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**AUTHORS**

Theresa Wizemann and Darla Thompson, Rapporteurs; Roundtable on Population Health Improvement; Board on Population Health and Public Health Practice; Institute of Medicine

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# SPREAD, SCALE, *and* SUSTAINABILITY *in* POPULATION HEALTH

## WORKSHOP SUMMARY

Theresa Wizemann and Darla Thompson, *Rapporteurs*

Roundtable on Population Health Improvement

Board on Population Health and Public Health Practice

INSTITUTE OF MEDICINE
*OF THE NATIONAL ACADEMIES*

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The serpent has been a symbol of long life, healing, and knowledge among almost all cultures and religions since the beginning of recorded history. The serpent adopted as a logotype by the Institute of Medicine is a relief carving from ancient Greece, now held by the Staatliche Museen in Berlin.

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*"Knowing is not enough; we must apply.*
*Willing is not enough; we must do."*
—Goethe



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**JACQUELINE MARTINEZ GARCEL** (*Co-Chair*), Vice President, New York State Health Foundation

**J. DAVID HAWKINS,** Endowed Professor of Prevention and Founding Director of the Social Development Research Group, University of Washington, Seattle

**KERRY ANNE McGEARY,** Senior Program Officer, Robert Wood Johnson Foundation

**KEVIN NOLAN,** Statistician and Consultant, Associates in Process Improvement

**WYNNE E. NORTON,** Assistant Professor, School of Public Health, Department of Health Behavior, University of Alabama at Birmingham

**MARY PITTMAN,** President and Chief Executive Officer, Public Health Institute

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**DEBBIE I. CHANG,** Vice President, Policy and Prevention, Nemours
**GEORGE R. FLORES,** Program Manager, The California Endowment
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**ROSE MARIE MARTINEZ,** Senior Director, Board on Population Health and Public Health Practice

*Consultant*

**THERESA WIZEMANN,** Rapporteur



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# Reviewers

This workshop summary has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the National Research Council's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published workshop summary as sound as possible and to ensure that the workshop summary meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the process. We wish to thank the following individuals for their review of this workshop summary:

**Pierre Barker,** Institute for Healthcare Improvement
**Angela Diaz,** Icahn School of Medicine at Mount Sinai
**David J. Erickson,** Federal Reserve Bank of San Francisco
**Paul Jellinek,** Isaacs/Jellinek

Although the reviewers listed above have provided many constructive comments and suggestions, they did not see the final draft of the workshop summary before its release. The review of this workshop summary was overseen by **Bruce N. Calonge,** The Colorado Trust. Appointed by the Institute of Medicine, he was responsible for making certain that an independent examination of this workshop summary was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this workshop summary rests entirely with the rapporteurs and the institution.



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# Contents





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# Abbreviations and Acronyms

| | |
|---|---|
| ACO | accountable care organization |
| ASSIST | American Stop Smoking Intervention Study (NCI) |
| ASSIST | Applying Science to Strengthen and Improve Systems (USAID) |
| CACTI | Center for the Advancement of Critical Time Intervention |
| CATCH | Coordinated Approach to Child Health |
| CDC | U.S. Centers for Disease Control and Prevention |
| CMMI | Center for Medicare & Medicaid Innovation |
| CMS | Centers for Medicare & Medicaid Services |
| CTI | Critical Time Intervention |
| IHI | Institute for Healthcare Improvement |
| IOM | Institute of Medicine |
| NCI | National Cancer Institute |
| NIMH | National Institute of Mental Health |
| TPCB | Tobacco Prevention and Control Branch (North Carolina) |
| USAID | U.S. Agency for International Development |



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# 1

# Introduction[1]

The Institute of Medicine's (IOM's) Roundtable on Population Health Improvement convened a workshop on December 4, 2014. The workshop, titled Achieving Meaningful Population Health Outcomes: A Workshop on Spread and Scale, was held at Hunter College in New York City. Jennifer Raab, president of Hunter College, welcomed participants to the Silberman School of Social Work and drew attention to the workshop's location in East Harlem, an area with significant health, social, economic, and educational challenges. Raab noted that the new building where the workshop was held was intentionally designed to engage the surrounding neighborhood. The aim of locating the school in Harlem, Raab summarized, was to be engaged in the community, be a true community partner, listen to the community's objectives, and focus research on the needs of the community.

In her introductory comments, Debbie Chang, the vice president of policy and prevention for Nemours and co-chair of the planning committee, noted that this workshop, by building on the insights provided by previous workshops on innovations in population health, is intended

[1] This workshop was organized by an independent planning committee whose role was limited to the identification of topics and speakers. This workshop summary was prepared by the rapporteurs as a factual summary of the presentations and discussion that took place at the workshop. Statements, recommendations, and opinions expressed are those of individual presenters and participants and are not necessarily endorsed or verified by the Institute of Medicine or the roundtable, and they should not be construed as reflecting any group consensus.



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to highlight how to accelerate change by placing a particular focus on the different strategies that have been used to take successful initiatives or interventions, getting the right infrastructure and the right financial structures in place to support capacity, reach more locations and people, and increase impact. "Ultimately," she emphasized, "if we want to get to population-level changes, we're going to need to change the way we work." There are pockets of innovation but they are disconnected, she continued. People are working in the same topical areas, but they are not working together. Population-level change requires that innovations first be tested and promising tools and strategies that work are spread and scaled, and refined through a continuous feedback loop. As an example, she noted that Nemours has been working to improve healthy eating and physical activity behaviors in child care centers, and has now developed a curriculum and a national technical assistance center to spread this strategy that was developed in Delaware to nine other states. To spread strategies of healthy eating and physical activity, Nemours works with partners to incorporate Nemours' training into current educational and early care systems. This is a way of building change into a system's infrastructure, said Chang. To accelerate change, Nemours uses open source platforms so other people can learn from what they are doing. Nemours also works to change policies, a strategy that supports and sustains change. In Delaware, for example, they worked with partners to change child care licensing rules to include healthy eating and physical activity. Taken together, these practices and policy changes create on-the-ground demand for Nemours' interventions.

## WORKSHOP OBJECTIVES

A primary activity of the IOM Roundtable on Population Health Improvement is sponsoring workshops for its members, stakeholders, and the public to discuss issues of importance to improving the nation's health. The working definition of population health used by the roundtable is "the health outcomes of a group of individuals, including the distribution of such outcomes within the group" (Kindig and Stoddart, 2003). The roundtable understands that such population health outcomes are the result of multiple health determinants, including environmental factors, social factors, behaviors, public health, medical care, and genetics.

The topics of spread, scale, and sustainability of different strategies and practices that affect population health have emerged as significant areas of discussion in previous workshops on applying a health lens to non-health sectors, financing, the role and potential of communities, and collaboration between the health and education sectors (IOM, 2014a,c, 2015b,c). To consider the issues of spread and scale as they apply to popu-

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**BOX 1-1**
**Statement of Task**

An ad hoc committee will plan and conduct a public workshop that will feature invited presentations and discussion about the spread, scale, and sustainability of practices, models, and interventions for improving health in a variety of inter-organizational and geographical contexts. Specific topics to be explored may include lessons learned and best practices from several programs that have been successfully grown, disseminated, and adapted to other settings or communities; the role of innovation, culture, and context on diffusing programs and ideas or achieving desired outcomes; and methods for evaluating the impact of these efforts on population health. The committee will define the specific topics to be addressed, develop the agenda, select and invite speakers and other participants, and moderate the discussions. An individually authored summary of the presentations and discussions at the workshop will be prepared by a designated rapporteur in accordance with institutional guidelines.

lation health, an independent planning committee, co-chaired by Debbie Chang and Jacqueline Martinez Garcel and including J. David Hawkins, Kerry Ann McGeary, Kevin Nolan, Wynne E. Norton, and Mary Pittman, was charged with developing a workshop (see Box 1-1). Chang explained that the workshop was designed with four basic goals:

- to explore the different meanings of the spread and scale of programs, policies, practices, and ideas;
- to learn about a variety of approaches to spread and scale;
- to explore how users measure whether their strategies of spread and scale have been effective; and
- to discuss how to increase the focus on spread and scale in population health.

The planning of this workshop was informed by a large, diverse body of literature produced by academics as well as by practitioners in the health and non-health sectors. The terms "spread" and "scale" are not consistently used or defined in this literature or in practice, particularly when in reference to a program, idea, skill, or policy and sometimes the terms are even used interchangeably (see, for example, GEO, 2013; Hardee et al., 2012; Ilott et al., 2013). There are also numerous frameworks, models, and theories of action of how to spread or scale up the impacts of successful programs or initiatives (see, for example, Allen et al., 2014; Dees et al., 2004; Harris et al., 2012; IHI, 2008; Massoud et al., 2010; McCannon

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et al., 2009; MSI, 2012; Nolan et al., 2005; Rogers, 1995). For the purposes of this workshop, the planning committee members decided it would be most useful to learn how a selected group of practitioners actually engage in efforts to spread, scale, and sustain strategies in order to improve population health outcomes (see Box 1-2). Other than the keynote speaker, Anita McGahan of the University of Toronto, workshop participants were not asked to define these terms, nor discuss their experiences within a consistent framework. Instead, speakers were asked to provide background information on how they understand these concepts within the context of their own work (see Appendix C).

## ORGANIZATION OF THE WORKSHOP AND SUMMARY

The first of two keynote speakers addressed the roundtable members and participants in the morning to set the stage for the later discussion of spread and scale (Chapter 2). Following the first keynote speaker, all participants were engaged in an interactive activity that facilitated the exchange of current perceptions and new ideas about spread and scale (Chapter 2). Next, over the course of three panel sessions, case examples of the spread and scale of evidence-based initiatives were discussed, including barriers to and facilitators for improving the health of populations. The first panel provided case examples from the health arena (Chapter 3); the second panel shared examples from other sectors (Chapter 4); and the last panel considered lessons learned from the tobacco control experience (Chapter 5). At the end of the day, a second keynote speaker discussed how best to take action, from getting started to the elements of successful spread and scale initiatives (Chapter 6). In the final discussion of the workshop, roundtable members reflected on the presentations and shared their thoughts for moving forward (Chapter 6). In order to focus discussion on the practical aspects of spread and scale, panelists were asked to provide brief background statements on their case examples to the roundtable members prior to the workshop; these are provided in Appendix C.

In accordance with the policies of the IOM, the workshop did not attempt to establish any conclusions or recommendations about needs and future directions, focusing instead on issues identified by the speakers and workshop participants. In addition, the organizing committee's role was limited to planning the workshop. The workshop summary has been prepared by the workshop rapporteurs Theresa Wizemann and Darla Thompson as a factual summary of what occurred at the workshop.

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**BOX 1-2**
**Topics Highlighted During Presentations and Discussions**

Throughout the workshop, participants shared many important insights on how to spread, scale, and sustain practices to improve outcomes. These included

### Start-Up

- Design for success and scale. (Massoud, McCannon, McGahan)
- Start small with a demonstration project, and develop an evaluation process that demonstrates the efficacy of the intervention. (Kaufman, Kelder, Massoud, McCannon, McGahan, Sanghavi)
- Knowledgeable, committed, and passionate staff and leadership are an essential component of success from start-up through scale and spread. (Kaufman, Massoud, McCannon)
- Working as a team is crucial to performance and motivation. (McCannon, McGahan)

### Implementation and Scale Up

- Finding and maintaining financial resources is a crucial component of success and a major challenge to spread, scale, and sustainability. (Dotson-Newman, Healton, Herman, Herndon, Kelder, King, Noltenius, Sanghavi)
- Innovative incentive programs and strategies increase participation and can have a significant impact on outcomes. (Kaufman, McGahan)
- Democratize the change process. (Kaufman, Massoud, McCannon)
- When evaluating scale up, measure not only the achieved outcomes but also the costs and time relative to the demonstration project. (Massoud, McCannon)
- Local context matters. Successful spread and scale is not simply replicating what worked in one place or site. (Herndon, Kaufman, Kelder, Massoud, McCannon, McGahan)

### Learning

- Use data in an ongoing evaluative learning process that informs strategy on a regular basis. (Kaufman, Massoud, McCannon)
- Relevant, accurate, and disaggregated data should be collected specifically to understand the disparities within racially and ethnically diverse populations in order to achieve greater impact. (King, Noltenius)
- In order to be successful at improving outcomes for all populations, approaches should take into consideration the needs of diverse (racial, ethnic, national, geographical) subpopulations. (Dotson-Newman, Kelder, King, Larkin, McGahan, Noltenius)

*continued*

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**BOX 1-2 Continued**

### Spread

- Develop monitoring and surveillance strategies that reach people in need, particularly those in remote geographic locations. (Massoud, McCannon, McGahan)
- Stories are an important method of spread. (Herndon, Kaufman, Larkin, McCannon)
- Improved and sustainable outcomes are often achieved by cultivating and spreading culture, beliefs, and values. (Healton, Herndon, Kaufman, Kelder, Larkin, Massoud, McCannon, McGahan)

### Sustainability

- The success of spread, scale, and sustainability strategies often depends on building relationships and forming partnerships within and across multiple sectors. (Dotson-Newman, Healton, Herman, Herndon, Kaufman, Kelder, Larkin, McGahan, Noltenius, Sanghavi)
- See points above regarding contributions to sustainability, including finding knowledgeable staff and working as a team; financing; continuous learning and evaluation; and cultivating culture, beliefs, and values of change.

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# 2

# Spread and Scale

The opening keynote address was delivered by Anita McGahan, who is the associate dean of research and holds the Rotman Chair in Management at the Rotman School of Management of the University of Toronto. McGahan discussed spread and scale from her perspective as a management scholar. Following the introductory keynote address, all attendees participated in an interactive activity facilitated by Ashley Forman and Fareed Mostoufi, community engagement experts from Arena Stage in Washington, DC. The activity was designed to elicit current perceptions on spread and scale as they relate to population health, and to get participants thinking about questions and solutions for moving forward.

## SPREAD, SCALE, AND SUSTAINABILITY IN POPULATION HEALTH

The emphasis of the population health definition adopted by the Institute of Medicine (IOM) roundtable is health outcomes, McGahan said, and therefore what practitioners are seeking to spread, scale, and sustain are better health outcomes at the level of the individual, the community, and the population as a whole.[1] This raises the question, What is health? The

[1] The roundtable considers population health to be the health outcomes of a group of individuals, including the distribution of such outcomes within the group (Kindig and Stoddart, 2003).



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standing definition of "health" adopted by the World Health Organization in 1946 and implemented in 1948 is complete physical, mental, and social well-being. McGahan noted that while about 75 percent of Americans would say they are healthy, few could say they have complete physical, mental, and social well-being. Someone wearing eyeglasses that were not an up-to-date prescription, for example, would not meet this definition. While it is difficult to achieve a goal when the goal is not well defined, she suggested that it is impossible to achieve complete mental, physical, and social well-being.

McGahan suggested that a more robust and actionable definition of health would be "resilience" (Zautra et al., 2010). This would include resilience of the individual to his or her health circumstances, resilience of a community, and resilience of a population, including those who may be disenfranchised. In this regard, she offered a variation of the roundtable definition: Population health is the cultivation of resilience among a group of individuals. There are many facets of resilience, such as prevention and early diagnosis; community engagement; quick, coordinated responses; enfranchisement; happiness, mental health, and agency; deep specialist knowledge and care; and affordability.

## Defining Spread, Scale, and Sustainability[2]

Spread can be thought of as reach, McGahan said—for example, reaching into a population to make sure that everyone who is eligible for a particular health intervention is receiving it and that people are connected to the care they need. While scale is often thought of as replication, from her perspective as a management scholar, McGahan said that scale generally involves investing in fixed costs and creating fixed infrastructure that can serve larger numbers of people with diminishing marginal costs over time. Health care is notoriously unscaled in the sense that each individual needs attention from the health system. Historically, many of the activities associated with care delivery are not scalable in the sense that they are not platform based, she continued. Sustainability is persistence and commitment to dealing with the health care challenges in the community over time.

## Cultivating Spread, Scale, and Sustainability in Population Health

McGahan said that there are often tradeoffs among spread, scale, and sustainability, and she highlighted several opportunities for cultivat-

[2] These are McGahan's definitions of these terms. Each subsequent speaker uses these terms as individually understood in the context of the speaker's own work.

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ing spread, scale, and sustainability in prevention, early detection, and treatment.

### *Big Data and Monitoring Techniques*

Reaching more people often requires going deep into a community to find those people who are undiagnosed or who are resisting diagnosis, to identify their health issues, and to support them with health care. Big data and monitoring techniques offer opportunities for spread, helping to find and provide health resources to people in remote corners of the world.

### *Registration*

Another opportunity for better spread and scale is through registration. Registering people for access to the health resources that are available to them, or for which they are eligible by various criteria, helps break the tradeoff between spread and scale. Access to platform-based initiatives offers both spread and scale. For example, a smoker in Ontario, Canada, would be able to use the resources that are available through the province to get online support, access to antismoking communities, and other assistance that is available only to registrants in the health system. Innovating through the challenge of achieving both spread and scale is crucial to the roundtable's deliberations, McGahan said.

### *Marketing Health*

Marketing health is essential to breaking the tradeoff between scale and sustainability, she said. In global health, the missing link between effectiveness and sustainability involves advertising what is being done, explaining the benefits of the various interventions that are available in a community, and teaching people how to use the system more effectively.

### *Early Detection*

Web-based diagnostics for early detection are a powerful way to achieve scale in health delivery, especially in remote or resource-limited areas, McGahan said. Another approach to early detection is training and making tasks routine for community health workers, physician assistants, and nurses. Providing training is a very effective way to break the tradeoffs between scale and sustainability, she said. Sustainability requires training people to learn how to be more effective in what they are doing over time and to make routine and institutionalize that learning. Identify-

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ing which protocols are better and then training rigorously on them can have a sustained impact on outcomes in a particular area.

*Incentives*

Innovative incentive programs also foster early detection. The right incentives for a particular setting can have significant impact. As an example, McGahan cited Turmo do Bem, a program of the government of Brazil that subsidizes dental care for high school students with relatively minor dental problems. The intent is to create a relationship between dentists and young patients. While the incentive (i.e., subsidized care) is no longer offered after graduation, the relationship has been established, and sustainable health outcomes result from the program. The Brazilian government was presented with evidence that getting students to see a dentist offers benefits to the individuals later in life, such as greater ease of finding a job and being more likely to seek other types of health care.

*Franchising and Collaboration*

On the topic of treatment, McGahan highlighted the concept of solidarity, the idea that practitioners do what it takes to make patients better and health delivery more effective. Obtaining sustainable resilient health outcomes also depends on enfranchising the patient support system.[3] Franchising and collaboration also provide opportunities for spread and scale of treatment.[4] The Aravind Eye Care System, for example, has been very effective in treating glaucoma and other eye illnesses at a much lower cost by having physicians see many patients, and providing the health care that only doctors are qualified to deliver. Because social workers or others communicate with and prepare the patient, the doctors can see and deliver treatment to many more patients per day. In the case of Aravind, there have been better outcomes, both at the level of treatment and in the cost of care. Aravind is now training other organizations, enfranchising and qualifying them as a way of achieving scale.

## Summary

Figuring out how to spread, scale, and sustain effective health interventions will have significant implications for world health in our lifetimes, given the growing and aging U.S. and global populations, McGahan said.

[3] Enfranchising in this context means empowering people typically disenfranchised.

[4] Franchising—provides high-quality eye treatment at lower cost, linked to enfranchising—which is access to care for people who may not otherwise have access, thus empowering/enfranchising them as patients and the organizations that treat them.

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In order to change the culture of an organization to focus on the spread, scale, and sustainability of population resilience, organizations will need to innovate and achieve early successes, McGahan concluded. Measurement of outcomes is also needed to make sure that efforts are successful. The process of spread and scale is not untethered data mining, it is not replication without platforms, and it is not cost reduction without considering incentives, she cautioned. The easiest way to fail in spreading, scaling, and sustaining population resilience, she continued, is to spread interventions that are not effective, to scale non-scalable activities, and to sustain outcomes that patients do not want. The focus should be on outcomes that are desired at the individual, community, and population levels, she said.

## DISCUSSION

During the brief discussion that followed the keynote presentation, participants commented on accelerating change; measurement and data mining; scaling ideas, beliefs, and values; population resilience; and trust and relationships.

### Accelerating Change

To start the discussion, moderator Debbie Chang of Nemours asked McGahan to expand on the accelerators of spread, scale, and sustainability. From her perspective as a management scholar, McGahan said, she has observed that while there is much discussion about creating health and well-being, it is not entirely clear what that means. Individual experiences of health often have less to do with the administration of health care by a provider, and more to do with the personal choices and experiences that have led to positive health outcomes (e.g., the decision not to smoke). Cultivating healthy behavioral outcomes in communities is related to but different from the question of how to run the health care system more effectively. Most health care institutions are not designed to prevent illness, she noted. The challenge is to redesign the health system to cultivate resilience and to achieve better outcomes more cost effectively and with higher quality.

### Measurement and Data Mining

In light of McGahan's caution against untethered data mining, David Kindig, emeritus vice chancellor for health sciences at the University of Wisconsin School of Medicine and Public Health, raised the issue of measurement. McGahan noted that in this age of computers, mobile devices,

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and the Internet, there are volumes of data available for analysis. But there are a host of cautions associated with simply mining existing data, including issues of data privacy. McGahan likened untethered data mining to "looking in the rearview mirror, but only at the car behind you, and trying to drive forward effectively." It is important to think more deeply about what the questions to be answered are before going to the data, she said. Another concern she raised is that many of the datasets are not temporally deep, and changes in a dataset over time may have more to do with increased access to mobile technology and the Internet by users than with coverage over time of individuals.

