

COMMENTARY: POLICY IMPLEMENTATION SCIENCE – AN UNEXPLORED STRATEGY TO ADDRESS SOCIAL DETERMINANTS OF HEALTH

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This commentary explores the ways in which robust research focused on policy implementation will increase our ability to understand how to – and how not to – address social determinants of health.

We make three key points in this commentary. First, policies that affect our lives and health are developed and implemented every single day, like it or not. These include “small p” policies, such as those at our workplaces that influence whether we have affordable access to healthy food at work, as well as “large P” policies that, for example, determine at a larger level whether our children’s schools are required to provide physical education. However, policies interact with context and are likely to have differential effects across different groups based on demographics, socioeconomic status, geography, and culture. We are unlikely to improve health equity if we do not begin to systematically evaluate the ways in which policies can incorporate evidence-based approaches to reducing inequities and to provide structural supports needed for such interventions to have maximal impact. A policy mandating physical education in schools will do little to address disparities in fitness and weight-related outcomes if all schools cannot provide the resources for physical education teachers and safe activity spaces.

Second, as we argue for an increased emphasis on policy implementation science, we acknowledge its nascent status. Although the field of implementation science has become increasingly robust in the past decade, there has been only limited application to policy. However, if we are strategic and systematic in application of implementation science approaches and methods to health-related policy, there is great opportunity to discover its impact on social determinants. This will entail fundamental work to de-

INTRODUCTION

The last two decades have seen many advances in prevention and treatment of chronic disease—vaccines for cancer prevention, medications to prevent HIV, treatments for hepatitis C and cystic fibrosis, and immunologic treatments for cancer, to name a few. Overall cancer death rates declined continuously between 1991 and 2017, reflecting a 29% reduction in cancer deaths.¹ Yet, despite improvements in medical care and health outcomes, we continue to have persistent disparities in health outcomes based on race, ethnicity,

and socioeconomic status. In cancer, for example, despite the fact that the overall cancer death rates decreased in every racial and ethnic group from 2013-2017, non-Hispanic Blacks continue to have significantly higher mortality rates than Whites overall and for most specific cancers.¹

Persistent patterns of health disparities are largely the result of structural factors that influence health outcomes and the fact that social factors play a critical role in determining population-level health and in maintaining disparities. Social determinants of health (SDOH) include poverty, poor education, limited em-

velop common measures of policy-relevant implementation processes and outcomes, to develop the capacity to track policy proposal outcomes, and to maximize our capacity to study natural experiments of policy implementation.

Third, development of an explicit policy implementation science agenda focused on health equity is critical. This will include efforts to bridge scientific evidence and policy adoption and implementation, to evaluate policy impact on a range of health equity outcomes, and to examine differential effects of varied policy implementation processes across population groups.

We cannot escape the reality that policy influences health and health equity. Policy implementation science can have an important bearing in understanding how

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ployment opportunities, unaffordable and unhealthy housing, and exposure to violence. Exposure to disadvantage in early life can have extensive neurodevelopmental and biological consequences that accumulate and produce disease across the lifespan.^{2,3} However, many intervention strategies to reduce health disparities tend to be disease-specific, often targeting individual and/or health systems factors without addressing social determinants

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or taking a life-course perspective.

Even within health care-based interventions, systemic factors impede progress. For example, there is evidence that patient navigation, which is the use of health care workers to guide patients through the health care system and help overcome barriers to care, is a key strategy to close gaps and reduce disparities in outcomes in cancer screening and in chronic disease management.⁴ However, patient navigation is generally not a billable service and there are no systemic mechanisms for funding navigation programs, rendering it extremely difficult to sustain and scale. The chal-

lenge in providing access to evidence-based treatment for tobacco use is another excellent example of systemic barriers to reducing socioeconomic disparities in tobacco use and tobacco-related health outcomes. In the 2.5 years after the Massachusetts Medicaid Program began coverage of tobacco treatment, smoking prevalence among Medicaid subscribers declined by 10%, hospital admissions for acute myocardial infarction declined by 46%⁵ and every \$1 in program cost was associated with \$3.12 in medical savings and a \$2.12 return on investment to the Medicaid program.⁶ Yet, by the end of December 2018, only 15 states covered all nine evidence-based cessation treatments for all Medicaid enrollees and 87% of those states had coverage barriers (eg, co-payments, prior authorization, limits on treatment duration and/or number of quit attempts covered).⁷

These examples suggest that, in addition to efforts to implement evidence-based interventions that can reduce disparities, there is an urgent need to understand how to increase implementation of policies that provide the structural supports needed for those interventions to have maximal impact. Implementation science—the study of methods to promote the adoption and integration of evidence-based practices, interventions and policies into routine health care and public health settings—has a great deal to offer related to understanding the impact of policy on health equity.

