Cancer Care Ontario
Action Cancer Ontario

# Synoptic Radiology Reporting:

## Clinical Checklist Development Governance

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Methodology for a Systemized Approach to Clinical Checklist Development

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## Background

The radiology report is the communication tool between the radiologist, the referring physician and the patient. As the end product of the radiology patient journey the report needs to contain accurate information, and needs to be presented in a format using language that is clear and understandable. The report needs to facilitate clinical decision making.

All radiologists wish to produce reports which accurately describe the findings, and provide information in a manner that facilitates effective clinical management of the patient. However, while radiologists will agree about what is important to include in a radiological report, a consensus about how the information should be presented has not yet been achieved. In fact, studies have shown considerable variability in the reporting styles of radiologists (1). This variability can lead to miscommunication of information, and suboptimal patient care.

Deficiencies in radiology reports have been identified and are attributable to the lack of:

- Organization
- Clarity
- succinctness
- completeness

Modern radiology reporting is adopting more structured organization and language lead by breast imaging reporting. Breast imaging reporting quality has improved through the use of the Breast Imaging Reporting and Data Systems (BI-RADS) reporting format and lexicon (2).

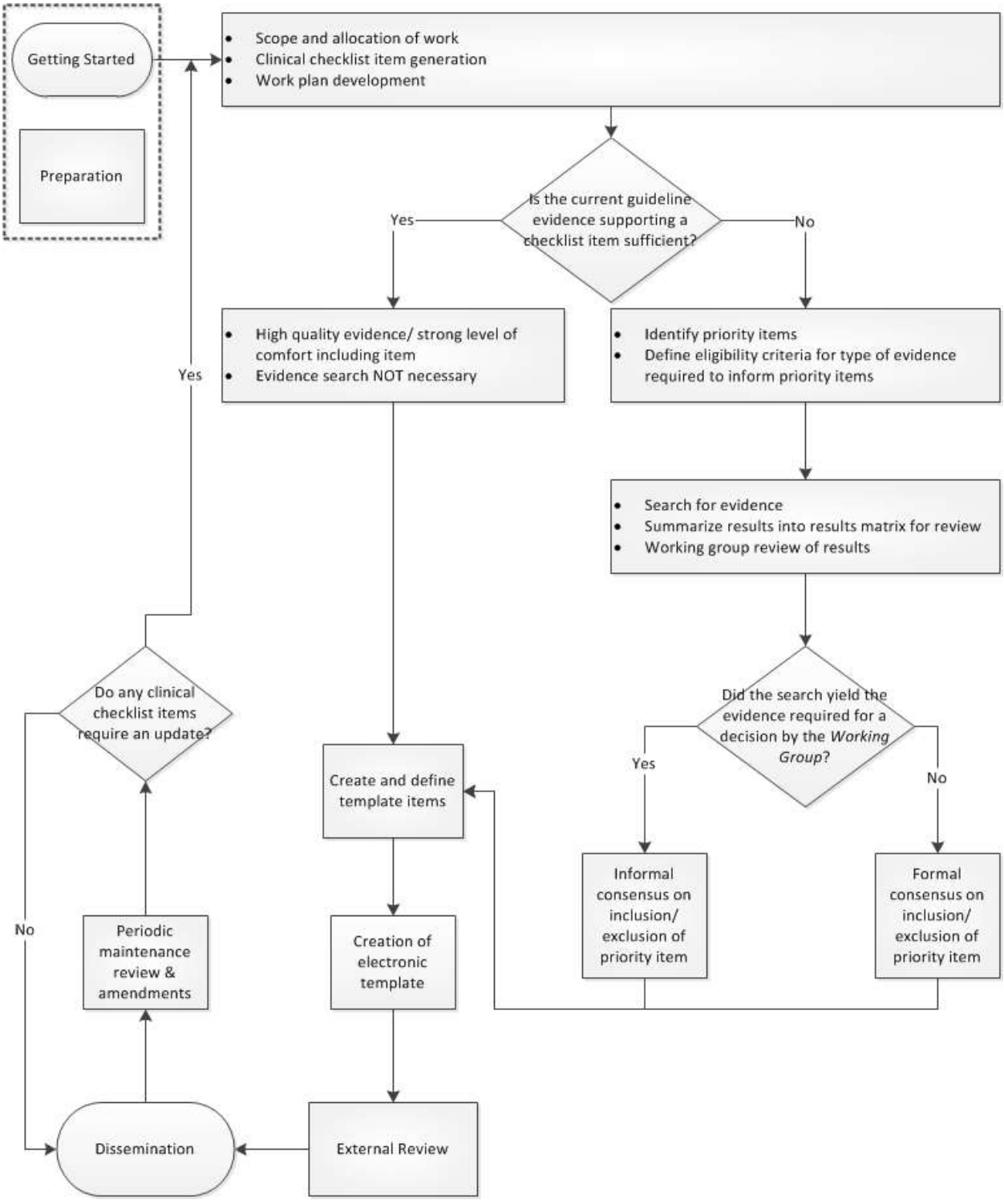
The need has come for improvement of the quality of all radiology examinations related to cancer patients.

This document is adapted from CPAC's *Guidance Document for Item Selection in Template Development* (3). It is intended to outline the steps and measures taken for a *Clinical Checklist Development Working Group* to create and maintain an evidence-based, externally reviewed synoptic radiology template.

