

The NIH Office of Disease Prevention

May 24, 2022

NINR Council

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National Institutes of Health



National Institutes of Health
Office of Disease Prevention

NIH Office of Disease Prevention (ODP)



Mission:

Improve public health by increasing the scope, quality, dissemination, and impact of prevention research supported by the NIH.

Provide leadership for the development, coordination, and implementation of prevention research in collaboration with NIH Institutes and Centers and other partners.

Strategic Priorities and Cross-Cutting Themes

Conduct Portfolio Analysis & Impact Assessment



Identify Research Gaps



Improve Research Methods

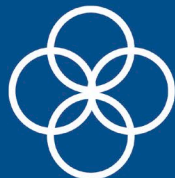


CROSS-CUTTING THEMES

- » Leading Causes and Risk Factors for Premature Morbidity and Mortality
- » *Health Disparities**
- » Dissemination and Implementation Research



Promote Collaborative Research



Advance Tobacco Regulatory & Prevention Science



Communicate Efforts & Findings

*The ODP elevated Health Disparities from a cross-cutting theme to a new Strategic Priority in 2022

Address Health Disparities



Portfolio Analysis is One of ODP's Strategic Priorities

- ODP defines prevention research to include primary and secondary prevention in humans, together with relevant methods development.
- ODP's definition includes research designed to promote health; to prevent onset of disease, disorders, conditions, or injuries; and to detect and prevent the progression of asymptomatic disease.
- For ODP, prevention research includes studies for:
 - Identification and assessment of risk and protective factors,
 - Screening and identification of individuals and groups at risk,
 - Development and evaluation of interventions to reduce risk,
 - Translation, implementation, and dissemination of effective interventions into practice,
 - Development of methods to support prevention research.

Coding Based on a Prevention Research Taxonomy

- A classification system to characterize projects or subprojects on:
 - Study Focus
 - Rationale
 - Exposures
 - Outcomes
 - Population focus
 - Study design/purpose
 - Prevention research category
- 140 topics, 29-page protocol
 - Applied to title, abstract, public health significance
- Input from the Prevention Research Coordinating Committee.

Appl ID _____ PI Last Name: _____ Project Title: _____

A. Study focus	A.1. Rationale	A.2. Exposure	A.3. Outcome
1. Alcohol			
2. Alzheimer's disease			
3.			
4. Blood disorder			
5. Blood pressure			
6. Cancer			
7. Chemical/toxin			
7a. Air pollution			
8. Cholesterol			
9. Diabetes			
10. Diet			
11. Education/counseling			
12. Firearms			
13. Gastrointestinal disease			
14. Genetics			
15. Healthcare delivery			
16. Heart disease			
17. HR quality of life			
18. Infectious disease			
18a. HIV/AIDS			
19. Kidney disease			
20. Lung disease			
21. Maternal/paternal/child health			
22. Medication/device			
23. Mental health			
24. Microbiome			
25. Mortality			
26. Motor vehicle crash			
27. Musculoskeletal disease			
28. Neurological disease (not Alzheimer's)			
29. Obesity			
30. Physical activity			
31. Policy/built environment			
32. Pneumonia/influenza			
33. Sexual behavior			
34. Stress			
35. Stroke			
36. Substance abuse			
37. Suicide			
38. Surgery			
39. Tobacco			
40. Unintentional injuries			
41. Vaccine			
42. Violence			
43. Other or unclear			

