

ACLM Resource: Funding Opportunities to Support Lifestyle Medicine August 2024

Federal

NIH

Health and Health Disparities

NIMHD Exploratory/Developmental Research Grant Program (R21- Clinical Trial Optional)
(Application Deadlines: October 16, 2024, February 16, 2025, June 16, 2025, dates repeat through February 2026)
National Institute on Minority Health and Health Disparities (NIMHD) invites applications to support short-term exploratory or developmental research projects that have the potential to break new ground in the fields of minority health and/or health disparities or extend previous discoveries toward new directions or applications that can directly contribute to improving minority health and/or reducing health disparities in the U.S. LEARN MORE

National Heart, Lung, and Blood Institute Single-Site Investigator-Initiated Clinical Trials (R61/R33 Clinical Trial Required) (Application Deadlines: October 11, 2024, February 11, 2025, June 11, 2025)

This Funding Opportunity Announcement (FOA) supports applications to develop and implement investigator-initiated single site clinical trials including efficacy, comparative effectiveness, pragmatic and/or implementation research clinical trials. Trials using innovative designs such as platform trials, adaptive, and Bayesian designs are encouraged. These trials may include ones that test different therapeutic, behavioral, and/or prevention strategies. Trials for which this FOA applies must be relevant to the research mission of the NHLBI. LEARN MORE

Interventions to Address Disparities in Liver Diseases and Liver Cancer (R01- Clinical Trials Optional) (Application Deadlines: October 5, 2024, February 5, 2025, June 5, 2025, dates repeat through June 2027)

This initiative will support multi-level and/or multi-domain intervention research to reduce disparities in liver diseases and liver cancer among populations who experience health disparities in the United States. These disparities reflect disproportionate disease burden and worse outcomes among populations experiencing health disparities. The focus of this initiative is on improving screening, prevention, treatment, management, and survivorship of liver diseases and liver cancer among these populations. To advance health equity in this area, applicants are encouraged to conduct tailored interventions in a variety of settings (i.e., clinics, schools, community centers, pharmacies, workplaces, churches, justice settings, fitness centers), disaggregated subpopulations, and include unique considerations of persons belonging to multiple populations experiencing health disparities through an intersectional approach whenever possible. LEARN MORE

Health and Health Care Disparities Among Persons Living with Disabilities (R01 - Clinical Trials Optional) (Application Deadlines: October 5, 2024, February 5, 2025, June 5, 20245, dates repeat through October 2026)

The overarching goals of this funding opportunity are to support novel and innovative research that focuses on the health (e.g., conditions, outcomes, trajectories, etc.) and healthcare (e.g., modalities systemic or structural factors, access/barriers, service delivery, care quality, utilization, etc.) of persons living with disabilities and the intersections with race and ethnicity, and socioeconomic status. Research focused on intersections with sexual and gender minority self-identification, and living in underserved rural locations are also of interest. Applications are expected to provide a conceptual model that describes or hypothesizes causal pathways by which clinicians and other healthcare professionals, services, or systems engage persons with disabilities to mitigate health risks, improve health outcomes, reduce health disparities, or compliment health care system. LEARN MORE

Intervention Research to Improve Native American Health (R34 Clinical Trial Optional) (Application Deadlines: October 21, 2024, October 21, 2025, October 21, 2026)

The purpose of this funding opportunity is to support planning and development, including pilot or feasibility research, to improve health in Native American populations. Proposed research may address health promotion, disease prevention, treatment, recovery, or services research to inform intervention implementation and dissemination. This opportunity is part of the Intervention Research to Improve Native American Health (IRINAH) initiative, which also includes <u>PAR-23-298</u>, which uses the R01 Research Project Grant mechanism and <u>PAR-23-299</u>, which uses the R21 Exploratory/Developmental Research Grant mechanism. <u>LEARN MORE</u>

Addressing the Impact of Structural Racism and Discrimination on Minority Health and Health Disparities (R01 - Clinical Trial Optional)

(Application Deadlines: October 09, 2024, October 09, 2025)

This initiative will support intervention research that addresses structural racism and discrimination (SRD) in order to improve minority health or reduce health disparities. Research projects may focus on health promotion, prevention services, and/or treatment of chronic condition. Interventions may focus primarily on addressing SRD to improve health outcomes, or SRD may be included as one of several determinants of health addressed to improve health outcomes. Participating organizations include NCI, NIMHD, NIA, NIDDK, NCCIH, NINR, ONR. LEARN MORE

Patient-Clinician Relationship: Improving Health Outcomes in Populations that Experience Health Care Disparities (R01 Clinical Trial Optional)

(Application Deadline: October 5, 2024)

The purpose of this Funding Opportunity Announcement (FOA) is to support innovative multi-disciplinary and multi-level (e.g., patient, clinician, interpersonal, health care system, community) research designed to understand how optimizing patient-clinician communication and relationship affects health care outcomes in patients from populations with health care disparities. In addition, this initiative will support research to (1) gain an understanding of how the Patient-Clinician Relationship (PCR) in the primary care and chronic disease care settings affects clinical and non-clinical health outcomes in populations that experience health disparities, and (2) identify best practices and interventions that build and improve PCR leading to better health outcomes and increased health equity. LEARN MORE

NINR Areas of Emphasis for Research to Optimize Health and Advance Health Equity (R01 Clinical Trial Optional) (Application Deadlines: October 5, 2024, February 5, 2025)

This funding announcement solicits R01 grant applications that propose independent research projects that are consistent with the scientific framework detailed in the 2022-2026 National Institute of Nursing Research (NINR) Strategic Plan. This research will be rooted in nursing's holistic, contextualized approach to understanding people and their health, address the nation's most pressing and persistent health challenges with a solutions orientation, and employ innovative and rigorous study designs to inform practice and policy. NEW: Participating in Notice of Special Interest: Addressing Organizational Factors to Prevent or Mitigate Nurse Burnout LEARN MORE

Risk and Protective Factors of Family Health and Family Level Interventions (R01 - Clinical Trial Optional) (Application Deadlines: October 05, 2024, February 05, 2025)

The overarching purpose of this funding opportunity announcement is to solicit innovative multidisciplinary minority health and health disparities research and interventions at the interpersonal level, especially within and at the family level. The initiative's purpose is to advance the science of minority health and health disparities by supporting research on family health and well-being and resilience. Participating in the LM-related NOSI "Interventions to promote mental well-being in populations that experience health disparities through social, cultural, and environmental connectedness". LEARN MORE