### Scaling Ideas, Beliefs, and Values

George Isham of HealthPartners suggested that from a management and organizational perspective, it is not only programs and interventions that need to be scaled, but also ideas, beliefs, and values. McGahan responded that ideas, beliefs, and values are the ultimate in platforms. From an economics perspective, scale refers to the way that, by growing or adding volume to a particular activity or group of activities, one achieves more effective results for the marginal person who is brought into the fold as well as for everybody else in the fold, by virtue of the growth. A platform may be thought of as an approach, belief, or idea that with more users increases in value for all. Using social networking websites as an example, she explained that the first two people to join find value in being connected to each other, but the value increases vastly when many other people join the network. The platform associated with the social networking website creates an economy of scale. In this simplified example, the cost of running the network is relatively constant (e.g., fixed costs associated with software and servers), and there is no incremental cost associated with more people joining. As a result, the cost per user decreases, and the platform is more effective with more people in it. There is no setup cost to cultivating beliefs, and only marginal additional costs, and hopefully, she said, the result is the creation of a "pandemic of health."

### Population Resilience

Terry Allan of the Cuyahoga County Board of Health and the National Association of County and City Health Officials noted that the term "resilience" is often used in the context of emergency preparedness and the ability to recover after disaster. McGahan replied that getting existing systems to work together more effectively is a first step toward resilience, especially for disaster preparedness and response. But resilience needs to be disseminated into all of the different activities that cultivate health in

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that community. Resilience is, for example, coordinated payment systems so that patients can be easily transferred among hospitals for specialist care, activating community resources so people have access to the support that they need, addressing the social determinates of health (e.g., ensuring sanitation), mutual aid agreements among fire departments, or leadership that fosters a sense of calm in a crisis. These may not be what are conventionally thought of as part of the health care system, but they have a tremendous impact on how citizens experience health.

Marc Gourevitch from the Department of Population Health at New York University asked about the relationship between resilience and prevention. McGahan responded that it is a continual process from prevention to resilience.

Sally Herndon from the North Carolina Tobacco Prevention and Control Branch noted the occasional disconnect between behavioral health and physical health providers, including the challenge of different payer mechanisms. McGahan emphasized the need to advocate for patients on patients' terms and to understand what is going on in their lives that leads them to make choices that may have long-term health consequences. Cultivating awareness and advancing a mutual commitment to long-term health begins with public knowledge about the health consequences of different behaviors.

### Trust and Relationships

Sanne Magnan of the Institute for Clinical Systems Improvement raised the issue of building trust and relationships alongside the innovation and the measurement. McGahan agreed that trust and relationships are crucial to performance and motivation, and she added that working as a team accomplishes much more than anyone can achieve individually. She suggested that performance is fostered not by simple measures but by a sophisticated dashboard of objectives. Research suggests that the dashboard has to be built collaboratively and provide guidelines for dealing with exceptional patient circumstances and needs.

## INTERACTIVE ACTIVITY: MAKING SENSE OF SPREAD, SCALE, AND SUSTAINABILITY

Workshop speakers and attendees gathered in an open space at the meeting venue for an interactive activity facilitated by Forman and Mostoufi.[5] Participants first engaged in an ice-breaker activity, grouping and regrouping themselves according to their responses to a series of

[5] A video of the activity can be viewed at https://www.youtube.com/watch?feature=player_embedded&v=HJmmXmW46tQ (accessed February 20, 2015).

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verbal questions from the facilitators. The resulting groups highlighted both the individuality of and commonalities among the participants. For the next set of activities, participants grouped themselves in response to verbal questions about their awareness of and perceptions about spread and scale in population health. Finally, participants responded individually to questions posted around the room by writing their responses on

**BOX 2-1**
**Individual Participants' Responses During the Engagement Activity, as Summarized by Fareed Mostoufi**

**What does a healthy community have/need?**

- Resources
- Leadership
- Empowerment—acts as a bridge to community engagement
- At the root of a healthy community are positive culture, environment, and values
- The alignment and context of the community serve as a connector

**What gets in the way of building a healthy community?**

- Social structures: racism, poverty, injustice, politics, imperialism
- Infrastructure: lack of collaboration, silos
- Resources: lack thereof or misalignment, competing priorities (leading to triage)
- Communication: misinformation, lack of a platform
- A general lack of: access, empowerment, shared perspective

**How do you spread health?**

- Relationships
- Communication
- Address inequities
- Community leadership, giving the community voice, creating a culture and environment of health
- Policy, incentives
- Training and education

**How do you scale up your impact?**

- Strong metrics: tangible, demonstrate impact, show value, relate to rewards and incentives
- Collaboration, including clear communication
- Leadership: central, shared, collaborative, multidisciplinary

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sticky notes. Questions asked were: What does a healthy community have/need? What gets in the way of building a healthy community? How do you spread health? How do you scale up your impact? What makes a program sustainable? What questions do you have about spread and scale? What are your hopes for the workshop today? Mostoufi then summarized the responses posted for each question (see Box 2-1).

- Logistics: education, community buy-in, resources, shared ownership, use media

**What makes a program sustainable?**

- Aligned incentives
- Sustainable finances
- Clear strategy
- Community buy-in, appeals to/inspires people
- Infrastructure/potential for spread and scale

**What questions do you have about spread and scale?**

- What are the barriers to spread and scale?
- How can the spread and scale of ineffective programs be prevented?
- What is success?
  - How do we declare success?
  - How do we evaluate/measure if something is working?
  - How do we know if something is meaningful?
- Facilitatory engagement:
  - How do you build partners?
  - How do you get the right voices heard?
  - How do you create a social movement?
- Decision to implement/scale:
  - How do we implement something that is working?
  - If it is working, how do we scale up?
  - What is necessary for building infrastructure?
  - What are the priorities/tradeoffs?
  - How do we adapt to context?

**What are your hopes for the workshop today?**

- Brainstorm strategies
- Share information, learn new approaches
- Network, build stronger relationships
- Find inspiration

SOURCE: As summarized during the activity by participants and facilitator Fareed Mostoufi, community and training programs manager at Arena Stage, Washington, DC.

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# 3

# Approaches to Spread, Scale, and Evaluation of Impact

The first panel of the workshop, moderated by Wynne Norton, an assistant professor in the Department of Health Behavior at the School of Public Health of the University of Alabama at Birmingham, presented examples of approaches to spread and scale from the health sector. M. Rashad Massoud, the director of the U.S. Agency for International Development (USAID) Applying Science to Strengthen and Improve Systems (ASSIST) Project and senior vice president of the Quality and Performance Institute at University Research Co., LLC, discussed the ASSIST Project. Steven Kelder, a co-director of the Coordinated Approach to Child Health (CATCH) and professor of epidemiology at the Michael & Susan Dell Center for Healthy Living of the University of Texas School of Public Health discussed CATCH, which is focused on preventing obesity and promoting healthier lifestyles. Darshak Sanghavi, the director of the population and preventive health models group at the Center for Medicare & Medicaid Innovation (CMMI) at the Centers for Medicare & Medicaid Services (CMS), described two population and preventive health models that CMMI is exploring. (Brief background information on the case examples, including how speakers understand spread and scale in the context of their own work, was submitted by the panelists prior to the workshop and is available in Appendix C.)



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## USAID APPLYING SCIENCE TO STRENGTHEN AND IMPROVE SYSTEMS (ASSIST) PROJECT

The USAID ASSIST Project is part of the U.S. foreign assistance program aimed at improving health at scale, Massoud said. ASSIST is the fifth in a series of projects and has worked in 28 countries to date to strengthen their capacity and improve care. The USAID ASSIST Project is working with multiple partners, including more than 230 governments and implementing partners, more than 4,400 facilities, more than 900 communities, and more than 2,500 quality improvement teams reaching more than 96 million people in the areas served. The project is working to address global health priorities, focusing on technical areas such as HIV; tuberculosis; maternal, newborn, and child health; community health; health workforce development; noncommunicable diseases; and others, depending on the geographic area. Massoud highlighted the work that ASSIST is doing with the Ministry of Health and Family Welfare in India as an example. ASSIST works in 263 facilities, with a quality improvement team in each facility, and makes 12,000 to 14,000 deliveries per month, 30 percent of the total delivers in 27 high-priority districts (USAID, 2014).

### Scaling Up

There is no single best approach to scaling up, Massoud said, and a variety of methods have been used (Massoud et al., 2006, 2010). A mainstay approach is the collaborative improvement methodology developed by the Institute for Healthcare Improvement. ASSIST also uses extension agents heavily, deploying staff to the facilities. Another approach is wave sequence methodology, in which champions act as spread agents from the starting point to the remainder of the system. The majority of the scale up efforts, however, are hybrid models, taking an adaptive approach and catering to the particular setting at that particular time. In response to a question, Massoud said that the model used is often chosen by the different countries based on their situation, with guidance from ASSIST.

Massoud elaborated on the wave sequence methodology, which he said is an approach used when not everyone can be reached all at once (Massoud and Mensah-Abrampah, 2014). Starting with the full geographic area that ASSIST wants to cover, the team identifies a main center or central hub that has some sort of distribution network throughout the region (e.g., district, province). Each of these regions will probably have its own centers, and there will be many facilities in the regions where care is being delivered. The approach then takes a slice or a wedge of the population in each of the regions of interest, captures all of the different levels of care

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in that system as part of the demonstration project. Once they have successful improvements that are determined to be scalable they are spread from that slice to the remainder of the slices of the system by the initial developers and champions of the improvements, with the support from the ASSIST Project.

## COORDINATED APPROACH TO CHILD HEALTH (CATCH)

CATCH is focused on preventing childhood obesity and promoting healthier lifestyles among children. The approach is based on the ASCD (formerly the Association for Supervision and Curriculum Development) Whole Child Initiative[1] and the Whole School, Whole Community, Whole Child model, developed by ASCD and the U.S. Centers for Disease Control and Prevention (CDC)[2] (see Figure 3-1). Healthy children attend school more frequently, Kelder noted, and, furthermore, research supports a relationship between physical fitness and academic achievement.

The key elements of the CATCH School Health Model include physical education (including professional development for teachers), nutrition services, classroom education, family education, preschool and afterschool programs, and physical activity breaks. Kelder described several challenges, such as the fact that child nutrition services are often under contract and it can be difficult to modify the food offerings. In the classroom, there is often not enough time in the day for health education. In addition, schools are not held accountable for health education. He added that physical education class provides most elementary and middle school children with about 20 minutes of moderate to vigorous physical activity every other day (about 40 minutes total per week), and there is almost no physical activity in high school unless students participate in athletics.

From the educational perspective, Kelder said, the desired student outcomes of the CATCH program are academic progress, achievement, and success; positive social and emotional development; high attendance; and parent and community support. The desired outcomes for staff include providing engaging and rigorous instruction, a high commitment to improvement, positive morale, and high attendance. Kelder emphasized that these desired outcomes were developed from meetings with school superintendent groups and that if a program is to operate within the value system of a school, it has to be oriented toward both what the students and staff need. Kelder highlighted the importance of the diffusion of innovation (Rogers, 1995) and the value of identifying program champions for taking programs to scale.

[1] See www.ascd.org/whole-child.aspx (accessed February 20, 2015).
[2] See http://www.cdc.gov/healthyyouth/wscc (accessed February 20, 2015).

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**FIGURE 3-1** ASCD and CDC Whole School, Whole Community, Whole Child model.
SOURCE: ASCD, 2014.

### The CATCH Global Foundation

The CATCH Global Foundation, established in 2014, is a 501(c)(3) organization devoted to improving children's health worldwide by developing, disseminating, and sustaining the CATCH platform in collaboration with researchers at the University of Texas School of Public Health, Kelder said. The foundation links underserved schools and communities to the resources necessary to create and sustain healthy change for future generations. In closing, Kelder noted the value of social media for outreach and dissemination in the face of limited resources.[3]

[3] In Appendix C, Kelder elaborates that the CATCH program of promoting healthy eating and physical activity is spread and adapted for use in afterschool programs, YMCA, and

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## CMMI POPULATION AND PREVENTIVE HEALTH MODELS

The total annual federal spending for Medicare and Medicaid is more than $700 billion. More than 54 million Americans receive services that are covered by Medicare, and 70 million receive services covered by Medicaid. Sanghavi said that scale in this context means that to treat the whole person we need to pay for the whole person, which means transitioning away from fee-for-service medicine to population-based payments. In this regard, CMS is exploring innovative payment and service delivery models (e.g., value-based payments). Currently, approximately 20 percent of all payments are value based, and Sanghavi said that a critical mass of payers implementing value-based payments is needed before most organizations will invest in programs and services that will lead to improvements in population and community-based health.

Community and population-based health interventions should be as inclusive and generalizable as possible, Sanghavi continued. The tendency is to focus a program on a segment of the population (e.g., an economic or a geographic segment). Part of scalability is having broad incentive structures so that all people will buy into and support the intervention.

Sanghavi described two broad population and preventive health models that his group at CMMI is exploring. Despite the evidence, it is difficult to make the case for prevention to payers, Sanghavi said. One approach is to focus on robust analytics to predict risk and then develop ways to pay for reductions in aggregate risk. The model that CMMI is exploring involves calculating individual risk and then incentivizing people to lower that risk (e.g., blood pressure, cholesterol levels, smoking). This is not a new idea, Sanghavi acknowledged, but doing it at scale is new, especially at the scale of CMS. This is a very different way for CMS to think about payment, he said.

The second broad model Sanghavi described is an accountable health community. From the payer perspective, investing in community health requires demonstrating that the innovation substantially improves quality or reduces costs. A three-track model is being explored for use on a national scale. In the first track, which is low touch and high volume, patients can be provided with a list of services that could help them. The medium-touch, medium-volume track provides the information about services and also a connection to a person whose job it is to follow up and make sure they connect with those services. The third track provides the

parks and recreation programs. The CATCH program serves as a good example of how strategies of spread, scale, and sustainability may become inseparable in practice.

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information and personal follow up, and also invests in creating durable linkages among the people delivering the services.[4]

These models have internal controls built in so that the total cost of care over time can be assessed. In this way it can be possible to demonstrate the value of investing in preventive services and to pursue innovative financing strategies, whether at the state, national, or other levels, Sanghavi concluded.

## PANEL DISCUSSION

Norton, the session's moderator, asked panelists to comment further on several topics raised in the presentations, including partnerships, barriers, and the evaluation of impact, as well as their thoughts on moving forward with spread and scale.

### Partnerships

Norton noted that in all of the examples there was a need for relationships and partnerships in bringing a practice or program to scale. Kelder said that CATCH started by developing local partnerships with the larger school districts through the diffusion-of-innovation model, finding those people who were interested in and passionate about the topical area for which CATCH had solutions. Later, CATCH partnered with the Texas State Department of Education to align the program with the state educational objectives and garner approval from the State Board of Education to allow any school in Texas to implement the program. CATCH also partnered with the Texas Department of Health to obtain funding for professional development for health education and also with the Department of Agriculture, which has responsibility for the food served at the schools. In summary, the researchers had to step out of the university, meet the elected officials, and find the champions throughout the state who were willing to accept the innovations that CATCH had to offer. Other districts around the state and the country then began calling for information about the program.

Massoud said that the initial conversation that ASSIST has with foreign governments is about which issues are most important to them. An outsider can make improvements on a small scale, but larger-scale sustainable change has to come from within, he said. ASSIST engages governments in a partnership, working with them to develop capability

[4] In Appendix C, Sanghavi notes that CMMI uses evaluation, learn and diffusion strategies, and "public accountability of results of pilot programs" to support spread and scale strategies.

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and infrastructure so that they will ultimately take over and lead when the program goes to scale. This type of partnership is one where the exit strategy of the ASSIST Project is part of the plan from day one.

CMS is a big payer, but it is still only one payer, Sanghavi said, and it is not enough to move the market if only CMS endorses a particular idea. A core challenge is how to get private payers to catch up to and join CMS in paying for innovation. He noted that truly innovative health care centers are struggling to find sustainable funding, falling into the gap where the private payers are not yet paying.

### Barriers

Panelists highlighted a variety of barriers that are encountered when going to scale and maintaining sustainability.

Sanghavi said that it is often the communities that already have durable, highly invested institutions that are the ones applying for CMS funding for innovative health care programs. There are very large areas of the country without innovative care solutions or a focus on community health. There is a divide between the haves and the have-nots in terms of the sophistication of the health systems. CMS tries to be cognizant of what it can offer to those communities and what it can do to allow them to participate in health care innovation.

Kelder added that after the recent recession and cuts in state budgets, many school personnel lost their jobs, personal development days were taken away, and training programs for school health specialists were cut. Researchers who are designing, developing, and evaluating programs and creating the evidence base are struggling to monetize these programs or to get them implemented. Faculty are not well versed in how to deal with intellectual property issues, he said. CATCH was able to find a commercial partner to print and market materials and supplies, but, he added, the marketplace can be both a facilitator and a barrier. Having a commercial partner made CATCH ineligible for funding because many institutions will not fund for-profit organizations.

Change in staff at the leadership level as well as in health care delivery institutions is a particular challenge, Massoud said, and new champions must be continually identified and developed. Another obstacle is the pervasive notion among leadership that all that is necessary is to replicate a successful pilot program over and over, in a linear fashion. Building on the experience and using good spread methods allows for scale at a much faster rate and much lower cost than simple linear replication.

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### Evaluation of Impact

Norton raised the issue of the evaluation of impact and population health outcomes. CATCH has done a number of studies to determine efficacy, Kelder said. For example, CATCH is in place in all of the middle schools in the city of Dallas. CATCH was able to use the existing fitness standard testing done at the schools (e.g., obesity rates and fitness levels) to show that schools that were higher implementers experienced a stronger effect than schools that were lower implementers. Kelder highlighted the value of finding existing public data sources when programs go to scale, because the collection of original data is often unfeasible. Staff at the school district level can usually provide information about the evaluation methods that they use to meet state standards. Kelder added that Texas—like many other states—requires schools to fill out a campus improvement plan annually. The campus improvement plans often do not have a health component. CATCH has written standards and disseminated them to the school and district administrations.

In evaluating impact, CMS generally focuses on the reduction in total cost or on in improvement in quality, Sanghavi said. A challenge is that an evaluation can suggest a correlation between an initiative and an outcome, but not causation. Conclusions drawn are often colored by the agenda of the evaluator. A community health advocate, for example, might suggest that costs went down because of the intervention. Another challenge is the design of the intervention, Sanghavi said. If the intervention is not designed to actually answer a question, it is highly unlikely that the data will be very persuasive. The gold standard in evaluation is to conduct studies in which the interventions are randomized, but that is very difficult to do in practice, he noted. He added that CMS is exploring a cardiovascular risk reduction model, and, if it is done, it will likely be a randomized study.

Massoud added that when conducting an evaluation of a scale up, one wishes to determine not just whether the desired result was achieved, but also how long it took and how much it cost relative to the demonstration project and also relative to other alternatives.

### Moving Forward

Norton asked the panelists to summarize approaches that others could use moving forward with spread and scale. In response, Kelder said that when working with schools, it is important to talk with the state agencies, especially the state board of education, to find out what they are already doing and if the proposed program elements will work with their current structure. Linking the program priorities with both federal and private philanthropic interests and missions is also helpful, as is engag-

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ing professional organizations. Kelder reiterated the value of finding the innovators and the early adopters to serve as champions for the diffusion of the innovation.

Massoud suggested starting with the end in mind when developing interventions, defining what to achieve, and then designing how to get there. Start with something small and deliberate at the demonstration level. He also suggested having an upfront agreement with the leadership that the key staff for the demonstration project will be allowed to participate in taking the program to full scale (releasing them from current obligations as needed). He also reiterated the need for a deliberate transition scheme, so that the program will ultimately be handed over to the local leadership.

Sanghavi concurred and added that large health systems should try to engage the private-payer partners at a very early stage, making sure that they have input and are participating in the design of the intervention. Building on the prior discussion of evaluation, he also suggested developing an independent and well-thought-out evaluation strategy prior to the intervention.

## OPEN DISCUSSION

During the open discussion that followed, George Isham of HealthPartners observed that each speaker had provided a very situationally dependent view of spread, scale, and impact. He asked whether the evidence base is complete and whether it is distinct or if each could learn from the other examples. Massoud responded that the evidence base is far from complete and may never be complete. For example, there is much to learn about the rate of spread or adoption. Kelder agreed and added that in his area, for example, there are programs that are known to work with middle school children that do not work with preschoolers. The problems are different, the solutions are different, and the personnel are different, he said. There are always new ways to improve programs and get outside of the silos, he said, noting that in his case, he needs to interact with pediatricians, school nurses, economists, and the state government. If the ultimate goal is to have healthier individuals living in healthier communities, Sanghavi said, then spread, scale, and impact are multilayered issues. CMS can look at one or two parts of that—for example, the payment incentives. What is needed overall is a rigorous system of professionalism, education, and community engagement.

Participants then commented on partnerships, funding, evaluation, and prevention as they relate to the spread and scale of population health. Finally, panelists offered their advice on priorities for the roundtable moving forward.

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### Partnerships and Shared Responsibility

One participant raised the issue of the "edges between systems," or where the responsibilities of one program end and where those of other programs begin. Sanghavi said that a positive side of division is that people are often more invested in dealing with a problem if they feel as if they own it. He also raised the issue of controlling "leakage" when the walls between systems are removed. For example, if a payer tries to reduce emergency room visits by giving free air conditioners to patients who were repeat visitors for heat concerns or by giving all chronically homeless people housing, it would become difficult to draw the line for who should get free air conditioners or housing from that payer.

One path forward might be what Sanghavi referred to as "virtual braided funding." If different organizations (e.g., health, social services, corrections, housing, and welfare) consider the trends for where they spend money, they can collectively fund shared interventions (e.g., investing in substance abuse treatment) and then determine if their individual costs were reduced over time. Sally Herndon of the North Carolina Division of Public Health shared another example of virtual braided funding. Together with the private sector, North Carolina has built support for smoke-free affordable housing by becoming the second state in the nation to provide tax credits for building new multi-unit housing that is smoke free.

Massoud agreed with the need to look at the bigger picture, and commented that the likelihood of achieving better health outcomes is even higher when interrelated efforts are combined. As an example, he noted that USAID's work in caring for vulnerable children and families started with emergency relief for the orphans of the AIDS epidemic, and it now encompasses other health care, schooling, food and nutrition, economic household strengthening, and other elements.

Kelder said that CATCH tries to tailor its approaches to the local communities as much as possible, using their own value and belief systems as well as their prioritization of problems. He explained that he has a portfolio of projects, some created by him and some by other institutions, and he can make broad program recommendations to schools based on the problems they are interested in instead of being restricted to just the programs he has funding for.

