Optimizing collaborative relationships in emergency medicine research

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Abstract

Objective The objective of the Canadian Association of Emergency Physicians (CAEP) 2020 Academic Symposium Panel was to present recommendations for collaboration on (1) writing a grant application; (2) conducting a study; (3) writing an abstract; and (4) writing a manuscript.

Methods We assembled an expert panel of eight experienced emergency medicine clinician scientists from across Canada. Panel members performed literature searches for each of the four topics. Draft recommendations were developed and refined in an iterative fashion by panel members. We solicited external feedback on the draft recommendations online from identified researchers known to CAEP and in person at the Network of Canadian Emergency Researchers meeting in February 2020. We obtained additional feedback during an online symposium presentation on October 15th, 2020, open to all members of the Canadian Association of Emergency Physicians.

Results Four sets of recommendations were established for each component including: 14 for writing a grant application including relevant timelines; 23 for conducting a study; 13 for writing an abstract; and 18 for writing a manuscript. Forming a strong team, including patients, appropriate methodologists, content experts and a mix of senior and junior investigators, establishing and following clear timelines, and proactive communications were common themes.

Conclusions We offer recommendations for research collaboration for (1) writing a grant, (2) conducting a study, (3) writing an abstract, and (4) writing a manuscript. We believe these recommendations will help to improve the science, improve grant success, and improve the impact of the abstracts and manuscripts.

Keywords Emergency medicine · Collaboration · Research

Résumé

Objectif L'objectif du comité d'experts du symposium académique 2020 de l'Association canadienne des médecins d'urgence (ACMU) était de présenter des recommandations de collaboration sur (1) la rédaction d'une demande de subvention; (2) l'accomplissement d'une étude; (3) la rédaction d'un résumé; et (4) la rédaction d'un manuscrit.

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Méthodes Nous avons réuni un comité d'experts de huit cliniciens-chercheurs en médecine d'urgence dotés d'expérience de partout au Canada. Les membres du comité ont effectué des recherches documentaires sur chacun des quatre sujets. Des projets de recommandations ont été élaborés et affinés de manière itérative par les membres du comité. Nous avons sollicité en ligne des remarques externes sur les projets de recommandations des chercheurs connus de l'ACMU (CAEP) ainsi que des chercheurs connus en personne lors de la réunion du Réseau des chercheurs d'urgence canadienne en février 2020. Nous avons obtenu des remarques supplémentaires lors d'une présentation du symposium en ligne le 15 octobre 2020, ouvert à tous les membres de l'Association canadienne des médecins d'urgence.

Résultats Quatre séries de recommandations ont été établies pour chaque composante, dont: 14 pour la rédaction d'une demande de subvention, y compris les délais pertinents; 23 pour mener une étude; 13 pour rédiger un résumé; et 18 pour la rédaction d'un manuscrit. La formation d'une équipe solide, comprenant des patients, des méthodologistes appropriés, des experts en contenu et un mélange de chercheurs principaux et chercheurs assistants, l'établissement et le respect de calendriers clairs et des communications proactives étaient des thèmes communs.

Conclusion Nous proposons des recommandations de collaboration de recherche pour (1) rédiger une subvention, (2) mener une étude, (3) rédiger un résumé et (4) rédiger un manuscrit. Nous croyons que ces recommandations contribueront à améliorer la science, à renforcer le succès des subventions et à bonifier l'impact des résumés et des manuscrits.

Introduction

Background

Emergency medicine research is an evolving field in Canada. Although clinician researchers are relatively few, a growing number of emergency departments (ED) and university ED programs have clinician scientists conducting research [1]. Many of these scientists are highly prolific and are creating practice changing research. However, clinician scientists benefit from collaborative efforts. The collective experience of EM clinician scientists and the formation of the research networks within emergency medicine (e.g. Network of Emergency Researchers (NCER), Pediatric Emergency Research Consortium (PERC), Canadian Resuscitation Outcomes Consortium (CanROC), etc.) signal that emergency medicine research has reached a level of maturity required to conduct multicentre studies. Multicentre studies provide better evidence and are more likely to get funded. We lack a framework to optimize collaborative efforts to facilitate successful multicentre, multidisciplinary studies.

There is very little literature on how best to collaborate with others when writing grants, abstracts, manuscripts and conducting multicentre studies. There is a clear gap in guidance for investigators interested in collaborating. This paper reviews the recommendations from the 2020 Canadian Association of Emergency Physicians (CAEP) Academic Symposium Panel: How to Optimize Collaborative Relationships in Emergency Medicine Research. The target audience of these recommendations includes clinical researchers of all levels of experience, their research teams and collaborators.

Objectives

We sought to identify how best to collaborate when (1) leading a team to write a successful grant application; (2) conducting a study; (3) writing a scientific abstract; and (4) writing a manuscript.

Methods

We assembled an expert panel of eight emergency medicine clinician scientists with extensive research experience from across Canada. We selected clinician scientists from the 3 largest Canadian provinces with more than 10 years experience and research training. The expert panel consisted of 25% women, 25% Certification in the College of Family Physicians—Emergency Medicine [CCFP(EM)] certification versus 75% Fellow of the Royal College of Physicians of Canada—Emergency Medicine [FRCPC(EM)] and all from academic centres.

