

Technical Assistance Webinar

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September 1, 2020

[PAR-20-179](#): Advancing Research To Develop Improved Measures and Methods for Understanding Multimorbidity (R01 Clinical Trial Optional)

[PAR-20-180](#): Identifying Innovative Mechanisms or Interventions that Target Multimorbidity and Its Consequences (R01 Clinical Trial Optional)



Webinar Agenda

- **Introductions**
 - Staff from the NIH Office of Disease Prevention (ODP), Representatives from the NIH Institutes/Centers/Offices (ICs), and the NIH Center for Scientific Research (CSR) Representative
- **Webinar Logistics**
- **Background Information**
- **Overview of the two funding announcements**
 - Purpose and Scope of Research
 - Application Information and Key Dates
- **Scientific Review Process and Review Criteria**
- **Description of IC-specific research interests**
- **Q&A Session**

Introduction of Presenters

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- Kathryn Koczot, ODP
- Liz Vogt, ODP
- Crystal Reed, NCI
- Bryan Kim, NCI
- NIH Co-Morbidity Special Interest Group (SIG)
IC Co-Chairs, Johanna Dwyer (NIH Office of Dietary Supplements) & Marcel Salive (NIA), and SIG Members

Webinar Logistics and Q&A Procedures

- Webinar attendees are muted and cannot unmute themselves.
- Submit questions using the **chat box** feature in WebEx.
- During the upcoming Q&A session, priority will be given to questions that were submitted in advance.
- Registered participants will receive an email with a link to the webinar recording, slides, and frequently asked questions (FAQs) when they are available.
- All webinar materials will be posted on the ODP website listed below:

prevention.nih.gov/MultimorbidityWebinar

Background: Multimorbidity

- Multimorbidity—also referred to as multiple chronic conditions (MCCs)—is defined as **the co-occurrence of two or more chronic health conditions.**
- A chronic health condition is one that has lasted 3 or more months.

In 2014, 60% of adults aged 20 and older had two or more chronic conditions, an increase from 46% in 1998.

Source: NHANES data

MCCs are common at every stage of life, challenging, and resource intensive.

Women, African Americans, Hispanics, and non-Hispanic Whites have the highest prevalence of MCCs.

Two thirds of older adults have two or more chronic conditions.

Background: Cochrane Review

Cochrane review of the effectiveness of interventions to improve outcomes for people with multimorbidity (Smith et al., 2016)

- Examined 18 randomized controlled trials (RCTs) that evaluated interventions to improve outcomes for patients with multimorbidity were evaluated.
- Identified 2 main types of interventions:
 - Interventions to changing the organization of care delivery
 - Patient-oriented interventions (education; self-management support)
- **Conclusions:**
 - Small number of RCTs; more are needed
 - Overall, mixed findings for intervention effectiveness
 - Health outcomes for patients with multimorbidity may be improved if interventions are targeted at risk factors or specific functional difficulties
 - Difficult to improve outcomes for people with multiple chronic conditions

Background: MCC Gap Areas

- There is no standard approach to measuring multimorbidity; selection and definition of conditions to include is subjective and dependent on the data available (Barnett et al., 2012).
- Very little is known about:
 - **Risk factors for developing multimorbidity** (i.e., genetic, biological, behavioral, environmental), or the **pathogenetic mechanisms** (i.e., inflammation, oxidative stress, metabolic syndrome) that may lead to it (Marengoni et al., 2011).
 - **How to stop the process of multimorbidity** and reduce its negative consequences.
- Studies of multimorbidity patterns should be followed up with new research to assess possible underlying causal mechanisms.

Background: Prevention Research at the NIH

- Prevention research at the NIH encompasses primary and secondary prevention.
 - **Primary prevention** - promote health, identify risk factors for developing a new health condition; prevent the onset of a new health condition
 - **Secondary prevention** - identify risk factors for the progression or recurrence of a health condition; detecting and preventing progression of an asymptomatic or early-stage condition
- See FOAs for additional inclusions (e.g., targeting biology, individual behavior, etc.)

