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Advanced Training Research Project Guidelines

145 Macquarie Street, Sydney NSW 2000, Australia
Telephone +61 2 9256 5444 | Facsimile +61 2 9251 7476 | Email racp@racp.edu.au

Contents

Advanced Training Research Project

Purpose of research project requirement

The purpose of the research project requirement in Advanced Training, Chapter Training and Faculty Training is to enable trainees to gain experience in research methods; in interpretation of research literature; in participation in research at some stage of their career; and to develop quality improvement skills. Submission of a research project provides evidence of the skills of considering and defining research problems; the systematic acquisition, analysis, synthesis and interpretation of data; and effective written communication.

The College supports the practice of evidence-based medicine, integrating individual expertise with the best available external evidence from research. Sackett and colleagues (1996), describe evidence-based medicine as:

> *"…the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical experience with the best available external clinical evidence from systematic research."*

The final product will be a report of a research project in which the trainee has had significant involvement in design, conduct of research and analysis of data. Trainees may work as part of a larger research project but must have significant input into a particular aspect of the study.

Research projects are not required to be specialty-specific, but are required to be broadly relevant to trainees' area of specialty. Broadly relevant can be defined as topics that can enhance, complement and inform trainees' practice in the chosen specialty.

Quick links

Advanced Training specialty pages

elearning resource on research projects

Role of the research project supervisor

The supervisor of the research project needs to be able to guide trainees with respect to choice of research project, method, data analysis and interpretation, and quality of written and oral presentation. As this role requires particular skills and experience, it is possible that the research project supervisor will be different to the training rotation supervisor. If they are different, clear communication between the research project supervisor and the training rotation supervisor is important to ensure that each is aware of the trainee's progress in their research project work.

The research project supervisor should:

- familiarise themselves with the guidelines and marking standards
- recommend colleagues to assist with supervision if necessary
- meet with the trainee early in the period of supervision to clarify the research project goals and requirements
- consider and provide feedback regarding the merits of the proposed research project early on in the process
- ensure that the research project planned is feasible and of a suitable standard
- review the feasibility of the trainee's developed timeline to submission
- clarify access to statistical support or other infrastructure required
- monitor progress at regular intervals
- review the research project prior to submission, to ensure the research project is of an acceptable standard
- support the trainee to find a forum to present the research project
- approve the research project prior to submission to indicate the proportion of work attributed to the trainee is correct.

Research Project Types

Three types of research projects are acceptable:

- Research in human subjects, populations and communities and laboratory research; epidemiology; field research; and medical education research.
- Audit
- Systematic review

The research project must be undertaken and completed during Advanced Training, unless the trainee is applying for Recognition of Prior Learning for a previously completed PhD, Masters by Research or project completed in a Masters by coursework. Please see research project exemptions for further information.

Additional project formats may be considered for acceptance provided they meet the standards outlined in the research projects guidelines and marking criteria. Trainees and supervisors seeking approval of additional project formats should provide justification as to how the project submission meets the criteria.

Research in human subjects, populations and communities or laboratory research

This category includes: research in human subjects, populations and communities and laboratory research; epidemiology; field research; and medical education research.

Process

These are the steps for conceptualising, executing and reporting research in human subjects, populations and communities or laboratory research:

1. General preparation
   - identify a supervisor and review the College guidelines
   - develop skills in scientific writing so as to be able to apply for grant support and publish scientific and medical papers

2. Identify the problem and formulate research questions
   - consider and define a health related problem
   - review, analyse and synthesise evidence related to the existing literature or your current practice to identify research gaps and to formulate research questions or hypotheses

3. Develop the research design
   - convert information needs into answerable questions and clearly identify the specific aims of a study designed to address the question
   - identify an appropriate research method and techniques
   - identify the ethical issues arising from conduct of the study
   - obtain ethics approval from the appropriate body, if required

4. Collect or identify data to achieve the study objectives
   - either quantitative or qualitative methods

5. Write up research
   - appraise and synthesise the research findings in light of the research objectives and hypotheses
   - set findings within the context of the wider literature on the topic
   - apply the results of the study to practice
   - demonstrate effective and succinct written communication
   - outline how research should and could contribute to the practice of evidence-based medicine
   - assess strengths, weaknesses and limitations of the research project
   - reference using a consistent style

6. Self-reflection
   - evaluate own performance
   - discuss performance with the supervisor, considering if any issues arose during the research project and how the findings might change the trainee's practice

Please see the Research Projects online resource for further information about this project type, including example projects.

