
# 2013 RANZCR
# PEER REVIEW AUDIT TOOL FOR RADIATION ONCOLOGY

FACULTY OF **RADIATION ONCOLOGY**

THE ROYAL AUSTRALIAN AND NEW ZEALAND COLLEGE OF RADIOLOGISTS®

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## BACKGROUND

The Royal Australian and New Zealand College of Radiologists (RANZCR) Peer Review Audit Tool for Radiation Oncology (PRAT) was originally developed by the RANZCR Post-Fellowship Education Committee (PFEC) for use as a revalidation and quality improvement instrument[1-3]. The current 2013 version has been revised by the Faculty of Radiation Oncology Quality Improvement Committee (QIC) to reflect recent published suggestions[4] and user feedback. There is good evidence that the tool's use can improve radiation oncologist practice quality and the care of patients undergoing adiation therapy[2-4]. Use of the tool also facilitates individual radiation oncologists compliance with RANZCR Continuing Professional Development (CPD) requirements.

The RANZCR strongly endorses peer review audit before radiation therapy treatment has commenced and ideally after all planning has been completed (i.e. "real-time audit"), as research demonstrates that 3−5% of all cases audited require some alteration to their radiotherapeutic management[2-6].

## RECOMMENDATIONS

It is recommended that the PRAT audit be combined with feedback to the treating radiation oncologist. This feedback is ideally provided in a subsequent peer review meeting where peers give educational and enabling feedback. This is one way to improve the quality of radiation oncologist practice[2-6]. In addition, where changes to patient management are discussed, the QIC recommends the patient be re-audited at a later date to determine whether changes to patient care were implemented.

The PFEC recommends that the PRAT audit would ideally be applied to every new patient simulated rather than selected "unusual" or "difficult" cases, as types of cases at high risk for suboptimal care have not been reliably identified. However if it is not feasible to audit every patient, random selection of patients is strongly recommended.

It is suggested that departments provide regular teaching to auditors and peer reviewers in order to ensure consistency of scoring. Any uncertainties regarding PRAT scoring, or any suggestions for future PRAT revisions should be forwarded to the Chair of the QIC via RANZCR administration staff.

The QIC also recommends that departments consider reviewing their audit results annually, and consider publishing their results to improve the evidence base.

# INSTRUCTIONS FOR CONDUCTING PEER REVIEW AUDITS

There are four main steps to conduct the peer review audit process:

1. Patient selection
2. Preliminary scoring of each case
3. Peer review meeting to discuss all cases and feed back to radiation oncologist
4. Subsequent re-audit of all cases where a change in management was discussed.

## 1. PATIENT SELECTION

a. If a random selection of patients is to be audited, cases to be audited should be randomly selected by a staff member who has no direct input into the patients' care (for example clerical staff or a doctor from another team). Patients should be randomly selected from all patients simulated in the department: this includes radical, palliative, benign and re-treatment cases, and cases treated with any modality (including external beam, brachytherapy, radioisotopes etc).

b. Ideally all patients simulated would be audited. However, as a minimum it is suggested that 25 patients should be audited per radiation oncologist per year. Peer review audits could be conducted once per year (in which case all patients simulated in the preceding 12 months are the denominator), or as often as every week (thus all patients simulated in the preceding week are the denominator). The latter is preferable, as both educational and quality improvement efforts are maximised when they occur close to the point of care episode, and audited patient care can be positively impacted upon.

## 2. PRELIMINARY SCORING

a. To facilitate preliminary scoring, all relevant patient documentation should be obtained (where possible), including radiation oncology +/- hospital notes, simulation/verification films, anatomical and functional imaging, CT plans and DVHs.

b. The person auditing (i.e. completing the RANZCR PRAT Scoring Sheet) should ideally be a radiation oncology registrar, fellow or consultant, at the discretion of the institution. The auditor should not have been involved in the audited patient's care. The use of external auditors is acceptable, as is the use of a data manager or clerical staff for criteria 1 to 23 of the RANZCR PRAT Scoring Sheet.

c. The auditor should complete preliminary scoring of the patient using the RANZCR PRAT Scoring Sheet. This preliminary scoring should not be done during the subsequent peer review meeting, but should occur as close to the day of the peer review meeting as possible. The preliminary scoring should be done independently, and without input from the treating team. An attempt should be made to score all items.