Background: Two New ODP-Led Trans-NIH FOAs

- The ODP coordinated development of the FOAs out of the **NIH Comorbidity SIG** and in collaboration with **13 ICs**:
 - **PAR-20-179**: Advancing Research To Develop Improved Measures and Methods for Understanding Multimorbidity (R01 Clinical Trial Optional)
 - Participating ICOs (8): ODP, NCI, NIA, NIDCD, NIDCR, NCCIH, NICHD,* and ORWH*
 - NICHD and ORWH priorities are published in [NOT-OD-20-150](#).
 - **PAR-20-180**: Identifying Innovative Mechanisms or Interventions that Target Multimorbidity and Its Consequences (R01 Clinical Trial Optional)
 - Participating ICOs (12): ODP, NCI, NIA, NIDCD, NIDA, NIMH, NIMHD, NINR, NCCIH, OBSSR, NICHD,* and ORWH*
 - NICHD and ORWH priorities are published in [NOT-OD-20-151](#).

Background: Two New NIH Notices released July 28, 2020

Notice of ORWH's and NICHD's Participation in PAR-20-179, "Advancing Research to Develop Improved Measures and Methods for Understanding Multimorbidity (R01 Clinical Trial Optional)"

Notice Number:

NOT-OD-20-150



Key Dates

Release Date:

July 28, 2020

Related Announcements

[PAR-20-179](#) - Advancing Research to Develop Improved Measures and Methods for Understanding Multimorbidity (R01 Clinical Trial Optional)

Issued by

Office of Research on Women's Health ([ORWH](#))

Eunice Kennedy Shriver National Institute of Child Health and Human Development ([NICHD](#))

Notice of ORWH's and NICHD's Participation in PAR-20-180, "Identifying Innovative Mechanisms or Interventions that Target Multimorbidity and Its Consequences (R01 Clinical Trial Optional)"

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[PAR-20-180](#) - Identifying Innovative Mechanisms or Interventions that Target Multimorbidity and Its Consequences (R01 Clinical Trial Optional)

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PAR-20-179: Improved Measures and Methods FOA

Purpose

- To improve the availability, quality, and utility of data and measures that capture multimorbidity or MCCs and the methods for analyzing multimorbidity data.
- Discover, develop, and/or evaluate MCC measures/tools that reflect the longitudinality and life course diversity of multimorbidity.
- This includes, but is not limited to:
 - Measures/tools to support basic mechanistic discovery
 - Identification and initial biological, analytical, and clinical evaluation of MCC shared signatures
 - Patient-focused studies that capture patient reports and related constructs
 - Analytic approaches best suited for use with multimorbidity data and matched to target populations
 - Approaches that fully harness the wealth of multimorbidity data available in electronic health record (EHR) systems
 - Studies that make use of existing data and data linkages to explore new research questions.

Participating ICs (8): ODP, NCI, NIA, NIDCD, NIDCR, NCCIH, NICHD, and ORWH

PAR-20-179: Scope of Research

General topics that are considered within scope for [PAR-20-179](#) include, but are not limited to:

- Identification and/or initial biological, analytical, and clinical evaluation of basic mechanisms or pathways.
- Proof of concept studies using animal models of MCCs, human tissue/biofluids/imaging samples to confirm MCC biomarker signatures.
- Development/evaluation of measures and methods appropriate for longitudinal studies that examine onset and/or fluctuation in multimorbidity, risk factors, and underlying biology.
- Development/evaluation of multimorbidity measures and methods appropriate for various stages of the life course and racial/ethnic minority groups.
- Rigorous measurement of multiple diseases in epidemiological or mechanistic studies, with a focus on understanding disease groupings and etiology.

PAR-20-179: Scope of Research, cont'd

General topics that are considered within scope for [PAR-20-179](#) include, but are not limited to:

- Development of multimorbidity measures that more comprehensively capture illness severity.
- Development/evaluation of person-centered measures of multimorbidity, its progression, and impact.
- Assessment of multiple measures of multimorbidity and related constructs, using the most comprehensive and appropriate data sources, so that MCCs, functional limitations, geriatric syndromes and quality of life are captured in unified analyses.
- Advancing universal outcome measurement and matching outcome measurement to the purpose of measuring multimorbidity.
- Use of modeling and simulations to improve multimorbidity measurement in systems of care.
- Developing approaches to measuring and analyzing multimorbidity that take full advantage of the wealth of data on multimorbidity and its impact/outcomes available in EHR systems.

PAR-20-180: Innovative Mechanisms or Interventions FOA

Purpose

















- To support the identification of shared mechanisms and development of innovative interventions to address multimorbidity or MCCs and its consequences.
- Intervention research should be designed to study:
 - (1) **mechanisms or pathways** that prevent MCCs, including the identification of early biomarkers, behavioral pathways, and individual and contextual risk factors and interactions that contribute to the development of common MCCs;
 - (2) **targeted therapies and management**, including self-management, of MCCs to delay progression and prevent onset of new diseases; and
 - (3) **innovative health care partnership models** for managing or treating MCCs.

