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John A. Hartford Foundation Centers of Excellence Program: History, Impact, and Legacy

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The John A. Hartford Foundation (JAHF) created the Centers of Excellence in Geriatric Medicine and Geriatric Psychiatry in 1988 with the goal of establishing academic training environments to increase geriatrics-trained faculty. The initiative identified medical schools with the necessary components for training academic geriatricians. JAHF grants provided the resources to create a cadre of physicians whose research, teaching and practice leads to substantial contributions in geriatrics. Results from two evaluations show that the program has successfully increased geriatrics-prepared faculty who have achieved promotion and institutional retention, success in winning competitive research grants, and positions of leadership. The initiative strengthened the national network of geriatrics programs and served as a major driver of increased prestige for the fields of geriatric medicine and psychiatry. *J Am Geriatr Soc* 2017.

Key words: geriatrics training; faculty development; research training

In response to burgeoning numbers of older persons and dire shortages of faculty to teach physicians about geriatrics care and research, JAHF provided funding \$57.7 million from 1988 to 2016 for a series of initiatives to develop faculty and academic geriatrics programs. Following the recommendations of a 1987 Institute of Medicine report that promoted a Centers of Excellence (CoE) strategy to invigorate the development

of academic geriatrics, JAHF funded 10 Centers through the Academic Geriatrics Recruitment Initiative (AGRI) in 1988, which later became the Centers of Excellence (CoE) Program in Geriatric Medicine and Geriatric Psychiatry.

The goal was to create academic training environments to produce greater numbers of geriatrics-trained faculty, who would conduct research, develop and integrate principles of geriatrics into medical practice, provide clinical care, and teach the next generation of health care providers how to care for older patients. The initiative identified medical schools with the necessary components for training academic geriatricians such as research and medical education infrastructure, advanced training opportunities, academic mentoring, and sufficient institutional support. Funds were used for salary support to protect time for research, training to become expert clinician-educators, and pioneering models of research, training, and care.

The 1993 Institute of Medicine report, "Strengthening Training in Geriatrics for Physicians," reinforced awareness that there were inadequate numbers of faculty to meet the nation's training and research needs in geriatrics. In 1998, the JAHF responded by creating the Centers of Excellence in Geriatric Medicine and Geriatric Psychiatry, providing continued funding of the original 10 CoEs and additional funds for 18 new centers. Concurrently, the JAHF awarded a grant to the American Federation for Aging Research (AFAR) to serve as the national Coordinating Center. In 2009, AFAR's role evolved from Coordinating Center to a National Program Office to construct a transparent, centralized award distribution process, develop a scholar selection process, and create a scholar database.

From 1988 to 2015, the initiative supported 1,164 fellows and junior faculty in geriatric medicine and geriatric psychiatry and related specialties and sub-specialties. To gauge the impact of these efforts, the JAHF commissioned two evaluations, in 2002 by the UCLA Multicampus Program in Geriatric Medicine and Gerontology, and in 2015 by Daniel Kaplan, PhD. This paper draws upon the findings of those evaluations to describe the accomplishments of the program.

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EARLY YEARS (1988–2002)

The 2002 evaluation incorporated multiple sources of data. A 2001 Reynolds-ADGAP survey of 122 geriatrics academic programs (82% response rate) provided data to characterize the CoEs with respect to their size, stability in leadership, focus of activities, total research and educational support, and other structural aspects. A survey of former fellows conducted by Medina-Walpole and Barker¹ (62% response rate) provided insight on the current positions and successes of CoE fellows who were trained from 1990–1998. Lastly, the evaluators conducted a survey and structured interviews with Directors from all CoEs funded to date (95% response rate) to obtain information about program features and recent events not captured in other databases.

CoE Directors identified major CoE accomplishments including faculty career development (identified by 52%) and increasing prominence of the geriatrics programs developed by the CoEs (identified by 38%) and the broader field of geriatrics (identified by 48%). The CoE program supported 163 geriatrics fellows (an average of more than one per medical school nationwide), approximately two-thirds of whom entered academic geriatrics. At the time of the survey, most (56%) CoE-supported fellows reported having a current academic appointment. Of the fellows trained from 1988–1993, 29% had been promoted to associate professor or professor by 2002. First generation CoEs (with funding that began in 1988) retained about half of their trainees. About 40% of trainees went to other institutions, expanding impact by seeding the field and exporting skills, knowledge and teaching. Second generation CoEs (with funding that began in 1998) were less likely to retain their fellows (41%) but were more likely to retain faculty that they had supported (82%). More than 40% of first generation former CoE fellows subsequently received career development awards.