## Purpose

The purpose of this *Clinical Checklist Development Governance* document is to provide a clear methodology for a systemized approach to clinical checklist development for synoptic radiology reports. The flowchart found in the Overview section of this document outlines the high-level steps involved in template development that may or may not occur in the prescribed sequence, but are required for template approval by Cancer Care Ontario's (CCO) Synoptic Radiology Reporting Advisory Panel. Each section will be described in further detail.

## Overview


Getting Started
Preparation
Scope and allocation of work
Clinical checklist item generation
Work plan development
Is the current guideline evidence supporting a checklist item sufficient?
Yes
No
High quality evidence/ strong level of comfort including item
Evidence search NOT necessary
Identify priority items
Define eligibility criteria for type of evidence required to inform priority items
Search for evidence
Summarize results into results matrix for review
Working group review of results
Did the search yield the evidence required for a decision by the Working Group?
Yes
No
Informal consensus on inclusion/ exclusion of priority item
Formal consensus on inclusion/ exclusion of priority item
Create and define template items
Creation of electronic template
External Review
Dissemination
Do any clinical checklist items require an update?
Yes
No
Periodic maintenance review & amendments

## Getting Started

It is recognized that there is a need for disease site and/or modality specific synoptic radiology templates. In leading the development, a *Clinical Checklist Development Working Group* (*Working Group)* chair will be identified whose qualifications include, but are not limited to:

- Expertise in disease site and/or modality
- Commitment to leading the clinical checklist development process
- History of effective leadership and project management
- Willingness to champion synoptic reporting

The chair will lead the *Working Group* to develop the disease site and/or modality specific synoptic radiology clinical checklists. *Working group* members will be selected based on, but not limited to, the following criteria:

- Expertise in disease site and/or modality
- Multidisciplinary representation
- Regional representation
- Commitment to work within the estimated timeframes

### *Stakeholders*

Guidance and input should be sought from individuals or organizations that are relevant to the disease site and/or modality. Stakeholder groups may include representatives from:

- Radiological discipline
- Referring physicians
- Information technology
- Standards organizations
- Management

### *Terms of Reference*

*Clinical Checklist Development Working Groups* are governed by the Terms of Reference that outlines the expectations are roles of each member. See Appendix A for the *Clinical Checklist Development Working Group* Terms of Reference.

## Preparation

Once a disease site and/or modality are selected for template development and the *Working Group* is established, the initial meeting will be scheduled. The following preparation should be considered prior to the first meeting:

- Confirmation of participants
- Identification of primary contact person
- Articulation of template need
- Draft agenda
- Review of *Synoptic Radiology Reporting Template Development Guidance*

- Review of initial set of guidelines to be used in choosing template items as outlined in CCO's document *Synoptic Radiology Reporting: Establishing the minimum elements required for a quality synoptic report* (4)
- Review relevant existing checklists and templates, including but not limited to, radiology, pathology and surgery
- If possible, gather a random sample of patient de-identified dictated reports in order to identify common data elements

A resource team should be made available to the *Working Group* that may be consulted to conduct an initial search for relevant practice guidelines that can be shared with the *Working Group* prior to the first meeting.

## Scope, Allocation of Work & Work Plan Development

The *Working Group* may require several meetings to initiate, discuss work undertaken, and finalize the clinical checklist draft. Many of the meetings may be done via teleconference and much of the work may be done offline via email communications.

Ideally, the initial meeting of the *Working Group* should be face-to-face and should address:

- Scope of work
- Clinical checklist item generation and confirmation (what should be included and adequacy of evidence)
- Assignment of responsibilities
- Conflict of interest disclosures
- Work plan development (see Appendix B for an example)

Dependent on the level of pre-meeting preparation, the *Working Group* may begin by reviewing the categories of items as outlined in the CCO's architecture document (4). A list of clinical checklist items within each category can then be drafted and the identification of item importance can begin (see section *Importance,* below)

Once the draft list of clinical checklist items has been established, each item may be further examined for clinical checklist inclusion and to determine if the available evidence is adequate, or if more evidence is needed (see section *Need for Evidence*).

The definition and terminology of each clinical checklist item should be considered early in the clinical checklist development process. The *Working Group* should consult standards organizations and subject matter experts to determine which terminology set(s) (e.g. LOINC, RadLex, SNOMED CT etc) are most appropriate for the clinical checklist being developed. Additionally, Information Technology experts should be consulted on items and workflow for the future conversion of the checklist to electronic template status.

### *Importance*

The *Working Group* should classify the importance of each draft clinical checklist item by assigning each item a status, as follows (adapted from CPAC (3)):

a) Mandatory
b) Strongly preferred but not mandatory
c) Somewhat preferred
d) Somewhat preferred but not needed
e) Not needed at this time

Consideration of importance for each draft clinical checklist item should include the purpose served by that item. For example:

- To inform referring physician
- To inform secondary use (for data mining)
- To address legal risk

### *Need for Evidence*

The *Working Group* will need to review the level of acceptability of available evidence for each draft items, and whether further evidence is needed by assigning each item into one of the following four categories (adapted from CPAC (3)):

a) Strong level of evidence and/or comfort including item without further study:
    - Satisfactory evidence provided in current guidelines; and/or
    - Widely accepted standard of practice
    - No controversy
b) Further evaluation needed, informal consensus sufficient:
    - Conflicting evidence in guidelines
    - No universally accepted standard
    - Some controversy
c) Further evaluation needed with formal consensus:
    - No universally accepted standard or guideline
    - Considerable controversy
d) Strongly uncomfortable including item without further evidence:
    - Guidelines insufficient
    - Formal search required for guideline, systematic review or trial