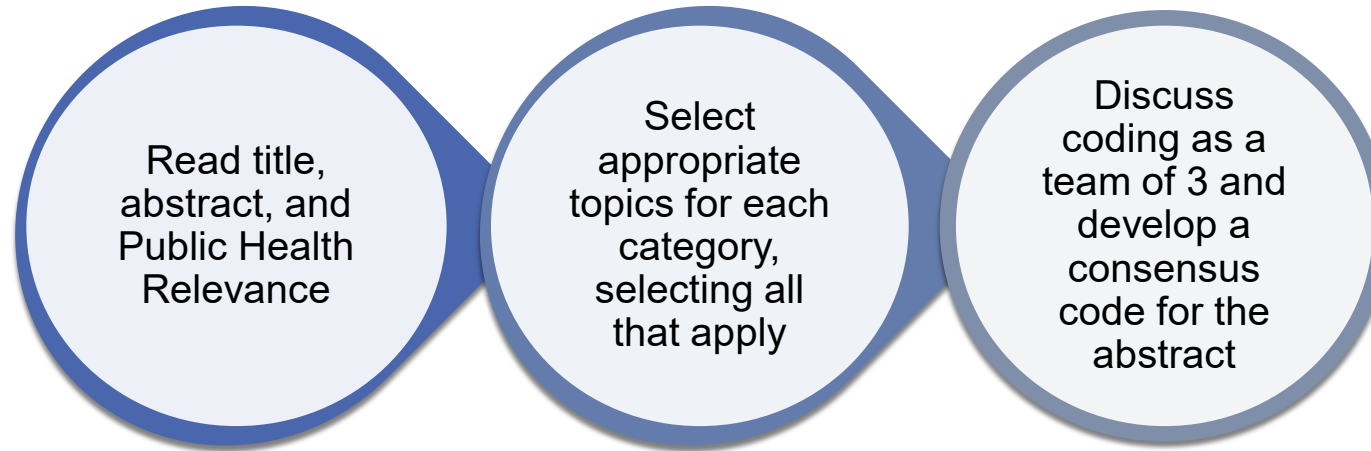
D. Population focus	
1. Incarcerated/institutionalized	
2. Sexual or gender minorities	
3. Low income	
4. Military/veterans	
5. Older adults/elderly	
6. People with disabilities	
7. Pregnant and/or post-partum women	
8. Rural	
9. Urban	
10. Youth (infants, children, adolescents)	
11. Other or unclear	

E. Study design/purpose	
1. Analysis of existing data	
2. Methods research	
3. Non-randomized intervention study	
4. Observational study	
5. Pilot/feasibility/proof-of-concept/safety	
6. Randomized intervention study	
7. Other or unclear	

