

ADCES/CBDCE Mentored Post-Doctoral Fellowship in Integrated Diabetes Research

The Certification Board for Diabetes Care and Education (CBDCE) and The Association of Diabetes Care and Education Specialist's (ADCES) are pleased to offer a full-time Post-Doctoral Fellowship program supporting the career development of emerging scientists in diabetes care and education, supporting the growth of the profession and the care of people with diabetes.

This award supports health services and outcomes research investigating the dynamically changing environment of diabetes research. Our organizations recognize the need to engage and support/collaborate with health services researchers interested in implementing services that positively impact clinical, behavioral, safety, quality, and economic outcomes and enhance the experience for both the person with or at risk for diabetes and the provider.

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Opportunity

ADCES and CBDCE recognize the need to engage and support promising health services research scientists interested in integrating diabetes management for positive health outcomes. We recognize health services research is a collaborative approach to clinical research and requires a team of subject matter and methodological experts to train the next generation of diabetes care and education specialists.

The Mentored Fellowship in Integrated Diabetes Research is a one-year fellowship supporting a post-doctoral fellow specializing in diabetes to design and test hypotheses which will support development and dissemination of research for diabetes care and education services, and advance the science of diabetes care and education. The review committee is looking for a focus on one more of the following topics:

- Clinical Integration: Integrating the clinical and self-management aspects of care.
- Related Conditions: Evaluating the diabetes specialists' expertise in the full range of cardiometabolic conditions: diabetes, obesity, hypertension and cardiac disorders.
- Behavioral Health: Implementing programs that support the emotional well-being of the whole person with diabetes.
- Technology: Creating researched educational pathways for data interpretation, patient training and system implementation.
- Person-Centered Care: Advocating for every individual with diabetes and cardiometabolic conditions through research to improve access to a diabetes specialist.
- Quadruple Aim: Implementing programs that positively impact safety, quality, and cost and enhance the experience for both the person with diabetes and the provider.

Priority research topics include, but are not limited to:

- Diabetes Technology
- Telehealth for delivery of diabetes education
- Diabetes Care and Education Guideline Implementation
 - Decision support for both people with diabetes and providers for optimal health outcomes
 - EHR strategies to facilitate DSMES referrals
 - Establishing an accurate diagnosis and providing tailored education
- Health Equity
- Peer to Peer Diabetes Support, peer navigation
- DCES as coach (exercise, nutrition) – Role of the DCES
- Precision Medicine, AI, data science for DSMES (Diabetes Self-care Management and Support) and diabetes care
- Innovative DSMES services – redesigning programs, delivery system redesign
- Community resources and policies

ADCES/CBDCE Mentored Post-Doctoral Fellowship Program Guidelines

- Built environment (in conjunction with existing organization) as it relates to DSMES. The built environment refers to human made conditions and the physical surroundings where people live, work, and play. It touches all aspects of our lives, encompassing the buildings we live in, the distribution systems that provide us with water and electricity, and the roads, bridges, and transportation systems we use to get from place to place.

Program Requirements

The Mentored Fellowship in Integrated Diabetes Research supports:

- One-year salary and support for a post-doctoral health services research fellow in an organization or institution that offers research support providing the integrated structure outlined below. (see budget section below)
- Effort for the primary mentor, including active participation on the ADCES Research Committee and consultant to ongoing CBDCE and ADCES research efforts.
- Travel funds for research dissemination.
- Maximum of 10% indirect rate according the [ADCES Indirect Cost Policy](#).

Structure: The post-doctoral fellow appointment must be in an integrated department, center, or institute with access to support across the various disciplines supporting health services research: statistics, health economics, analytics, and clinical expertise. A terminal doctoral degree is required for eligibility. If an applicant holds a doctorate other than a PhD, a description of the applicant's research training and course work in research methodology must be included in the application.

The primary mentor is required to submit a report at the end of the year, describing the fellow's training and outcomes.

Research Committee Participation: The ADCES Research Committee is a national multidisciplinary committee comprised of leading researchers in diabetes education and integrated diabetes management. Both the fellow and mentor participate as honorary members of this committee and provide active participation and input on all research activities of the committee.