Documentation on the need for evidence will be organized via an evidence table:

*Table 1 – Need for Evidence* (3)*)*

| Item | Adequacy of Evidence | Is the item informed by high quality guidelines? | | Is additional Evidence required? | | |
|---|---|---|---|---|---|---|
| | | Yes | No | Yes | No | Type of Evidence |
| | | ☐ | ☐ | ☐ | ☐ | |
| | | ☐ | ☐ | ☐ | ☐ | |

### *Priority Items*

Once the importance of each draft clinical checklist item has been classified, and the need for evidence has been outlined, a confirmed list of items can be established. From this list, the *Working Group* can identify the contentious items and items that require further evidence which will be considered priority items. The *Working Group* will then indicate to the resource team which priority items they should focus on when searching for additional guidelines or other evidence.

## Establishing the Evidence Needed to Inform Priority Items

When priority items are identified, the *Working Group* must establish inclusion and exclusion criteria to be used in an evidence search. High quality guidelines should be sought to inform priority items. If high quality guidelines are unable to inform priority items, a description of the evidence required to inform priority items should be established to help guide the resource team.

The *Working Group* should outline the evidence hierarchy required to reliably inform the priority items selected for review (see Table 2 for an example). Depending on the research question being asked, a single hierarchy of methods may be unsuitable; in these cases a typology table may be a useful construct (5) to identify the mix of evidence that may be appropriate to inform the priority item (see Table 3 for an example). In the event that high quality evidence is absent, and a typology table is unsuitable, the *Working Group* may wish to consider bypassing the use of modest quality evidence in favour of formal consensus methods.

*Table 2: An Example for Establishing Evidence to Inform Priority Items* (6)

| |
|---|
| 1++ High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias |
| 1+ Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias |
| 1- Meta-analyses, systematic reviews or RCTs, or RCTs with a high risk of bias |
| 2++ High quality systematic reviews of case-control or cohort studies or High quality case-control or cohort studies with a very low risk of confounding, bias, or chance and a high probability that the relationship is causal |
| 2+ Well conducted case-control or cohort studies with a low risk of confounding, bias, or chance and a moderate probability that the relationship is causal |
| 2- Case-control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal |
| 3 Non-analytic studies, e.g. case reports, case series |
| 4 Expert opinion |

*Table 3: An example of a typology of evidence (example refers to social interventions in children)* (1)

| Research question | Qualitative research | Survey | Case-control studies | Cohort studies | RCTs | Quasi-experimental studies | Non experimental evaluations | Systematic reviews |
|---|---|---|---|---|---|---|---|---|
| **Effectiveness** | | | | | | | | |
| Does this work? Does doing this work better than doing that? | | | | + | ++ | + | | +++ |
| **Process of service delivery** | | | | | | | | |
| How does it work? | ++ | + | | | | | + | +++ |
| **Salience** | | | | | | | | |
| Does it matter? | ++ | ++ | | | | | | +++ |
| **Safety** | | | | | | | | |
| Will it do more good than harm? | + | | + | + | ++ | + | + | +++ |
| **Acceptability** | | | | | | | | |
| Will children/parents be willing to or want to take up the service offered? | ++ | + | | | + | + | + | +++ |

## *Search for Evidence*

The resource team will conduct an evidence search based on the evidence criteria set by the *Working Group* for each priority item identified. Databases and evidence sources listed in Appendix C will be searched using appropriate search terms and filters, as required.

## Critical Appraisal/Interpretation

Critical appraisal of the evidence should be performed by the resource team using the elements of common critical appraisal tools, and may include but are not limited to:

- AGREE II for practice guidelines
- AMSTAR for systematic reviews
- Cochrane Risk of Bias for randomized control trials
- etc.

### *Template-specific Evidence Results Matrix*

Results from the evidence search should be summarized in a high-level results matrix (Appendix D). The results matrix will assist the *Working Group* in the decision making process.

### *Timeframe*

The timeframe for the search for evidence, critical appraisal/interpretation and evidence results matrix will vary depending on the number of priority items, the scope of the topic and the nature/volume of the evidence reviewed. The resource team may be called upon at any point throughout the iterative clinical checklist development process.

## Working Group Review

When relevant evidence is identified for priority items, the results matrix (Appendix D) and/or recommendations will be provided electronically to the *Working Group* for review. If the search does not identify evidence relevant to the priority item, or is found to be inconclusive, the *Working Group* should consider a formal consensus process (Appendix E).

### *Timeframe*

From the date the *Working Group* receives the results matrix, it is recommended that endorsement or modification of clinical checklist items be completed within approximately two weeks.

## Create and Define Template Items

Once the *Working Group* has determined all clinical checklist items, the checklist will be created. The checklist should be in Word document format, and should clearly layout each item, with all applicable responses; mandatory and non-mandatory items should be identified. Units for measurement should be defined where applicable, and any free text responses should be clearly marked.

The checklist document will also require explanatory notes. The explanatory notes will outline and reference the supporting evidence for each checklist item. Explanatory notes will assist the

end user by defining clinical checklist items, and explaining the purpose of each item within the checklist.

Standards organizations should once again be consulted on the finalized items to determine the appropriate lexicon to be used for each clinical checklist item (e.g. LOINC, RadLex, SNOMED CT etc).