F. Prevention research category	
1. Preventing new health condition, promoting health in the general population, or identifying risk factors for a new health condition	
2. Screening for risk factor	
3. Screening for early disease	
4. Preventing progression of disease, preventing recurrence in those with a known health condition, identifying risk factors for progression or recurrence	
5. Methods research	
6. Other or unclear	

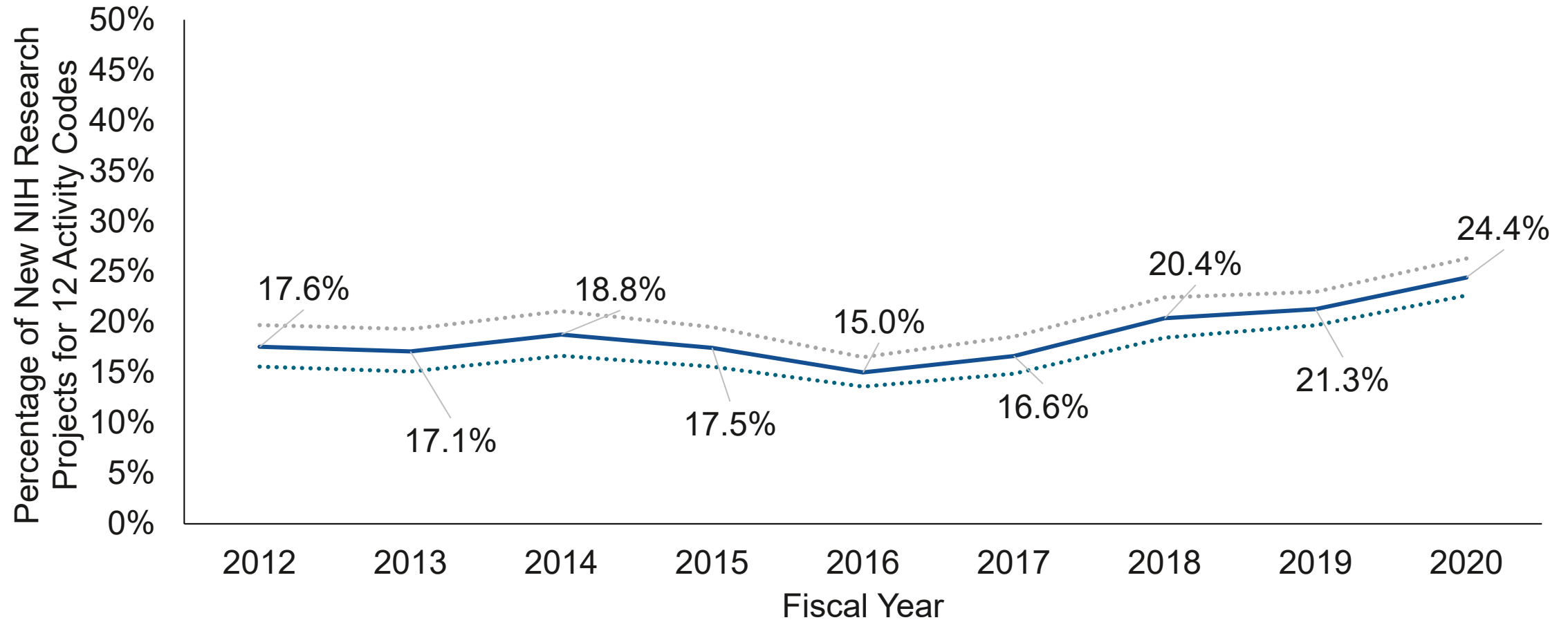
G. Research flags	
1. Partial	
2. Infrastructure	
3. International research	
4. Occupational risk	
5. Health economics	
6. Unclear or none	