Dissemination and Implementation Research in Health (R03 Clinical Trial Not Allowed) (Application Deadlines: October 16, 2024, February 16, 2025)

The purpose of this Funding Opportunity Announcement (FOA) is to support studies that will identify, develop, and/or test strategies for overcoming barriers to the adoption, adaptation, integration, scale-up, and sustainability of evidence-based interventions, practices, programs, tools, treatments, guidelines, and policies. Studies that promote equitable dissemination and implementation of evidence-based interventions among underrepresented communities are encouraged. Companion R01 and R21 opportunities also issued. LEARN MORE

Research With Activities Related to Diversity (ReWARD) (R01 Clinical Trial Optional) (Application Deadlines: October 5, 2024, February 5, 2025, June 5, 2025, dates repeat through February 5, 2026)

The ReWARD program provides support for the health-related research of scientists who are making a significant contribution to Diversity, Equity, Inclusion, and Accessibility (DEIA) and who have no current NIH research project grant funding. The grant will support scientific research in areas related to the programmatic interests of one or more of the participating NIH Institutes and Centers (ICs), and ongoing DEIA activities focused on enhancing diversity in the biomedical research enterprise within the United States and territories. Participating ICs with aims providing opportunities for lifestyle medicine include, but are not limited to, NIAMS, NIMH, NINDS, NINR, NIMHD, and NCCIH. NIH intends to support ReWARD renewals through future re-issuances of this funding announcement. LEARN MORE

Feasibility Clinical Trials of Mind and Body Interventions for NCCIH High Priority Research Topics (R34 Clinical Trial Required)

(Application Deadlines: October 21, 2024, February 20, 2025, June 20, 2025, similar dates repeat through October 2026)

The goal of this funding opportunity is to support early phase clinical trials of complementary and integrative health approaches with physical and/or psychological therapeutic inputs (often called mind and body interventions) for conditions that have been identified by NCCIH as high priority research topics. This funding opportunity is intended to support feasibility clinical trials, which will provide data that are critical for the planning and design of a subsequent clinical efficacy or effectiveness study, or a pragmatic trial. <u>LEARN MORE</u>

NIH Support for Conferences and Scientific Meetings (Parent R13 Clinical Trial Not Allowed) (Application Deadlines: December 12, 2024, April 12, 2025, August 12, 2025, dates repeat through December 2026) The purpose of the NIH Research Conference Grant (R13) is to support high quality conferences that are relevant to the

public health and to the scientific mission of the participating Institutes and Centers. <u>LEARN MORE</u>

Small R01s for Clinical Trials Targeting Diseases within the Mission of NIDDK (R01 Clinical Trial Required) (Application Deadlines: October 05, 2024, February 05, 2025, June 05, 2025, dates repeat through February 2026)

This Funding Opportunity Announcement encourages the submission of pilot and feasibility clinical trials conducted in humans that will lay the foundation for larger clinical trials related to the prevention and/or treatment of diseases and conditions within the mission of NIDDK. The program will support small, short-term proof-of-concept clinical trials in humans to acquire preliminary data regarding the effects of the intervention, as well as feasibility data related to recruitment and retention, and study conduct. Applications for clinical trials submitted under this FOA should have clearly described aims and objectives, and have a high likelihood that the trial findings will lead to more definitive, hypothesis-driven trials to improve understanding, diagnosis, prevention or treatment of the diseases studied and have the potential to impact clinical practice and/or public health. Preliminary data regarding intervention efficacy are not required. LEARN MORE

Obesity

Time-Sensitive Obesity Policy and Program Evaluation (R01 Clinical Trial Not Allowed) (Application Deadlines: September 10, 2024, October 9, 2024 and other dates through January 9, 2025)

This Funding Opportunity Announcement (FOA) establishes an accelerated review/award process to support time-sensitive research to evaluate a new policy or program that is likely to influence obesity related behaviors (e.g., dietary intake, physical activity, sedentary behavior, and/or sleep) and/or weight outcomes in an effort to prevent or reduce obesity. This FOA is intended to support research where opportunities for empirical study are, by their very nature, only available through expedited review and funding. All applications submitted to this FOA must demonstrate that the evaluation of an obesity-related policy or program offers an uncommon and scientifically-compelling research opportunity that will only be available if the research is initiated with minimum delay. For these reasons, applications submitted to this time-sensitive FOA are not eligible for re-submission. It is intended that eligible applications selected for funding will be awarded within 4 months of the application due date. LEARN MORE

Musculoskeletal

Exploratory Clinical Trial Grants in Arthritis and Musculoskeletal and Skin Diseases (R61 Clinical Trial Required) (Application Deadlines: November 01, 2024, March 04, 2025, July 02, 2025, similar dates repeat through November 2026)

The goal of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) clinical trial program is to support research leading to the prevention or reduction of symptoms and improve outcomes and function in patients with rheumatic, musculoskeletal, or skin conditions or diseases. The purpose of the Exploratory Clinical Trials Grants Program is to foster clinical trials that will lead to clinically meaningful improvements in prevention, diagnosis, or treatment of these conditions or diseases. This funding opportunity is designed to facilitate clinical trials that can be completed within a limited time frame. A broad range of types of exploratory studies may be submitted. The trials must address research questions related to the mission and goals of the NIAMS and may evaluate interventions with drugs, biologics, devices, or surgical, dietary, behavioral or rehabilitation therapies. LEARN MORE

Cancer Risk and Care

Exploratory Grants in Cancer Control (R21 Clinical Trial Optional) (Application Deadline: October 08, 2024)

This funding opportunity announcement (FOA) encourages the submission of exploratory/developmental research grant (R21) applications that focus on different aspects of cancer control by modifying behavior, screening, and understanding etiologic factors contributing to the development of cancer, and developing ways to control cancer. The overarching goal is to provide support to promote the early and conceptual stages of research efforts on novel scientific ideas that have the potential to substantially advance population-based cancer research, such as the development of novel techniques, agents, methodologies, models, or applications that could have a major impact on a field of cancer research (epidemiologic, biomedical, behavioral, health care delivery or clinical). LEARN MORE

Cancer Prevention and Control Clinical Trials Planning Grant Program (R34 Clinical Trials Optional) (Application Deadlines: October 25, 2024, February 25, 2025, June 25, 2025)