Neal Kaufman of the University of California, Los Angeles, schools of medicine and public health, asked how to make partnerships between the private sector and universities more robust. Kelder responded by noting the importance of understanding intellectual property, especially licensing agreements and the payment of royalties for both nonprofit and for-profit institutions, when developing these relationships.

A question was raised about the role of accountable care organi-

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zations (ACOs), and how to incentivize them to focus on population health. Sanghavi said that incentives are important, but that there are other elements to consider. One approach could be to capitate the payments in some way, creating a full-risk ACO. Another issue is attribution of patients—that is, assigning a provider in the ACO to be accountable for a patient's overall care, both cost and quality, regardless of which providers deliver the care. Communication with patients in the network is also essential because many people do not even know that they are in an ACO or even what one is.

### Funding Innovation

Pamela Russo of the Robert Wood Johnson Foundation asked the panel to comment on social impact bonds[5] as a way to fund innovation. Sanghavi said that CMS is exploring the use of "pay for success." One of the core issues is that social impact bonds are not a very attractive investment vehicle. Rather, they are more of a charitable venture. If the programs are great ideas that people are going to invest in, then social impact bonds may be helpful as bridge funding to buy time, but ultimately there has to be a rigorous political process in the background. Kelder agreed that a lot of this work is charitable, especially—because of state budget cuts—in his field of education. The private marketplace has not stepped in with the intellectual property because there is such a thin profit margin compared to, for example, drug treatment or many other treatments. It is important to find those charitable contributions and also to take the long route of asking the state agencies to do the right thing, he said.

### Evaluation

Jeannette Noltenius of the National Latino Tobacco Control Network raised a concern about whether the evaluation of impact goes deep enough to see disparities. Will the right data exist to identify the impact and the cost of having large poor populations with multiple chronic diseases? Kelder agreed that more research is needed that demonstrates efficacy within certain groups. This can be a challenge for hospitals from a workforce perspective, but is important for prevention and screening to reach the populations who are at a disparate health risk. Sanghavi suggested that for large health systems and public health agencies, it may be more effective to find ways to improve care for the entire population, which

[5] Social impact bonds are a "pay for success" funding model in which private investors fund public projects, receiving a return on investment only if the project successfully demonstrates improvement in social outcomes.

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would help in eliminating disparities. While there may be approaches that could be used to target particular populations, the biggest yield could come from the public reporting of measurement and transparency, which would help ensure that all are receiving care.

### Prevention

Kaufman suggested that people care less about their lifespan and more about their "performance span," that is, the years during which they have the ability to do the things they want to do. He suggested that there is a need to consider the risk of accumulating second or third chronic conditions. He added that money can be saved in the short term not only by preventing disease but its complications as well—for example, lowering the rate of sleep apnea in overweight and obese people, thereby reducing the need for and costs of continuous positive airway pressure machines. Kelder concurred, citing the problem of overweight children and the advent of bariatric or other surgical weight control techniques. It is better to prevent the child from becoming morbidly obese in the first place, he said.

### Priorities for the Roundtable

Sanne Magnan of the Institute for Clinical Systems Improvement in Minnesota asked panelists to advise the roundtable on priorities, given the roundtable's three basic goals: increasing life expectancy and other health outcomes, decreasing disparities in those outcomes, and decreasing health care expenditures and using the savings upstream. Kelder said that there are no quick and immediate solutions for decreasing disparities and improving outcomes and reducing health care expenditures. The work takes time. He suggested that increasing life expectancy and reducing health disparities should be priorities. Massoud suggested that a place to start would be looking at preventive interventions that will provide the most impact at the lowest cost. He also suggested targeting the people most affected in order to address the disparities issues. Breaking down the barriers among sectors is also essential for progress. Essentially, most people do not care what the average lifespan of Americans is; they care about their own lifespan. The first challenge then is how to make population health meaningful to the average person. Sustainability requires community buy-in. He added that cost effectiveness, quality-adjusted life years, and other such measures are strongly subject to bias. He suggested considering what is needed to achieve those three goals regardless of cost and then to talk about scalability.

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# 4

# Learning About Spread and Scale from Other Sectors

The second panel, moderated by Mary Pittman, the president and chief executive officer of the Public Health Institute, provided examples of spread and scale from other sectors. Pittman referred participants to several recent articles on scale and spread that cut across different sector approaches. Lavinghouze and colleagues, for example, described the need to have program-level capacity to effectively implement and sustain programs within a larger public health infrastructure (Lavinghouze et al., 2014). Both governmental and nonprofit public health infrastructure has been underfunded for years, Pittman said. Should the existing infrastructure and programs continue to be funded, she asked, or should the infrastructure and programs be designed differently in order to achieve scale and spread of innovations and solutions? In one publication, Lublin and Finger of DoSomething.org described how, in an effort to scale, the organization decided to cut half of its programs and instead focus on campaigns for issues in which young people are engaged (Lublin and Finger, 2014). While the approach was transformative, Pittman questioned whether it is sustainable for change.

Panelist Linda Kaufman, the national movement manager for Community Solutions' Zero: 2016 campaign to end homelessness, shared lessons learned from the spread and scale of the 100,000 Homes Campaign to reduce homelessness. Ogonnaya Dotson-Newman, the director of environmental health for West Harlem Environmental Action, Inc. (WE ACT) for Environmental Justice, discussed strategies from the environmental justice movement. Dan Herman, a professor and the associate dean for



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scholarship and research at the Silberman School of Social Work at Hunter College, described scaling the Critical Time Intervention (CTI) model of support during high-risk transition periods, with the goal of reducing recurrent homelessness. (Brief background information on the case examples, including how speakers understand spread and scale in the context of their own work, was submitted by the panelists prior to the workshop and is available in Appendix C.)

### 100,000 HOMES AND ZERO: 2016

"I believe housing is health care," Kaufman said, and "we cannot do health care without housing."[1] During its 4-year 100,000 Homes Campaign, Community Solutions worked with 182 communities around the country to house more than 100,000 vulnerable and chronically homeless individuals and families by July 2014. This national movement has reduced veteran homelessness by 33 percent and has reduced long-term homelessness by 20 percent, Kaufman said. Today, Community Solutions is no longer satisfied with simply reducing the amount of homelessness, she said, but instead is focused on reducing the number of homeless to zero. The Zero: 2016 initiative is a follow-up to the 100,000 Homes Campaign, and is intended to help 71 communities in 4 states end veteran homelessness by the end of 2015 and to end chronic, long-term homelessness by the end of 2016.[2]

Kaufman outlined the five basic steps in the 100,000 Homes model: build the local team, clarify the demand (and triage the placements), line up the supply (i.e., the housing), move people into housing, and help people stay housed. The model was developed and piloted in Times Square in New York City and then was spread to five other communities (Albuquerque, Charlotte, Denver, Los Angeles, and Washington, DC). The 100,000 Homes Campaign approach to spread and scale was based on lessons from the collective impact and lean start-up models. Kaufman outlined four basic stages of spread and scale:

- **Prototype.** Find an idea and start.
- **Pilot.** Try it, learn from the mistakes, make changes, measure outcomes. The pilot phase was not a straight duplication of what was done in Times Square.
- **Spread.** Share it everywhere. Community Solutions took the lessons learned from the pilot communities and spread them to more than 200 communities with the 100,000 Homes Campaign,

[1] For more on housing as health care, see Doran et al., 2013.
[2] See http://cmtysolutions.org/zero2016 (accessed February 20, 2015).

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targeting communities with more than 1,000 people homeless, but taking all interested communities.
- **Scale.** Help communities that are ready to get to zero homelessness among veterans and the long-term homeless.

### Lessons Learned

Kaufman shared some of the lessons that Community Solutions learned in conducting the 100,000 Homes Campaign. First, she said, choose a talented, capable leader, and put together the best team possible. Let the data experts lead the strategy. Dream and plan every 6 months to learn, change, and grow.

One of the most important lessons learned, she said, is that housing should be given out based on the need for housing, not according to how long someone has been waiting. Evidence suggests that about one-quarter to one-third of those who are homeless get out of homelessness on their own; about half need a short-term intervention (e.g., 3 to 6 months of rental assistance), and 90 percent of the time they do not enter the housing system again; and about 15 percent need a permanent housing voucher. The communities that are actually reducing homelessness, she said, are the ones that are triaging the people asking for housing. Communities in the 100,000 Homes Campaign were asked to know every person in their community who is homeless by name and to have enough information to triage them for housing.

Ask communities if they are ready for zero, she concluded. Zero: 2016 has set high standards for communities to be part of the initiative. Communities can do amazing things, Kaufman said.

## WE ACT FOR ENVIRONMENTAL JUSTICE

The 1987 United Church of Christ report "Toxic Waste and Race" was the first report that really discussed the relationship between the geographic proximity of toxic waste sites and communities of color and low income, said Ogonnaya Dotson-Newman, the director of environmental health for WE ACT for Environmental Justice, in New York. This early evidence of disproportionate exposures found that three out of five Black and Hispanic Americans lived in communities with one or more uncontrolled waste sites; that race was the single most important variable (more than income or property value) determining proximity to toxic waste sites; and that the percentage of the local population that was of color increased proportional to commercial waste sites. An updated report 20 years later found that many of these racial and socioeconomic disparities persisted. Host communities for commercial hazardous waste

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facilities were located predominantly in communities of color, and there were unequal protections for communities hosting hazardous facilities. Dotson-Newman said that these exposures can create a toxic legacy of heritable health effects that will affect future generations regardless of where they live or what they achieve socioeconomically.

The environmental justice movement is the product of a convergence of civil rights, environmentalism, and public health and is focused on social justice, pollution prevention, and environmental protection. Critical issues include cumulative and multiple exposures, poor and unhealthy land use decisions, the exclusion of the community voice from decision making, and accountability and transparency of public institutions. Many of the ideas and solutions adopted by the movement are coming from grassroots organizations, and many community-based organizations are scraping together materials and resources to begin to have an impact on a day-to-day basis. Dotson-Newman said that it is important to work on multiple levels, engaging with grassroots organizations but then taking ideas to scale in order to achieve measurable results.

WE ACT for Environmental Justice is a northern Manhattan community-based organization whose mission is to build healthy communities by ensuring that people of color and low income people participate meaningfully in the creation of sound and fair environmental health and protection policies and practices, Dotson-Newman said.[3] WE ACT is involved in the training and empowerment of people in the northern Manhattan area and in advocacy at the city, state, and national levels. For example, WE ACT will take community members to meet with their city council officials or senators. The organization also has community academic partnerships, such as a partnership with the Columbia Center for Children's Environmental Health. WE ACT translates molecular epidemiology research into plain language so that community members can use it to advocate for better policy or to take steps to limit their personal exposure.

## Spread and Scale

Dotson-Newman shared an example of the spread and scale of an idea and a policy. The 2014 Climate March brought more than 400,000 people to New York City to highlight the need to address climate change. She traced the origins of this action back to 1982, when civil rights and environmentalism came together in an environmental action at a landfill in Warren County, North Carolina, that contained polychlorinated biphenyls, or PCBs. That early work by individual groups working locally

[3] See http://www.weact.org (accessed February 20, 2015).

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grew to a focus on issues that affect low-income and communities of color at a national level. Together, by working at local and national levels, they were able to push for an executive order signed in 1994 (Executive Order 12898) focusing federal attention on issues of environmental justice and health. This led to growth in many areas, from communities increasing awareness and organization and government agencies considering health disparities in their rule making, to researchers partnering with community-based organizations to better understand their health needs and more individuals becoming trained in organizing to create change.

## CRITICAL TIME INTERVENTION

CTI is an individual-level, time-limited care coordination model that mobilizes support for vulnerable persons during periods of transition. Herman explained that the work actually began in the 1990s in the Fort Washington Armory in upper Manhattan, which at the time was serving as a large shelter for homeless men. Up to 1,000 men would sleep on cots on the drill floor of the armory, many of them suffering from mental illness, substance abuse, and untreated medical problems, including HIV and tuberculosis. Over time, some people went into supportive housing units, others were able to be reunited with family members, and others found rooms on their own, often with the help of social services staff. Unfortunately, Herman said, it was observed that many of the people placed in housing cycled back into the shelters or to other institutions. The CTI model evolved up from street-level workers eager to provide better support and to increase retention in housing.

CTI is a model of how to provide support during high-risk transition periods with the goal of improving long-term outcomes. It differs from traditional case management or care coordination models, Herman explained, in that it is explicitly designed to be time limited and to focus on the periods of transition that have been identified through research as being high risk for recurrent homelessness, re-hospitalization, incarceration, or a variety of health risks. CTI workers are taught the skills to focus on individual-level risk factors for recurrent homelessness. The model is applied over 9 months, in three phases of decreasing intensity of involvement with the individual to be housed. The goals are to provide transitional support that links people to long-term supports in the community and to help people become more effectively rooted in the community, thereby reducing the risk of recurrent homelessness.

With funding from the National Institute of Mental Health (NIMH), a randomized trial was conducted comparing CTI for 9 months to normal discharge planning and follow-up services. The study found a reduction of about 60 percent in the risk of recurring homelessness after 18 months

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for those in the CTI group, compared to those randomly assigned to housing (Susser et al., 1997). A second NIMH-funded study adapted the model for use with a similar population of homeless people being discharged from a psychiatric hospital, which is another key risk period for homelessness, Herman noted. Again, the study found a reduced risk of homelessness as well as a reduced risk of psychiatric re-hospitalization associated with CTI (Herman et al., 2011).

### Spread and Scale

As a researcher, Herman said, his first step in the dissemination of CTI was to publish the results of the first randomized trial in the professional literature. This led to occasional contacts from service providers interested in the model. He noted, however, that publishing scientific research—or creating websites or national registries of evidence-based programs and policies—in the hopes that people will discover the work is not an effective approach to spread and scale.

Herman and his colleagues realized that they, like most intervention developers, did not have the capacity to move the model forward. What evolved, then, was a partnership strategy to disseminate the CTI model, in which Herman and his colleagues worked with nonprofit and for-profit organizations that train social services and health care providers. In 2014, with support from the Silberman School of Social Work at Hunter College, the Center for the Advancement of CTI was launched to support the dissemination of CTI and to promote collaboration among trainers, providers, researchers, advocacy groups, and policy makers.[4]

In closing, Herman reiterated his concern about the dissemination of evidence-based interventions in social services and health care, including the sustainability of dissemination efforts. While there have been suggestions of linking with commercial enterprises, Herman said he felt that these types of models are not of commercial interest from a profit perspective. What is needed, he asked, in order to develop—and sustain—that infrastructure to help promote effective dissemination? Another concern is that, to be effective, models need to be locally relevant, adapted to fit the unique needs of communities. Herman said that the challenge here is how to allow for adaptation of the model, while preserving the fundamental elements that account for its impact and preventing "model drift."

[4] See http://sssw.hunter.cuny.edu/cti (accessed February 20, 2015).

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## DISCUSSION

Following the introductions of their case examples, participants discussed further how to take local advocacy to scale, the iterative nature of spread and scale, and business models for spread and scale.

### Taking Local Advocacy to Scale

Moderator Pittman asked panelists to comment further on advocacy at the local level and on scaling advocacy strategies. Advocacy at the community level is very grassroots, Kaufman said. As an example, she cited the Albuquerque Heading Home initiative to end homelessness, whose tag line is "The smart way to do the right thing." She noted that the fiscally conservative mayor and the more liberal social services community were able to come together because the initiative both saves money and saves lives. Having accurate information about how much money is being saved by housing homeless people rather than supporting them on the streets gave the advocates leverage with the city.

The most effective advocacy, Kaufman said, is telling the stories. For example, as part of the 100,000 Homes Campaign, before (homeless) and after (housed) pictures and stories were posted online every week, showing the overall improvement of the people. She added that Community Solutions has a communications staff person who works with communities to help them tell their own stories. Community Solutions has also been involved in advocacy on the national level, telling the stories and collaborating across lines and across ideologies. The organization has one staff person who is focused on strategic partnerships with the U.S. Department of Housing and Urban Development, the U.S. Department of Veterans Affairs, the U.S. Interagency Council on Homelessness, and others.

Dotson-Newman concurred, noting the applicability of the phrase "Think globally, act locally." There are many communities that are dealing with the same issues. A coalition or network of organizations and agency staff needs to come to some consensus around national and local advocacy strategies and implement them. For example, as Kaufman discussed, the 100,000 Homes Campaign has a network of individuals who bring local voices into the national campaign strategy. Environmental justice organizations and public health researchers have been working in collaboration to influence the reform of state chemical policies and then to use those as leverage to get the U.S. Environmental Protection Agency and other organizations to take action and also to hold industry accountable.

Herman added that while issues such as homelessness and environmental justice are cross-sectoral, they are confined to a particular service delivery organization, agency, or funding source. They are community-level problems that can only be effectively addressed at the community

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level. Advocacy approaches are essential as they are the only way to mobilize sufficient energy and activity across sectors to address such complex problems.

### Spread and Scale as Iterative Processes

Panelists further discussed the concept that spread and scale are iterative processes and that models need to be adapted over time and to the population. Kaufman said that it is important to recognize what is not sustainable. It is also important to be able to let go and to let communities develop their own goals and handle some of the responsibility. For example, Kaufman said, some communities want to give out gift cards as incentives for filling out surveys, while others do not, feeling that this would be a form of bribery.

Pittman asked how variability across locales affects data collection and evaluation. Kaufman responded that there are elements that communities must agree to. For example, to be part of the Community Solutions campaigns, communities must know every homeless person by name, with enough information to triage them. The communities do not have to use the tool provided by Community Solutions to do this, but they do have to have the same end result. For the 100,000 Homes Campaign, communities had to agree to house 2.5 percent of their chronically homeless population every month and to report monthly on how many people were housed. When not all communities were reporting, a "fully committed" list was instituted that contained the communities that did know everyone by name and that reported every month. Communities became eager to be part of this "exclusive club" and to be on the list. This is just one of the ways the program continually adapted to foster progress, Kaufman said.

### Business Models for Spread and Scale

Debbie Chang said that at Nemours they learned to be intentional about doing spread and scale and actually created a national office with that focus. Chang asked panelists to elaborate on their business model, including financing for spread and scale. In many cases, especially in social services, the support for developing a thoughtful, effective business model or infrastructure to support the spread of an innovation does not exist, Herman said. There are individual charismatic leaders who have been successful in pulling together resources to support the spread of programs, but there is a gap in the infrastructure that is used to bring innovations to the community to improve health outcomes.

Dotson-Newman suggested that being able to do spread, scale, and

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strategic planning is a privilege. Many social services organizations and community-based organizations are necessarily focused on near-term goals, such as keeping the doors to the shelter open or making sure there are enough staff members. These organizations do not have the support to plan for spread and scale. She offered several examples where community organizations did have such support. In one case, the National Institute of Environmental Health Sciences provided strategic funding and support for community–academic partnerships to develop ways to translate science into practical actions (e.g., asthma home management programs). There has also been investment by foundations in the training of the leaders of the community-based organizations on how to develop a business plan and a theory of change. Some foundations have also provided funding for consultants to help with the transition to scale up in the organizations. She cited the Harlem Children's Zone model as an example of the development and implementation of a strategic plan to spread a successful model.[5] Kaufman acknowledged the Institute for Healthcare Improvement for its support of the 100,000 Homes Campaign and continuing work.[6] Support for the campaign has come from a variety of places, and she reiterated that there is a staff member whose job is to focus on developing a diversified portfolio of strategic partnerships with corporations, foundations, and the federal government.

[5] See http://hcz.org.

[6] See http://www.ihi.org/Pages/default.aspx (accessed February 10, 2015).

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# 5

# Learning from the Spread and Scale of Tobacco Control: From Concept to Movement

The third panel, moderated by Michelle Larkin, an assistant vice president at the Robert Wood Johnson Foundation, looked to the tobacco control movement for transferrable lessons on spread and scale. As background, Larkin displayed several maps showing the spread of state laws mandating that workplaces, bars, and restaurants be smoke free: From no such laws in 1998, about half of the country was covered by such laws in 2014. While this is an impressive spread of tobacco control, Larkin pointed out that comprehensive smoke-free laws have been implemented primarily in Northern states. This highlights the importance of local context. Only about 54 percent of the U.S. population is covered by state and local smoke-free laws for workplaces, restaurants, and bars, she said. Although this is a dramatic increase since the late 1990s, there is still a long way to go before the total population in the United States is not being exposed to a carcinogenic product and its byproducts.

Cheryl Healton, the director of the Global Institute of Public Health, the dean of global public health, and a professor of public health at the New York University Wagner Graduate School of Public Service, described the National truth® Campaign for the prevention of smoking by youth. Brian King, a senior scientist at the Office on Smoking and Health at the U.S. Centers for Disease Control and Prevention (CDC), provided a federal perspective on scaling tobacco control. Jeannette Noltenius, the former national director of the National Latino Tobacco Control Network, discussed the spread and scale of programs to reach minority populations. Sally Herndon, the director of North Carolina's Tobacco Control



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Network and the head of the Tobacco Prevention and Control Branch at the Division of Public Health at the North Carolina Department of Health and Human Services, discussed changing social norms as a strategy for spread and scale. (Brief background information on the case examples, including how speakers understand spread and scale in the context of their own work, was submitted by the panelists prior to the workshop and is available in Appendix C.)

## SMOKING PREVENTION IN YOUTH: THE TRUTH® CAMPAIGN

The National truth® Campaign is a primary prevention campaign to help young people avoid taking up the behavior of tobacco use, Healton said. The program is based on a successful large-scale campaign in the state of Florida. The theme of the Florida campaign was manipulation by the tobacco industry, and it included hard-hitting and edgy ads. Youth were integrally involved in the development of the Florida campaign, she noted.

