Blueprint for the Use of Social and Behavioral Science to Advance Evidence–Based Policymaking

A Report by the
SUBCOMMITTEE ON SOCIAL AND BEHAVIORAL SCIENCES OF THE

COMMITTEE ON SCIENCE

of the
NATIONAL SCIENCE AND TECHNOLOGY COUNCIL

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About the Subcommittee on Social and Behavioral Sciences

The Subcommittee on Social and Behavioral Sciences was rechartered in response to the charges of the Foundations for Evidence-Based Policymaking Act of 2018; the January 20, 2021 Executive Order on Advancing Racial Equity and Support of Underserved Communities Through the Federal Government; and the January 27, 2021 Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking, to prioritize and expand the scope of evidence-based methods in support of federal policymaking. The Subcommittee provides executive departments and agencies a forum for discussing the use of social and behavioral science methods and evidence to promote these goals in light of these disciplines' unique role in describing, understanding, and addressing societal challenges and assessing and evaluating initiatives, programs, and policies promulgated by the federal government.

About this Document

As outlined in the charter for the Subcommittee on Social and Behavioral Sciences, the Blueprint for the Use of Social and Behavioral Science to Advance Evidence-Based Policymaking aims to provide a resource to assist federal decision-makers in leveraging social and behavioral science to improve policy and program design and delivery.

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Acronyms

AHRQ	Agency for Healthcare Research and Quality
APHIS	U.S. Department of Agriculture Animal and Plant Health Inspection Service
ASPE	Health and Human Services Office of the Assistant Secretary for Planning and Evaluation
BOEM	Bureau of Ocean Energy Management
CDC	Centers for Disease Control and Prevention
CEQ	Council on Environmental Quality
DHS	Department of Homeland Security
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOJ	Department of Justice
DOL	Department of Labor
ED	Department of Education
EPA	Environmental Protection Agency
FCC	Federal Communications Commission
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FNS	Food and Nutrition Service
FWS	Fish and Wildlife Service
GSA	General Services Administration
HHS	Department of Health and Human Services
HRSA	Health Resources and Services Administration
HUD	Department of Housing and Urban Development
NASA	National Aeronautics and Space Administration
NEA	National Endowment of the Arts
NIH	National Institutes of Health
NIJ	National Institute of Justice
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NSF	U.S. National Science Foundation
NTIA	National Telecommunication and Information Administration

OPM	Office of Personnel Management
OSTP	White House Office of Science and Technology Policy
SAMHSA	Substance Abuse and Mental Health Services Administration
SSA	Social Security Administration
USAID	United States Agency for International Development
USDA	Department of Agriculture
USGS	United States Geological Survey

Executive Summary

A parent must decide whether to undergo a health screening when struggling to find time between work and childcare responsibilities amid worries about potential out-of-pocket costs from the procedure. A local non-profit is working to reduce community youth violence through a new program focused around mentorship and educational support. A mid-career professional is trying to decide if they should pursue additional skills training after an unexpected wave of layoffs in their industry. Federal program administrators are trying to find effective methods of ensuring that a new grant program is supporting a diverse array of communities and applicants, but receive fewer submissions than expected from historically-marginalized communities most in need of additional support.

The social and behavioral sciences examine if, when, and how fundamental human processes influence outcomes and decisions. Human behavior is a key component of every major national and global challenge we face. Infectious and chronic diseases, national security, public safety and trust, climate and disaster preparedness, economic opportunity, traffic safety, and educational and employment disparities are just a few examples. The success of all federal government initiatives relies on human behavior in some way.

Social and behavioral science is already integral to the missions of departments and agencies across the federal government. For example, the National Highway Traffic Safety Administration's mission is to "save lives, prevent injuries, and reduce economic costs due to road traffic crashes, through education, research, safety standards and enforcement activity."[1] Social and behavioral science research in the 1970s lead to the 1986 requirement of an elevated third brake light on cars based on evidence that rear-end crashes often came as a result of drivers failing to notice the traditional pair of lower brake lights.[2] Research a decade after the requirement found that the additional light added $12 to the price of a car and prevented as many as 70,000 injuries and up to $655 million in costs annually.[3] Despite the already profound influence of social and behavioral science on federal policymaking, there is much more that we can and need to do to effectively leverage these insights.

The social and behavioral sciences play an essential role in fulfilling the promise of evidence-based policies that deliver these outcomes across America and among all Americans by informing the conceptualization, development, implementation, dissemination, and evaluation of interventions, programs, and policies that address each of our national priorities.[4, 5] Successfully leveraging social and behavioral science allows the federal government to produce more efficient and effective efforts with more positive, meaningful, and equitable outcomes for all individuals. The failure to understand and address the social and behavioral dimensions of issues reduces effectiveness of policies, programs, and outcomes for the American public and risks unintended consequences.[6] Without the effective integration of social and behavioral science, federal policies and programs simply cannot achieve their intended outcomes.

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[1] https://www.nhtsa.gov/about-nhtsa/nhtsas-core-values
[2] https://nap.nationalacademies.org/read/23673/
[3] https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/chmsl_complete.pdf
[4] https://obssr.od.nih.gov/about/strategic-plan
[5] https://nap.nationalacademies.org/catalog/24790/the-value-of-social-behavioral-and-economic-sciences-to-national-priorities
[6] https://obssr.od.nih.gov/about/bssr-definition

The social and behavioral sciences encompass a diverse array of disciplines that focus on how and why people act as they do. This includes understanding multiple levels of influence—from individuals and families to communities, organizations, and society. Through careful analysis of human behavior and its causes, social and behavioral science moves us beyond intuition and anecdotes toward a more complete, systematic, and representative understanding of the complex processes that govern how people and societies think and act in practice.

This Blueprint is a whole-of-government effort that aims to provide a resource to assist federal decision-makers in leveraging social and behavioral science to improve policy and program design and delivery. To do so, it:

- Defines the social and behavioral sciences and tools they provide;
- Identifies the value of social and behavioral science in advancing our national priorities;
- Provides a framework for using social and behavioral science to advance evidence-based policymaking;
- Offers recommendations for implementing the framework; and
- Highlights pathways and opportunities for partners, organizations, and communities outside of the federal government to support these efforts moving forward.

A technical companion provides guidance for using the framework in practice across national priorities, highlights efforts already underway across the federal government, and identifies cross-cutting challenges and opportunities to leverage social and behavioral science.

To advance the use of social and behavioral science in policymaking, we recommend that federal decision-makers incorporate the following steps into their processes:

1. Identify policy areas that would benefit from a better understanding and application of human behavior and outcomes;
2. Consider potential social and behavioral science insights that affect relevant policy outcomes while identifying the consequences of these insights for policy and program conceptualization, design, and implementation;
3. Synthesize available knowledge to identify promising practices with a strong body of evidence for effectiveness;
4. Identify the most appropriate ways to translate these insights into action given available policy tools;
5. Implement and disseminate policy and program information informed by social and behavioral science-informed approaches; and
6. Evaluate efforts through rigorous evaluation using the most appropriate social and behavioral science methods and available data.

To continue developing the infrastructure that will enable federal agencies and offices to incorporate social and behavioral science through the preceding steps effectively, we recommend federal entities take immediate action to:

1. Invest in the continued building and strengthening of dynamic and durable evidence ecosystems to support evidence-based policymaking;
2. Promote meaningful engagement and partnership by strengthening connections between the federal government, the public, private, and non-profit sectors, and communities;
3. Reduce barriers by increasing buy-in for social and behavioral science from senior leadership across the federal government, reducing administrative burdens for social and behavioral science evidence generation, and improving data equity and access;

4. Increase capacity for social and behavioral science through increased investment in a social and behavioral science-trained workforce and increased support for interagency efforts dependent on social and behavioral science expertise; and

5. Mandate social and behavioral science-informed strategies through federal funding practices that prioritize proposals that include evidence-based social and behavioral science strategies, support the generation of new evidence to help fill knowledge gaps, and institute rigorous evaluation requirements.

The recommendations from this Blueprint can help address our nation's most complex challenges. By continuing to infuse social and behavioral insights on decision-making in healthcare contexts into prevention-focused programs, we can help patients make optimal health choices for themselves and their families. Expanding our investments in delivering readily available data and evidence to communities through clearinghouses and data repositories can further enable local efforts at improving community safety. By incentivizing the use of evidence-based support services and pathways to good jobs, we can enable opportunity at every career stage. By continued expansion of federal workforce with skills in public engagement and capacity-building, we can help support communities who have been historically disadvantaged by federal activities.

Social and behavioral science gives us the knowledge and tools we need to support and serve communities across the country. Our national challenges are complex and pressing, which is why we must leverage available insights and approaches that can help us more effectively design, implement, and evaluate policies and programs. By continuing to integrate these insights into federal efforts, we can help ensure that all Americans have longer, healthier, more prosperous lives.

A Framework for Using Social and Behavioral Science to Advance Evidence–Based Policymaking

From the U.S. National Science Foundation's Directorate for Social, Behavioral, and Economic Sciences, the social and behavioral sciences focus on "human behavior and social organizations and how social, economic, political, cultural, and environmental forces affect the lives of people from birth to old age and how people in turn shape those forces."[7]

The National Institutes of Health's Office of Behavioral and Social Sciences Research defines the social and behavioral sciences as the systematic study of "interactions between and among individuals, and of the characteristics, structures, and functions of social groups and institutions, such as families, communities, schools, and workplaces, as well as the physical, economic, cultural, and policy environments in which social and behavioral phenomena occur" and "observable actions of individuals or groups and of mental phenomena such as knowledge, attitudes, beliefs, motivations, perceptions, cognitions, and emotions."[8]

These definitions capture the broad and diverse array of disciplines that comprise the social and behavioral sciences (e.g., sociology, anthropology, economics, psychology). The social and behavioral sciences offer unique tools for describing, understanding, and addressing societal challenges, and assessing and evaluating initiatives, programs, and policies. As such, integrating social and behavioral science insights and approaches into federal practice is necessary to develop effective and equitable policies and programs.

This section presents a framework for effective use of social and behavioral science to advance evidence-based policymaking. The framework includes six key components: identifying opportunity areas; considering social and behavioral science insights; synthesizing evidence and highlighting best practices; identifying actionable steps and policy mechanisms; implementing and disseminating; and reflecting and revising.

The Tools of the Social and Behavioral Sciences

Although methods and approaches vary across the social and behavioral sciences, there are some unique strengths and commonalities.

Understanding Cause and Effect: The ability to determine causal relationships between factors of interest is a particular strength of the social and behavioral sciences. Through effective measurement and study design, social and behavioral science experts can identify the factors that directly, or indirectly, produce an outcome and are not simply associated with that outcome. In more complex designs, these experts combine qualitative and quantitative data in mixed-method approaches. As another example, the social and behavioral sciences allow us to examine individual actions in the context of a community using multilevel models to understand complex real-world problems.[9, 10]

Evaluating Effectiveness: As noted by the Office of Management and Budget, the Foundation for Evidence-Based Policymaking Act of 2018 "advances program evaluation as an essential component of

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[7] https://www.nsf.gov/sbe/about.jsp
[8] https://obssr.od.nih.gov/about/bssr-definition
[9] https://obssr.od.nih.gov/sites/obssr/files/Best_Practices_for_Mixed_Methods_Research_the_nature_and_design_of_mixed_methods_research.pdf
[10] https://www.ncbi.nlm.nih.gov/books/NBK565712/

federal evidence building" and a central component of federal processes. [11], [12] The quantitative and qualitative methods of the social and behavioral sciences are essential tools for the conception, study design, data collection, and analysis required to assess the effectiveness and efficiency of federal efforts.

Driving Innovation: The social and behavioral sciences provide critical tools for driving the innovation central to advancing American economic growth, raising our quality of life, and improving health outcomes.[13] These disciplines provide a systematic approach for identifying the factors that promote or inhibit innovation. For example, regional innovation systems are defined by geographic concentrations of institutions and industry, but the effectiveness of these systems depends on specialization and the structure of these interconnections.[14]

Scaling Solutions: Scalability is an essential complement to innovation. As new scientific methods and technologies emerge, their impact hinges on our ability to effectively utilize them at scale. Implementation science and other social and behavioral science disciplines provide systematic approaches that allow us to think critically about whether a successful intervention can scale, and if so, how.[15] The social and behavioral sciences also allow us to identify and address the structural and cultural barriers that may hinder efforts to scale innovative ideas and technologies.

Promoting Equity: Finally, the social and behavioral sciences are core in addressing questions of equity. Identifying and addressing disparities across economic, health, and climate contexts are inherently social science processes. Methods for conceptualization, measurement, study design, and evaluation essential to understanding and addressing these social challenges are uniquely offered by these disciplines. From the Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, advancing equity requires "a systematic approach to embedding fairness in decision-making processes, executive departments and agencies must recognize and work to redress inequities in their policies and programs that serve as barriers to equal opportunity."[16] In sum, executive departments and agencies across the federal government are mandated to effectively leverage the tools provided by the social and behavioral sciences.

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[11]https://www.congress.gov/bill/115th-congress/house-bill/4174.
[12]https://www.whitehouse.gov/wp-content/uploads/2020/03/M-20-12.pdf
[13]https://www.usda.gov/sites/default/files/documents/behavioral-factors-adoption-diffusion-usda-Innovations.pdf
[14]https://crsreports.congress.gov/product/pdf/R/R47495
[15]https://pubmed.ncbi.nlm.nih.gov/31036287/
[16]https://www.whitehouse.gov/briefing-room/presidential-actions/2023/02/16/executive-order-on-further-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/

Integrating Social and Behavioral Science into Evidence–Based Policymaking

The suggested framework for using social and behavioral science to advance evidence-based policymaking (Figure 1) fits alongside existing federal models and approaches.

Figure 1. A framework for the iterative process of using the social and behavioral sciences to advance evidence-based policymaking.

Importantly, the social and behavioral sciences should be tightly integrated within existing federal processes—and from the very outset of a new activity—rather than being seen as an additional process that adds burden. These steps should advance efforts in "building and nurturing a culture of evidence and the infrastructure needed to support it" as highlighted in OMB's Evidence-Based Policymaking: Learning Agendas and Annual Evaluation Plans.[17] The suggested framework should synergize with OMB's model for using evidence to improve agency processes, as well as models for generating and using evidence to improve programs and policies in use across the federal government, with additional considerations for maximizing the unique contributions and insights from the social and behavioral sciences.

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[17] https://www.whitehouse.gov/wp-content/uploads/2021/06/M-21-27.pdf

1. Identify Opportunity Areas

The initial step for effective use of social and behavioral science in federal decision-making is the identification of appropriate challenge or opportunity areas. Importantly, identification of opportunity areas does not require beginning with problem areas or ineffective policies or programs. Efforts to strengthen, scale, and broaden successful programs and approaches also benefit from social and behavioral science perspectives and approaches.

There are plentiful opportunities appropriate for the application of social and behavioral science approaches. Across the federal government, there are numerous ways challenges are defined, including, but not limited to: designation as an Administration policy priority; legislative mandates passed into federal law; examinations of internal agency operational processes; and through structured engagement with relevant constituencies.

For example, the Foundations for Evidence-Based Policymaking Act of 2018 requires agencies to establish multi-year Learning Agendas aimed at identifying and setting priorities for evidence building.[18] Learning Agendas provide a transparent and publicly available method of identifying priority opportunities to build evidence to inform agency missions and operations. Executive Order 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, led to the release of Equity Action Plans from more than 90 federal agencies, including more than 300 strategies and actions to address systemic barriers across policies and programs. Both Learning Agendas and Equity Action Plans are strong starting points for identifying areas where the implementation of social and behavioral science insights would provide great benefit to improving government operations.

Engagement with external partners, such as state and local governments, Tribal communities, academia, philanthropy, non-profits, community organizations, the private sector, and members of the public, is essential at each step. Meaningful engagement is a requirement of effective identification processes, particularly in regard to promoting equity and ensuring priorities are reflective of the needs and interests of communities.

2. Consider Social and Behavioral Insights

In reflection on the greatest challenges of the COVID-19 pandemic, Dr. Francis Collins, former director of the National Institutes of Health, identified insufficient attention to social and behavioral science evidence:

> "Maybe we underinvested in research on human behavior. I never imagined a year ago, when those vaccines were just proving to be fantastically safe and effective, that we would still have 60 million people who had not taken advantage of them…"[19]

Omitting social and behavioral science insights in addressing opportunity areas hinders the federal government's ability to design and deliver effective policies and programs. The social and behavioral sciences play a vital role in understanding the causes of, and identifying solutions to, many of our nation's most pressing challenges.

After identifying opportunity areas, decision-makers should consider relevant social and behavioral science factors essential to delivering the desired outcomes. These considerations can include personal

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[18] https://www.congress.gov/bill/115th-congress/house-bill/4174

[19] https://www.pbs.org/newshour/show/dr-collins-reflects-on-career-at-nih-covid-response-effort-work-on-genome-sequencing

factors (e.g., behaviors, knowledge, attitudes, beliefs, motivations, perceptions, cognitions, and emotions) and social factors (e.g., the physical, economic, social, cultural, and policy environments).

The social and behavioral sciences can provide key insights into the pathways through which even indirect factors (e.g., institutional, historical, community) can result in any number of important outcomes (e.g., educational attainment). For example, historical redlining (an unlawful practice in which lenders avoid providing services to individuals living in communities of color) is a cause of contemporary racial disparities in exposure to environmental contaminants and subsequent health and academic achievement outcomes. [20] Identifying and understanding these pathways can enable more effective decision-making and intervention efforts.

Federal decision-makers should ensure identification and consideration of the social and behavioral factors central to relevant outcomes at the outset of any policy or programmatic work. Social and behavioral science experts should be engaged early to highlight these considerations. This expertise can come from inside (e.g., inclusion of staff social scientists in initial planning meetings) or outside the federal government (e.g., listening sessions with subject matter experts, including those from affected communities). In consideration of relevant social and behavioral insights, decision-makers should also work to identify the consequences of failing to address these factors.

Thoughtful examination of the role of social and behavioral factors can require additional resources, such as the staff time allotted to design requests for information or hold listening sessions, ensuring sufficient lead-time, and logistical preparation to ensure successful communications accessibility.[21] However, those resources are often outweighed by the value of inclusion and costs of exclusion of social and behavioral science evidence and approaches. Identifying relevant social and behavioral factors, and considering the benefits and costs of addressing them, facilitates informed decision-making processes.

3. Synthesize Evidence and Highlight Best Practices

In line with the Foundations for Evidence-Based Policymaking Act of 2018 and a whole-of-government focus on evidence-based policy, experts both internal and external to the federal government should work to synthesize evidence drawn from pilot projects, randomized controlled trials, quantitative survey research and statistical analysis, qualitative research, ethnography, Indigenous Knowledge, risk assessments, participatory and community-based research, and other approaches that may be informed by social and behavioral science and data science.[22]

The synthesis should center evidence with a significant body of support while remaining sufficiently flexible to incorporate emerging findings and approaches. It should also seek to identify both gaps in existing knowledge, as well as important boundary conditions and contexts that currently constrain the applicability of the evidence, especially its ability to promote equity. The practices suggested by the available evidence may not be applicable in all contexts, as needs often vary significantly within and between communities as well as over time.

Inside the federal government, decision-makers should support the development and use of clearinghouses and other approaches that provide rigorously identified, screened, reviewed, and rated evidence to allow for accelerated access to social and behavioral science insights.

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[20] https://www.justice.gov/opa/pr/justice-department-announces-new-initiative-combat-redlining
[21] https://www.whitehouse.gov/omb/information-regulatory-affairs/broadening-public-engagement-in-the-federal-regulatory-process/
[22] https://www.whitehouse.gov/wp-content/uploads/2021/06/M-21-27.pdf

Outside the federal government, decision-makers should engage support from social and behavioral science experts from academia, non-profits, and other evidence-focused organizations. For example, with support from the U.S. National Science Foundation and the Alfred P. Sloan Foundation, the National Academies of Sciences, Engineering, and Medicine launched the Societal Experts Action Network to engage social, behavioral, and economic science researchers across the country to provide rapid response evidence synthesis to decision-makers at the local, state, and federal levels.

Importantly, available evidence should be shared and presented in formats approachable and usable by federal decision-makers and other interested parties, including researchers, non-profits, and the American public to promote transparency and accountability.

4. Identify Actionable Steps and Policy Mechanisms

Translational social and behavioral science research helps fill the gap between evidence and policy. Translational science examines the scientific and operational principles underlying the process of moving insights from discovery to implementation.[23] Expertise in translational science is a valuable part of the broader evidence ecosystem, and should be leveraged and developed both within and outside of the government.

Through engagement with experts both internal and external to the federal government, decision-makers should identify the actionable components of available evidence. Although the social and behavioral sciences are effective at identifying and understanding the many immediate and distant factors that affect outcomes, not all of these factors will be appropriate targets to address in a particular intervention, policy, or program. In particular, the ability to determine which factors are causal (the factors that drive outcomes) makes the social and behavioral sciences essential for identifying actionable elements that can help produce effective policies or programs with meaningful real-world impacts.

Identified actionable steps from available evidence should be mapped onto available federal levers. Typically, there are a range of levers decision-makers can utilize, including but not limited to available funding vehicles (e.g., grants, contracts, and cooperative agreements), public and private partnerships, and potential new initiatives and programs. Efforts should be made to utilize the full array of federal policy mechanisms, including tiered evidence funding; pay-for performance approaches; waiver demonstrations; and community-engaged approaches, including citizen science, prizes, challenges, and competitions.[24]

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[23]https://ncats.nih.gov/translation/spectrum#:~:text=develop%20new%20ones.-,Translation,medical%20procedures%20and%20behavioral%20changes.
[24]https://obamawhitehouse.archives.gov/sites/default/files/omb/memoranda/2013/m-13-17.pdf

5. Implement and Disseminate

It is vital to incorporate social and behavioral science insights into programs and policies throughout the development process, from conceptualization and design to implementation. Effective and flexible solutions that incorporate the social, cultural, physical, and economic context of a community are more likely to be successfully implemented, and decision-makers should work to ensure any implementation strategy includes components to account for these contexts. Decision-makers should leverage insights about how people think and act to improve implementation and minimize the gap between intent and practice to ensure that implementation effectively leverages the best available evidence.

Importantly, sustained community engagement – from the identification of opportunity areas through the implementation of policies and programs – should be considered an essential component of implementation and be guided by best and promising practices for community engagement. Employing evidence-based approaches to ethical community engagement and user-centered design will promote more effective implementation and build trust and accountability with communities, particularly those who have been historically and continue to be underserved or harmed by federal action or inaction. This requires an appropriate communication strategy for affected communities or populations. Dissemination of changes to programs or policies should be made in clear, approachable, and transparent language in accessible formats. A lack of awareness, acceptance, and trust of federal policies and programs across a community can limit program effectiveness and obscures efforts toward transparency and accountability.[25] Sustainability of policies or programs should be considered as part of successful implementation approaches as sudden program or policy cessation can also damage community trust and harm vulnerable individuals.

Successful policy or program implementation should ensure that evaluation components are considered and included from the outset to help identify what is working, why, where, and for whom. New data collection should align with equitable data recommendations designed to ensure that underserved communities are engaged and supported through the use of disaggregated data that protects privacy, partnerships with non-federal entities, and efforts to promote transparency, trust, and partnership.[26]

6. Reflect and Revise

Social and behavioral science evidence and insights evolve over time. Programs and policies must continue a cycle of reflection and reconceptualization to ensure effectiveness and incorporate newly available evidence. Rigorous evaluation efforts should be conducted to examine whether implemented programs or policies are effective. Social and behavioral science-informed approaches can provide vital information into why programs and policies succeed or fail and can identify opportunities for improvement. In cases where programs are successful, social and behavioral insights can help answer the question of whether the approach or intervention can scale, and if so, how.

Importantly, reflection also provides the opportunity to identify who benefits from policies and programs. For example, robust equity assessments are essential for ensuring that the benefits of federal policies and programs benefit all Americans. As the growth of big data allows for greater levels of analysis, social and behavioral science insights are essential for driving thoughtful inquiry.

Effectively leveraging the social and behavioral sciences can contribute to discoveries that support effective policies, programs, and interventions. Similarly, implemented policies, programs, and

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[25] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5433718/

[26] https://www.whitehouse.gov/wp-content/uploads/2022/04/eo13985-vision-for-equitable-data.pdf

interventions can recursively lead to basic science discoveries and the identification of new opportunity areas that inform future efforts to advance evidence-based policymaking.

Recommendations to Enable the Use of Social and Behavioral Science in Policymaking

The expertise, interest, and resources to effectively leverage social and behavioral science exists both within the federal government and externally; including within academia, non-profits, local and state governments, and the public. Effectively leveraging social and behavioral science will support the federal government in meeting the mandates of the Foundations for Evidence-Based Policymaking Act of 2018; EO 13985 on Advancing Racial Equity and Support of Underserved Communities Through the Federal Government; and the January 27, 2021 Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking.

There are five key areas we recommend that departments, agencies and offices address to promote the effective use of social and behavioral science in federal decision-making and practice.

1. Strengthening Evidence Ecosystems

Rapid and responsive evidence building—in collaboration with the evidence and translation communities outside of the federal government—can amplify federal agencies' ability to efficiently address pressing societal challenges and support evidence-informed decision-making.[27]

Progress in robust and timely evidence-building and sharing across federal departments and agencies is already underway across the federal government, from the Executive Office of the President to the Evidence Act Officials and other civil servants throughout government, as well as the evidence clearinghouses and other resources available today.