## 3. PEER REVIEW MEETING

a. After the preliminary scoring is completed for all patients, the results are discussed at a subsequent peer review meeting. At this meeting the auditor, peer reviewers and radiation oncologists in charge of audited patients should discuss the results for each case. To streamline the audit process it is suggested that for items 1 to 23, only items that have not been documented (or were unable to be scored) be discussed. Most of the educational and quality improvement aspect of the PRAT audit will occur via discussion of items 24 to 32. It is suggested that electronic radiation therapy plans be pre-loaded prior to the meeting in order to streamline the audit.

b. For the purpose of peer review, peers would include radiation oncology specialists or Fellows only. However at the time of the peer review meeting, other non-peer staff members (such as registrars, radiation therapists, physicists and nurses) may (and ideally would) also participate. In the form of regular departmental or section meetings, educational and enabling feedback can be provided back to the treating radiation oncologist to improve the care of future patients, as well as provide education to registrars and ancillary staff.

c. Changes made to preliminary scoring should be made at the time of the feedback meeting.

**4. RE-AUDIT**

a. When a patient is audited and a change to management is recommended, or where changes are discussed but no consensus can be reached, these changes should be documented. This documentation does not necessarily have to be in the patient record, but can be recorded on the de-identified RANZCR PRAT Scoring Sheet in the space provided.

b. The patient should be re-audited at a later time (e.g. on completion of treatment) to determine whether the changes were implemented, and the patient's original RANZCR PRAT Scoring Sheet updated.

It is recommended that the re-audit be incorporated as part of the standard peer review audit meeting (e.g. at the start of the normal meeting).

## COLLECTION AND RETENTION OF AUDIT RESULTS

Once final audit scoring has been agreed upon, the department should retain one RANZCR PRAT Scoring Sheet per case audited, ensuring the score sheet can be linked back to the patient who was audited. These must be retained in order to verify RANZCR CPD participation.

These RANZCR PRAT Scoring Sheets should be updated when patients are re-audited.

## SCORING OF AUDIT RESULTS (OPTIONAL)

Departments may wish to score audit results to allow comparisons (anonymous or otherwise) between radiation oncologists and over time. Such comparisons may improve motivation and contribute to improved practice quality[2-3]. Various scoring systems are possible at the discretion of the institution. The QIC recommends that proportions of adequate criteria be reported.

For example, the proportion of adequate "behaviour" criteria for each case can be calculated by using the numerator of "Documented" and the denominator of ("Not documented" + "Documented"). Thus "Not applicable" and "Unable to evaluate" are excluded.

An overall proportion ("overall practice") can also be obtained by combining both behaviour and performance criteria (including protocol and study adherence). For multiple audited cases, the scores for behaviour, performance and overall practice can be averaged across the cases by consultant, division, or the whole department. With multiple cases audited, average proportions of adequate criteria can be obtained for each criterion (e.g. the proportion of "Documented" letters to referring doctors for audited cases).

This can provide valuable comparisons of scores, including comparisons over time. Comparative scores can be fed back to radiation oncologists either during departmental audit meetings, or individually.