Through this Funding Opportunity Announcement (FOA), the National Cancer Institute (NCI) intends to facilitate well planned clinical trials across the cancer prevention and control spectrum aimed at improving prevention/ interception, cancer-related health behaviors, screening, early detection, healthcare delivery, management of treatment-related symptoms, supportive care, and the long-term outcomes of cancer survivors. Although the scientific literature or preliminary data may provide the rationale for conducting a clinical trial, investigators often lack critical information about the study population, accrual challenges, intervention, outcome/ endpoints, data/statistical challenges or operational risks necessary to finalize the trial protocol completely. Preparatory studies may fill information gaps and address unknowns this can include a pilot/feasibility clinical trial if necessary, improving trial design and rigor. LEARN MORE

Population Approaches to Reducing Alcohol-related Cancer Risk (R01 Clinical Trial Optional) (Application Deadlines: October 5, 2024, February 5, 2025, June 5, 2025 dates repeat through October 2026)

This funding opportunity aims to support research on interdisciplinary population approaches to increasing awareness of the relationship between alcohol and cancer risk, understanding and changing social norms related to alcohol consumption, developing and/or evaluating alcohol policy approaches, and the development, testing, and implementation of population-level interventions to reduce alcohol-related cancer risk. Applications that address multiple levels of consumption are of particular interest, as well as those focusing on alcohol use disorder (AUD) from the perspective of cancer prevention and control. LEARN MORE

NCI Small Grants Program for Cancer Research for Years 2023, 2024, and 2025 (NCI Omnibus) (R03 Clinical Trial Optional) (Application Deadline: October 17, 2025)

This funding opportunity announcement (FOA) supports small research projects on cancer that can be carried out in a short period of time with limited resources. The RO3 grant mechanism supports different types of projects including pilot and feasibility studies; secondary analysis of existing data; small, self-contained research projects; development of research methodology; and development of new research technology. LEARN MORE

Brain Health

Small Research Grant Program for the Next Generation of Researchers in AD/ADRD Research (R03 Clinical Trial Optional) (Application Deadlines: October 16, 2024, February 16, 2025, June 16, 2025, dates repeat through February 2026)

This Small Research Grant (R03) program will support meritorious projects to provide needed scientific insight to improve the prevention, diagnosis, treatment, and/or care for individuals with Alzheimer's disease and Alzheimer's disease-related dementias (AD/ADRD). Specifically, this NOFO will support projects covering a wide range of topics related to AD/ADRD. The overall goal of this NOFO is (i) to encourage the next generation of researchers to pursue research and academic careers in AD/ADRD research; and (ii) to stimulate established researchers who have not had a major award in AD/ADRD research to perform pilot studies to develop new, innovative AD/ADRD research programs that leverage and build upon their existing expertise. LEARN MORE

Pilot Studies for the Spectrum of Alzheimer's Disease/Alzheimer's Disease-Related Dementias and Age-Related Cognitive Decline (R61 Clinical Trial Optional)

(Application Deadline: October 18, 2024)

The purpose of this Funding Opportunity Announcement (FOA) is to 1) invite research grant applications that enable the collection of pilot data to support early stage testing of promising pharmacological and non-pharmacological interventions for cognitive and neuropsychiatric changes associated with age-related cognitive decline and Alzheimer's disease (AD) and Alzheimer's disease-related dementias (ADRD) across the spectrum from pre-symptomatic to more severe stages of disease, and 2) stimulate studies to enhance trial design and methods. <u>LEARN MORE</u>

Behavioral Health

Pilot and Feasibility Studies in Preparation for Substance Use Prevention Trials (R34 Clinical Trial Optional) (Application Deadlines: October 16, 2024, February 16, 2025, June 16, 2025, dates repeat through October 2026)

The purpose of this notice of funding opportunity (NOFO) is to encourage theoretically driven pilot and/or feasibility research in the following areas: 1) the development and pilot testing of new or adapted interventions to prevent or delay the initiation of substance use and/or the progression from use to misuse or disorder and 2) services research examining questions specific to the prevention of substance use. The latter may include pilot studies of strategies or approaches to intervention, and/or other service system-based research to address areas such as economics, funding, service quality and engagement. The R34 award provides resources for evaluating the feasibility and acceptability of approaches to preventing the initiation of substance use, and for obtaining the preliminary data needed as a pre-requisite to a larger-scale intervention (efficacy or effectiveness) trial or services research study. LEARN MORE

NIMH Pilot Effectiveness Trials for Treatment, Preventive and Services Interventions (R34 Clinical Trial Required) (Application Deadline: October 15, 2024)

The purpose of this FOA is to encourage pilot research consistent with National Institute of Mental Health's priorities for: 1) effectiveness research on preventive and therapeutic interventions with previously demonstrated efficacy, for use with broader target populations or for use in community practice settings, and 2) research on the development and preliminary testing of innovative services interventions. This FOA supports pilot studies and provides resources for evaluating the feasibility, tolerability, acceptability and safety and preliminary effectiveness of approaches to improve mental health/functional outcomes, to modify risk factors, or to improve service delivery, and for obtaining the preliminary data needed as a pre-requisite to a larger-scale effectiveness trial (e.g., comparative effectiveness study, pragmatic trial). Support for fully-powered effectiveness studies is provided through separate FOAs that utilize the R01 mechanism for single-site effectiveness trials (PAR-21-130; "Clinical Trials to Test the Effectiveness of Treatment, Preventive, and Services Interventions (R01).") and collaborative R01 mechanism for multi-site effectiveness trials (PAR-21-129; "Clinical Trials to Test the Effectiveness of Treatment, Prevention, and Services Interventions (Collaborative R01 Clinical Trial Required)"). LEARN MORE

Phased Research to Support Substance Use Epidemiology, Prevention, and Services Studies (R61/R33 Clinical Trials Optional)

(Application Deadlines: October 11, 2024, February 14, 2025, June 13, 2025, similar dates repeat through October 2026)

