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STATISTICAL METHODS, EVIDENCE APPRAISAL AND RESEARCH FOR TRAINEES (SMART) PROGRAM

Introduction

Radiation Oncologists need to have competence in appraising the medical literature in order to optimally care for their patients. They also need the skills to understand and participate in Oncology-related clinical (+/- laboratory) research. This requires a good understanding of research methodology and biostatistics.

The SMART program is the component of the Radiation Oncology training program Curriculum that guides the trainee in acquiring these skills. Secondly, it allows documentation of learning and activity in these areas. It is made up of two assessment requirements:

- Original Research Project
- SMART Points Accrual

The SMART program deals with skills mainly within the CanMEDS roles of Scholar and Collaborator, but also Communicator and, of course, Medical Expert.

Trainees can begin the SMART program activities and documenting these as soon as they join the training program, though typically, these skills will be attained as the trainee becomes more familiar with the practice of Radiation Oncology and after the fundamentals of the oncology sciences have been learned.

It is recommended that a suitable research project be identified as soon as practicable with the aid of Clinical Supervisors and the Director of Training. All components are to be completed and submitted by the time the trainee applies to sit the Phase 2 examinations.

This pack includes vital information on the SMART Program, outlines the process for submission into TIMS of assessment requirements for both sections, and provides the following attachments: the SMART Points Activity Guide, the SMART Resource List and the SMART Reporting Template.

ORIGINAL RESEARCH PROJECT

Aims of the Original Research Project

The Original Research Project aims to –

- Foster an interest in research amongst trainees
- Apply an understanding of research methodology
- Ensure participation in research as integral to Radiation Oncology training and subsequent specialist practice
- Give all trainees the experience of journal submission
- Encourage trainees to contribute to the Oncology literature in their future careers

Pathway 1 – Accepted for Publication or Accepted for Peer-Review

Trainees are required to undertake a piece of original research and to prepare a manuscript for submission. The manuscript must either be :

- a. accepted for publication in a suitable Oncology-related peer review journal (see * for caveats) OR
- b. accepted to peer-review to:
 1. Journal of Medical Imaging and Radiation Oncology (JMIRO) OR
 2. Clinical Oncology OR
 3. International Journal of Radiation Oncology Biology Physics (“The Red Journal”) OR
 4. Practical Radiation Oncology (PRO) OR
 5. Radiotherapy & Oncology (“The Green Journal”)

If the manuscript has already been published or has been accepted for publication in one of the five above-named journals, then this will automatically satisfy the research requirement and the College should be notified with the reference/acceptance.

The trainee must be the first author and have primary responsibility for the research conducted. Trainees will be required to provide proof of acceptance to peer review before applying to sit the Phase 2 Examination.

Pathway 2 – Cochrane Protocols/Reviews

The following criteria is required for a project to be considered as acceptable under the Cochrane Protocols/Reviews pathway.

- a. The subject must be related to Oncology;
- b. The trainee must have attended Cochrane training (available in Australia and New Zealand);
- c. The trainee must submit evidence (letters of support) from Clinical Supervisors or Research Mentors confirming the trainee's role in the review;
- d. The trainee must provide confirmation that the co-authors in the Protocol/Review have Cochrane Protocol/Review experience;
- e. The Protocol/Review must be published in the Cochrane Library with the trainee as the first author.

Pathway 3 – Prospective Studies

The following options are permitted for a project to be considered as acceptable under the Prospective Studies pathway.

- a. The Prospective study protocol has been completed AND published in a peer-reviewed oncology journal with the trainee as a first author;
- b. The Prospective study is completed with the trainee as the Principal investigator AND successfully attracted competitive grant funding;
- c. The Prospective study is completed with the trainee as the Principal investigator AND is being supported/accepted by collaborative clinical trials group (eg Cancer Council; tumour specific groups like Prostate Cancer Foundation, Breast Cancer Foundation; ANZUP; TROG approved with a Trial Number).

Process for Conduct and Submission

Directors of Training and/or the Network Research Mentor are responsible for ensuring that research topics chosen are suitable. Advice may also be obtained from the Faculty of Radiation Oncology Research Committee and/or Network Research Mentors if there is uncertainty about the suitability of the research topic.

A Network Research Mentor/Co-investigator should be identified for each project and must be the second author on the manuscript. Trainees are encouraged to refer to the SMART Resource List for recommended resources that may help them with their research project. The trainee and senior research mentor have joint responsibility in ensuring that the work is conducted and presented in a scientifically robust manner.

The journals named above will provide trainees with an email that indicates whether the manuscript has been accepted for peer review or not. This email notification should take no more than 21 days to be generated.

In TIMS, the trainee should open the SMART Research Assessment and upload the email notification from the Journal, indicating acceptance for peer review or the proof of publication (i.e. copy of the abstract) and press submit. The Education Officer will be auto-notified to review the submission and if approved, the status of the assessment instance will then show as complete.

Assessment Completion

Trainees must provide proof of acceptance to the peer review process to the College prior to applying to sit the Phase 2 Examination. This must be done prior to applying to sit the Phase 2 Examination. There will be **no** exceptions to this stipulation.

Non-successful Manuscripts

If a trainee is not successful in having their manuscript accepted to the peer review process FOR JMIRO ONLY, the following will occur –

1. The trainee must inform the College of the failed acceptance to peer review by providing the email outlining this decision to the Education Officer at the College and also to seek advice as to what to submit into TIMS.

A senior member of the JMIRO Editorial Board will be informed and will contact the trainee to provide feedback.

2. The JMIRO Editorial Board member will work with the trainee to identify areas of weakness and give guidance about improving the manuscript and/or changes to and/or problems with the actual project. The trainee is then required to complete a brief report outlining what they would do differently another time, emphasising what this experience has taught them. This reflective summary is submitted using the SMART Reporting Template to the College for review. Submission of the reflective summary must occur prior to the trainee applying to sit the Phase 2 examinations.

Caveats

The following are the only journals for which the process of progression through to peer review can be monitored by the College:

1. Journal of Medical Imaging and Radiation Oncology (JMIRO) OR
2. Clinical Oncology OR
3. International Journal of Radiation Oncology Biology Physics (“The Red Journal”) OR
4. Practical Radiation Oncology (PRO) OR
5. Radiotherapy & Oncology (“The Green Journal”)

If the trainee chooses to submit his/her manuscript to another Oncology peer-reviewed journal (of equal impact factor or higher), the training requirement for the Original Research Project component will be considered satisfied if the trainee is able to show evidence, in writing, that the paper has been accepted for publication in the alternative journal and evidence of the impact factor for the alternative journal.

If the work has already been published during training, and verification of the first author reference is supplied, this will also comply with the Original Research Project requirement.

STATISTICAL METHODS, EVIDENCE APPRAISAL AND RESEARCH FOR TRAINEES (SMART) PROGRAM FLOWCHART