## Conversion to Electronic Template

The *Working Group* will not be directly responsible for the conversion of the clinical checklist to an electronic template, but will be required to work closely with the technical team to ensure the clinical content does not change, and that the resulting workflow is appropriate and optimal.

## External Review

The completed clinical checklist and explanatory notes will be submitted for external review to ensure both the clinical and methodological quality and the relevance of the evidentiary base and recommendations. The external review should focus on the end-user community and may include national and/or provincial consortia, cancer centres and peers.

During the planning phase, individuals, institutions and consortia should be identified as possible external reviewers of the clinical checklist. Reviewers should be selected on the basis of their expertise and should be invited to review the final draft documents early in the development phase.

Reviewers will be provided with the draft document and a questionnaire to structure their feedback and may be submitted via mail, email or the internet (online survey). Reviewers are asked to comment, in detail, on all aspects of the clinical checklist and explanatory notes. The resource team will summarize the responses; the *Working Group* will respond to each point.

### *Timeframe*

From the date the clinical checklist and explanatory notes are distributed for external review, it is recommended that external responses, resource team summary and *Working Group* responses be complete within approximately four to six weeks.

## Dissemination

In the Ontario context, CCO is working towards standardized processes for the province. The description here is what is thought to be an appropriate dissemination strategy at a high-level. However, until such processes are established, other dissemination strategies relevant to

current circumstances in Ontario, Canada and abroad may be considered. Consideration of the dissemination strategies should be given during the clinical checklist development.

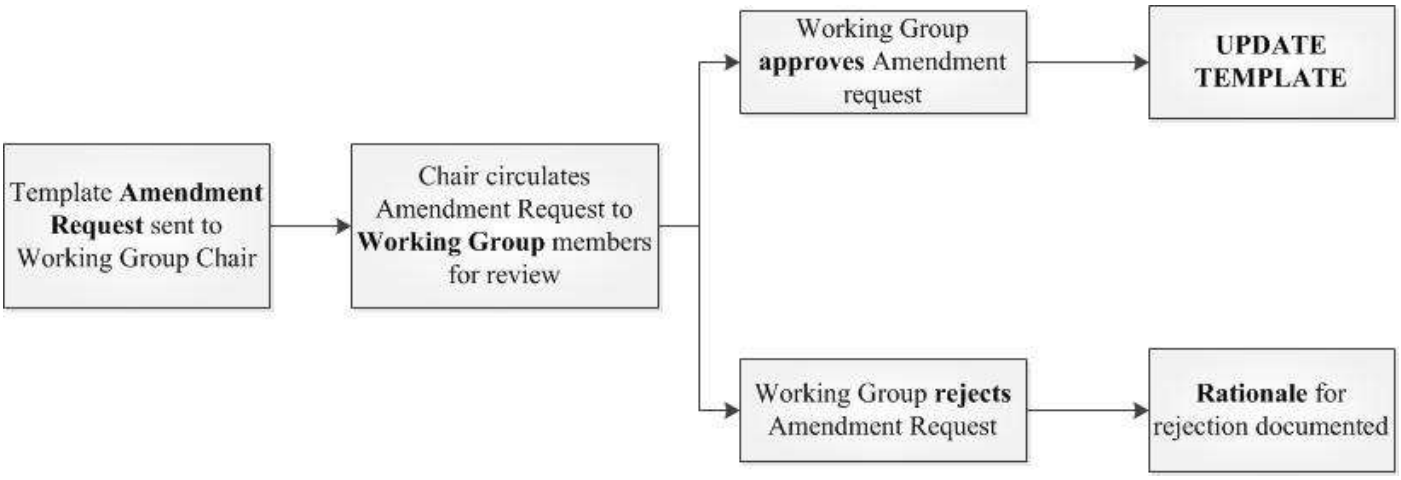
A central repository will house the final electronic template. Hospitals throughout the province will be notified when the template is available for use. Template content should not be modified by individual hospitals in such a manner as to delete mandatory fields, or add additional items not specified in the template. All templates should be accompanied by the explanatory notes and supporting documentation.

## Periodic Maintenance Review & Amendments

The periodic maintenance review of the clinical checklists will occur on an annual basis, unless otherwise indicated. During the periodic maintenance review, new evidence and changes to clinical practice will be assessed, and the *Working Group* will determine if amendments are required.

Template reviews may also occur out of necessity, e.g. new compelling evidence or standards have been brought forward, or perhaps after implementation the end-users may find that the current format is not intuitive, lacks clarity or is inconsistent. These situations will trigger an amendment outside of the regular periodic maintenance review. Amendment requests, outside of the regular periodic maintenance review will be reviewed on a semi-annual basis, or more often if required. Such amendments should be handled as follows (Figure 2):

*Figure 2: Template Amendments (adapted from CPAC* (3)*)*




If amendments are necessary, whether they be a part of or outside of the periodic maintenance review, the *Working Group* will be required to once again follow the steps regarding evidence reviews outlined in this governance document.

### *Timeframe*

From the date the *Working Group* chair receives the amendment request, it is recommended template be updated or rejected within approximately two to four weeks.

## References

1. *Radiology reports: Examining Radiologist and clinician preferences regarding style and content.* **Naik, S.S.** 2001, AJR Am. J. Roentgenol., pp. 176:591-598.

2. **ACR.** Breast Imaging reporting and data system atlas. 4th edition. Reston, Virginia, United States of America : American College of Radiology, 2003.