The campaign was developed in part at Columbia University under a contract with CDC in response to the announcement by the U.S. Food and Drug Administration (FDA) that it hoped to support national youth public education. Leaders from the youth advertising world and brand managers for key teen brands offered their expertise as did TRU (a teen brand design leader) to craft messages that could counter the big tobacco brand. Teen brands are a tool for self-expression, and a group of national youth marketing experts suggested that the approach to fighting tobacco use among adolescents was to create a brand that was more empowering and rebellious than smoking. The position of truth® as a brand was intended to help counter the pop culture smoking images that are pervasive in society. The campaign had a rational component and an emotional component, Healton explained. The rational component provided facts and information that put teens in control, exposing what Healton described as the lies of the tobacco industry. The emotional component sought to appeal to the intelligence, rebelliousness, and risk-taking behaviors of teens, directing them to rebel against the tobacco industry. The campaign did not preach at kids, Healton said, and it did not condemn smokers. It did condemn the tobacco industry, she noted, and the industry did not appreciate it. The campaign was in litigation with the industry for years, but the campaign prevailed in a unanimous decision by the Delaware Supreme Court.

The underlying philosophy of the campaign, Healton explained, was that sensation seekers are much more likely to smoke. People who are high on the sensation-seeking scale as adolescents are much more likely to be open to smoking, to ultimately become a smoker, and to stay a smoker. She added that the amount of money spent on the truth® campaign was

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the second largest amount ever spent by a U.S. nonprofit organization in the media space (the first being a Partnership for a Drug-Free America campaign that aired for many years).

A multi-pronged approach was used to evaluate the impact of the campaign, including assessing receptivity and reactions to ads and national youth data for tracking smoking prevalence. There was a doubling in the rate of decline of youth smoking in the United States between 2000 and 2004, Healton said, and at least 22 percent of that was clearly attributable to the truth® campaign. This translated to an estimated 450,000 young people not starting to smoke. Despite the campaign's success, attempts to incentivize states to bring their campaigns to a higher level failed, which Healton attributed to the politics of the campaign.

Over a very short period of time, 90 percent of all youth (from 12 to 17 years of age) in the United States were familiar with the campaign, and 75 percent could describe at least one truth® ad. Awareness of the campaign was linked to changes in key attitudes and beliefs related to smoking. For the metric "Did you talk to a friend about the campaign?" between 22 percent and 40 percent of youths said that they did, depending on the ad. This is a high level of impact, for any ad, nonprofit or for-profit, Healton said, adding that the usual response rate is around 5 percent.

Healton shared the conceptual model for scale and spread for the new truth® campaign, which was called Finish It and was aimed at eliminating teen smoking (see Figure 5-1). While the original campaign, initiated in 2000, was entirely dependent on television and radio for delivery of its messages, the new campaign not only uses television but also seeks to use social networking activities extensively (e.g., Facebook, Twitter) to

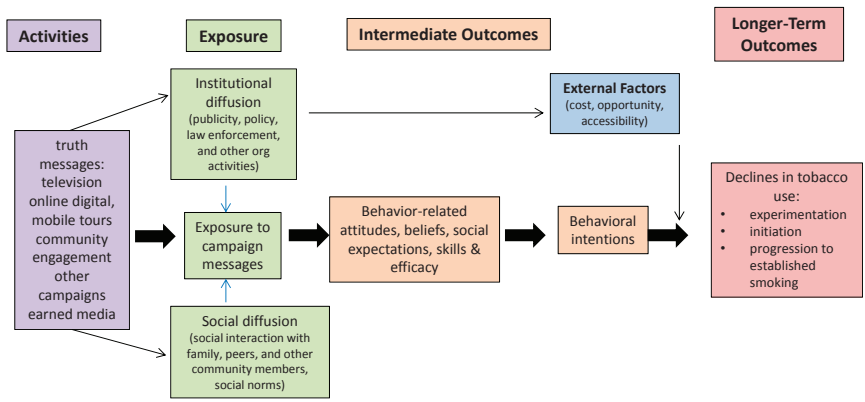


**FIGURE 5-1** 2014 conceptual model for the truth® campaign.
SOURCE: Legacy. Adapted from Hornik and Yanovitzky, 2003.

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grow the campaign organically. As has always been the case, she said, this is a major challenge because the campaign is competing for adolescents' attention against a very broad range of issues and interests.

In closing, Healton lamented the challenges of combating illnesses and behaviors where there is a corporate interest (e.g., food, alcohol, tobacco, firearms). When a campaign has the capacity to reduce the use of a product and it depicts a particular industry negatively in terms of health impact of that product, it is much harder to bring partners on board.

## FEDERAL PERSPECTIVE ON SCALING TOBACCO CONTROL

Much of the momentum, innovation, and spread of ideas for tobacco control has started at the local level, which in turn expanded to the state level, and ultimately the federal level, King said. Current tobacco control efforts stem from more than 50 years of experience in trying to determine what works. However, evidence-based interventions are not necessarily spread to the populations that need them most. Although there has been progress over the past five decades since the first Surgeon General's report on smoking and health in 1964 (HHS, 2014), there are still marked disparities in tobacco use and in the dissemination of innovations.

The tobacco epidemic peaked in the 1960s. King noted that it got its start in World War II, when cigarettes were included in the rations of soldiers, who later introduced smoking to their wives and other family members. Tobacco use began to decline following the release of the first Surgeon General's report and the implementation of proven population interventions. There have been numerous reports on tobacco control, including 32 released by the Surgeon General,[1] and CDC has issued standards for comprehensive programs (CDC, 2014). Marked declines have been observed over time, as the knowledge of the dangers of tobacco use and secondhand smoke has proliferated and as social norms regarding the social acceptability of tobacco have changed. Evidence also shows that the percentage of non-smokers exposed to secondhand smoke has declined, as measured using serum cotinine levels, a biomarker of nicotine (CDC, 2010; Homa et al., 2015; Pirkle et al., 2006). Still, in 2013 about 18 percent of the adult population was using cigarettes (Jamal et al., 2014), and the tobacco product landscape continues to diversify with new products, such as electronic cigarettes (e-cigarettes) (Agaku et al., 2014). All 50 states currently have tobacco control programs, but the adoption of proven population-based tobacco control strategies varies by state (CDC, 2014).

The biggest inhibitor of implementing and spreading tobacco control interventions is funding, King said. The tobacco industry outspends pre-

[1] See http://www.surgeongeneral.gov/initiatives/tobacco (accessed February 20, 2015).

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vention efforts by 18 to 1. State tobacco revenue from taxes and Master Settlement Agreement payments is about $25 billion per year, King said, and the federal revenue from cigarette taxes is about $15.6 billion (CDC, 2014). The tobacco industry spends about $8.8 billion per year to market and promote its products (FTC, 2013a,b). CDC recommends that annual state spending on tobacco control be $3.3 billion, but in reality states are spending only about half a billion dollars per year (CDC, 2014). The funds are not being used to implement the strategies that are known to work to effectively reduce tobacco use. If just a small portion of the income from tobacco revenue were applied to tobacco control, it would be possible to make great inroads, particularly among disparate populations, King said.

### Evidence-Based Population Tobacco Control Interventions

King briefly discussed four major interventions that are part of comprehensive tobacco control programs: 100 percent smoke-free policies, tobacco price increases, cessation treatments, and counter marketing (CDC, 2014).

As Larkin mentioned, comprehensive smoke-free laws (prohibiting smoking indoors at worksites, restaurants, and bars) have spread over a relatively short time period, from zero in 2000 to 26 states and the District of Columbia in 2014.[2] King said that the momentum for such laws has decreased considerably in recent years because of the issue of preemption and other factors. Much of the momentum for these policies is at the local level, he explained, but if a state law preempts localities from taking action, there is no initiative to start the discourse at the local level. He noted that there has not been a statewide law implemented since 2012.

Increasing the price of tobacco products is the single most effective method to reduce consumption, King said (HHS, 2014). This has been proven time and again at local, state, national, and international levels. As the price of tobacco products increases, consumption declines (see Figure 5-2). King noted that there is marked variability in cigarette excise taxes across the United States, ranging from 17 cents per pack in Missouri, to $4.35 per pack in New York.[3] It is not a surprise, he said, that smoking prevalence is the lowest in the states with the highest cigarette excise taxes. The tobacco belt in the south has the highest rates of smoking and other tobacco use as well as the lowest levels of cigarette taxes and smoke-free policies or other interventions that are known to work.[4]

[2] See http://www.cdc.gov/tobacco/data_statistics/state_data/state_system/index.htm (accessed February 19, 2015).

[3] Ibid.

[4] Ibid.

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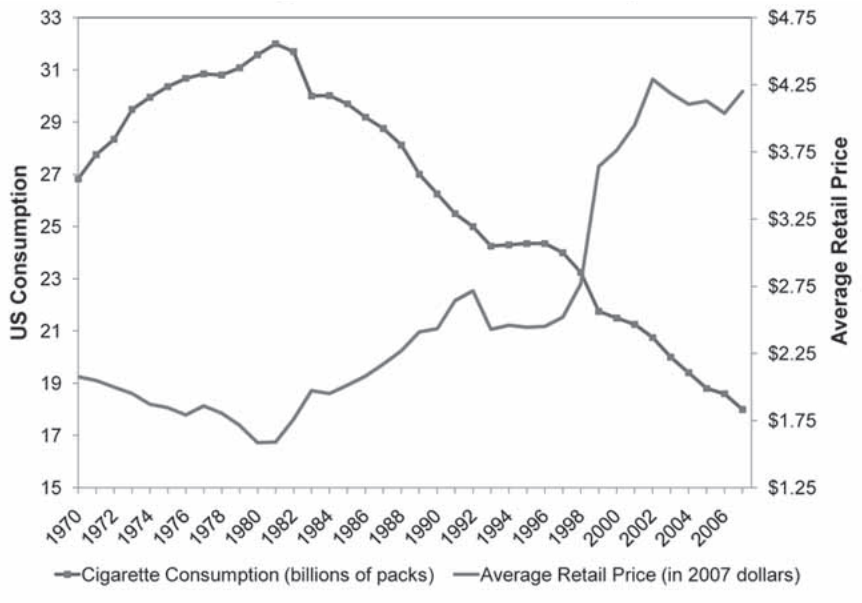


**FIGURE 5-2** U.S. cigarette price versus consumption.
SOURCE: King presentation, December 4, 2014, derived from Orzechowski and Walker, 2009.

In 2000, very few states had tobacco quitlines that people could call for information about quitting smoking. Today, all 50 states and the District of Columbia have quitlines, and they have been expanded to reach vulnerable populations, including Spanish and Asian language speakers. King pointed out, however, that only about 6 percent of smokers access quitlines (CDC, 2014).

King also described the impact of national mass media campaigns, particularly graphic media campaigns such as the CDC Tips from Former Smokers campaign, the truth® campaign discussed by Healton, and the recent Real Cost campaign from FDA. These interventions are known to work, King concluded, adding that more than 200,000 people quit as a result of the 2012 CDC Tips campaign (McAfee et al., 2013).

## SPREAD AND SCALE TO REACH DIVERSE COMMUNITIES

There are whole regions of the country that have been left behind in terms of tobacco control policies, Noltenius said, reminding participants of the maps shown by Larkin and King. The demographics of the United States have changed over the past 20 years, and she suggested that

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although there are successful tobacco control programs, they have not been scaled to reach the growing minority populations of smokers. In addition, more than 6 percent of Americans are living in deep poverty (defined as having an income 50 percent below the poverty line). Racial and ethnic minorities, women, children, and families headed by single women are particularly vulnerable to poverty and deep poverty. Higher poverty rates and a lack of education are associated with higher rates of smoking.

Although great progress has been made in reducing smoking in the overall adult population to 18 percent, Noltenius said, young adults of ages 18 to 25 have very high rates of tobacco use, and tobacco use varies across and within ethnic groups (see Figure 5-3). She added that 99 percent of adult smokers started smoking before the age of 25, and cigarette use is also present among 12- to 17-year-olds.

Noltenius stressed that ethnic and gender differences in tobacco consumption make it especially important to disaggregate data and target initiatives into specific populations and genders. For example, among the Hispanic/Latino subgroups, Puerto Ricans living in the mainland have smoking rates of 38 percent, much higher than Mexican Americans (both male and female). The second group with highest smoking rates are Cuban Americans living in Florida, New Jersey, and New York. The lowest rates are among Mexican American immigrant women and Puerto Ricans living on the island of Puerto Rico. Noltenius also reminded par-

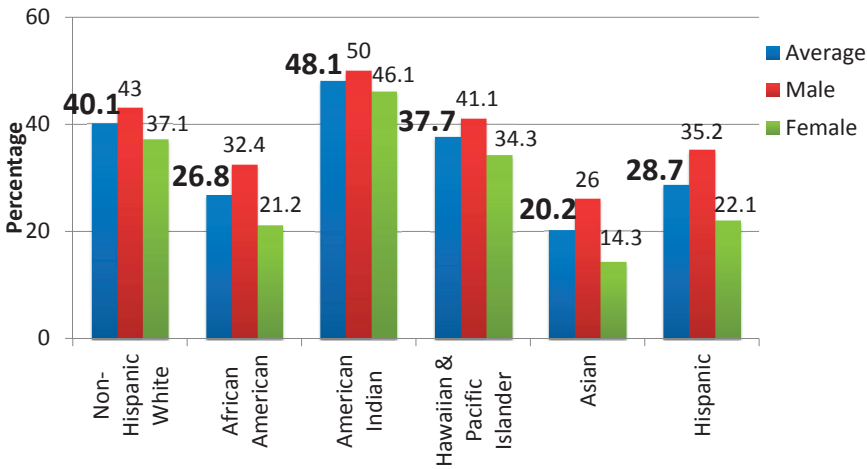


**FIGURE 5-3** Percentage of current cigarette use among 18- to 25-year-olds by race/ethnicity and gender.
SOURCE: Noltenius presentation, December 4, 2014, citing National Survey on Drug Use and Health 2008–2010 data, SAMSHA, 2015.

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ticipants that Asian Americans come from 53 different countries. It is important to concentrate on place when considering racial and ethnic subgroups, she said. There is also diversity in which types of people are most likely to choose a particular product. For example, smokers who use menthol cigarettes vary by race, sex, and age, with menthol use being more common among African American smokers, new smokers, female smokers, and younger smokers.

### The National Latino Tobacco Control Network

The National Latino Tobacco Control Network focuses on reducing tobacco use and promoting health equity.[5] A challenge for the organization is collecting and disseminating data on subgroups in order to mobilize the diverse populations within communities. In New York City, for example, Puerto Ricans, especially Puerto Rican women, have the highest smoking rates, but Latinos in general have the lowest smoking rates. Data have to be relevant to the local community in order for that community to become engaged, she said.

Another challenge is that many national Latino and minority organizations and political leaders have received tobacco, fast food, alcohol, and soda industry funding or sponsorship and therefore are beholden to them, Noltenius said. At the local, state, and federal levels, policy initiatives have been opposed by these groups and by politicians. Public heath funders have not systematically helped these groups divest themselves of this industry funding.

Population-level interventions do not necessarily work for all subpopulations. Noltenius said that funders that provide one or several national racial/ethnic networks with $400,000 to $700,000 may think they are reaching all minorities in the nation and territories. But policies and programs need depth and breadth, and they need to be segmented to reach diverse subpopulations. There are some promising practices for engaging minority populations, but there is not enough funding to implement, evaluate, and scale them. Every time we make progress, Noltenius concluded, we have to think about who we are leaving behind and if the interventions are widening the disparities gap.

## CHANGING SOCIAL NORMS AND POLICY

North Carolina is the leading tobacco-producing state in the nation, Herndon said. The North Carolina Tobacco Prevention and Control Branch (TPCB) works with partners to spread evidence-based practices

[5] See http://latinotobaccocontrol.org (accessed February 20, 2015).

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in tobacco prevention.[6] In the early 1990s, North Carolina was 1 of 17 states to be funded by the American Stop Smoking Intervention Study (ASSIST)[7] of the National Cancer Institute (NCI). Core funding of that project moved from NCI to CDC in 1999, with supplemental funds being provided by other agencies. A great deal about spread and scale has been learned in the process, Herndon said. For example, just as the planning phase of ASSIST was ending and the implementation phase was about to begin, the North Carolina General Assembly passed preemptive legislation requiring state-controlled buildings to set aside 20 percent of their space for smoking, as practicable, and prohibiting local governments from passing more restrictive regulations. This was a huge setback to the launch of the major tobacco control initiative, which was intended to eliminate exposure to secondhand smoke and change social norms about smoking in worksites and public places, Herndon said, and it was necessary to revisit the planned approach. The work then focused on making incremental progress without closing doors on future progress.

One of the approaches to spread that TPCB has taken is to collect stories from schools in North Carolina that had gone 100 percent tobacco free. School districts that had gone 100 percent tobacco free shared their success stories and started spreading tobacco control to other school districts during a series of breakfast meetings. Around the same time, Master Settlement Agreement funding was received, which helped to facilitate the 100 percent tobacco-free schools campaign. When approximately 85 percent of North Carolina schools had adopted a tobacco-free policy, a senator who was also a pediatrician introduced a bill to require all school districts to not only be tobacco free, but to adopt a 100 percent tobacco-free policy.

As a result of the school initiative, a progressive hospital administrator in one of the communities decided that hospitals also needed to be 100 percent tobacco free and started the same movement. This caught the attention of The Duke Endowment and the North Carolina Hospital Association, which provided funding to accelerate the spread of 100 percent tobacco-free hospitals. Although it took longer, mental health hospitals and substance abuse facilities in North Carolina are also now 100 percent tobacco free. Government buildings were not smoke free or tobacco free. Herndon and her team used a strategy whereby they first got the general assembly building tobacco free and then argued that what was good for the legislators ought to be good for state employees as well. Health care costs were used as leverage to get prisons to be 100 percent tobacco free. It was a major accomplishment, Herndon said, when in 2010 North Carolina became the first of the southern states—and the only tobacco-

[6] See http://www.tobaccopreventionandcontrol.ncdhhs.gov (accessed February 20, 2015).

[7] Note that NCI's ASSIST project is distinct from and unrelated to the USAID ASSIST Project discussed by Massoud in Chapter 2.

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producing state—to make restaurants and bars 100 percent smoke free. Herndon noted that there is a strong complaint-based system of compliance. Consumers and employees at facilities can submit a complaint, which is sent to the local health director for rapid follow-up. She added that the Restaurant and Lodging Association was a key partner in this process. Public health coalitions and advocates wanted no exemptions, and businesses wanted a level playing field. With help from Pfizer and the CDC Foundation, TPCB evaluated the impact of the law on business, and it has found no negative economic impact in terms of lost jobs or receipts for restaurants and bars.

TPCB also found an 89 percent improvement in air quality, a 21 percent decline in weekly emergency department visits for heart attacks, and a 7 percent decline in emergency department visits for asthma in the year that the smoke-free restaurant and bar law went into effect.

There has been a fair amount of success, Herndon said, as the amount of support for smoke-free restaurants and bars in North Carolina has increased every year, and there is an 83 percent voter approval rating for the law. TPCB has had to defend the smoke-free restaurants and bars law in the general assembly every year, and it has also had to defend the part of the law that repealed part of the preemption. Future progress will depend on taking advantage of that part of the law that partially restored the local authority to ban smoking in government buildings, on government grounds, and in public places (defined as any indoor space inside which the public is invited). Because most work places have customers at some time or another, they are covered under this authority, although there are some workplaces that are considered private.

In the future, TPCB will continue to work at the local level to help build support for smoke-free government buildings, government grounds, public places, and community colleges. Herndon said that 35 of the 58 community colleges are 100 percent tobacco free. North Carolina is also poised to become the second state in the nation to require properties to be smoke free in order to quality for tax credits. Finally, TPCB plans to help community-based mental health and substance abuse organizations incorporate treatment for tobacco addiction.

## DISCUSSION

To start the discussion, Larkin observed that a theme that ran through all of the presentations was the need to work at multiple levels—federal, state, and local—and with a range of partners. She suggested that tobacco control is somewhat unique in how successful it has been in translating evidence into action and creating policy campaigns that move the issue forward at the local, state, and to some degree, federal levels. Policy change is critical, she said. Another issue Larkin highlighted from the pre-

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sentations was preemption of local action, which is specifically designed to stifle a growing movement. In thinking about spread, she said, it is important to think about who the opposition is and what tactics they might use to thwart pro-population health innovations that they perceive as counter to their interests. Healton added that the federal preemption of state action is also an issue and that significant amounts of corporate dollars are spent to secure federal policies that are favorable to industry.

### Engaging Partners

Panelists discussed further the need to engage nontraditional partners, such as schools and the hotel industry, in spreading tobacco control. Based on her work with schools, Herndon said that it appears that the majority of smokers start at age 12 to 14 and that few people start smoking after the age of 24. Many children think that "Everyone smokes." Having 100 percent tobacco-free schools changes the social norm at the school level and could affect children who are starting to smoke. When Governor Hunt convened a youth summit of two students from every high school in North Carolina, the students said that when they see their teachers smoking, they are being taught to smoke, Herndon said. The students asked for tobacco-free schools, and the governor gave the authority at the state level for action at the local level.

Healton said that the Legacy Foundation felt that if one major hotel chain could be convinced to become smoke free, others would follow, thus spreading the practice. It is very costly to businesses to have smoking on their property, she said, and the cleaning costs are significant when someone has smoked in a non-smoking part of the hotel.

The Legacy Foundation also partnered with willing governmental entities at all levels. One area where they have had a large impact and also a large pushback, she said, is the depiction of smoking in movies. No one had raised this issue with the state attorneys general before, she said, but state attorneys general have now called on moviemakers to take action on this issue multiple times.

Panelists also discussed engaging local governments and the community, especially young people, in spreading tobacco control. King said that having locally relevant information and data is essential. We do have the data, he said, and the challenge is finding the appropriate policy and decision makers and providing them with information that is relevant to them. One of the biggest arguments he has heard against tobacco control interventions, for example, is "They are not like me." Bringing New York data to Georgia is not going to be effective, he said. Whether the decision makers on smoking policy are restaurant and bar owners or public housing authorities and landlords, it is essential to have information that supports the cause and that it is relevant to them.

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Noltenius emphasized the value of engaging youth in spreading the values and practices of tobacco control and observed that many community advocates started as youth advocates. Fostering youth advocacy creates sustainable leadership not just for issues such as tobacco or public health, but for democratic engagement. Noltenius described the Minnesota afterschool program, Jovenes de Salud, as an example. Latino students advocated before the St. Paul legislature to eliminate all candy cigarettes. They also mobilized to get the organizers of Cinco de Mayo, the largest Mexican American/Latino fair in Minnesota, to go smoke free and not accept tobacco industry funding. Noltenius said that many of the legislators are parents and that they responded to having a child stand before them and ask if they wanted their children to be smokers. Youth empowerment puts a human face on these issues, she said.