Strategies to bolster the evidence ecosystem at large must also make use of the diverse and committed evidence community outside of the federal government, highlighted by the cross-sector collaboration during the White House Year of Evidence for Action. These strategies can include hosting regular panels of leading researchers on topics of importance to government decision-makers, formally contracting with research organizations to provide evidence on key societal issues on a regular and rapid basis, or establishing pathways for external social and behavioral scientists to co-develop research approaches to provide insights on pressing research questions and policy evaluations, such as those captured in agency Learning Agendas and Annual Evaluation Plans.

Continued investments for implementation of the updated policy guidance, Ensuring Free, Immediate, and Equitable Access to Federally Funded Research, will promote increased public access to federally funded research, foster greater collaboration and innovation, and strengthen public trust. This enhanced access will yield significant benefits across our national priorities and help deliver evidence-based results for the American people.

Strengthening the evidence ecosystem is also reliant on data availability, utility, and quality, goals highlighted in the Vision for Equitable Data: Recommendations from the Equitable Data Working Group report as well as efforts led by the Office of Management and Budget, the Federal Statistical Agencies, and evaluation and data offices across the federal government. Efforts to increase transparency and availability of social and behavioral science and federal data are essential for building a robust evidence ecosystem in line with the federal open science goal of making research products and processes

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[27] https://www.readcube.com/articles/10.1038/nrd.2018.27?shared_access_token=JVEXa9d3BUGEPpVj2m3M6dRgN0jAjWel9jnR3ZoTv0MVh9X_EaWUStNqs5IEu5gauFhnEzdohANS27S4Zx0yk6b47Xk3cCuG8p1kyuerkrSK4kp_Ldfb0ltLILmc11EUhnVR5gmfCDJfm2Fdu1otyw%3D%3D

available to all, while respecting diverse cultures, maintaining security and privacy, and fostering collaborations, reproducibility, and equity.

Continued efforts to build a dynamic and durable evidence ecosystem require expansion of funding for generating and translating evidence, building flexible and dynamic evidence models, advancing methods, and fostering the development of bidirectional and trustworthy relationships between producers and consumers of social and behavioral science insights, and the intermediaries who bring them together.

2. Promoting Meaningful Engagement

Engaging and supporting partners across the social and behavioral science evidence ecosystem is essential to diversifying the types of evidence available for federal policy and program decision-makers and advancing the use of social and behavioral science evidence in policy and practice. Maintaining this type of open collaboration between the federal government and diverse partners, such as academics, community members, decision-makers, and state and local agency representatives, may require additional resources and efforts to clarify the appropriate rules and procedures for this interaction.

Federal agencies should provide support to the broad range of funding and other resource recipients (e.g., grant recipients, community organizations, and state regulators) to identify and implement evidence-based interventions. Toolkits, clearinghouses, and peer learning can be effective approaches along with allowing funding recipients to use federal funds to build their own capacity to build and use evidence.[28] Effective use of federal funds relies on the active participation of agencies to work in cooperation with funding recipients to design and implement federal programs. In some cases, this more hands-on approach to program administration may require additional funds for technical assistance, either by federal staff or in collaboration with outside organizations that have the expertise and resources to support federal grantees in this area.

Creating and maximizing opportunities for formal research-practice partnerships can also improve progress toward ensuring that programs and policies drive equitable outcomes. Meaningful and respectful engagement requires federal entities to value and prioritize diverse knowledge and experience. Community engagement is an area vital to advancing the use of social and behavioral science in decision-making and central to advancing federal policy objectives. Importantly, community engagement must be based on available evidence and informed by the social and behavioral sciences. Any department, agency, or federally-funded entity that seeks to enter or begins new engagement with a community should involve community members in the conception, governance, decision-making, and evaluation processes to increase the alignment with community priorities and likelihood of effective implementation. Engagement informed by social and behavioral science is vital for effective, respectful, and mutually beneficial engagement with communities historically or currently marginalized or underserved due to race, ethnicity, sexual orientation, gender identity, disability, income, geography, immigrant status, or veteran status.

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[28] https://www.federalregister.gov/documents/2023/10/05/2023-21078/guidance-for-grants-and-agreements

3. Reducing Barriers

Barriers to the use of social and behavioral science in decision-making and practice can range from structural challenges (such as data interoperability or restrictive funding parameters) to beliefs and attitudes (such as a lack of awareness of the value of social and behavioral science from senior federal leadership).

The federal government is moving to identify and reduce barriers inside and outside of the federal government with the twin goals of improving access to government benefits and services for the public and ensuring those benefits and services are protected from misuse, theft, or fraud. However, agencies face ongoing capacity and maturity constraints, skills gaps, shifting priorities, delayed appropriations, and sometimes lengthy administrative processes in their efforts to reduce administrative burdens that may undermine their ability to leverage social and behavioral sciences to support the agency mission.

Agencies also need to proactively build in processes to leverage social and behavioral science expertise into the decision-making process. Social and behavioral science experts should be engaged at the outset of efforts to ensure effective leveraging of relevant bodies of knowledge. Opportunities should be taken to address barriers and burdens, but also balance burden reduction with flexibility for social and behavioral science-informed efforts that often emphasize effective community engagement and other approaches that uniquely benefit from social and behavioral science methods.

Accelerating the translational process requires examination, and potential modification, of data management and sharing policies across federal agencies to facilitate the harmonization and sharing of social and behavioral science data and evidence as appropriate while protecting privacy and confidentiality. At the same time, it is important for federal users of social and behavioral science data to be aware of potential ethical challenges, including any biases introduced through study designs or application of algorithmic tools that use social or demographic data to inform policies or programs. Failure to address these potential biases can exacerbate inequities and erode trust in the federal government.

4. Increasing Capacity

Organizational changes designed to increase the federal government's capacity for effectively leveraging social and behavioral science through addressing workforce needs can help to ensure that these insights are successfully integrated into policy. Although many statistical, evaluation, research, and policy development offices within the federal government already produce and fund high-quality social and behavioral science evidence, the Evidence Act required functions that were new to some agencies. The Evidence Act also did not provide new appropriations for agencies to plan and execute Learning Agendas and Annual Evaluation Plans. Failing to fully fund these essential efforts undermines efforts to promote effective evidence-based policy.

Investing in leadership and staff positions with specialized training in social and behavioral sciences who are supportive of the generation and translation of evidence will help ensure that relevant evidence from communities, researchers, statisticians, and evaluators is connected to program officers and other decision-makers, in the appropriate form and timeframe to support effective policy development. Importantly, the staff in these positions should reflect the diversity of the American people in line with best practices for diversity, equity, inclusion, and accessibility.[29]

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[29]https://www.whitehouse.gov/briefing-room/presidential-actions/2021/06/25/executive-order-on-diversity-equity-inclusion-and-accessibility-in-the-federal-workforce/

In practice, this strategy entails incorporating social and behavioral science expertise into the process and outcomes of federal agencies' workforce development plans, such as through further investment in Evidence Act Officials (Evaluation Officers, Chief Data Officers, and Statistical Officials) and supporting staff, as well as similar positions in small agencies, components, and bureaus. It also entails advocating for the establishment of new roles at all levels specifically dedicated to engaging communities and non-federal audiences, generating evidence, translating evidence into policy, and scaling effective implementations of social and behavioral science into broader efforts. Federal agencies should ensure efforts to recruit, hire, develop, promote, and retain social and behavioral science experts are included in workforce development plans.

Leadership should ensure sufficient support is provided to effectively integrate and elevate social and behavioral science insights across the federal government. Although social and behavioral science insights are essential within each agency, the social and behavioral sciences also provide unique value across diverse and cross-cutting issues particularly suited to federal interagency efforts. Accordingly, staff workloads should be considered in the context of interagency efforts vital to coordinated, effective, whole-of-government approaches. Expanding personnel capacity ensures that federal staff can meet the requirements of their day-to-day workload while also providing valuable interagency technical assistance and coordination for novel, urgent interagency demands, including the optimal leveraging of social and behavioral science insights.

5. Mandating Social and Behavioral Science-Informed Strategies

Requiring the adoption of social and behavioral insights by federal agencies and federal funding recipients accountable for the implementation of services would advance the use of social and behavioral science in policy and programs. In practice, this might entail a range of actions, with a particular emphasis on funding practices as a powerful government lever.

Prioritizing proposals for federal funding that include evidence-based social and behavioral science strategies or requiring that funds be spent on social and behavioral science evidence-based strategies can make this adoption happen at scale. Requiring the use of social and behavioral science in program implementation would also support the generation of new evidence to help fill knowledge gaps. Instituting rigorous evaluation requirements that leverage social and behavioral science tools to assess outcomes, impact, and processes would expand understanding of effective government practices and ensure program and policy goals translate into positive outcomes for recipients. Including consideration of requirements for building evidence examining scalability would advance the potential reach of federal efforts and promote development of successful interventions to broader programs and policies with positive outcomes across the nation.

For policies and programs where strong social and behavioral evidence does not currently exist, efforts should be taken to ensure the generation of evidence to inform future policy in line with existing guidance on efforts to build a culture of learning and evidence across the federal government.

The Future of the Social and Behavioral Sciences in Federal Policymaking

Overall, the opportunities and resources exist to build a dynamic and durable social and behavioral science evidence ecosystem that fully leverages our current and future knowledge to effectively deliver results for every person in America. Both inside and outside the federal government, tremendous expertise exists for how to use the social and behavioral sciences to consider, design, implement, and evaluate policies and programs essential for addressing our national priorities. Each department and agency across the federal government, regardless of size or focus, has a role to play in using the tools and insights of social and behavioral science to advance evidence-based policymaking and better achieve its respective mission.

From Framework to Practice: A Technical Companion for Using Social and Behavioral Science to Advance Policymaking

Using this Technical Companion

This technical companion aims to provide more detail on the social and behavioral sciences, where they exist in the federal government, and highlight their use in federal policymaking. This companion provides greater insight into how the tools of the social and behavioral sciences are being used across the federal government today to advance decision-making to achieve progress across a diverse array of national policy priorities. The highlighted activities represent recent or ongoing use of social and behavioral science in action to advance evidence-based policymaking. Importantly, these activities represent a small subset of the contributions of the social and behavioral sciences in delivering outcomes for the American public. Additional background and technical assistance are available to support decision-makers in effectively applying these approaches, strategies, and methods.

For each national priority, the breakout boxes and accompanying appendix resources highlight opportunities and example use cases for the social and behavioral sciences to advance policymaking. These appendix resources aim to support federal agencies in moving toward application of the suggested framework steps in practice for these areas.

Social and Behavioral Science in the U.S. Federal Government

The social and behavioral sciences are broad and diverse but essentially all focus on how and why people behave as they do. This includes understanding and intervening at multiple levels of influence, including individuals, families, groups, organizations, communities, and society. The social and behavioral sciences systematically examine personal and societal phenomena relevant to a wide range of outcomes such as physical and mental health, education, relationships, decision-making, violence, and employment.

Researchers and experts in the social and behavioral sciences examine the complex interplay between and among biological, behavioral, social, and environmental processes, including phenomena that occur within people (e.g., genetics, neurobiology, emotion, perception, cognition) and around the person (e.g., environment, social relationships, societal factors, culture, policy, markets and economic conditions). Understanding the reciprocal influences of these internal and external processes is key to understanding how these processes function and lead to outcomes of interest across the federal government.

Social and behavioral scientists in the U.S. government come from a wide range of disciplines such as psychology, sociology, demography, anthropology, political science, linguistics, education, criminal justice, and economics.

> ### Effective Strategies for Incentivizing Evidence–based Approaches in Federal Spending
>
> The United States government annually provides billions of dollars to state, local, tribal, and territorial governments as well as myriad service providers to deliver services designed to improve outcomes for the American public. Due to the knowledge developed through the social and behavioral sciences, federal agencies often know about evidence-based interventions that can improve results. However, much of federal spending is not incentivizing funding recipients to use this knowledge to improve outcomes. The U.S. government can better incentivize evidence use in its spending by adopting a set of strategies, including: 1) incorporating existing evidence into federal programs, 2) supporting and engaging recipients to identify and implement evidence-based interventions, and 3) building evidence where needed to further build knowledge about what works. (Appendix A).

The number of social and behavioral science staff at various federal agencies ranges greatly, and their roles include everything from conducting or overseeing research to guiding or implementing programs and policy. Integration of social and behavioral science findings into practice and decision-making in the U.S. government can enhance the effectiveness, adoption, and sustainability of government-led initiatives.

The roles that different federal agencies play in the translation of social and behavioral science research depend on their respective missions. For some federal agencies, conducting or funding research is core to their respective missions, whereas other federal agencies leverage scientific findings to inform program decisions or regulatory issues as a primary aim. Still other agencies focus on both conducting research and leveraging scientific findings for program decisions and policies. These varying missions give federal agencies differing roles in translating social and behavioral science research and raise the need for collaborative efforts to ensure that this evidence is widely and equitably adopted.

Using the insights and approaches of the social and behavioral sciences can inform decision-making across the federal government and is an integral component of understanding the human and social interactions that affect how Americans use and interact with the federal programs meant to facilitate a robust economy, promote population health, and strengthen our democracy.

Social and Behavioral Science Methods and Approaches

As noted by the Office of Behavioral and Social Sciences Research at the National Institutes of Health: "The multi-disciplinary nature of behavioral and social sciences research is both a challenge and an opportunity. The disciplines contributing to the behavioral and social sciences often have different scientific approaches, methods, definitions, vocabularies, theories, and hypotheses. This broad and complex research landscape, however, provides a rich fundamental and applied knowledge base to understand behavioral and social phenomena and how these processes and mechanisms impact" outcomes of interest.[30]

Given the breadth of behavioral and social science disciplines and topics, it should not be surprising that social and behavioral science research adopts a wide variety of methods and theoretical approaches to achieving its aims. Methods range from qualitative fieldwork to randomized controlled trials and can include survey research, observational studies, focus groups. quasi-experiments (in contexts where true randomization is infeasible), natural experiments (often used to assess the impact of uncontrolled events such as weather emergencies, with suitable comparators such as unaffected areas), and innovative experimental designs (e.g., fractional factorial designs).[31] For example, NIH has promoted adoption of the experimental medicine approach which focuses on how interventions affect specific factors that are believed to be responsible for changing particular outcomes, such as health behaviors. NIH has also introduced several models, such as the Obesity-Related Behavioral Intervention Trials (ORBIT), that help characterize how obesity develops from childhood to adulthood, as viewed from the scientific methods spectrum (i.e., from basic behavioral science to intervention).

Social and behavioral science research also includes a wide array of outcomes that range from self-reported states on questionnaires to less intrusive measures such as observed behavior. Technological innovations, such as wearable sensors, now permit the frequent and largely effortless capture of many social and behavioral variables, such as sleep and emotional states. This data collection approach provides the opportunity to test novel hypotheses that previously were untestable given the burden of collecting intensive longitudinal data from single individuals. Moreover, advanced methods have been developed to facilitate data linkages among independent data sets using linking variables such as geographical location. Much effort has been devoted to the development of databases containing valid and reliable measures of commonly measured constructs; these include, for example, the NIH Patient Reported Outcomes Measurement Information System (PROMIS) which warehouses measures of patient states such as anxiety and depression. Availability of these resources permits researchers to use well-developed and well-tested measures in their studies rather than creating novel measures. This facilitates data harmonization and offers the advantage of being able to more easily compare findings across studies.[32]

Theories and theory testing occupy an important place in the social and behavioral sciences, with some theories focused on the individual (e.g., Theory of Planned Behavior) and others examining population-level phenomenon (e.g., Diffusion Innovation Theory). Research comparing the predictive utility of comparable theories is still needed, as is research assessing the relative impact of theory-informed interventions compared to interventions that are not theory-driven.[33] A key limitation of the literature is that many theories often include similar constructs that are labeled differently, introducing what

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[30]https://obssr.od.nih.gov/about/bssr-definition

[31]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2446451/

[32]https://commonfund.nih.gov/promis/index

[33]https://pubmed.ncbi.nlm.nih.gov/21796270/

some call a "jingle-jangle" conundrum that may misrepresent the magnitude of relevant behavioral constructs. Recent work has focused on the development of "behavioral ontologies" (i.e., defining terms and how they are related) that help to systematically organize and measure behavioral constructs.

Many scholars across the social and behavioral sciences emphasize the value of examining the research evidence as a whole, with the use of meta-analyses, systematic analyses, and landscape analyses that synthesize the current state of the literature and provide guidance for which findings are scalable. Implementation science methods can then be used to help translate social and behavioral science findings to multiple settings.

The behavioral and social sciences have themselves contributed to innovation in research methodology and analysis. For example, the field of social psychology has developed advanced methods to test mediational and path models that examine how and why interventions are effective. The fields of economics and sociology have developed modeling techniques that can be utilized to make predictions about future outcomes given the state of the current literature. Social and behavioral scientists have also leveraged time-intensive data that can now be collected from innovative technologies to implement novel research interventions approaches, such as optimal adaptive interventions (e.g., Multiphase Optimization Strategy and Sequential Multiple Assignment Randomized Trial) and just-in-time adaptive interventions.[34, 35] These approaches enable researchers and program implementers to tailor interventions to individuals and communities in real-time and in the real world.

Social and behavioral scientists throughout the federal government are trained in a wide variety of methodological techniques and are fluent in the application of these techniques to many disparate problems. More systematically employing these behavioral and social science methods, approaches and techniques across the federal government to address persistent and "wicked" problems would strengthen research and program development, dissemination and implementation.[36]

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[34]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2062525/
[35]https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5364076/
[36]https://appel.nasa.gov/2010/02/25/ao_1-4_f_wicked-html/

Advancing National Priorities using Social and Behavioral Science

Promoting Safe, Equitable, and Engaged Communities

America was founded on the promise of new beginnings, the prospect of better possibilities, and the principle of equal justice under law. For generations, entrenched disparities and disinvestment in people and places, many times facilitated by laws and policies, have made it particularly difficult for Black and Brown Americans, Native Americans, other people of color, and other historically marginalized and underserved communities to have a fair shot at the American dream.

To address these injustices, a whole-of-government approach to equity embeds racial justice across federal agencies, policies, and programs. The Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government and subsequent executive order further strengthen efforts to achieve racial equity across the federal government. The orders support community partnerships, promote development of social capital, invest in underserved communities, improve economic opportunity, and address emerging civil rights risks to help build an equitable, just, cutting-edge, and responsible future for America.

Public safety depends on public trust, and public trust in turn requires that our criminal justice system embodies fair and equitable treatment, transparency, accountability, and efficacy. The Executive Order on Advancing Effective, Accountable Policing and Criminal Justice Practices to Enhance Public Trust and Public Safety was signed to advance these mutually-reinforcing values and priorities. The Executive Order enhances public trust by promoting accountability, transparency, and the principles of equality and dignity in policing and the larger criminal justice system. Increased community

> ### Going Beyond Recidivism to Determine Successful Reentry and Strengthen Public Safety
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> The Executive Order on Advancing Effective, Accountable Policing and Criminal Justice Practices to Enhance Public Trust and Public Safety established a federal interagency effort to develop an evidence-informed, multi-year Alternatives, Rehabilitation, and Reentry Strategic Plan to strengthen public safety by reducing unnecessary criminal justice system interactions; supporting rehabilitation during incarceration; and facilitating successful reentry. The plan includes policy actions aimed at improving the criminal justice system and strengthening public safety by leveraging data, research, and proven successful strategies from state and local governments across the country.
>
> Continuing to broaden the scope of successful reentry programs and approaches beyond recidivism and toward positive reintegration of formerly incarcerated individuals into society helps tackle historic inequities in the criminal justice system by addressing vital determinants of success. Efforts to promote successful reentry benefit from measurement of the full range of related determinants, such as desisting from crime (Appendix B.1), advancing educational attainment (Appendix B.2), and obtaining sustainable housing (Appendix B.3).

trust makes policing, and the broader criminal justice system, more effective and thereby strengthens public safety. The Executive Order also requires the use of evidence-based approaches and federal tools, such as guidance on best practices, training and technical assistance, and grantmaking to support reforms at state, Tribal, local, and territorial law enforcement agencies that will strengthen public trust and improve public safety across the nation. Since the signing of the Executive Order, agencies across the federal government have made significant progress in implementation. Through meaningful engagement, agencies have worked directly with non-federal partners throughout the

implementation process, including with law enforcement associations, civil rights groups, labor organizations, technical experts, and families impacted by police violence.

Identify Opportunity Areas

- Since Fiscal Year 2010, the **National Institute of Justice (NIJ)** has awarded approximately $17 million in Second Chance Act grants for reentry-related research to identify potential opportunity areas. Informed by these funded projects, the Second Chance Reauthorization Act of 2018 (Public Law 115-391) approved the provision of federal grants to government agencies and nonprofit organizations that provide employment assistance, substance abuse treatment, housing, family programming, mentoring, victim support, and other services to individuals returning to the community from prison or jail, all services associated with reduced criminal justice system involvement and positive public safety outcomes. The initial research identified promising areas in re-entry-related research such as young adult reentry programs, programs for individuals with posttraumatic brain injuries, risk-need responsivity strategies, emerging technologies, and innovative treatment modalities.

- The **Administration for Children and Families (ACF)** launched the Advancing Contextual Analysis and Methods of Participant Engagement project to support better understanding, incorporating, and advancing equitable research practices in projects overseen by ACF. The project focuses on strategies for incorporating participatory methods and analysis of contextual factors into ACF research and evaluations. Participatory approaches to research, programming, and policy aim to ensure such work is ethical, accurate, and sustainable. Engaging program participants puts "people at the center" of the government's work and can inform program operations and policy development with critical context and practical input that can generate more nuanced, robust, and lasting results. Contextual analysis acknowledges the complex social, historical, cultural, and political environments in which people navigate, access, and experience human services programs. Considering the contexts in which people experience programs and policies can help to strengthen the relevance and rigor of research projects. One of the key project activities is the development of a community advisory board comprised of individuals with lived experience of ACF programs to provide a variety of diverse perspectives to inform the project.

- In 2021, the **ACF** initiated the Head Start REACH: Strengthening Outreach, Recruitment, and Engagement Approaches with Families (HS REACH) project. Through geomapping, secondary analysis, a literature review, and quantitative and qualitative data collections, the project is building evidence about the experiences of Head Start eligible families experiencing adversities (e.g., deep poverty, child welfare involvement, substance use, homelessness) and the promising eligibility, recruitment, selection, enrollment, and attendance and retention practices Head Start programs use to engage families facing adversities. The primary goal of the project is to produce actionable information in support of efforts to ensure Head Start is reaching and serving the families who can potentially benefit from Head Start's comprehensive approach.

- The **Department of Labor (DOL) Chief Evaluation Office** led the first federal research response to the Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the federal government with the release of the Summer Data Challenge, a national competition to spur more social and behavioral science research into how to use existing data

to analyze how federal labor policies, protections, and programs reach traditionally underserved communities due to race, ethnicity, sexual orientation, gender identity, disability, income, geography, immigrant status, or veteran status.

Consider Social and Behavioral Insights

- **NIJ's** Crime Solutions clearinghouse highlights access to housing as an important factor in reducing criminal justice involvement. For example, the Supportive Housing Social Impact Bond Initiative is a program for people in jail who lack housing after release, aimed at increasing their housing stability and, thereby, reducing their risk of future criminal justice involvement. Research shows that people receiving supportive housing and other services in the program had statistically significant reductions in arrest, jail stays, days in jail, and shelter stays and visits, and statistically significant increases in proactive mental health treatment.

- The **National Science Foundation (NSF)** Law and Science Program considers proposals that address social scientific studies of law and law-like systems of rules, as well as studies of how science and technology are applied in legal contexts. Program awards generated impact at scale in local communities across policy and economic domains. For example, work from researchers at the University of Nebraska identified institutional confidence and trust as vital factors for effective policymaking. Resulting research and the facilitated workshop on Institutional Trust and Confidence led to the implementation of participatory budgeting on an ongoing basis in Lincoln, Nebraska and engagement and trust measures enacted through an initiative by the National Center for State Courts aimed at promoting racial equity in justice.

- The **National Endowment of the Arts (NEA)** is working to surface opportunities for social and behavioral insights across its programs. For example, in evaluation studies seeking to understand the factors and outcomes associated with program delivery for military-connected populations who have experienced trauma, social and emotional dimensions are vital factors for successful programs and especially conducive to social and behavioral science-informed approaches and measurement. The NEA has also designed multiple conceptual frameworks, logic models, and theories of change that highlight social and behavioral insights and factors to guide various program activities—especially those involving cross-sectoral partnerships, including the Our Town creative placemaking grant program; Poetry Out Loud; Creative Forces: NEA Military Healing Arts Network; and many more.

Synthesize Evidence and Highlight Best Practices

- At the **NIJ**, programs and practices presented on the Crime Solutions clearinghouse are identified, screened, reviewed, and rated using a rigorous standardized process. Programs are reviewed based on social and behavioral science-informed evaluations and practices, such as meta-analyses that synthesize different evaluations.

  Social and behavioral scientists at the NIJ recently synthesized the evidence developed by social and behavioral science research on jails to distill their impact on perceptions of the legitimacy and equity of the criminal justice system. Currently, roughly five million people are detained in jails each year. Understanding the services provided to individuals while they are in jail and their perceptions of the fairness of jail-based programs can have substantial implications for them as effective mechanisms for strengthening public trust and public safety and supporting successful rehabilitation and reentry.

