

Title: **CERA: A Vehicle for Lowering Research Barriers in Family Medicine**

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The Council of Academic Family Medicine (CAFM) is made up of four family medicine organizations with overlapping interests: the Society of Teachers of Family Medicine (STFM), the Association of Departments of Family Medicine (ADFM), the Association of Family Medicine Residency Directors (AFMRD), and the North American Primary Care Research Group (NAPCRG). These organizations, along with the American Board of Family Medicine and the Robert Graham Center provide financial support and representatives to the CERA Steering Committee. The CAFM Educational Research Alliance (CERA) grew out of the Society of Family Medicine's Research Committee in 2011. Initial goals for CERA included reducing the survey burden on family medicine leaders, improving the quality of the surveys completed by family medicine leaders in order to ensure their time was well spent, and making research more achievable for novice researchers and family medicine residents.(1)

CERA has largely accomplished these goals by regularly conducting omnibus surveys of family medicine department chairs, program directors, clerkship directors, and the general membership of CAFM organizations. The research topic ideas are proposed by members of the four CAFM organizations, undergo peer review and are ultimately selected by the CERA Steering Committee. Experienced mentors are assigned to individual research teams to mature and refine the surveys. The omnibus surveys are created, pretested, and administered centrally by the CERA Steering Committee and STFM staff. Results are then provided to the individual research teams who are then expected to generate scholarly products. The data are also stored in an online data warehouse freely accessible to CAFM organization members for later secondary analyses.(2,3)

CERA has been highly successful as a conduit for generating publications and presentations by family medicine scholars. As of July 25, 2023, there have been 164 known published manuscripts and 207 known completed presentations originating from CERA projects.(5) In addition to the recurrent surveyed populations, CERA has conducted surveys of Practice-Based Research Directors, medical students, family medicine residents, and several family medicine faculty subgroups.

CERA research provided important insights on timely educational topics such as the use of hospitalists(6), point-of-care ultrasound training(7), burnout(8), racial justice(9), and the COVID-19 pandemic(10). In 2019, CERA began presenting a Best Paper Award to celebrate outstanding products of CERA research. Table 1 list the winners to date. CERA research has covered an immense number of clinical and educational topics. Results have been published in over a dozen different medical journals. Table 2 lists some key journals that have published CERA studies.

In 2021, CERA launched a fellowship offered to one family medicine faculty per year.(4) The fellowship provides a yearlong learning experience as part of the CERA Steering Committee. Fellows learn survey research methodology, gain experience as a CERA mentor, are afforded opportunities to publish original research, and gain expertise that may lead to future leadership roles in CERA or other family medicine organizations.

Despite the successes of CERA since its inception, there have been challenges along the way. One ongoing issue is that the survey topics are often narrowly focused on family medicine, thus limiting the generalizability of the results. CERA is a program of family medicine organizations and it naturally attracts research focused on family medicine topics. Other than the annual omnibus survey of the Clerkship Directors in Internal Medicine (3), no educational research infrastructure similar to CERA exists in other specialties. Future CERA calls for proposals should encourage researchers to propose topics that are of interest beyond family medicine. Another option is actually sending the call for proposals to other specialties, which would certainly broaden the scope beyond family medicine.

Another challenge is that submitted projects are too often purely descriptive in nature rather than hypothesis driven. The CERA Steering Committee has hosted workshops at conferences to educate potential researchers about CERA and the process of submitting a proposal. Future workshops should prioritize focusing on how to develop hypothesis driven proposals. Extending the CERA mentoring

service to novice researchers at the proposal writing stage may also help produce more projects that are hypothesis testing.

Response rates for student and resident surveys have been very low to date. In an effort to troubleshoot this low participation rate, residents and students registered for NAPCRG's annual conference were invited to the CERA Steering Committee meeting at the 2022 NAPCRG Conference to provide their feedback. The CERA Steering Committee is also developing refined survey methods for improved sampling of residency programs. This may eventually be done by assigning a faculty member or resident at each residency to be the "CERA champion" who would then distribute the survey to the residents. The CERA Steering Committee is working with AAFP and AFMRD to identify all family medicine residencies and their important characteristics so that we can ensure a representative sample of programs.

