College of Intensive Care Medicine
of Australia and New Zealand
ABN: 16 134 292 103

Document type: Training
Date established: 1996
Date last reviewed: 2014

FORMAL PROJECT REQUIREMENTS

1. INTRODUCTION

An important part of training in intensive care medicine is the ability to plan, undertake, write and present a research project. While not all trainees will become researchers, it is expected that all trainees should:

- Gain an understanding of research methods and be exposed to the rigour of research
- Develop the ability to critically analyse scientific literature
- Develop a questioning attitude to their own clinical practice, including ongoing systematic audit and review

To encourage the development of these skills, all trainees are required to complete a formal research project or report, known as the Formal Project. Fellowship will not be awarded until the Formal Project has been successfully completed.

2. TYPE OF PROJECT

The following types of projects meet the requirements of the Formal Project and will be deemed acceptable:

- Clinical audit including practice review
- Case series defining exposures, treatments or outcomes
- Narrative reviews where based on a clearly defined question and where the review includes a systematic review of the available medical literature
- Systematic reviews with or without meta-analysis as appropriate
- Prospective clinical trials including local aspects or data related to larger multi-centered trial where this is acceptable to the Project Management Team
- Epidemiologic studies (case-control, cohort, cross-sectional, intervention, ecologic)
- Laboratory-based investigations of a question of at least broad clinical relevance
- Surveys of practice or opinion conforming to the principles of research for survey design
- Quality improvement projects including clinical audit with demonstrated practice change processes
- Education projects with a formal and testable evaluation of effectiveness in meeting predetermined educational objectives
- Advocacy projects with a formal impact assessment

Where appropriate, approval by an institutional Ethics Committee must be granted.

2.1 What other type of project will be accepted?

The following will also be deemed acceptable for submission, as long as they meet all of the requirements regarding format, length and presentation outlined in sections 4 and 5 of this document:

- A scientific paper already accepted for publication in a journal will require no further modification before submission. Proof of acceptance or publication must be provided together with the accepted manuscript.
- Project reports completed in conjunction with training toward other Fellowships may be submitted for consideration. Please note that the literature review must be up-to-date at the time of submission.
- Reports arising from work undertaken as part of scientific courses or higher degrees may be submitted but must conform to all of the requirements with respect to form and presentation. If not already published, thesis material should be presented in the format of a paper for Critical Care and Resuscitation and the literature review and discussion updated.

2.2 What will not be accepted?

The following **do not** meet the requirements of the Formal Project and will not be accepted:

- individual case reports
- letters to the editor
- correspondence
- book chapters
- editorials

3. CONDUCTING THE RESEARCH: WHAT IS INVOLVED?

Conducting the research for the Formal Project typically involves:

- formulation of a question
- finding a helpful supervisor
- development of a hypothesis
- conducting a literature review
- protocol development
- ethical considerations
- planning of research time frames for data collection, analysis, write-up and submission
- finding funding (although most Formal Projects only require time commitment)
- getting the work published
- dissemination of results (techniques for presentation including slide and poster preparation)

For a list of useful resources that might assist with the completion of the Formal Project, refer to the Resources document.

4. PRODUCING THE FORMAL PROJECT - SPECIFIC REQUIREMENTS

When writing the Formal Project, the following specific requirements must be met:

4.1 The project must be original

4.2 The trainee must be the first author of the project

4.3 The project must demonstrate the minimal criteria for the principles of investigation and research including:

4.3.1 A clear question

4.3.2 A structured literature review using relevant databases, evidence-based medicine techniques and specifying search criteria and methodology

4.3.3 Appropriate study design and methodology to answer the question including bias minimisation strategies where relevant

4.4.4 A description of any requisite, relevant ethical approval process

4.4.5 Specification of sample determination with inclusion and exclusion criteria where appropriate

4.4.6 Specification of the primary outcome of the research

4.4.7 Analysis appropriate to the study design

4.4.8 Discussion based upon a summary of the main findings, relationship to existing knowledge and relevant contexts

4.4.9 Potential study biases and limitations as appropriate

4.4.10 Clear conclusions supported by the data or material presented and the relevant literature

4.4.11 Reference accuracy using a recognised citation format – preferably that included in the Critical Care and Resuscitation guidelines for authors

4.4.12 Clarity in the writing style and overall organisation of the report

4.4.13 A statement of conflict of interests of all personnel involved in the research and sources of support as required

4.4 In general, a Formal Project should be between 2,000 and 3,000 words. While it can be slightly longer than this, the project should not exceed 4,000 words

5. REQUIRED FORMAT FOR THE FORMAL PROJECT

To be acceptable, the Formal Project must be submitted as either:

- A published manuscript, or
- A manuscript that meets the submission requirements for the journal ***Critical Care and Resuscitation.*** These submission requirements are detailed in *Preparation of Manuscripts* found in the 'Information for Authors' section of *Critical Care and Resuscitation* 2004; 6: 74-76.

As such, all submissions should include:

- an abstract
- an introduction (including objectives or an hypothesis)
- a description of patients, methods and results (as applicable)
- a discussion including referenced literature review
- a conclusion.

While the Formal Project should ideally be submitted for publication, publication is not mandatory.

6. PRESENTATION OF THE FORMAL PROJECT

The trainee is required to present the project as a free paper at an international, national or regional scientific meeting which involves a discussion period where the trainee is answerable to the audience and a meaningful interrogation of the project is available.