## REFERENCES


1. *Shakespeare TP et al.* A comparison of RANZCR and Singapore-designed radiation oncology practice audit instruments: how does reproducibility affect future approaches to revalidation? *Australas Radiol. 2004; 48: 195-203.*
2. *Shakespeare TP et al.* Evaluation of an audit with feedback continuing medical education program for radiation oncologists. *J Cancer Educ. 2005; 20: 216-221*
3. *Leong CN et al.* Efficacy of an integrated continuing medical education (CME) and quality improvement (QI) program on radiation oncologist (RO) clinical practice. *Int J Radiat Oncol Biol Phys (in press).*
4. *Boxer M et al. Impact of a real time peer review audit on patient management in a radiation oncology department. JMIRO. 2009; 53: 405-11.*
5. *Shakespeare TP.* Results of a Radiotherapy Clinical Practice Audit of Victorian Single Machine Units and Hub Sites. Victorian Department of Human Services. November 8, 2005.
6. *O'Brien TMA et al.* Audit with feedback: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev. 2001 Issue*

## APPENDIX: RANZCR PRAT SCORING SHEET

| APPENDIX: RANZCR PRAT SCORING SHEET | | |
|---|---|---|
| **AUDIT IDENTIFIERS** | | |
| Name of person randomly selecting cases / auditor | Selector: | Auditor: |
| Patient ID (may be de-identified) | | |
| Treating radiation oncologist name or anonymous ID | | |
| Number of specialist radiation oncologist peer reviewers (excluding treating radiation oncologist or registrars, but includes Fellows and other radiation oncologists) | | |
| Date simulated | | |
| Primary site | | |
| Stage | TNM: I / II / III / IV<br>OR other system stage: | |
| Treatment intent | Curative / Palliative / Benign | |
| Prior radiation therapy | Yes / No | |
| Audit timeframe in relation to radiation therapy treatment delivery | Pre-radiation therapy / On radiation therapy / Post radiation therapy / No radiation therapy | |
| Has feedback been provided (or will it be provided) to treating radiation therapy oncologist | Yes / No | |
| **Suggestions for audit tool improvement, please email faculty@ranzcr.edu.au** | | |

| BEHAVIOUR CRITERIA (CRITERIA 1-23) | | | | | |
|---|---|---|---|---|---|
| | | Documented or copied in clinical record [A] | Not documented/ copied in clinical record, or illegible [B] | Unable to evaluate/Not evaluated [C] | Not applicable [D] |
| **Departmental or hospital clinical record E** | | | | | |
| 1 | History recorded [1, E] | | | | |
| 2 | Examination recorded [2, E] | | | | |
| 3 | Primary tumour site correctly documented [3, E] | | | | |
| 4 | Histology correctly documented and report filed [4, E] | | | | |
| 5 | Relevant imaging of treated site correctly documented and reports filed [5, E] | | | | |
| 6 | Tumour stage correctly documented [6, E] | | | | |
| 7 | Rationale for radiation therapy documented [7, E] | | | | |
| 8 | Treatment intent documented [8, E] | | | | |
| 9 | Discussion of treatment risks and consent recorded [9, E] | | | | |
| 10 | Letter or notes copied to referring doctor and GP [10, E] | | | | |
| **Treatment prescription [F]** | | | | | |
| 11 | Legible patient name is present on all prescriptions [11] | | | | |
| 12 | Treatment site specified and correct [12] | | | | |
| 13 | Laterality (i.e. “left” or “right”) for treated site correctly documented [13] | | | | |
| 14 | Radiation modality and energy for all phases[14] | | | | |
| 15 | Total dose specified for all phases [15] | | | | |
| 16 | Dose per fraction specified for all phases [16] | | | | |
| 17 | RT dose point specified for all phases [17] | | | | |
| 18 | Number of fractions /day specified for all phases[18] | | | | |
| 19 | Number of fractions per week for all phases [19] | | | | |
| 20 | Treatment prescriptions are signed /approved and dated [20] | | | | |
| **Simulation and planning** | | | | | |
| 21 | Isodoses/treatment plan signed / approved and dated by doctor [21] | | | | |
| 22 | Legible and correct patient name on all simulation/ VP film/electronic images [22] | | | | |
| 23 | Simulation image is signed or approved and dated by doctor [23] | | | | |