- **DOL** initiatives are helping the government and public gain insights into equity-related topics using [research](#). In collaboration with Department agencies, the Office of the Chief Evaluation Officer supports research on vulnerable and underserved populations, including employment programs and protections for: [justice-involved youth, young adults, and formerly incarcerated adults](#), [individuals with disabilities](#), and vulnerable workers' [rights violations](#), [benefits non-eligibility](#) and other [protections gaps](#). The [Career Pathways Descriptive and Analytical Project](#) studies the DOL approaches to workforce development that aim to help less educated workers advance to better paying jobs by earning in-demand postsecondary credentials. In the [Navigator Evidence-Building Portfolio](#), the DOL is examining the potential of Navigators to improve outcomes and equity in workforce programs across three evaluations focused on access, equity, Unemployment Insurance benefits, and workers in the trades. A [National Worker Survey](#) will help the DOL understand the prevalence and nature of violations of workers' rights under the Fair Labor Standards Act (FLSA), with a focus on wages, pay, and hours worked, as well as other topics.

- The **NEA** routinely convenes Technical Working Groups, consisting of cross-disciplinary experts who can provide valuable feedback at all phases of the research or evaluation study's development. These experts also serve as resources in the sharing of strategies and best practices that might be incorporated into the project at hand.

  The NEA has established a National Arts Statistics and Evidence Reporting Center to develop and maintain key statistical indicators of arts and culture in the United States, and also to draft evidence-based practice guides and literature scans that can be used to support decision-making in cultural policy and practice. In addition, the NEA maintains three distinct repositories to share research and evidence about the arts: the National Archive of Data on Arts & Culture; the Sound Health Network, focused on music and health; and the Creative Forces National Resource Center.

Identify Actionable Steps and Policy Mechanisms

- The **NIJ** is using experience identifying effective and actionable interventions and program elements from the Project Safe Neighborhoods initiative to help support the **Office of Justice Program's** Community-Based Violence Intervention and Prevention Initiative. The highly competitive [solicitation](#) includes four funding categories focused on community-based partnerships, including training and technical assistance to support evaluation capacity building and researcher and practitioner partnerships; training and technical assistance to support violent crime problem analyses of jurisdictions; site-based evaluations of programs funded; and other community-violence research and evaluations.

  NIJ social and behavioral scientists synthesized the evidence developed by social and behavioral science research on school and other mass shootings to [develop an action-focused set of steps to prevent mass shootings in K- 12 schools](#). For example, one notable finding identified warning behaviors, such as sharing mass violence plans to peers or social media, as an important intervention period.

Implement and Disseminate

- At the **NIJ**, research on violence prevention and intervention programs under the Project Safe Neighborhoods initiative, robust training and technical assistance programs assisted initiative

sites on various topics related to the effort's promising elements. For example, technical assistance teams assisted in finding research partners, building police-prosecution partnerships, and brainstorming victim services strategies.

- The **NEA** has established a social and behavioral team to assist with the design, implementation, and evaluation of a capacity-building grant pilot program that will support organizations demonstrating a commitment to equity and engagement for the benefit of historically underserved groups and communities. The team will adopt culturally responsive approaches and provide a social and behavioral-informed lens for program design and delivery.

Reflect and Revise

- A **DOJ**-supported [evaluation of the Restoring Promise program](#) found that changing prison culture led to a reduction in violence. The evaluation fills a gap in the field and provides evidence to support a new, replicable model for strengthening safety in correctional settings. Findings showed that the fundamental components of the randomized-control trial are potentially applicable and consistent across locations. Due to the implemented culture changes, both incarcerated young adults and prison staff reported more positive experiences.

- In 2010, the **NIJ** launched the [Evaluation of Second Chance Act Adult Reentry Courts study](#). The three-year, seven-site study funded under the Second Chance Act of 2007 aimed to better evaluate these accountability-based reentry initiatives, and identified several factors that affect the effectiveness and sustainability of reentry court programs, including staff and team member positionality, staff turnover, communication and team decision-making, organizational partnerships, and treatment access.

- A 2022 **NIJ**-supported [review examined the effect of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996](#) which enabled the Department of Homeland Security to enter into agreements with state and local officials which authorizes them to perform the functions of a federal immigration officer, including detaining, interrogating, and taking into custody non-citizens who are believed to have violated federal immigration law. The review found no evidence that these agreements reduced total crime, violent crime, or property crime.

- Since the passage of the First Step Act of 2018, jurisdictions and local communities around the country have aimed to expand and strengthen their commitment to reentry to reduce the risk of recidivism for people returning home from jail and prison. The First Step Act requires the **NIJ** to engage with relevant stakeholders to develop metrics, such as employment, housing, education, and public safety. The [collection of the performance measures](#) was put forth as an opportunity to lay the foundation for conducting more scientific evaluations of the impact of the First Step Act funding in the future and identify new measures.

- The **DOL** Chief Evaluation Office is currently collaborating with other federal agencies to support research and evaluation on a variety of equity-focused topics. These efforts include working with the **Office of Personnel Management (OPM)** on a project to examine, evaluate, and improve Diversity, Equity, Inclusivity and Accessibility efforts within the federal workforce and a collaboration with the **NSF**, **OSTP**, and **OMB** to support Phase 1 of the Analytics for Equity

Initiative, which will support research examining equity considerations for workplace safety and workers.

Protecting the Environment and Promoting Climate Innovation

The Administration is committed to leading efforts to confront longstanding environmental injustices and inequities and tackling the climate crisis. For far too long, communities across our country have faced persistent environmental injustice through toxic pollution, underinvestment in infrastructure and critical services, and other disproportionate environmental harms often due to a legacy of racial discrimination including redlining. Every person has a right to breathe clean air, drink clean water, and live in a healthy community—now and into the future. During his first week in office, President Biden launched the most ambitious environmental justice agenda in our nation's history. To continue delivering on that vision, the President signed an executive order further embedding environmental justice into the work of federal agencies to achieve real, measurable progress that communities can count on.

Communities with environmental justice concerns face even greater burdens due to climate change. Across the federal government, departments and agencies are working to ensure that all people—regardless of race, background, income, ability, Tribal affiliation, or ZIP code—can benefit from the vital safeguards enshrined in our nation's foundational environmental and civil rights laws.

Alongside efforts to promote environmental quality and justice, it is essential to use evidence to better understand nature's critical contributions to the U.S. economy and to guide policy and business decisions moving forward through efforts like the National Strategy to Develop Statistics for Environmental-Economic Decisions.

Identify Opportunity Areas
- Existing intra- and inter-agency initiatives in risk and crisis communication are critical for identifying opportunities for the application of social and behavioral science insights to policymaking. One example is the **Science for Disaster Reduction Interagency Working Group**, a multi-disciplinary, cross-agency collaborative that convenes regularly to exchange information on policies, organizational structures, processes, and personnel to identify hazards and management problems of common interest to multiple federal government agencies, and to engage professionals representing various scientific disciplines, including the social and behavioral sciences.

- At the **Environmental Protection Agency (EPA)**, the Office of Science Advisor, Policy, and Engagement within the Office of Research and Development regularly holds listening sessions with regional staff and state partners to identify research need and gaps that can be addressed by Office of Research and Development scientists and experts. In addition to listening sessions, advisory councils provide direct input on potential opportunity areas. For example, the National Environmental Youth Advisory Council is an emerging effort for young people between the ages of 16-29 to provide advice and recommendations on environmental issues directly to the head of the EPA.

Consider Social and Behavioral Insights
- The Administration created the interagency **Net-Zero Game Changers Working Group** to identify, prioritize, and accelerate innovation in game-changing climate innovations to meet the President's goal of net-zero greenhouse gas emissions by 2050, resulting in identification of 37 net-zero research and development (R&D) opportunities and five priority areas. To help support its goals of equitable, inclusive, and intentional innovation, the Net-Zero Game

Changers working group is coordinating with the **Decarbonization and Justice Interagency Working Group** of the **NSTC Subcommittee on Social and Behavioral Sciences** to help clarify and amplify opportunities for social and behavioral science insights essential for promoting equity and justice across federal R&D investment, particularly for climate mitigation innovations, spanning all stages of technology development. Relevant insights include how equity and justice are addressed, including environmental impacts and environmental justice, community engagement, community impacts, workforce development, access, and affordability (including impacts on other markets that can affect equity and justice). Importantly, these insights are being included and integrated early as interagency efforts move forward to roadmap pathways from early-stage research to widespread deployment of these game changers.

- Social science researchers in the **EPA** Office of Research and Development conducted original research to identify novel methods to better communicate with the lay public about marine nutrient pollution. The research team made use of a qualitative coding approach to review the science communication and climate change communication literatures to identify approaches that could be used for nutrient pollution. This work helped highlight how and where social and behavioral science on communication approaches play a role in environmental outcomes.

- Social and behavioral science plays an essential role in conceptualizing risk and uncertainty across issue areas, including insights on the nature and extent of the risks associated with various hazards as well as the scientific uncertainties about these risks. A number of conceptual frameworks and taxonomies for characterizing risk and uncertainty have been developed by scientists at various federal agencies, ranging from the **EPA** to the **National Aeronautics and Space Administration (NASA)** and used to guide federal agency efforts to analyze and communicate important risks and uncertainties to diverse audiences and communities. The **NSF** supports research on judgment, risk analysis, and decision-making in the Decision, Risk and Management Sciences program, as well as Doctoral Dissertation Improvement Research grants to support the next generation of social scientists.

Synthesize Evidence and Highlight Best Practices

- HDgov is a clearinghouse for social and behavioral science information about interactions between people and the environment hosted by the **U.S. Geological Survey (USGS)**, **EPA**, **National Park Service (NPS)**, **National Oceanic Atmospheric Administration (NOAA)**, **U.S. Department of Agriculture (USDA)**, **U.S. Fish and Wildlife Service (FWS)**, **Forest Service**, **National Aeronautics and Space Administration (NASA), Bureau of Ocean Energy Management (BOEM), USDA Animal and Plant Health Inspection Service (APHIS)** and Northern Michigan University. The clearinghouse provides resources for research, methods, tools, and training. The clearinghouse also provides information for upcoming events and job opportunities for applying social and behavioral science in environmental systems.

- **OSTP** and the **Council on Environmental Quality (CEQ)** released guidance assisting federal departments and agencies in considering, including, and applying Indigenous Knowledge in policymaking. Indigenous Knowledge is a body of observations, oral and written knowledge, innovations, practices, and beliefs developed by Tribes and Indigenous Peoples through

interaction and experience with the environment. The guidance affirms Indigenous Knowledge as a valid form of evidence for inclusion in federal policy, research and decision-making.

- With funding from the **NSF**, the University of Massachusetts at Amherst launched The Center for Braiding Indigenous Knowledges and Science to advance knowledge about environmental change and its effects on food and cultural systems at local and global scales. The Center works to combine and synthesize Indigenous Knowledge with Western science in effective, ethical, and novel ways. In recognizing the value of Indigenous Knowledge and practices, and synthesizing them with Western science, a more holistic approach to knowledge and evidence promotes effective understanding of opportunities in evaluating and responding to climate change adaptation.

- The **NOAA** Weather Program Office hosts the Social Science Portal for Accessing Research Knowledge. The portal is a one-stop-shop to store and share the Weather Program Office's funded and generated evidence with the goal of increasing the visibility, use, and impact of funded research.

Identify Actionable Steps and Policy Mechanisms

- Social science researchers in the **EPA** Office of Research and Development conducted original research to better understand how to advance translational research in the environmental sciences. The research team conducted focus groups with research scientists at three research laboratories within the Office of Research and Development that focused on translational research practices. One of the team's novel findings was that the integration of social and biophysical sciences improves translation of environmental research, demonstrating the importance of integration of social and behavioral insights into policies and programs for effectiveness.

- The **EPA** Science to Achieve Results Program aims to stimulate and support scientific and engineering research that advances EPA's mission to protect human health and the environment. A recent grant call from the program focused on the drivers and impacts of energy transitions in underserved communities with explicit review criterion to include a detailed plan for engaging local affected communities in proposed research. This criterion was driven by social and behavioral science insights that frontline communities have unique knowledge of their local context and environment and that they need to be engaged early and equitably in research that may inform local decision-making processes.

- The **USGS** supported development of the ShakeAlert Earthquake Early Warning System currently used for the West Coast of the United States to detect and raise alarm regarding ground motions from an on-going earthquake, as enacted in the Earthquake Hazards Reduction Act of 1977. This development was accompanied by the formation of the ShakeAlert Joint Committee for Communication, Education, Outreach and Technical Engagement in 2016 to provide consistent guidance on social and behavioral science best practices regarding the ShakeAlert system interface and alert process.

Implement and Disseminate

- Remediation, time-critical and non-time critical removals, and redevelopment of contaminated or potentially contaminated sites require interactions with diverse communities. Community

engagement, building relationships and trust are important components of cleanup work. Social science researchers in the **EPA** Office of Research and Development advanced environmental social science on this topic by ethnographic research with personnel who work in Superfund, brownfields, emergency response, and other contaminated sites. Their report marries social science theories on these topics with research findings on practices used for community engagement, trust, and relationship building, in cleanup work applicable to agencies across the federal government.

- Supporting the importance of effective stakeholder engagement, the **EPA** has developed processes to elicit feedback from communities affected by environmental hazards, to understand their information needs and to develop effective communication strategies that meet these needs. Through the agency's environmental justice program, it established the Environmental Justice Thriving Communities Technical Assistance Centers Program, consisting of a nationwide network of 17 technical assistance centers and partner organizations in diverse geographic regions. This network provides direct technical assistance, training, and capacity-building support to local grassroots nonprofit organizations, Tribal governments, and other similar community stakeholders communities and organizations to advance environmental and energy justice priorities, which include effective communication of risks associated with various hazards. Community engagement and improved accessibility of and access to resources for communities with environmental justice concerns is a central focus of this initiative. This initiative can serve as a model for future efforts to build infrastructure for community engagement in the communication of risk and uncertainty.

- The **Department of Energy (DOE)** Office of State and Community Energy Programs works with states and local organizations and communities to accelerate the deployment of clean energy technologies, create jobs, and reduce energy costs. The office provides an array of tools and technical assistance opportunities to support effective implementation. Stakeholders use the Low-income Energy Affordability Data Tool to make data-driven decisions on energy planning. State and Local Planning for Energy is a web platform that also supports state and local energy and decarbonization planning. The State and Local Solution Center highlights technical assistance opportunities to help states, local agencies, and K-12 school districts meet their energy efficiency and renewable energy goals.

- The **NSF** Advisory Committee for Environmental Research and Education report titled "Engaged Research for Environmental Grand Challenges: Accelerating Discovery and Innovation for Societal Impacts" offers funding agencies, scientists, decision-makers, and community members guidance on how to design and implement engaged research to advance discovery and innovation for societal benefit. The report showcases examples of how scientists and community members have worked collaboratively to effectively implement research programs aimed at addressing environmental problems such as climate change and biodiversity loss.

Reflect and Revise
- Social science researchers in the **EPA** Office of Research and Development are conducting several interrelated original research projects to evaluate and strengthen the capacity of EPA's Environmental Justice Academy. Specifically, this work will focus on the following components: (1) To amplify the Academy's impact by strengthening the program's self-assessment

component. (2) To increase access to the Academy by developing educational materials and guidance for hosting an EJA with different types of stakeholders involved in improving environmental justice issues, e.g., local, state, and federal agencies. (4) To understand how individuals utilize and adapt Academy training modules to support environmental justice and climate change initiatives. (5) To understand the extent to which the Academy training module can support local action and evaluation efforts to mitigate adverse outcomes for vulnerable communities stemming from environmental justice and climate change issues. (6) To assist communities in strengthening their capacity for change by increasing their knowledge and awareness of the interconnectedness across Academy strategies, tools, and stakeholders addressing different environmental health issues. (7) To further refine the self-assessment framework providing community leaders strategies and guidance for how to evaluate their capacity-building efforts and make adjustments to attain desired outcomes.

- The **DOE** Office of Economic Impact and Diversity develops and executes policies across the department to ensure equal opportunities are provided to everyone to participate in the department's programs, opportunities and resources. To support this work, the office conducts research programs to assess the effects of national energy programs, policies and regulations on communities of color, including development of numerous tools to enable users to evaluate questions, policies, regulations, and practices pertaining to energy and environmental justice. These tools include the Energy Justice Dashboard, Energy Justice Mapping Tool for Schools, and the Energy Justice Mapping Tool – Disadvantaged Communities Reporter.

Advancing Economic Prosperity and the Future of the Workforce

The federal government is working to deliver an economic agenda that is rebuilding our economy from the middle out and bottom up. The agenda is not only making our economy work for working families, it is creating jobs that don't require a four-year degree, encouraging private sector investment, and strengthening communities that for too long were left out or left behind. Through the passage of Bipartisan legislation, the Administration has taken key steps to make sure our economy is even stronger than before. Under the Investing in America agenda, the United States has begun rebuilding our nation's infrastructure, driving $628 billion in private sector manufacturing and clean energy investments in the United States so far, creating good paying jobs, and building a clean-energy economy that will combat climate change and make our communities more resilient.

Identify Opportunity Areas

- At the **Department of the Treasury**, the Office of Capital Access created a learning agenda, which is designed to learn about how economic recovery programs can be implemented effectively and equitably. Building on the Treasury's agency wide learning agenda, the Office of Capital Access learning agenda identifies a number of key areas where social and behavioral science can improve programs' policies and operations. Treasury released an earlier draft of the learning agenda and gathered stakeholder feedback that was used to create an updated version; in addition, a number of evaluations have already been performed that are designed to answer the research questions from the learning agenda.

- The **Department of Education (ED)** Office for Civil Rights uses its Civil Rights Data Collection (CRDC), a biennial survey of public local education agencies and schools that are recipients of Department financial assistance, to document K-12 students' access to resources that are associated with academic excellence. Able to be disaggregated by student characteristics (e.g., race, ethnicity, sex, disability, English learner status), CRDC data is used by decision-makers, education leaders, and researchers to identify and address a wide range of

Pathways to Good Jobs

Job quality matters for individual and family well-being, but job quality is insufficiently and inconsistently measured. The lack of attention to job quality measurement limits understanding of whether the jobs created and available for the American people are "good jobs." Measures of good jobs should at least include: wages, high-quality employer-sponsored benefits, equitable advancement, and job satisfaction.

Beyond access to work experience, education, and training opportunities, individuals with multiple barriers to employment need a range of support services, such as child care and transportation, to secure good jobs. These support services are critical to reduce or eliminate barriers that may inhibit attendance and participation in work and school. Federal agencies have many levers to integrate support services; however, there is no one-size fits all need or solution to facilitating equitable access to good jobs. Ensuring effective support services will require action by federal, state, and local governments, as well as, service providers, philanthropic organizations, and the private sector. (Appendix C.1).

American workers have inequitable access to good jobs. Effective and equitable approaches include hiring based on skills, not credentials; worker-centered sector strategies; and "earn and learn" approaches such as registered apprenticeships and subsidized employment. Federal actions should emphasize and incentivize evidence-based approaches to improve access. (Appendix C.2).

issues including disparities in access to qualified educators, disparities in the application of student discipline policies, inequities in students' access to rigorous coursework, and gaps in supportive school climates.

Consider Social and Behavioral Insights

- The **Internal Revenue Service** and the **General Services Administration (GSA)** Office of Evaluation Sciences worked together to identify and study strategies to increase voluntary tax compliance on tax returns completed by return preparers through outreach based on behavioral insights. The collaboration led to the design and evaluation of an updated "Behavioral Insights" letter, which makes salient the consequences of filing improperly, simplifies and clarifies the language, and communicates that the return preparer's clients may also receive a letter notifying them of inaccuracies in their returns. The letter format reduced the percent of returns with likely errors, the dollar amount of credits claimed with likely errors, and the average total refund amount per preparer.

- The **Department of the Treasury** Office of Capital Access and the **GSA** Office of Evaluation Sciences worked together to evaluate the effectiveness of Treasury's communications with funding recipients. After identifying whether communications to local governments that received State and Local Fiscal Recovery Funds had their desired effect and were designed integrating social and behavioral science insights, implemented improvements in the process led to 13% more governments reporting the required information to Treasury.

- A report from the **United States Agency for International Development (USAID)** Development Innovation Ventures, which uses a tiered evidence funding model that allows international development funds to identify innovative new projects and scale those that are shown to work, found that the program delivered $17 in benefits for every $1 the program spent by leveraging social and behavioral science insights.

- The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project, supported by **ACF**, demonstrated that applying insights from behavioral science to challenges facing human services programs can improve program operations and outcomes at relatively low cost. The BIAS-Next Generation project continues to explore the application of behavioral science to ACF programs and the populations they serve. This project is currently designing and testing behavioral interventions in partnership with Temporary Assistance for Needy Families (TANF), child welfare, and Head Start programs.

- The **ACF** conducts two periodic, nationally representative surveys that describe the landscape of early childhood services, including characteristics the children and families served as well as the workforce that serves them. The Head Start Family and Child Experiences Survey (FACES) captures descriptive information about the Head Start program, while the National Survey of Early Care and Education describes childcare preferences and utilization by America's families and the characteristics of the workforce.

- The **DOL** collaborated with the Family and Workers Fund on the Job Quality Measurement Initiative, which is mobilizing leaders inside and outside of the U.S. government to consider the best measures of job quality and the data infrastructure required to support that measurement.

Synthesize Evidence and Highlight Best Practices

- The **ED** What Works Clearinghouse (WWC) reviews causal impact research on the efficacy of education policies, programs, products and practices to help identify those which have been demonstrated to improve important student academic and behavioral outcomes. The WWC synthesizes multiple studies of the same intervention into Intervention Reports that include information about the intervention's effectiveness, the characteristics of students included in the research, the intervention's components, and the resources needed to implement it. Educator Practice Guides summarize the results of systematic literature reviews on specific education problems (e.g., supporting struggling readers in the middle grades), offering specific practice recommendations to educators and suggestions on how to effectively implement those practices.

- The **ACF** sponsors three systematic reviews that provide a comprehensive, systematic assessment of evidence on programs or interventions that are meant to improve the lives of program participants. For example, the Pathways to Work Evidence Clearinghouse focuses on the evidence on programs, or interventions, that aim to improve the employment-related outcomes of individuals with low incomes. The Pathways Clearinghouse website was designed with significant input from key audiences including TANF administrators, employment service providers, researchers, and technical experts on evidence reviews to ensure that the findings from the evidence review are presented in as useful and clear manner as possible. Users of the website can search the site to find interventions that are well-supported, supported, or not supported; strategies for finding programs that work with similar target populations; and examine detailed study-level information on findings.

- The **DOL** supports an array of studies focused on workers without four-year degrees. For example, evidence from the Career Pathways Project is helping state and local workforce agencies easily identify areas of high career growth, including through a user-friendly dashboard of results.

Identify Actionable Steps and Policy Mechanisms

- The **DOL** Reemployment Services and Eligibility Assessment Grants (RESEA) program requires the use of evidence-based reemployment interventions to be paired with unemployment benefits. DOL has continued further random assignment evaluations to determine which strategies work best, and has developed evidence synthesis to support state and local governments in using evidence. By focusing on evidence-based approaches and continuing to build evidence about strategies and approaches, the goal of RESEA is to enable unemployed workers to get new jobs sooner and earn higher wages in comparison to other unemployed workers.

- The Office of Child Care, in the **ACF** drew on research findings from analyses of the 2019 National Survey of Early Care and Education (NSECE) and the COVID-19 follow up study from NSECE to understand rates of turnover of the center-based workforce to focus efforts to stabilize the child care market for working families. These data informed the design of new initiatives to support and retain these workforces with other NSECE research findings on the characteristics of the workforces serving young children including their demographic characteristics, wages, benefits, and other working conditions.

- A variety of federal agencies have committed to expanding measures of job quality through Notices of Funding Opportunity related to the Bipartisan Infrastructure Law. For example, the **DOE's** efforts related to Battery Materials Processing and Battery Manufacturing requests that applicants show their intentions to provide wages at or above prevailing wage rates, workforce training to promote equitable advancement, highest standards of workplace safety and health, and community worker and worker engagement, among others.

Implement and Disseminate

- The **Department of Treasury** Office of Capital Access and the **GSA** Office of Evaluation Sciences worked together to understand how Tribal and small local governments' experience with completing the required reporting for the State and Local Fiscal Recovery Funds. By engaging with governments that are receiving funds from this program, the study was able to use qualitative and quantitative methods to undertake an in-depth study of Tribes' and local government's interaction with Treasury's compliance and oversight. Using the findings from this research, Treasury was able to redesign its outreach, reporting tools, and assistance for these governments to make it easier for them to comply with program requirements.

Reflect and Revise

- The **Department of the Treasury** Office of Capital Access and the **GSA** Office of Evaluation Sciences worked together to examine the implementation and equity of the Emergency Rental Assistance program, which provided assistance to low-income tenants to avoid eviction. The study was designed to understand how the demographic profile of renters who were eligible for ERA compared to the demographic profile of renters who received ERA. The evaluation found that ERA funds have been particularly effective at reaching low-income and traditionally underserved renters of color and allowed Treasury to ensure that the program was meeting its goals.

- The **ED** Education and Innovation Research (EIR) competitive grant program supports states, school districts, and their partners in the development, scaling, and evaluation of interventions designed to improve student achievement for underserved students. Overseen by the Department's Office of Elementary and Secondary Education and supported by its Institute of Education Sciences, as a tiered-evidence program EIR encourages the development of innovative interventions via "early-phase" grants that are then rigorously evaluated. "Mid-phase" and "Expansion" grants are used to refine programs that have demonstrated early efficacy, scale those with strong evidence of effectiveness, and build further evidence of "what works, for whom, and under what conditions."

- Social service programs need timely evidence to implement positive program modifications and improve service. The **ACF** has leveraged rapid learning methods such as rapid cycle evaluation (RCE) and continuous quality improvement (CQI) to strengthen programs through quick and/or iterative evaluation. For example, the Office of Planning, Research and Evaluation developed the *Learn, Innovate, Improve* (LI^2) process, which is a systematic, evidence-informed approach to program improvement. LI^2 involves a series of analytic and replicable activities, supported by collaboration between practitioners and applied researchers, to help human services programs design, implement, and iteratively test programmatic changes. As a continuous improvement process, LI^2 is intended to build practitioners' capacity for better

using and producing high-quality evidence; ultimately, this process can be institutionalized within the program environment.