The purpose of this notice of this funding opportunity (NOFO) is to support translational research across epidemiology, addiction services, and prevention to, ultimately, reduce the burden of substance use on public health. This NOFO encourages research that facilitates rapid translation from one discipline to another (e.g., epidemiology to prevention); supports community/stakeholder engagement in substance use treatment and prevention clinical trials; or reduces the research to practice gap through the rapid transition from pilot study to clinical trial, or effectiveness to implementation study. The goal is to support translational research improving our ability to 1) identify and characterize malleable individual, familial, behavioral, developmental, and socio-cultural/environmental factors (within the population or precise subgroups) with the potential for multi-directional transfer of knowledge; 2) prevent initiation of substance use or progression to misuse or use disorder; and 3) maximize the efficient delivery of high-quality, personalized addiction treatment and related services to ultimately inform and facilitate real world responses designed to reduce the burden of substance use, misuse and/or addiction on the health of the population. This NOFO invites projects for which preliminary feasibility or pilot data are not available. LEARN MORE

LM Pillar: Healthy Sleep

Interventions to Reduce Sleep Health Disparities (R01 - Clinical Trials Optional) (Application Deadlines: October 5, 2024, February 05, 2025, June 05, 2025, dates repeat through June 2027)

The purpose of this initiative is to support non-pharmacological interventions to promote sleep health, reduce sleep health disparities, and examine sleep as a modifiable factor to reduce disparities for other health outcomes among populations that experience health disparities. <u>LEARN MORE</u>

Optimizing Behavioral Sleep Interventions for Adolescents and Young Adults (R34 Clinical Trial Required) (Application Deadlines: October 30, 2024, June 13, 2025)

NIMH seeks applications for pilot research to adapt, optimize, and test empirically supported behavioral interventions that address common sleep problems in adolescents and young adults with or at risk for a mental health disorder. Pilot trials should be designed to evaluate the feasibility, tolerability, acceptability, safety, and potential effectiveness of the approach in real world settings, and to conduct a preliminary test of the intervention's impact on target mechanisms and sleep and mental health outcomes, and to obtain preliminary data needed as a prerequisite a larger-scale effectiveness trial. An emphasis is placed on studies that address the needs of youth from understudied and underserved populations. <u>LEARN MORE</u>

Medical Technology, Health IT, Mobile Health, and Digital Healthcare Solutions

Investigator Initiated Clinical Trials of Complementary and Integrative Interventions Delivered Remotely or via mHealth (R01 Clinical Trial Required)

(Application Deadlines: October 21, 2024, February 20, 2025, June 20, 2025, similar dates repeat through October 2026)

The National Center for Complementary and Integrative Health (NCCIH) encourages applications for investigator-initiated fully remotely delivered and conducted clinical trials to assess the efficacy or effectiveness of complementary and integrative health interventions in NCCIH- designated areas of high research priority. Applications submitted under this NOFO are expected to propose a remotely delivered and conducted fully powered clinical trial with no in-person contact between research staff and study participants and may utilize mHealth tools or technologies. Applicants must provide justification for the remotely delivered approach and provide preliminary data on the feasibility and safety of the approach, along with evidence that the intervention has promise of clinical benefit. Companion R34, U24, and UG3/UH3 also published. LEARN MORE

Leveraging Health Information Technology (Health IT) to Address and Reduce Health Care Disparities (R01 Clinical Trial Optional)

(Application Deadlines: October 5, 2024, February 5, 2025)

This funding opportunity announcement (FOA) seeks to support research that examines the impact of leveraging health information technology (health IT) to reduce disparities in access to and utilization of health care services, patient-clinician communication, and health outcomes for populations that experience health disparities in the U.S. Projects should involve collaborations from relevant stakeholders, health disparity population groups such as academic researchers, administrators and leaders of healthcare systems or clinics, clinicians caring for the patients from populations that experience health disparities, and patient advisory and advocacy groups. Research encouraged under this FOA includes multi-level (e.g., patient, clinician, and health care system) approaches to develop interventions that leverage health IT tools to improve the health outcomes of populations that experience health disparities. LEARN MORE

Research Education

Alcohol and Other Substance Use Research Education Programs for Health Professionals (R25 Clinical Trial Not Allowed) (Application Deadlines: September 25, 2024, January 25, 2025, May 25, 2025, dates repeat through May 2026)

This NOFO will support creative educational activities with a primary focus on Outreach. This NOFO will support projects designed to engage practicing health care professionals in education about current and emerging knowledge derived from scientific research on the neurobiology, epidemiology, prevention, and/or treatment of alcohol and other substance use disorders and related health conditions. Outreach activities should include strategies appropriate for engaging practicing health professionals in meaningful, actionable education about the current research on addictive disorders and state-of-the-art methods for detection, prevention, and treatment. Ultimately, outreach activities should aim to improve clinical practice of those patients who use alcohol and other substances, including but not limited to individuals with alcohol use disorder (AUD) or substance use disorder (SUD). LEARN MORE

Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grant (Parent T32) (Application Deadlines: September 25, 2024, January 25, 2025, May 25, 2025, dates repeat through January 2026)

The National Institutes of Health (NIH) will award Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grants (T32) to eligible, domestic institutions to develop and/or enhance predoctoral and postdoctoral research training, including short-term research training, to help ensure that a diverse and highly trained workforce is available to meet the needs of the Nation's biomedical, behavioral, and clinical research agenda. Research training programs are expected to incorporate engaging, didactic, research, and career development elements to prepare trainees for careers that will have a significant impact on the health-related research needs of the Nation. LEARN MORE

Research Enhancement Award Program (REAP) for Health Professional Schools and Graduate Schools (R15 Clinical Trial Required)

(Application Deadline: October 25, 2024)

The purpose of the Research Enhancement Award Program (REAP) for Health Professional Schools and Graduate Schools is to support small scale research grants at institutions that do not receive substantial funding from the NIH, with an emphasis on providing biomedical research experiences primarily for health professional, undergraduate and graduate students and enhancing the research environment at applicant institutions. Companion funding opportunity with shared deadlines R15 Clinical Trial not Allowed. LEARN MORE

NIDDK Education Program Grants (R25 Clinical Trial Not Allowed) (Application Deadlines: January 30, 2025, January 30, 2026)

The NIH Research Education Program (R25) supports research education activities in the mission areas of the NIH. The overarching goal of this R25 program is to support educational activities that complement and/or enhance the training of a workforce to meet the nation's biomedical, behavioral and clinical research needs. To accomplish the stated over-arching goal, this NOFO will support educational activities with a primary focus on: Courses for Skills Development and Research Experiences. These courses for skill development and research experiences must fall within NIDDK's mission areas. NIDDK supports research training skill development and research experiences on diabetes and other endocrine and metabolic diseases; digestive, hepatobiliary and exocrine pancreatic diseases, nutritional disorders, and obesity; and kidney, urologic, and hematologic diseases. LEARN MORE