| PERFORMANCE CRITERIA (CRITERIA 24-31) | | | | | | |
|---|---|---|---|---|---|---|
| | | No change to management recommended [G] | No consensus for change of management [H] | Change to management recommended [I] | Unable to evaluate/Not evaluated [C] | Not applicable [D] |
| 24 | Indication for treatment [24] | | | | | |
| 25 | Treatment intent (radical vs. palliative) [25] | | | | | |
| 26 | Appropriate Volume Contoured [26] | | | | | |
| 27 | Target volume coverage [27] | | | | | |
| 28 | Critical structure doses [28] | | | | | |
| 29 | Prescribed total dose for each volume [29] | | | | | |
| 30 | Fractionation schedule [30] | | | | | |
| **Notes on changes to management [J]:** | | | | | | |
| | | Treated on protocol/ study, no violation | No protocol/ study or ineligible | Eligible but not treated on protocol/ study, or did not fully comply: acceptable reason documented | Eligible but not treated on protocol/ study, or did not fully comply: acceptable reason not documented | Unable to evaluate/ Not evaluated |
| 31 | Clinical protocol or practice guideline [31] | | | | | |
| 32 | Research or Study [32] | | | | | |
| **If "change to management recommended" or "No consensus for change of management", and patient re-audited:** | | | | | | |
| **RE-AUDIT** | | | | | | |
| | | Yes | No | Partially | Unable to evaluate | |
| 33 | Were consensus changes implemented? [33] | | | | | |
| 34 | Were non-consensus changes implemented? [34] | | | | | |
| **If changes not implemented, what were the reasons? [K]** | | | | | | |

## NOTES

A. All items that require doctors to record information must be in either electronic form or permanent ink (not pencil). Items in pencil should be scored “Not documented”. All changes must be signed/ initialed and dated (or electronically approved) by departmental doctors, otherwise the item should be scored “Not documented”.

B. If the criterion is not appropriately documented, in pencil, or has been altered without being initialed and dated, the criterion is scored “Not documented”.

C. “Unable to evaluate” (including “unknown”) is used when the auditor is unable to determine or assess the adequacy or appropriateness of the criterion, for whatever reason. Examples include where data cannot be accessed to check histology or site, or if the auditor does not have the time to fully evaluate the criterion.

D. “Not applicable” is defined as irrelevant for the patient in question. For example “laterality correct” (criterion 13) would be “Not applicable” for a patient who is having a midline structure irradiated. A patient who was not simulated would score “Not applicable” to many (but not all) criteria.

E. Criteria 1-10 require documentation by doctors from the radiation oncology department. These criteria are to ensure recording exists and is correct: no judgment of adequacy of information is required. That is, whilst the history or examination may be deemed to be inadequate, if they have been recorded and are correct, they will be scored “Documented”.

F. Treatment prescription includes chart / electronic prescription. Information is required to be present either physically or electronically in the patient chart.

G. Criteria 24-30 can only score “No changes to management recommended” if there is absolutely no change (however small) related to the criterion in question, and all peer reviewers and the treating radiation oncologist are in agreement that the criterion has been reasonably met. This implies that each criterion is consistent with the goal of radiation (cure or palliation). Each phase / volume to be treated should be considered: no alterations can occur to any of them.

H. A criterion is scored in this category, if, at the time of the audit *or* feedback meeting:
   - One or more peers (not other staff) recommend a change in management, but one or more peers or the treating radiation oncologist do not agree, OR
   - There are no changes recommended but, due to uncertainty, a decision is made to review management in more depth (e.g. an educational or literature review).

   It should be noted that in this situation the peer review discussion may have highlighted potential changes to management that cannot be agreed upon by all peers- it is possible that the patient has a change in management implemented despite the lack of agreement by all peers.

I. “Change to management recommended” means that there have been one or more recommended alterations or adjustments to management or treatment in relation to the criterion being scored. Specific examples are given in notes 24-30. To score in this category requires agreement by all of the peers and the treating radiation oncologist, or in the absence of the treating radiation oncologist, the radiation oncologist who has assumed responsibility for the care of the patient.