- The **DOL** supports a number of evaluation efforts focused on workforce-related challenges and opportunities for people from underserved communities, including examinations of programs for youth and adults re-entering the workforce, workers with substance use disorders, and individuals with disabilities, including those attending community colleges.

Enhancing the Health Outcomes of All Americans

Equitably improving health outcomes for all Americans requires addressing the behavior and structural drivers that contribute to poor health and well-being in addition to supporting innovation in preventing, managing, and treating diseases and disorders. The federal government is taking action to increase access to healthy foods, support tobacco cessation, expand mental health services, and reduce barriers to healthcare services among other actions to improve the health of Americans. Evidence from the social and behavioral sciences underpins these efforts.

In 2022, the Administration held the first Conference on Hunger, Nutrition, and Health in over 50 years to launch the White House National Strategy on Hunger, Nutrition, and Health. This Strategy serves as a playbook to meet the President's goal to end hunger in America and increase healthy eating and physical activity by 2030 so fewer Americans experience diet-related diseases. The intersections of environments, social structures, and behavior cross the five pillars of the Strategy.

Cancer is a specific disease priority as it touches every American in some way, at some point, and despite the progress we've made in recent decades, it's still the second leading cause of death in America. The White House Cancer Moonshot aims to mobilize a national effort to end cancer as we know it. The Cancer Moonshot is working to build a world where the word 'cancer' loses its power, where a diagnosis isn't a death sentence, we prevent cancer before it starts, we catch cancer early so people live longer and healthier lives, and patients and families don't have to navigate their cancer journey alone. By bringing the federal government, healthcare providers, researchers, patients, caregivers, advocates, and the public and private sectors together, we're dramatically accelerating progress in the fight against cancer. The Cancer Moonshot is mobilizing toward the clear goals of preventing more than 4 million cancer deaths by 2047 and to transforming the experience of people who are touched by cancer.

Communicating Hazard Information

Federal agencies tasked with safeguarding the well-being of the US public face the common challenge of effectively communicating the risks of various hazards, as well as the nature and extent of scientific uncertainty about these risks. Effective communication involves a systematic assessment of the known risks and uncertainties associated with a specific hazard and the informational needs, values, goals and capacities of affected people, and the dissemination of information that accounts for these factors and is understandable and useful to people. Effective communication of risk and uncertainty enables the public to understand the likelihood of important hazards, assess the strength of available risk information, and take appropriate action to mitigate and respond to these hazards. Effective risk communication helps people anticipate, prepare for, prevent, and respond to hazards more effectively. Accurate, timely, transparent, and proactive communication of the risks and uncertainties associated with these hazards has become increasingly important due to global challenges and rising inequity. The challenges could be addressed through development of a risk communication community engagement system, consisting of policies, structures, and processes for local stakeholders in the development and implementation of risk and uncertainty communication strategies; building trust; and ensuring timely, consistent, bi-directional transfer of information between federal and local organizations and stakeholders. (Appendix D).

Identify Opportunity Areas

- To address knowledge gaps in how human services programs can address the needs of underserved rural communities, the **ACF** sponsored the Human Services in Rural Contexts project. Researchers engaged subject matter experts, reviewed over 50 articles, conducted over 100 interviews with human services providers and community partners across 12 rural communities, and analyzed qualitative and quantitative data. Focusing on four programs (TANF, MIECHV, HMRF, and HPOG), the study identified opportunities for strengthening the capacity of human services programs to promote the economic and social well-being of individuals, families, and communities in rural contexts.

- To better understand vaccine hesitancy within socially marginalized communities, the **Federal Emergency Management Agency (FEMA)** provided funding to the Culture and Disaster Action Network to identify barriers to vaccination. Using an ethnographic method of on-the-ground community immersion and community partnership common in cultural anthropology, experts used qualitative interviews and focus groups to identify the unique social, cultural, and historic factors that contributed to mistrust of vaccines among unhoused populations, incarcerated individuals, and migrant farmworkers.

Consider Social and Behavioral Insights

- The DARE (Drug Abuse Resistance Education) program launched in 1983 and included more than 75% of school districts with an annual budget of more than $10 million in 2002. Unfortunately, DARE proved ineffective at leveraging social and behavioral science insights and preventing adolescent substance use. The **Substance Abuse and Mental Health Services Administration (SAMHSA)** estimated that effective school-based substance use programing in 2002 would have saved state and local governments $1.3 billion, reduced social costs of substance use by $33.5 billion, and produced quality of life benefits of $65 billion.

- In response to the challenges of COVID-19, rapid health communication, and vaccine misinformation, the **NIH** responded to risks of a federal response to the virus underutilizing social and behavioral science by engaging expert input to rapidly develop a white paper on evidence-informed communication strategies in support of national COVID-19 vaccine distribution efforts. This report summarized foundational practices of effective health communication, including coordinated communication and consistent messaging, trust building through partnerships, consideration of differing health literacy levels in the population, and prioritizing equity in all aspects of communication. This effort was accompanied by additional resources, such as tip sheets to provide practical guidance.

- In response to the prevalence of Long COVID, the **Department of Health and Human Services (HHS)** drew on learnings from social and behavioral science regarding under-diagnosis and under-treatment of other post-viral illness sequelae, such as myalgic encephalomyelitis/chronic fatigue syndrome, when establishing the Office of Long COVID Research and Practice, and the launch of long COVID clinical trials Through the RECOVER Initiative. HHS seeks to ensure that the negative stereotyping of patients with ME/CFS be avoided in research and treatment of long COVID.

- To identify and evaluate strategies for improving the delivery and effectiveness of Healthy Marriage and relationship Education (HMRE) programs, the **ACF** sponsored the Strengthening Relationship Education and Marriage Services (STREAMS) project. This large, multi-site random assignment impact and process evaluation was designed to answer practice-relevant questions informed by behavioral insight theory. The findings provided actionable insights for improving programs, such as the best use of text messages to improve session attendance and workshop completion.

- In 2011, the **ACF** in partnership with the **Health Resources and Services Administration (HRSA)** launched the Mother and Infant Home Visiting Program Evaluation (MIHOPE), a legislatively mandated longitudinal evaluation of the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program. MIHOPE initially included four main components: an analysis of the needs assessments that the states and territories provided in their initial MIECHV applications; an impact analysis; an implementation analysis; and a cost analysis. Drawing on the findings, ACF undertook long-term follow-up and cost-benefit studies to inform the MIECHV program.

Synthesize Evidence and Highlight Best Practices

- The **Agency for Healthcare Research and Quality (AHRQ)** Evidence-based Practice Center Reports provide systematic reviews of scientific and clinical practice guidelines. These reports provide comprehensive, science-based information on common, costly medical conditions and new healthcare technologies and strategies to inform developing coverage decisions, quality measures, educational materials and tools, clinical practice guidelines, and research agendas. Institutions are awarded five-year contracts to serve as Evidence-based Practice Centers that review all relevant scientific literature on a wide spectrum of clinical and health services topics, produce technical reports on methodological topics, and conduct research on methodology of evidence synthesis.

- A diverse array of federal agencies has developed documents and resources on risk and uncertainty (e.g., evidence syntheses, white papers, best practice recommendations, conceptual frameworks), which provide insights on effective strategies for communicating risks and uncertainties of different hazards. **NOAA** developed a web-based, updatable evidence repository on risk communication, "ProbCom," which could serve as a prototype for broader interagency efforts to disseminate best practices in risk and uncertainty communication.

- The **USDA's Food and Nutrition Service (FNS)** evaluated states' cost containment policies and developed a model that states can use when choosing their own cost containment policies. The model shows a list of policies that produced cost savings with no adverse participant outcomes, compared to those that had cost savings but negative impacts on participants, had neither cost savings nor adverse outcomes, or had no cost savings and had adverse outcomes. The study produced practical findings states could use immediately to select their own policies based on evaluation evidence.

- Efforts to engage communities are at the heart of many federal programs and research activities. The **U.S. Department of Veterans Affairs (VA)** and **HHS**, including the **Centers for Disease Control and Prevention (CDC)**, **NIH**, and **HRSA**, collaborated to design the "*Principles*

of Community Engagement." The *Principles* provide both a science base and practical guidance for establishing collaborations and engaging with partners. As digital communications and websites have become an integral part of federal agencies sharing information and interacting with the community, the federal government has also established best practices and web design principles (e.g., the U.S. Web Design System) to guide teams across the government in establishing websites. Many of these principles for community engagement and web design development were informed by social and behavioral science.

Identify Actionable Steps and Policy Mechanisms

- Effective and flexible solutions that incorporate the social, cultural, and economic context of a community are more likely to be successfully implemented. By employing research-based approaches to stakeholder engagement and user-centered design, government leaders can deliver more actionable knowledge to the operations of federal agencies. For example, a Center of Excellence funded by the **National Institute on Minority Health and Health Disparities** at the **NIH** launched the Health Advocates In-Reach and Research (HAIR) program that created a network of barbershops and hair salons, providing training to barbers to support health communication efforts through trusted sources.

- The **NIH** partnered with nearly 550 community-based organizations to address COVID-19 disparities with the Community Engagement Alliance Initiative. Community-based interventions were based on social and behavioral science theories of change and participatory action research designs. In addition, social and behavioral science data from various communities was gathered to better understand vaccine hesitancy, as well as the impact of misinformation on belief and behavior. As a result of the Initiative, teams vaccinated nearly 200,000 individuals, distributed over 123,000 masks, and recruited over 600 participants in clinical research. Given the need to establish community partnership quickly, the NIH leveraged the Other Transactional Authority funding mechanism to fund the establishment of partnerships in a rapid fashion. Furthermore, along with traditional communication channels (e.g., news media, community events, printed education materials), teams from the Initiative and the National Institute of Health also leveraged digital communications (e.g., social media, webpages, e-newsletters) to spread the word to various communities. The development of these digital communication channels incorporated social and behavioral science community-based participatory methods, such as involving Community Advisory Boards to develop/refine websites. This digital strategy produced over 2 billion digital impressions and over 1.8 million website visits.

Implement and Disseminate

- The **FNS** has a number of efforts leveraging digital technology with the goal of ensuring eligible participants have access to Food and Nutrition Service's critical nutrition assistance programs, which research shows improve long-term outcomes related to food security, education, and health. Current efforts include a texting program with targeted nutrition education, and a social media and digital advertising campaign aimed at participants in the Women, Infants, and Children program. Early evaluation results indicate both were associated with increases in participation and retention. Other work testing a model using social media platforms reveals it had promise to expand access to program participants for nutrition education and similar messaging. Further, a model that tested an app's efficacy in helping participants identify eligible foods in the grocery store found that it increased benefit redemption, which is critical

to accessing the full benefit of the program's food prescription, which is designed to address nutritional deficiencies. Taken together, research provides preliminary evidence that digital communication channels can be implemented effectively and leveraged to improve Women, Infants, and Children program awareness and behaviors.

- There is not a "one-size-fits-all" approach to engaging communities in the implementation of efforts to communicate risk and uncertainty about particular hazards. Contexts (who, what, where), mechanisms (how and when), and outcomes (why and for what purpose) can all vary. The literature is full of descriptions of community engagement principles, practices, purposes, impacts, and outcomes. The **CDC** and **Agency for Toxic Substances and Disease Registry** plan to publish guidance summarizing scientific advances in community engagement over the past decade along with a focus on equity-centered community engagement, especially "meaningful community engagement" which means working closely with communities to understand their preferences on how, when, and to what level and degree they want to be engaged in efforts.

- The ACF established the Marriage Strengthening Research and Dissemination Center to form a nexus between research and evaluation on marriage and romantic relationships in the United States and programs designed to strengthen these relationships. The Center contributes to the relevant research and evaluation base, builds and supports the capacity of students and early career professionals to expand and strengthen the field, translates and disseminates emerging research and evaluation resources, and aims to actively engage a diverse range of groups and individuals.

- When engaging communities and implementing initiatives, **FEMA** utilizes a variety of tools to better understand community beliefs, values, and attitudes aimed at delivering more effective messaging and focus on community needs. For example, leveraging data and analysis from the World Well-Being Project allows for the delivery of programmatic efforts that align with community attitudes and preferences. The World Well-Being Project aims to measure the psychological state of communities through language-based prediction models of public social media content and demographic information.

Reflect and Revise

- An example of using causal evidence to inform policy decisions and its strength is the Summer Electronic Benefit Transfer for Children project administered by the **USDA.** The program used the gold standard in research design (random assignment), which enabled social scientists to demonstrate a direct causal impact of this program on a significant reduction in childhood hunger. Because of the strength of the research design, decision-makers could confidently allocate additional resources to the demonstration and ultimately work with Congress to convert it into a permanent program. In order to do this, social scientists needed several things: They used a rigorous design but explained it to decision-makers using plain language. When they had findings, they explained them in actionable terms and provided specific steps the program could take to apply the research findings to designing and implementing the program. When similar challenges arose during the pandemic, social scientists were able to help program partners interpret and apply the findings to adjust the program to a new context so the principles of the program designs that caused the reduction in childhood hunger could be preserved and applied in a new context with the confidence that the adjusted program should

have similar impacts on reducing childhood hunger. In December of 2022, Congress authorized the project as a permanent, nationwide program, launching an effort to scale the intervention nationally.

- Through the Innovative Strategies for Addressing Employment Barriers Portfolio, the **ACF** is partnering with the **Social Security Administration (SSA)** to rigorously evaluate employment interventions for individuals with low incomes and who have current or foreseeable disabilities, mental health conditions, substance use disorders, or other complex barriers to employment. The portfolio aims to build the evidence base on programs that are effective in improving employment, earnings, and other well-being outcomes for the target populations.

- The **ACF** is conducting the Diaper Distribution Demonstration and Research Pilot. This program provides funding to expand existing diaper distribution services through a robust network of community partners that provide anti-poverty services such as economic mobility and family support services. Addressing diaper need has potential implications for a wide range of outcomes related to child, caregiver, family, and community well-being. ACF is conducting an evaluation to assess program implementation and outcomes, and to lay the groundwork for a future impact evaluation.

Rebuilding our Infrastructure and Building for Tomorrow

After decades of talk on rebuilding America's crumbling infrastructure, President Biden delivered the Bipartisan Infrastructure Law—a historic investment in America that will change people's lives for the better and get America moving again. To date, over 20,000 projects have been awarded funding from the Bipartisan Infrastructure Law. These projects include deploying high-speed internet through state-formula and competitive grants, repaving roads and water system upgrades funded through formula grants to states, and distributing competitive funding for massive bridge and transit projects.

Identify Opportunity Areas

- Geographically granular data from national household surveys, including key information on demographics and internet use for local areas, are currently limited to five-year estimates from the **Census Bureau's** American Community Survey. The **National Telecommunications and Information Administration (NTIA)** and the Census Bureau are collaborating to produce more fine grade, single-year estimates (i.e., small area estimates) to inform digital equity and broadband adoption programs. Drawing from available survey data, administrative sources, and advanced modeling techniques, the NTIA and the Census Bureau released the first-ever tract- and county-level estimates of the covered populations defined by the Digital Equity Act, enabling states, advocates, and researchers to better understand where those populations are concentrated. These new estimates are available for download and are also depicted in the Digital Equity Act Population Viewer. As a result, decision-makers can more precisely identify communities that may be experiencing barriers to full participation in the digital age, which can assist in identifying locally relevant interventions.

Inclusion Through Digital Community Engagement and Broadband Availability

Digital technologies may either enhance or hinder program engagement with different communities and may present unique opportunities or challenges when engaging historically underserved populations. The social and behavioral sciences offer methods and strategies for partnering with communities to determine which technologies and delivery approaches may be most appropriate for program implementation. Federal agencies should work with communities as equal partners in developing, implementing, and disseminating programs and services with digital components from the beginning, and assess community members' preferences, capabilities, and behaviors when interacting with technology-based solutions. Federal agencies should explore how to best share data among agencies and with community partners (Appendix E.1).

Many Americans live in areas where broadband infrastructure is still not available, and where available, many do not subscribe to or use this technology or have the skills to use it effectively. Disparities and inequities are also seen in broadband availability, adoption, and digital skills. The federal government continues to invest substantial resources to remedy the problem. Social and behavioral sciences insights can inform policy approaches to increase broadband availability and adoption by identifying factors related to availability and adoption and assessing the impacts of programs. (Appendix E.2).

Consider Social and Behavioral Insights

- The **USDA** is advancing research to better identify people and places that are not as well served by selected USDA broadband programs, whether because such people/places are not eligible, are less likely to apply to programs if eligible, or are less likely to have applications for funding approved. Further social and behavioral research investigating why some populations and places are less likely to apply for funding or are less likely to have applications for funding approved could provide valuable information that could help program managers improve equity and inclusion in broadband programs.

- Little published research investigates the impacts of federal broadband programs and even fewer studies to estimate the economic benefits, costs, and risks of such investments to date, particularly in regard to how these factors vary across geographic regions, different racial and ethnic groups, or other subpopulations and communities. To address this research gap, the researchers at the **USDA** and their collaborators are investigating such impacts for selected broadband programs funded by the department. These efforts will help clarify and identify areas of potential benefit and risk for future broadband and digital infrastructure investments.

- Supporting the practical value of conceptual frameworks, the **EPA** has developed and implemented the Strategy, Action, Learning, and Tools framework to guide risk communication efforts. **NASA** has established and implemented a framework-based Risk-Informed Decision-Making and Continuous Risk Management process to help agency decision-makers adopt a systematic approach to understanding and managing risks. This framework uses a 5x5 matrix to convey the estimated consequence and likelihood of an outcome. Definitions of established professional community thresholds accompany these to match the operational decision-making setting. These matrices provide a common language at the technical and management level and allow for greater understanding and tracking of identified risks. It also facilitates the elevation of critical concerns to higher levels for risk acceptance within the organization.

Synthesize Evidence and Highlight Best Practices

- The **Department of Housing and Urban Development (HUD)** established the [Regulatory Barriers Clearinghouse](#) to collect, process, assemble, and disseminate information on state and local regulations and policies affecting the creation and maintenance of affordable housing. The Clearinghouse also provides evidence on barrier reduction related to affordable housing development. For example, a [2021 report](#) identified metropolitan areas with high housing costs and low production with best practices for localities and states to increase housing production to better enable households of all income levels to access high-productivity areas.

Identify Actionable Steps and Policy Mechanisms

- Research on the extent and challenges of broadband availability and adoption informed decision-makers about the size of the problem, the places and populations most at risk, and the social and economic consequences of the digital divide. This information enables decision-makers to weigh the potential costs and benefits of broadband expansion policies and programs, and can help federal, state, local, and Tribal governments to target assistance to the places and populations most in need of assistance. The **NTIA** [State Digital Equity Planning Grant Program](#) provides funding to states and territories to develop digital equity plans for expanding digital access to underserved communities and the [State Digital Equity Capacity Grant Program](#) will provide the funding to implement the proposed equity plans. For households with existing

access to broadband, but insufficient financial resources, the **Federal Communications Commission's (FCC)** Lifeline and Affordable Connectivity Programs provide targeted subsidies to promote digital inclusion. Each of the broadband projects funded by the **Department of the Treasury** $10 billion Capital Projects Fund are required to participate in the Affordable Connectivity Program.

Implement and Disseminate

- The Lab at the **U.S. Office of Personnel Management (OPM)** and **EPA** collaborated to launch the Flooded Homes site aimed at disseminating information and informing community efforts to reduce health threats during floods. The guidance site was designed around human-centered design principles that put people at the center of the process by taking into account behaviors, ways of thinking, needs, and aspirations. Through participatory design, experts worked directly with communities to guide content creation and usability testing around the topics of interest to end-users and impacted communities.

Reflect and Revise

- Evidence on the socio-economic impacts of broadband availability and adoption is essential for evaluating efforts to close the digital divide. The Consolidated Appropriations Act of 2021 (CAA) included the ACCESS BROADBAND Act, which requires **NTIA** to annually report on federal broadband spending across the federal government in the Federal Broadband Funding Report, while also assessing the economic impacts of those projects. As the many substantial broadband-related grant programs funded by the CAA and the Bipartisan Infrastructure Law get underway, these activities will serve as an important channel for disseminating program data that can be used in program evaluation research, including via the newly-released ACCESS BROADBAND Dashboard. The Dashboard represents the latest product of a partnership between the NTIA and the **Census Bureau** that also resulted in the Digital Equity Act Population Viewer and associated estimates. It displays granular indicators of broadband availability and adoption with economic indicators that research suggests broadband expansion could influence. To assist in evaluation efforts, **OMB** issued Controller's Alert CA-23-02 in consultation with the NTIA directing agencies to consistently describe programs that can support broadband, which, when fully implemented, will assist researchers and the public to determine trends in federal spending for common broadband program purposes—Broadband Infrastructure Deployment, Broadband Digital Inclusion or Adoption, and Broadband Planning, Data, or Mapping.

Promoting National Defense and International Security

To protect the security of the American people, to expand economic opportunity, and to realize and defend the democratic values at the heart of the American way of life, the Administration is committed to working in lockstep with America's allies and partners, investing in the nation's military edge, and addressing the most significant challenges and opportunities before us. The Administration has reinvigorated crucial partnerships, fostered democracy and economic prosperity, advanced global health, furthered gender equality around the world, invested in our immigration system, and strengthened America's military.

Identify Opportunity Areas
- Decision-makers draw upon social science expertise to shape the National Defense Strategy and its implementation. For example, the **Department of Defense (DOD)** Minerva Research Initiative hosts an annual virtual seminar series that aims to facilitate a conversation among social scientists and senior decision-makers about the National Defense Strategy. These sessions are an opportunity for scientists to convey relevant insights important for the Department's consideration and inform strategy implementation. These insights can reveal vital shortcomings and opportunities for addressing national defense challenges. Novel social and behavioral science research informed one of the central themes of the 2022 National Defense Strategy, integrated deterrence.

Consider Social and Behavioral Insights
- The **Department of Homeland Security (DHS)** Science and Technology Directorate's new Technology Centers Research Agenda highlights social and behavioral science as essential for identifying and addressing threats, prevention, deterrence, resilience, security, and recovery efforts around national security. In particular, combatting terrorism, human trafficking, child exploitation, and targeted violence, and helping to build a fair, orderly, and humane immigration system, are priorities supported by social and behavioral science. Better understanding motivations and drivers across DHS efforts, advancing awareness of changing behavioral and social implications of technology, and advancing technological acceptance across DHS are focus areas aimed at helping DHS deliver on efforts across these priorities.

- To better understand the strategies that rebel groups use to fund their activities by gaining control of natural resources (e.g., oil reserves, mineral deposits, alluvial gemstones), the **DOD** worked with social and behavioral scientists to produce the Rebel Contraband Dataset, a geocoded database that tracks resources rebels control, how they gain control of natural resources (e.g., extortion, theft, providing kickbacks to local civilians who provide access to the resources) and how they use the resources to finance their activities (e.g. smuggling). The analysis lends new insights for decision-makers on the range of regions at risk of conflict from particular groups through highlighting the role these dynamics play in rebel activity. From a similar approach, social scientists created the Resource Location Dataset, which identifies where resource pockets are in Africa. When used with the Rebel Contraband Dataset, the Resource Location Dataset enabled analysts to identify risk regions and provided Defense policy leaders and strategists with new information to counter rebel activities.

Synthesize Evidence and Highlight Best Practices
- The **DOD** funded social and behavioral science research that enabled the North Atlantic Treaty Organization (NATO) policy leadership approval of the 2022 NATO Strategic Concept, which sets out NATO's priorities, core tasks and approaches for the next decade. The strategy also outlines the political and military tasks that America and NATO Allies will carry out to address them. This empirical evidence influenced a shift in language and emphasis during the drafting stage of the new Strategic Concept. A key revision was changing the language of one of NATO's three core tasks from "crisis management" to "crisis prevention and management."

- The **NSF** recently launched the Centers for Research and Innovation in Science, the Environment, and Society (CRISES) program, which seeks to address complex and compounding national and global crises whose solutions require a human-centered approach. The envisioned centers will catalyze new research and research-based innovations to address seemingly intractable problems that confront society, from floods, droughts, and wildfires to famine, war, and epidemics of suicide, substance abuse, and mental illness.

- With support from the **DOD** Minerva Research Initiative, the Empirical Studies of Conflict Project (ESOC) launched in 2009 to support research on civil war and other politically motivated violence. Today, ESOC focuses on generating independent social science research on topics ranging from counterterrorism and counterinsurgency to economic development and civil conflict. The project delivers academically rigorous, timely, and relevant evidence to a wide range of decision-makers in addition to supporting data dashboards and facilitating programs for security professionals to better understand how social and behavioral science evidence informs decision-making for national defense.

Identify Actionable Steps and Policy Mechanisms
- The **DOD** Minerva Research Initiative supports social science research aimed at improving our basic understanding of security, broadly defined, by helping identify how social and behavioral science insights can be applied to issues of national security and global stability. All supported projects are university-based and unclassified, with the intention that all work be shared widely to support thriving stable and safe communities. The goal is to improve DOD's basic understanding of the social, cultural, behavioral, and political forces that shape regions of strategic importance to the United States. Among these issues, translating and applying work on hazard communication by the **NSF**, the **NIH**, and other agencies into exiting national security efforts is a priority.

Implement and Disseminate
- Alumni from the Empirical Studies of Conflict Project supported by the **DOD** promote and disseminate social science and security expertise through engaging with interdisciplinary think-tanks and non-profits organizations like the Stimson Center that support evidence on the relationship between social sciences and national security.