Audit

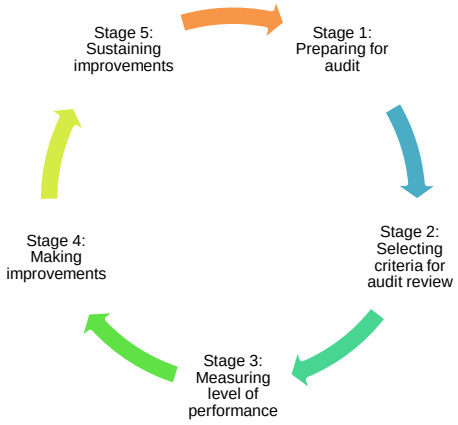
An audit project aims to assess, evaluate and improve the quality of health care through the systematic review of practice. A specific component of practice to be reviewed is identified and local performance is assessed against specific criteria in relation to the gold standard. This assessment will identify substandard areas and specific recommendations should be made to implement improvements, based on a succinct review of the literature. The audit should then be repeated to assess the success of the interventions. If this is not possible due to time constraints, then a plan for implementing, measuring and sustaining improvements must be presented.

The audit should be of an area of interest to the trainee. It may audit a novel project or program within the hospital.

The trainee should demonstrate a clear understanding of the audit cycle (see Figure 1), with evidence of how their work will lead to an improvement in clinical practice.

The size of the audit will be dependent on the topic and nature of the audit undertaken. The presentation of the audit must adhere to the standards for presentation of research, including the suggested word count.

Figure 1. Audit cycle[1]



Process

This should follow the paradigm of 'joined-up research' which would begin by assessing a problem, moving on to implementing change, and completing the circle by evaluating change over an appropriate period.

1. Identify a topic that is important to audit
2. Review the literature and other relevant information to determine standards against which to audit
3. Develop audit criteria that will measure performance against the agreed standard
4. Collect and analyse data and report results
5. Reflect on results and develop improvement plan
6. Implement improvement plan
7. Repeat data collection to measure improvement.

Please see the Research Projects online resource for further information about this project type, including example projects.

[1] Benjamin A. The competent novice. Audit: how to do it in practice. British Medical Journal. 2008; 336; 1241-1245.

Systematic review

A systematic review is a method of critically appraising bodies of research studies with a high level of rigour. Systematic reviews are different to narrative reviews and expert commentaries, in that they use a well-defined protocol to ensure high coverage of all of the relevant information, and so can be replicated easily. Typically a standard, published protocol, such as the PRISMA guidelines would be used.

For College research projects, the systematic review should be conducted in an area of relevance to the trainee's practice.

Process

1. Define the review question and rationale behind question
2. Develop inclusion and exclusion criteria for including studies, search for studies and explain search syntax, define search strategy, e.g. brief description of PICO, identify and defend databases searched.
3. Assess study quality
4. Select studies and collect data
5. Assess risk of bias in included studies
6. Analyse data
7. Interpret results and draw conclusions

Please see the Research Projects online resource for further information about this project type, including example projects.

Presentation of research

The report should contain the following sections:

1. Abstract
    - concise summary of the background, aims, methods, results, conclusions
2. Introduction
    - discussion of the literature and placement of the study in context
3. Aims of the research
4. Methodological approach
    - description of appropriate method chosen in sufficient detail to allow the study to be replicated
5. Statistical analysis
    - quantitative or qualitative analysis for the study
6. Results of the study
7. Discussion
    - interpretation of results and findings
    - discussion of the study and placement of the results in context of the available literature
    - limitations of the study
8. Conclusion
9. Reference list

The word limit should be appropriate to the type of study. For quantitative research up to 3500 words is expected and for qualitative research up to 5000 is expected.

Trainees should present their research projects orally at hospital, state or national meetings and are encouraged to publish their work and identify an appropriate peer-reviewed journal for submission for publication. The research project should adhere to the requirements of that journal, and instructions to authors for the journal should be submitted with the research project.