J. If any of items 24-30 are scored as “No consensus for change of management” or “Change to management recommended”, then the recommended (or in the case of no consensus, the discussed) changes should be documented here. This facilitates the re-audit process to determine if changes to patient management were actually implemented.

K. If recommended changes were not implemented, the reasons for this should be documented in free text below item 34.

1. This requires history to be recorded in the notes. No judgment is made regarding the extent, however it must be accurate as far as it is possible to ascertain.

2. This requires examination to be recorded in the notes. No judgment is made regarding the extent, however it must be accurate as far as it is possible to ascertain.

3. Primary tumour site requires documentation, even when the site being treated is metastatic. Thus whole brain radiation for metastatic breast cancer requires documentation that the primary site is “breast”. If the case is of an unknown primary, this still requires documentation. Check against one source document: e.g. histology/imaging reports, operation report, diagram, photo.

4. Histology documented requires that there is a tissue diagnosis of the type of malignancy (or benign disease, when appropriate) being treated. Documentation of histology requires both: 1) copies of histology reports in the radiation therapy record (physical or electronic) i.e. This needs to be accessible from within the patient record as a hard copy or in the case of an electronic record via a direct link: AND 2) doctor’s notes of histology findings in the clinical record. If tissue diagnosis is not obtained, there must be documentation of why this is the case as well as a provisional diagnosis: if these are both present then this criterion is scored as “Documented”. Check against one source document: e.g. histology report.

5. Relevant imaging is restricted to investigation of the site being treated. Thus staging investigations and investigations for a primary site when a metastasis is being irradiated would not be included. Documentation of imaging requires both: 1) copies of imaging reports in the radiation therapy record (physical or if electronic via a direct link): AND 2) doctor’s notes of imaging findings in the clinical record. In cases where imaging is not required, this criterion scores “not applicable”. If imaging is inconclusive and no other imaging is deemed appropriate, a score of “Documented” is applied.

6. Stage requires either the overall stage (e.g. Stage I), or a full TNM description (e.g. T1N0M0). Where AJCC/UICC criteria are not used, the staging system should be stated. To be scored as “Documented”, recurrent disease requires a designation of stage as “recurrent”, and benign disease should be stated as “benign”. Use of the word “metastases” is inadequate, as it can refer to nodal or distant disease.

7. Rationale requires a statement that treatment is being offered to palliate or prevent specific symptoms, improve local control or survival, or improve cure rates. A statement that the rationale has been discussed with the patient, although laudable, is not sufficient unless the actual rationale itself is recorded. Statements that radiation therapy is “the best treatment” or “given for close margins” are insufficient without explicitly stating what is to be gained by radiation therapy.

8. Treatment intent requires a description of radiation therapy as either radical/curative/definitive (with or without a statement of sequencing such as adjuvant or neoadjuvant), or palliative. Use of the terms “adjuvant”, “neoadjuvant” or “salvage” can be used in isolation, however must only be used in the setting of potentially curative treatment. Benign disease is scored as “Not applicable'.

9. This requires a statement that informed consent has been obtained, or that risks and benefits have been discussed. The elements of the discussion do not have to be documented. A signed consent form on its own is adequate documentation.

10. This requires documentary evidence that there has been some form of direct written or electronic communication with the referring doctor and general practitioner (GP or family doctor), such as a copy of a letter (ideally), a reference confirming that notes have been sent, or notes in inpatient records (such as a ward consult).

11. This is required whether electronic (usually automatic), printed out or written prescriptions are used. It must be present on every treatment prescription (i.e. for all phases, brachytherapy etc).

12. Treatment site must refer to a specific anatomical site. Specifying “PTV” or “tumour” are not sufficient on their own. The site must also be consistent with the organ or volume actually being targeted: thus specifying “skull” for whole brain radiation therapy should be regarded as “Not Documented”. The site must also be specific: for example recording the treatment site as “pelvis” when the prostate alone is being treated should be recorded as “Not Documented” as there are many organs in the pelvis, but only one is being targeted. Check against one source document: e.g. imaging reports, operation report, diagram, photo.