Reflect and Revise
- **DHS's** FY23 Annual Evaluation Plan highlighted evaluation of the Targeted Violence and Terrorism Prevention Grant Program. As noted in the plan, better "understanding the effectiveness of targeted violence and terrorism prevention practices on outcomes will allow DHS, its federal partners, and grant recipients to better shape policies and programs to

implement the national strategic terrorism and targeted prevention strategy." The evaluation effort reflects the first strategic goal of DHS's FY22-26 Learning Agenda - Counter Terrorism and Homeland Security Threats. Evaluation of the program will allow for the opportunity to ensure that funded activities collect measurable data to evaluate effectiveness, promote equity, safeguard civil rights and liberties, and are reflective of the available social and behavioral science evidence.

Appendix

Appendix A: Effective Strategies for Incentivizing Evidence-Based Approaches

In Summary:

The United States government annually provides billions of dollars to state, local, Tribal, and territorial governments as well as myriad service providers to deliver services designed to improve outcomes for the American public. Due to the knowledge developed through the social and behavioral sciences, federal agencies often know about evidence-based interventions that can improve results. However, much of federal spending is not incentivizing funding recipients to use this knowledge to improve outcomes. The U.S. government can better incentivize evidence use in its spending by adopting a set of strategies, including: 1) incorporating existing evidence into federal programs, 2) supporting and engaging recipients to identify and implement evidence-based interventions, and 3) building evidence where needed to further build knowledge about what works.

What's the Problem?

The U.S. government and external research entities maintain a wide variety of resources that catalog the available evidence about effective approaches in a significant number of policy areas, from workforce development and education to childcare. But many of the federal programs that provide funds to external organizations to deliver services do not incorporate this evidence, nor do they incentivize funding recipients to use evidence or collect data on effectiveness, themselves. More broadly incorporating evidence into federal funding opportunities could improve results for people, and make more effective use of federal funds. Incorporating evidence can also lead to more equitable outcomes, including by expanding the receipt of available services to all eligible recipients, which is an emerging priority across federal agencies. At the same time, more broadly encouraging recipients to generate additional evidence about the interventions they implement will expand the knowledge base about what works, for whom, and under what circumstances.

What Works: Insights from the Social and Behavioral Sciences That Can Help

Promising strategies to encourage the adoption of social and behavioral science insights into government-led practices, programs, and policies include:

- **Requiring—or strongly encouraging—the adoption of social and behavioral insights**, by government agencies and funding recipients accountable for the implementation of services with federal funding.
  - In practice, this strategy entails a range of actions, from awarding points in grant competitions for proposals that include evidence-based strategies, to requiring that grant funds be spent on evidence-based strategies For example, the U.S. Department of Education's Education Innovation and Research uses evidence to allocate funds to applicants based on their level of evidence. As another example, AmeriCorps has awarded points for proposals that include evidence-based strategies in its annual state and national grant competition for the last seven years. During that time period, the percentage of funds going towards projects with strong evidence doubled to 40 percent and allowed effective programs to broaden their impact.

- o Many policy areas have evidence gaps, so another element of this strategy is to require funding recipients to generate new evidence by including a rigorous program evaluation from the outset.
  - o **Prioritizing the development of direct, trustworthy relationships**, whether formal or informal, between producers and consumers of social science insights, and the intermediaries who bring them together.[37, 38] In practice, this strategy could mean quick-turn evidence building, in partnership with the research community outside of the federal government to amplify federal agencies' ability to efficiently address pressing evidence needs and support evidence-informed decision making within the agency. For example, the Department of Labor has spearheaded a [Summer Data Challenge on Equity and Underserved Communities](#) during which scholars pursued 6-month research sprints to analyze how federal labor policies, protections and programs reach communities that have been historically underserved due to race, ethnicity, sexual orientation, gender identity, disability, income, geography, immigrant status, or veteran status.
- **Creating and maximizing formal research-practice partnerships**, which can serve as a standing structure for supporting relationships of trust and shared goals between researchers and decision makers.[39, 40, 41]
  - o In practice, this strategy could mean deploying agency social and behavioral scientists, or contracting with external social and behavioral scientists, to co-develop research approaches to provide insights on pressing research questions and policy evaluations, such as those captured in agency [Learning Agendas](#) and [Annual Evaluation Plans](#). It could also mean cross-agency partnerships; for example, the U.S. Treasury Department and the Office of Evaluation Sciences partnered to [examine](#) the equity in the distribution of the Emergency Rental Assistance program.
- **Investing in leadership positions focused on evidence translation** within federal agencies to not only focus on creating social and behavioral science evidence, but ensuring that this evidence funnels from researchers to program officers and other decision-makers.[42]
  - o In practice, this strategy entails establishing and investing in the offices of Evaluation Officers, Chief Data Officers, and Statistical Officials in the federal government (and similar positions in other organizational structures), and advocating for the establishment of new roles specifically dedicated to translating research insights to the policy perspective – an often overlooked, but absolutely critical, job when it comes to promoting evidence-informed approaches to federal funding.

[37] https://www.researchgate.net/publication/286545359_The_Critical_Role_of_Brokers_in_the_Access_and_Use_of_Evidence_at_the_School_and_District_Level

[38] https://www.researchgate.net/publication/290907963_The_Intermediary_Function_in_Evidence_Production_Promotion_and_Utilization_The_Case_of_Educational_Incentives

[39] https://journals.sagepub.com/doi/full/10.3102/0162373715576074

[40] https://files.eric.ed.gov/fulltext/ED536954.pdf

[41] https://wtgrantfoundation.org/evidence-crossroads-pt-11-next-generation-evidence-based-policy

[42] https://www2.census.gov/adrm/fesac/2017-12-15/Abraham-CEP-final-report.pdf

What Should We Do?

To improve programs and increase the effectiveness of government spending by making better use of the existing evidence from social and behavioral sciences, the U.S. government should:

- **Incorporate Existing Evidence**: Federal agencies should incorporate information from social and behavioral sciences into their processes for developing and implementing grant programs. For example, the Department of Education's Evidence Leadership Group assist agency program staff to infuse evidence into the agency's grantmaking programs. In addition, the state of Colorado uses an evidence scale to score spending proposals in the state's annual budget and the state of Minnesota incorporated evidence into budgeting and policy processes, including using $2.36 billion of State and Local Fiscal Recovery Funds to support 67 unique evidence-based practices implemented by just over 1,000 sub-recipients.
    - To facilitate this work, federal agencies should explicitly appoint evidence "translators" that can serve as link between researchers and program staff to bake evidence into agency programs in ways that are practicable and actionable. In addition, agencies should dedicate resources to creating structures to develop relationships between researchers and policymakers.
- **Support and Engage Recipients**: Federal agencies should provide support to funding recipients to help them identify and implement evidence-based interventions. Toolkits, clearinghouses, and peer learning can be effective approaches along with allowing funding recipients to use federal funds to build their capacity to use evidence. Effective use of federal funds relies on the active participation of agencies to work in cooperation with funding recipients to implement federal programs. In some cases, this more hands on approach to program administration may require additional funds for technical assistance by federal staff.

The federal government should use funding opportunities to support rigorous evaluation, provide technical assistance to increase evidence generation, and provide peer learning opportunities that permit different program leaders to convene and share resources and lessons learned.

- For example, the Administration for Children and Families TANF Data Collaborative provides technical assistance and training to support state TANF agencies' efforts to routinely use administrative data to inform policy and practice. Other agencies have used evaluation technical assistance to build and use evidence in a variety of areas.
- For example, the Department of Education released a resource to elevate evidence-based practices to support educators who are working to address the impact of lost instructional time on students.
- The Substance Abuse and Mental Health Services Administration at the Department of Health and Human Services created the Developing a Competitive SAMHSA Grant Application guide, which assists applicants to incorporate evidence into their grant applications.
- In response to stakeholder feedback, the Millennium Challenge Corporation created an Evidence Platform to encourage country partners to learn from measured results.

In addition, the U.S. government can collaborate with outside organizations, who have the expertise and resources to support federal grantees in this area, to incorporate evidence-based approaches into federal grant programs. These external partners add value by running programs, broadly sharing evidence-based practices, bringing together national or regional organizations for peer learning, convening other partners to focus on effective implementation. External partners can also help to do

outreach to underserved communities, bridge gaps to ensure that federal programs are communicated in ways that are relevant to those communities, and improve the equity of program impact.

- **Build evidence where needed**: It is also important that we continue to conduct additional evaluations about the results these programs are achieving and how they could be further improved. Continuing to build a robust body of evidence will create a virtuous cycle for federal programs where they both use evidence to improve effectiveness and also further generate new evidence to get even better results in the future. It is also important to build evidence on effective strategies to encourage the adoption and faithful implementation of evidence by federal agencies and funding recipients. For more information on these activities, explore agencies' Learning Agendas and Annual Evaluation Plans on Evaluation.gov.

In many of these areas, additional fiscal support from Congress and other sources could supercharge these efforts to incorporate evidence into agencies' processes and programs.

What Levers Do We Have to Act?

The federal government should use all available levers to require, incentivize, encourage, and stimulate the use of existing evidence in federal programs. As noted below, these levers include both explicit requirements to use evidence and soft encouragement of evidence.

Funding and Compliance

Federal agencies provide significant funding in a wide variety of policy areas. The permitted uses for these federal funds are governed by a variety of mechanisms, including notices of funding, program application requirements, rules and regulations, guidance, reporting requirements, and related information disseminated by federal agencies.

As was clarified in the Uniform Grants Guidance 2024 Revision, recipients of Federal funds, including grants, are allowed to spend a portion of award funding on evaluation activities when related to the award. Evaluation costs include (but are not limited to) evidence reviews, evaluation planning and feasibility assessment, conducting evaluations, sharing evaluation results, and other personnel or materials costs related to the effective building and use of evidence and evaluation for program design, administration, or improvement.

By requiring, incentivizing, or encouraging the use of evidence-based interventions through these funding and compliance related requirements, the federal government can increase the effectiveness and equity of the programs it funds.

- For example, the Department of Labor's Reemployment Services and Eligibility Assessment Grants program requires states to use interventions that have strong evidence and to evaluate any strategies without such evidence, beginning in FY23 states are required to use no less than 25% of their grant funds for interventions with strong causal evidence showing a demonstrated capacity to improve employment and earnings outcomes for program participants.
- For example, the American Rescue Plan requires the Department of Education to allocate a percentage of funds to State and Local Education Agencies (SEAs and LEAs) for evidence-based interventions and programs.
- Additionally, the U.S. Treasury's State and Local Fiscal Recovery Funds reporting guidance requires large recipients to report on what amount of funds is being spent on evidence-based

interventions, though such reporting is not required if the recipient is conducting a rigorous program evaluation.

- Meanwhile, the American Rescue Plan incentivizes states to provide evidence-backed, community-based mobile crisis intervention services for a period of up to five years, starting on April 1, 2022.

Best Practice Sharing Tools

Beyond funding, compliance, and reporting guidance, the U.S. government is able to take less formal approaches to encouraging the use of evidence-based interventions by sharing tools and best practices with stakeholders. While these approaches may not require the use of evidence, they can be strong ways to incentivize action by the governments and organizations that receive federal funding and want helpful tools to make the most effective use of resources to serve their constituents. Some frequent approaches by federal agencies include creating toolkits, publishing evidence clearinghouses and reviews, sharing best-practices documents, and highlighting reviews of effective programs.

Outreach and Targeted Communications

Targeted engagement of federal grantees and partners can increase the use of evidence by helping external stakeholders to adopt approaches that are based on findings from the social and behavioral sciences. In addition, by conducting authentic community engagement, federal agencies are able to share federal priorities and learn from stakeholders on the ground about effective ways to increase the adoption of evidence-based approaches. Federal agency Learning Agendas are an important tool in this regard and require stakeholder engagement.

- For example, the U.S. Department of Housing and Urban Development has used a robust stakeholder engagement process to generate feedback for its agency Learning Agenda.

What's Being Adopted?

Across the federal government, a number of agencies are incorporating evidence into their spending processes as outlined above. In addition to the examples included in the previous sections:

- The U.S. Department of Education's Education Innovation and Research uses evidence to allocate funds to applicants based on their use of evidence-based interventions, with bigger awards for applicants with stronger evidence.
- USAID's Development Innovation Ventures uses rigorous evidence to identify, fund, and scale innovative interventions. Since 2010, the program has spent more than $170 million to fund innovations in nearly 50 countries.
- The Substance Abuse and Mental Health Services Administration's Community Mental Health Block Grant has a 10% set-aside for evidence-based interventions that can serve individuals with mental illness.
- The Administration for Children and Families' Sexual Risk Avoidance Education program requires that applicants cite evidence that supports their proposed interventions.

What Do We Still Need to Know?

While there are numerous ways of using evidence to inform federal programs and policies, more research is needed to determine:

- What strategies promote greater success in using evidence to improve outcomes for federal programs? To what extent does this differ across policy areas?
- Which kinds of supports, resources, and assistance are most helpful for supporting federal awardees and implementing partners in building and using evidence?
- What are effective ways to include lived experience and other qualitative research in evaluations of federal programs that are serving a diverse set of beneficiaries?

Appendix B.1 - Going Beyond Recidivism to Determine Successful Reentry and Strengthen Public Safety (Desistance)

In Summary:

Public safety should not be measured solely on the basis of recidivism rates. Doing so limits the effectiveness of current approaches to reentry and could be exacerbating disproportionalities in the criminal justice system by contributing to the cumulative disadvantage of racial and ethnic minorities, people with disabilities, and communities of lower socioeconomic status.[43] Communities, academic experts, bipartisan elected officials, faith leaders, civil rights advocates, and law enforcement leaders agree that our criminal justice system can and should reflect core values that promote safer and stronger communities, such as tackling the root causes of crime, improving individual and collective outcomes, and ensuring taxpayer dollars are delivering the highest degree of public safety and equal justice. As reflected in the Alternatives, Rehabilitation, and Reentry Strategic Plan, a paradigm shift is necessary to provide a fuller understanding of reentry, develop more effective approaches to successful reentry, and promote better ways of measuring positive outcomes which could lead to a more equitable criminal justice system and greater public safety for all.[44]

What's the Problem?

The U.S. population has less than 5% of the world's population but represents over 20% of the world's prisoners. The incarceration rate in America is four to eight times higher than that of other liberal democracies and higher than Russia and Cuba. The impact of this mass incarceration is disproportionate. Black men are incarcerated at nearly six times the rate of White men.[45] Black men with disabilities account for less than 2% of the overall U.S. population but more than 18% of the state prison population.[46] Hispanic men are incarcerated at nearly two-and-a-half times the rate of White men.[47] Native Americans overall are incarcerated at more than twice the rate of White Americans.[48] Women are the fastest-growing population experiencing incarceration.[49] LGBTQI+ adults are incarcerated at three times the rate of the total adult population. Nearly 40% of people in state and federal prisons have at least one disability[50] compared to 26% of adults in the overall U.S. population.[51]

Between 70 million and 100 million—or as many as one in three Americans—have a criminal history record.[52] After release, people returning home from jail or prison face civil and criminal penalties that make it difficult for them to obtain education, secure quality jobs, support their families, and contribute

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[43] https://bjs.ojp.gov/content/pub/pdf/drpspi16st.pdf

[44] https://www.whitehouse.gov/wp-content/uploads/2023/04/The-White-House-Alternatives-Rehabilitation-and-Reentry-Strategic-Plan.pdf

[45] https://www.sentencingproject.org/reports/the-color-of-justice-racial-and-ethnic-disparity-in-state-prisons-the-sentencing-project/

[46] https://www.healthaffairs.org/doi/10.1377/hlthaff.2022.00495

[47] https://bjs.ojp.gov/content/pub/pdf/p19.pdf

[48] https://eji.org/racial-justice/#Presumption_of_Guilt

[49] https://www.vera.org/news/womens-incarceration-rates-are-skyrocketing

[50] https://bjs.ojp.gov/content/pub/pdf/drpspi16st.pdf

[51] https://www.cdc.gov/ncbddd/disabilityandhealth/infographic-disability-impacts-all.html

[52] https://www.sentencingproject.org/app/uploads/2022/08/Americans-with-Criminal-Records-Poverty-and-Opportunity-Profile.pdf

to their communities. This lack of access to healthcare, housing, job training, and other supportive services hinders successful reentry and increases the risk of recidivism. According to the most recent federal analysis of statistics from 34 states, nearly 4 in 10 were rearrested at least once in the first year after their release from state prison.[53] More than 7 in 10 were rearrested within five years.[54] What's more, the direct governmental cost of our corrections and criminal justice system was $320 billion in 2019, according to the Bureau of Justice Statistics.[55] If states lowered recidivism rates by 10%, they would save an average of $635 million annually. Those figures, however, do not capture the full social cost of incarceration: lost earnings, adverse health effects, and detrimental effects on the children of incarcerated parents, amounting to nearly $1.2 trillion annually.[56] Economists have estimated that our gross national product is reduced between $78 to $87 billion dollars annually due to the lack of full participation of formerly incarcerated persons in the workforce.[57]

Historically, recidivism has been used as one of the primary measures for determining the effectiveness of policies and programs targeting successful reentry, in part because recidivism is the most widely and consistently collected metric in the justice system. The National Academies of Sciences, Engineering, and Medicine (NAS) published its analysis of recidivism in 2022.[58] They concluded that recidivism is a poor measure of an individual's reintegration success, in significant part because public safety and rehabilitation are not captured by measuring recidivism alone. Specifically, recidivism fails to address multiple dimensions of post-release success, such as employment, housing, and building pro-social relationships.

Additionally, a significant percentage of those who return to prison are returned for technical violations of their conditions of release, not necessarily related to the commission of a new offense.[59] In 2019, the Council of State Governments reported that nationally nearly one in four incarcerated individuals were incarcerated as the result of a technical violation, costing states more than $9 billion annually. How researchers distinguish between those rearrested for supervised release, probation, and parole violations and those rearrested for the commission of new criminal offenses, can have significant effects on the evaluation of the policies and programs targeting post-release outcomes.[60]

The NAS report recommended moving beyond recidivism as the sole or primary metric to adequately measure post-release outcomes "which will require reversing the polarity of recidivism from failure to success." Further, the authors encourage developing better measures of successful reentry focusing on individual success in stabilizing factors such as housing, employment, and family connections over recidivism risk alone. A fuller understanding of reentry will help to promote more accurate ways of measuring success, thus leading to the development of more effective and equitable approaches.

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[53] https://bjs.ojp.gov/sites/g/files/xyckuh236/files/media/document/rpr34s125yfup1217.pdf
[54] https://bjs.ojp.gov/sites/g/files/xyckuh236/files/media/document/rpr34s125yfup1217.pdf
[55] https://bjs.ojp.gov/jeet
[56] https://www.americanactionforum.org/research/the-economic-costs-of-the-u-s-criminal-justice-system/#:~:text=The%20societal%20costs%20of%20incarceration%E2%80%94lost%20earnings
[57] https://cepr.net/images/stories/reports/employment-prisoners-felonies-2016-06.pdf
[58] https://nap.nationalacademies.org/catalog/26459/the-limits-of-recidivism-measuring-success-after-prison
[59] https://journals.sagepub.com/doi/abs/10.3818/JRP.2.1.2000.73
[60] https://doi.org/10.1080/0735648X.2019.1676817

What Works: Insights from the Social and Behavioral Sciences That Can Help

Social and behavioral science research demonstrates that housing, employment, family unification, mental and physical health treatment, and addressing other critical needs are vital to post-release success. Studies indicate that people who receive mental health treatment during and after their sentences are less likely to commit new criminal offenses.[61] Moreover, a well-documented body of literature suggests that government public assistance programs have been effective in reducing the risk of criminal justice system involvement in the first place and the risk of recidivism, thereby strengthening public safety. The research also suggests that smaller caseloads improve community corrections officers' ability to accurately assess clients' needs and direct them to more beneficial treatment programs based on those assessments.[62]

Research also points to reentry programs not being sufficient in themselves. An individual's needs may interact with the systemic barriers of the neighborhood or community to which they are returning. Additionally, research suggests that a program needs to be delivered at the right time in the individual's trajectory of change.[63]

For years, researchers have studied the association of community supervision and recidivism outcomes, finding that focusing time, attention, and resources on high-risk offenders yields the most impact.[64] In fact, research shows that unnecessary and/or excessive supervision requirements on certain low-risk offenders can be counterproductive, actually increasing their risk of reoffending.[65]

What Should We Do?

- **Strengthen common data definitions and collection procedures** to enable effective use of diverse data sources, including administrative records (e.g., to measure post prison success) and open-source data.
- **Develop improved measures for reentry** beyond recidivism to shape more effective policy approaches and practices.
- **Build better evidence on what works** (and what does not work) in reentry, using the most rigorous applicable and practical research approaches. To the degree possible use randomized control trials (RCTs) to get at causality. Support replication research.

What Levers Do We Have to Act?

- **Funding**
  - o Grants and assistance that incentivize or require common data standards that enable assessment of long-term outcomes.
- **Collaboration**
  - o Support programs aimed at supportive transition, including building new contacts and networks to find employment, housing, healthcare, etc.
- **Promote Promising Practices**

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[61]https://csgjusticecenter.org/publications/reducing-recidivism-states-deliver-results-2017/
[62]https://www.ojp.gov/ncjrs/virtual-library/abstracts/reduced-caseloads-improve-probation-outcomes
[63]https://www.njjn.org/uploads/digital-library/Prison-Reentry-Services-What-Worked-for-SVORI-Evaluation-Participants_RTI-International_05.17.2012.pdf
[64]https://www.ojp.gov/ncjrs/virtual-library/abstracts/probation-and-recidivism-study-probation-adjustment-and-its
[65]https://psycnet.apa.org/record/2010-15519-006

- o   Strengthening the evidence base on "what works."
- **Ongoing Administration Efforts**
  - o   Federal Interagency Alternatives and Reentry Committee strategic plan.

What's Being Adopted?

The Department of Justice (DOJ) has made a $30 million, multi-year investment in rigorous research and evaluation projects to build better evidence on what works and what does not work in reentry programs and practices and the mechanisms of desistence. The DOJ's investments focus on evaluating: (1) young adult reentry programs, (2) traumatic brain injury programs, (3) risk-need responsivity strategies, (4) emerging technology, (5) addressing technical violations, (6) desistence, and (7) innovative treatment modalities.[66]

As it concerns young adult reentry programs, one project seeks to address past trauma and its likely consequences, particularly impulsivity and aggression, among individuals released from prison. Other projects focus on interventions for young adults in jail, mainly cognitive behavioral therapy with case management.

The focus of the DOJ's interdisciplinary investments in technology focus on the use of artificial intelligence and machine learning (AI/ML) to better identify and address an individual's criminogenic risks and needs; to enable the probation or parole officer to focus more attention on the individuals under their supervision. Efforts include application of AI/ML to identify risks and provide programming support in real-time, through data collected through wearable devices and smartphones.[67] The DOJ just completed the *Recidivism Forecasting Challenge* which sought to develop improved AI/ML-based tools to predict future recidivism risk among a sample of individuals released from prison to parole, using person- and place-based variable. (Challenge participants used deidentified data provided by the Georgia Department of Community Supervision.) Among other questions, the Challenge probed how to minimize the risk of bias, including racial and gender bias, in these criminogenic risks and needs analyses.[68]

The DOJ's efforts also include a randomized control trial (RCT) of the Organizational Coaching Model (OCM). The OCM model uses community supervision practices, organizational design, and implementation science to focus probation and parole practices on coaching people on supervision through the behavioral change process to reduce the risk of revocation due to technical violations.

In 2021, the DOJ published *Desistance From Crime: Implications for Research, Policy, and Practice*, which explores critical questions surrounding the process of individuals ceasing engagement in criminal activities, referred to as "desistance."[69] The collection of research is working toward defining, measuring, and analyzing desistance, understanding biosocial factors and their influence on desistance, understanding the impact of incarceration on the desistance process among chronic offenders, understanding international perspectives on desistance, establishing connections between age and desistance, and finally, challenging the criminal justice system to pivot from a focus on recidivism to a focus on desistance. The National Academies report encouraged the collection of three

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[66] https://nij.ojp.gov/topics/articles/reentry-research-nij-providing-robust-evidence-high-stakes-decision-making
[67] https://nij.ojp.gov/funding/awards/2019-75-cx-k001
[68] https://journals.sagepub.com/doi/full/10.1177/08874034231180505
[69] https://nij.ojp.gov/topics/articles/desistance-crime-implications-research-policy-and-practice#impact

desistance measures, namely (1) decelerating from crime (reducing the number of criminal offenses committed), (2) de-escalating (or reducing the seriousness of the criminal offense committed), and (3) reaching a cessation (or stopping altogether).

The DOJ has funded research in barriers to reentry including the impact of public records of prior criminal convictions on outcomes such as on employment and housing outcomes. These include efforts studying "Ban the Box" initiatives and expungement. A 2019 study found that BTB policies raise the probability of public employment for those with convictions by about 30 percent on average.

What Do We Still Need to Know?

- What is the best way to measure:
  - Criminal justice indicators of success (e.g., desistance);
  - What are the relative advantages of administrative data versus self-report data?
- Why do interventions work for some and not others?
- What are the individual, community, and societal factors that lead to success?
- What structural barriers exist that hinder success?
- How do we best tailor interventions to ensure the individual's success?
- Is there variation in the effectiveness of various successful interventions by jurisdiction (local, state, federal, Tribal)?
- Is there variation in the effectiveness of various successful interventions by demographics (e.g., race, ethnicity, gender, socioeconomic status) and how can researchers distinguish these variations from ones resulting from structural barriers, if any?