Team-Based Coding



- Coders
 - MPH grads led and overseen by ODP staff
 - 2 months training in groups of 3-4
- 3-person teams coded abstracts
 - Each person coded independently, then the team resolved disagreements to generate a set of consensus codes for each project
 - ODP coded 5% of the abstracts weekly for QC using the same methods
 - ODP reconciled discrepancies with the contract coding teams
- Average interrater agreement was 0.85 for FY12-20.

Percentage of New Research Projects Used for New Primary and Secondary Prevention Research in Humans

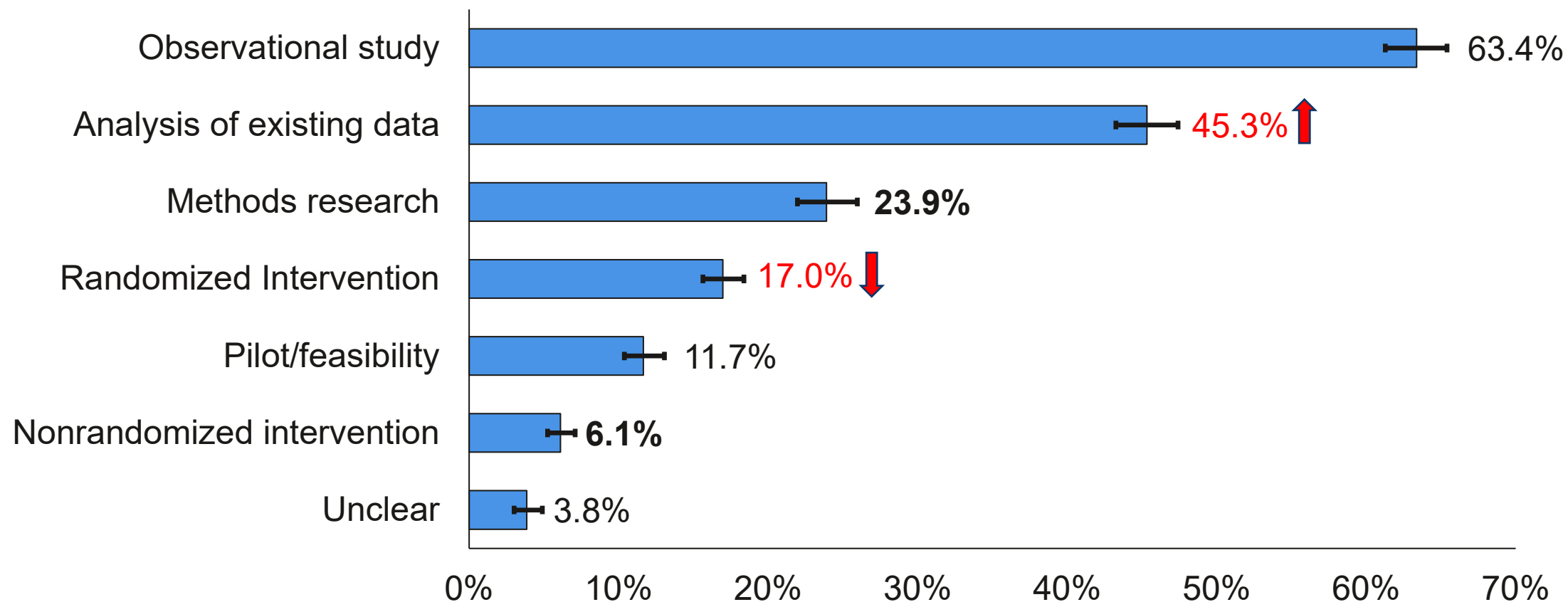


Leading Risk Factors for Death in New Primary and Secondary Prevention Research in Humans (FY12-20)

Category	% NIH Prevention Projects	% NIH Prevention Dollars	2019 GBD % Attributable Deaths
Any Top Risk Factor for Death	31.8% (29.9-33.7)	31.4% (28.1-34.7)	60.9
↓ Multiple Top Risk Factors for Death	8.6% (7.8-9.5)	9.5% (7.0-12.0)	(-)
↓ Tobacco	5.7% (5.0-6.6)	4.7% (4.0-5.4)	18.7
High systolic blood pressure	2.9% (2.4-3.5)	3.4% (2.6-4.2)	16.8
High fasting plasma glucose	4.6% (3.9-5.5)	5.8% (3.3-8.4)	14.9
Dietary risk	7.3% (6.4-8.3)	6.3% (5.5-7.2)	14.2
High body mass index	4.9% (4.3-5.5)	5.5% (3.0-7.9)	13.4
High total cholesterol	1.6% (1.3-1.9)	1.6% (1.2-2.1)	7.7
Impaired kidney function	1.6% (1.1-2.3)	1.6% (1.0-2.1)	7.3
↓ Alcohol	4.9% (4.3-5.6)	3.9% (3.4-4.3)	4.6
Drug Use	7.2% (6.3-8.2)	8.7% (7.2-10.3)	3.6
Low physical activity	4.6% (4.0-5.3)	4.4% (3.8-5.0)	1.3

Percentages are for new NIH prevention research projects for 12 activity codes that measured each risk factor as an exposure or outcome. Topics in red show a significant change in FY12-20. Coders selected all topics that applied to each project; percentages do not sum to 100%.