13. Laterality must be written in full (not abbreviated as L or Lt). Laterality does not require specification for midline structures, unpaired organs (such as stomach), or organs where multiple lesions on both sides are being treated (e.g. multiple bilateral brain metastases). Check against one source document: e.g. histology/imaging reports, operation report, diagram, photo.

14. Radiation modality refers to the choice of superficial or megavoltage photons, electrons, brachytherapy, radioisotope etc, as well as the energy chosen. These must be specified for all phases.

15. If multiple phases are prescribed a total dose is required for each phase. This includes brachytherapy. If brachytherapy prescriptions are recorded on a separate chart, a reference must be made on the external beam treatment chart to the brachytherapy chart or that brachytherapy is intended.

16. Dose per fraction must be specified for each phase. Dose per fraction is required to be written or electronically specified, not inferred. Where several volumes are being treated concomitantly within each fraction, the dose per fraction to each volume must be specified. This is relevant for IMRT, where a single phase total dose and number of fractions may be delivered, however differing dose per fractions may be delivered to different GTVs, CTVs or PTVs.

17. Prescription point includes prescribing to a reference isodose. For a single beam treatment, depth or isodose must be recorded. For a treatment using multiple beams, the prescription point must include either the “ICRU reference point”, “midplane dose”, “isocentre”, “reference isodose or point” or equivalent.

18. Fractions per day must be written or electronically specified for each phase, including brachytherapy.

19. Number of fractions per week must be written or electronically specified for each phase, including brachytherapy.

20. This is required for every prescription, including brachytherapy. Again it should be noted that all written approvals must be in permanent ink, and ALL changes to the treatment prescription(s) must be signed/initialed AND dated. Failure to adhere to these legal requirements results in the criterion scored as “Not documented”.

21. For paper records, approval can be for either the isodose charts or DVHs (however DVHs must include at least PTVs). For electronic plans the approval is of the electronic data set. Approval must be documented for every phase of treatment (including brachytherapy) individually, or for a composite plan. All approvals must be documented or approved by a doctor, and must be dated (automated if electronic). Again it should be noted that all written approvals must be in permanent ink, and ALL changes to the isodose / treatment plans must be signed/initialed AND dated. Failure to adhere to these legal requirements results in the criterion scored as “Not documented”.

22. For paper records this includes printouts of electronic images. In electronic systems, the patient’s CT-simulation data set should be checked for the correct patient name attached to the data set.

23. For 3D CT-simulation, item 23 will have been automatically met if item 21 has been met. For 2D simulation, electronic images with shielding (if specified) must be approved either electronically or on a printout of the image. This must be approved for all phases. All approvals must be legible and dated.

24. Is the reason that radiation is being prescribed reasonable? An example of an inappropriate indication might include adjuvant chest wall radiation for in-situ breast carcinoma post-mastectomy with clear margins. If there is full agreement that the indication is inappropriate, it should be scored “Change to management recommended”, and all subsequent criteria are scored “Change to management recommended”. If this criterion scores “Unable to evaluate / Not evaluated”, then all subsequent criteria are scored “Unable to evaluate / Not evaluated”.

25. Intent can be determined either by radiation oncologist’s documentation, or inferred from dose, fractionation etc. Intended treatment intent should be judged based on patient details (such as age) and tumour stage / volume. However if treatment intent is uncertain, it should be coded “Unable to evaluate / Not evaluated”, and subsequent items scored “Unable to evaluate / Not evaluated”. Intent excludes benign disease, (code as “Not applicable”): In this case, subsequent criteria can be scored as indicated.

26. This is an evaluation only for patients where one or more target volumes have been contoured by the radiation oncologist. For example one or more GTVs, CTVs or PTVs. The reviewer must determine whether the volume that was contoured was appropriate, both in terms of the selection of the target itself and the voluming of the selected target. An example of selection of an inappropriate volume might be voluming a CTV or PTV for the supraclavicular fossa in a patient with conserved DCIS. This would score “Change to management recommended”. An example of an inappropriate voluming of a selected target would be the CTV of a supraclavicular fossa volume including the spinal canal.