Research Dissemination: The CBDCE/ADCES Fellow is required to submit at least one research abstract (podium or poster) to a national meeting: Examples include:

- ADCES Annual Meeting
- Academy Health Annual Research Meeting
- American Diabetes Association Scientific Sessions
- Other recognized national conference affiliated with the fellow's discipline or specialty

Budget Requirements

The Fellowship has a maximum budget of \$100,000 for one year. The budget must include the following direct budget components:

- One-year stipend for the post-doctoral fellow, commiserate with the [NIH/NRSA current stipend levels](#) supporting a minimum of 75% effort.
- Travel for the ADCES Annual Meeting and one more required meeting at \$1800/meeting

Indirect costs may be included up to 10% as outlined in the [ADCES Indirect Cost Policy](#).

One-year ADCES membership and registration to the ADCES annual meeting is provided in kind to the awardee.

Application Requirements

Applicants must propose a research project location in the U.S. Quality improvement or evidence-based practice proposals will not be reviewed. The application package must include:

1. Title Page
2. Application narrative: limited to 5 pages (maximum), single-spaced, and must include:
 - a. A description of the research and training environment. CBDCE and ADCES are looking to support research scientists embedded in collaborative research and training programs with access to a wide variety of expertise and perspective supporting integrated diabetes research.
 - b. A description of the mentoring program, including access to and structure of both primary and methodological mentoring.
 - i. Socializing into the role of a principal investigator
 - ii. Collaborating with other PhD and post doc students
 - iii. Opportunities to develop grant writing skills, conduct secondary data analysis, manuscript development and publications, and research presentations
 - iv. Access to courses in research methodologies and research regulatory training
 - v. Access to an IRB that has processes for reviewing health science research in a timely manner
 - vi. Mentors must demonstrate a record of extramural, foundation, or intramural funding
 - c. A description of the fellow's proposed research plan, including tables and figures
 - d. Applicant's career goals
 - e. Budget and justification (justification not included in the 5-page limit)
3. Bio sketches (NIH format), including current and pending other support, for the fellow and all mentors.
 - a. Concurrent Awards: Grant funding supporting the applicant's research projects is allowed. Concurrent fellowship awards supporting the applicant's effort is not allowed. All grant funding and proposed funding will be reviewed in the application process. Please note any overlap.
4. Mentor/s letter of support including effort commitment for the primary mentor (no page limit)
5. Institutional letter of commitment supporting the fellow's proposed research project, commitment to provide the infrastructure outlined in the proposal, and commitment to the fellow's participation in ADCES research committee activities. (no page limit)

ADCES Indirect Cost Policy and Guidance

The Association of Diabetes Care & Education Specialists (ADCES) Foundation tackles critical problems impacting the dissemination of Diabetes Self-Management Education and Support (DSMES) and supports strong and effective partner organizations interested in doing the same. We believe that good stewardship means maximizing our resources, including grant funding and staff time, while building strong partnerships based on trust. We aim to structure grants in a way that makes sense from a financial perspective while also funding partners for the cost of delivering results efficiently, supported by open and honest dialogue about the resources required.

We welcome partners to contact the foundation if they have questions about this policy. Our finance team can help clarify appropriate treatment of costs under the foundation's policy.

Definitions

The spirit of this policy is to pay for expenses that are directly attributable to project outcomes and outputs as direct costs and expenses associated with general running of the business as indirect costs. Greater specificity on each category is described below.

Direct Costs

Direct costs are the expenses required to execute a grant that are directly attributable and can be reasonably allocated to the project. Program staff salaries, travel expenses, materials, and consultants required to execute the grant are examples. Costs that would not be incurred if the grant did not exist are often indicative of direct costs.

Indirect Costs

Indirect costs are general overhead and administration expenses that support the entire operations of a grantee and that may be shared across projects. Examples include facilities expenses, e.g. rent, utilities, equipment for the grantee's headquarters, and associated information systems and support and administrative staff such as HR, general finance, accounting, IT, and legal. Expenses that would be incurred regardless of whether the grant is funded are often indicative of indirect costs. While these costs may not be directly attributable to a project, they are real and necessary to operate as an organization.