Larkin commented that civic engagement is an important element in community health, no matter which issues one would like to spread—tobacco, obesity, housing, environmental issues, or something else.

Participants discussed further the concept of virtual braided funding that was mentioned by Sanghavi and Herndon (see Chapter 3). It is important to think about how health and other programs at the national level might cooperate, Herndon said. The U.S. Department of Housing and Urban Development recommends, but does not require, that multifamily public housing go smoke free (HUD, 2014). Smoke-free public housing is moving in a positive direction in North Carolina, she said, because the public health interests overlap with business interests. As mentioned above, the public health interests are working to require properties to be smoke free in order to qualify for tax credits. Larkin added that it is very expensive to clean housing units and to deal with lawsuits and complaints. It is a good business decision to not allow smoking. As she noted, previous roundtable workshops have discussed the investments that the business community is making in healthy communities, healthy housing, and healthy businesses (IOM, 2015a,c).

### Stopping the Spread of Ineffective Programs

Paula Lantz of The George Washington University pointed out that sometimes programs spread with great speed and skill, despite evidence that they are not effective. Tobacco control is a great example of the spread and scale of evidence-based policies and programs, she said, but it is important to acknowledge that many ineffective tobacco policies and programs have also been scaled and spread. For example, the Drug Abuse Resistance Education (DARE) program spread very quickly, with 75 percent of schools in the United States having a DARE program at one point. Many schools still have programs, she noted, even in the face of evidence that it is ineffective and may actually have counterproductive effects.

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In Puerto Rico, the National Latino Tobacco Control Network was able to mobilize all of the teachers in Puerto Rico to reject an ineffective, tobacco-industry-funded curriculum, Right Decision, Right Now, on tobacco-free choices, Noltenius said. The Tobacco Control Network also wrote a letter to alert the Substance Abuse and Mental Health Services Administration that the tobacco-industry program was ineffective because it was listed on the agency's website; the curriculum was later eliminated from the site. King said that the tobacco industry is a "prime example" of spreading interventions that do not work, but it has the money, resources, and political clout to move them. King cited the tobacco-industry-initiated We Card program as another example. It was an effort to prevent the retail sale of tobacco to people under age 18 by asking for identification.[8]

Lantz clarified that it is not just industry-funded initiatives that are of concern. State health departments have implemented programs without evidence because there was a lot of interest in a program or a sense that it was right. King concurred, saying that interventions later found to be ineffective are sometimes implemented during the process of building that evidence base. At other times, the evidence is there, but people ignore it.

### Lessons from Tobacco Control

George Isham of HealthPartners reiterated the point by King that the tobacco industry outspends prevention efforts by 18 to 1 and agreed with the characterization of the industry as an opponent. However, he questioned the wisdom of a strategy that characterizes the opposition as an enemy, rather than co-opting the resistance. He reminded participants of previous Institute of Medicine roundtable workshops on social movements for health and the role of communities (IOM, 2014b,c). Some movements need to have a clear opponent to mobilize against.

Isham noted also that there are regional disparities in how tobacco control policies are implemented. The roundtable's definition of population health is "the health outcomes of a group of individuals, including the distribution of such outcomes within the group." If we are not having reach, he said, improving health outcomes becomes less an issue of science and more an issue of engaging individuals where they are culturally. He suggested that industries probably have a stronger skill set in this area—engaging individuals—than many public health advocates. This is something to consider in terms of overall strategy, he said.

Terry Allan of the Cuyahoga County Board of Health commented on the appeal of certain products to selected subpopulations, such as results in minority populations having higher rates of smoking flavored small

[8] See http://www.wecard.org (accessed February 19, 2015).

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cigars. King said that tobacco products are taxed based on weight, and if a product weighs a certain amount, it is classified as a cigar. In 2009 the Family Smoking Prevention and Tobacco Control Act effectively banned characterizing flavors in cigarettes. The tobacco industry circumvented this by adding weight to the flavored product so that it is the same size, shape, and filter as a cigarette, but it is heavier, so that it is not classified a cigarette (King et al., 2014). King agreed with Allan that the use rates of these flavored products are highest among minority populations, specifically non-Hispanic blacks (Corey et al., 2014). This is a prime example of how the tobacco industry can identify and adapt to loopholes in laws, he said.

Healton said that there is a critically important role for advocates in speaking truth to power. She suggested that without the sustained truth® national media campaign, there would likely not have been a public education strategy from CDC or FDA. They saw the evidence that the campaign worked. The other side of speaking truth to power is giving the tobacco industry a wakeup call.

Sanne Magnan of the Institute for Clinical Systems Improvement asked presenters what specific lessons from the spread and scale of tobacco control might apply more broadly to population health, especially when dealing with multi-billion-dollar international corporations. At the community level, Herndon said, a key element was the brave commitment of resource dollars at a time when tobacco control was really needed. The early community-level programs helped to advance the evidence. Another lesson from the community level is the impact of price in driving consumer behavior. The tobacco control movement had the Advocacy Institute, Noltenius said, which brought together multi-sectoral cohorts of leaders to foster partnerships. Scale up requires these types of cohorts that represent national leadership. This is not only a scalable leadership process, but also an investment in partnerships for the future, she said. Larkin suggested that one of the lessons from tobacco control, childhood obesity, and housing is the importance of having stories of success to hold up and of being able to demonstrate a return on investment for partners, whether it is a financial return or achieving the intended population health goal. It is also important to co-create initiatives so that partners have a sense of accountability and ownership. Isham said that there is a need for metrics that can provide information at the community level and thus offer the sorts of insights that can trigger community engagement.

Martha Gold from City College of New York asked about the use of social impact bonds. Larkin responded that this has not been done specifically for tobacco control, but that there is some work being done around asthma that is focused on environmental contaminants that exacerbate asthma and that are tied to health care usage.

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# 6

# Accelerating Spread and Scale in Population Health

In the final session of the workshop, keynote speaker Joe McCannon, a co-founder of the Billions Institute,[1] shared his perspective on expanding population health, including advice on successfully getting from start to scale.

## FROM CONTEMPLATION TO ACTION: KEYS TO GETTING STARTED AND SCALING EFFICIENTLY

There are several prerequisites that must be in place before considering going to scale in any area, McCannon began. First, there must be promising prototypes or a promising evidence base that can be built upon. There are various examples of successful prototypes that offer some confidence that it will be possible to have an impact on population health at scale, he said, and some of them were discussed at this workshop. Second, there needs to be attention from influential leaders and stakeholders at national and local levels; many leaders in population health were in attendance at the workshop, he noted. Third, there needs to be a "conducive context." By this, he meant that the implementation of the Affordable Care Act has stimulated a health environment that is conducive to change. Beyond government, there has also been a notable increase in venture capitalism and changes in patterns of investing by banks and universities. For example, he said, in 2014 digital health fund-

[1] See https://www.billionsinstitute.org (accessed February 20, 2015).



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ing broke previous records, exceeding the total for 2013 in the first half of the year (Rock Health, 2014). The significant energy and attention in this area suggests a conducive environment for spread and scale, he said. He expressed confidence that there is a strong enough evidence base to begin and that it will be possible to continue to learn and refine the science going forward.

With the prerequisites in place, the question is how to seize the moment in population health. There are case examples from many different sectors that might be relevant to scaling impact in population health across the United States (e.g., infectious disease, public health, patient safety, corrections, homelessness, sex trafficking). Drawing on his work in and study of these sectors, McCannon focused his keynote remarks on the elements that take an initiative beyond typical to truly exceptional.

This type of change is very hard, McCannon acknowledged. He listed a variety of reasons why is it so difficult to take a sound initiative that has worked locally to a larger scale and to spread it effectively. There is a very crowded marketplace of ideas, he said, and the sheer volume of information and ideas is a barrier. Another barrier to change is what McCannon called "the myth of natural diffusion." There is little evidence that simply putting something out there in the literature or the public domain will result in uptake because of its merit or intrinsic value. Other challenges that undermine change are conflicting values, inertia and the need to attend to business as usual, resignation and apathy, competition, and fear. Fear is the enemy of all change, McCannon said.

## Typical Versus Exceptional Initiatives

McCannon presented ten attributes and behaviors of typical initiatives, and he contrasted those to the comparable attributes and behaviors of exceptional initiatives (see Table 6-1). Typical initiatives are not the result of bad intentions, he said, but more the result of the inertia that was noted as a barrier above. Exceptional initiatives stand out and have a very different feel or energy to them, he said.

### *Strategy Development Versus Starting*

A typical initiative generally involves comprehensive strategy development, McCannon elaborated. It is a natural tendency when addressing complex problems to want to take time and consider all possible directions and outcomes in order to try to solve the problem. In contrast, exceptional initiatives have a bias toward starting—not despite complexity, but because of complexity, he said. McCannon referred to the work of Asupos

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**TABLE 6-1** Attributes of Typical Versus Exceptional Initiatives

| Typical | Exceptional |
|---|---|
| Comprehensive strategy development | Bias toward starting |
| Emphasis on consensus | Consensus kills |
| General goals for expansion | Explicit, time-bound aims |
| Design for success | Design for success *and scale* |
| Broad knowledge of audience | Detailed audience segmentation |
| One stimulant | Many stimulants |
| One teaching method | Many *learning* methods |
| Replication | Adaptation |
| Summative evaluation is the priority | Formative evaluation (daily data) is the priority |
| Management gives approval | Management removes barriers |

SOURCE: McCannon presentation, December 4, 2014.

and colleagues at the Aspen Institute,[2] which suggests that the existence of complexity actually means that excessive strategy is wasteful—perhaps even absurd, McCannon added. Engaging with the world is the only way to know what will work and when for each context, he said. Modeling or network mapping can provide clues, but engaging with the environment is necessary. Complexity also means there is no silver bullet solution. One characteristic of initiatives that really succeed is a bias toward getting started, he said.

### *Consensus*

Another characteristic of typical initiatives is an emphasis on consensus and working to ensure that all stakeholders are in agreement. In reality, McCannon said, consensus is a very complex process, and he observed that the initiatives that succeed take the view that "consensus kills." Consensus on aim is needed, but the process of trying to achieve perfect consensus, particularly on smaller decisions going forward, is actually damaging to progress.

### *Goals for Expansion*

Another characteristic of initiatives that do not succeed is vague goals for expansion, McCannon said. Successful initiatives have explicit,

[2] See http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/Complexity_and_Community_Change.pdf (accessed February 20, 2015).

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time-bound aims and concrete ideas about what the initiative seeks to accomplish. He quoted Donald Berwick of the Institute for Healthcare Improvement (IHI) who, in reference to the IHI 100,000 Lives Campaign,[3] said "Some is not a number. Soon is not a time." The campaign set out to accomplish a defined goal by a certain date. Explicit goals are determined by understanding what full scale looks like, McCannon said, and also with the understanding that full scale is not achieved in one move. For any phase of an expansion (moving from prototype to pilot to scale), a rate of expansion of five times to ten times is a reasonable expectation (what McCannon referred to as the "Rule of 5× to 10×"). For example, the 100,000 Homes Campaign started in about 20 cities, and the target for the expansion phase was 200 cities. A goal of 2,000 cities would have been unreasonable, he said. Another example is the Millennium Development Goals, which are eight very explicit goals to be achieved by 2015. There has been remarkable progress globally, particularly in certain regions of the world, on these goals, he added.

### *Design for Success and Scale*

Initiatives tend to struggle when it comes to scaling because they design only for success, McCannon said. There is resource-heavy investment to ensure success at all costs, but this does not account for the need to reduce marginal costs and introduce economies of scale over time as the initiative expands. A better model is designing both for success and for scale from the outset, he said. Citing the work of Everett Rogers on the diffusion of innovations (Rogers, 1995), McCannon said that the attributes of an idea that facilitate adoption are relative advantage, simplicity, compatibility with people's values and beliefs, trial-ability, and observability. An idea that is trial-able and observable, he explained, is one that people can test and experience and see its benefits in the near term. As an example of simplicity, he noted that a draft guide addressing methicillin-resistant *Staphylococcus aureus* as part of the IHI 100,000 Lives Campaign was initially about 140 pages long. In the interest of scale and making it simple enough to actually be used, it was reduced to about one-third of that size.[4]

There are also infrastructure requirements to consider when designing for success and scale. Human resources, financial resources, physical space, equipment and supplies, data collection, technology, logistics,

[3] 100,000 Lives was the IHI national patient safety campaign to avoid unnecessary deaths in U.S. hospitals. See http://www.ihi.org/engage/initiatives/completed/5millionlivescampaign/documents/overview%20of%20the%20100K%20campaign.pdf (accessed February 20, 2015).

[4] This is a corrected figure from what McCannon said (12 pages) at the workshop. He inadvertently confused different guides.

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and oversight are all critical to think about in the early design phase, McCannon said.

### *Understanding the Audience*

In a typical initiative, the people carrying out the initiative have a broad knowledge of their audience, that is, the people at whom the initiative is aimed. Rogers' diffusion of innovation curve illustrates how, for any innovation, a given population will distribute into a bell-shaped curve with regard to how the members adopt the given idea or innovation. In an exceptional initiative, McCannon explained, there is also a detailed audience segmentation by, for example, geography (country, state, region, district), readiness (experienced, intermediate, novice), profession (e.g., administrator, doctor, nurse, community health worker), or type of facility (primary, secondary, tertiary). It is important to understand the population that the initiative is intended to reach, or the "customers."

### *Stimuli*

A stimulus[5] is an incentive or driving force for change. In a typical initiative, there tends to be one stimulus, McCannon said. As mentioned earlier, a common incentive is payment. In contrast, exceptional initiatives employ many different stimuli to drive change. Stimuli can be positive, negative, or anywhere on the spectrum in between. Examples include emotional connection, recognition, sense-making, empowerment, collaboration, enjoyment, evidence base, payment, transparency, regulation, and punishment. McCannon recommended an 80/20 balance, with 80 percent of incentives on the positive end of the scale, and 20 percent toward the negative. Negative stimuli, such as regulation or punishment, are appropriate where there are cases of negligence or sabotage, he said.

### *Teaching Versus Learning*

A typical pitfall in initiatives is relying too much on one teaching method, or relying too much on didactics in general, under the assumption that simply providing the information leads to change. Some weaker strategies for spread are papers, pamphlets, courses, websites, or conferences. There is a place for these methods, McCannon said, but learning methods are more appropriate for spreading change. Learning methods essentially democratize the change process, empowering people to make the innovation work for them in their environment or circumstance. There

[5] McCannon used the term "stimulant" during the presentation, but likely meant "stimulus."

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are numerous such methods, McCannon said, and he highlighted some that had been discussed in the workshop, including extension agents, the IHI Breakthrough Series Collaborative Model, the campaign model, grassroots organizing, wave sequence (wedge and spread), and parallel process (broad and deep). In response to a question, McCannon clarified that the extension agent concept has its origins in the U.S. Department of Agriculture. The extension agent travels from site to site across a remote geographic area to bring ideas, collect problems and challenges, and serve as a connection.

The core principles of any successful learning method are hands-on application and a rhythm or tempo. People must be testing new ideas, seeing their results, assessing their progress, understanding the data for their population, and making adjustments on a daily basis, he said.

### *Replication Versus Adaptation*

As discussed by McGahan (see Chapter 2) and others throughout the workshop, spread and scale are not simply replication. Exceptional initiatives focus on adaptation and are able to improvise to follow the theme, regardless of surprises or setbacks. This is true not just at the local level, McCannon said, but also at the level of a movement or a large-scale change initiative. The patient safety movement, for example, has been able to adapt to and take advantage of the opportunities presented by world events and emerging trends (McCannon and Perla, 2009).

### *Evaluation*

In a typical initiative, especially a heavily funded initiative, a summative evaluation is often the priority. One reason for this, McCannon explained, is the need for attribution, as funders may need to establish the value of their investments. However, a summative evaluation is a complement to a formative evaluation. Starting with a formative evaluation (of daily data) as the priority is a hallmark of a successful large-scale change initiative, he said. Successful improvement relies not just on data, but on timely data that can be used to make adjustments on a frequent basis. An allowance for local adaptation and an appreciation of local context are made impossible by a summative design that is too restrictive, he said (Langley et al., 2009; Pawson and Tilley, 1997).

### *Management Approach*

A typical initiative that struggles to get to scale and to have impact at scale often has systems where management gives approval. In the initia-

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tives that are successful at scale, management places priority on removing barriers. As an example, McCannon described two contrasting scenarios. In the typical scenario, district representatives submit reports to the central office, and the central office rewards the timely submission of data. Occasionally, the central office reviews data and ranks performance, and underperformers are called in. A common byproduct of this approach is that many district representatives are tempted to falsify their data. In the alternative scenario, which correlates with better results, senior officials visit districts and facilities on a rotating basis. They spend 25 percent of their time reviewing progress together with the people in the districts and facilities, sitting on the same side of the table as the representatives. They spend the balance of their time identifying specific barriers that the leadership will remove by the next visit and identifying new tests that local owners will run. Being successful at having impact at scale means spreading culture and values, McCannon said. The culture in the first scenario is one of fear, with limited learning in the culture. The second scenario is one where participants are invested in the outcome and are solving problems together as a team.

The essence of leading a successful large-scale change initiative is keeping the process free of fear, he concluded, so that people can test, fail, experiment, adjust, be transparent about problems, and overcome obstacles as rapidly as possible to constantly make the intervention better. McCannon noted that Rebecca Solnit's book, *A Paradise Built in Hell* (2009), describes the profound teamwork and fear-free environments that emerge in times of crisis.

## DISCUSSION

During the brief discussion that followed, participants reflected on getting started and having time-specific goals and on summative versus formative evaluation. Participants also discussed the concept of exceptional initiatives as a learning system and reiterated the issue of misalignment between the payment system and population health as a barrier to scale and spread.

In considering the need to get started rather than spending time developing comprehensive strategies, George Isham of HealthPartners recalled the examples and lessons from the panel on tobacco control regarding the spread of ineffective initiatives. McCannon agreed that there can be big miscalculations in developing large strategies, and he suggested that this supports the wisdom of getting started, but starting small. This is not to say that there is not time for deliberative thought and design, he said, but one should set a short timeframe for when the initiative will begin (e.g., 6 months).

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Isham concurred with McCannon's comments on the need for time-specific goals. He noted that the Institute of Medicine consensus studies have made time-specific recommendations for improving population health. He cited the first recommendation in the report *For the Public's Health: Investing in a Healthier Future*, which recommends that the secretary of health and human services set targets for life expectancy in the United States to be achieved by 2030.[6]

Paul Jellinek of Isaacs/Jellinek suggested that a rigorous summative evaluation of the prototype can pay huge dividends in terms of the subsequent rollout. Compelling cost–benefit or cost-effectiveness data can help secure financing going forward. Formative evaluation is then more appropriate for the project rollout. It is a sequential process, he said. McCannon agreed, but added that people sometimes confuse a summative evaluation with randomized controlled trials, and there are many other valuable forms of summative evaluation that may allow for greater appreciation of the texture and the context of the innovation.

David Kindig of the University of Wisconsin pointed out that the components of exceptional innovations outlined by McCannon form what Donald Berwick of IHI has referred to as a "learning system." Berwick has also observed that in the most effective initiatives, there is someone in charge to manage the learning system. This work is so deeply multisectorial that often there is no one accountable for the outcome. Kindig asked how a diffuse-accountability, multi-sectorial system can still perform in these exceptional ways. McCannon responded that there does need to be an entity or organization (or representatives from multiple organizations) that will be responsible for the learning system. A learning system supplies people with data that allow them to change and improve themselves or else gives them the ability to collect those data and make change themselves. There is a surveillance function that is designed to see what is happening around the system and that is able to identify what is good, distill it, repackage it, and redistribute it very quickly. The learning system does not catalog or create databases; it focuses on tacit knowledge rather than explicit knowledge. A learning system that works is created and managed intentionally by a core group of people, he said.

Debbie Chang of Nemours raised the issue of misalignment between the payment system and population health, which was discussed by the first panel (see Chapter 3), and asked how that barrier to spread and scale

[6] "Recommendation 1: The Secretary of the Department of Health and Human Services should adopt an interim explicit life expectancy target, establish data systems for a permanent health-adjusted life expectancy target, and establish a specific per capita health expenditure target to be achieved by 2030. Reaching these targets should engage all health system stakeholders in actions intended to achieve parity with averages among comparable nations on healthy life expectancy and per capita health expenditures" (IOM, 2012, p. 4).

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might be overcome. McCannon responded that there is now a critical mass of lives covered under value-based or population-based payment models to serve as demonstrations. In some states, there is innovative work going on with Medicaid, and there are some private payers that are closely following these models and conducting small tests with their own populations. McCannon suggested that demonstrating the success of these models will lead more private payers to follow.

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# 7

# Reflections on the Day

In the final discussion, roundtable members and attendees reflected broadly on how to successfully spread and scale to achieve meaningful population health outcomes.[1] Moderator Jacqueline Martinez Garcel of the New York State Health Foundation prompted participants to consider what they had learned from the discussions; what questions were raised for them by the discussions; and what, if anything, was missing from the discussions.

## COMMON THEMES

Martinez Garcel opened the discussion with a summary of what she heard as common themes throughout the day.

- **Collaboration.** A basic ingredient of spread and scale is collaboration, she said. This includes finding a common language and sharing joint responsibility and ownership for the issue and the solutions.
- **Community engagement.** Collaboration requires identifying common beliefs and value systems and building from them. Creating programs and then imposing them on people is a failure in public health, Martinez Garcel said. It is good to translate

[1] Use of the terms "spread" and "scale" should be understood in the context of the comments offered by each speaker.



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research into practice, she said, but the research needs to take into account what the community wants and needs. To grow to scale, build programs based on the beliefs, values, wants, and needs of community, she said.