The CoE program also supported a total of 222 geriatrics faculty (an average of approximately 1.8 per medical school nationwide) and most remained at the CoEs where they were supported. Nevertheless, many CoE-supported faculty were exported to other institutions, especially by first generation programs. By 2002, approximately 30% (66 of 222) of those supported by first and second generation programs had become senior faculty, including 50% of faculty who had been supported from 1988–1993. CoE-supported faculty were most likely to be currently employed by university programs (63% of first generation faculty and 84% of second generation faculty). A minority of centers (28%) used CoE funds to support the development of clinician-educator faculty, though many more (75%) used CoE support as a mechanism to increase geriatrics teaching efforts at the medical student and resident levels.

Obstacles identified by CoE Directors included poor clinical reimbursement for geriatrics (mentioned most commonly among both generations of programs), lack of senior research faculty (mentioned next most commonly by first generation programs) and lack of junior research faculty and research fellow (mentioned next most commonly by second generation programs).

The 2002 evaluation concluded that the major CoE accomplishments included faculty career development,

increased prominence of geriatrics at their home institutions, and the development of new geriatrics programs. CoEs had used faculty development efforts to increase their own strength by retaining faculty and enhancing their research productivity. All CoE directors had success in exporting geriatric content and expertise to other units within their own institution. The CoE mechanism was also a stimulus to obtaining institutional and extramural resources. CoEs frequently served critical roles by providing initial funding to build infrastructure and train faculty to obtain extramural funding. All 21 CoEs had obtained additional institutional resources to support the CoE mission. The prestige of CoE designation assisted in securing additional external grants and resources. Most directors (76%) described CoE designation as the turning point to increased institutional support for geriatrics. First generation program leadership changed at several centers but new directors received strong institutional support, demonstrating commitment to geriatrics rather than a specific leader.

LATER YEARS (2002–2015) AND SUMMATIVE IMPACT

The 2015 evaluation strategy identified and contacted as many award recipients as possible, including those who received institutional support from CoEs as far back as the early 1980s. Data collection employed two approaches—a content analysis of the curricula vitae (CVs) and a voluntary online survey to collect information not typically documented in a professional CV. CVs were used to identify detailed information on educational achievements, publications and presentations, employment positions, service to institutions, organizations, and communities, and other accomplishments. The survey focused on impacts of work and research on practice, policy, and workforce development. Collectively, these data provided details about the leadership activities and other areas of productivity.

Records from AFAR, JAHF, and the CoEs yielded a list of 1,164 individuals. Of these, 878 records (75%) contained email addresses used for evaluation outreach. Letters from AFAR and the CoEs introduced the evaluation to award recipients, provided a link to the online survey, and requested a copy of an up-to-date CV. Of the 878 physicians contacted for this evaluation, 282 (32%) submitted copies of their CVs, 336 (38%) completed the online survey, and 277 (31%) did both. Most responses (76%) were from 2000–2015 awardees with the remaining 24% of responses from 1988–2000 awardees.

The demographic composition of the 336 respondents portrays a diverse group working in a multitude of settings and medical specialties. Two-thirds of respondents were female and one-third were male; 71% identified as white, 23% as Asian, 3% as black/African American; 7% reported being Hispanic/Latino, and 4% as other. The majority reported working as faculty members (90%), clinical practitioners (41%), and researchers (34%) (respondents could report more than one role). An additional 10% were health care administrators, 8% were still training as fellows, and 6% were hospitalists. Their principal employers were most often universities (67%), the Department of Veterans Affairs (12%), and not-for-profit

hospitals (11%). The remaining 10% worked for the federal or state government, nursing homes, for-profit hospitals, hospices, community health clinics, or were self-employed.

Educational Roles and Activities

Award recipients were surveyed about their current professional positions, the contexts in which they teach, and the number of students they directly affect via teaching and/or mentoring. The academic ranks of respondents were assistant professor (39%), associate professor (32%), professor (19%), instructor (5%), and other (5%).

The extent of teaching varies greatly among respondents; 26% taught fewer than 10 trainees in the prior year, 47% taught 10–50 trainees, 13% taught 51–100 trainees, and 14% taught more than 100 people. The types of trainees also varies; 91% train medical residents, 83% train fellows, 78% train graduate medical students, and 72% train interns. Additionally, 24 respondents made 50 contributions to the Portal of Geriatrics Online Education (POGOe), and nine respondents made 28 contributions to the MedEd Portal, an open exchange of peer-reviewed health education teaching and assessment resources.