Participating ICs (12): ODP, NCI, NIA, NIDCD, NIDA, NIMH, NIMHD, NINR, NCCIH, OBSSR, NICHD, and ORWH.

PAR-20-180: Scope of Research

- Studies that **make use of existing data and/or data linkages** to explore new research questions that may be helpful in **understanding the impact of interventions** targeting prevention of one chronic health condition on related chronic conditions, **or in designing future interventions** to prevent co-occurring MCCs are considered within scope.
- Topics include, but are not limited to:
 - Longitudinal studies that examine MCC onset and trajectory, as well as risk factors and underlying biology.
 - Comparative studies of multimorbidity in diverse, underserved, and vulnerable populations.
 - Studies of a variety of rare disease combinations in children.
 - Multimorbidity studies that examine factors related to constructs such as: adverse childhood experiences, functional status, and geriatric symptoms
 - Epidemiological or mechanistic studies that seek to identify MCC biomarkers and/or common etiologies, or to understand MCC groupings, with the ultimate goal of preventing MCCs.

Application Information

Application information	PAR-20-179 (Measures and Methods)	PAR-20-180 (Mechanisms or Interventions)
R01, Clinical Trial Optional		
Number of awards is contingent upon NIH appropriations and sufficient number of meritorious applications		
Application budgets are not limited, but need to reflect the actual needs of the proposed project		
Scope of proposed project should determine the project period		
Maximum project period = 5 years		
<p><u>Foreign Institutions</u></p> <p>1) Are non-domestic (non-U.S.) entities eligible to apply?</p> <p>2) Are non-domestic (non-U.S.) components of U.S. Organizations eligible to apply?</p> <p>3) Are foreign components allowed?</p>	<p></p> <p></p> <p></p>	<p></p> <p></p> <p></p>

Key Dates

	Letters of Intent	Application Due Dates (Standard dates apply; applications are due by 5:00 pm local time)	Scientific Merit Review Date	Earliest Start Date
Non-AIDS Applications	Not applicable	Oct. 5, 2020 Feb. 5, 2021	Feb.–Mar. 2021	July 2021
AIDS and AIDS-Related Applications	Not applicable	Jan. 7, 2021 May 7, 2021	June–July 2021	Sept. 2021

New applications, resubmissions, renewals, and revisions are allowed.

The Scientific Review Process

Dual Review System for Grant Applications

Fungai Chanetsa, Ph.D.,
Scientific Review Officer, CSR
Email: fungai.chanetsa@nih.hhs.gov

First Level of Review

CSR or Institute Review by Scientific Review Group (SRG)

- For scientific merit
- Recommend level of support/duration
- Do not make funding decisions



Second Level of Review

NIH IC Council

- Reviews the SRG review
- Recommends funding to IC
- Evaluates priorities/relevance
- Advises on policy

FOA-specific* Review Criteria

(*in addition to the typical review criteria)

Fungai Chanetsa, Ph.D.,
 Scientific Review Officer, CSR
 Email: fungai.chanetsa@nih.hhs.gov

Criterion	PAR-20-179	PAR-20-180
SIGNIFICANCE		For applications with aims to study mechanisms or pathways that prevent MCCs, reviewers will evaluate the explanation of how findings will contribute to advancing interventions to address multimorbidity and its consequences if the aims of the project are achieved.
INVESTIGATORS	Do the Program Directors (PDs), Principal investigators (PIs), co-investigators, collaborators, and others on the research team have demonstrated experience with prevention and the designated MCCs, as well as with developing and testing measures, methods, and analytic approaches for studying the designated MCCs?	Have PD(s), PI(s), co-investigators, collaborators, and others on the research team demonstrated experience with prevention and the designated MCCs?
INNOVATION	Does the application propose to develop or improve measures, methods, or analytic tools in true gap areas, where they do not exist, or where those that exist are not sufficient?	Does the application propose novel, innovative, plausible partnership models (e.g., across health and non-health sectors) and/or strategies (e.g., mHealth and other technologies) for preventing, assessing, managing, and treating MCCs?
APPROACH		Are appropriate stakeholders/partners, relevant to the populations to be included in the research and the sectors/settings where the research is to be conducted, included in the project, and is there clear indication of their support?
ENVIRONMENT		

Additional Review Criteria

- Study Timeline (if clinical trial)
- Protections for Human Subjects
- Inclusion of Women, Minorities, and Individuals Across the Lifespan
- Vertebrate Animals
- Biohazards
- Resubmissions, Renewals, and Revisions