If presentation at an international, national or regional scientific meeting is not feasible, presentation at a more local forum, such as a major hospital forum, is acceptable provided it involves a discussion period in which the trainee is answerable to a suitable audience. A suitable audience can be defined as one that includes at least 5 senior clinicians, with at least one of whom is completely independent of the project. The details of this meeting must be completed on the Supervisor's Project Evaluation Report that must accompany the project.

Meetings with perpetual pre-approval include:

- CICM Annual Scientific Meeting
- ANZICS Annual Scientific Meeting
- Regional CICM Research Forums
- ANZICS-CTG meetings
- ACEM Annual Scientific meeting and Winter Symposium
- RACP Annual Scientific Meeting or RACP affiliated specialty scientific meeting
- Local Meetings where there is an invited consultant to review the project and that a suitable quorum and cross section of specialists are available to provide critical review. The supervisor will need to provide a report of the adequacy of this meeting.

Note that where there is no presentation or discussion period, poster presentations are not suitable.

7. ROLE OF THE SUPERVISOR OF TRAINING

Supervisors of Training are responsible for:

- Advising trainees on the selection and conduct of the project and preparation of the final Formal Project
- Critically reviewing the final manuscript to ensure its suitability for submission
- Involving other senior colleagues experienced in research in any or all of these responsibilities
- Advising trainees on the most suitable time during training to carry out the Formal Project, keeping in mind that this may take up to 18 months and requires consistent access to the data sources.
- Completing the **Supervisor's Project Evaluation Report** which involves providing written confirmation:
    i. of the nature of the presentation
    ii. of the duration of the presentation
    iii. of the period of interrogation
    iv. that the trainee has presented the project at an appropriate forum
    v. that the trainee has been a major contributor to the project
    vi. that the trainee is the first author.

8. PROJECT SUBMISSION

Trainees are required to electronically submit the following to the College:

- The Report Cover Sheet, including any declarations
- The completed Formal Project
- A scanned copy of the Supervisor's Project Evaluation Report.

Where electronic submissions are not possible, paper copies will be accepted.

Note: Where the project has been written or published in a foreign language, the onus remains with the trainee to submit the Formal Project in a form that enables assessment in English.

9. PROJECT ASSESSMENT

A standard score sheet is used to mark the Formal Project and is identical for all project types. The project is marked against minimum criteria and if all these have not been met, the project will be considered unacceptable. The Assessor's feedback of the project will be provided to the trainee.

The standard required for acceptance will vary with the nature of the project. Case series and systematic reviews will be assessed against the standard of presentation, structure and academic discussion of a manuscript published in *Critical Care and Resuscitation*. Manuscripts published in peer-reviewed journals will not normally require extensive review.

Each project will be assessed by at least two Reviewers/Assessors from the Formal Project Assessment Panel. If the Assessors do not achieve consensus, the Censor or Chairman of the Formal Project Assessment Panel will have the deciding vote on the outcome of the review.

Where a project is assessed as unsatisfactory, trainees may request reconsideration by the Training Committee. The final decision may be subject to the Appeals Process. Trainees will be notified of outcomes in writing.

10. RESOURCES

Resources to assist in completing the CICM trainee Project requirement:

- **Short research courses**:

i. ANZICS-CTG Trainee Research Forums

ii. CICM Regional Committee Trainee Research Forums

- **Website resources**:

i. NHMRC – Australian Code for the Responsible Conduct of Research
http://www.nhmrc.gov.au/guidelines/publications/r39

ii. NHMRC- how to put the evidence into practice
http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp71.pdf

iii. NHMRC-how to review the evidence: systematic identification and review of scientific literature
http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp65.pdf

iv. NHMRC-how to use the evidence: assessment and application of the evidence
http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp69.pdf

v. NHMRC - Australian code of practice for the care and use of animals for scientific purposes
http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/ea16.pdf

vi. WHO – Guidelines for Good Clinical Research Practice
http://apps.who.int/prequal/info_general/documents/gcp/gcp1.pdf

vii. NIH – Clinical Trials.gov http://clinicaltrials.gov/ct2/info/understand

viii. YouTube – How Do I get Started in Clinical Research?
http://www.youtube.com/watch?v=re48P3RVLk4

- **Printed resources**:

i. *Clinical Epidemiology: How to do clinical practice research.* Editor R Haynes. DL Sackett, GH Guyatt, Peter Tugwell 2006 Lippincott Williams and Wilkins

ii. *Statistics at Square One.* Ninth Edition. T D V Swinscow Revised by M J Campbell, University of Southampton BMJ Publishing Group 1997 (available on line from BMJ).

iii. How to read a paper: Statistics for the non-statistician. I: Different types of data need different statistical tests. *BMJ* 1997; 315 http://dx.doi.org/10.1136/bmj.315.7104.364

iv. How to read a paper: Statistics for the non-statistician. II: "Significant" relations and their pitfalls *BMJ* 1997; 315 http://dx.doi.org/10.1136/bmj.315.7105.422

v. *Basic and Clinical Biostatistics.* B Dawson, RG Trapp. Lange McGraw Hill 2004

vi. Information for authors. *Critical Care and Resuscitation* 2004: 6:74-76

Promulgated as JSAC-IC document: November 1996
Revised: 2002, 2004, 2006, 2007, 2008, 2010
Republished by CICM: 2010
Reviewed: 2013, 2014