Indirect Cost Rate

Indirect Cost Rate = Budgeted Indirect costs/ Budgeted Total Direct Costs (e.g. personnel, sub-awards, supplies, equipment, etc.)

The indirect cost rate proposed in the budget should not exceed the grantee's organizational rate (when defined by the same terms.)

While the definitions above are general guidance for all grants, the requirements and activities of each project should be considered when determining direct and indirect costs. We review budget assumptions and cost categorizations on a grant by grant basis, and treatment of specific costs in one grant should not be considered precedent-setting for other grants.

Maximum indirect Cost Rates

RATE	INSTITUTION
0%	Government Agencies and Private Foundations
10%	US Universities, Colleges, and Community Colleges
15%	NGOs, Non-US Universities, For-profit organizations

The rates provided above are the maximum rates allowed under the foundation’s policy. A grantee or contractor with an actual indirect cost rate lower than the maximum rate provided above should not increase the funding request to the maximum allowed. The intent is to sufficiently fund actual costs, not to generate financial surpluses for grantees.

The indirect cost rate awarded in a grant budget may vary up to the maximum percentages depending on factors including, but not limited to, the type of project, level of administrative effort required, cost structure of the grantee, overall grant size, and extent of sub-awards or commodity purchases.

- Example 1: A primary grantee will receive grant funds that will be largely sub-granted to other organizations. The foundation may limit indirect costs the primary grantee receives on the sub-granted funds depending on the level of effort required to manage the subawards. The overall effective indirect cost rate awarded to the primary grantee may therefore be less than the maximum allowable rate.
- Example 2: A portion of a project budget is allocated for equipment (over \$5,000) purchases. A lower overall effective indirect cost rate may be negotiated to remove equipment cost from the indirect cost calculation.
- Example 3: A university grantee has an organizational actual indirect cost rate of 8%, i.e., for every \$1,000 in direct costs, it has \$80 in indirect costs. Rather than defaulting to the maximum rate of 10% in the grant proposal, 8% should be proposed in the grant budget.

Maximum Indirect Cost Rates and limitations apply to both the primary applicant organization and any sub-grantees. Each respective organization may receive indirect costs UP TO the rate applicable to their organization type.

- Example: If a U.S. university is the primary grantee and has an international nonprofit organization sub-grantee, the U.S. university is eligible to receive up to a 10% indirect cost rate, while the international organization is eligible to receive up to a 15% rate.

We seek consistency across funding mechanisms and thus we reserve the right to apply this philosophy and principles to contracts.

For profit entities may propose indirect costs as a percentage from 0% up to 15% to the extent that adequate explanation of the cost is provided.

We reserve the right to request substantiation of any grantee’s indirect cost rate.



Strategic Plan

Mission

Promote ongoing quality diabetes care, education, prevention & support by providing certification and credentialing programs that incorporate and reflect best practices.

Vision

All persons at risk for or living with diabetes receive education and/or services from CBDCE credentialed individuals.

Values

- Uphold Integrity
- Commit to Quality and Innovation
- Cultivate Diversity and Inclusion
- Foster Collaboration
- Act with Empathy and Respect

Strategic Priorities

Growth

Objective: Drive growth in the number of CBDCE-certified individuals

Awareness

Objective: Increase awareness and value of CBDCE certificants and the CDCES credential

Organizational Strength

Objective: Ensure resources and processes are available that foster innovation and support achievement of strategic priorities

The ADCES 2022 research agenda aims to guide researchers to design and test hypotheses which will support development and implementation of evidenced-based best practices for diabetes care and education services. The agenda seeks to identify implementation strategies of diabetes care and education that support engagement and positive health outcomes for all people living with or at risk for diabetes.

Introduction and Background

The Association of Diabetes Care & Education Specialists (ADCES) aims to drive optimal evidence-based outcomes for people with diabetes and the providers who care for them by integrating diabetes self-management, education, prevention and support through six “Vision for the Specialty” pillars. This vision is driving expansion of the field and scope of expertise for the diabetes care and education specialist through the ADCES 2019-2023 strategic plan. ADCES recognizes that this expanded vision and the current ADCES Strategic Plan require a clearly delineated translational research strategy which will support advancing the science of diabetes care and education.