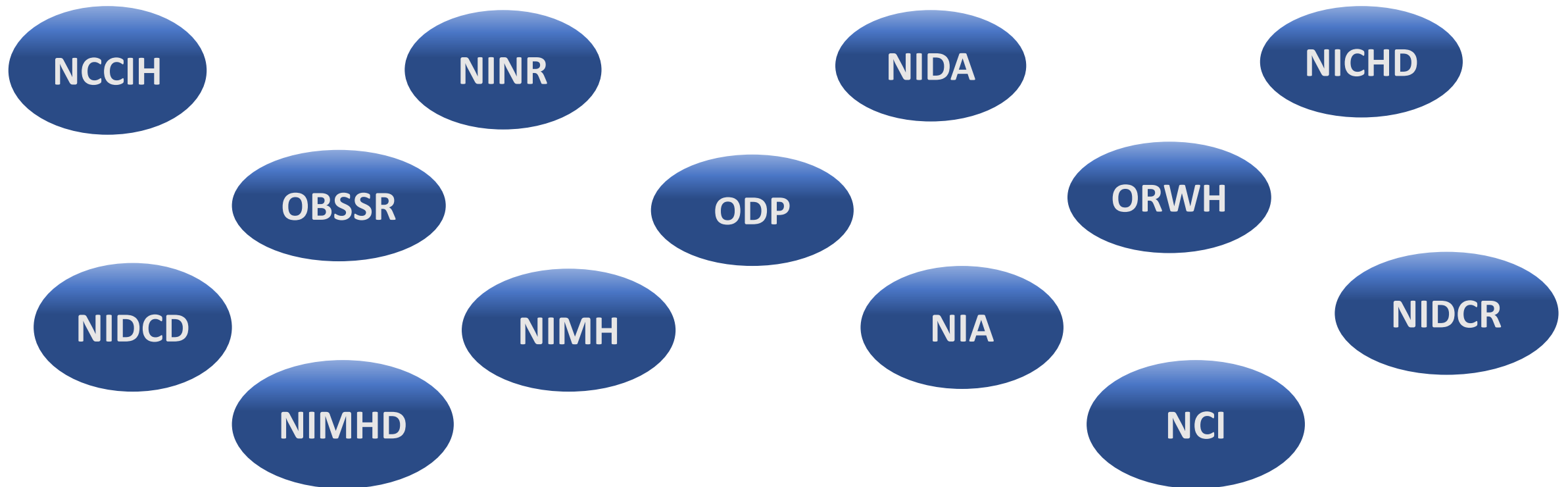
Additional Review Considerations

- Select Agent Research
- Resource Sharing Plans
- Authentication of Key Biological and/or Chemical Resources
- Budget and Period of Support

- **During the scientific peer review process, all applications:**
 - Are assigned 3–4 reviewers.
 - Receive a preliminary overall impact score and 5 criterion scores.
 - Within the top 50% of the group are discussed.
 - Receive a summary statement that includes critiques from assigned reviewers and individual criterion scores
 - Summary statements of discussed applications also include:
 - An overall impact/priority score
 - Summary of discussion
 - Budget recommendations
- **CSR ENQUIRE:** <https://public.csr.nih.gov/StudySections/CSREnquire>
 - Evaluating Panel Quality in Review (ENQUIRE)
- **CSR Assisted Referral Tool (ART):** <https://art.csr.nih.gov/ART/>

Specific Research Priorities for NIH ICs

The specific research priorities for participating NIH ICs are described on the following slides.



• National Institute of Dental and Craniofacial Research (NIDCR)

The NIDCR supports research that aims to improve dental, oral, and craniofacial health. For this FOA, NIDCR is interested in research to develop improved measures and methods that include dental, oral, and craniofacial diseases/conditions within the context of multimorbidity or MCCs.

Areas of interest include:

- Studies examining shared pathways between MCCs and dental, oral, and craniofacial diseases/conditions.
- Research designed to develop and/or evaluate multimorbidity progression, severity, and impact that includes measures and methods to assess dental, oral, and craniofacial diseases/conditions, including patient-reported measures.
- Research that evaluates multimorbidity measures and methods to better understand the impact of multimorbidity on dental, oral, and craniofacial diseases and conditions across various stages of the life-course, and among different geographic catchment areas and racial/ethnic groups.