3. **CPAC.** Surgical Oncology Operative Synoptic Report: Guidance Document for Item Selection in Template Development. 2012.

4. **CCO.** Synoptic Radiology Reporting for Cancer Imaging: Establishing the minimum elements required for a quality synoptic report. 2014.

5. *Evidence hierarchies, and typologies: horses for courses.* **Petticrew M., Roberts H.** 2003, J. Epidemiol Community Health, pp. 57:527-259.

6. *A new system for grading recommendations in evidence based guidelines.* **Harbour R., Miller J.** 2001, BMJ, p. 323:334.1.

7. **PEBC.** Program in Evidence-Based Care Handbook. 2012.

# Appendix A – Working Group Terms of Reference

## Synoptic Radiology Clinical Checklist Development Working Group – Terms of Reference

### 1.0 Background

Systematically developed clinical checklists for reporting a procedure have been shown to be superior to narrative reports in capturing and clearly communicating the key information that facilitates clinical decision making.

Well-developed clinical checklists will include key information of relevance to the treatment and downstream management of a patient. For many of these factors, evidence is derived from rigorous research that validates their importance. For other factors, the experience and opinions of experts is the best available source of information.

To decrease the variability and improve the quality of the radiology reports, structured and synoptic reporting is being advocated by Cancer Care Ontario (CCO). In 2013, the "Synoptic Radiology Reporting Clinical Advisory Panel" was established and determined the need for expert clinical checklist development working groups that will undergo the process of new clinical checklist creation.

### 2.0 Responsibilities and Deliverables

The main responsibilities of the Synoptic Radiology Clinical Checklist Development Working Group will be:

1. Development of a synoptic radiology report clinical checklist for the disease site and modality in question
2. Maintenance of clinical checklist including participation in the review cycle
3. Compliance with the procedures outlined in the Clinical Checklist Development Governance document.

The main deliverable of the Clinical Checklist Development Working group will be to produce the synoptic reporting checklist with approved, evidence-based clinical content.

***Guiding Principles***

- Use multidisciplinary approach for the creation of clinical checklists.
- Have content informed by evidence where this evidence is available.
- Be aligned with appropriate overall clinical practice, as identified in disease pathways where they exist. (e.g., CCO's Disease Pathways)
- Contain minimum mandatory elements needed to support clinical decision making. Optional elements may also be recommended, but should be identified as such.

- Be clear and usable, and consider cross-referencing of data elements where applicable (e.g., previous imaging studies, existing clinical checklists or pathology & surgical synoptic reports).

***Clinical Checklist Development Working Groups will be expected to***:

- Act as champions and spokespersons for synoptic reporting
- Agree upon clinical checklist content
- Agree on a standardized and common terminology/lexicon

***Participation on the Clinical Checklist Development Working Group will include the following activities:***

- Individually review documents, as circulated
- Individually seek out and review literature on synoptic reporting
- Actively participate in Clinical Checklist Development Working Group meetings to provide content, feedback and discuss plans and issues
- Individually review and provide comments on revised drafts of documents
- Recommend external reviewers to assess and evaluate draft documents

**3.0 Membership**

3.1 Sponsor

- Synoptic Radiology Advisory Panel

3.2 Proposed membership includes representation from key stakeholder groups, including but not exclusive to the following physician specialties:

- Medical Oncology
- Radiation Oncology
- Surgery
- Pathology
- Radiology

3.3 Activities of the team will be supported by the Cancer Imaging Program, CCO.

**4.0 Meetings**

***Format***

Clinical Checklist Development Working Group meetings will be held remotely via a CCO-supported online meeting and will not be longer than one hour in length. Face to face

meetings may be required on occasion as work dictates. Every attempt will be made to find a common acceptable meeting time for the group in order to facilitate maximum attendance.

Members may be asked to review and comment on relevant documents circulated electronically between meetings.

***Administration***

Meeting agendas will be prepared by the Cancer Imaging Program team and will be circulated ahead of time, along with any pre-reading materials. It is members' responsibility to review these materials prior to any meetings in order to facilitate a productive discussion.

**5.0 Decision Making Process**

All decisions made by the group require general consensus. If there are any issues on which consensus cannot be achieved, a formal consensus process may be implemented at the discretion of the Chair in consultation with the Project Sponsor.

**6.0 Term**

The Terms of Reference will be revisited and revised, if necessary, on an annual basis. The composition of the working group will be expected to evolve and change on an as-needed basis, in alignment with these provisions of this Terms of Reference.

## Appendix B – Sample Work Plan

The following table is adapted from CPAC (3). It reflects the categories of this governance document at a glance, highlighting major elements of each section.

