INTRODUCTION

Geriatric emergency medicine (GeriEM) is an expanding area of focus with many institutions allocating resources to the care of older adults [1]. One method of continued growth in the field is through high-quality research and quality improvement projects. Given that GeriEM is a relatively new subspecialty, the challenges with research in this field include a shallow research base, complex patient populations and novel research questions [2]. These same challenges, however, are also what makes the field exciting and ripe with potential for large impact of research studies for a significant proportion of emergency department patients—older adults. This article is a review of the Journal Club on Geriatric Emergency Medicine Research held on November 2nd, 2023. We summarize three presentations from established researchers in the field of geriatric emergency medicine to help inspire, promote and expand research in this field. The discussed strategies are applicable to learners at the start of their research careers and experienced researchers with interests in the care of older adults.

CASE

A 29-year-old resident physician is starting a geriatric emergency medicine fellowship. In addition to gaining valuable knowledge in the care of older adults through clinical rotations, one of their goals is to develop academic skills by exploring scholarly projects and/or becoming involved with research in the field of geriatric emergency medicine. They decide to approach this task by seeking advice from experienced mentors in the field.

Presentation 1: Success on your Resident/Fellowship Research Project by Lauren Southerd

Starting a research project as a trainee can seem daunting. Given time constraints and clinical responsibilities, completing a project during residency or fellowship requires careful consideration and planning. Large scope projects like randomized control trials, systematic reviews or qualitative studies may be challenging to complete within a short time-span. Dr. Lauren Southerd provided her advice on successfully completing a research project as a trainee.

- Consider joining a project that is already on the go instead of starting from scratch. A year of fellowship flies by quickly.
- If you are developing your own project, start as early as possible. Begin by connecting with mentors and researchers at your institution to share your ideas and receive guidance on what your project can look like.
- Examples of projects that can be achieved in a short period of time include:
Retrospective cohort studies (chart reviews)
Quality improvement projects where the baseline data has already been collected.
Book chapters on focused topics, or
Complete an existing project by taking it across the finish line and finishing up data analysis or writing.

- When designing a study ensure to take time in solidifying the key elements such as primary objective, defining of variables (keep a data dictionary with clear descriptions), methodology, power and sample size, as well as rationale for decisions made. Keep a log of every research meeting so you have notes to refer to when you write up your methods. Taking these steps at the beginning will give the highest chance for a smooth operation.
- Become familiar with standardized guidelines early (ex. PRISMA, STROBE) so as to ensure you are on track with your data collection and study design.
- Inquire about receiving support from other learners or team members for your project to help ensure it remains manageable. Add in some resident team members. No one finishes a research project alone!
- Once preparing for publication, employ the use of structured reporting guidelines in drafting a manuscript. Visual abstracts are also useful tools to help with publication and information dissemination.
- Additional resources for those starting research in geriatric emergency medicine include The Clinstar Group (https://clinstar.org/resources/#c) which has information on research funding and mentorship. The Geriatric Emergency Department Collaborative (GEDC-https://gedcollaborative.com/) also has implementation toolkits and research advice available online.

**Presenter Bio:**

Lauren Southerland, MD MPH, is an Associate Professor in the Department of Emergency Medicine at The Ohio State University Wexner Medical Center. She did her medical school and Emergency Medicine residency training at Duke University, a geriatric Emergency Medicine fellowship at William Beaumont Hospital in Michigan, and a Master’s in Public Health at The Ohio State. Her research focuses on using quality improvement techniques and implementation science to improve the care of older adults in the Emergency Department.

**Presentation 2: Re-thinking Study Design and Methodology: Delirium Study Example by Jacques Lee**

Older adults have previously been often excluded from randomized control trials and case-control studies. As more studies are beginning to enroll older adults, the standardized methods of participant recruitment and consent, commonly employed, have shown potential for inapplicability and risk of bias among this study population. For this reason, there may be a need to re-think how participant selection practices can best be modified to meet the needs of older adults, while balancing study ethics and scientific rigor. Dr. Jacques Lee presents the importance of careful study design for successful and meaningful research by using studies on delirium in older adults as an example.

- Researchers studying medical conditions in older adults must consciously consider how standard processes may need modifications for older adults to limit study bias. This is applicable not only to studies focused on cognition but any studies involving older adults.
- One such example is selection bias, which is the systematic difference in the way participants are included or excluded during a study and can impact study validity. It can occur during study design, data acquisition or analysis phases.
- Normally, research studies involving patients with cognitive impairments (ex. dementia, delirium) require formal capacity assessments and legally authorized representatives to oversee consent. This process, however, introduces selection bias since those deemed capable are likely not to be significantly cognitively hindered, leading to a non-representative study population with implications on study outcomes and validity.
- One approach to address this is a modified consent process. There is evidence that the use of informal capacity and consent methods, such as those used in most other research studies, leads to greater number of patients enrolled, fewer patients being deemed incapable and more representative outcomes when used in studies on patients with delirium [3]. These modified consent practices ensure to uphold the participants` autonomy and informed consent.
- A second approach to limit selection bias is by defining a protocol to reach out to legal authorized representatives (LARs) to provide consent for the patient’s inclusion in the study within a certain time-period following enrollment.
A third approach can be the use of waivers of consent by conducting a retrospective chart review for those patients deemed incapable of providing consent in formal assessments.