Appendix B.2 - Going Beyond Recidivism to Determine Successful Reentry and Strengthen Public Safety (Education)

What's the Problem?

Incarcerated persons have lower average literacy and numeracy scores than the general U.S. population.[70] Nearly 40% of individuals in state or federal prison have at least one disability; almost a quarter of people in state or federal correctional institutions report participating in special education classes.[71] One in four formerly incarcerated people do not have a high school diploma or General Education Diploma (GED).[72] People who obtain their GEDs while in prison increase their earnings by 24-29% within the first year of release.[73] Moreover, people who participate in correctional education programs are 13% less likely to recidivate than those who do not.[74] In today's economy, a college education is a significant advantage in earning a good income: the median weekly earnings of workers with a bachelor's degree is more than $500 dollars higher than those with a high school diploma and nearly $700 higher than those without a high school diploma.[75]

What Works: Insights from the Social and Behavioral Sciences That Can Help

Education, housing, employment, family unification, mental and physical health treatment, and other critical core stabilizing needs are vital to post-release success, with needs varying across individuals and communities. Additionally, research suggests that a program needs to be delivered at the right time in the individual's trajectory of change.[76]

Education policies and opportunities are particularly vital for reducing criminal justice system involvement initially and improving reentry-related outcomes.[77] Evidence-based policies can improve student and community outcomes for youth and adults and expand opportunity by building the skills and educational credentials needed to succeed upon exiting jail and prison and to stay out.

Prison education: Reentry Success Through Continuity of Educational Opportunity

Postsecondary education for inmates provides benefits to both formerly incarcerated individuals and communities. Failing to provide educational opportunities to incarcerated and formerly incarcerated individuals fails to leverage STEM talent essential to economic and national competitiveness.[78]

Correctional education improves inmates' outcomes after release, including improvements to public safety and individual reentry success.[79] A 2013 metanalysis found:

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[70] https://nces.ed.gov/pubs2016/2016040.pdf

[71] https://bjs.ojp.gov/content/pub/pdf/drpspi16st.pdf

[72] https://www.prisonpolicy.org/reports/education.html

[73] https://docs.iza.org/dp13534.pdf

[74] https://www.rand.org/pubs/research_reports/RR266.html

[75] https://www.bls.gov/careeroutlook/2021/data-on-display/education-pays.htm

[76] https://www.njjn.org/uploads/digital-library/Prison-Reentry-Services-What-Worked-for-SVORI-Evaluation-Participants_RTI-International_05.17.2012.pdf

[77] https://www.americanprogress.org/article/education-opportunities-prison-key-reducing-crime/

[78] https://www.nsf.gov/awardsearch/showAward?AWD_ID=1931045

[79] https://www.rand.org/pubs/research_reports/RR266.html

- Inmates who participate in correctional education programs had 43% lower odds of recidivating than those who did not.
- It may improve their chances of obtaining employment after release. The odds of obtaining employment post-release among inmates who participated in correctional education was 13% higher than the odds for those who did not participate in correctional education.
- Inmates exposed to computer-assisted instruction learned slightly more in reading and substantially more in math in the same amount of instructional time.
- Providing correctional education can be cost-effective when it comes to reducing recidivism.

By one estimate, $4 to $5 are saved on reincarceration costs for each dollar spent on correctional education.[80] Additionally, individuals who complete college courses are eligible for higher-paying jobs compared to people without a college education." Inmate education also can help address racial disparities with 30% of Second Chance Pell students identifying as Black compared to 13.4% of college students overall in 2018.[81]

What Should We Do?

- Strengthen common data definitions and collection procedures to enable effective use of diverse data sources, including administrative records (e.g., to measure post prison success).
- Build better evidence. Further studies should be undertaken to identify the characteristics of effective programs in terms of curriculum, dosage, and quality. Studies should incorporate stronger research designs, including, but not limited to, randomized controlled trial (RCTs). A study registry of school discipline and culture programs and of correctional education evaluations would help develop the evidence base in the field, to inform policy and programmatic decision-making. Incentivize or require rigorous studies of "what works" in school discipline and inmate education-- including grants would help further the field, by enabling correctional educators to partner with researchers and evaluators to evaluate their programs.[82] For example, as GAO has noted, if adequately funded, the Pell Second Chance program offers important opportunities for rigorous research on effectiveness.
- Determine the extent to which incarcerated individuals with disabilities lack access to accessible technology when incarcerated, particularly for individuals with intersectional marginalization such as from race and disability; and how improved access to accessibility supports may impact educational outcomes among people with disabilities in reentry.
- Develop education programs and networks of mentorship that include both on-line and in-person support for transition successful transitions. [83]
- Explore how to effectively use information technology, not only to provide online instruction, but also to build networks of mentorship and resources for transition to jobs and community life.
- Leverage existing networks of business, community organizations, faith communities etc. for robust systems for implementation and support to more effectively and efficiently assess and improve programs and their implementation.

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[80]https://www.justice.gov/opa/pr/justice-and-education-departments-announce-new-research-showing-prison-education-reduces

[81]https://www.brookings.edu/articles/the-societal-benefits-of-postsecondary-prison-education/

[82]As reported by GAO, the Department of Education has found itself challenged in funding rigorous evaluation research on the Pell "second chance experiment."

[83]https://www.science.org/doi/10.1126/science.abl4476

What Levers Do We Have to Act?

- **Funding**
  - Grants and assistance that incentivize or require common data standards, which enable assessment long term and diverse impacts.
- **Collaboration**
  - Support programs aimed at supportive transition, through wraparound services, including building new contacts and networks to find employment, housing, healthcare, accessibility supports, etc.
- **Promote Promising Practices**
  - Strengthening the evidence base on "what works."
- **Ongoing Administration Efforts**
  - White House Alternatives, Rehabilitation, and Reentry Strategic Plan.[84]

What's Being Adopted?

Postsecondary programs, such as Pell Grants, offered in correctional facilities have been demonstrated to increase students' skills, improve employment outcomes, and reduce recidivism. Although 29% of the general population has completed postsecondary education, only 4% of formerly incarcerated people have done so.[85] The Second Chance Pell experiment, launched during the Obama-Biden Administration, has provided education opportunities for thousands of justice-involved individuals who previously could not access federal need-based financial aid necessary to attain a postsecondary education. In 2022, the Biden-Harris Administration invited 73 new sites to participate in Second Chance Pell. Presently, 200 colleges and universities have been invited to participate in the initiative with support from the Pell Grant program to support rehabilitation during incarceration. Beginning on July 1, 2023, over 760,000 incarcerated people could be eligible for a Pell Grant due to a 2020 federal law.[86] The Improved Reentry Education program builds on the Second Chance Act's Promoting Reentry Success through Continuity of Educational Opportunities discretionary grants administered by the U.S. Department of Education. The program aims to create an educational continuum to bridge the gap between prison- and community-based education and training using the Reentry Education Model, a model that emphasizes program design matters, strong partnerships between education providers and correctional officials, a focus on transitions into and out of the correctional facility, and education links to career pathways.

Beyond programs led by the Departments of Education and Justice, other federal agencies have important initiatives in this area, including:

- The U.S. National Science Foundation-supported STEM-OPS program has four main initiatives: STEP internships—including hands-on research opportunities at top research institutions for formerly incarcerated people; developing a national model to expand vital STEM programs into existing prison education programs; career and education readiness workshops for STEM careers, and developing STEM mentorship and professional networks for returning citizens to find jobs and build careers in math, science and engineering.

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[84] https://www.whitehouse.gov/wp-content/uploads/2023/04/The-White-House-Alternatives-Rehabilitation-and-Reentry-Strategic-Plan.pdf
[85] https://www.prisonpolicy.org/reports/education.html
[86] https://www.vera.org/downloads/publications/investing-in-futures.pdf

- The Department of Labor's "Pathway Home" grants seek to reduce barriers to employment by providing training and employment services to incarcerated people to prepare them for release from state, county or local jails and prisons, and support post-release supportive services to facilitate their success during reentry. This includes job readiness and job search skills as well as apprenticeships and occupational training that leads to industry recognized credentials. Grantees must partner with a state, county or local jail, and are encouraged to collaborate with employers, industry organizations or union partners to commit to providing work experience, onsite job-related mentoring and post-release employment opportunities for participants.

What Do We Still Need to Know?

- Why do interventions work for some and not others? What are the individual, community, and societal factors that lead to success?
- How do we best tailor interventions to ensure the individual's success, and what structural barriers currently prevent individuals from accessing and benefitting from potential interventions?

Appendix B.3 - Going Beyond Recidivism to Determine Successful Reentry and Strengthen Public Safety (Housing)

What's the Problem?

Housing is one of many core needs that must be addressed to facilitate successful reentry after people return home from jail or prison. The challenges returning citizens face as they try to piece together their lives outside prison walls are complicated by their inability to secure safe and affordable housing and begin the process of connecting to needed services and support systems. Formerly incarcerated people experience homelessness at a rate nearly 10 times higher than the general public, due to systemic barriers to obtaining safe and affordable housing.[87] Those who have been incarcerated more than once are thirteen times more likely to experience homelessness.[88] Moreover, research shows that the lack of stable housing following incarceration leads to a higher likelihood of rearrest and reincarceration.[89]

What Works: Insights from the Social and Behavioral Sciences That Can Help

The literature is consistent in indicating that successful reentry requires interventions to address health (including physical, behavioral, and mental health), employment or skill development, and housing (including, housing with supportive services).[90] Further, the interconnectedness of health, employment, and housing as part of the reentry process requires intentionality with respect to policy and program development. [91]

People returning home from jail or prison are more likely to succeed after release if they are able to access safe and affordable housing and are connected to services that address their healthcare needs, as well as other supportive services, such as employment or skill-building programs.[92]

Formerly incarcerated individuals are nearly ten times more likely to be homeless than the general public.[93] The rates are significantly higher among those released from incarceration within the past two years. From HUD Point-in-Time estimates and the National Former Prisoner Survey, the sheltered homeless rate is 98 per 10,000 for formerly incarcerated individuals compared to 13 per 10,000 for the general public. The unsheltered homeless rate is 105 per 10,000 for formerly incarcerated compared to 8 per 10,000 in the general public. An additional 367 per 10,000 formerly incarcerated individuals have marginal housing insecurities, living in rooming housings, hotels, or motels.

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[87] https://www.prisonpolicy.org/reports/housing.html
[88] https://www.prisonpolicy.org/reports/housing.html
[89] https://www.prisonpolicy.org/reports/housing.html
[90] https://iop.harvard.edu/sites/default/files/2023-02/IOP_Policy_Program_2019_Reentry_Policy.pdf
[91] https://onlinelibrary.wiley.com/doi/full/10.1111/1745-9125.12213
[92] https://www.vera.org/downloads/publications/NYCHA_report-032917.pdf
[93] https://www.prisonpolicy.org/reports/housing.html

What Should We Do?

The goal should be to ensure that upon release from prison, people are connected to safe and affordable housing. Housing is a key predictor of successful community reentry.[94] Safe and affordable housing serves as a protective factor by removing the search for housing as a primary need and therefore facilitating access to other needed services. People returning home from jail or prison for whom safe and affordable housing is inaccessible often experience a downward spiral immediately following release from incarceration that increases the risk of recidivism.

With access to safe and affordable housing, people returning home from jail or prison are better able to reunify with family members who can support their release plan, engage in employment services or maintain their employment, participate in behavioral health services, and better manage their physical and mental well-being.[95] There is a growing body of evidence highlighting the importance of well-structured housing interventions plus other supportive services, such as healthcare and employment, in increasing the likelihood of successful reentry.

Further, we should educate housing providers and their management agents on the limitations of criminal history data in housing decisions. Nearly 1 in 3 adults in the United States has a criminal arrest record that often serves as a barrier to housing as they encounter landlords who refuse to rent to them even when they are financially qualified.

Although criminal history records are typically used in the criminal justice system to inform judicial proceedings and risk assessments and screenings, some landlords use these records as part of their tenant screening process.

What Levers Do We Have to Act?

- **Funding**
  - o Conditioning grant funding
- **Collaboration**
  - o Consider memoranda of understanding (MOUs) as strategy to collaborate among federal, state, Tribal, and local agencies
  - o Public-private partnerships (joint funding streams)
- **Promote Promising Practices**
  - o Policy, legislation at the federal, state, Tribal, local levels
  - o Promote approaches that have promise
  - o Fund replication research/more rigorous evaluation research for promising programs/approaches

What's Being Adopted?

Permanent Support Housing

Permanent Supportive Housing (PSH) – housing with support services – is a model being adopted to support the transition from jail/prison to the community, especially for individuals with unmet medical and mental health needs who are also at risk of being homeless. Although implementation of the model varies, the core components of the model involve first housing returning citizens who might otherwise be at risk of homelessness ("housing first") then assessing their service delivery needs and ensuring

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[94] https://housingmatters.urban.org/articles/can-housing-interventions-reduce-incarceration-and-recidivism
[95] https://bja.ojp.gov/doc/opening-doors-returning-home.pdf

they are placed in services that should mitigate/moderate the need for more costly services – to include emergency medical care, emergency mental healthcare, or revocation to incarceration. A case manager/worker is typically assigned to coordinate housing and services to address unmet needs and moderate primary risk factors associated with revocations for new offenses or technical violations. Two examples worth noting are the New York City Frequent Users Service Enhancement (FUSE) and the Returning Home – Ohio projects.[96, 97] With consultation from a national non-profit that has deep PSH expertise, these jurisdictions have assembled a network of local housing providers, state and local service providers, and community non-profit organizations to address the needs of returning citizens who at risk of being homeless upon release from jail or prison and for whom unmet core medical, mental health, and behavioral health needs are believed to be contributing to their continued criminal justice system involvement.

Partnering to Provide Subsidized Housing – Departments of Corrections and Public Housing Authorities

State departments of corrections and public housing authorities are partnering to reduce barriers to housing that may be related to criminal history records.[98] Specifically, some housing authorities have agreed to accept referrals from corrections agency for placements in rental housing managed by the housing authority. In other instances, housing authorities have set aside housing vouchers for use by people released from jail and prison who have been referred to them by corrections agencies; this allows them to lease a rental property with participating landlords. As needed, corrections department and housing authorities may secure secondary funding to assist with security deposits and/or first-month rent. Following completion of community supervision, some housing authorities allow program eligible participants to continue receiving HCV or other voucher participation.

The American Rescue Plan (ARP) provides HUD more than $1.1 billion for emergency housing vouchers. These funds will allow HUD to award 70,000 vouchers to more than 600 housing authorities administering the vouchers. To ensure that returning citizens who meet the eligibility requirements receive consideration for these vouchers, in June 2021, Secretary Fudge sent a letter to housing authorities, Continuums of Care, and other stakeholders clarifying that returning citizens who are experiencing homelessness or who are at-risk of homelessness are among the eligible populations for these emergency housing vouchers.[99]

Family Reunification in Subsidized Housing

Housing authorities are revisiting their admissions policy with the objective of removing barriers to housing for individuals with a criminal history record to improve safe and affordable housing and reduce the disparate impact that these barriers have had on Black and Brown people.[100]

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[96]https://shnny.org/uploads/CSH-FUSE-Evaluation.pdf

[97]https://www.urban.org/sites/default/files/publication/25716/412632-Supportive-Housing-for-Returning-Prisoners-Outcomes-and-Impacts-of-the-Returning-Home-Ohio-Pilot-Project.PDF

[98]https://www.vera.org/downloads/publications/Opening-Doors-Full-Report.pdf

[99]https://www.hud.gov/sites/dfiles/PA/documents/SOHUD_reentry_housing_letter.pdf

[100]https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing
https://www.brookings.edu/articles/understanding-risk-assessment-instruments-in-criminal-justice/

A number of organizations are working with housing authorities to change policies that essentially exclude returning citizens and other individuals with a criminal history record from reunifying with their families in public housing.[101] Specifically, the focus is on four policy levers.

1. Reduce the 'look back' period for criminal offenses or convictions
2. Limit the types of criminal offense convictions to be screened
3. Remove one-strike policy for suspected drug use or criminal activity
4. Allow people on community supervision (probation, parole, supervised release) to live in public housing

An early review of the roughly two dozen or more participating housing authorities indicates that there is no 'one-size fits all' model, the overarching objective of removing exclusionary policy can be achieved with a focus on these four policy levers.

In April 2022, HUD Secretary Marcia Fudge directed her principal leadership to conduct a comprehensive review of HUD regulations, guidance, and policy documents that mention the use of criminal history records in tenant screening, selection, and tenancy decisions. Following the review, the leadership will propose changes to language to help housing providers avoid the overly broad use of criminal history records in denying or excluding people from HUD-assisted housing.

What Do We Still Need to Know?

HUD has a long history of utilizing paired-testing methodology to identify patterns of housing discrimination. HUD has produced paired-testing studies assessing potential housing discrimination based on race/ethnicity, source of income, same-sex couples and transgender individuals, mental disabilities, and people who are deaf or who use wheelchairs to name a few. However, HUD has not conducted a housing discrimination study based on criminal history or reentry status. This type of study would undoubtedly inform the broader policy discussions at the intersection of race and criminal history and related issues that create access barriers to safe and affordable housing. Further, this type of study would inform admission policies among public housing authorities and private landlords administering HUD-assisted rental assistance programs.

We also need to scale and conduct more rigorous evaluations of existing reentry housing programs. We see signals of positive impacts that stabile housing has on returning citizens who are linked to housing with support services, have structured pre-release coordination focused on the use of vouchers and other layered subsidies, and allowed to reunite with their families in public housing. However, we need a better handle on the program models and how they align with prescriptive release plans that center successful reentry on affordable and stable housing and services to address unmet medical, mental health, and behavioral health needs.

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[101] https://www.vera.org/downloads/publications/opening-doors-returning-home.pdf

Appendix C.1: Pathways to Good Jobs (Support Services)

In Summary:

In addition to access to work experience, education, and/or training opportunities, evidence shows that individuals—particularly those with multiple barriers to employment—need a range of support services, such as child care and transportation, in order to secure pathways to good jobs. These support services aim primarily to reduce or eliminate barriers that may inhibit attendance and participation in work and school. Federal agencies have many levers to integrate support services into the business of government; however, there is no one-size-fits-all need or solution to facilitating equitable access to good jobs. Ensuring a comprehensive suite of necessary and effective support services will require action by federal, state, and local governments, as well as, service providers, philanthropic organizations, and the private sector.

What's the Problem?

Many individuals need access to supports to persistently participate and successfully complete education and training programs as well as to secure and maintain employment. Individuals are part of dynamic households, with complex, ever-changing needs, and particularly for households with low-incomes, access to critical needs to enable work, such as child care or transportation, may be unpredictable, inconsistent, or non-existent. In order to facilitate more equitable opportunities for self-sufficiency and economic mobility, there is a need to offer support services to put individuals, particularly the most underserved populations, in a better position to access opportunities for good jobs. [102]

What Works: Insights from the Social and Behavioral Sciences That Can Help

Based on the existing body of evidence and past performance of federally-funded programs, there are multiple support services that could improve job training and employment outcomes. Child care and transportation are two examples that consistently emerge as a need for those with significant barriers to employment.

Adequate child care is essential to parents or guardians hoping to complete job training or secure employment. Research shows that the availability and affordability of child care increases women's labor force participation, whether care is supported by direct subsidies to parents to cover costs, subsidies of programs like Head Start, or paid family leave. [103, 104, 105, 106, 107, 108] One literature review found

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[102] The Departments of Labor and Commerce have outlined principles that frame "good jobs" including: Recruitment and hiring; benefits; Diversity, Equity, Inclusion, and Accessibility (DEIA); Empowerment and representation; Job security and working conditions; Organizational culture; Pay; Skills and career advancement. https://www.dol.gov/sites/dolgov/files/goodjobs/Good-Jobs-Summit-Principles-Factsheet.pdf.

[103] https://www.nber.org/papers/w7058

[104] https://www.jstor.org/stable/40344406

[105] https://www.jstor.org/stable/2109377

[106] https://www.journals.uchicago.edu/doi/full/10.1086/720980

[107] https://www.nber.org/papers/w11832

[108] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2019450

that a 10% reduction in the price of child care can lead to a 0.5-2.5% increase in maternal employment.[109]

Research also suggests that access to public transportation or a car increases the likelihood of positive employment-related outcomes. Some studies have shown that ownership or availability of a personal vehicle is likely associated with better employment outcomes, especially among populations with low incomes and those receiving social safety net benefits[110] like Supplemental Nutrition Assistance Program (SNAP).[111] Yet summative studies suggest that targeted strategies are needed, and this is particularly important for those without access to a car and for individuals living in rural areas or with limited or no access to public transportation.[112, 113]

What Should We Do?

Support services should be tailored to the needs of the community and the individuals the program intends to serve. For example, when service providers are designing a job training program, it is important to consider the life experiences and journeys of the intended participants, to help identify barriers and other pain-points that support services can alleviate.

It is important to note there is a distinction between offering a menu of support services (e.g., child care and transportation assistance), a particular type of support service (e.g., when focusing on transportation there are many strategies that can be used), or wrap-around support services (e.g., a comprehensive offering of services to meet multiple identified needs and potentially for all members of a participant's household). When examining the evidence, it is crucial to understand how needs were identified, what services were offered, and evidence of effectiveness before applying these lessons.

Even in a situation where a particular support service may appear to be universally important, the service should be tailored to communities and individuals. For example, to attend a job training program, an individual in a rural area may benefit from a gas card or mileage reimbursement, whereas a participant in a more urban area may find a light rail, bus, or other transit pass meets their needs. Similarly, in an area where there is child care availability, families may still need additional support services during their working hours, which may not align with the standard child care facility operating hours.

Therefore, flexibility by locality and diversity in offerings of support services is necessary in order to be useful and relevant for program participants. A suite of multiple, varied options is needed in many cases. In addition, more research and evaluation are needed to understand how to better target support services that mitigate barriers to successful employment in good jobs.

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[109]https://www.researchgate.net/publication/299404965_Child_care_and_parent_labor_force_participation_a_review_of_the_research_literature

[110] https://eprints.whiterose.ac.uk/158809/1/22_03_20_TTRV-2019-0059.R2_full.pdf ;

[111]https://www.census.gov/library/stories/2022/05/who-is-receiving-social-safety-net-benefits.html .

[112]https://www.trb.org/Publications/Blurbs/161489.aspx

[113]https://poverty.ucdavis.edu/sites/main/files/file-attachments/blumenberg_and_pierce_a_driving_factor_in_mobility.pdf

What Levers Do We Have to Act?

There are multiple opportunities for action to facilitate support services that enable pathways to good jobs.

- More evidence is needed about what support services are most effective, for whom, and under what conditions, including on the important questions outlined above. Federal agencies can collaborate with one another and other partners to identify Learning Agenda questions and Evaluation Plan activities under the Evidence Act, and/or collaborate to produce evidence to inform program improvements. Agencies can start with the Learning Agenda Questions Dashboard[114] on evaluation.gov to find commonalities and coordinate with other agencies to plan evaluations and research. States and localities can participate in federally-led evaluations or lead their own evaluations. Agencies should be sharing lessons learned from these evaluations and other evidence-building activities with other federal agencies and those implementing programs at the state and local levels.
- In funding availability announcements, federal agencies have an opportunity to provide clear and transparent messaging that support services are necessary and allowable costs when implementing programs that are aimed at improving employment outcomes, self-sufficiency, and economic mobility. Federal agencies may also signal the need for better information on support services: on the most effective strategies for use by providers applying for federal awards, on what support services federal agencies are funding, and on the employment and earnings outcomes that result from these support services. In funding availability announcements, federal agencies may:
  - o Ask applicants to provide a brief summary on all of the program's proposed activities, including a brief description of support services that are aimed at enabling participation in job readiness or job search activities and the proposed theory of change based on proposed participant demographics and localities.
  - o Require reporting on provision of support services to better understand needs and outcomes of those served, including information on the type and dosage of support services.
  - o Require participation in evaluations that examine the implementation of service provision (including support services), participant training and employment outcomes, and the relationship of support services to these outcomes.
  - o Require coordination with partners to offer support services, as a condition of the award, and
  - o Re-affirm in award documents that support services are an allowable cost, if appropriate.

Federal agencies do not and should not pursue solutions alone. Agencies should be sharing lessons learned on program design, funding availability announcements, implementation, and insights from performance management, evaluation, and other evidence-building initiatives. Due to the nature of support services, implementation inevitably requires coordination and collaboration across systems that provide specialized services or training, including partners such as workforce development agencies, community colleges, and public and non-profit employment services agencies. Federal agencies can encourage coordination in implementation guidance to states, localities, and providers for block grants and other formula funding, and/or require coordination as a condition of a federal award.

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[114]https://www.evaluation.gov/learning-agenda-questions-dashboard/

What's Being Adopted?

The Biden-Harris Administration is committed to ensuring all workers have access to the support services that they need to succeed in education and training programs and secure and advance in good jobs and careers. The Administration is taking a wide range of actions to expand access to support services, including:

- The Department of Commerce is requiring CHIPS Incentives grants greater than $150 million provide a plan to improve access to high-quality child care for their semiconductor manufacturing and construction workforces.
- In April 2023, President Biden signed the [Executive Order](#) on Increasing Access to High-Quality Care and Supporting Caregivers (Care EO)— the most comprehensive set of executive actions any President has ever taken to improve care for hard-working families while supporting care workers and family caregivers.
  - The Care EO directs every Cabinet-level agency to determine which of their funding streams can be used to provide support services, including care—and to take steps to encourage, preference, or require applicants to provide support services, as allowable.
  - Agencies have made substantial progress implementing the Care EO. For example, the Department of Labor and the Department of Health and Human Services are developing technical assistance materials on best practices for encouraging support services in federal investments, including child care and long-term care. This includes engaging directly with care providers to outline details on existing successful models of high-quality, affordable, accessible care.
- The Department of Transportation is helping states and other partners understand how they can use flexible transportation funding—including annual highway formula funds—for workforce development services that connect people to jobs on projects, such as transportation assistance, child care, and other support services.