| SECTION | HIGHLIGHTS | COMMENTS/ TIMEFRAME |
|---|---|---|
| **Getting Started** | *Identify*<br>• *Working Group* chair<br>• *Working Group* members<br>• Stakeholders<br>*Review*<br>• Terms of Reference | |
| **Preparation** | • Confirmation of participants<br>• Identification of primary contact person<br>• Articulation of template need<br>• Draft agenda<br>• Review of *Synoptic Radiology Reporting Template Development Governance*<br>• Review CCO's document *Synoptic Radiology Reporting: Establishing the minimum elements required for a quality synoptic report* (4)<br>• Review relevant existing checklists and templates, including radiology, pathology and surgery<br>• If possible, gather a random sample of patient de-identified dictated | |
| **Scope, allocation of work & work plan development** | • Scope of work<br>• Clinical checklist item generation and confirmation (what should be included and adequacy of evidence)<br>• Assignment of responsibilities<br>• Conflict of interest disclosures<br>• Work plan development | Initial meeting<br><br>May require 3-4 meetings (initiate, discuss work to date, finalize) |
| **Establishing the evidence needed to inform priority items** | • Identify Priority Items<br>• Define eligibility criteria for type of evidence to search | Established by *Working Group* |
| **Search for Evidence** | • Guided by eligibility criteria set by *Working Group* | Facilitated by resource team |
| **Critical appraisal/ interpretation** | • Summary of results compiled into results matrix | *Dependent on*<br>• # priority items |

| | | |
|---|---|---|
| | | • Scope of topics<br>• Nature & volume of evidence |
| **Expert panel review** | • Results matrix provided electronically to *Working Group* for review | Approximately **2 weeks** upon receipt of summaries |
| **Formal Consensus** | • In the absence evidence or where evidence is poor<br>• Modified Delphi approach<br>• *Working Group* defines body of experts to whom formal consensus will be targeted | Facilitated by Resource Team<br>**4-6 weeks** |
| **Create and Define Template Items** | • Create clinical checklist<br>• Define template items in explanatory notes<br>• Checklist and explanatory notes to be saved in Word document format | |
| **Conversion to Electronic Template** | • *Working Group* will work closely with technical team during the conversion process to ensure integrity of clinical content and workflow | |
| **External Review** | Focus on the end-user community and may include:<br>• national and/or provincial consortia<br>• cancer centres<br>• peers | **4-6 weeks** |
| **Dissemination** | • Clinical checklist made available to central repository<br>• Hospitals notified of availability<br>• User guide and supporting documents are also made available | |
| **Periodic maintenance review & amendments** | • Amendment requests vetted through *Working Group* chair<br>• Record of requests, approvals or rejections maintained on central repository<br>• Requests reviewed semi-annually | **2-4 weeks** |

## Appendix C – Published & Grey-Literature Sources

**Databases for Scientific and Published Literature**

| Database | Description |
|---|---|
| MEDLINE | Article database covering the fields of medicine, nursing, dentistry, veterinary medicine, the health care system, and the preclinical sciences. |
| PubMed | Biomedical database containing MEDLINE citations *plus* PMC articles as well as in-process citations that have not yet been and indexed for MEDLINE |
| EMBASE | Major biomedical and pharmaceutical database for drug research, pharmacology, pharmaceutics, toxicology, clinical and experimental human medicine, health policy and management, public health, occupational health, environmental health, drug dependence and abuse, psychiatry, forensic medicine, and biomedical engineering/instrumentation. Selective coverage for nursing, dentistry, veterinary medicine, psychology, and alternative medicine. |
| CINAHL | A medical nursing database covering nursing, biomedicine, health sciences librarianship, alternative/complementary medicine, and consumer health. |
| HealthStar | Database for health services, technology, administration and research. Focuses on both the clinical and non-clinical aspects of health care delivery. Includes variable source types: journal articles, monographs, technical reports, meeting abstracts and papers, book chapters, government documents, and newspaper articles. |
| Web of Science | A multidisciplinary database consisting of the Arts & Humanities Citation Index, the Science Citation Index, and the Social Sciences Citation Index. |
| Scopus | Multidisciplinary database for the social sciences, life sciences, health sciences, physical sciences, and arts and humanities. |
| ProQuest | |
| The Cochrane Library | Electronic publication for high quality evidence to inform people providing and receiving care, and those responsible for research, teaching, funding and administration at all levels |
| | |

**Grey Literature Sources**

| Source | Information Available |
|---|---|
| National Guideline Clearinghouse (AHRQ) | GUIDELINES, HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| Cancerview Guideline Resource Centre | GUIDELINES |
| **Program in Evidence-based** | GUIDELINES |

| | |
|---|---|
| **Care (PEBC)** | |
| **National Institutes for Clinical Excellence (NICE)** | GUIDELINES |
| **Scottish Intercollegiate Guidelines Network (SIGN)** | GUIDELINES |
| **European Society for Medical Oncology (ESMO) Guidelines** | GUIDELINES |
| **European Union (EUROPA)** | GUIDELINES, HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **National Comprehensive Cancer Network Guidelines (NCCN)** | GUIDELINES |
| **CMA Infobase: Clinical Practice Guidelines Database (CPGs)** | GUIDELINES |
| **National Guideline Clearinghouse (AHRQ)** | GUIDELINES |
| **Healthcare Information Management Systems Society (HIMMS)** | HEALTH TECHNOLOGY |
| **Canadian Agency for Drugs and Technology in Health (CADTH)** | HEALTH TECHNOLOGY |
| **Agency for Healthcare Research and Quality (AHRQ)** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Institute for Healthcare Improvement (IHI)** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Institute for Clinical and Evaluative Sciences (ICES)** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Institute for Clinical Systems Improvement (ICSI)** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Canadian Health Services Research Foundation (CHSRF)** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Health Council of Canada** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **The Commonwealth Fund** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Health Quality Ontario (HQO)** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Canadian Foundation for Healthcare Improvement** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Canadian Hospice** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |

| | |
|---|---|
| **Palliative Care Association** | |
| **Conference Board of Canada** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |
| **Canadian Partnership Against Cancer** | HEALTH SERVICES & HEALTHCARE IMPROVEMENT |