Trainees must comply with the College's Academic Integrity in Training Policy, available on the College website.

Research project exemptions

Trainees may be able to apply for exemption from the research project requirements if they have completed and passed one of the three research project exemptions.

Potential exemptions may include:

- Research doctoral degree, e.g. MD or PhD
- Masters by research
- Major project completed through a Masters by coursework.

A project completed through a Masters by coursework must meet the requirements for one of the three acceptable types of Advanced Training research projects. Projects completed through a Masters by coursework must be submitted for marking according to the Advanced Training research projects marking process.

Recognition of all research project exemptions completed prior to entry into training will be considered in accordance with the College's Recognition of Prior Learning Policy. Exemptions completed during the training program will be assessed for suitability against the research project guidelines and marking criteria.

Submission guidelines and marking outcomes

Trainees must submit their research projects electronically with the relevant cover sheet. Each project will be sent to two reviewers. Reviewers will mark the projects against set marking criteria.

For most programs the submission of the research project is due by the end of the penultimate year of training. This is so there is sufficient time for marking the project, and for opportunities for resubmissions if required. Please ensure you check your program requirement handbook for any program specific submission dates if applicable.

Assessment of Research Projects

Research projects are independently marked by two assessors using assessment criteria that are common to all training programs. In the case that the two assessors cannot reach agreement, the research project is sent to a third assessor who will determine the final outcome. It is estimated that you will receive the outcome of your project within 6 weeks of submission to the Collge.

The assessment criteria used to mark all research projects is available on the College website.

There are three grading outcomes that a project reviewer can make:

- Pass – Meets expected standard. Below expected standard in no more than 1 criterion
- Resubmit – 2 or more areas below the expected standard
- Fail – Does not meet any of the criteria for a research project

If a project is marked as resubmit a trainee will have 2 opportunities to resubmit the same project to the markers with revisions. If a trainee is dissatisfied with the outcome after 2 resubmit outcomes, they may request for 2 new reviewers to mark the project. A trainee may also request for 2 new reviewers to mark their project if their project is marked as a fail in the first instance. There is a fee associated with this additional marking. There are only two outcomes that a remark with new reviewers can make – Pass or Fail. If the project is marked as a fail by the two new reviewers the trainee cannot resubmit again, and will need to complete a substantially new project to meet this requirement.