CERA continues to innovate and is working to add to its study methodologies. In 2018, CERA conducted a survey of residency program directors on different aspects of their residency curricula and infrastructure. Unlike previous surveys, the responses included each program's Accreditation Council for Graduate Medical Education (ACGME) identification number. Responses were then linked to the American Board of Family Medicine's (ABFM) 2021 residency graduate survey. This project provided a way to examine the effects of residency curricula on graduate practice across a large number of programs. Preliminary results have been presented at the Society of Teachers of Family Medicine and North American Primary Care Research Group conferences, and publications are in process. With the new major changes in Family Medicine ACGME requirements that went into place in July 2023, a similar future project presents an opportunity to further explore how residency curricular changes can impact the practice of family medicine and how we can best prepare residents for their future careers.

The CERA mentoring program is growing and attempting to refine its processes. There has been a recent increase in the number of mentors from 40 to 70 as well as an expansion of mentors' areas of expertise. There is ongoing effort to increase the number of mentors to add to the mentor database and to determine how best to utilize the mentors. There is an effort to evaluate the quality and effectiveness of CERA mentorship by querying research teams about their mentor experience a few months after completion of their research projects.

As CERA has now been in existence for over a dozen years, the project has accumulated a significant amount of data available to CAFM members for secondary analysis. An excellent example of a secondary data analysis was conducted by St. Louis et al.(12) The CERA Program Director Survey in 2015-2016 included six sets of questions, in addition to the standard demographic questions. The research team used data from two of the question sets to test a novel hypothesis: that the practice type within the family health center was associated with strength of training in addiction medicine. Although some publications have already been done using secondary data analysis, this is an area of opportunity for family medicine researchers. The ACGME requires residents to complete two scholarly activities. (11) Because use of this data does not involve a competitive application process, these secondary analysis projects may be particularly useful to residents, who often have a set timeline for their required residency scholarship.

As the CERA survey process has become more well-known to CAFM members, there has been an increase in the number of applications to many of the surveys. Some of these proposals are from experienced researchers, but many are from newer researchers or those who are less familiar with the CERA process. CERA workshops and presentations at CAFM conferences can provide some support to attendees, and the CERA Steering Committee is also developing a "Survey School" that would provide longitudinal education and mentoring about educational survey research. This project is in the early

stages of development, but represents a significant opportunity to improve the quality and quantity of research in our specialty.

References

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Table 1. CERA Best Paper Winners to date.

Year	Citation.
2019	Mainous AG 3rd, Porter M, Agana DF, Chessman AW. Institutional NIH Research Funding and a Culture of Support for Family Medicine-Their Relationship to Family Medicine Specialty

	Choice. Fam Med. 2018 May;50(5):369-371. doi: 10.22454/FamMed.2018.913629. PMID: 29762796.
2020	Morris LE, Lindbloom E, Kruse RL, Washington KT, Cronk NJ, Paladine HL. Perceptions of Parenting Residents Among Family Medicine Residency Directors. Fam Med. 2018 Nov;50(10):756-762. doi: 10.22454/FamMed.2018.978635. PMID: 30428104.
2021	Hooker SA, Post RE, Sherman MD. Awareness of Meaning in Life is Protective Against Burnout Among Family Physicians: A CERA Study. Fam Med. 2020 Jan 4;52(1):11-16. doi: 10.22454/FamMed.2019.562297. Epub 2019 Nov 4. PMID: 31689355.
2022	Mishori R, Stolarz K, Ravi A, Korostyshevskiy VR, Cronholm P. Assessing Family Medicine Residency Programs' Training on Human Trafficking:A National Survey of Program Directors. Journal of Human Trafficking. 2021;7(4):384-96. DOI: 10.1080/23322705.2020.1780082
2023	Shungu N, Diaz VA, Perkins S, Kulshreshtha A. Physician Attitudes and Self-reported Practices Toward Prostate Cancer Screening in Black and White Men. Fam Med. 2022 Jan;54(1):30-37. doi: 10.22454/FamMed.2022.474827. PMID: 35006597.

Table 2. Key journals by CERA publications as of August 8, 2023.

Journal	Number of CERA papers published to date
Family Medicine	113
Peer-Reviewed Reports in Family Medicine Research (PRIMER)	13
Journal of the American Board of Family Medicine	11
Annals of Family Medicine	4
Journal of Graduate Medical Education	2
Academic Medicine	2