In this article, we make three key points. First, like it or not, policy happens and will impact health, for better or worse. It is unlikely that we will achieve health equity without:

1) incorporating evidence-based approaches to reducing inequities into all policies; and 2) understanding the impact of policy on health equity outcomes. Implementation science is a key strategy to increase the pace at which we achieve health equity goals. Second, policy implementation science is in a nascent phase; if we are strategic and systematic in application of implementation science approaches and methods to policy, there is an opportunity to expand our capacity, and subsequently the utility of policy implementation science to improve health equity. Third, it is time to develop an explicit research agenda focused on policy implementation science that will improve the likelihood that efforts to address SDOH lead to improved health equity.

POLICY HAPPENS AND IT WILL IMPACT HEALTH, FOR BETTER OR WORSE

Health is affected by virtually all policies enacted at organizational and systems (“small p”) levels as well as local, state, and federal governmental (“large P”) levels, whether a health impact is intended or not. Policies create a context around which evidence-based interventions are integrated into everyday activities, health services are received, and health and wellness are experienced.⁸ Policies are strategies that enable interventions to be delivered. For example, a workplace policy that provides flexible sick leave ensures that workers can take time off to address acute health issues and preventive health needs. Workplace policies also determine whether

workers have affordable access to healthy food at work. Local and state government's transportation policies that ensure availability of efficient public transportation can reduce the physical and psychological burden of commuting and increase access to good paying jobs and quality health care. Federal and state education policy determines whether our children's schools are required to provide physical education, significantly influencing their risk of obesity in adulthood.

Policies interact with context and are likely to have differential effects across different groups based on demographics, socioeconomic status, geography, and culture. We are unlikely to improve health equity if we do not begin to systematically evaluate the ways in which policies can incorporate evidence-based approaches to reducing inequities and provide structural supports needed for such interventions to have maximal impact. For example, a policy mandating physical education in schools will do little to address disparities in fitness and weight-related outcomes if all schools cannot provide quality physical education and safe activity spaces. In fact, such a policy, without consideration of local implementation context, would likely increase disparities.

The importance of inter-sectoral collaboration to recognize the wide range of impacts on health was first recognized by the World Health Organization in 1978 and has more recently gained traction in the concept of Health in All Policies (HiAP). HiAP is a cross-sector collaborative approach to improving the health of all people by incorporating health considerations into all levels of poli-

cy-making.⁹ The HiAP approach has been embraced by many states and local communities, including King County, Washington, which is implementing an impressive array of strategic initiatives designed to address upstream determinants of health through policy action. For example, recognizing the substantial health and developmental impact of homelessness,¹⁰ a tax levy was instituted that provided resources for a Youth and Family Homelessness Prevention Initiative. The initiative provided extensive training and considerable flexibility to case managers to address the specific needs of families facing homelessness. In a 9-month period, this program provided service to 1,024 households, 96% of which retained their housing—preventing homelessness in 3,000 people in less than a year. By moving beyond traditional approaches that typically offer limited options for assistance, case managers were able to offer flexible and efficient solutions: 24% of household needs did not require financial support to be resolved. Policy implementation science can help to determine if this critical initiative has significant long-term impact on health among these children and their families.

To date most research related to HiAP has been descriptive, and the importance of more systematic study of the implementation and outcomes of HiAP approaches has been noted.¹¹ Further, the literature that does exist has relatively little emphasis on health equity,¹² with <10% of cases of intersectoral action explicitly incorporating an equity lens.¹³ Implementation science methods would support development of a

stronger evidence base that evaluates the impact of HiAP on health equity.

BUILDING CAPACITY IN IMPLEMENTATION SCIENCE RELATED TO POLICY

While there is much that can be done to generate evidence from the study of how policies related to health and equity are adopted, implemented, sustained, adapted or abandoned over time, we recognize that the field may need to build further capacity to support this area of research. Additional capacity is needed to expand the number of investigators and partners who are trained on the intersection of health policy and policy implementation science, to develop infrastructure that facilitates data to be collected and analyzed, and to develop methods and measures needed for rigorous policy experiments that maximize utility of the lessons learned.

We can capitalize on existing training models¹⁴⁻¹⁶ to support introduction to implementation research content while providing appropriate mentorship. The field has developed self-guided materials (eg, TIDIRC open access (<https://cancercontrol.cancer.gov/IS/training-education/tidirc/openaccess.html>), UC-Denver's e-Book (<https://bit.ly/2IHPOfA>), and interested investigators can attend workshops at scientific conferences like the Academy Health/NIH Annual Conference on the Science of Dissemination and Implementation and Annual Research Meeting (<https://www.academyhealth.org/events>), and the Society for Behavioral Medicine an-

nual meeting (<https://www.sbm.org/>). For implementation scientists interested in policy, we can build off of reviews done of the literature and recent portfolio of studies¹⁷ and better bridge policy research experts with those moving into this space. A bridge to key policy stakeholders is also imperative. For example, if investigators are studying the impact of HiAP approaches, involving ex-

Putting Public Health Evidence into Action Training Workshop, <https://www.cpcrn.org/training>), and foster more stakeholder engagement in implementation science activities (eg, NCI's Implementation Science Consortium in Cancer,¹⁶ Annual D&I Conference). The ultimate goal is to build a community of scholars who have both research and policy competencies to work in this space.