What Do We Still Need to Know?

There are pressing questions that remain unanswered and require more evidence-building to better inform decision makers. These include, but are not limited to, the following:

Questions about types of support services

- Which support services lead to the strongest employment and earnings impacts?
- What are the potential impacts of more recent transportation modes and services, such as ride hailing and bikeshare, on employment outcomes?
- Although evidence shows that the availability of high-quality child care leads to positive outcomes for children, what additional strategies are needed to support parents with their child care needs?
- What considerations must be given for effective program integration (e.g., bundling services)?

Questions about service provision

- What are innovative approaches to providing support services?
- How can support services be distributed equitably across program participants?
- How can programs more systematically determine the type and intensity of support services that their target populations will need and use?
- How can programs provide adequate and reliable support services to meet participants needs?

Questions about funding and resources

- How can programs overcome specific funding challenges (e.g., inadequate funding, time-limited grants, allowable uses, etc.)? What can funders (i.e., federal agencies) do to alleviate these challenges in future funding availability announcements?
- How can programs braid federal funding streams to provide additional resources for support services?
- In under-resourced communities, how can programs provide reliable and long-lasting support services to their participants?

Questions about partnerships

- How can programs build new and/or leverage existing partnerships with community organizations to provide support services? What are some best practices for building and maintaining these partnerships?
- How can state and local coordinated service models be used to provide support services?
- How can local governments or service providers engage employers to provide support services to current or potential employees?

Appendix C.2: Pathways to Good Jobs (Access)

In Summary:

American workers have inequitable access to jobs. Research suggests there are effective models to create more equitable pathways. These include hiring based on skills, not credentials; worker-centered sector strategies; and "earn and learn" approaches such as registered apprenticeships and subsidized employment. Federal, state and local spending and actions should emphasize and incentivize evidence-based approaches to improve access.

What's the Problem?

The job market does not provide equitable opportunities for all workers to access good jobs. Black and Latino workers continue to experience higher unemployment rates than workers of other races. People with disabilities experience an employment rate over 40% lower than individuals without a disability.[115] While the role of discrimination cannot be discounted, research also suggests that improvements in job training programs can also reduce racial and disability gaps in job recruitment, retention, and promotion. While there are a wide variety of job training programs across the country, including many supported with federal funds, not all of these programs are using the most current evidence from social and behavioral science about the most effective type of interventions. By increasing the use of evidence-based workforce programs, the United States can create more equitable job opportunities for workers of color and other underserved workers, which would benefit the United States' overall economy by increasing the number of productive workers.

What Works: Insights from the Social and Behavioral Sciences That Can Help

Below is a summary of key research on what works to build more equitable talent pipelines. When adopting a strategy, federal, state, and local actors should consider the needs of the specific population to be served (e.g., youth, mid-career changers, individuals in reentry from incarceration) and geographic and community context.

- **Worker-centered sector strategies**: Studies shows that worker-centered sector-based training programs – such as Year Up, Project QUEST, and Per Scholas—can lead to sustained and significant earnings gains.[116] The programs with the strongest results had close alignment between the training provided and employer hiring needs; provided soft skills/career readiness training and support services; and included worker voice in program design.
- **Registered apprenticeships**: Research has consistently demonstrated the benefits of registered apprenticeship programs for workers and employers. For example, a recent study finds that apprentices' annual earnings grew by 49% from the year before starting the RAP to the year after completing the program. For every dollar the typical employer invested in an apprentice, it earned $1.44 in benefits such as reduced turnovers. Pre-apprenticeships can also play a valuable role in promoting equity in these high-quality pathways, such as by closing gender gaps for women in traditionally male-dominated fields.

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[115]https://www.bls.gov/news.release/disabl.nr0.htm
[116]https://scholar.harvard.edu/lkatz/publications/why-do-sectoral-employment-programs-work-lessons-workadvance

- **Skills-based hiring**: Millions of workers have the skills to perform a job that pays at least 50% more than they currently earn, but such workers lack the academic degree required by employers to fill the job. Moving to skills-based hiring can allow more workers to move into good jobs, and expand the talent pool for employers.
- **Subsidized employment**: Subsidized employment programs can improve employment and earnings, at least in the short term, for many underserved workers, including the long-term unemployed, those with higher risks of recidivism, and those without a high school degree or equivalent.[117]

What Should We Do?

To improve the efficacy and equity of workforce training programs, the U.S. government should:

- Building on DOL's evidence clearinghouse, develop a cross-agency collection (which includes Commerce, Treasury, SBA, HHS and other agencies) of promising, evidence-based practices that support equitable opportunities for career pathways aligning with regional and national workforce needs.
  - This inventory can be developed through literature syntheses, combined with mixed-methods research to identify promising sector-specific and cross-sectoral training programs.
- Provide sector-specific and cross-sectoral funding opportunities that incentivize the use of these evidence-based practices, and collect expanded data on job quality.
  - These funding opportunities should include support of a rigorous evaluation component, as well as technical assistance, permitting the different program leaders to convene and share resources and lessons learned.
- Following an outcomes evaluation, publish the results through a variety of different channels, and share widely with state, local, and national entities in government and in the for-profit, academic, and nonprofit sectors.
  - Create a typology of programs, to align with different stakeholder interests, and feature case studies elucidating the mechanisms of action as well as program delivery methods.

What Levers Do We Have to Act?

The U.S. government has a unique set of levers to incentivize state, local, territorial, and Tribal governments, as well as other organizations and stakeholders, to use evidence and best practices in designing and implementing job training programs. These tools include: funding and compliance, best practice sharing, partnerships, outreach, and targeted communications.

Funding and Compliance

As outlined in the following section, federal agencies provide significant funding and support for workforce development initiatives across the country, including those focused on helping people train for and get jobs. This funding goes to state, local, territorial, and Tribal governments as well as workforce training organizations. The permitted uses for these federal funds are governed by a variety of mechanisms, including notices of funding, program application requirements, rules, guidance, reporting requirements, and related information disseminated by federal agencies.

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[117]https://www.acf.hhs.gov/opre/report/can-subsidized-employment-programs-help-disadvantaged-job-seekers-synthesis-findings

- By requiring, incentivizing, or encouraging the use of evidence-based interventions, the federal government can increase the effectiveness and equity of the job training programs. For example, the Department of Labor's Reemployment Services and Eligibility Assessment Grants (RESEA) program requires states to use interventions that have strong evidence and to evaluate any strategies without such evidence, beginning in FY23 states are required to use no less than 25% of their grant funds for interventions with strong causal evidence showing a demonstrated capacity to improve employment and earnings outcomes for program participants. In addition, the U.S. Treasury's State and Local Fiscal Recovery Funds reporting guidance requires large recipients to report on what amount of funds is being spent on evidence-based interventions, including for workforce related projects.

Tools and Best Practices

Beyond funding, compliance, and reporting guidance, the U.S. government is able to take less regulatory approaches to encouraging the use of evidence-based interventions by sharing tools and best practices with stakeholders. While these approaches may not require the use of evidence, they can be strong ways to incentivize action by the governments and organizations that receive federal funding and wish to make the most effective use of tools and resources to serve constituents. Frequent approaches for federal agencies include creating toolkits, publishing evidence clearinghouses and reviews, sharing best-practices documents, and highlighting reviews of effective programs. These tools can be applied across domains to create more equitable pathways in areas ranging from the arts to green energy and overall job training.

Partnerships

In addition to sharing implementation tools and best practices, the federal government can partner with external stakeholders to build new job pipelines, improve existing job training programs, and support funding recipients in implementing evidence-based approaches with fidelity. Institutions of higher education, nonprofit organizations, employers, organized labor, and philanthropy are frequent federal partners in the workforce development realm. For example, the Department of Labor's Trade Adjustment Assistance Community College and Career Training program—now succeeded by the Strengthening Community Colleges program—focused on increasing the ability of community colleges to address the challenges of today's workforce. These external partners add value by running job training programs, broadly sharing evidence-based practices, bringing together national or regional organizations for peer learning, and convening other partners to focus on effective implementation. External partners can also help to engage with underserved communities, to bridge gaps so that federal workforce programs are communicated in compelling and customized ways, and to improve the equity of workforce development initiatives.

What's Being Adopted?

Agencies across the U.S. government are requiring and encouraging the use of evidence-based interventions in workforce training programs. For example:

- AmeriCorps, which funds a wide variety of workforce development programs that help people develop skills through national service, provides a funding preference to organizations that utilize evidence-based interventions.
- U.S. Treasury's State and Local Fiscal Recovery Funds allow state, local, Tribal, and territorial governments to spend funds on growing and supporting the workforce, especially including services to workers disproportionally impacted by the pandemic. The program incentivizes the

use of evidence by requiring the largest recipient governments to report on the percent of project funds that are going to evidence-based interventions.

- The Department of Labor's RESEA program is an evidence-based program that seeks to re-employ those currently receiving Unemployment Insurance; research indicates significant positive impacts on individuals enrolled in this program.
- The Department of Labor's Good Jobs Initiative builds on research of what makes a "good job" to encourage best practices on the part of employers and ensure that the funds coming from USG agencies support jobs that lead to careers.
- The Department of Labor's Chief Evaluation Officer regularly evaluates apprenticeship and job training programs to refine and improve grant programs.
- The Department of Labor's Clearinghouse for Labor Evaluation and Research (CLEAR) makes research on labor topics more accessible to practitioners, policymakers, researchers, and the public more broadly to inform decisions about labor policies and programs. CLEAR identifies and summarizes many types of research, including descriptive statistical studies and outcome analyses, implementation studies, and causal impact studies. For causal impact studies, CLEAR assesses the strength of the design and methodology of those examining the effectiveness of particular policies and programs.
- The Department of Labor's grants for Women in Apprenticeship and Nontraditional Occupations support pre-apprenticeships and provide supportive services to bring women of color into the skilled trades.

While there are numerous examples of workforce programs that improve pathways to jobs by using the social and behavioral sciences, there remains no single coordinated approach to use and build this evidence across federal programs.

What Do We Still Need to Know?

To strengthen the evidence base for workforce training programs that can improve equitable access to jobs, more knowledge is needed in these and other topic areas:

- What role does higher education play in alleviating barriers to good jobs?
- What are the gaps and deficiencies in preparing students, early career professionals, and lifelong learners for entry in the workplace?
- How does interdisciplinary or transdisciplinary learning/training impact one's job attainment, performance, and advancement?
- How do different job training programs service different age groups? Are there generational issues that must be addressed in terms of successful job-training interventions?
- What more can be done to scale best practices, specifically for proven sector-based models? How can approaches to scaling best practices in one sector be translated to another?
- How can we support pathways to high-quality jobs that do not require a college degree (e.g., registered apprenticeships, short-term credentials, etc.)?
- What is the role for employers, and how can they be encouraged to support their workers?
- How can we improve the quality of jobs and ensure that we are accurately valuing jobs that are filled by women, people of color, and people with disabilities?
- To what extent would more timely access to appropriate reasonable accommodations better support recruitment and retention of workers with disabilities?
- How can we better plan for macroeconomic shifts and ensure our workforce is ready?

Appendix D: Communicating Hazard Information

In Summary:

Federal agencies tasked with safeguarding the well-being of the US public face the common challenge of effectively communicating the risks of various hazards, as well as the nature and extent of scientific uncertainty about these risks. For the purposes of this brief, *effective communication* involves a systematic assessment of the known risks and uncertainties associated with a specific hazard and the informational needs, values, goals and capacities of affected people, and the dissemination of information that accounts for these factors and is understandable and useful to people. Effective communication of risk and uncertainty enables the public to understand the likelihood of important hazards, assess the strength of available risk information, and take appropriate action to mitigate and respond to these hazards. The communication of risk and uncertainty thus plays a cross-cutting, instrumental role in the federal government's management of a wide variety of hazards including meteorological, geological, and environmental disasters, disease and other human health threats, social injustices, economic deprivation, crime, war, and terrorism. It helps people anticipate, prepare for, prevent, and respond to hazards more effectively. Accurate, timely, transparent, accessible, and proactive communication of the risks and uncertainties associated with these hazards has become increasingly important due to several emergent problems including climate change, socio-economic inequities, and the proliferation of misinformation and disinformation, which have generated new hazards, exacerbated their associated suffering, and made their management more difficult.

What's the Problem?

Many examples could be used to illustrate the critical role of risk and uncertainty communication in hazard management; however, the COVID-19 pandemic is especially useful given its worldwide impact and high visibility for members of the general public.

Effective communication of risk and uncertainty poses several difficult challenges, which pertain to three important, inter-related questions: 1) What to communicate? 2) Why communicate? 3) How to communicate? These challenges are compounded by the sheer diversity of hazards and their associated risks and uncertainties, of potential goals for communicating these risks and uncertainties to different audiences, and of potential communication strategies. Furthermore, many human factors limit the public's understanding of risk and uncertainty, including varying levels of literacy and numeracy, numerous human cognitive biases and heuristics (mental short-cuts), and the spread of misinformation and disinformation among the public. All of these challenges make a simple, "one size fits all" communication strategy unrealistic. They require federal agencies to systematically assess the risks and uncertainties associated with individual hazards, the informational needs, values, and goals of people affected by these hazards, and the potential strategies for communicating risk and uncertainty. Such a systematic assessment can enable agencies to develop a tailored communication approach that accounts for the many challenges to effective risk communication.

- **What to communicate?** Any single hazard encompasses multiple and complex risks and uncertainties. A primary challenge for federal agencies is to determine what specific risks and uncertainties to communicate to different audiences in different situations. For example, the risk of a tropical storm encompasses not only the likelihood of its occurrence in a particular geographic area or impacting a community, but also the likelihood of numerous other interrelated outcomes (e.g., adverse effects on human health, economic well-being, social well-being); the time course,

magnitude or severity of these outcomes; and the extent to which these outcomes can be prevented or mitigated. Furthermore, each of these hazards encompasses numerous scientific uncertainties that arise from various sources (e.g., the dynamic nature of the hazards and their associated risks; missing or insufficient empirical evidence; conflicting or changing evidence, expert opinions, or recommendations; interdependent, cumulative, compounding and cascading risks and the diversity of their effects; variability in the effects of risks on different populations and individuals; and other complexities that make hazards and risks difficult to quantify). The immediate challenge that federal agencies face in communicating the risks and uncertainties associated with many hazards, therefore, is to identify what specific risks and uncertainties exist in a given situation.

- **Why communicate?** Whether any existing risk or uncertainty ought to be communicated and how detailed or precise this communication should be, however, ultimately depends on why—that is, what are the goals of communication? The potential goals of communicating risk and uncertainty are diverse, and include educating or informing the public; raising public awareness or concern; building trust in scientific information or agencies; providing reassurance; and promoting hazard preparedness and precautionary behaviors or actions to reduce or mitigate risks. The diversity of these goals presents practical challenges for efforts to communicate risk and uncertainty, given that some goals are either inherently conflicting (e.g., raising concern and providing reassurance), or else achievable but at the expense of other goals (e.g., informing the public about scientific uncertainties regarding a recommended precautionary behavior such as vaccination may discourage the behavior). A critical task in efforts to communicate the risks and uncertainties associated with particular hazards, therefore, is to clarify the goals of communication and any potential goal conflicts and tradeoffs entailed by such efforts. Clarity about the goals of communication then enables agencies to determine what specific risks and uncertainties to communicate and at what level of detail or precision, and to implement effective strategies to accomplish these goals.

- **How to communicate?** Implementing effective communication strategies requires determining not only what risks and uncertainties exist and ought to be communicated, but how best to communicate them. This broad question encompasses several more specific practical and methodological questions. First, what communication formats (e.g., textual, numerical, graphical, visual) or strategies (e.g., educational campaigns, public service announcements using various media channels, accessibility approaches) are most effective? Second, when in the time course of a given hazard should efforts to communicate risk and uncertainty take place, and how often? Third, who is the intended audience for these communication efforts? These can be difficult questions for several reasons. A primary reason is that the effectiveness and appropriate timing of different communication strategies depends on numerous factors, including characteristics of the individuals and communities affected by different hazards. For example, low numeracy and literacy affect a substantial proportion of the general population and can limit people's ability to understand and use risk information, while socioeconomic and cultural factors may limit people's access to high-quality risk information and their capacity to respond to it. Other factors that have been well-documented by social and behavioral science research more broadly limit the effectiveness of agency efforts to communicate risk and uncertainty. Cognitive biases and heuristics can lead to judgmental errors and suboptimal decision making, while various social and political forces can promote public mistrust of scientific evidence and the dissemination of misinformation and disinformation. Organizational barriers further limit the effectiveness of federal agency efforts to communicate risk and uncertainty, and include a lack of coherent communication strategies, insufficient or ineffective coordination of communication efforts both within and between

agencies, and inadequate resources to support these efforts. These many factors can promote inconsistencies in how federal agencies communicate risks and uncertainties, which can exacerbate people's negative psychological responses to them and potentially undermine public trust in agency communications. Social and behavioral science research has begun to identify ways to address these problems; however, important evidence gaps remain, and the most effective strategies for communicating risk and uncertainty for different hazards, situations, and audiences remain to be identified.

What Works: Insights from the Social and Behavioral Sciences That Can Help

Addressing the many challenges involved in communicating the risks and uncertainties of important hazards requires further work to 1) conceptualize the types and characteristics of risks and uncertainties that exist in different situations, 2) clarify the goals of communicating different risks and uncertainties, and 3) identify and implement the most effective communication strategies. Insights from research, including work conducted by various federal agencies, can aid each of these tasks.

- **Conceptualizing risk and uncertainty**: Research has produced insights on the nature and extent of the risks associated with various hazards as well as the scientific uncertainties about these risks. A number of conceptual frameworks and taxonomies for characterizing risk and uncertainty have been developed by scientists both within different federal agencies and in the broader scientific community. Some of these frameworks have been used with great success within federal agencies. Integrating the best of these frameworks and the lessons learned from their use could provide the foundation for a more deliberative, systematic, and evidence-based approach to communicating risk and uncertainty across federal agencies, and promote the consistency and quality of communication efforts. An integrative risk and uncertainty framework can also help federal agencies prioritize which hazards, risks, and uncertainties to address and how to address them at any given time.

- **Clarifying communication goals**: Research has also produced insights on the diversity of both the goals of communicating risk and uncertainty and the values of individual and community stakeholders. Advances in the science and practice of community engagement, defined by the Centers for Disease Control and Prevention (CDC) as "the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people," have produced effective methods of engaging with diverse stakeholders to elicit their values, goals, and informational needs and preferences, and to meaningfully and ethically involve them in efforts to promote change and achieve social justice and health equity. Community engagement facilitates two-way communication and participatory democracy in the management of hazards and builds trust between government agencies and communities. Applying methods and insights from community engagement research to the communication of risk and uncertainty can help federal agencies clarify what risks and uncertainties are important to communicate from the perspectives of community members affected by various hazards, and how to effectively engage these communities in communication efforts.

- **Identifying and implementing effective communication strategies:** Research has generated various potential strategies for communicating risk and uncertainty and important insights to guide implementation of these strategies. These insights include empirical evidence on the cognitive, emotional, and behavioral effects of communicating risk and uncertainty, the factors that promote and impede effective communication for particular audiences and situations, and the comparative effectiveness of different communication strategies. Many of these insights have been captured in

systematic literature reviews, evidence syntheses, and evidence-informed practice guidelines put forth by researchers as well as several federal agencies; however, an integrated synthesis of past empirical research on the communication of risk and in diverse hazard domains is needed. Such an integrative synthesis could help federal agencies implement more consistent, coordinated, effective, and proactive—rather than reactive—strategies for communicating risk and uncertainty. It could help clarify what strategies are likely to be effective in different circumstances, and what structures and processes (e.g., early warning systems for natural disasters) are required to facilitate implementation of these strategies. It could also help clarify existing knowledge gaps and questions for future scientific research, including what risk information formats are best understood by different individuals; how much informational detail and precision is useful to communicate for different hazards and circumstances; and what communication channels are most effective for reaching different target audiences. An integrative evidence synthesis could be a resource with broader value—not only for governmental but also non-governmental organizations, both in the United States and beyond.

What Should We Do?

The overarching need is for a national strategy for hazard risk and uncertainty communication, aimed at increasing the quality, consistency, timeliness, and appropriateness of agency communication efforts directed at diverse hazards and audiences. Implementing such a strategy will require new resources, structures, and processes that can foster a shared understanding and commitment to action among federal agencies; promote a more intentional and coordinated approach to communicating risk and uncertainty; increase translation of social and behavioral science evidence into best practices; and ensure meaningful stakeholder engagement of communities in communication efforts.

- Develop integrative conceptual frameworks to facilitate a shared understanding of risks and uncertainties associated with different hazards, and the range of goals and methods for communicating these risks and uncertainties.
- Fund, establish, and maintain a centralized, continually updated, "Living Evidence" repository of current empirical evidence on the effectiveness of different approaches to risk and uncertainty communication.
  - o Identify evidence-informed best practices in risk and uncertainty communication in different hazard domains.
  - o Identify key knowledge gaps requiring further scientific research.
  - o Develop a dissemination plan to maximize resource availability and use by federal agencies and other stakeholders.
- Establish a cross-agency Committee on Hazard Risk and Uncertainty Communication, consisting of federal agency social and behavioral scientists as well as senior leaders representing all federal agencies involved in hazard management, to develop, oversee, and coordinate a national strategy for hazard risk and uncertainty communication, and a plan for implementation and evaluation.
  - o Convene a social and behavioral science advisory board consisting of experts from the broader scientific community as well as representatives from diverse community stakeholder groups—including disadvantaged and vulnerable populations.
  - o Develop and coordinate an international social and behavioral science network on risk and uncertainty communication, focusing on global hazards such as pandemics and climate change, and composed of scientists and leaders of governmental and non-governmental organizations across a diverse array of countries.

- Develop intra- and inter-agency structures and processes that increase the capacity of the federal government to communicate risk and uncertainty information in a timely, effective, accessible, and consistent manner.
  - Expand the federal agency workforce to include more social and behavioral scientists with focused expertise in risk and uncertainty communication, and raise the profile of social and behavioral science careers across federal agencies.
  - Establish processes to promote inter-agency collaboration and sharing of evidence, best practices, and practical tools for risk and uncertainty communication.
  - Develop and provide educational opportunities (e.g., conferences, workshops) and on-demand training for federal agency staff on best practices for communicating risk and uncertainty.
  - Develop databases and processes for evaluating the effectiveness of agency efforts to communicate risk and uncertainty.
- Develop a risk communication community engagement system, consisting of policies, structures, and processes aimed at interacting with local stakeholders in the development and implementation of risk and uncertainty communication strategies; building trust; and ensuring timely, consistent, bi-directional transfer of information between federal and local organizations and stakeholders.
- Increase funding support for scientific research focused on improving the communication of risk and uncertainty in diverse hazard domains.

What Levers Do We Have to Act?

- Multiple federal agencies (e.g., CDC, DHS, DOI, EPA, FDA, FEMA, NASA, NIH, NOAA, USGS) have developed documents and resources on risk and uncertainty (e.g., evidence syntheses, white papers, best practice recommendations, conceptual frameworks), which provide insights that could be integrated to produce a centralized resource.
- Existing intra- and inter-agency initiatives in risk and crisis communication (e.g., Science for Disaster Reduction, Interagency Coordination Committee on Landslide Hazards) provide organizational structures, processes, and personnel that could be utilized in broader inter-agency initiatives.
- A thriving social and behavioral science network of risk communication researchers and practitioners, both within federal government agencies and in the broader national and international community, can provide expert consultation and guidance for future inter-agency initiatives in risk and uncertainty communication.
- Existing agency resources to support social and behavioral science research could be used to expand basic and applied research on risk and uncertainty communication.

What's Being Adopted?

- Supporting the practical value of conceptual frameworks, NASA has established and implemented a framework-based Risk-Informed Decision Making (RIDM) and Continuous Risk Management (CRM) process to help agency decision makers adopt a systematic approach to understanding and managing risks. The DOI Strategic Hazards Identification and Risk Assessment (SHIRA) project has identified over 70 hazards, with the goal of aiding decision makers in priority setting. EPA has developed and implemented the SALT (Strategy, Action, Learning, Tools) framework to guide risk communication efforts. FDA has developed a conceptual framework, the Benefits-Risks-Uncertainties Framework, to guide agency efforts to communicate about some FDA-regulated

products and the scientific uncertainties associated with them. These efforts have been limited to single agencies; however, they illustrate the usefulness of conceptual frameworks and identify common themes that could be integrated within a broader framework.

- Supporting the feasibility and value of a Living Evidence resource, NOAA has developed a web-based, updatable evidence repository on risk communication, "ProbCom," which could serve as a prototype for a broader interagency effort.
- Supporting the value of dedicated processes for engaging social and behavioral science experts both in and outside of the federal government, the Societal Experts Action Network (SEAN) was launched by the National Academies of Sciences, Engineering, and Medicine to engage national and international experts in the social, behavioral, and economic sciences to provide timely, actionable guidance on evidence-based strategies to address COVID-19 and other pressing societal issues.
- Supporting the importance and value of stakeholder engagement, CDC has supported major initiatives in crisis communication and community engagement, including the development of the foundational publication, Principles of Community Engagement, and training programs for public health practitioners. EPA has elicited feedback from communities affected by environmental hazards to understand their information needs and to critically evaluate the effectiveness of EPA's risk communication efforts.

What Do We Still Need to Know?