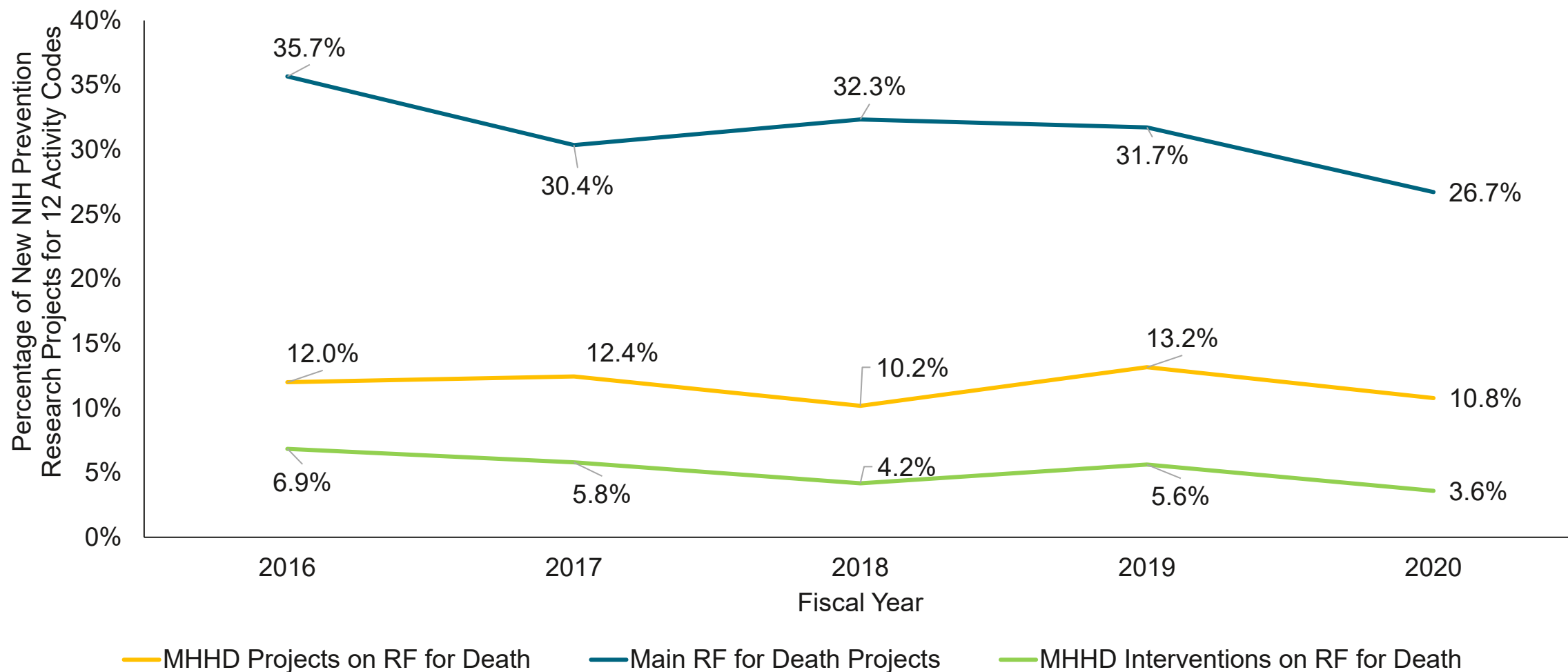
Study Designs in New Primary and Secondary Prevention Research Projects in Humans (FY12-20)



Percentages are for new NIH prevention research projects for 12 activity codes that included each study design. Topics in **bold** changed their definition or were new in FY18-20; topics in **red** show a significant change in FY12-20. Coders selected all topics that applied to each project; percentages do not sum to 100%.

NIH Prevention Research: Addressing Minority Health and Health Disparities

Percentage of New Prevention Research Projects focused on MHHD and the Leading Risk Factors for Death



MHHD Interventions for Leading Risk Factors for Death in New Primary and Secondary Prevention Research in Humans (FY16-20)

Category	% NIH Prevention Projects	% NIH Prevention Dollars	2019 GBD % Attributable Deaths
↓ Any Top Risk Factor for Death	5.0% (4.4-5.7)	6.4% (5.0-7.8)	60.9
↓ Multiple Top Risk Factors for Death	1.7% (1.5-2.0)	2.0% (1.6-2.4)	(-)
↓ Tobacco	1.0% (0.9-1.2)	0.9% (0.8-1.0)	18.7
↓ High systolic blood pressure	0.6% (0.4-0.7)	0.8% (0.4-1.1)	16.8
↓ High fasting plasma glucose	0.5% (0.4-0.7)	0.7% (0.3-1.0)	14.9
↓ Dietary risk	1.5% (1.3-1.8)	1.8% (1.4-2.2)	14.2
↓ High body mass index	1.2% (1.1-1.4)	1.2% (1.0-1.3)	13.4
↓ High total cholesterol	0.2% (0.2-0.3)	0.2% (0.2-0.3)	7.7
↓ Impaired kidney function	0.1% (0.0-0.1)	0.1% (0.1-0.1)	7.3
Alcohol	0.7% (0.6-0.8)	0.6% (0.5-0.7)	4.6
Drug Use	0.9% (0.7-1.2)	2.4% (1.2-3.6)	3.6
↓ Low physical activity	1.2% (0.8-1.9)	1.4% (0.8-2.0)	1.3

Percentages are for new NIH prevention research projects for 12 activity codes that measured each risk factor as an exposure or outcome. Topics in red show a significant change in FY16-20. Coders selected all topics that applied to each project; percentages do not sum to 100%.