- ***Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD)**
 - Our interests are described in detail in [NOT-OD-20-150](#) and [NOT-OD-20-151](#) (*not* the main PARs)
 - **NICHD priorities**
 - Applications responsive to [NICHD Strategic Plan 2020](#)
 - Applications specific to NICHD priority populations*, including:
 - Infants, children, and adolescents
 - Individuals with intellectual and developmental disabilities
 - Individuals with specific learning disorders
 - Individuals with physical disabilities
 - Pregnant, lactating, and postpartum women.
 - **NICHD will not support projects applicable only to a single group of related conditions or a single organ system.**

- ***Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD)**

- **NICHD approaches of interest**

- Measures that draw from multiple sources and multiple respondents
- Studies that delineate similarities and differences between self-report, parent/caregiver report, and parent/caregiver proxy report
- Measures that are sensitive to change over time and developmental stages
- Methods to assess young adult/midlife outcomes of MCCs in childhood
- Methods for capturing impact of MCCs on health outcomes of closely intertwined persons
 - Impact of MCCs in pregnant women on offspring
 - Impact of MCCs in parents on children
 - Impact of MCCs in children on parents/caregivers/siblings (aside from stress/mental health outcomes)

- **NICHD topic areas of interest**

- Maternal morbidity and mortality among women with MCCs
- Transition of adolescents with MCCs to adulthood
- Outcomes of MCCs emanating from multiple organ dysfunction syndrome (MODS) in childhood

NICHD will not support efficacy or effectiveness clinical trials through this FOA.

- ***Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD)**
 - **NICHD Interests: Mechanisms**
 - Polypharmacy in NICHD priority populations with MCCs
 - Pharmacokinetic/pharmacodynamic medication interactions among individuals prescribed multiple medications for their MCCs
 - **NICHD Interests: Interventions**
 - Interventions to prevent or mitigate the impact of MCCs on maternal morbidity and mortality
 - Interventions to improve transition of adolescents with MCCs to adulthood
 - Interventions to prevent or mitigate MCCs emanating from multiple organ dysfunction syndrome (MODS) in childhood

Any intervention study must use outcome measures shown to be valid in the target population being studied.

- **National Cancer Institute (NCI)**

NCI encourages research to:

- Improve existing measures/methodologies
- Develop and test novel techniques, methods, models (including preclinical animal models), and approaches to managing cancer-related multimorbidity
- Examples include, but are not limited to:
 - Understanding shared genetic susceptibilities, cellular processes, and molecular mechanisms that mediate cancer comorbidities and demonstrate the potential to uncover druggable targets in cancer prevention.
 - Identifying mechanisms responsible for inverse cancer comorbidities with the long-term goal of improving cancer prevention strategies.
 - Chronic conditions as precursors to cancer diagnosis or etiology.
 - Developing/validating methods to manage patient-reported symptoms or functional deficits that can be attributed to more than one chronic condition.

- **National Cancer Institute (NCI)**

NCI interests include observational and intervention research to understand and promote prevention and mitigation of effects of multimorbidity for cancer survivors

- **Examples include, but are not limited to:**

- Multimorbidity and cancer clinical trial accrual; designing clinical trials for real-world clinical practice; the role of eligibility criteria in treatment trials.
- Understanding the context for, and dynamics of, patient-provider decision making for cancer treatment and follow-up care in the context of multimorbidity.
- Interventions targeting clinicians to reduce treatment burden, adverse events, and improved care coordination care for cancer patients/survivors with multimorbidity.
- Development of interventions to prevent the emergence of multimorbidity associated with cancer treatment.

• National Institute on Aging (NIA)

The NIA encourages observational studies focused on measuring multimorbidity in animal models and in adults with MCCs in midlife and at older ages.

- Expansion of single-disease-focused prospective and interventional studies or studies of dominant conditions to include assessment of multimorbidity.
- Novel multimorbidity measures that incorporate geriatric syndromes, for example, cognitive impairment, dementia and Alzheimer's disease, and Alzheimer's disease-related dementias (AD/ADRD).
- Identification and/or initial biological, analytical and clinical evaluation of basic mechanisms or pathways shared by MCCs.
- Proof of concept studies using animal models of MCCs, human tissue, biofluids, or imaging samples to confirm MCC biomarker signatures.
- Development of markers that can assess the same mechanisms in laboratory animal and human studies.
- Longitudinal studies that examine chronic condition onset and trajectory, including the assessment of risk factors and/or underlying [basic] biological mechanisms.
- Development and evaluation of tools which enhance application of multimorbidity measurement and care management into primary care settings.
- Comparative studies of multimorbidity in diverse, underserved, and vulnerable populations.