- **Data.** Data that are local and relevant are essential to defining targets, planning, and going to scale. Understand the needs of the community, and scale to meet that need.
- **Infrastructure and resources.** Infrastructure and resources are needed to support the collaboration, community engagement, and data collection and use.
- **Leadership and vision.** Leadership and vision are what bring everything together. Leadership is not necessarily one leader, but more likely champions from all different sectors, from politicians to people from the community, Martinez Garcel said. Leaders need to be allowed the flexibility to lead, she added, and leaders cannot be expected to take something to scale that they do not believe in.

The following additional topics were then highlighted by roundtable members and participants as important takeaway messages from the presentations they heard.

### Getting Started

Many participants mentioned getting started and then learning by doing as being an effective approach. Concerning how to get started in a large, complex system, M. Rashad Massoud of the U.S. Agency for International Development Applying Science to Strengthen and Improve Systems Project provided an analogy from maternal mortality reduction (a target of the Millennium Development Goals). Trying to deal with maternal mortality can be overwhelming for a country. The primary causes of maternal mortality are known (e.g., postpartum hemorrhage, preeclampsia, sepsis). There are interventions that work for each of these conditions individually, and it is possible to approach the larger issue by starting with these. Another aspect of maternal mortality is the "three delays": delay in recognizing the need for care, delay in getting to a care facility, and delay in treatment at the facility. An effective approach is to start by setting aims and very specific actions for each area. Once good progress has been made in these areas, one can go onto more difficult issues, such as complications during delivery. It is very difficult to take on all things at once, Massoud said. Start with the easiest, and build up in terms of complexity.

Pamela Russo of the Robert Wood Johnson Foundation expressed concern about taking a "winnable battles" approach that focuses on a sub-

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set of concrete outcomes because of the complexity of population health improvement. The focus should be on the best way to make the change for the outcome to be improved, she said. She referred the workshop participants to an article by Kania and colleagues on an emergent strategy for philanthropy to address complex problems (Kania et al., 2014).

A participant observed that many communities have already started working on population health in one form or another. They are at different stages of activation. Part of the challenge is to determine how to take them from where they are at the beginning of a movement to the next level of scale.

Debbie Chang of Nemours suggested that there is a need to build a shared sense of urgency. This might come from an explicit, time-bound aim, but people have to agree on that time-bound aim. Another participant noted that urgency often stems from an emotional connection to an issue. Jean McGuire from Northeastern University also reiterated the need to take into account the goals and objectives that matter to people.

Mary Pittman of the Public Health Institute noted that she was encouraged that the discussion is finally moving from defining the problem to developing concrete steps for taking action.

### Planning for Scale

Neal Kaufman of the University of California, Los Angeles, suggested thinking about scale in a business context, in the sense that something that cannot be sustained should not be built. Scale should be considered at the research level when creating the effective evidence-based programs. The Diabetes Prevention Program, for example, was highly effective but unaffordable and unscalable because of personnel costs and other issues. If the original researchers had considered reaching 50 million people instead of 3,000, they might have done things very differently at the beginning. A second element is working with the agents of sustainability (individuals, communities, foundations, governments, and others) to maintain those relationships and ensure that they receive value. In some cases, these agents are interested in outcomes such as health care improvement and cost savings, but there are many other reasons (customer loyalty, member retention, public relations) to participate.

Based on his experience with foundations, nonprofit organizations, health departments, and governments, Paul Jellinek of Isaacs/Jellinek said that one of the biggest challenges is that people do not recognize the importance of getting to scale in population health. How can people be helped to understand the importance of getting to scale in the first place? David Kindig of the University of Wisconsin suggested that another barrier is the public perception that medical care equals health. Sally Herndon

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of the North Carolina Division of Public Health Tobacco Prevention and Control Branch reiterated the importance of resources, both human and financial.

In scaling up population health there are three interacting levels to be considered, Massoud said: the individual adoption level, the care delivery level (e.g., facility or community), and the policy level. Chang said that payers will be key accelerators of spread and that they need to be brought to the table.

In reference to the discussion of people not in true need taking advantage of programs (e.g., free housing for homeless people), Lourdes Rodriguez with the New York State Health Foundation said that the fear of being taken advantage of should not stop people from taking action or scaling. At the population level, the number of people who may take unfair advantage of a program will be very small relative to the number of people who have a true need and will benefit.

### Six Drivers of Population Health Improvement

Kindig reminded the workshop participants that part of the roundtable's mission is to "catalyze urgently needed action." He repeated the six drivers that shape population health improvement and that the roundtable hopes to influence—metrics, resources, policy, research, relationships, and communication—and he observed that, based on the discussions, there is much work to do on catalyzing action.

George Isham of HealthPartners said there is a need for multi-faceted metrics in spread and scale.[2] For example, what kind of infrastructure and daily metrics are needed to monitor the effects of efforts at a community level? What kind of robust system of measurement is needed to meet the purposes of government or private payers? Isham raised a concern about the use of resources (e.g., finances) to oppose change, as illustrated in some of the tobacco case examples discussed. How does economic power affect overall strategy? Addressing the subject of relationships, Isham noted that the experts on the panels are assets and resources who are part of the relationship circle. Isham said that the discussions raised questions for him about how siloed or fragmented the body of research may be and about how to bring it together for population health improvement and scale. He said that he was inspired by some of the examples of overcoming state-level policy barriers and by what has been achieved in spite of policy barriers. Finally, with regard to communication, Isham emphasized the power of consumerism in health care delivery and the

[2] The roundtable held a workshop, "Metrics That Matter for Population Health Action," on July 30, 2015.

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need to pay much more attention to communication in connection with population health and addressing the social determinants of health.

### Avoiding Opposition to Scale

Participants discussed further the idea of resistance to the scale up of population health improvement. Isham stressed the need for a strategy to improve population health in all states, not just some states, and to have all of industry support the change, not just some of it. Population health should be bipartisan, he continued, not liberal versus conservative, and it should engage all cultures and races. There are lessons to be learned from movements such as tobacco control about the challenges of facing a strong opposition to social change. The next iteration of large social policy and strategy must learn from these lessons.

Jeannette Noltenius of the National Latino Tobacco Control Network pointed out that there is a cost associated with not scaling up when there is the possibility to do so. When people work with a community and the community becomes excited about an initiative and that initiative is not scaled, it discourages the community, and it becomes a barrier for future scale up possibilities.

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# Appendix B

# Workshop Agenda

**Roundtable on Population Health Improvement**
**Achieving Meaningful Population Health Outcomes:**
**A Workshop on Spread and Scale**
**December 4, 2014**
Location: Silberman Auditorium, Hunter College
The Silberman School of Social Work
2180 Third Avenue (at 119th Street) New York, NY 10035

**WORKSHOP OBJECTIVES**

1. Explore the different meanings of the spread and scale of programs, policies, practices, and ideas.
2. Learn about a variety of approaches to spread and scale.
3. Explore how users measure whether their strategies of spread and scale have been effective.
4. Discuss how to accelerate the focus on spread and scale in population health.

8:00 a.m. **Welcome, introductions, and context**

*George Isham, senior advisor, HealthPartners; senior fellow, HealthPartners Institute for Education and Research; co-chair, Roundtable on Population Health Improvement*

*Debbie Chang, vice president, policy and prevention, Nemours; co-chair, workshop planning committee; member, Roundtable on Population Health Improvement*

8:15 a.m. **Welcome to Hunter College**

*Jennifer J. Raab, president, Hunter College*



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8:20 a.m. **Keynote: Mapping out the universe of spread and scale**

*Anita McGahan, associate dean of research, Ph.D. director, professor and Rotman chair in management, Rotman School of Management, University of Toronto*

8:50 a.m. **Discussion**

9:20 a.m. **Interactive activity: Making sense of spread, scale, and sustainability**

*Ashley Forman and Fareed Mostoufi, Arena Stage Facilitators*

10:15 a.m. **Break**

10:30 a.m. **Panel I. What do different approaches to spread and scale offer us as we seek to achieve meaningful population health outcomes? How do we evaluate and measure our impact?**

*Moderator: Wynne Norton, assistant professor, Department of Health Behavior, School of Public Health, University of Alabama at Birmingham; membe, workshop planning committee*

*Speaker: Rashad Massoud, director, USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, and senior vice president of Quality Performance Institute, University Research Co., LLC*

*Speaker: Steven Kelder, co-director, Coordinated Approach to Child Health (CATCH); distinguished professor in spirituality and healing, University of Texas*

*Speaker: Darshak Sanghavi, director, population and preventive health models group, Center for Medicare & Medicaid Innovation, Centers for Medicare & Medicaid Services*

11:15 a.m. **Discussion**

11:45 a.m. **Lunch**

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12:45 p.m. **Panel II. What can we learn from other sectors about effective ways to spread and scale impact to significant portions of the population?**

*Moderator: Mary Pittman, president and chief executive officer of the Public Health Institute; member, workshop planning committee; member, Roundtable on Population Health Improvement*

*Speaker: Linda Kaufman, national movement manager, Community Solutions' 100,000 Homes Campaign*

*Speaker: Ogonnaya Dotson-Newman, director of environmental health, WE ACT for Environmental Justice, New York*

*Speaker: Dan Herman, professor and associate dean for scholarship and research, Silberman School of Social Work, Hunter College, City University of New York*

1:30 p.m. **Discussion**

2:00 p.m. **Panel III. What can we learn from the spread and scale of tobacco control? From concept to movement.**

*Moderator: Michelle Larkin, assistant vice president, Robert Wood Johnson Foundation; member of the Roundtable on Population Health Improvement*

*Speaker: Cheryl Healton, director of the Global Institute of Public Health, dean of global public health and professor of public health at the NYU Wagner Graduate School of Public Service*

*Speaker: Brian King, senior scientist, Office on Smoking and Health, Centers for Disease Control and Prevention*

*Speaker: Jeannette Noltenius, National Latino Tobacco Control Network, Washington, DC*

*Speaker: Sally Herndon, director of North Carolina's Tobacco Control Networ; head, Tobacco Prevention and Control Branch, Division of Public Health, North Carolina Department of Health and Human Services*

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3:00 p.m. **Discussion**

3:30 p.m. **Break**

3:45 p.m. **Keynote II: Where do we go from here? How can we accelerate the focus on spread and scale in population health?**

*Joe McCannon, Billions Institute*

4:15 p.m. **Discussion**

4:45 p.m. **Reactions to the day and significance for future action**

*Introduction: David Kindig, professor emeritus of population health sciences, emeritus vice chancellor for health sciences, University of Wisconsin, School of Medicine and Public Health; co-chair, Roundtable on Population Health Improvement*

*Moderator: Jacqueline Martinez Garcel, vice president, New York State Health Foundation; co-chair, workshop planning committee; member, Roundtable on Population Health Improvement*

5:30 p.m. **Adjourn**

For more information about the roundtable, visit iom.nationalacademies.org/Activities/PublicHealth/PopulationHealthImprovementRT.aspx or email pophealthrt@nas.edu.

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# Appendix C

# Background Questions and Panelist Responses

Panelists were asked to provide the roundtable with written responses to the following questions prior to the workshop. The responses provided by the panelists for each case example follow.

1. Describe what you are spreading (ideas, practices, programs, policies).
2. Please explain what spread and scale means in the context of what you do.
   a. What is the size or scope of the scale up/spread?
   b. How many organizations (e.g., schools, hospitals, communities, etc.) have adopted the strategies (programs, practices, etc.)?
   c. How many individuals (e.g., clients, patients, students, etc.) have been reached by the scale up effort?
      i. How do you measure this?
   d. What proportion of your target population have you reached?
      i. How do you measure this?
3. What is your ultimate goal?
   a. What is your timeline for achieving the goal?
   b. How long has it taken you to scale up the ideas, practices, programs, policies to get where you are now?
   c. What barriers have limited your success in reaching your goals?



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4. Describe your approach to disseminating/spreading your ideas, practices, programs, policies.
    a. What theory/approaches do you use to get people to adopt your ideas, practices, programs, policies?
        i. Have you used a particular theory of action or framework of scale or spread?
        ii. What steps did you go through in order to spread a program?
        iii. What investment strategies did you use to spread a program?
        iv. Did you need to make organizational changes to bring something to scale?
        v. Were resources already in place to support the scaling strategy, or did you need to find special resources to implement the scaling?
            1. If you needed to find additional resources, how did you do it?

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# Rashad Massoud, Director, U.S. Agency for International Development (USAID) Applying Science to Strengthen and Improve Systems

USAID
FROM THE AMERICAN PEOPLE

USAID
ASSIST PROJECT
*Applying Science to Strengthen and Improve Systems*

## The USAID ASSIST Project

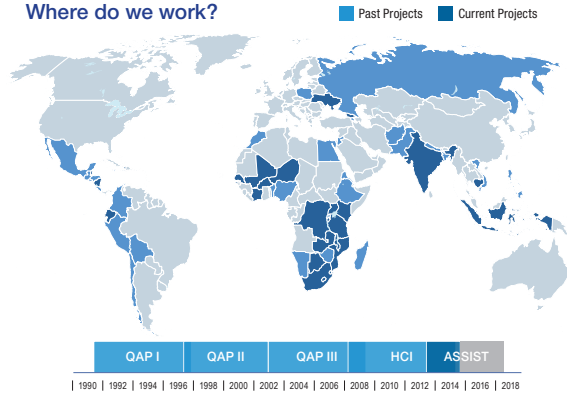
USAID Applying Science to Strengthen and Improve Systems (ASSIST) is a five-year project of the Office of Health Systems of the USAID Global Health Bureau designed to:

- Improve health and social services at scale
- Strengthen host country capacity to improve care
- Learn and share knowledge about improvement globally

## Project technical areas

- Care and support for vulnerable children and families
- HIV and AIDS
- Maternal, newborn, and child health
- Non-communicable disease and care for chronic conditions
- Nutrition assessment, counseling and support
- Reproductive health and family planning
- Tuberculosis, malaria, and other infectious diseases
- Health workforce
- Community-based services and linkages with facility-based care
- Knowledge management
- Research and evaluation

## Where do we work?




The USAID ASSIST Project is the fifth in a series of preceding contracts that have built on each other: Quality Assurance Projects (QAP): QAP I (16 countries), QAP II (18 countries), QAP III (26 countries), the USAID Health Care Improvement Project (HCI) (39 countries), and USAID ASSIST (to date 28 countries).

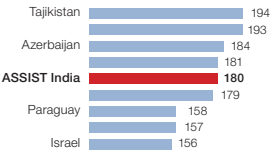
## At what scale are we working?

### *Project wide*

| **230+** government and implementing partners | **4400+** facilities | **900+** communities | **2500+** QI teams | **96+ million** people in areas served |
|---|---|---|---|---|

### *Example: India*

| Ministry of Health and Family Welfare | **263** facilities | **12-14,000** deliveries per month | **263** QI teams | **30%** of deliveries in 27 Districts |
|---|---|---|---|---|




*If ASSIST India supported sites were their own country, they would rank **88th out of 180 countries** in the world in total deliveries, just behind Azerbaijan and the Netherlands*

2010 births per country (1000s)

**DECEMBER 2014**

The USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project is funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by University Research Co., LLC (URC) under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; WI-HER LLC; and the World Health Organization Service Delivery and Safety Department. For more information on the work of the USAID ASSIST Project, please visit www.usaidassist.org.

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## What are we improving at what scale?

**Scale of USAID ASSIST activities in FY15**

| Country | Technical Area | Partners | Geographic scale | QI teams | Population coverage |
|---|---|---|---|---|---|
| AFRICA | | | | | |
| Botswana | | MOH | 101 facilities | 84 | 49,047 of 50,048 live births |
| Burundi | | MOH, 6 IPs | 70 facilities<br>24 communities | 70 | 5.6 of 10.6 million |
| DRC | | MOH, 5 IPs | 16 facilities | 16 | 16.9 of 72.5 million |
| Cote d'Ivoire | | MOH, 6 IPs | 60 facilities | 60 | 6 of 23 million |
| Kenya | | MOH, MLSS&S, NASCOP, 9 IPs | 530 facilities<br>387 communities | 800 | Health: 33 of 47 counties<br>OVC: 43 of 47 counties (600,000 of 2.4 million vulnerable children) |
| Lesotho | | MOH, 3 IPs | 12 facilities<br>3 of 10 districts | 3 | 417,129 of 1.9 million |
| Malawi | | MOGCSW, MOH, Office of President & Cabinet | 12 facilities<br>72 communities | 17 | 402,664 of 587,214 |
| Mali | | MOH, 1 IP | 153 facilities<br>50 communities | 203 | 2.3 of 2.9 million |
| Mozambique | | MMAS, 80 IPs | 7 facilities<br>8 communities | 95 | 1.8 of 11.8 million vulnerable children |
| Niger | | MOPH | 16 facilities | 16 | 239,255 of 971,115 |
| Nigeria | | MWA&SD, 2 IPs | 100 communities<br>10 of 36 states | | 200,000 of 2.5 million vulnerable children |
| South Africa | | DOH, 15 IPs | 2420 facilities<br>30 communities | 7 | 2 of 51 million |
| Swaziland | | MOH | 85 TB facilities | 30 | 841,752 of 1.1 million |
| Tanzania | | MOHSW, 11 IPs | 378 facilities<br>152 communities | 580 | 19.6 of 45 million |
| Uganda | | MOH, MGLSD, 20 IPs | 142 facilities<br>24 communities | 176 | 2.8 of 36 million |
| Zambia | | MOH, 3 IPs, 2 global partners | 8 facilities<br>1 of 89 districts | 8 | 30,000 of 88,000 |
| EURASIA & ASIA | | | | | |
| Cambodia | | All health professions councils: Medical, Nursing, Midwifery, Pharmacists, Dentists | 5 councils | | 20,000+ health workers |
| Georgia | | MOLHSA, 5 IPs | 20 facilities | 19 | 1.3 of 4.5 million |
| India | | MOHFW | 263 facilities | 263 | 32 million of 1.2 billion |
| Ukraine | | MOH | 10 facilities<br>5 cities | 11 | 2500 of 890,000 women (15-49 yrs) |
| LATIN AMERICA & CARIBBEAN | | | | | |
| Haiti | | MSA, IBESR, 4 IPs | 6 facilities<br>48 communities | 5 | 1.0 of 10.7 million |
| Nicaragua | | UNAN Managua, UNAN Leon, BICU, POLISAL, UPOLI, URACCAN, UCAN, UAM | 8 of 13 universities | 8 | 5,157 of 6,192 students |

Maternal Newborn and Child Health · HIV · Family Planning · Tuberculosis · Health Workforce · Chronic Care · Nutrition Assessment Counseling and Support · Orphans and Vulnerable Children

**USAID Applying Science to Strengthen and Improve Systems**
University Research Co., LLC, 7200 Wisconsin Ave., Bethesda, MD 20814-4811 USA
TEL 301-654-8338 • FAX 301-941-8427 • www.usaidassist.org • assist-info@urc-chs.com

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### Steve Kelder, Co-Director, Coordinated Approach to Child Health (CATCH)

1. **Describe what you are spreading (ideas, practices, programs, policies).**

   Diffusion of strategies for youth health promotion. This includes preschool, elementary school, and middle school–aged children and adolescents. Specifically, strategies for healthy eating and physical activity that are supported and managed through the CATCH Global Foundation.

   CATCH is composed of five main elements: (1) developmentally appropriate classroom instruction for children in grades pre-K–8; (2) physical education activities and continuing education; (3) continuing education for child nutrition services; (4) training, outreach, and involvement of parents; (5) site-based training for program management. See http://catchinfo.org.

   Over time we discovered that afterschool programs, YMCA, parks, and recreation programs were interested in the elements of the CATCH school-based program, so we adapted the program and tailored materials and training for those organizations.

2. **Please explain what spread and scale means in the context of what you do.**

   a. **What is the size or scope of the scale up/spread?**

      In Texas, 50 percent of public elementary and middle schools report using all or part of the CATCH program (approximately 1.6 million children). We have trained schools, preschools, YMCAs, Jewish community centers, and Boys and Girls Clubs in all 50 states and several other countries.

   b. **How many organizations (e.g., schools, hospitals, communities, etc.) have adopted the strategies (programs, practices, etc.)?**

      This is a problem we intend to solve within the coming year. We did not start out to train every school and YMCA in the United States in CATCH; our main target was Texas schools. As our Texas initiative grew, requests for training came from other states, and we did our best to keep up with demand. We did not keep track as we should have. With that said, we conservatively estimate having trained more than 10,000 schools, preschools, and YMCAs.

   c. **How many individuals (e.g., clients, patients, students, etc.) have been reached by the scale up effort?**

      This also is a difficult question. Schools are easier to enumerate, because there is a known population of students with small variation within any given school year. However, even adopting schools have varying levels of implementation that is very difficult to track on a large scale.

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i. **How do you measure this?**
In Texas, we have a better estimate of school size from our training logs: We estimate annually reaching approximately 1.6 million students. In other states, the numbers are not well identified, and I should not hazard a guess. What I can say is we have trained schools in all 50 states; in urban, suburban, and rural environments.

d. **What proportion of your target population have you reached?**
In Texas, approximately 50 percent. Nationally, the number is smaller and I should not guess. A crude guess is 10 percent.

i. **How do you measure this?**
The Texas Education Agency annually conducts a survey of school district wellness councils and CATCH is consistently reported to be used in approximately 50 percent of schools.

3. **What is your ultimate goal?**

I've been working on CATCH since 1992, as a professor interested in development and evaluation of child health promotion programs. As a professor, the dissemination of CATCH is one of many professional obligations and has not been my full-time job, and funding is inconsistent year to year. To solve some of the problems described above, in 2014 several CATCH investigators started the CATCH Global Foundation, a 501(c)(3) public charity. The mission is to improve children's health worldwide by developing, disseminating, and sustaining the CATCH platform in collaboration with researchers at University of Texas (UT) Health. The foundation links underserved schools and communities to the resources necessary to create and sustain healthy change for future generations.

a. **What is your timeline for achieving the goal?**
Our first timeline is to establish the CATCH Global Foundation—we plan on completing initial fundraising and staffing in 2015. As the foundation grows, we anticipate reaching a greater number of underserved schools and families. At this point, I cannot predict how far and fast we will grow, but we have had high-level conversations with many national and international organizations. I'm very optimistic.

b. **How long has it taken you to scale up the ideas, practices, programs, policies to get where you are now?**
CATCH has been a labor of love for me since graduate school in the late 1980s. Throughout my career, I have continued to research and build CATCH starting from an incredible foundation developed by the best child and adolescent researchers in the country. Cheryl Perry, Guy Parcel, Jim Sallis, Johanna Dwyer, Thom McKenzie, and

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John Elder, to name a few. My colleague Deanna Hoelscher and I have been at this for a long time.

