

6.   Decision-making authority
Decision making: Members will strive to make decisions by consensus.

7.   Communications:
Agendas and other material will be distributed prior to meetings, and members may add agenda items through the chairperson. Health Quality Ontario is the designated spokesperson for the Expert Panel, as such members will refer any questions regarding the work of the committee to the chair.

Appendix 3 – Implementation Working Group Terms of Reference and Membership

## 1.		Background:

On December 5, 2013 the Minister of Health and Long-Term Care released a statement announcing that:

"Working with our health partners, Health Quality Ontario will lead the implementation of a province-wide physician peer review program in all facilities where diagnostic imaging services are provided, including mammograms and CT scans.

Peer review has been found to be an effective method for enhancing safety and accuracy in diagnostic imaging in many jurisdictions around the world.

Going forward, we will also be looking at additional ways to strengthen health care quality assurance, which may include an accreditation program."

In order to address this mandate, an Expert Panel was constructed to focus on peer review, and consider a broader DI quality assurance program that will consider diagnostic imaging in multiple settings, including various modalities, and be relevant to different providers. The potential to undertake a conceptual framing of a broad based provincial QA program was also identified.

From December 2013 through July 2014, the Expert Panel (supported by PricewaterhouseCoopers) developed a report that highlighted the key design principles that should underpin an Ontario-wide peer review program, as well as recommended program goals and an approach based on leading practices. The report also included implementation principles that should support the program's roll out over the next number of years.

The Expert Panel (or Steering Committee) has been reconstituted in order to lead communications and stakeholder engagement efforts, as well as develop recommendations on the overall Quality Assurance program for Ontario, including an approach to accreditation. As part of its mandate, the Steering Committee will recommend a more detailed implementation plan and cost estimate for the Peer Review Program developed by a newly formed Working Group. The goal of the Working Group will be to support and drive the development of a design, governance and reporting model for peer review in Ontario along with an implementation plan and cost estimate. PricewaterhouseCoopers will help support the Working Group and the Steering Committee through this process.

## 2.		Role

The Working Group will report to the Steering Committee its progress and work in developing the detailed design, governance, reporting model, implementation plan and cost estimate for the peer review program. This work will result in a set of recommendations and a report that will be developed with input from the Steering Committee.

The Working Group will report to the Steering Committee on the following outstanding design items:

- Critical mass requirements for program participation
- Education and learning model/ recommendations
- Relationship to related quality statutory and regulatory requirements
- Clarity of what distinguishes peer review from other related quality processes (e.g. critical incident reporting)
- Governance/ roles and responsibilities recommendations - Who will do what at the local, regional and/ or provincial levels
- Program reporting recommendations
- Alignment with related provincial quality initiatives once in operation

Additionally, the following implementation requirements will be examined and detailed:

- Implementation approach, phases and groups
- Implementation timeline
- Implementation costs and funding model
- Implementation governance structure, roles and responsibilities
- Implementation supports/ guidance tools required

3.   Responsibilities:

The Working Group members are responsible for the following:

- Attend meetings and provide constructive input and expertise in detailed implementation planning efforts;
- Review documentation and materials provided by PricewaterhouseCoopers and provide feedback in a timely manner;
- Keep members of the Expert Panel apprised of news, updates, and activities that have implications for the group mandate

Name	Title
Dr. Mark Prieditis	President, Ontario Association of Radiologists
Dr. Brian Yemen	Site Chief, Juravinski Hospital & McMaster University Medical Centre
Dr. John Clark	Staff Radiologist, Rouge Valley Health Sciences – Centenary Site and Partner, Ellesmere X-Ray Associates
Dr. Paul Voorheis	IHF Task Force Chair – College of Physicians and Surgeons & Radiologist, Barrie Ontario
Ray Foley	Executive Director at the Ontario Association of Radiologists
Dr. Sarah Harvie	Medical Director of Diagnostic Imaging. Ross Memorial Hospital, Lindsay Ontario
David Wormald	Integrated Assistant Vice President Diagnostic Services and MDU - Hamilton Health Sciences & St. Joseph's Healthcare Hamilton
Catherine Wang	Executive Director, Joint Department of Medical Imaging - UHN, Mount Sinai and Women's College Hospital
Maggie Keresteci	Executive Director, Engagement & Program Delivery – Ontario Medical Association
Gerald Hartman	CEO – True North Imaging and President of IDCA
Angela Lianos	Director of DI Program at eHealth Ontario
Wade Hillier	Director of the Quality Management Division of the College of Physicians and Surgeons of Ontario
Mark Fam	Director, Strategy and Diagnostics at North York General Hospital
Dr. Andrea Lum	Chair, Department of Medical Imaging, University of Western Ontario, City-Wide Chief, Department of Diagnostic Radiology, London Health Sciences Centre and St. Joseph's Healthcare.
Dr. Dante Morra	Chief of Staff, Trillium Health Partners
Melissa Tamblyn - Support	Consultant
Dov Klein - Support	Consultant – PricewaterhouseCoopers National Healthcare Practice

4.   Membership:

The Working Group will be co-chaired by one member of the Steering Committee. Membership of the Working Group includes:

Members of the Steering Committee may also lead and/or participate in the Working Group sessions. Guests may be invited to present to the group on specific topics.

5.   Attendance and member alternates:

There will be a total of four Working Group sessions between November 2014 and March 2015 and a number of discussions/conference calls as required outside of the sessions.

To maintain continuity and consistency in discussion and group composition, members will strive to attend all meetings in person or by teleconference. If unable to attend a meeting, members are encouraged to provide written feedback if required. Members may appoint a delegate to represent them.

6.   Decision-making authority

Decision making: Members will strive to make decisions by consensus.

7.   Communications:

Agendas and other material will be distributed prior to meetings, and members may add agenda items through the chairperson. Health Quality Ontario is the designated spokesperson for the Steering Committee and this Working Group, and as such, members will refer any questions regarding the work of the committee to the chair.