Women's Health

Understanding the Impact of Healthcare System and Clinician Factors on Disparities in Maternal Morbidity and Mortality (R01 - Clinical Trial Optional)

(Application Deadlines: October 5, 2024, February 5, 2025, June 5, 2025, dates repeat through October 2026)

The purpose of this Notice of Funding Opportunity (NOFO) is to support multidisciplinary and innovative intervention research to understand and address maternal morbidity and mortality in the United States, particularly but not exclusively among racial and ethnic minority, socioeconomically disadvantaged, and underserved rural populations, with a focus on understudied healthcare factors. This is a new funding opportunity to advance the goals of the NIH Implementing a Maternal health and PRegnancy Outcomes Vision for Everyone (IMPROVE) Initiative. IMPROVE aims to understand the biological, behavioral, environmental, sociocultural, clinical, and structural factors that affect pregnancy-related and pregnancy-associated severe morbidity and mortality and build an evidence base for improved care and outcomes. The IMPROVE initiative supports research to reduce preventable causes of maternal deaths and improve health for women before, during, and after delivery. LEARN MORE

The Intersection of Sex and Gender Influences on Health and Disease (R01 Clinical Trial Optional) (Application Deadline: November 22, 2024)

The purpose of this Funding Opportunity Announcement (FOA) is to solicit R01 applications on the influence and intersection of sex and gender in health and disease, including: (1) research applications that examine sex and gender factors and their intersection in understanding health and disease; and (2) research that addresses one of the five objectives from Strategic Goal 1 of the 2019-2023 Trans-NIH Strategic Plan for Women's Health Research "Advancing Science for the Health of Women." Research supported by this FOA seeks to stimulate research advances on the influence of sex and gender, lay the groundwork for innovative investigative approaches, and improve health care tailored to women of all ages and backgrounds. LEARN MORE

Children's Health

NICHD Small Research Grant Program (R03 Clinical Trial Required) (Application Deadlines: October 16, 2024)

The Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) Small Research Grant Program supports clinical trials that fall within the NICHD mission. See NICHD-Supported Research Networks and Initiatives. The R03 activity code supports small research projects that can be carried out in a short period of time with limited

resources. The R03 program may be used for different types of projects including pilot and feasibility studies; secondary analysis of existing data; small, self-contained research projects; development of research methodology; and development of new research technology. <u>LEARN MORE</u>

CDC

Exploratory/Developmental Grants on Lifestyle Medicine Research Related to the World Trade Center Health Program (R21)

(Application Deadline: October 29, 2024)

Lifestyle medicine is a highly valuable, evidence-informed clinical approach focused on preventing, managing, and reversing many types of chronic diseases certified as WTC-related health conditions by the WTC Health Program. By focusing on sustainable health behaviors and lifestyle factors (including these 6 pillars: nutrition and diet, sleep hygiene, stress management and positive psychology, physical activity, social connectedness, and avoidance of substance misuse), lifestyle medicine has the potential to: limit current disease progression, prevent development of additional chronic diseases, and improve health outcomes, overall member well-being, quality of life, and member satisfaction with the Program. To help maximize the impact of the WTC Health Program FY2024 lifestyle medicine research, NIOSH seeks to achieve a suitable mix of projects and interventions focusing on sustainable health behaviors and the lifestyle factors described previously. These studies should break new ground or extend previous discoveries toward new directions or applications. Applicants are expected to propose research approaches for which there is likely to be minimal or no preliminary data. LEARN MORE

AHRQ

Implementing and Evaluating Patient-Centered Clinical Decision Support Strategies in Real-World Settings (U18) (Application Deadline: September 12, 2024)

The purpose of this NOFO is to conduct research on patient-centered clinical decision support (PC CDS), a nascent area within the larger field of CDS. Through the AHRQ-funded Patient Centered Outcomes Research (PCOR) CDS Initiative and the CDS Innovation Collaborative specifically, PC CDS resources are now publicly available for interested researchers to further build upon, develop, and test, in real-world settings. Innovative research is needed to understand how to make traditional, clinician-facing CDS more patient-centered, while also engaging patients, families, and caregivers in a co-design process to design and implement these tools. This NOFO aims to support innovative collaborative research to understand how clinical decision support tools in real-world settings can be improved to become more patient centered. Interested applicants may include health information technology experts, patient advocates and representatives, clinicians, electronic health record developers, policymakers, payors, as well as leaders from research and academic medical institutions. LEARN MORE

Systems-Based Approaches to Improve Patient Safety by Improving Healthcare Worker Safety and Well-Being (R01 Clinical Trial Optional)

(Application Deadlines: October 5, 2024, February 5, 2025, June 5, 2025, dates repeat through October 2029)

The overarching goal of this NOFO is to improve healthcare worker safety and well-being so as to improve patient safety. Providing safe care for patients in all care delivery settings is not just about avoiding harm and attempting to prevent errors. Safe care should also be considered from a resilience engineering perspective as attempting to ensure "as many things as possible go right" so that healthcare delivery achieves outcomes that are successful for healthcare workers as well as patients and their families. AHRQ requires applications to include licensed healthcare professionals in project planning and the development of interventions or strategies, including those who deliver care in ambulatory, prehospital, emergency, inpatient, post-acute or long-term care settings, including medical, surgical, and mental health care, to patients of any age. LEARN MORE

AHRQ Small Research Projects to Advance the Science of Primary Care (R03)

(Application Deadlines: October 16, 2024, February 16, 2025, June 16, 2025 dates repeat through February 2027)

The AHRQ Small Research Grant Program supports small research projects that can be carried out in a short period of time with limited resources. This program supports different types of projects including pilot and feasibility studies; secondary analysis of existing data; small, self-contained research projects; development of research methodology; and development of new research technology. This NOFO aims to support small research projects that advance the understanding of the role

and capacity of primary care to increase the value and quality of care and improve patient outcomes and population health by delivering person-centered care. <u>LEARN MORE</u>

AHRQ Health Services Research Demonstration and Dissemination Grants (R18)

(Application Deadlines: September 25, 2024, January 25, 2025, May 25, 2025, dates repeat through May 2029)