**c. What barriers have limited your success in reaching your goals?**
There are three main barriers: (1) reductions in overall school funding nationwide, (2) health objectives are a lower priority relative to educational objectives, and (3) a low profit margin on the delivery of quality training and materials.

**4. Describe your approach to disseminating/spreading your ideas, practices, programs, policies.**

In the late 1990s, after the main CATCH randomized controlled trials, we received funding from the Texas Department of Health to disseminate CATCH in Texas. The university also licensed Flaghouse, Inc., to produce, market, and distribute CATCH. Prior to Flaghouse joining our team, we kept CATCH materials in a storage locker in Austin—not the most efficient operation!

Our main approach is twofold: (1) We respond to training and implantation requests, and (2) we seek funding from public sources and private philanthropy. Flaghouse markets and warehouses the CATCH program materials and UT faculty maintains quality control over training. The CATCH Global Foundation is now licensed to conduct CATCH trainings and will soon take over maintenance of training and program quality control.

**a. What theory/approaches do you use to get people to adopt your ideas, practices, programs, policies?**

**i. Have you used a particular theory of action or framework of scale or spread?**
We adhere to the diffusion of innovation theory.

**ii. What steps did you go through in order to spread a program?**
The typical diffusion cycle: increase awareness of the program, locate program champions and innovators, tailor program to local conditions (with reason), train users to implement program, provide technical support, encourage institutionalization of program.

**iii. What investment strategies did you use to spread a program?**
Most schools and districts have very small health education and physical education budgets, especially in underprivileged schools. We strive to offset school monetary costs with public and private funding. We also have gained UT institutional commitment for allowing faculty to work on CATCH as a professional service. A percentage of faculty salary for program development, evaluation, and dissemination is borne by UT.

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**iv. Did you need to make organizational changes to bring something to scale?**

Numerous. From production and storage of materials (Flaghouse, Inc.) to the development of the CATCH Global Foundation.

**v. Were resources already in place to support the scaling strategy or did you need to find special resources to implement the scaling?**

UT has been very supportive but could not supply all the resources needed to scale and reach full potential. We needed outside funding and a commercial partner.

**1. If you needed to find additional resources, how did you do it?**

Mostly by writing grants and attracting philanthropy dollars.

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## Darshak Sanghavi, Director, Population and Preventive Health Models Group at the Center for Medicare & Medicaid Innovation (CMMI)

*Center for Medicare & Medicaid Innovation: Background*

CMMI was established by section 1115A of the Social Security Act (as added by section 3021 of the Affordable Care Act). Congress created the innovation center for the purpose of testing "innovative payment and service delivery models to reduce program expenditures . . . while preserving or enhancing the quality of care" for those individuals who receive Medicare, Medicaid, or Children's Health Insurance Program benefits.

Congress provided the Secretary of Health and Human Services with the authority to expand the scope and duration of a model being tested through rule making, including the option of testing on a nationwide basis. In order for the secretary to exercise this authority, a model must demonstrate either reduced spending without reducing the quality of care or improved quality of care without increasing spending, and it must not deny or limit the coverage or provision of any benefits. These determinations are made based on evaluations performed by the Centers for Medicare & Medicaid Services (CMS) and the certification of CMS's chief actuary with respect to spending.

Established in 2010 and composed of roughly 300 staff members, the center is funded by a $10 billion appropriation over 10 years. Broadly, the center is currently testing models related to accountable care organizations (ACOs) (the Pioneer ACO model), comprehensive primary care, bundled payments for care improvement, state-based innovation models focused on Medicaid, numerous health care innovation awards, and broad based system transformation (e.g., the Partnership for Patients).

*Spread and Scale of the Innovation*

Annual federal spending by Medicare and Medicaid is approximately $772 billion, and the programs consume 22 percent of the federal budget, covering about 54 million Americans with Medicare and 70 million people via Medicaid. As a result, federal policy in these programs has the potential to drive significant impact through their scale. As of 2013, more than 50,000 providers were engaged by CMMI models, which served more than 1 million Medicare and Medicaid beneficiaries. Typical models can range from 3 to 5 years in duration, though there are several examples of Medicare demonstration projects that have continued for extended periods of time.

The spread and scale of models is typically supported by evaluation, learn/diffusion strategies, and public accountability for results of pilot programs, which are released publicly.

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**TABLE C-1** Current Model Authorized by the Affordable Care Act (taken from Report to Congress at end of 2012)

| Initiative Name | Description | Statutory Authority |
|---|---|---|
| Accelerated Learning Development Sessions | A series of collaborative learning sessions with stakeholders across the country to inform the design of the accountable care organization initiatives | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Advance Payment ACO Model | Prepayment of expected shared savings to support ACO infrastructure and care coordination | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Bundled Payment for Care Improvement | Evaluate four different models of bundled payments for a defined episode of care to incentivize care redesign<br>Model 1: Retrospective Acute Care Hospital Inpatient Stay<br>Model 2: Retrospective Acute Care Hospital Inpatient Stay & Post-Acute Care<br>Model 3: Retrospective Post-Acute Care<br>Model 4: Prospective Acute Care Hospital Inpatient Stay | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Comprehensive Primary Care Initiative | Public–private partnership to enhance primary care services, including 24-hour access, creation of care management plans, and care coordination | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Federally Qualified Health Center Advanced Primary Care Practice—Demonstration | Care coordination payments to FQHCs in support of team-led care, improved access, and enhanced primary care services | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Financial Alignment Initiative | Opportunity for states to implement new integrated care and payment systems to better coordinate care for Medicare/Medicaid enrollees | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Health Care Innovation Awards | A broad appeal for innovations with a focus on developing the health care workforce for new care models | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |

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**TABLE C-1** Continued

| Initiative Name | Description | Statutory Authority |
|---|---|---|
| Initiative to Reduce Preventable Hospitalization Among Nursing Facility Residents | Initiative to improve quality of care and reduce avoidable hospitalizations among long-stay nursing facility residents by partnering with independent organizations with nursing facilities to test enhanced on-site services and supports to reduce inpatient hospitalizations | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Innovation Advisors | This initiative is not a payment and service delivery model for purposes of section 1115A, but rather is an initiative that is part of the infrastructure of the Innovation Center to engage individuals to test and support models of payment and care delivery to improve quality and reduce cost through continuous improvement processes | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Million Hearts | This initiative is not a payment and service delivery model for purposes of section 1115A, but rather is an initiative that is part of the infrastructure of the Innovation Center. Million Hearts is a national initiative to prevent 1 million heart attacks and strokes over 5 years; brings together communities, health systems, nonprofit organizations, federal agencies, and private-sector partners from across the country to fight heart disease and stroke. | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Partnership for Patients | Hospital engagement networks (and other interventions) in reducing HACs/readmissions by 20 and 40 percent, respectively. (Community-Based Care Transition is covered in another row.) | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Pioneer ACO Model | Experienced provider organizations taking on financial risk for improving quality and lowering costs for all of their Medicare patients | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |

*continued*

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**TABLE C-1** Continued

| Initiative Name | Description | Statutory Authority |
|---|---|---|
| State Demonstrations to Integrate Care for Medicare-Medicaid Enrollees | Support states in designing integrated care programs for Medicare/Medicaid enrollees | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| State Innovation Models | Provides financial, technical, and other support to states that are either prepared to test, or are committed to designing and testing new payment and service delivery models that have the potential to reduce health care costs in Medicare, Medicaid, and CHIP | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |
| Strong Start for Mothers and Newborns | Strategy I: Testing the effectiveness of shared learning and diffusion activities to reduce the rate of early elective deliveries among pregnant women<br>Strategy II: Testing and evaluating a new model of enhanced prenatal care to reduce preterm births (less than 37 weeks) in women covered by Medicaid | Section 1115A of the Social Security Act (section 3021 of the Affordable Care Act) |

NOTES: This table summarizes the current model tests authorized by Section 1115A of the Social Security Act. ACO = accountable care organization; CHIP = Children's Health Insurance Program; FQHC = federally qualified health center; HAC = hospital-acquired condition.

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**Linda Kaufman, National Movement Manager, Community Solutions' 100,000 Homes Campaign and Zero: 2016**

Community Solutions is working on a real-time, data-driven approach to ending homelessness, and it is especially focused on those individuals who are in the most acute need and have been homeless the longest. We view homelessness in America as a public health emergency, as the mortality rate for street homelessness is on par with some forms of cancer, cutting a person's lifespan by an average of 25 years.

By using learnings from the collective impact and lean start-up models, Community Solutions has quickly spread the work of ending chronic homelessness across the United States by scaling up best practices and embracing targeted, data-driven solutions.

We began with a prototype called Housing First, which provides people experiencing homelessness with housing as quickly as possible and without preconditions, and then provides services to these people as needed. Although developed more than 20 years ago, the Housing First model had not spread far beyond Pathways to Housing, Inc., the developer of the concept. This simple concept has revolutionized the work of ending homelessness.

We then piloted a method of organizing housing services within a community, using the Housing First model to prioritize people based on vulnerability and moving those with the greatest need into housing as quickly as possible. This pilot started in Times Square in New York City and quickly spread to five other vanguard communities across the country (Albuquerque, Charlotte, Denver, the District of Columbia, and Skid Row in Los Angeles). This pilot phase allowed us to develop the right tools and process to house chronically homeless individuals and was pushed forward by the success of these communities.

In July 2010 the national 100,000 Homes Campaign was launched with the help and support of the Institute for Healthcare Improvement (IHI). Joe McCannon (also a speaker at this forum) was our consultant, guru, and facilitator of many meetings. By learning from IHI's 100,000 Lives Campaign, we set our sights on an audacious goal—to permanently house 100,000 of our most vulnerable and chronically homeless neighbors and transform the way our communities respond to homelessness. The launch of the campaign allowed us to intentionally target the communities with more than 1,000 chronically (i.e., long-term) homeless individuals.

The spread of this work began in 2010, as we spread the idea to more than 180 communities that went on to house more than 105,000 chronically homeless individuals by July 2014. We made significant changes over the 4 years of the campaign, adopting new techniques and scaling up best practices, and we have seen significant returns on our investments. An independent researcher estimates that each year the system saves

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$1.3 billion by moving these 100,000 people from the streets to permanent housing.

By the latter part of the campaign, the spread of these ideas and systematic changes began to reach the scale we had hoped to see. By employing a boot camp model (6 to 10 communities gathered in one place for large-scale change), we were able to go far beyond our previous single-community methodology. The boot camps were first used to introduce communities to prioritization and Housing First, and subsequently they were used to dramatically increase housing placements and system redesign.

Following the successful completion of the 100,000 Homes Campaign, Community Solutions launched a new initiative, Zero: 2016. This rigorous and challenging follow-on to the 100,000 Homes Campaign includes a cohort of 71 communities (including 4 states), which have committed to ending veteran homelessness by the end of 2015 and to ending chronic/long-term homelessness by the end of 2016.

We have moved from working with one community at a time to multiple communities simultaneously. We have moved from simply asking communities to know each person by name to using triage rather than chronology to determine their next housing placement. We have moved from "Set your own goal and see if you can meet that goal" to an objective goal—that 2.5 percent of a community's chronically homeless population should be housed each month. And now communities have committed to doing the impossible: taking veteran homelessness to functional zero by December 31, 2015, and chronic homelessness to functional zero by December 31, 2016.

Disrupting the failed status quo of "managing" homelessness rather than ending homelessness requires systemic change. That is why we required that all communities applying to be part of Zero: 2016 obtain buy-in from key stakeholders and have a signed memorandum of action in place. Communities had to publicly commit to the goals of Zero: 2016 as well as to a number of community actions aimed at helping reach these goals.

The success of Zero: 2016 is based on the learnings from the prototype and pilot phase, but it is not confined to them. The success of this initiative is based on a constantly iterating process: Data from communities are used to plan and drive subsequent steps, and best practices are identified and adopted. For example, in the 100,000 Homes Campaign, communities were lauded and celebrated for meeting their goals and reporting their monthly housing placements; this had never before been viewed as a useful exercise. Now Zero: 2016 communities recognize that meeting goals and reporting not only are required to participate in the initiative, but also are necessary to reach zero within their communities.

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Before the beginning of the 100,000 Homes Campaign and Opening Doors (the federal campaign to end homelessness), we had seen very little success in the reduction of homelessness. Since the federal campaign, supported by the 100,000 Homes campaign, we have seen a 33 percent reduction in the number of homeless veterans and a 20 percent reduction in chronic homelessness. This reduction has been a direct result of a national turn toward the use of evidence-based practices, a reliance on what the data show us, and the amazing federal–private collaborations that have been established along the way. By working with the U.S. Department of Housing and Urban Development, the U.S. Interagency Council on Homelessness, and the U.S. Department of Veterans Affairs, we have developed strategic partnerships that have supported our work and impelled us toward meeting the goals of ending veteran and chronic homelessness.

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**Ogonnaya Dotson-Newman, Director of Environmental Health, West Harlem Environmental Action, Inc. (WE ACT) for Environmental Justice**

1. **Describe what you are spreading (ideas, practices, programs, policies).**

   For this example, I will discuss the spread of ideas, programs, and policies directly related to the work of WE ACT for Environmental Justice. WE ACT, based in West Harlem, New York, has been the community health watchdog of Northern Manhattan for more than 25 years. WE ACT's work bridging research, community organizing, and policy serves as a valuable model for community improvement and change. The two examples of this work that we will use are the spread of ideas and the spread of policies. As an environmental justice organization, WE ACT has worked alongside organizations that do environmental justice work at the national scale. This includes coalition development among organizations, organizing community residents in Northern Manhattan, leveraging relationships through community–academic partnerships, and even engaging local elected officials to create opportunities to improve community health and planning processes. Examples of this include, but are not limited to, the engagement of local residents in the climate march; the engagement of local business owners and residents around garbage, pests, and pesticide issues; negotiation and discussion with the Metropolitan Transportation Authority; and leveraging community organizations, residents, and businesses to close an environmentally hazardous facility.

2. **Please explain what spread and scale means in the context of what you do.**

   a. **What is the size or scope of the spread/scale up?**

      WE ACT's work in relation to size and scale up is at the local community level in most cases. Although the frame is localized, many of the implications of this work can be seen at the city, regional, or even national level, depending on our partners. For example, the implications of the lawsuit filed by WE ACT with the support of Earth Justice related to bittering agents in rodenticides has a national scale. By contrast, the work to sue and engage the Metropolitan Transportation Authority more than 10 years ago with regard to their issues related to Title VI of the Civil Rights Act has more localized implications for community residents in New York City.

   b. **How many organizations (e.g., schools, hospitals, communities, etc.) have adopted the strategies (programs, practices, etc.)?**

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Many of the examples that were given have been created, adopted, and modified on a community-by-community basis by environmental justice organizations. For example, the National Institute of Environmental Health Sciences had a number of programs in the late 1990s and early 2000s that provided a framework for academic institutions working with community-based organizations. The funding and capacity-building initiatives lead to techniques to improve citizen science and a framework for using science as an organizing tool. Many of the ideas for this framework were tested locally with hundreds of organizations. The wins that you see in cities across the country and even the world are based on programs, policies, and practices developed individually and in collaboration. Some of these examples even build historically on work done and catalogued by movement historians.

c. **How many individuals have been reached by the scale up?**
In some cases, hundreds of thousands of individuals have been reached. For example, much of the work around community–academic partnerships has allowed WE ACT to reach thousands of residents in Northern Manhattan alone. When you multiply this number by the environmental justice organizations across the country and world, the number grows exponentially.

d. **What proportion of your target population have you reached?**
By our estimation we have reached a small sliver of individuals through a variety of methods. Given that Northern Manhattan has more than 550,000 residents based on the last census and that WE ACT has a database of a little fewer than 10,000 residents that comes to about 1 percent of the population of Northern Manhattan.

3. **What is your ultimate goal?**
WE ACT's goal is to improve community health in Northern Manhattan.

a. **What is your timeline for achieving that goal?**
There is no timeline for this goal. Because our work often takes a number of years to see measurable change—for example, the Harlem Piers Park took more than 15 years to come to fruition—we envision a healthy, just, and sustainable future for all New Yorkers, and that will take decades to achieve.

b. **How long has it taken to scale up the ideas, practices, programs, and policies to get where you are now?**
For the examples I used, there were a variety of timelines to get the policies and ideas scaled up. The Executive Order on Environmental Justice took more than 20 years and then took an additional

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10 years for the right leaders to be in office at the federal level. The work related to the adoption of policies and practices by the Metropolitan Transportation Authority took more than 15 years. The coalition work and individual organizing around climate justice and climate change issues has taken more than 7 years just in terms of engagement of residents in Northern Manhattan, although the broader coalition and idea spread has been going on for even longer.

c. **What barriers have limited your success in reaching your goals**? Coalition building, changing public opinion, and engaging people around issues of social justice are difficult. Power dynamics and social structures that affect institutional racism are all part of the barriers to spreading this work. Identifying key ways to creatively use funding to support community organizing is a continuing barrier. We work hard within our organization and with strategic partners to manage competing interests of the community we serve and to ensure that we are remaining authentic in how we accomplish our goals.

4. **Describe your approach to disseminating/spreading your ideas, practices, programs, policies.**

WE ACT uses a variety of ways to disseminate information, and the details vary based on the campaign, initiative, or program. This can relate directly to social marketing, civil disobedience, social media, or just community organizing.

a. **What theory/approaches do you use to get people to adopt your ideas, practices, programs, policies?**

WE ACT uses a variety of models to do our work. We use direct organizing when it is needed, we use a community change model, and at times we also use theories that are based in popular education.

i. **Have you used a particular theory of action or framework of scale to spread?**

No, WE ACT did not use a particular theory of action or framework of scale to spread.

ii. **What steps did you go through in order to spread a program?** WE ACT worked with partners in academic institutions and sometimes government agencies to spread a model. We also worked directly with community-based organizations and individuals through leadership development, mentorship, and internship opportunities, which are always helpful in informing the next generation of social movement leaders in models or ways to get the work done.

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iii. **What investment strategies did you use to spread a program?**
WE ACT continues to invest in local community leaders and individuals in order to have spokespeople and champions for our work.

iv. **Did you need to make organizational changes to bring something to scale?**
No, we did not make organizational changes.

v. **Were resources already in place to support the scaling strategy or did you need to find special resources to implement the scaling?**
Some resources were in place, but much of the work was funded through special funds that were used to increase organizational capacity.

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**Dan Herman, Professor and Associate Dean,**
**Silberman School of Social Work, Hunter College**

1. **Describe what you are spreading (ideas, practices, programs, policies).**

   Critical Time Intervention (CTI) is an individual-level, time-limited care coordination model that mobilizes support for vulnerable persons during periods of transition. It facilitates community integration and continuity of care by ensuring that individuals have enduring ties to their community and support systems during these critical periods. CTI has been applied with veterans, people with mental illness, people who have been homeless or in prison, and many other groups. The model was recently evaluated as meeting the Coalition for Evidence-Based Policy's rigorous "top-tier" standard for interventions: "shown in well-designed and implemented randomized controlled trials, preferably conducted in typical community settings, to produce sizable, sustained benefits to participants and/or society."

2. **Please explain what spread and scale means in the context of what you do.**

   We engage in active efforts to disseminate CTI directly to provider organizations (e.g., social services agencies, health and mental health providers, housing and homelessness service providers) and to government agencies that fund and oversee delivery of services to vulnerable populations.

   a. **How many organizations (e.g., schools, hospitals, communities, etc.) have adopted the strategies (programs, practices, etc.)?**
      We estimate that personnel from more than 200 organizations have been trained, but we lack reliable information on adoption.
   b. **How many individuals (e.g., clients, patients, students, etc.) have been reached by the scale up effort?**
      Unknown. We estimate between 3,000 and 10,000 persons. We currently have no way to measure this.
   c. **What proportion of your target population have you reached?**
      Unknown.
   d. **How do you measure this?**
      We have no way to measure this right now. It is possible that in future work within specific service delivery systems (i.e., funding auspices, geographical entity) we may be able identify targets for spread and assess how far along we are toward attaining these targets.

3. **What is your ultimate goal?**

   The goal right now is to continue broad dissemination in multiple systems. No numerical goal has been identified.

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**a. What is your timeline for achieving the goal?**
No timeline has been established.

**b. How long has it taken you to scale up the ideas, practices, programs, policies to get where you are now?**
The original demonstration research project (funded by the National Institutes of Health) began in 1991 and ended in 1996, with results published in 1997. Further research and dissemination has been continuing since that time.

**c. What barriers have limited your success in reaching your goals?**
- A lack of a single funding mechanism that can support model implementation across service delivery sectors and in a variety of local communities.
- Difficulty in getting the word out to potential funders and adopters.
- A lack of funding support for dissemination, training, and implementation support activities.

**4. Describe your approach to disseminating/spreading your ideas, practices, programs, policies.**

As researchers, we relied originally on publishing in academic journals and presenting at professional conferences. Over the past several years, we have developed partnerships with training organizations whose primary mission is to train social services and health care providers in evidence-based practices. Most recently, with support provided by the Silberman School of Social Work at Hunter College, we have launched a Center for the Advancement of Critical Time Intervention (CACTI) in partnership with our organizational collaborators. The purpose of CACTI is to support the broad dissemination of CTI and to ensure quality and fidelity in its implementation. The center sponsors the CTI Global Network to promote collaboration among CTI practitioners, trainers, and researchers on promising adaptations and enhancements to the model.

**a. What theory/approaches do you use to get people to adopt your ideas, practices, programs, policies? Have you used a particular theory of action or framework of scale or spread?**
We have not employed a particular theory to promote spread. Our activities have been largely ad hoc up until this point. However, we have been informed by general principles of implementation science that are consistent with the work of Fixsen and others who have emphasized the need for careful consideration of drivers and barriers to effective implementation. We have also been influenced by the literature on diffusion of innovation.