27. This is an evaluation of whether the intended target volume is appropriately covered in light of the treatment intent, and whatever limitations might exist (such as available technology, critical structures, etc). This includes coverage for each volume (i.e. one or more GTV, CTV, PTV). This criterion also applies to palliative treatments: the target(s) of palliation must be appropriately covered. Examples of when this criterion would be scored as “Change to management recommended” include changes to shielding, field arrangement, weightings, bolus use, patient set-up, field borders, beam matching etc that have been instituted to better cover the target volume(s).

28. This includes all critical structures that the auditor / peers consider important, regardless of whether they were originally considered by the treating radiation oncologist. Examples of when this criterion would be scored as “Change to management recommended” include changes to shielding, field arrangement, weightings, bolus use, patient set-up, field borders, beam matching etc that have been instituted to ensure critical structures receive an appropriately low dose.

29. Prescribed total dose must be appropriate to achieve the intended goal of therapy (i.e. curative or palliative). This applies to all volumes (e.g. GTV, CTV and PTV) or targets. This criterion would be scored as “Change to management recommended” when dose or fractionation schedules are schedules that inadequately treat various target volumes or result in an excessive risk of toxicity. An example includes treating the GTV of a T2N0M0 nasopharyngeal carcinoma radically to a dose of 40Gy in 15 fractions (in which case both dose and fractionation schedule require modification).

30. The fractionation schedule must be appropriate to achieve the treatment intent (curative or palliative). This must be the case for each phase and each treatment volume (i.e. GTV, CTV, PTV).

31. Was the patient eligible for a non-research institutional clinical protocol or clinical practice guideline? (Any clinical protocol or guideline that required ethics or review board approval, or where patients are required to sign an understanding that the protocol or guideline is investigational, would be considered as research or a study). If the patient is being treated as part of a non-research clinical protocol or clinical practice guideline, was the patient treated according to the protocol (with or without violation)? That is, did the patient have the correct indications and investigations, and was the treatment planned and delivered as per protocol? If the patient was eligible but not treated accordingly, was there an acceptable reason documented in the patient file? If the patient was withdrawn, was an acceptable reason documented? NB: it is possible to be treated on both a research study AND clinical protocol.

32. This criterion is reserved for research studies or protocols only. Any research study, clinical protocol or clinical practice guideline that required ethics or review board approval, or where patients are required to sign an understanding that the protocol or guideline is investigational, would be considered as a research protocol or a study. If the patient was eligible but not entered, or entered and withdrawn, or the protocol was violated, then an appropriate reason must be documented.

33. Items 33 and 34 can only be filled out at re-audit. It is not sufficient for the treating radiation oncologist to agree to make changes at the initial peer review audit meeting – the changes to management must be verified at a subsequent re-audit. Item 33 applies specifically to changes to management that were recommended with full consensus at the peer review audit meeting (see I above for definition of full consensus). Thus, if any of performance criteria 24-30 were scored as “Change to management recommended”, were the recommended changes implemented in full, partially, or not at all?

34. Items 33 and 34 can only be filled out at re-audit. Item 34 applies specifically to changes to management that were considered but no consensus was reached about whether the changes should occur (see H above for definition of no consensus). Thus, if any of performance criteria 24-30 were scored as “No consensus for change of management”, were any of the discussed changes implemented in full, partially, or not at all?

## ACRONYMS

| | |
|---|---|
| AJCC | American Joint Committee on Cancer |
| CTV | clinical target volume |
| DCIS | Ductal carcinoma in situ |
| DVH | Dose-volume histogram |
| GTV | gross tumour volume |
| ICRU | International Commission on Radiation Units and Measurements |
| PTV | planning target volume |
| TNM | Tumor, Node, and Metastasis |
| UICC | Union for International Cancer Control |

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