• National Institute on Aging (NIA)

NIA encourages experimental, observational, or interventional studies focused on prevention of multimorbidity in adults in midlife and at older ages. Observational studies are permitted for the development and planning of future interventional trials.

- Evaluation of beneficial and adverse outcomes from differing prevention strategies for multiple chronic conditions, testing an intervention, or coordinating several interventions.
- Development and testing of simple, low-cost interventions in EHRs to improve physician and patient adherence to prevention and treatment guidelines to accomplish multimorbidity prevention.
- Evaluation of person-centered approaches to prevention strategies for multiple chronic conditions.
- Observational studies in conjunction with intervention development to plan future interventional trials for prevention of three or more chronic conditions.
- Discovery of biological pathways focused on preventing or reducing common risk factors shared by MCCs in the aging population.
- Identifying cellular, molecular, or physiological mechanisms that prevent multiple or comorbid conditions in the elderly.
- Studies utilizing aged models of humans, nonhuman primates, and other mammals will be considered.

• National Institute on Deafness and Other Communication Disorders (NIDCD)

Welcomes applications in which disordered communication processes, including diseases or conditions affecting hearing, balance, taste, smell, voice, speech, and language, are a component of the MCCs being examined.

Populations of interest include both pediatric and adult.

▪ Examples include, but are not limited to:

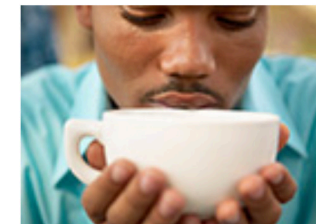
- Development and validation of new approaches to measure hearing, vestibular, or chemosensory deficits in older adults with MCCs, including cognitive impairment.
- Normative data from existing tools across populations with communication disorders and MCCs, including populations that are underserved.
- New approaches to assessing risk for the communication disorder contributing to the development of other disorders/deficits/conditions.



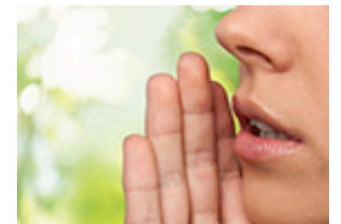
Hearing



Balance



Taste and Smell



Voice, Speech, and Language

Research Priority Areas

Judith A. Cooper, Ph.D.
Scientific/Research Contact
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• National Institute on Deafness and Other Communication Disorders (NIDCD)

Welcomes applications in which disordered communication processes, including diseases or conditions affecting hearing, balance, taste, smell, voice, speech, and language, are a component of the MCCs being examined.

Populations of interest include both pediatric and adult.

▪ Examples include, but are not limited to:

- Intervention work (including screening) that evaluates the effect, feasibility, and accessibility of existing interventions in people with cognitive deficits and hearing, vestibular, speech/language, or chemosensory impairment.
- Evaluating the effectiveness of the provision of services and outcomes for patients with communication disorders and MCCs.
- Studies related to disease pathogenesis and genetic factors that underlie structure, function, and the biology of communication disorders, and underlying syndromes and their functional consequences for the purpose of developing comparative studies of multimorbidity in diverse, underserved, and vulnerable populations.



Hearing



Balance



Taste and Smell



Voice, Speech, and Language

• National Center for Complementary and Integrative Health (NCCIH)

NCCIH will support research to improve or develop methods, measurement, data collection, and data analyses techniques for complementary and integrative health approaches designed to prevent and/or treat MCCs that impact multiple physiological systems, such as nervous system, musculoskeletal and fascia systems, cardiovascular systems, endocrine system, gastrointestinal system, and immune system.

▪ Examples include, but are not limited to:

- Development and validation of measures relevant for assessing complementary and integrative health approaches used for MCCs in diverse populations.
- Development or refinement of biosensor/mHealth measurement approaches for real-time assessment of symptoms of MCCs.
- Secondary analyses of existing data and biorepositories to develop, test, and validate novel data analytic methodologies.

NCCIH will not fund research proposing efficacy or effectiveness clinical trials through this FOA.

• National Center for Complementary and Integrative Health (NCCIH)

NCCIH will support research to understand the mechanisms of action through which complementary and integrative health approaches impact MCCs that impact multiple physiological systems, such as nervous system, musculoskeletal and fascia systems, cardiovascular systems, endocrine system, gastrointestinal system, and immune system.