- Despite a growing body of empirical research on risk and uncertainty communication and the development of new communication strategies (e.g., information visualization tools and delivery mechanisms), much remains unknown about the most effective strategies for particular hazards, risks, and uncertainties, and audiences—including individuals with limited literacy and numeracy. More research is needed to understand which communication strategies work best for different hazards, situations, and individuals.
- A growing societal focus on diversity, equity, inclusion, and accessibility calls for greater attention to how social, cultural, and economic factors influence people's responses to information about the risks and uncertainties associated with different hazards, and the effectiveness of agency efforts to communicate this information. More research is needed to develop and implement communication strategies that promote equity in access to information and improve outcomes among diverse population groups and communities.
- Aspects of the current public information environment, including public distrust of science and government institutions and the proliferation of misinformation and disinformation, pose difficult challenges for agency efforts to communicate risk and uncertainty. More research is needed to determine how to communicate risk and uncertainty in ways that foster trust and acceptance of evidence-based scientific information by the general public.

Appendix E.1: Inclusion Through Digital Community Engagement and Broadband Availability (Digital Engagement)

In Summary:

Digital technologies may either enhance or hinder program engagement with different communities and may present unique opportunities or challenges when engaging historically underserved populations. Social and Behavioral Sciences offer methods and strategies for partnering with communities to determine which technologies and delivery approaches may be most appropriate for program implementation. Federal agencies should work with communities as equal partners in developing, implementing, and disseminating programs and services with digital components from the beginning, and assess community members' preferences, capabilities, and behaviors when interacting with technology-based solutions. In addition, federal agencies should explore how to best share social and behavioral science data with communities (and among various agencies).

What's the Problem?

Advances in digital technology (e.g., social media, online communities, video channels, mobile applications, service platforms, etc.) now offer unprecedented opportunities to engage various communities in programs, services, and research studies administered or supported by the federal government. These advances may be especially impactful for historically underserved populations (e.g., rural communities, ethnic minority communities, individuals with disabilities), in which disparities are often seen in both outcomes (e.g., health equity) and access to and accessibility of digital resources (i.e., digital equity). Community engagement is defined as "the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people".[118] Principles of community engagement have been well-documented[119] and principles for user-centered design are available[120] to help increase community engagement with digital technologies. However, determining how best to incorporate the diverse array of digital tools and platforms into federal programs remains a challenge.[121] Social and behavioral sciences offer insight into how user-centered design and motivational principles can enhance community engagement in the digital age.

What Works: Insights from the Social and Behavioral Sciences That Can Help

Engagement is a persistent challenge for digital programs developed, sponsored, and/or disseminated by the federal government. Employing community-based participatory research (CBPR) principles can enhance engagement and trust when designing and implementing digital programs,[122, 123] particularly among underserved communities.[124] Using social science principles that integrate technology and social concepts (i.e., sociotechnical models) in the development and implementation of digital

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[118] https://www.atsdr.cdc.gov/communityengagement/pdf/PCE_Report_508_FINAL.pdf

[119] https://www.atsdr.cdc.gov/communityengagement/index.html

[120] https://designsystem.digital.gov/design-principles/

[121] https://humanfactors.jmir.org/2022/3/e35693/

[122] https://link.springer.com/chapter/10.1007/978-3-319-40409-7_31

[123] https://www.whitehouse.gov/wp-content/uploads/2022/05/05-2022-Summary-of-CCH-Stakeholder-Engagement.pdf

[124] https://www.frontiersin.org/journals/digital-health/articles/10.3389/fdgth.2022.880849/full

platforms for community programs can also enhance engagement by tailoring programs to digital literacy levels.[125] Furthermore, empowering the public with technology to directly participate in scientific efforts and share data they collected (i.e., citizen or community science) can bring communities together with researchers as equal partners.[126, 127] However, it is important to note that well-designed technology alone will never replace a trusted relationship when collaborating with communities.[128] This highlights the importance of identifying ways to have technology complement and enhance relationship and trust building with the community. In addition, researchers and policymakers must be mindful of potential biases and ethical issues relevant to the use of digital technology aimed at enhancing community engagement.

What Should We Do?

- User-centered approaches (e.g., exploratory interviews, building mental models, contextual inquiry, collaborative design, designing for customer experience, usability testing, and accessibility testing) should be combined with community-engaged approaches (e.g., CBPR) when developing federal government programs, services, and research that involve digital technology. Any health system, funder, government, or other external organization that enters a new community should involve diverse and representative community members in the governance and decision-making process for any technological interventions, as well as in the development of digital content, to increase the likelihood of use and uptake.[129]
- Psychological, behavioral, and social aspects of how individuals and communities interact with technology (e.g., sociotechnical models) need to be considered when addressing difficult problems (e.g., health equity, digital literacy) with digital tools. [130]
- Government agencies should share strategies and recommendations for leveraging social and behavioral science to address program needs. For example, NIH provided five overarching recommendations for integrating social and behavioral science to promote digital health and digital equity: 1) Center equity in research teams and theoretical approaches, 2) Focus on issues of digital health literacy and engagement, 3) Use methods that elevate perspectives and needs of underserved populations, 4) Ensure ethical approaches for collecting and using digital health data, understanding limitations, and mitigating biases, and 5) Develop strategies for widespread adoption and use of digital health tools within and across systems and settings.[131] This model approach can be scaled and generalized to other topical domains outside of digital health.
- Federal agencies should further explore how technology-enabled crowdsourcing and citizen science (e.g. CitizenScience.gov; sometimes referred to as "community science") can engage the community in scientific data collection towards finding innovative solutions to persistent

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[125]https://mhealth.jmir.org/2020/1/e14512/PDF

[126]https://www.citizenscience.gov/about/#

[127]https://www.whitehouse.gov/wp-content/uploads/2022/05/05-2022-Implementation-of-Federal-Prize-and-Citizen-Science-Authority.pdf

[128]https://www.whitehouse.gov/wp-content/uploads/2022/05/05-2022-Summary-of-CCH-Stakeholder-Engagement.pdf

[129]https://www.whitehouse.gov/wp-content/uploads/2022/05/05-2022-Summary-of-CCH-Stakeholder-Engagement.pdf

[130]https://academic.oup.com/jamia/article/14/6/746/753183

[131]https://academic.oup.com/tbm/article/13/3/132/6786016

community problems.[132] In addition, agencies should share best practices in developing citizen science initiatives which engender both engagement and trust in science. In these crowdsourcing and citizen science initiatives, policies and procedures around data sharing and data security/privacy should be discussed explicitly with the respective community.

What Levers Do We Have to Act?

- Community-partnered research, including CBPR models and program, are highlighted by various federal agencies (e.g., AHRQ, CDC, NIH, USDA). These resources and models can be leveraged by other agencies.
- Digital.gov, USWDS, and Section508.gov offer agencies principles and resources to improve digital services.
- The American Innovation and Competitiveness Act (AICA) (Public Law 114-329), which contains the Crowdsourcing and Citizen Science (CCS) Act, provides agencies broad authority to use crowdsourcing and citizen science to advance agency missions. Agencies have also used Other Transactions Authorities (OTA) to establish collaborations with communities.
- Data sharing policies, procedures and models have been established by various agencies for specific programs (e.g., NIH HEAL Public Access and Data Sharing). These data sharing policies, procedures, and models can be leveraged and adapted to other federal government community engagement initiatives. Agencies should also assess whether specific data policies are required for social and behavioral science data collected (and potentially shared) as part of community initiatives (e.g., geographic data collected in crowdsourcing initiatives).
- Given the specialized nature of some social, behavioral and economic data with potentially sensitive data (personal identifying information, personal health information), federal agencies should consider whether particular data management and sharing policies should be established with these types of data (similar to Genomic Data Sharing policies). Consultation with individuals with expertise in ethics would also be important.

What's Being Adopted?

Examples of federal government programs that have leveraged social and behavioral science and digital technology include:

- **WIC and Digital Technology**: The Food and Nutrition Service (FNS) at USDA has a number of efforts leveraging digital technology with the goal of ensuring eligible participants have access to FNS's critical nutrition assistance programs, which research shows improve long-term outcomes related to food security, education, and health. Current efforts include a texting program with targeted nutrition education, and a social media and digital advertising campaign aimed at participants in the Women, Infants, and Children (WIC) program. Early evaluation results indicate both were associated with increases in participation and retention.[133] Some digitally-based breastfeeding interventions aimed at increasing breastfeeding rates are associated with improved exclusive breastfeeding rates.[134] Study of a texting strategy focused on nutrition education showed it may be a feasible alternative or acceptable complement to nutrition education delivery.[135] Other work

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[132] https://www.whitehouse.gov/wp-content/uploads/2022/05/05-2022-Implementation-of-Federal-Prize-and-Citizen-Science-Authority.pdf

[133] FNS, prepublication data, in press.

[134] ttps://pubmed.ncbi.nlm.nih.gov/29236569/

[135] https://pubmed.ncbi.nlm.nih.gov/30684412/

testing a model using social media platforms reveal it had promise to expand access to WIC participants for nutrition education and similar messaging.[136] Further, a model that tested an app's efficacy in helping WIC participants identify WIC-eligible foods in the grocery store found that it increased benefit redemption, which is critical to accessing the full benefit of the program's food prescription, which is designed to address nutritional deficiencies.[137]

- **NIH Community Engagement Alliance (CEAL) Initiative**: NIH partnered with nearly 550 community-based organizations to address COVID-19 disparities. An Other Transactional Authority (OTA) funding mechanism was employed. CEAL teams leveraged social media and digital technology (e.g., virtual meetings, electronic registry) to foster community collaborations and engagement.
- **The U.S. Department of Veterans Affairs (VA) - National Center for PTSD**: The VA offers a suite of publicly available mobile apps for mental health that were developed in collaboration with veterans. The VA also has treatment companion apps, for use with a healthcare provider, to make treatment easier.
- **The U.S. Department of Education's Pandemic Recovery Efforts**: Social and behavioral science tools are fundamental to understanding and redressing the impact of the widespread pivots to remote learning during the COVID Pandemic on student outcomes. The National Assessment of Educational Progress (NAEP) Long Term Trends (LTT) reading and mathematics assessments shows significant declines in learning across the U.S. post-pandemic. Widening disparities were observed for underserved learners, even though most schools ensured access to digital devices and internet for students in need. Research can answer critical questions regarding whether and how those support offerings may have buffered or redressed learning disparities. Investigations are ongoing via the School Pulse Panel and other Education Department funded research into how variability in school practices (e.g., high-dose tutoring often remotely delivered) during and post-pandemic related to learning outcomes. Findings from these studies will help pinpoint effective future strategies for augmenting in-person learning with digital support resources.
- **The Department of Justice Office of Civil Rights** has proposed regulations clarifying the applicability of the Americans with Disabilities Act (ADA) to Title II entities (state and local government and services) regarding web and mobile accessibility. The shift of government services online greatly accelerated during the pandemic, more starkly revealing the importance of accessibility of government services as part of closing the digital divide.

What Do We Still Need to Know?

The following questions would help to advance the field:

- How and why do specific communities adapt to the ever-changing landscape of digital technologies over time? What evaluation metrics are most useful in determining whether and how disadvantaged communities are engaging in federal programs via specific digital communications? What shared digital data benchmarks can help advance progress on community engagement efforts? Who is collecting this information and how is the information being collected (i.e., considering bias, etc.)?
- What are the best approaches to address digital literacy and tailor program materials to match the preferences, needs, and abilities of various communities? How can design thinking and co-design principles improve digital literacy for various communities?

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[136]https://pubmed.ncbi.nlm.nih.gov/34444854/
[137]https://pubmed.ncbi.nlm.nih.gov/33052133/

- To what extent can the arts and creativity be used to empower participation on digital technology platforms, especially by underserved populations?
- How can the federal government collect and share data to address the multi-level social, behavioral, policy, and system factors that contribute to community engagement of federal programs in general, and for particular initiatives/programs?

Appendix E.2: Inclusion Through Digital Community Engagement and Broadband Availability (Broadband Access)

In Summary:

Many people live in areas where broadband infrastructure is not available, and where available, many do not subscribe to or use this technology, or have the skills to use it effectively. Disparities and inequities are also seen in broadband availability, adoption, and digital skills. The federal government invested substantial resources to remedy the problem. Social and Behavioral Sciences can inform policy approaches to increase broadband availability and adoption by identifying factors related to availability and adoption and assessing the impacts of programs.

What's the Problem?

Broadband is a technology that delivers high-speed Internet services, which research suggests is closely linked with social and economic benefits, including economic productivity and growth, entrepreneurship and innovation, higher employment and wages, increased property values, increased civic participation, improved digital accessibility, and better health, education, and other quality of life outcomes. These benefits are realized in part through improved access to labor market information, telework, online education and job training, health services (e.g., telehealth), and other goods and services.[138, 139, 140]

Many people live in areas where broadband infrastructure is not available, and where available, many do not subscribe to or use this technology (adoption) or have the skills to use it effectively. Where infrastructure is available, limitations on the affordability and quality of broadband service, gaps in digital skills and accessibility of content, and lack of awareness of the potential benefits may limit adoption and use of broadband and thus limit the benefits achieved. Despite progress in closing the digital divide, 29% of American households still did not have wired high-speed Internet service in their homes in November 2021 – defined as internet service installed at home through cable, digital subscriber line (DSL), or fiber-optic service.[141] The percentages of households without service were higher for African Americans (34%), Hispanics (33%), and American Indian or Alaska Natives (39%). Lack of wired high-speed Internet service was also much more common among rural Americans (41%), Americans aged 65 and older (37%), households with incomes less than $25,000 (49%) or between $25,000 and $50,000 (34%), adults without a high school diploma (52%) or only a high school diploma (40%). The social and behavioral sciences inform policy approaches to increase broadband availability and adoption by identifying factors related to availability and adoption, and evaluating how the impacts of broadband vary by demographic and geographic characteristics.

What Works: Insights from the Social and Behavioral Sciences That Can Help

Studies show these factors could make a difference in broadband availability and adoption:

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[138] https://ideas.repec.org/a/eee/telpol/v43y2019i3p183-198.html
[139] https://journals.sagepub.com/doi/full/10.1177/15248399211014490
[140] https://srdc.msstate.edu/ecommerce/research/briefs/Brief-22-4-Broadband-Availability-vs-Adoption.pdf
[141] https://www.ntia.gov/data/explorer.

- Studies show that the economic impacts of expanded broadband availability can be substantial at the national, regional and local levels.[142, 143, 144, 145]
- Expanded broadband availability appears to be most effective when it leads to increased adoption rates. However, availability is necessary but not sufficient for delivering the social and economic benefits of broadband. Many studies show that broadband availability is a determinant of better economic outcomes, especially in rural areas. For some economic indicators such as employment outcomes and business startups, adoption is key to maximizing the benefits of broadband availability.[146]
- Some evidence suggests that making broadband subscriptions more affordable, either through private sector initiatives or federal programs, may be effective at increasing adoption.[, 147, 148, 149] Two studies found positive impacts of USDA broadband infrastructure programs on broadband adoption in rural areas. Positive impacts of federal broadband programs are not universally found in the literature, however.[150]
- Affordability is only one of several factors that have been linked with disparate adoption rates. Only 18% of offline households cited expense as their main reason for non-use of the Internet from home in 2021, though it should be noted that households naming other primary reasons still had lower family incomes than their online counterparts.[151]
- **Language**: Language can present a barrier to access that impedes internet use. Some research has shed light on other factors besides cost that may influence disparities in adoption and effective use of the internet, such as language barriers. For example, a randomized controlled trial in the United States revealed that Spanish-speaking asthma patients were less like to use an online electronic health records portal than their English-speaking counterparts—and in many cases the patients even suggested a need for the portal to be made available in Spanish.[152]
- **Disability**: NTIA data have long shown an enormous gap in access and use among persons with disabilities.[153] In-depth analysis using NTIA Internet Use Survey data suggests that persons whose disabilities are associated with particular technological barriers—e.g., visually impaired persons who may rely on screen readers—were at a particular disadvantage.
- **Digital Skills**: In addition to affordable access to high-speed internet, access to computers – especially desktops and laptops – and digital skills are all needed to realize the benefits of high-speed internet service.[154] Digital skills may be especially vital to ensuring effective use of the Internet among seniors, both generally and especially among those with less privileged socioeconomic backgrounds.

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[142] https://ideas.repec.org/a/eee/telpol/v43y2019i3p183-198.html

[143] https://onlinelibrary.wiley.com/doi/full/10.1111/j.1468-0297.2011.02420.x

[144] https://www.erudit.org/en/journals/cjrs/2019-v42-n1-cjrs06538/1083638ar/abstract/

[145] https://www.aeaweb.org/articles?id=10.1257/jel.20171452

[146] https://srdc.msstate.edu/ecommerce/research/briefs/Brief-22-4-Broadband-Availability-vs-Adoption.pdf

[147] https://www.gao.gov/products/gao-15-473

[148] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3431346

[149] https://www.aeaweb.org/articles?id=10.1257/pol.20190648

[150] https://www.researchgate.net/publication/282417344_Evaluating_the_impact_of_the_American_Recovery_and_Reinvestment_Act%27s_BTOP_on_broadband_adoption

[151] https://www.ntia.gov/blog/2022/switched-why-are-one-five-us-households-not-online

[152] https://pubmed.ncbi.nlm.nih.gov/34634975/

[153] https://www.ntia.gov/data/explorer

[154] https://www.kansascityfed.org/community/digital-divide/disconnected-sevenlessons/

What Should We Do?

- Federal agencies should explore developing complementary digital equity and inclusion efforts along with increased broadband availability to maximize the benefits of broadband expansion. Agencies should explore whether digital equity activities can be undertaken within the context of existing programs, to the extent these activities may help achieve program objectives.
- Federal agencies should provide robust, targeted technical assistance to communities that would most likely benefit from increased broadband adoption.
- Federal programs should increase knowledge of the types of broadband availability and adoption programs available and what impact they have on broadband adoption and key socioeconomic outcomes by contributing to NTIA's BroadbandUSA Federal Funding guide which publishes federal programs that are available for broadband deployment, digital inclusion, and planning.
- Federal agencies should use consistent nomenclature to describe digital inclusion and adoption programs to aid in the reporting of available programs.[155]
- Public data on costs of broadband subscriptions and implementation, as well as who benefits from federal broadband programs, should be made open in line with federal open science principles and available for engaged parties and researchers working to study and expand broadband adoption.[156]
- Where possible, researchers should make better use of existing data sources, such as by linking across different datasets, developing model-based estimates at more granular community scales, and exploring other ways to add to existing data. These strategies can serve to enrich the data available to researchers without further burdening survey respondents.
- Almost all existing rigorous evaluation efforts are not program-specific but focus on broadband expansion in general. Program-specific evaluation efforts may yield important insights about the strengths and weaknesses of different program designs that could improve broadband program design and delivery in the future.

What Levers Do We Have to Act?

- Programs to promote broadband deployment/availability through grants, loans, or subsidies (e.g., FCC Connect America Fund (CAF) and Rural Digital Opportunity Fund (RDOF), NTIA Broadband Equity, Access, and Deployment (BEAD) Program and Broadband Infrastructure Program, USDA ReConnect, Rural Broadband, and Community Connect Grant programs):
  o The Capital Projects Fund: This $10 billion program is designed to ensure that all communities have access to the high-quality modern infrastructure, including broadband, needed to access critical services. To date, over $4.5 billion broadband projects have been approved that will provide more than 1 million households with access to high speed broadband.
  o State and Local Fiscal Recovery Funds: This program provides $350 billion to state, local, and Tribal governments across the country to support their response to and recovery from the COVID-19 public health emergency. Broadband is an eligible use for the program and collectively governments have already put nearly $7 billion towards almost 600 individual projects.
- Programs to subsidize broadband subscriptions (e.g., FCC Lifeline Program and Affordable Connectivity Program) or make broadband available in community centers or essential community facilities (e.g., FCC E-rate Program, Rural Health Program, Emergency Connectivity Fund, and

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[155] https://www.cfo.gov/assets/files/CA-23-02%20Broadband%20Reporting.pdf
[156] https://www.whitehouse.gov/wp-content/uploads/2022/08/08-2022-OSTP-Public-Access-Memo.pdf

Connected Care Pilot Program, USDA Community Connect program, and IMLS Native American Library Services Grants).

- Programs providing technical assistance for planning and capacity strengthening (e.g., NTIA State Digital Equity Planning Grant Program and State Digital Equity Capacity Grant Program, Appalachian Regional Commission grant program, Denali Commission Alaska Broadband Program).
- Programs to develop digital skills (NTIA Tribal Broadband Connectivity Program, Digital Equity Competitive Grant Program, USDA Distance Learning and Telemedicine Program, and IMLS Native American Library Services Grants).
- Extensive data collections and products, including the NTIA Internet Use Survey, the American Community Survey, and the FCC's Broadband Data Collection.
- Interagency partnerships aimed at surfacing vital data for use in broadband policy research, including an ongoing collaboration between NTIA and the U.S. Census Bureau to support the Digital Equity Act Population Viewer and other needs.
- Interagency working groups focused on specific topic areas that are impacted by broadband expansion (e.g., Federal Telemedicine Working Group; FedTel).

What's Being Adopted?

- USDA is investigating the incidence of its broadband programs (especially ReConnect and Community Connect), which may inform future efforts to better reach communities that are not as well served.
- NTIA is developing consistent data elements for use by federal agencies across infrastructure and digital inclusion broadband programs to enable policymakers and the public comparable information across federal broadband programs.
- NTIA has developed a conceptual framework identifying the potential areas of economic impact from broadband expansion and associated indicators.
- IMLS Digital Navigators: To expand digital inclusion in libraries, IMLS developed a partnership with the Urban Libraries Council, the Salt Lake City Public Library, and National Digital Inclusion Alliance to advance the Digital Navigators service model and toolkit to help libraries address the new and intensified digital access barriers resulting from COVID-19.

What Do We Still Need to Know?

- Digital redlining is a developing area of research, showing some evidence that historic housing policies and differential broadband service speed affect education and access to fintech services.[157] More research is needed to improve our understanding of how broadband availability and quality vary by community to inform policy decision-making.
- Granular data on broadband adoption is currently limited to five-year moving average estimates from the Census Bureau's American Community Survey. Single-year estimates of broadband adoption would improve research and evaluation efforts of federal broadband programs.
- Who participates in/benefits from the different broadband programs? Who qualifies for broadband programs and does not make use of them?
- Does broadband adoption provide an effective opportunity for training and implementation of accessibility guidance for web and mobile services that are deployed over broadband?

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[157] https://edworkingpapers.org/ai21-471

- What types of programs work best for various populations? What are the impacts of different approaches to increasing adoption, e.g., subsidies, digital literacy training, etc., to inform resources uses?
- How can the federal government broadband-related programs employ digital inclusion and digital equity services and resources to meet the needs for further outreach, adoption, and digital literacy/skill training for communities that feature non-English speakers (e.g., such as Spanish-speaking communities, etc.)?
- How might the federal government leverage community-based models for both broadband adoption and digital literacy and skills training?
- How does access speed/quality/devices change the benefits/opportunities of connectivity?
- How does the pricing/discrimination/competitiveness of broadband services effect broadband adoption and use?
- Are there particular tasks or uses of the Internet not utilized by particular groups, such as online education, utilizing telehealth resources, or working remotely?

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Mariam Gulaid—Office of Science and Technology Policy

Mark Reardon—Department of Housing and Urban Development

Mary Clair Turner—General Services Administration

Megan Reid—Administration for Children and Families

Melissa Abelev—Department of Agriculture

Mercedes Rubio—National Institutes of Health

Michael DiDomenico—General Services Administration

Michael Freed—National Institutes of Health

Michael Hand—General Services Administration

Michael Kremer—United States Agency for International Development

Michael Reiner—Department of Energy

Mike Martin—Census Bureau

Monica Grasso—National Oceanic and Atmospheric Administration

Myesha Braden—Department of Justice

Nancy Weiss—Institute of Museum and Library Services

Natalie Ward—Office of Science and Technology Policy

Neetu Abad—Centers for Disease Control and Prevention

Nicholas Bowersox—Department of Veterans Affairs

Nicole Ndumele—Department of Justice

Patricia Hu—Department of Transportation

Patrick Bourke—Economic Development Administration

Paul Han—National Institutes of Health

Paula Rausch—Food and Drug Administration

Rachel Reolfi—Office of Science and Technology Policy

Rachel Samuels—Office of Science and Technology Policy

Rachel West—Domestic Policy Council

Rafi Goldberg—Department of Commerce

Randall Akee—Council of Economic Advisers

Rebecca Dodder—Environmental Protection Agency

Rebecca Wistreich—Office of Science and Technology Policy

Rik Legualt—Department of Homeland Security

Robert Richardson—Department of the Treasury

Robin Vanderpool—National Institutes of Health

Russell Burnett—Department of Justice

Saeed Mody—Department of Justice

Samantha Schartman—Department of Commerce

Sasha Gallant —United States Agency for International Development

Shanna McClain—National Aeronautics and Space Administration

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Spiro Stefanou—Department of Agriculture

Star Sharpe—Office of Science and Technology Policy

Stephanie Lawrence—Department of Transportation

Steve Newell—Office of Science and Technology Policy

Sunil Iyengar—National Endowment for the Arts

Sylvia Butterfield—National Science Foundation

Teresa Parr—United States Agency for International Development

Ticora Jones—United States Agency for International Development

Tisha Wiley—National Institutes of Health

Tom Fish—Department of the Interior

Tracy Dillinger—National Aeronautics and Space Administration

Tracy Hepburn—National Institutes of Health

Valerie Maholmes—National Institutes of Health

Vanessa Chen—Domestic Policy Council

Valerie Were—National Oceanic and Atmospheric Administration

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