Evidence supporting the value of diabetes care and education has already been established. Despite ongoing research and quality improvement efforts large knowledge gaps exist in translating this evidence to benefit people living with or at risk for diabetes, their providers, health systems and population health nationally. Therefore, diabetes care and education translational research is needed to generate evidence-based strategies to drive improvement across the spectrum of diabetes-related outcomes.

It is proposed/recommended that this research will explore a range of health services and outcomes research in the field which are aligned with the ADCES vision pillars. The priorities have been distilled down to the following four

fields where evidence is needed to advance the science of diabetes care and education, and which are therefore identified as priorities for moving the field forward:

- Diversity and Equity
- Health Economics and Policy
- Implementation Science
- Workforce Development

In addition, it is vitally important to recognize that health services research is a collaborative approach to clinical research and requires a multidisciplinary team of subject matter and methodological experts to achieve optimal outcomes. It is also essential to recognize that this strategy is presented for consideration not only for ADCES and its membership as an organization, but as an agenda for all health services researchers participating across the diabetes care and education research continuum.

Process and Development

Identifying the Breadth of Needed Research

An interprofessional ADCES committee met and developed research questions within these four defined areas of health services research and highlighted how each of the areas identified is aligned with the ADCES vision pillars. These strategic questions are outlined in Table 1. It should be recognized that the areas proposed are not exhaustive but are rather designed to guide translational research in those areas deemed current strategic priorities.

Table 1. **Alignment of the Matrix of Research Questions and the ADCES Pillars**

Research Questions	ADCES Project Vision Pillars					
	Drive Integration	Achieve Quadruple Aim	Leverage Technology	Focus on Behavioral Health	Include Related Conditions	Promote Person-Centered Care
Increase Access to DCES						
What is the evidence supporting best practices for increasing access to DSMES?	X		X	X	X	X
To what extent does technology augment access to DCES (telehealth, mHealth)?		X	X			
DCES Dosage						
What dosage of diabetes care and education best predicts changes in clinical, behavioral, and psychosocial outcomes?		X				
Health Equity						
How can access to DCES be facilitated for all persons with or at risk for diabetes by socioeconomic status, ethnicity, race, cultural background, language, disability, setting, and other social factors in specific settings?	X					X
How do we modify the delivery of DCES based on the specific needs of persons from different social, economic, racial and ethnic backgrounds?						X
What are optimal strategies to attain equitable delivery and acceptance of DCES by population?		X	X	X	X	X
How can access to DCES be facilitated to all people with diabetes?	X	X	X	X		X
Economics and Policy						

What is the evidence that DCES is cost-effective by population and setting?		X		X		
What are the strategies to make DSMES most effective for PWD/populations.	X	X	X	X	X	X
What are the optimal methods for engaging PWD and caregiver/care partners in diabetes care and education		X		X		X
What evidence do we have that DSMES increases quality and lowers cost long term?	X	X	X		X	X
Implementation Science						
What are best practices for implementing DSMES in practice by setting and population?	X	X				
Workforce						
What models exist to integrate DCES into healthcare systems?	X					
What training exists to develop and sustain effective DCES?	X	X	X	X	X	X
What support do DCES have to improve experiences?		X				
Social Determinant of Health						
How are social and environmental factors that influence diabetes self-care behaviors addressed in DCES?	X	X	X	X	X	X
What are best practices for establishing links to effective support for PWD with social needs?	X	X	X	X	X	X

Need for Increased Access to the DCES and DSMES Services

Through review of the literature and discussions, the research committee identified areas where evidence is needed to support increased access to DCES care^{1,2}:

1) Need to design and study processes which will promote a) the value of the DCES and diabetes care and education and b) access to diabetes care and education services to health care systems where DCESs are absent or underutilized

The research strategy committee discussed the current state of diabetes care and education in practice. Diabetes care and education specialists are underutilized or absent in many health care systems and organizations. Unfortunately, many health care providers, people with diabetes and their family members are unaware that a DCES can provide the knowledge, skills, and confidence for self-management, resulting in favorable health outcomes. In addition, providers and PWD are often not aware of processes for accessing DSMES services.