During the 2014–2015 academic year, respondents taught and mentored 16,123 early career professionals and students. Because respondents represent 29% of award recipients, it is reasonable to assume that the actual teaching and mentoring impacts of the larger group are considerably greater. This raises the question how extensive the impact would be if accounting for the entire group of 1,164 award recipients, both cumulatively over the past three decades and moving forward into future years. Sufficient data for precise modeling of this nature are not available. However, a “rough estimate” for the current teaching impact can be deduced, assuming the respondent sample offers an approximate representation of the larger population of award recipients. Ninety percent of respondents reported teaching in the prior year. By applying average respondent teaching rates to an equivalent 90% of the full roster of awardees, it is possible to estimate that approximately 55,500 trainees are taught and/or mentored by these award recipients each year.

During the prior academic year, 255 respondents also provided education and training in other important community venues, including 204 who led educational seminars for local healthcare professionals, 147 who offered skills training in-service programs in clinical settings, and 114 who made public community health presentations.

Health Care Policy Activities

Fellows and faculty also contribute to better health outcomes for older adults by exerting their influence to assure effective public health policy. For example, nine CoE scholars received Health and Aging Policy Fellowships, which foster the experience and skills necessary to help lead efforts to shape health policy addressing an aging population. Sixty-six respondents (20%) reported efforts to impact policy. They reported working to influence laws or policies (56%), legislative advocacy (36%), meeting with legislators to discuss research (36%), testifying before

legislators (30%), and impacting reimbursement guidelines (14%) or industry regulations (5%). Among the many faculty who have undertaken important health policy projects, three examples are provided.

Elbert Huang, MD, MPH, FACP, Associate Professor of Medicine at the University of Chicago, served as a senior advisor in the Office of the Assistant Secretary for Planning and Evaluation during implementation of the Affordable Care Act to revise the Medicare Accountable Care Organization (ACO) regulations. Brie Williams, MD, Associate Professor of Medicine, University of California, San Francisco, changed intake policies for older adults at a local county jail, and instituted an approach to compassionate release for older prisoners, and served as an advisor to the Senate Special Committee on Aging about potential avenues for new legislation related to older prisoners. Lillian Min, MD, MSHS, Associate Professor of Internal Medicine, University of Michigan, participated in the Assessing the Care of Vulnerable Elders Study, which led to the uniform adoption of functional status screening for older ambulatory care patients within the VA health-care system.

Research

It is not only important to provide high quality medical and supportive care to older adults, but also to develop new scientific knowledge to inform care. While 103 (30%) respondents reported working in research positions, 189 (56%) were involved in research activities through their work as faculty members, clinicians, administrators, and fellows. Respondents were most commonly involved in clinical research (65%) and health services research (48%) (Table 1).

The 282 award recipients who submitted CVs were prolific in disseminating their research. They made over 7,000 professional presentations (mean = 25 per awardee) at conferences and universities nationally and internationally since the time of their awards. They authored 9,264 publications since receiving their awards, for an average of 33 publications per awardee. This includes 1,007 books or book chapters and 8,257 articles, of which more than 1,200 were published in high-impact medical journals (as identified by AFAR and other consulting experts), including: *Journal of the American Geriatrics Society* (JAGS),

Table 1. Areas of Research Among Hartford Foundation-Supported Fellows and Faculty (n = 189 respondents)

Type of Research	n (%)
Clinical	122 (65%)
Health services	91 (48%)
Epidemiological	46 (24%)
Behavioral/social	29 (15%)
Basic	27 (14%)
Other*	22 (12%)

*Other (e.g., medical education, quality improvement, translational, etc.)
Note: Total is greater than 100% because respondents could indicate participating in several types of research.

Table 2. Grants by Category Among Hartford Foundation-Supported Fellows and Faculty (n = 282 respondents)

Source	Count	Value
State/county grants	17	\$5,011,924
Other JAHF grants	100	\$18,252,266
Private grants	836	\$168,293,125
Federal grants	1,038	\$975,118,624
Total grants-based leveraged funding	1,991	\$1,166,675,939

New England Journal of Medicine (NEJM), Journal of the American Medical Association (JAMA), JAMA Internal Medicine, Journal of the American Medical Directors Association (JAMDA), Lancet, British Medical Journal (BMJ), Cell, Nature, Science, Public Library of Science (PLOS), and Public Library of Science (PLOS) Medicine.