This FOA invites Large Research Demonstration and Dissemination (R18) Project applications that focus on AHRQ's mission and/or any aspect of its specific priority areas. The AHRQ mission is to produce evidence to make health care safer, higher quality, more accessible, equitable and affordable, and to work with HHS and other partners to make sure that the evidence is understood and used. Within the mission, AHRQ's specific priority areas of focus are: Research to improve health care patient safety; Harnessing data and technology to improve health care quality and patient outcomes and to provide a 360-degree view of the patient; Research to increase accessibility and affordability of health care by examining innovative market approaches to care delivery and financing. <u>LEARN MORE</u>

AHRQ Conference Grant Programs (R13)

(Application Deadlines: December 12, 2024, April 12, 2025, August 12, 2025, dates repeat through August 2026)

AHRQ seeks to support conferences that help further its mission to produce evidence to make health care safer, higher quality, more accessible, equitable and affordable, and to work with HHS and other partners to make sure the evidence is understood and used. Types of conferences eligible for support include Research Development; Research Design and Methodology; Dissemination and Implementation; and Research Training, Infrastructure, and Career Development. Regionally-based conferences are acceptable with the expectation that plans will be developed for national dissemination. Such strategies might include, but are not limited to, submitting articles for publication, posting information on a website, and seeking formal opportunities to discuss conference information with others. LEARN MORE

Using Innovative Digital Healthcare Solutions to Improve Quality at the Point of Care (R21/R33 - Clinical Trial Optional) (Application Deadlines: October 16, 2024, February 16, 2025, June 16, 2025, dates repeat through June 2026)

This Funding Opportunity Announcement (FOA) invites applications for research projects that test promising digital healthcare interventions aimed at improving the quality of healthcare services delivery at the point of care. This FOA will use the Phased Innovation Award (R21/R33) mechanism to provide up to 2 years of R21 support for initial developmental activities, and up to 3 years of R33 support for expanded The National Institute on Aging (NIA), the American Federation for Aging Research, and the John A. Hartford Foundation, are collaborating on this initiative to develop of a cadre of talented scientists prepared and willing to take an active leadership role in transformative change that will lead to improved health care outcomes. LEARN MORE

HRSA

Teaching Health Center Graduate Medical Education (THCGME) Program (Application Deadline: September 20, 2024)

The purpose of the THCGME Program is to support the training of residents in primary care residency training programs in community-based ambulatory patient care centers. These residency programs will prepare residents to provide high-quality care, particularly in rural and underserved communities, and develop competencies to serve these diverse populations and communities. These notices announce the opportunity to apply for funding under the THCGME Program. This funding will support both the direct expenses associated with sponsoring approved graduate medical residency training programs and indirect expenses associated with the additional costs relating to teaching residents in residency training programs. Two award types are available: 1. Expansion awards for an increased number of resident Full-Time Equivalent (FTE) positions at existing HRSA THCGME Programs. 2. New awards to support new resident FTE positions at new Teaching Health Centers (THCs). LEARN MORE

SMALL BUSINESS PROGRAMS (SBIR & STTR)

Innovations for Healthy Living - Improving Minority Health and Eliminating Health Disparities (R43/R44 - Clinical Trial Optional)

(Application Deadlines: December 10, 2024, June 10, 2025, dates repeat through December 09, 2026)

This Notice of Funding Opportunity (NOFO) invites eligible United States small business concerns (SBCs) to submit Small Business Innovation Research (SBIR) grant applications that propose to develop a product, process or service for commercialization with the aim of improving minority health and/or reducing and ultimately eliminating health disparities in one or more populations that experience health disparities. Appropriate technologies should be effective, affordable, and culturally acceptable. LEARN MORE

HEAL Initiative: Development of Therapies and Technologies Directed at Enhanced Pain Management (R41/R42 Clinical Trial Not Allowed)

(Application Deadlines: September 04, 2024, January 03, 2025, April 04, 2025)

More than 25 million Americans suffer from chronic pain, a highly debilitating medical condition that is complex and lacks effective treatments. The purpose of this Funding Opportunity Announcement (FOA) aims to speed scientific solutions to stem the national opioid public health crisis by supporting the development of therapies and technologies directed at enhanced pain management through the Small Business Technology Transfer (STTR) program. Specifically, this FOA is focused on applications directed at improving pain measurement and treatment. This FOA is part of the NIH HEAL (Helping to End Addiction Long-term) Initiative—an aggressive, trans-agency effort to speed scientific solutions to stem the national opioid public health crisis. More information about the HEAL Initiative is available at: https://heal.nih.gov. LEARN MORE

Advancing Research on Alzheimer's Disease (AD) and AD-Related Dementias (ADRD) (R43/R44 Clinical Trial Optional) Small Business Innovation Research (SBIR) Grant - Phase I, Phase II, Direct-to-Phase II, Phase IIB, and Fast-Track (Application Deadlines: September 05, 2024, January 05, 2025, April 05, 2025, September 05, 2025)

The aim of this FOA is to support research that may lead to the development of innovative products and/or services that have the potential to advance progress in preventing and treating Alzheimer's disease (AD) and AD-related dementias (ADRD) and/or caring for and treating patients living with AD/ADRD. <u>LEARN MORE</u>

PATIENT-CENTERED OUTCOMES RESEARCH INSTITUTE (PCORI)

Promoting Healthy Children and Youth Topical PCORI Funding Pre-Announcement—Cycle 3 2024 (LOI Deadline: October 1, 2024; Application Deadline: January 14, 2025)

PCORI is seeking to fund patient-centered comparative clinical effectiveness research (CER) projects that focus on interventions that improve patient-centered outcomes in children and youth. Applications may propose comparative effectiveness studies of prevention, screening, diagnostic, treatment and management approaches, and pharmacologic, non-pharmacologic and/or combination therapies, as appropriate. Studies may also focus on improving system-level strategies delivered in hospitals, clinics or community settings to improve patient-centered outcomes. Special Areas of Emphasis (SAEs) include Prevention and treatment of obesity; Addressing social determinants of health/social needs to improve health outcomes; and Targeted prevention of substance misuse through identified risk factors. LEARN MORE

Broad Pragmatic Studies Funding Announcement -- 2024 Standing PFA (Cycle 3 2024) (LOI Deadline: October 1, 2024; Application Deadline: January 14, 2025)