Panel members performed literature searches for each of the four topics. Draft recommendations were developed and refined in an iterative fashion by panel members using a combination of conference calls and email. We sought external feedback on the recommendations from identified researchers across Canada and in person at the NCER conference at Lake Louise, Alberta, in February 2020. At the NCER conference, we obtained feedback from clinical researchers, research coordinators and research assistants. Additional feedback was sought during an online symposium, open to all members of CAEP in October 2020. The proposed four best practice lists were finalized after incorporating this feedback.

Recommendations

Box 1. Writing a grant [2]

- A systematic review, survey and pilot data for the project objective will improve chances of success and are often considered a pre-requisite for Canadian Institutes of Health Research (CIHR) and other large granting agencies
- Assemble a strong team including patients, senior scientists, biostatistician, and applicable clinical and methodological specialists to the area of the study
- Applying for targeting opportunities often have higher success rates. You may need to be strategic and start small and grow the study with additional funding as it becomes available. Applying to multiple agencies with the same grant (adapted for the style of the given agency) is encouraged
- Get a mentor and use a template of a similar previously funded study before you start writing
- Make the grant easy to read, understandable and error free. Verify that a smart person, with no background knowledge of the grant, can understand it. Ideally, do not use any abbreviations, especially nonstandard abbreviations
- Study rationale must be compelling
- The lay and scientific summaries are usually the first documents read. Ensure these are well prepared and fully reviewed by study team
- Ensure that institutional representative(s) have been notified of intent to submit grant. If internal deadline is earlier than granting agency deadline, all above dates should use this internal deadline as the date of submission
- Reassess progress against planned submission milestones every 2 weeks
- Support letters are only helpful if they clearly demonstrate the value added by the site. Standardized letters are not helpful and make it harder for reviewers to locate documents
- While the budget is supposed to be reviewed separately from the science, try to ensure that you do not ask for too much, just enough to do the study with a plan to adjust for a possible 20% reduction in budget. Ensure budget is well justified
- If granting agency does not communicate directly with all authors, forward the decision response to them; if a rejection, discuss possible revisions and new plan
- Grants often do not get funded on the first submission, so even after submission, try to take steps to improve the proposal while waiting on the funding assessment (e.g. conduct a survey, systematic review, or get pilot

data if these steps have not been done at the time of initial submission)

- If accepted, provide letter and approximate timeline to start project with planned next steps to co-applicants

Suggested timelines

Time before submission	Action
6 months	Assemble core team members*
3 months	Finish writing initial draft one-page summary
3 months	Principal applicant to recruit any remaining sites/co-investigators
3 months	Clarify all roles and responsibilities including a checklist of actions needed/timelines
2 months	If possible, submit to REB at the PI's institution
2 months	Finish writing draft protocol in its entirety, or in small sections (e.g. objectives, methods, background)
2 months	Confirm who is collecting and coordinating the CVs, PINs, confirm affiliations from all co-applicants and start requesting these. Absolute deadline for these should be 2 weeks prior to submission
1.5 months	Identify staff to create budget and budget justification. Draft budget should be reviewed by core team members. Ensure the budget will cover costs yet remains "fundable". Once draft solidified, start budget justification. Both to be complete 2 weeks prior to submission
1.5 months (confirm your local deadline)	Submit draft protocol for internal review by university or colleagues previously funded by the same agency for critical review and feedback
1.5 months	Identify which letters of support are needed (usually one per site and at least one national organization (e.g. CAEP). Identify who will coordinate collecting these. Usually best to have PI request the document and ask that these be sent to the staff designated by 1 month prior to submission. Reminders should be sent as needed to ensure all letters are received by 2 weeks prior to submission. Prepare draft letters of support to be provided to the letter writers to modify

Suggested timelines

Time before submission	Action
1 month	Send all revised documents to co-applicants including one-page summary, lay summary, reply to prior submission (if applicable) and main protocol/appendices and ask for feedback within 10 days; provide a reminder after 1 week
1 month	Obtaining internal signatures should be delegated to staff, to determine who will sign (i.e. usual signing authority or delegate). Confirm if it is University or Research Institute who signs. Department Head signature is also required. All local co-investigators should ideally sign the same form
Submission	Ensure all members of the team get a copy of the entire submission and notification that it was successfully submitted on time

*Core team members should include senior researchers, junior researchers, statistician, pertinent specialists (e.g. neurology, geriatrics, cardiology, psychologist, KT expert), patient partner. Roles and time commitments from core team members should be discussed and clarified early. Ideally, experienced investigators and departments can provide administrative support for this process. Core team members build the preliminary protocol and discuss how to broaden/build the team. As the team is broadened, include all additional members on all correspondence

REB = Research Ethics Board; PI = principal investigator; CV = curriculum vitae; PINs = personal identification number; CAEP = Canadian Association of Emergency Physicians; KT expert = knowledge translation expert.