▪ Examples include, but are not limited to:

- Identifying interventions including biobehavioral or physiological processes that are designed to enhance capacity for self-management and consideration of non-pharmacologic approaches in the prevention and management of MCCs.
- Multimorbidity studies that examine factors related to constructs such as: adverse childhood experiences, functional status, and geriatric symptoms (such as falls, polypharmacy, urinary incontinence, dementia, frailty, and malnutrition).

NCCIH will not fund research proposing efficacy or effectiveness clinical trials through this FOA.

• Office of Research on Women's Health (ORWH)

- ORWH signed on and published a notice ([NOT-OD-20-150](#)) in response to ODP funding announcement [PAR-20-179](#). ORWH encourages applications on research relevant to the health of women. Potential research topics include projects proposing to develop:
 - Interventions to reduce multiple morbidities among understudied, underrepresented, and underreported women with co-occurrence of cardiovascular disease, gynecologic pain syndromes, diabetes mellitus, chronic lung disease, or obesity.
 - Descriptive studies using quantitative and qualitative methods to expand understanding of differences in chronic comorbidity.
 - Research exploring secondary data analyses aimed at the discovery of new phenotypes or new mechanisms to assess known phenotypic characteristics in females/males, and its relationship to disease etiology and impact on overall morbidity.

Funding is subject to availability of ORWH co-funds.

- **Office of Research on Women Health (ORWH)**

- ORWH signed on and published a notice ([NOT-OD-20-151](#)) in response to ODP funding announcement [PAR-20-180](#). ORWH encourages applications on research relevant to the health of women. ORWH is interested and supports research:
 - Examining the role of sex and gender in pathways to multiple morbidities.
 - Studying the mechanisms of multimorbidity through heritable influences.
 - Identifying or modeling clinically meaningful phenotypes to elucidate mechanisms underlying the manifestation and impact of the phenotype on/in multiple systems.
 - Conducting multidisciplinary studies that advance integrative, sex phenotyping to guide translational research questions of MCCs and create more innovative and precise use of existing therapeutic tools.
 - Conducting longitudinal studies of normative development on MCCs in special populations of women, such as racial and ethnic minority populations of women, women with complex health needs, women residing in rural or underserved urban areas, women in migrant and immigrant populations, women experiencing homelessness or living in overcrowded congregate housing, or women involved with the criminal system (incarcerated or under community supervision).

- **National Institute on Drug Abuse (NIDA)**

NIDA encourages research on prevention of substance-use related MCCs, including studies to understand mechanisms underlying intervention effectiveness. Prevention intervention studies targeting common risk and protective factors for substance-use related MCCs across the lifespan are encouraged. In addition, studies should attend to the settings and systems where interventions to prevent substance-use related MCCs would be implemented and incorporate relevant involvement of stakeholders in the research process.

- **Areas of interest include, but are not limited to:**

- Novel prevention intervention studies that target risk factors for co-occurring substance use and related chronic conditions (e.g., co-occurring psychiatric and physical health conditions).
- Use of existing substance use prevention intervention datasets to examine mechanisms of substance use related MCCs.
- Studies to augment existing substance use treatment interventions and examine their impact on MCCs (e.g., effect of substance use treatment on prevention of psychiatric comorbidities such as depression and suicide).
- Studies that leverage methods for integrative data analysis of existing prevention intervention studies to examine prevention of substance use related MCCs.

• National Institute of Mental Health (NIMH)

NIMH is interested in developmentally focused, theoretically informed research on the prevention of mental health-related multimorbidity or MCCs that spans the life course. NIMH support for clinical trials research follows an experimental therapeutics approach, whereby clinical trials are designed, not only to test the intervention effects on outcomes of interest, but also to inform understanding of the intervention's mechanisms of action. See the [Support for Clinical Trials at NIMH](#) web page for information regarding dedicated FOAs for NIMH clinical trials research support.

- Areas of interest include, but are not limited to:
 - Research aimed at identifying and intervening on common mechanisms of risk across mental health disorders, SUDs, and suicide, including studies testing whether intervening on common underlying risk/etiological factors improves outcomes across conditions.
 - Integrate/harmonize existing data sets from preventive intervention trials implemented earlier in life to determine whether there are long-term effects, and/or cross-over effects (e.g., unanticipated beneficial effects), on mental health and comorbidities, and to better understand mechanisms that might account for the effects.
 - Clinical trials to optimize and test scalable intervention strategies for preventing comorbidities common for youth (e.g., mental health, suicide ideation and behaviors, substance use, violence).