**Grey Literature Databases**

| Database | Description |
|---|---|
| **HSTAT: Health Services Technology Assessment Texts** | Free web-based resource of full-text documents that provide health information and support health-care decision making. Includes evidence-based reviews from the AHRQ; protocols from the substance abuse and mental health services administration, recommendations from the U.S. Preventative Services Task Force, clinical practice guidelines, and guidance on research and methods from the AHRQ Effective Health Care Program. |
| **Health Systems Evidence** | Health Systems Evidence is a continuously updated repository of syntheses of research evidence about governance, financial and delivery arrangements within health systems, and about implementation strategies that can support change in health systems. Health Systems Evidence also contains a continuously updated repository of economic evaluations in these same domains, descriptions of health system reforms, and descriptions of health systems, as well as a variety of types of complementary content (e.g. World Health Organization documents about health systems). |
| **OpenGrey** | System for information on grey literature in Europe. Covers science, technology, biomedical science, economics, social sciences, and humanities. Includes technical or research reports, doctoral dissertations, conference papers, etc. |
| **Canadian Electronic Library** | This is a curated collection of current monograph publications from Canadian research institutes, government agencies and university centres working in the area of health and medical research. The organizations included in this collection are very active publishers of primary research in the field. The publications included are both general policy documents as well as those of a specialized technical nature. |
| **Evidence in Health and Social Care** | Enables access to authoritative clinical and non-clinical evidence and best practice through a web-based portal. It helps people from across the NHS, public health and social care sectors to make better decisions as a result. NHS Evidence is managed by the National Institute for Health and Clinical Excellence (NICE). |
| **DARE (Database of Abstracts of Reviews of Effects)** | The database is focused primarily on systematic reviews that evaluate the effects of health care interventions and the delivery and organization of health services. Also includes reviews of the wider |

| | |
|---|---|
| | determinants of health such as housing, transport, and social care where these impact directly on health, or have the potential to impact on health. |
| **Effective Public Health Practice Project** | The Effective Public Health Practice Project (EPHPP) is an expert team of researchers producing high-quality evidence synthesis documents, including systematic reviews, for health practitioners and decision makers in order to inform the planning and delivery of public health services in Canada. The EPHPP has been helping to develop the capacity of public health practitioners and policy-makers as informed consumers of literature for the past ten years. EPHPP is affiliated with McMaster University. |
| **National Collaborating Centres for Public Health – Registry of Methods and Tools** | The Registry is a searchable, online collection of methods (processes) and tools (instruments) for knowledge translation in public health |
| **Public Health +** | A source of studies and reviews related to a particular focused question. Your efficient strategy to search for public health evidence should start at the top of the 6S pyramid. |
| **Canadian Best Practices Portal** | This enhanced Portal provides you with resources and solutions to plan programs for promoting health and preventing diseases in your community |
| **Cancerview – Service Delivery Models Directory** | This searchable inventory includes a collection of leading, innovative and promising Canadian and international models of care identified through the Service Delivery Models Project. |
| **Public Policy and Health Portal – INSPQ** | The *Public Policy and Health Portal* is a portal that makes knowledge and practices relating to healthy public policy easily accessible. |
| **NHS Evidence** | Search all NHS policy and review documents. |
| **PDQ-Evidence** | Facilitates rapid access to the best available evidence for decisions about health systems. It includes systematic reviews, overviews of reviews (including evidence-based policy briefs), primary studies included in systematic reviews and structured summaries of that evidence. |
| **Cancerview – Prevention Policies Directory** | The Prevention Policies Directory (the Directory) is a freely-accessible online tool making it easier for Canadian research, practice, and policy specialists to find information on policies related to cancer and chronic disease prevention. It provides summaries of the policies and direct access to the policy documents. |
| **What works for health** | *What Works for Health* provides communities with information to help select and implement evidence-informed policies, programs, and system changes that will improve the variety of factors we know affect health. |
| **Health Innovation Portal – Health Council Canada** | The Health Council of Canada is reporting on innovative health care practices, policies, programs and services so they can be adopted elsewhere in Canada. Our goal is to support the identification, sharing, |

| | |
|---|---|
| | and uptake of innovative practices that have been demonstrated to strengthen Canada's health care system |

**Ongoing Clinical Trials**

| Database | Link |
|---|---|
| **National Cancer Institute Clinical Trials** | http://www.cancer.gov/clinicaltrials |
| **Clinical Trials Register EU** | https://www.clinicaltrialsregister.eu/ |

## Appendix D – Results Matrix

Adopted from (3)

| GUIDELINE | 1 | | 2 | | 3 | | 4 | | 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Title** | | | | | | | | | | |
| **Type of Evidence** | | | | | | | | | | |
| **Reference** | | | | | | | | | | |
| **Publication Year** | | | | | | | | | | |
| **Research Question** | | | | | | | | | | |
| **Is research question addressed?** | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ |
| **Critical Appraisal: AGREE Score** | | | | | | | | | | |
| **Strengths/Limitations** (Include AGREE comments, content expert review, guideline/evidence content) | **Strengths** | | **Strengths** | | **Strengths** | | **Strengths** | | **Strengths** | |
| | **Limitations** | | **Limitations** | | **Limitations** | | **Limitations** | | **Limitations** | |
| **Algorithms/Tools provided;** | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ |
| **Description** | | | | | | | | | | |
| **# Appraisers** | | | | | | | | | | |

| EVIDENCE SOURCE | 1 | | 2 | | 3 | | 4 | | 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Title** | | | | | | | | | | |
| **Type of Evidence** | | | | | | | | | | |
| **Reference** | | | | | | | | | | |
| **Publication Year** | | | | | | | | | | |
| **Research Question** | | | | | | | | | | |
| **Is research question addressed?** | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ | Yes ☐ | No ☐ |
| **Critical Appraisal: AGREE Score** | | | | | | | | | | |
| **Strengths/Limitations** (e.g. AMSTAR, Cochrane risk of bias) | | | | | | | | | | |
| **Strengths** | | | | | | | | | | |
| **Limitations** | | | | | | | | | | |
| **# Appraisers** | | | | | | | | | | |