Successful acceptance of a modification to study protocols, such as informal capacity and consent models in older adults with impaired cognition, by institutional review boards (IRB) can be achieved through outlining the ethical validity, precedent for use and positive implications of the modification [3].

Overall, it is imperative to recognize that standard study design methods may not be appropriate in some studies with older adults, and the time spent to identify ways to adapt the design to better suit the population will help in producing more impactful and meaningful research.

**Presenter Bio:**

Jacques Lee MD, MSc, is an Associate Professor in the Department of Medicine at the University of Toronto. He is an emergency physician at Mount Sinai Hospital in Toronto, Ontario, where he also serves as the inaugural Geriatric Emergency Medicine Research Chair at the Schwartz-Reisman Emergency Medicine Institute (SREMI). His primary research focus is on delirium of older adults, including using technology to recognize and prevent delirium in the ED, investigating the underlying mechanisms of delirium, and developing diagnostic biomarkers. His other research interests include understanding and improving the impact of necessary physical distancing on social isolation and loneliness in vulnerable older ED patients. His research methods include: knowledge synthesis and translation; qualitative methods; and a strong focus on prospective quantitative research using observational and randomized interventional trial designs. Dr. Lee is committed to attracting and training the best and brightest to form the next generation of GEM researchers who will improve the care of older people in the ED nationally and internationally.

**Presentation 3: Growing your Research during Transition Periods by Dr. Ula Hwang**

Several periods of transition occur during a career in medicine and research. Examples include the transition from resident to fellow, fellow to first faculty position, between funding periods, and between institutions. Maintaining research productivity and momentum during these periods can be challenging. Dr. Ula Hwang presents ways of growing your academic work and how to advocate for yourself in research.

- When starting in a new environment, begin with getting a lay of the land by inquiring about the procedures, processes and resources of the institution. Talk to everyone you can find in the area of research you are interested in.
- Seek out mentors to guide you in starting out your projects and understanding how your goals align with those of the institution.
- Recognize that there is innate value to the interest in geriatric emergency medicine and/or research that you bring to the institution. Utilize this in project pitches by connecting your work to the broader impact it can have on the institution and healthcare systems. This may help more easily foster the support that you and your team may be seeking from leadership and financial teams.
- Build a team that fits your strengths, supports your work and respects your capabilities as well as your boundaries. Your team may be interdisciplinary or interdepartmental.
- Branch out your network to help understand the culture of the institution and ways in which you can expand your work.
- Avoid letting the fear of failing be a deterrent to trying out new projects, exploring new ideas or taking on new positions. We often think we aren’t ready for administrative or leadership roles but if someone is asking you to consider a position, then they think you are ready for it.
- Ask for what works for you – if you don’t advocate for yourself, it is the same thing as if the answer was “no.”
- Advancing your own skills through leadership seminars and courses can help your understanding of negotiation, self-investment and pitching self-value to organizations.

**Presenter Bio:**

Ula Hwang, MD, MPH, is a Professor of Emergency Medicine and Population Health at the New York University Grossman School of Medicine and a core investigator at the GRECC (Geriatrics Research, Education and Clinical Center) at the James J. Peters Bronx VAMC. She did her emergency medicine residency at Mount Sinai in New York, completed the Robert Wood
Johnson Clinical Scholars Fellowship at Yale, returned to Sinai where she was research faculty from 2004-2020 then joined Yale from 2020-2023. Most recently she was recruited to NYU to develop their Geriatric Emergency Medicine programs. She is the co-PI of the Geriatric ED Collaborative (GEDC), a national implementation program supported by the John A. Hartford Foundation and the West Health Institute to educate and evaluate geriatric emergency care, PIs the National Institute on Aging Geriatric Emergency care Applied Research (GEAR) and MPIs GEAR 2.0 Networks, both research infrastructures focused on supporting the optimization of emergency care for older adults and persons living with dementia.

CASE CONCLUSION

The fellow decides to reach out early to researchers at the institution to learn about research project on delirium, a specific area of interest for them, that are already underway and how they may become involved. They take the time to establish clear personal learning goals prior to beginning their project. With the support of their fellowship director, they seek a mentor to help navigate the academic goals. Through this process they also seek opportunities to network by attending journal clubs, joining committees, and attending conferences during their fellowship. In preparation for their transition as a geriatric emergency medicine leader, near the end of their training they plan out what resources they would need to achieve their future clinical and academic goals. They use this information in interviews with institutions to assess workplace and cultural fit.

KEYWORDS

Research, career advancement, training

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AUTHOR CONTRIBUTIONS

Priyank Bhatnagar is the principal author who wrote and revised this article. Lauren Southerland, Jacques Lee and Ula Hwang are co-senior authors, and provided oversight for the project.

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REFERENCES