2) How do we disseminate information to providers who don't know who what the DCES' scope of expertise is?

Current research studies and systematic reviews that promote the value of diabetes care and education are published in specialty journals, yet most generalists - who care for over 90% of people living with diabetes - do not subscribe to these journals, limiting ability of the specialty to reach providers who care for the majority of people with or at risk for diabetes.

Narrowing the Focus

Through a series of continued discussions addressing the limitations of DCES access, the research committee identified two areas of interest where evidence gaps are particularly great, and which are considered foundational to the development of an ADCES research agenda that addresses the current and future state of diabetes care and education in practice:

Economics and Policy: Defining the impact of diabetes care and education on cost and utilization in the healthcare system.

Implementation Science: Specific methods or techniques used to enhance the uptake, adoption, implementation, sustainability and evaluation of services or practices.

Two recognized experts in the areas of implementation science (Gretchen Piatt, PhD) and economics and policy (Elbert Huang, MD) joined the committee to lead a series of discussions on these two topics. Following these discussions, the research team narrowed the focus of these sections of the proposed research agenda to identifying implementation strategies for diabetes care and education to support engagement and health outcomes and quantifying the economic impact (cost and utilization) of diabetes care and education within health systems, including generating evidence of the cost-effectiveness of DSMES by setting.

Exploring these two foundational areas in the initial years of this research agenda will allow a focus in subsequent years on increasing access, exposure, diversity and equity, workforce training, and social determinants of health.

Proposed Research Strategy for 2022

ADCES recognizes the need to engage and support/collaborate with health services researchers interested in implementing services that positively impact clinical, behavioral, safety, quality, and economic outcomes and enhance the experience for both the person with or at risk for diabetes and the provider. **This 2022 research agenda aims to guide researchers to design and test hypotheses which will support development and implementation of evidenced-based best practices for diabetes care and education services**, including:

- Diabetes Technology
- Telehealth for delivery of diabetes education
- Diabetes Care and Education Guideline Implementation
 - Decision support for both people with diabetes and providers for optimal health outcomes
 - EHR strategies to facilitate DSMES referrals
 - Establishing an accurate diagnosis and providing tailored education
- Health Equity
- Peer to Peer Diabetes Support, peer navigation
- Patient Reminders related to the ADCES7 Self-Care Behaviors™
- DCES as coach (exercise, nutrition) – Role of the DCES
- Precision Medicine, AI, data science for DSMES and diabetes care
- Innovative DSMES services – redesigning programs, delivery system redesign
- Community resources and policies
 - Built environment (in conjunction with existing organization) as it relates to DSMES

The cornerstone of evidence-based practice and health services delivery incorporating health equity among diverse populations with or at risk for diabetes underpins all aspects of diabetes care and education translational research. Our proposed research strategy is an Implementation Science approach to engage health systems and all members of

the care team, providers and people with diabetes in addressing health equity. This approach leverages the foundation of the ADCES vision pillars with strategic research priorities for moving the field forward.

The 2022 ADCES Research Committee seeks to:

1. Generate interest in translational research supporting the science of diabetes care and education
2. Disseminate the 2022 ADCES research agenda to relevant stakeholders through ADCES communication channels,
3. Solicit applications for research projects supporting this agenda in Q1 2022 and,
4. Take this agenda under consideration when choosing the 2022 recipient of the ADCES/CBDCE Mentored Post-Doctoral Fellowship in Integrated Diabetes Management.

References

1. Powell, RE, Zaccardi, F, Beebe, C, et al. Strategies for overcoming therapeutic inertia in type 2 diabetes: A systematic review and meta-analysis. *Diabetes Obes Metab.* 2021; 23(9): 2137– 2154. <https://doi.org/10.1111/dom.14455>
2. Whitehouse CR, Haydon-Greatting S, Srivastava SB, et al. Economic Impact and Health Care Utilization Outcomes of Diabetes Self-Management Education and Support Interventions for Persons With Diabetes: A Systematic Review and Recommendations for Future Research. *The Science of Diabetes Self-Management and Care.* 2021;47(6):457-481. [doi:10.1177/26350106211047565](https://doi.org/10.1177/26350106211047565)