ADVANCE as a Trans-NIH Effort

- Beginning in late 2020, ODP discussed these findings with the ICOs to assess their interest in a new initiative...
 - To promote preventive intervention research with populations that experience health disparities.
 - To be driven and supported by participating ICOs and coordinated by ODP.
- ODP presented this plan to the IC Directors in February 2021.
 - Broad support for developing more intervention and D&I research to address health disparities.
- 24 ICOs agreed to participate in initial planning discussions:
 - NCCIH, NCI, NEI, NHLBI, NIA, NIAAA, NIAMS, NIBIB, NICHD, NIDA, NIDCR, NIDDK, NIEHS, NIGMS, NIMH, NIMHD, NINDS, NINR, OAR, OBSSR, ONR, ORWH, SGMRO, THRO

ADVANCE Workgroups

- ICOs decide which workgroups to join and who their representatives will be.
- Workgroups
 - Co-chaired by the ODP and an ICO representative.
 - Encouraged to think broadly about prevention research priorities, gaps, and opportunities in their area; target populations; age groups.
 - Decide whether to pursue portfolio analyses, RFIs, meta-analyses, workshops or other preliminary activities as a prelude to FOAs.
 - Determine content of their FOA(s), including those that may be workgroup-specific or span multiple workgroups.
 - Establish timeline for their work.

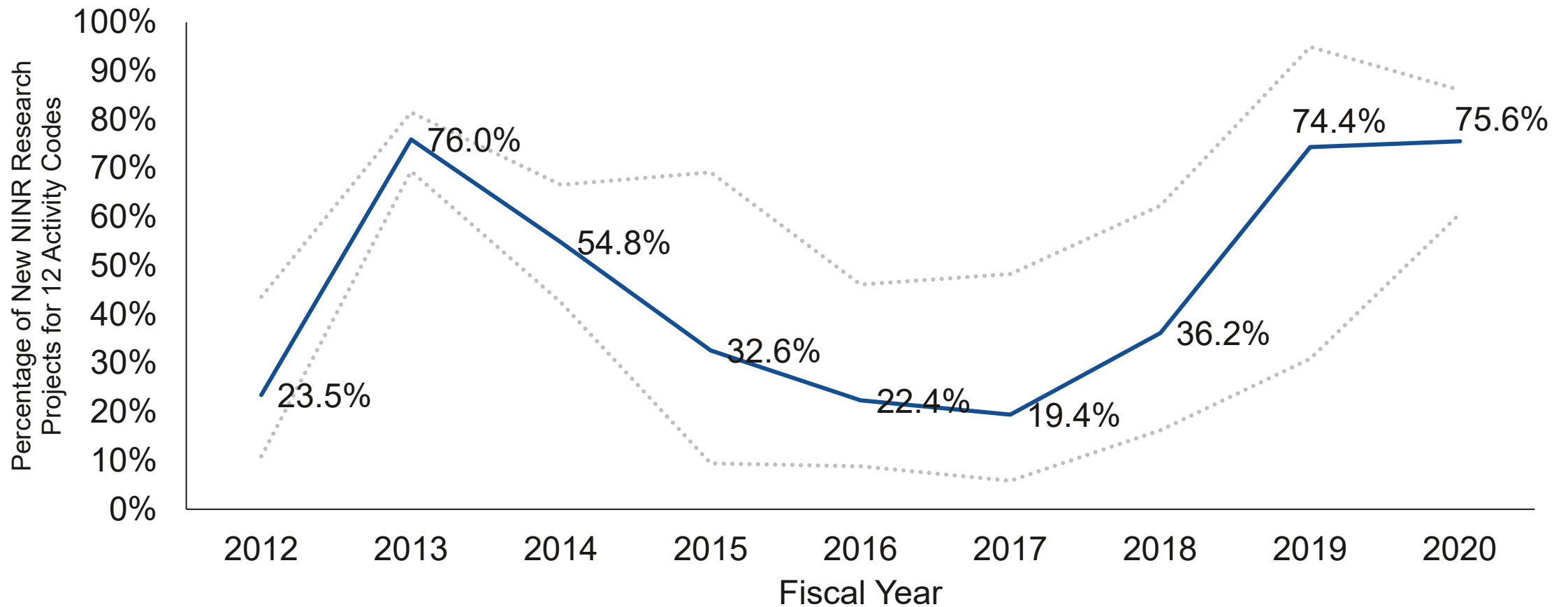
Cardiometabolic	Alcohol, Tobacco, & Other Drugs
Cancer	Mental Health