## Appendix E – Formal Consensus

A decision to employ a formal consensus process may occur when there is no evidence, or evidence is very poor. A modified Delphi approach, adapted from the Cancer Care Ontario Program in Evidence Based Care (PEBC) (7), will be used, and will be facilitated by the resource team (See Figure 1).

First, the *Working Group* will formulate draft recommendations on the basis of the results matrix. Then, in each round of feedback, the draft recommendations are submitted to the consensus body of experts who are asked to rate their level of agreement with each recommendation using a Likert scale (see *Figure Appendix E-1*), and provide feedback on each recommendation. The *Working Group* will make an *a priori* decision based on their clinical experience and expertise, on the interpretation of the responses from the consensus group on what constitutes a consensus agreement. For example, if 75% or more of the consensus group agree or strongly agree with the recommendation, then the recommendation is accepted (see *Figure Appendix E-2*)

*Figure 1: Steps in the Modified Delphi Approach, Adapted from PEBC* (7)

| | |
|---|---|
| **Phase 1:**<br>**Identify Consensus Group & Draft Recommendations** | ***Working Group* (WG):**<br>1. Work with resource team to identify the members of the consensus group<br>2. Formulate draft recommendations based on the evidence review presented in the results matrix |
| **Phase 2:**<br>**Round One Consensus (Steps 3 – 6)** | **Consensus Group (CG):**<br>3. Evidence review, recommendations and questionnaire sent to the CG<br>4. Participants rate level of agreement with each recommendation (*Figure Appendix E-1*) and provide written feedback<br><br>***Working Group* (WG):**<br>5. Responses analyzed by resource team (*Figure Appendix E-3*) for agreement and consensus<br>6. Authors modify recommendations based on feedback |
| **Phase 3:**<br>**Round Two Consensus (Steps 7 – 8)** | **Consensus Group (CG):**<br>7. Original and modified recommendations, feedback on round one, and questionnaire sent to CG<br>8. Participants rate level of agreement (*Figure Appendix E-1)*) with each recommendation and provide written feedback |
| **Phase 4:**<br>**Final Consensus** | ***Working Group* (WG):**<br>9. WG reviews consensus results (*Figure Appendix E-2*), draft practice guideline and votes on approval of guideline recommendations. |

### *Timeframe*

From the date the *Working Group* identifies the need for formal consensus, it is recommended that endorsement or modification of clinical checklist items be completed within approximately four to six weeks.

*Figure Appendix E-1: Sample Likert Scale for Formal Consensus Group Feedback (Steps 4 and 8)*

| Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

*Figure Appendix E-2: Criteria-based Threshold for Consensus (adapted from CPAC* (3)*)*

| Criteria | STRONG DISAGREEMENT | MODERATE DISAGREEMENT | UNCLEAR | MODERATE AGREEMENT | STRONG AGREEMENT |
|---|---|---|---|---|---|
| 1<br><br><br><br><br>2 | ≥ 75% of responses = 1, or 2<br>AND<br>Median value 1 | ≥ 75% or responses = 1, 2, or 3<br>AND<br>Median value 2<br><br>**OR**<br>**≥** 66% and ≤ 74% of responses = 1, 2, or 3 | All other cases | ≥ 75% of responses = 3, 4, or 5<br>AND<br>Median value 4<br><br>**OR**<br>≥ 66% and ≤ 74% of responses = 3, 4, or 5 | ≥ 75% of responses = 4 or 5<br>AND<br>Median value 5 |
| | ↓ | ↓ | ↓ | ↓ | ↓ |
| **Action** | Reject Recommendation | Reject Recommendation<br><br>Consider Revision/ Clarification | Revisions/ Clarification Required | Accept Recommendation<br><br>Consider Revision/ Clarification | Accept Recommendation |

*Figure Appendix E-3: Sample Summary of Results Table from Consensus Group Feedback (Steps 5 and 9)* (3)

| Recommendation/item | N | Score Frequency | | | | | Median |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | |
| 1. | | | | | | | |
| 2. | | | | | | | |

## Glossary

***Clinical checklist*** – The list of evidence-based mandatory and non-mandatory items that need to be answered to form a complete radiology report. Answers for items may come in the form of selecting a box (single or multiple select), filling in a numerical free text field, or filling in an alpha-numeric free-text field.

***Electronic template*** – An electronic file with a preset format, ready to be filled in; used so that the format does not have to be recreated each time it is used

***Structured report*** – Report details are presented in discrete fields in an organized format using a template or checklist

***Synoptic report*** - Electronic report in discrete data field format (i.e. each type of information has a specific place and format in the report) that allows for the standardized collection, transmission, storage, retrieval and sharing of data between clinical information systems