PCORI seeks to fund applications for high-quality comparative clinical effectiveness research (CER) projects, and in keeping with past cycles, the BPS PFA welcomes all investigator-initiated, patient-centered CER. While SAEs including Social Isolation and Loneliness in Older Adults and Promoting Sleep Health in Inpatient Settings do not have to be selected, all applications must align the proposed research with at least one of the National Priorities for Health (Increase Evidence for Existing Interventions and Emerging Innovations in Health; Accelerate Progress Toward an Integrated Learning Health System; Achieve Health Equity; or Advance the Science of Dissemination, Implementation and Health Communication). LEARN MORE

Phased Large Awards for Comparative Effectiveness Research (PLACER) -- Cycle 3 2024 (LOI Deadline: October 1, 2024; Application Deadline: January 14, 2025)

PCORI is seeking to fund high-quality patient-centered comparative clinical effectiveness research (CER) projects that will address critical decisions faced by patients, families, caregivers and the broader health and healthcare community. Investigators must propose an individual-level or cluster randomized controlled trial of significant scale and scope for this PFA. Proposed studies should compare interventions that already have robust evidence of efficacy and are in current use. Clinical interventions (such as medications, diagnostic tests or procedures) and delivery system interventions (such as workforce, technologies and healthcare service delivery designs) are appropriate for these studies. This funding announcement anticipates that proposed research projects will require two phases of funding. The initial phase of funding supports a distinct feasibility phase intended for study refinement, infrastructure establishment, patient and stakeholder engagement and feasibility testing of study operations, including the ability to recruit and enroll participants successfully. LEARN MORE

Other PCORI Funding Opportunity announcements and opportunities, including <u>Engagement Awards</u>, can be found on their website here.

Foundation and Foundation-Sponsored

Health Equity and Culture of Health

Allen Foundation, Inc

(Application Deadline: January 15, 2025)

Allen Foundation, Inc seeks to support projects that primarily benefit programs for human nutrition in the areas of health, education, training, and research. The policies and priorities of Allen Foundation are: To make grants to fund relevant nutritional research; To support programs for the education and training of mothers during pregnancy and after the birth of their children, so that good nutritional habits can be formed at an early age; To assist in the training of persons to work as educators and demonstrators of good nutritional practices; To encourage the dissemination of information regarding healthful nutritional practices and habits. <u>LEARN MORE</u>

Quest Diagnostics Foundation Quest for Health Equity II (Application Deadline: Open through December 31, 2024)

Quest for Health Equity (Q4HE) is working to help remove the barriers deepening health inequities in under-resourced communities, while improving equity in testing, screening and diagnosis. This program seeks to collaborate on community-driven priorities and community-led initiatives that address social determinants of health. It also seeks to advance equity in diagnostics and screening. Q4HE is this year accepting submissions for programs in the following geographies: LA County, CA; Harris County, TX; Cook County, IL; Miami-Dade County, FL; Baltimore County, MD; and Suffolk County, MA. Projects with applied research components may be accepted from any US region. LEARN MORE

RWJF Pioneering Ideas: Exploring the Future to Build a Culture of Health (Application Deadline: Rolling)

Pioneering Ideas: Exploring the Future to Build a Culture of Health seeks proposals that are primed to influence health equity in the future. RWJF is interested in ideas that address any of these four areas of focus: Future of Evidence; Future of Social Interaction; Future of Food; Future of Work. Additionally, they welcome ideas that might fall outside of these four focus areas, but which offer unique approaches to advancing health equity and our progress toward a Culture of Health. RWJF wants to hear from scientists, anthropologists, artists, urban planners, community leaders—anyone, anywhere who has a new or unconventional idea that could alter the trajectory of health, and improve health equity and well-being for generations to come. LEARN MORE

RWJF Evidence for Action: Innovative Research to Advance Racial Equity

(Application Deadline: Rolling; Note: RWJF will pause the submission window October 1, 2024- Sunday, February 2, 2025) Evidence for Action prioritizes research to evaluate specific interventions (e.g., policies, programs, practices) that have the potential to counteract the harms of structural and systemic racism and improve health, well-being, and equity outcomes.

RWJF is concerned both with the direct impacts of structural racism on the health and well-being of people and communities of color (e.g., Black, Latina/o/x, Indigenous, Asian, Pacific Islander people, and other races and ethnicities)—as well as the ways in which racism intersects with other forms of marginalization, such as having low income, being an immigrant, having a disability, or identifying as LGBTQ+ or a gender minority. <u>LEARN MORE</u>

Santec Community Engagement Funding

(Application Deadline: Rolling)

Santec contributes in four core areas: arts, education, environment, and health and wellness. In their health and wellness giving, they focus on supporting credible and recognized health organizations including national, provincial, or state charitable health organizations, regional hospitals, and health centers. <u>LEARN MORE</u>

HEARST Foundations Funding in Health

(Application Deadline: Rolling)

The Hearst Foundations assist leading regional hospitals, medical centers and specialized medical institutions providing access to healthcare for high-need populations. Preference is given to proposals for: professional development; programs improving access to high-quality healthcare for low-income populations, rural populations, and/or veterans; care for complex needs of older populations; intensive behavioral healthcare; scaling innovative healthcare delivery systems to provide efficient coordinated care; research, particularly related to finding new cures and treatments for prevalent diseases. LEARN MORE

Labcorp Charitable Foundation(Application Deadline: Rolling)

Labcop Charitable Foundation seeks to bring quality healthcare access to all by supporting education and local communities. Common grant opportunities include: Supporting food pantries and meal programs; Providing healthcare and patient services for underserved populations; Encouraging STEM programming; and Advocating for healthy lifestyles through ongoing medical research and screenings. <u>LEARN MORE</u>

The Commonwealth Fund: Various Program Areas (Application Deadline: Rolling LOI)

The Commonwealth Fund focuses on three core areas where they believe they can make the biggest difference: Coverage, Care, and Cost. The foundation's overarching goals are to improve health care practice and policy and promote antiracism in U.S. health care through support for rigorous, evidence-based research and analysis. TCF sponsors projects to monitor and benchmark health system performance and explore innovative approaches to addressing problems in health care. Aligned grant programs include Health Care Delivery System Reform; Advancing Health Equity; Public Health; Behavioral Health; and Climate Change and Health Care and more. <u>LEARN MORE</u>

March of Dimes Discovery Research Grants (Application Deadline: September 6, 2024)