Box 2. Conducting a study

- Inform investigators and grants officer that grant application was successful
- Update budget and study based on funding received
- Draft job description, post position and hire new staff if required—consider sharing human resources with other investigators or between projects
- Plan physical space and equipment for new staff—plan ahead if need for specialized equipment
- Create and ensure all study personnel are familiar with standard operating procedures and documents for study
- Complete a “delegation of task document” for study

- Re-engage/conference call with investigators/sites who provided support for application
- Collect co-investigators’ updated CVs and confirm completion of TCPS2 when relevant
- Form Study Committees and draft Terms of References (steering, publication, public, paramedic, DSMB, etc.)
- Revise and update the study protocol as needed, (<https://www.spirit-statement.org/>) [3] develop a study manual, teaching materials, study materials, and distribute for comments from investigators and coordinating staff
- Finalize above documents and register study
- Submit for ethics review if not done at grant application stage. Consider centralized ethics submission or a structure where one site in the province can act as provincial coordinating site for ease of ethics approval (e.g. Clinical Trials Ontario: <https://www.ctontario.ca/>)
- Inform contract officer and share study documents, draft and distribute Data Sharing Agreements and contracts
- Wait for institutional approval before proceeding
- Communicate clearly with sites proposed start date, any cross-over dates if applicable well in advance
- Receive, process, invoice, pay for services in accordance with contracts and agreements
- Hold regular and interim Steering Committees and distribute minutes
- Draft and distribute Newsletters and/or engage in other social media/study website
- Keep track of renewal deadlines (ethics) and update study registry when required
- Prepare interim reports (funding agencies, DSMB, staff evaluations) when required
- Inform stakeholders about study completion (sites, ethics, registration, etc.)
- Inform statistician ahead of study completion and start cleaning database(s) for linkage with other databases and analysis
- Make plans for disposal/storage of study material

CV = curriculum vitae; TCPS2 = Tri-Council Policy Statement (2018); DSMB = Data Safety and Monitoring Board.

Box 3. Writing an abstract [2]

- Presenting and publishing a conference abstract provides an opportunity for consolidating and interpreting results, getting peer feedback prior to publication and publication of the abstract.

- Inform investigators at least 1 month before the deadline of the intent to submit an abstract.
- If unable to include all authors in the abstract due to restrictions, explain rationale for inclusion of those selected.
- Provide a draft of the abstract and pertinent results output from the data and circulate it at least 2 weeks before the abstract deadline.
- Co-authors to provide feedback within 5 days of receipt.
- Second draft to be circulated if needed at least 1 week before the abstract deadline.
- Send the final version of the abstract to all the co-authors.
- Once selected for presentation, inform all the co-authors.
- If the abstract is published in a journal, provide a copy of the published abstract and citation details to all the co-authors.
- Request names for acknowledgement from all the study sites and site PIs for inclusion in the presentation.
- Circulate the presentation/poster at least 3 weeks before the presentation date for comments.
- Once the presentation is complete, communicate to all co-authors regarding feedback at the conference.
- Incorporate the feedback in the manuscript.

Box 4. Writing a manuscript [4–7]

- Indicate intent to write manuscript and confirm co-authors as early as possible; all authors must meet the ICMJE criteria [8]; no honorary authorship.
- Inform investigators once results are available and provide preliminary tables as soon as possible; discuss interpretation and focus of the paper by email or conference call.
- Start discussion of target journal.
- If available, solicit assistance for the methods and results section from a statistician or someone with statistical expertise.
- Review complete draft with a senior mentor/colleague prior to circulating.
- Circulate a complete draft to all authors and ask for feedback within a set deadline (e.g. 14 days; provide a reminder a few days before the deadline).
- Revise according to feedback and then circulate a tracked changes version for all authors to review.
- Further revisions may be required until all authors have signed off on the paper.
- Ask authors to update their affiliations.

- Confirm the first target journal.
- Review instructions for authors for that journal, requirements for cover letter, and format/word count for abstract.
- Consider use of a staff member to oversee formatting and submission.
- Submit to journal and ensure all authors are aware and have the final clean version.
- If journal does not communicate directly with all authors, forward the decision response to them; if a rejection, discuss possible revisions and next target journal.
- If revise and resubmit, circulate draft revisions and responses for comment and approval several weeks prior to the deadline.
- Circulate proofs to all authors so they can review their names and affiliations.
- Ensure all authors are aware of publication date and any press releases prepared by your institution or the journal.
- Provide pdf of final published version to all authors as well as the citation for their CVs.

ICJME = International Committee of Medical Journal Editors; CV = curriculum vitae.

Conclusion

Four sets of recommendations were established for each component including: 14 for writing a grant application including relevant timelines; 23 for conducting a study; 13 for writing an abstract; and 18 for writing a manuscript. Forming a strong team, including patients, appropriate methodologists, content experts and a mix of senior and junior investigators, establishing and following clear timelines, and proactive communications were common themes. We believe these recommendations will help to improve the science, improve grant success, and improve the impact of the abstracts and manuscripts.

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