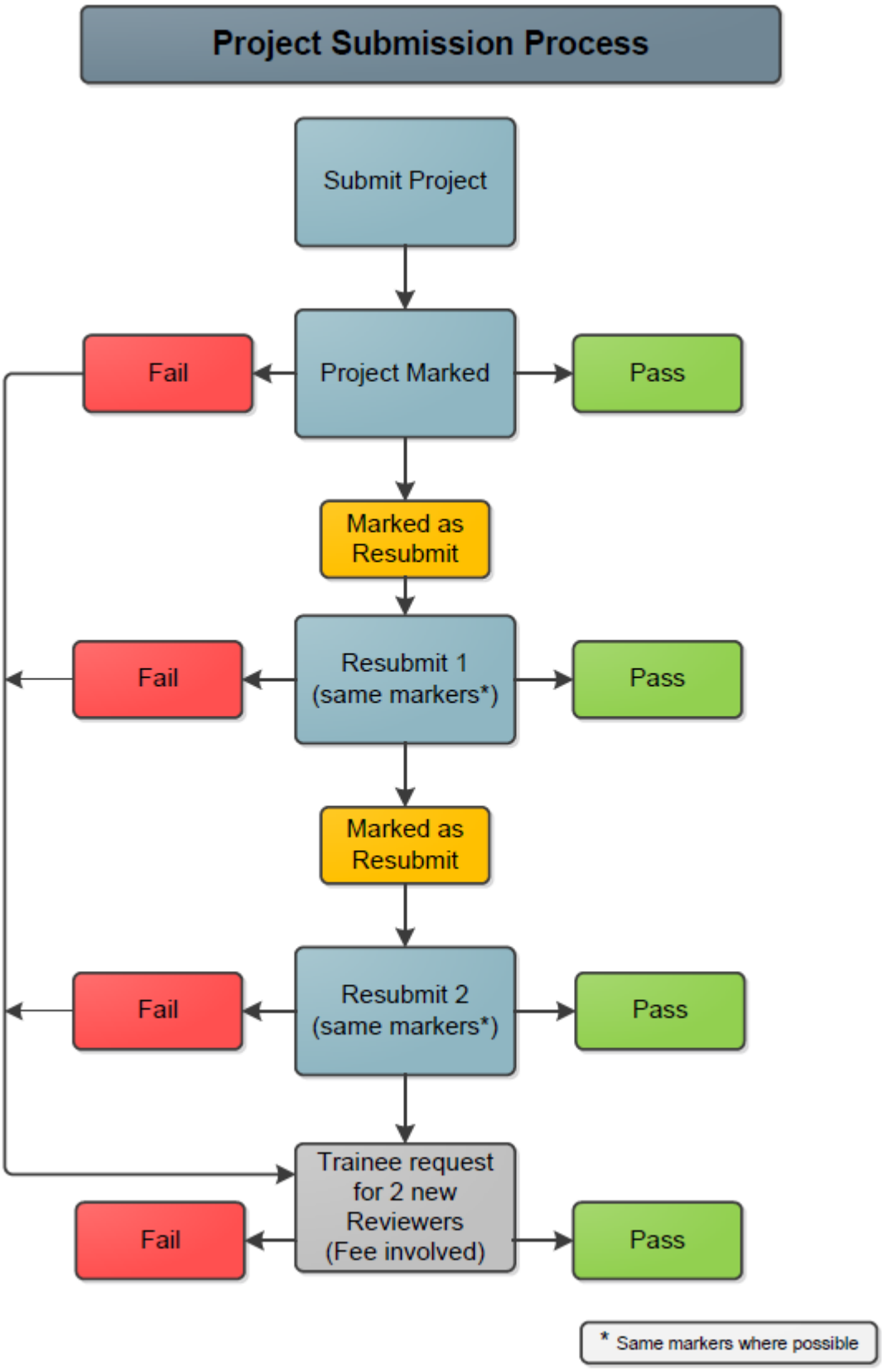
Turnitin

Turnitin is an originality and plagiarism detection tool, which compares projects against electronic texts from the Internet, published works (such as journal articles and books), and assignments previously submitted to Turnitin by other students.

Trainees will be required to obtain an similarity report from turnitin. The report must be submitted with the project. Trainees will have the opportunity to obtain the similarity report and make any changes prior to submitting the project to the College for marking. An updated similarity report must be submitted with the project if changes are made. If this is not submitted, the College will obtain a report on the trainees behalf and the trainee will not have the opportunity to make changes.

For further information regarding turnitin, please visit http://turnitin.com/

Figure 2. Project submission process



Resources

A self directed online resource has been developed for trainees completing research projects. It is also a useful resource for research project supervisors. The resource covers the process of conducting RACP research projects. The resource includes interviews with six trainees, exploring their journey completing one of the acceptable types of RACP research projects.

https://elearning.racp.edu.au/

Resource content

Foundation

- Review of evidence-based medicine
- RACP Research project requirements

Research process

- Finding a supervisor
- Identifying research gaps
- Designing a research question
- Conducting a literature review
- Research methods
- Ethics, integrity, collaboration and authorship
- Data collection and analysis
- Scientific writing
- Application to the workplace and clinical practice

Project types

- Research in human subjects, populations and communities or laboratory research
- Audit
- Systematic review

Learning outcomes

- Understand how to formulate a realistic and appropriate research question.
- Understand approaches to critically analyse relevant literature.
- Understand research methodology and scientific methods.
- Use effective scientific writing.
- Demonstrate awareness of research integrity.
- Demonstrate awareness of the importance of translating research to the workplace.
- Select approaches to collect and analyse data.
- Extract and articulate findings from data collected.
- Understand the use of evidence-based medicine.

Further questions? Contact the College	
Member Services Contact Centre First point of contact for general enquiries.	*Australia* Email: racp@racp.edu.au Phone: 1300 MyRACP 1300 69 7227 *New Zealand* Email: racp@racp.org.nz Phone: 0508 MyRACP 0508 69 7227