March of Dimes awards seasoned researchers seeking to make consequential translational discoveries that will drastically alter clinical care for pregnant women and babies, whether through evidence-based prevention, diagnosis or intervention. Priority Topic Areas: Late Spontaneous Pre-Term Birth; Racial Inequities as They Relate to Morbidity and Mortality Outcomes for Mothers and Babies; Cardiovascular Health Conditions Developed During Pregnancy or Exacerbated During Pregnancy; and Maternal Stress, Its Impact on Pregnancy Outcomes, and How to Mitigate the Effects. All topics may include investigations looking at the periods of pregnancy, intrapartum, and up to one year postpartum. LEARN MORE

Johnson&Johnson Amplifying Access to Mental Health Innovation QuickFire Challenge (Application Deadline: October 11, 2024)

Johnson & Johnson Innovation and Impact Ventures by J&J Foundation invites innovators to submit novel precision neuroscience and digital health approaches that both aim to advance health equity and transform mental healthcare in the United States and beyond. <u>LEARN MORE</u>

Education and Training

Josiah Macy Jr. Foundation Catalyst Awards (Application Deadline: September 20, 2025)

The Macy Catalyst Awards for Transformation in Graduate Medical Education support projects that impact the clinical learning environment and improve the experience of residents and fellows in one of the three priority areas supported by the Foundation: Promoting diversity, equity, and belonging; Increasing high-performing, interprofessional teams; Preparing future health professionals to navigate ethical dilemmas. Successful proposals will describe, implement, and evaluate innovative strategies to equip learners with the tools, skills, and strategies to flourish in the clinical learning environment. The Foundation will provide up to \$100K in total support over an 18-month period. LEARN MORE

Josiah Macy Jr. Foundation President's and Board Grants (Application Deadline: Rolling)

The Macy Foundation is dedicated to improving the health of the public by advancing the education and training of future health professionals. Current priority areas within learning environments: Diversity Equity and Belonging; Increasing Collaboration Among Future Health Professionals; Preparing Future Health Professionals to Navigate Ethical Dilemmas. LEARN MORE

Announcements and Forecasted Opportunities

ACL Advancing Strategies to Deliver and Sustain Evidence-Based Chronic Disease Self-Management Education Programs to Support Older Adults with Behavioral Health Conditions

(Estimated Post Date: December 11, 2024; Estimated Application Due Date: February 28, 2025)

The purpose of this NOFO is to develop and implement multi-faceted strategies that support the delivery and sustainability of evidence-based chronic disease self-management education (CDSME) programs for older adults with one or more behavioral health conditions. The two primary goals are: Goal 1: Develop capacity to increase the number of older adults with one or more behavioral health conditions who participate in evidence-based self-management education and support programs. Goal 2: Develop and disseminate resources that will enhance the participation of older adults with behavioral health conditions in evidence-based self-management education and support programs. Successful applicants will also be expected to (a) Develop a range of cross-sector partnerships to achieve project goals and objectives; (b) Develop and/or implement appropriate trainings and tools for aging and behavioral health professionals; and (c) Develop a toolkit detailing successful (and unsuccessful) strategies, lessons learned, and recommendations that will serve as a guide for replication of efforts. The Administration on Aging (AoA), part of the Administration for Community Living (ACL), plans to award 3 cooperative agreements with a three-year project period. LEARN MORE

Patient-Centered Outcomes Research Institute Upcoming Funding Announcement: Managing Pain Topical PCORI Funding Announcement—Cycle 1 2025

(Release Date October 8, 2024; LOI Due January 14, 2025; Application Deadline May 6, 2025)

PCORI intends to issue a PCORI Funding Announcement (PFA) seeking to fund high-quality, patient-centered comparative clinical effectiveness research (CER) projects that focus on interventions to improve patient-centered outcomes for individuals living with acute and/or chronic pain. PCORI seeks to fund studies that address meaningful decisional dilemmas faced by patients, clinicians and members of the broader health and healthcare community when seeking and obtaining pain-related care and to improve patient-centered outcomes. Applications may propose patient-, healthcare provider- and/or systems-level CER studies addressing acute or chronic pain across the care continuum in any clinical context. Comparators may include pharmacological, nonpharmacological and/or combination therapies, as appropriate. Systems-level interventions may include patients, healthcare providers and/or care teams and various settings where care is delivered, organized, purchased or coordinated. At least one validated primary outcome must be focused on pain. LEARN MORE

Special Emphasis Notice: AHRQ Announces Interest in Health Services Research to Improve Care Delivery, Access, Quality, Equity, and Health Outcomes for Older Adults

The purpose of this Special Emphasis Notice (SEN) is to inform the research community of the Agency for Healthcare Research and Quality's (AHRQ) strong and continued interest in receiving health services research grant applications that advance the

Nation's goal of improving care delivery, access, quality, equity, and health outcomes for older adults. AHRQ recognizes reengineering healthcare delivery systems to deliver person-centered integrated care so that care transformation optimizes physical and mental health outcomes, functional status, and well-being, is paramount. The Agency encourages research teams to submit applications in response to this emphasis using AHRQ's standing R18, R03, and R01 funding mechanisms (PA-24-156, PA-24-154) or any reissue of these NOFOs through expiration date of this SEN. AHRQ is also interested in receiving career development awards using AHRQ's K01, K08, K18 funding mechanisms (PA-22-255, PA-22-232, PA-22-051, PA-22-050 and PA-22-049) that propose developing generalizable health service research skills through projects related to research aging. Additionally, AHRQ is interested in receiving dissertation grant proposals addressing health services aging research using AHRQ's R36 funding mechanism (PA-23-196). LEARN MORE

Please note ACLM does not provide or guarantee funding through the opportunities listed here. External opportunities are provided as a resource for members seeking third-party funding. Please connect with the funder directly for detailed information.

This list is intended to bring awareness to aligned funding opportunities provided by external entities as a way to support lifestyle medicine research and programming. ACLM seeks to collaborate with partners on projects aligned with ACLM's strategic priority areas. Examples include: research that builds the evidence-base and advances the field of lifestyle medicine; programs that support education, resiliency and upskilling of the clinician workforce; and projects that address health disparities, health equity and equitable access to lifestyle medicine.

If your organization plans to seek funding related to these areas, we invite you to connect with our development team (<u>partnerships@lifestylemedicine.org</u>) to discuss opportunities for collaboration.