The needs of the field extend beyond the personnel involved. Maximizing our efforts to learn from existing and future health policy implementation opportunities requires a broad effort to set up the infrastructure to support iterative, well-designed studies. At the heart of this is a focus on measurement; we first need to develop the capacity to track policy development, adoption, and implementation at the local, state, and national level. This can build upon existing policy tracking databases (eg, State Health Practice Database for Research (<http://www.shpdr.org/>), The Classification of Laws Associated with School Students [CLASS], <https://class.cancer.gov>) that ideally capture both "P" and "p" policies. In addition, we need to develop common measures of policy-relevant implementation processes and outcomes and bridge these with existing measures of SDOH and health equity. Such actions would improve the quality of individual studies and enable pooling of common data to explore equity outcomes across different policy experiments. For example, policies supporting nutrition and physical activity programs in schools may vary greatly across districts, states, and regions; using common measures

to describe the policies and their impacts on health can enable the field to learn from policy variation and identify associations between different policy characteristics and improvements in health and health equity.

Finally, there may be value in developing the field's capacity to study natural experiments of policy implementation. This will require advances in research design to maximize the learnings from each study and will likely benefit from engagement of a range of different funders, and data collection and analytical capacity that efficiently supports decision-making without impeding the important work within practice and policy. Such research designs will need to identify the most appropriate outcomes, select potential control groups or settings where feasible, determine what sectors should be evaluated, and consider how to evaluate whether policies may improve outcomes in one area while also causing harm in others. This will most likely require sustainable academic-public partnerships that enable learning systems where teams can efficiently and systematically study policy implementation in real time, identify where refinements are happening, and to foster ongoing learning across individual policy experiments. Efforts to leverage big data and bring together a range of data sources to provide context and to evaluate policy outcomes from a range of perspectives could be particularly helpful. The result of such activities could be creation of a policy implementation science ecosystem, providing feedback across contexts so that each policy implementation effort can efficiently build on prior learning.

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perts from across multiple policy sectors (eg, health, housing, education, job training) is crucial to improve the relevance of the questions being asked, to understand the multi-level contexts in which policies are set, and to ensure the right outcomes are being captured. We can utilize resources that may foster these conversations¹⁴ (Implementation Science at a Glance, <https://cancercontrol.cancer.gov/IS/docs/NCI-ISaaG-Workbook.pdf>;

BUILDING OUR POLICY IMPLEMENTATION SCIENCE AGENDA

With steps taken to build capacity to advance policy implementation science focused on health equity, there remains a need to articulate an agenda that values the unification of existing evidence in all aspects of policy formulation, implementation, and evaluation. This agenda will need ongoing refinement by researchers, policymakers, and other key stakeholders to prioritize emergent topic areas and key outcomes relevant to health equity.

First, the field would benefit from an effort to evaluate the degree to which scientific evidence is used in all stages of policy, as well as how to improve the connectedness between evidence and policy. Relatedly, while it is important to measure the magnitude by which evidence-based policies influence SDOH, we believe there could be an even stronger benefit if studies can uncover the pathways by which evidence-based approaches to addressing SDOH are integrated into proposed and enacted policies across the range of HiAP approaches.

Second, we need to determine how policies are directly affecting implementation outcomes related to health equity (eg, health care access and utilization, environmental justice), and the degree to which those outcomes vary by geographical or sociodemographic features. We suggest that the policy implementation science community could evaluate the impact of policy adoption and implementation on a range of proximal and distal outcomes related to health equity and SDOH. Importantly, we must evalu-

ate both intended and unintended consequences to ensure that, despite best intentions, policies do no harm.

Third, a robust policy implementation science agenda will be dynamic in nature,¹⁸ reflecting the oft-changing context within which policies are implemented and the fluidity of the policy actions themselves. The research agenda must concentrate on longer-term implementation outcomes, such as: whether policies can be sustained over time; how policies can be adapted to enhance focus on SDOH; and what influences level of enforcement in the short- and long-term. It may be particularly beneficial to examine how policies in specific sectors (eg, health, housing, education) are changing over time, both in response to changing population needs and shifts in demographics.

Fourth, the research agenda should reflect the multi-level and multi-sector realities of the health policy environment and its influence on SDOH. Outcomes of research studies should cut across patient/individual, provider, team, organization/community, and system/state/national levels. In addition, with the recognition that most policies have an impact on health, outcomes should extend to cover multiple policy domains, reflecting both intentional and incidental HiAP approaches.

CONCLUSIONS

The current challenges of the COVID-19 pandemic are very much at the interface of implementation science and policy. There is little question that the policy actions taken

at multiple levels across the sectors of economics, health and well-being can go a long way to reduce the overall impact of the virus on so many populations. And in turn, it reflects an enormous opportunity to gather data on the influence of varying policies in different jurisdictions, how they are implemented and to what result. By building and enacting a more cohesive policy implementation science agenda, we can see benefits to both acute challenges and to building a longer-term focus on SDOH.

CONFLICT OF INTEREST

No conflicts of interest to report.

AUTHOR CONTRIBUTIONS

Research concept and design: Emmons, Chambers; Manuscript draft: Emmons, Chambers; Administrative: Emmons, Chambers

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