• National Institute on Minority Health and Health Disparities (NIMHD)

NIMHD is interested in projects that address interventions for multimorbidities that are more prevalent in health disparity populations. Projects are encouraged that encompass multiple domains (e.g., biological, behavioral, socio-cultural, environmental, physical environment, health care system) and multiple levels (e.g., individual, interpersonal, community, societal) to effectively address multimorbidities among health disparity populations.

- Key criteria for interventions are detailed in the FOA.
- Areas of interest include, but are not limited to:
 - Health impact assessment of existing or planned policies or programs on the prevention or management of multimorbidity.
 - Evaluation of natural experiments, programs, and policies that may affect the onset or management of multimorbidity.
 - Partnerships between health and non-health sectors to implement new interventions or expand existing ones to delay the onset or improve the management of multimorbidity.
 - Studies of how primary care centers (including Federally-Qualified Health Centers) can partner with community resources to delay the onset or improve the management of multimorbidity.

- **National Institute of Nursing Research (NINR)**

The NINR supports research that can build the scientific foundation for clinical practice, prevent disease and disability, manage and eliminate symptoms caused by illness, and enhance end-of-life and palliative care.

- In the context of this FOA, examples of research areas of interest include, but are not limited to:
 - Development of efficacious and sustainable mHealth technologies that improve quality of life for individuals with MCCs.
 - Identification of factors that contribute to family or caregivers' effective promotion of patient behaviors such as adherence and self-management that lessen the impact of MCCs.

• Office of Behavioral and Social Sciences Research (OBSSR)

- Promotes the use of behavior change strategies as core elements to facilitate the success of biologic and social science interventions. This includes studying not only the mechanisms and pathways of action, but the interactions between behavioral and biologic mechanisms within the context of social determinants of health.
- OBSSR promotes diverse trial design and evaluation approaches to establish feasibility of and applicability to diverse and under-resourced populations across the lifespan. These range from community-based natural experiments to highly controlled RCTs and policy implementation.
- OBSSR is interested in promoting successful interventions that can be implemented and scaled up for intended populations in intended settings, thus improving the potential for generalizability and reach. Ability to aggregate data with existing evidence is of strong interest.

- **Office of Disease Prevention (ODP)**

- **Interest in research that includes, but is not limited to, studies that:**

- Promote the best available methods in prevention research.
- Have promise for improving the measurement and methodological evaluation of multimorbidity and its outcomes, including applications that propose development of new MCC measures, tools, or analytic approaches.
- Have strong implications for disease prevention and make use of innovative design, measurement, and analytic methods relevant to the overall objectives of this FOA.

ODP does not award grants. Applications must also be relevant to the objectives of at least one of the participating NIH ICs listed in the FOA.

- **Office of Disease Prevention (ODP)**

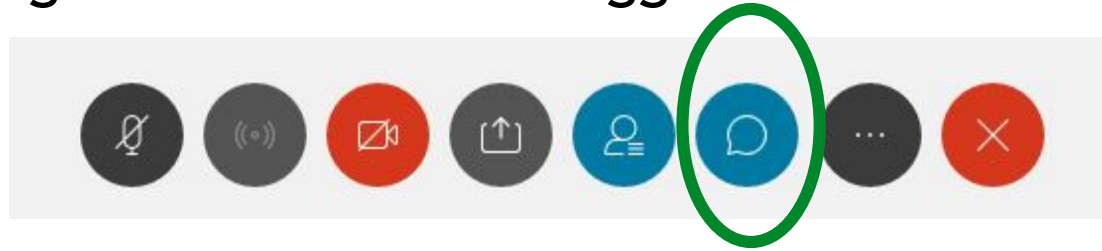
- **Interest in research that includes, but is not limited to, studies that:**

- Use interventions or observational research designs that have promise for:
 - Characterizing trends in the co-occurrence of MCCs
 - The mechanisms for development of co-occurring MCCs
 - The study of intervention to prevent or delay the onset of multimorbidity.
- Include interventions with strong implications for disease prevention and make use of innovative design, measurement, and analytic methods relevant to the overall objectives of this FOA.

ODP does not award grants. Applications must also be relevant to the objectives of at least one of the participating NIH ICs listed in the FOA.

Q&A Session

- Participants will remain muted throughout the Q&A session.
- Submit questions through the WebEx **chat box** (right side of your screen).
 - Click “talking bubble” icon to toggle on and off.



- Reference a **specific IC presenter**, **FOA #**, or **notice #**, when appropriate.
- Priority will be given to questions that were submitted in advance of the webinar.
- All materials will be posted on the ODP website listed below:

prevention.nih.gov/MultimorbidityWebinar

Thank You

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