A major strategy of JAHF is to employ their funding to create change beyond what these resources could accomplish alone. The term “leveraged funding” is used here to describe the additional grants obtained by award recipients after receiving their initial support from JAHF. They have secured support from a variety of funders, including federal agencies, state agencies, and foundations and health philanthropies (Table 2). The 282 award recipients who submitted CVs secured 17 research grants from State or County initiatives, totaling more than \$5 million. The JAHF awarded 100 additional grants to these 282 respondents, totaling more than \$18 million. Private philanthropies and institutions awarded 836 grants, totaling more than \$168 million. In addition, respondents reported obtaining 1,038 Federal grants totaling more than \$975 million. Collectively, respondents obtained more than \$1.1 billion through 1,991 research grants for studies with high relevance to the care of older adults.

Leadership in Aging and Geriatrics

While career opportunities and clinical interests have drawn awardees into a multitude of positions and settings, as demonstrated by the considerable leadership achievements described above, nearly all respondents (97%) have remained involved in aging and geriatrics in one or more

Table 3. Work Involving Aging and Geriatrics among Hartford Foundation-Supported Fellows and Faculty (n = 336 respondents)

Work Domain ^a	n (%)
At least one domain	327 (97%)
Practice	280 (83%)
Teaching	274 (82%)
Research	220 (66%)
Organizational leadership	144 (43%)
Policy	56 (17%)
Other ^b	8 (2%)

^a2.9 average number of work domains involving aging and geriatrics per respondent.

^bOther (e.g., advisor, editor, writing, public outreach, quality improvement, etc.)

capacities (Table 3). Moreover, CoE-supported faculty not only bring their geriatrics expertise to bear within their roles as educators, practitioners, policy advocates, and researchers, but have also assumed leadership responsibilities. Award recipients who submitted CVs participated in 32,186 professional leadership activities (e.g., service to community organizations, professional associations, academic publications, and universities) since the time of their awards (mean = 114 per awardee). Additionally, they won 1,729 awards and honors, and 112 respondents have served as deans, assistant deans, or chairs of programs within academic institutions.

DISCUSSION

Over the last 28 years, JAHF has demonstrated a lasting commitment to developing the field of academic geriatrics. It has invested in geriatrics fellows and faculty with research and teaching interests, other specialists who have devoted their academic foci to aging topics within their disciplines, and those who would ascend to administrative leadership positions. Based on two external evaluations, this investment has resulted in substantial dividends. Fellows and faculty have been successful in publishing, obtaining research support, and getting promoted. The high proportion of program awardees who remained in academic settings speaks to the potential impact of award recipients as educators and mentors for future generations of medical professionals. Already, they have had substantial influence on medical school and residency curriculums and have earned positions of respect at their local institutions. The stature of geriatrics at these CoEs and the institutional commitment have grown, even as many of the geriatrics divisions at these schools have transitioned their leadership. Although the resulting impacts on patient care cannot be measured, it is reasonable to assume that the JAHF investment in developing geriatrics capacity in the physician workforce has enriched healthcare in the United States and significantly improved the lives of older adults.

The findings of these evaluations and this report must be considered within the context of their limitations. The two evaluations were post hoc rather than pre-planned, not coordinated, and their methodologies and instruments differed. Moreover, low response rates can lead to biases and incomplete data. In addition, it is not possible to calculate the achievements of those who did not participate in the evaluations. The 2015 evaluation data came primarily from people who more recently received awards. If the evaluation findings are even partially indicative of the achievement capacity of the larger population, and it is likely that the findings underrepresent the achievements of awardees who are even more senior in their careers, it would be reasonable to assume that the indicators of professional leadership described here represent just a fraction of the actual and continued real world impacts made by these award recipients.

From the perspective of the John A. Hartford Foundation, the Centers of Excellence in Geriatric Medicine and Training was a cornerstone of the foundation’s grant-making and consistently met and even exceeded expectations. With the injection of foundation support, the centers continued to produce additional faculty members who are

prepared for and achieve sustained careers in academic geriatrics. Thus, the program met the foundation's goal of helping to address the nation's urgent shortage of faculty capable of advancing competence in geriatric care in routine medical practice.

In 2011, the JAHF made a strategic shift from building academic capacity to directly changing health care delivery and practice. As a result, the CoE program will sunset in December 2016. Nevertheless, it will have several legacies. First, the scholarly contributions of the supported fellows and faculty have influenced geriatrics and aging-related research and the clinical care provided to older persons. Second, the fellows and faculty have assumed leadership in academic geriatrics and will guide the discipline going forward. Third, the institutional changes at CoEs will persist, including commitments to geriatrics. Fourth, these fellows and faculty have influenced local and national policy. Finally, the centers have created infrastructures that allowed geriatrics programs to obtain additional extramural support. It is fair to say that much of the success of academic geriatrics and the stature of geriatrics in American medical schools today can be attributed to the JAHF CoE program.

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