Focus Areas across ADVANCE FOAs

- Focus on NIH-designated populations experiencing health disparities (HD)
 - Racial/ethnic minorities, sexual and gender minorities, socioeconomically disadvantaged populations, underserved rural populations
 - Other priority populations included in combination with HD populations
- Emphasis on prospective preventive interventions
 - Primary/secondary OR universal prevention
 - Testing of new interventions or new implementation strategies
 - RCTs or rigorous quasi-experimental designs

Results Specific to NINR

Percentage of New NINR Projects focused on Primary and Secondary Prevention Research in Humans

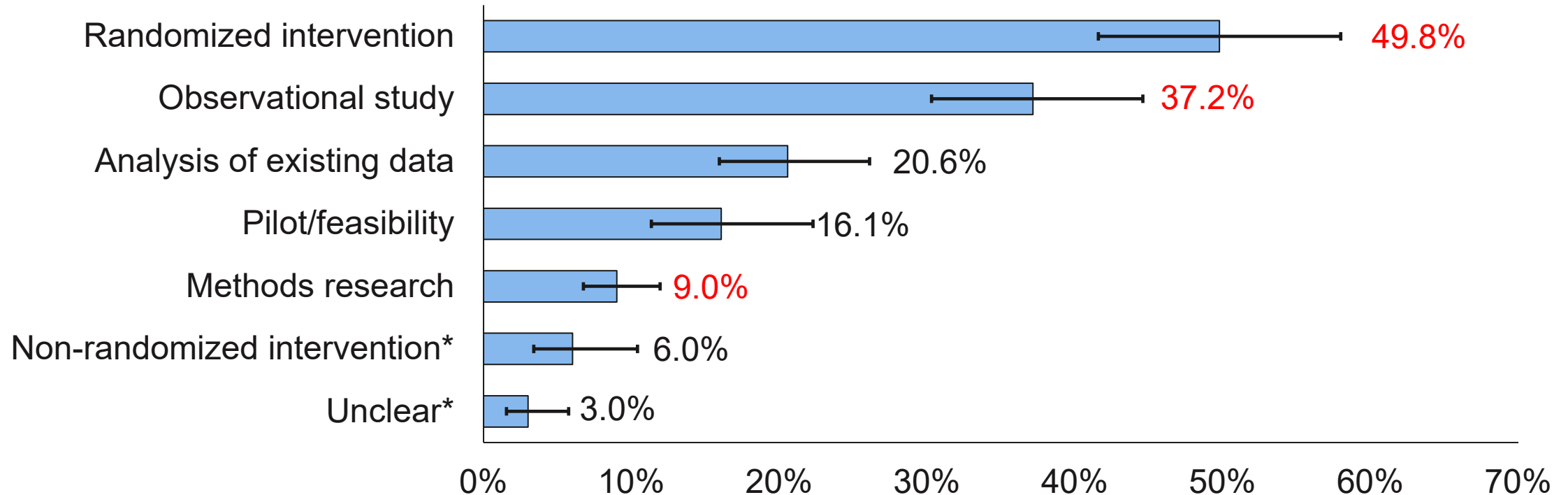


Leading Risk Factors for Death in New NINR Primary and Secondary Prevention Research in Humans (FY12-20)

Category	% New NINR Prevention Projects	% New NINR Prevention Dollars	2019 GBD % Attributable Deaths
Any Top 10 Risk Factor for Death	35.7% (29.4-42.6)	35.7% (29.0-42.5)	60.9
Multiple Top Risk Factors for Death	12.6% (9.2-17.0)	13.3% (8.8-17.7)	(-)
Tobacco	0.5% (0.4-0.6)	0.6% (0.0-2.1)	18.7
High systolic blood pressure	6.5% (4-10.6)	6.4% (3.5-9.3)	16.8
High fasting plasma glucose	4.5% (2.9-7.0)	5.0% (2.6-7.4)	14.9
Dietary risk	13.6% (10.1-18.0)	14.3% (9.5-19.1)	14.2
High body mass index	9.6% (6.7-13.5)	9.1% (6.2-12.0)	13.4
High total cholesterol	4.0% (2.1-7.6)	3.5% (1.9-5.0)	7.7
Impaired kidney function	0.0% (0.0-0.0)	0.0% (0.0-0.0)	7.3
Alcohol	0.0% (0.0-0.0)	0.0% (0.0-0.0)	4.6
Drug use	3.0% (1.6-5.5)	3.0% (1.9-4.0)	3.6
Low physical activity	16.6% (12.7-21.4)	16.7% (12.3-21.1)	1.3

Percentages are for new NINR prevention research projects for 12 activity codes that included each risk factor as an exposure or outcome. Coders selected all topics that applied to each project; percentages do not sum to 100%.

Study Designs in New NINR Primary and Secondary Prevention Research in Humans (FY12-20)



Percentages are for new NINR prevention research projects for 12 activity codes that included each study design. Coders selected all topics that applied to each project; percentages do not sum to 100%. Topics in red show a significant change in FY12-20.

* Estimate based in less than 10 observations.

MHHD Interventions Focused on Leading Risk Factors for Death in New Primary and Secondary Prevention Research in Humans (NINR, FY16-20)

Category	% NINR Prevention Projects	% NINR Prevention Dollars	2019 GBD % Attributable Deaths
Any Top Risk Factors for Death	17.2% (12.5-23.2)	18.3% (13.5-23.2)	60.9
Multiple Top Risk Factors for Death	7.4% (5.5-9.9)	6.8% (5.5-8.0)	(-)
Tobacco	0.8% (0.6-1.1)	0.9% (0.0-3.2)	18.7
High systolic blood pressure	3.3% (2.4-4.5)	3.6% (3.0-4.2)	16.8
High fasting plasma glucose	2.5% (1.9-3.2)	2.6% (0.0-6.4)	14.9
Dietary risk	8.2% (5.1-13.0)	8.2% (3.4-13.0)	14.2
High body mass index	4.9% (3.6-6.8)	4.7% (3.6-5.8)	13.4
High total cholesterol	1.6% (1.1-2.5)	1.8% (1.2-2.4)	7.7
Impaired kidney function	0.0% (0.0-0.0)	0.0% (0.0-0.0)	7.3
Alcohol	0.0% (0.0-0.0)	0.0% (0.0-0.0)	4.6
Drug use	3.3% (2.4-4.5)	3.8% (3.0-4.6)	3.6
Low physical activity	7.4% (5.6-9.7)	6.8% (6.0-7.5)	1.3

Percentages are for new NINR prevention research projects for 12 activity codes that measured each risk factor as an exposure or outcome. Topics in red show a significant change in FY16-20.

Summary

- Prevention represents 24.4% of research projected funded by NIH and 75.6% of research projects funded by NINR.
- Intervention research addressing the leading risk factors for death and disability in populations experiencing health disparities represents 3.6% of NIH prevention research and 17.2% of NINR prevention research.
- ADVANCE is a new initiative from ODP to stimulate more intervention research across NIH to address the leading risk factors in populations experiencing health disparities.
- ADVANCE has 4 workgroups and NINR is active on all 4.
- NINR and ODP collaborate on a variety of other activities, including our work with the USPSTF, our work on health and housing, several prevention related scientific interest groups, and other trans-NIH funding opportunities.