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**b. What steps did you go through in order to spread a program?**
As noted above, we initially focused on diffusing information about the model via traditional professional literature channels. More recently we have supplemented this by partnering with for-profit and nonprofit organizations whose business models rely on selling training and implementation support for a variety of evidence-based practices, including CTI. Our launch of a center dedicated to promoting effective dissemination of the model is the next step in this process.

**c. What investment strategies did you use to spread a program?**

**d. Did you need to make organizational changes to bring something to scale?**
As described above, we have launched a center dedicated to the dissemination of and support for the model.

**e. Were resources already in place to support the scaling strategy or did you need to find special resources to implement the scaling?**
Resources were not in place. We are currently attempting to identify resources to support continued dissemination. The options we are exploring include seeking public and private funding as well as obtaining revenue from trainers and providers via certification or accreditation approaches. We expect this to be a significant challenge.

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**Cheryl Healton, Dean, New York University, Global Institute of Public Health**

1. **Describe what you are spreading (ideas, practices, programs, policies).**

   Two principal forms of public education were undertaken by Legacy's truth® campaign and BecomeAnEX in partnership with other foundation funders and the states. The truth® campaign is focused on the primary prevention of smoking, while BecomeAnEX is focused on motivating people to quit and giving them tools to do so. The truth® campaign aims to empower teens to make an informed choice about starting to smoke through understanding the behavior of the tobacco industry toward teens (e.g., the truth about its marketing practices). The EX campaign, no longer airing, was focused on raising national awareness among smokers about their own efficacy with respect to quitting, and it sought to motivate quit attempts via the BecomeAnEX website (still operating) and through other means.

2. **Please explain what spread and scale means in the context of what you do.**

   National public education to prevent tobacco use is now undertaken by three main entities: truth®, which is back on the air at a fairly high paid media buy level; the U.S. Food and Drug Administration youth smoking prevention campaign; and the Centers for Disease Control and Prevention (CDC) Tips from Former Smokers campaign, which, while mainly focused on smokers, reaches youth as well. The scale of these campaigns is considerable in that they reach virtually the entire television viewing public in their target groups at high frequency. For most media campaigns, social media plays a key and increasing role. Breaking through the "clutter" remains a challenge for all campaigns, especially those not focused on a product but rather on complex behavior change of some sort.

   a. **What is the size or scope of the scale up/spread?**

      For truth® and EX, more than 75 percent of the entire national population target (teens and smokers) was reached. Both campaigns also have Web and other social media activity, which includes opportunities to share content with other teens and other smokers (for EX).

   b. **How many organizations (e.g., schools, hospitals, communities, etc.) have adopted the strategies (programs, practices, etc.)?**

      These campaigns were national in scope, but a number of states have subsidized the EX campaign, and many have used EX ads locally. The campaigns have not been replicated outside the United States.

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**c. How many individuals (e.g., clients, patients, students, etc.) have been reached by the scale up effort?**

For truth® about 75 percent of teens could describe at least one ad during 2000–2004, about 50 percent during 2004–2007, and less thereafter as the campaign relied more on social media and had less to spend on the national media buy. The new truth® campaign, Finish It, is currently being assessed with regard to reach and impact.

**i. How do you measure this?**

The truth® campaign's reach and frequency was measured by multiple waves of national sampling to determine what percentage of teens viewed the campaign and, on average, how many exposures they had. The campaign was also assessed on receptivity, "talking to friends about," and on impact on smoking rates. A similar approach was used for EX to estimate its reach, which was about 75 percent of smokers.

**d. What proportion of your target population have you reached?**

For truth®, the vast majority—75 percent—could describe specific ads; also 75 percent for EX, which had a shorter duration media buy—two 6-month intensive periods. Both campaigns had significant impact. truth® was responsible for at least 22 percent of the decline in smoking from 2000 to 2004, resulting in an estimated 450,000 youths not starting. EX was associated with a 24 percent greater likelihood of a quit attempt among those who recalled the campaign.

**3. What is your ultimate goal?**

Reducing smoking initiation and helping people quit.

**a. What is your timeline for achieving the goal?**

Ongoing national *Healthy People* goals would be nice to reach, but the adult goal is still out of reach despite the many related efforts ongoing, such as price increases, clear air laws, etc.

**b. How long has it taken you to scale up the ideas, practices, programs, policies to get where you are now?**

It has taken decades for funded national tobacco-use-related public education to be undertaken. The period from 1968 to 1971 was the first time that any national public tobacco education aired on television. This campaign was achieved via donated air time required by the Fairness Doctrine. truth® was the next national campaign (2000 to present). The CDC Tips campaign was the first federally funded public education campaign. A number of states have run campaigns, most consistently California.

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**c. What barriers have limited your success in reaching your goals?**
The Master Settlement Agreement allowed for state settlement funds to go to Legacy for only 10 years. The Foundation can fund truth® only by using reserve funds, which could be depleted if the campaign is funded at high levels for a sustained period. The tobacco industry sues to disrupt public education and works against tobacco control in a variety of ways. The tobacco industry seeks to obstruct blunt public education.

**4. Describe your approach to disseminating/spreading your ideas, practices, programs, policies.**

Encouraging states to adopt; encouraging media networks to subsidize, as they do anti-drug messages; encouraging other public education efforts, and collaborating with them.

**a. What theory/approaches do you use to get people to adopt your (ideas, practices, programs, policies)?**
The main theory underlying the truth® campaign is focused on youth "need states" associated with maturation. Young people seek to reject old ideas and adopt new ones for themselves. truth® used a "branded" approach—"Their brand is lies, our brand is truth"—in order to capitalize on the natural rebelliousness of teens, especially risk-taking teens open to smoking. Research has shown that "sensation-seeking" teens are more open to multiple risky behaviors including smoking; for this reason, the campaign was designed for this group.

EX relies mainly on the theory of reasoned action and efficacy theories of health behavior change.

**i. Have you used a particular theory of action or framework of scale or spread?**
See Figure 5-1.

**ii. What steps did you go through in order to spread a program?**
The program was spread using paid mass media and social media as well as "earned" media (free coverage).

**iii. What investment strategies did you use to spread a program?**
We invested in legal fees to fight the tobacco industry effort to shut down the campaign. We invested in efforts to encourage others to co-fund campaigns and to develop others at the state, local, and national levels.

**iv. Did you need to make organizational changes to bring something to scale?**
Yes—it can only happen with more money from government or private sources.

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**v. Were resources already in place to support the scaling strategy, or did you need to find special resources to implement the scaling?**

Yes, but not sufficient over time.

**1. If you needed to find additional resources, how did you do it?**

We raised funds from federal and state government to extend truth® to rural under-reached areas and to co-fund EX.

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**Brian King, Senior Scientist, Office of Smoking and Health, Centers for Disease Control and Prevention (CDC)**

1. **Describe what you are spreading (ideas, practices, programs, policies).**

We know what works to effectively reduce tobacco use, and if we were to fully invest in and implement these proven strategies, we could significantly reduce the staggering toll that tobacco takes on our families and in our communities. Evidence-based, statewide tobacco control programs that are comprehensive, sustained, and accountable have been shown to reduce smoking rates as well as tobacco-related diseases and deaths. This comprehensive approach combines educational, clinical, regulatory, economic, and social strategies. Research has documented the effectiveness of laws and policies in a comprehensive tobacco control effort to protect the public from secondhand smoke exposure, promote cessation, and prevent initiation, including increasing the price of tobacco products, implementing and enforcing smoke-free laws, warning about the dangers of tobacco use with antismoking media campaigns, and increasing access to help quitting. Additionally, research has shown greater effectiveness with multicomponent interventional efforts that integrate the implementation of programmatic and policy initiatives to influence social norms, systems, and networks.

2. **Please explain what spread and scale means in the context of what you do.**
   a. **What is the size or scope of the scale up/spread?**
      Proven population-based tobacco prevention and control interventions, including increasing the price of tobacco products, implementing and enforcing smoke-free laws, warning about the dangers of tobacco use with antismoking media campaigns, and increasing access to help quitting can be and are being implemented at the national, state, and local levels.
   b. **How many organizations (e.g., schools, hospitals, communities, etc.) have adopted the strategies (programs, practices, etc.)?**
      To date, all 50 states have tobacco control programs; however, only two (Alaska and North Dakota) currently fund tobacco control programs at CDC-recommended levels. Moreover, the adoption of proven population-based tobacco control strategies varies by state. To date, 26 states have comprehensive smoke-free laws prohibiting smoking in indoor areas of worksites and public places, including restaurants and bars; all 50 states have cigarette excise taxes, but wide variability exists (from 17 cents per pack in Missouri to $4.35 per pack in New York); the implementation of antismoking media campaigns varies by state, with some states relying solely on fed-

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eral campaigns (e.g., Tips from Former Smokers); all 50 states have a tobacco quitline, but the services rendered (e.g., free nicotine patches) vary across states.

c. **How many individuals (e.g., clients, patients, students, etc.) have been reached by the scale up effort? How do you measure this?**
The reach of proven tobacco prevention and control interventions varies by state, with implementation being greater in states with lower tobacco use and secondhand smoke exposure. At present, more than 150 million U.S. residents are covered by statewide and local laws prohibiting smoking in indoor areas of worksites and public places, including restaurants and bars. Moreover, people buying cigarettes in all states must pay cigarette excise taxes, with the exception of those buying cigarettes on Native American reservations; however, variability exists across states. Coverage is typically assessed using a combination of legislative tracking systems and self-reported data from public health surveillance systems along with population data from the U.S. Census Bureau.

d. **What proportion of your target demographic have you reached? How do you measure this?**
Population coverage of proven tobacco prevention and control interventions also varies by state. For example, approximately 50 percent of the U.S. population is covered by statewide and local laws prohibiting smoking in indoor areas of worksites and public places, including restaurants and bars. Coverage is typically assessed using a combination of legislative tracking systems and self-reported data from public health surveillance systems along with population data from the U.S. Census Bureau.

3. **What is your ultimate goal?**
*Healthy People* provides science-based, 10-year national objectives for improving the health of all Americans. For three decades, *Healthy People* has established benchmarks and monitored progress for national objectives. The *Healthy People* goal for tobacco is to reduce illness, disability, and death related to tobacco use and secondhand smoke exposure; there are 20 objectives to assess progress toward this goal (www.healthypeople.gov).

a. **What is your timeline for achieving the goal?**
*Healthy People 2020*, which was launched in December 2010, continues the tradition of the program's ambitious, yet achievable, 10-year agenda for improving the nation's health. For all 20 tobacco-related objectives, specific targets have been established for expected achievement by the year 2020.

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**b. How long has it taken you to scale up the ideas, practices, programs, policies to get where you are now?**

In January 1964, the U.S. Surgeon General released the first report on smoking and health—a landmark federal document linking smoking to lung cancer and heart disease in men. This scientifically rigorous report laid the foundation for tobacco prevention and control efforts in the United States. Since 1964, a considerable body of scientific evidence coupled with national and state tobacco control experiences has developed. We now know what works to effectively prevent and reduce tobacco use; however, these strategies are not fully implemented in many states and the tobacco landscape continues to evolve. Most recently, the 50th anniversary Surgeon General's report outlined a retrospective of tobacco control over the past five decades, as well as a summary of proven strategies to curtail the tobacco epidemic.

**c. What barriers have limited your success in reaching your goals?**

Many state programs have experienced and are facing substantial state government cuts to tobacco control funding, resulting in the near-elimination of tobacco control programs in those states. In 2014, despite combined revenue of more than $25 billion from settlement payments and tobacco excise taxes for all states, states will spend only $481.2 million (1.9 percent of that total) on comprehensive tobacco control programs, which is less than 15 percent of the CDC-recommended level of funding. Moreover, only Alaska and North Dakota currently fund tobacco control programs at CDC-recommended levels. To complicate matters, the tobacco industry spends more than $8 billion each year, or $23 million per day, to market cigarettes in the United States.

**4. Describe your approach to disseminating/spreading your ideas, practices, programs, policies.**

**a. What theory/approaches do you use to get people to adopt your idea, practices, programs, policies?**

Multiple models and theoretical frameworks exist for the purposes of health promotion and may be applied in the context of tobacco control interventions. Identifying a model or theoretical framework depends on the factors that are to be addressed and the setting in which the intervention or program will take place.

**i. Have you used a particular theory of action or framework of scale or spread?**

Some of the most commonly used theoretical frameworks in the context of tobacco control include, but are not limited to, the transtheoretical model, the theory of planned behavior, and

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the social-ecological model. The development of workplace tobacco control interventions may be informed by a single model or theoretical framework, or it may encompass more than one.

ii. **What steps did you go through in order to spread a program?** The continuum of change associated with implementing tobacco prevention and control interventions typically starts with increasing people's knowledge of the benefits of such interventions, changing their attitudes toward the acceptability of tobacco use and exposing non-smokers to secondhand smoke, and enhancing their favourability toward these interventions. Such changes can lead to increases in the adoption of, and compliance with, tobacco control interventions as people become more conscious of their public health benefits. Although statewide interventions provide greater population coverage than local restrictions, the strongest protections have traditionally originated at the local level. These laws and interventions have typically spread to multiple communities throughout a state and lay the groundwork for statewide laws and interventions.

iii. **What investment strategies did you use to spread a program?** CDC's *Best Practices for Comprehensive Tobacco Control Programs—2014* is an evidence-based guide to help states plan and establish comprehensive tobacco control programs (www.cdc.gov/tobacco/stateandcommunity/best_practices). This report describes an integrated budget structure for implementing interventions proven to be effective and the minimum and recommended state investment that would be required to reduce tobacco use in each state. In the report, the annual investment needed to implement the recommended components of a comprehensive program ranged from $7.41 to $10.53 per capita across the 50 states and Washington, DC.

iv. **Did you need to make organizational changes to bring something to scale?**

We know what works to effectively reduce tobacco use, and if we were to fully invest in and implement these proven strategies, we could significantly reduce the staggering toll from tobacco use. States that have made larger investments in comprehensive tobacco control programs have seen larger declines in cigarettes sales than the United States as a whole, and the prevalence of smoking among adults and youth has declined faster as spending has increased. Additionally, the longer states invest in such programs, the greater and quicker

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the impact. Therefore, organizational changes to fully implement and sustain comprehensive tobacco control programs at CDC-recommended levels are critical to make the organizational changes required to effectively achieve *Healthy People 2020* goals.

v. **Were resources already in place to support the scaling strategy, or did you need to find special resources to implement the scaling?**

CDC's Office on Smoking and Health created the National Tobacco Control Program in 1999 to encourage coordinated, national efforts to reduce tobacco-related diseases and deaths. The program provides funding and technical support to state and territorial health departments, including all 50 states, Washington, DC, 8 U.S. territories, 6 national networks, and 8 tribal support centers. However, state resources are also required to fully fund and sustain comprehensive tobacco control programs; this funding varies by state. In fiscal year 2014, the states will collect $25 billion in revenue from the tobacco settlement and tobacco taxes, but will spend only 1.9 percent of it on programs to prevent kids from smoking and help smokers quit. This means the states are spending less than 2 cents of every dollar in tobacco revenue to fight tobacco use.

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**Jeannette Noltenius, member of the National Latino Alliance for Health Equity, the National Latino Tobacco Control Network, and the Phoenix Equity Group, but statement is my own.**

1. **Describe what you are spreading (ideas, practices, programs, policies).**

As Latino networks and as part of the Phoenix Equity Group we promote reducing tobacco use, healthy eating, active living, and health equity. (1) Data collection, use, and dissemination by subgroups is essential to understanding how to reach/engage/mobilize the diverse members of our nation and future generations: one in four youth is Latino, two out of four are minorities, and in 2043 the nation will be majority/minority (http://nationalequityatlas.org). (2) Health equity is about social justice, inequities are growing, and structural racism and social determinants of health have to radically change to improve health in America. Place matters, housing segregation impacts health. (3) Comprehensive approaches should not only be about policies (private, public, local, state, federal: raising taxes, smoke-free air, cessation, restriction of ads, sales to minors, strong product regulation, etc.), but should also focus on local engagement, multi-ethnic leadership, capacity building, and targeted media campaigns. There is no silver bullet, policies do not affect populations equitably, they may have an immediate impact but leave many behind. (4) There is limited interest in and therefore limited funding for research projects that focus on specific priority populations. Population-level interventions do not necessarily work for priority populations, and there is limited evidence for what does work. (5) There are promising practices that reach these populations, but these need to be systematically evaluated and replicated (www.appealforhealth.org, www.latinotobaccocontrol.org, www.legacyforhealth.org). (6) Funding for leadership and capacity building is essential to achieve and defend gains at all levels. (7) Multi-ethnic and lesbian/gay/bisexual/transsexual (LGBT) efforts have to be supported to create political power. Master Settlement Agreement (MSA) funds, state funds raised from taxes, and Centers for Disease Control and Prevention (CDC), U.S. Food and Drug Administration (FDA), and foundation funds have to be destined to reach the most vulnerable and the growing racial, ethnic composition of the nation, the poor, and those suffering from mental health issues and substance abuse.

2. **Please explain what spread and scale means in the context of what you do.**

National means inclusive of U.S. territories, jurisdictions, and Indian nations and reaching all segregated, marginalized communities. Scale up means reaching all. It is not about one policy or one ad

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for each group; it is about different actors, messages, and messengers. It means integrating leadership so as to represent the changing demographics and perspectives, equitably distributing resources, and changing the focus of population-based approaches to reach those left behind.

a. **What is the size or scope of the scale up/spread?**
Unfortunately, funders think that funding one or several national racial/ethnic networks at $400,000 to $700,000 per year means they are "reaching" all minorities. This is a false premise because policies, programs, and efforts need to have depth and breadth and have everyone focusing on those left behind in pockets of poverty and segregation. Media is segmented, and industries target certain groups; funders need to do the same.

b. **How many organizations (e.g., schools, hospitals, communities, etc.) have adopted the strategies (programs and practices, etc.)?**
Listservs, newsletters, and information reach 10,000 people, but active participants are around 500 for Latinos and maybe 4,000 overall. Networks are ineffective if groups do not have funds to act locally. In Minnesota with Blue Cross/Blue Shield of Minnesota and Department of Health funding, Latinos and others have adopted tobacco-free policies in more than 200 apartment buildings; in churches, day care centers, restaurants, businesses; in two colleges; as well as healthy eating and active living policies (healthy options, labels, bike racks, built environment, farmers markets, etc.). ClearWay Minnesota has funded the Leadership and Advocacy Institute to Advance Minnesota's Parity for Priority Populations program and has obtained policy results. Minnesota has made achieving health equity a goal. But funding has been eliminated in Washington and Ohio, where leadership was being built and mobilized, and has dwindled in California, Colorado, Florida, Indiana, Maryland, Nevada, New Mexico, North Carolina, Texas, and most states, so many community-based organizations are no longer working on policies or programs. Smoke-free policies in New York and California did not affect businesses with fewer than five employees where many minorities work. The President signed the Family Smoking Prevention and Tobacco Control Act that gave FDA authority over regulating tobacco. But mentholated cigarettes, which are used heavily by African Americans, Native Hawaiians, and youth (as a starter cigarette), were not included in the law, and after 5 years these are yet to be regulated or banned. Flavored cigarettes were eliminated, but the industry created flavored cigarillos and cigars (used by minority youth) that can be individually purchased and are cheaper. So the products favored

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by minorities and vulnerable youth have not been regulated or taxed appropriately. E-cigarettes, hookah, and smokeless products are invading the market. More than 98 percent of MSA funds and most of the cigarette taxes have not been used for tobacco control. We failed to make an impact on politicians as to why progress is stalled, and industry tactics have adjusted by marketing multiple products.

c. **How many individuals (e.g., clients, patients, students, etc.) have been reached by the scale up efforts? How do you measure this?**
We counted towns, cities with large minority populations that went smoke free, housing developments, schools, churches, etc., and the prevalence of youth and adult in Behavioral Risk Factor Surveillance System and household surveys done by federal agencies. But these surveys do not gather data by subgroups or report on Asian Americans, Native Hawaiians, Native Americans, or LGBTs. More data and research is needed for dissemination and use!

d. **What proportion of your target population have you reached? How do you measure this?**
We cannot measure the impact of policies in an in-depth manner. Prevalence is only one measure. We can measure how many media outlets and messages are sent and how many people call quitlines, but not necessarily whether clean indoor air policies are effective, enforced, accepted, and whether people quit all tobacco products, nor whether norms have changed systemically in communities of color, LGBT, reservations, territories, in homeless shelters, public housing, etc.

3. **What is your ultimate goal?**

a. **What is our timeline for achieving the goal?**
A world where the disparate needs of diverse communities are measured, addressed, and resolved in an equitable manner. We will start with focusing on commercial tobacco use; equitable tobacco control prevention and control outcomes and promoting systems change that values equity at its core and inclusion of communities affected (Phoenix Equity Group).

b. **How long has it taken you to scale up the ideas, practices, programs, policies to get where you are now?**
Several of our leaders started with the ASSIST program in 1991, with funding from the CDC Office of Tobacco and Health for national networks in 1994, and with the Robert Wood Johnson Foundation's network initiative in 1997. All funding has ebbed and waned.

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**c. What barriers have limited your success in reaching your goals?**
Many national Latino and minority organizations and political leaders have received tobacco, fast food, alcohol, and soda industries funding or sponsorship and therefore are beholden to them. At the local, state, and federal levels, policy initiatives have been opposed by these groups and politicians. Public heath funders have not systematically helped these groups and individuals divest themselves of this funding. Mainstream organizations, governments, and foundations have not considered the importance of engaging racial/ethnic minority groups in their decision-making process, policy development, or actions. Tobacco control, active living, and healthy eating are not priorities in minority communities because they are dealing with jobs, housing, education, immigration, and law enforcement. Engagement in the political process is still in its infancy in some communities. Anti-immigrant sentiment, discrimination, and homophobia have dampened engagement in some states, and fear of deportation or reprisals is real, yet events have energized some groups.

**4. Describe your approach to disseminating/spreading your ideas, practices, programs, policies.**

Minority leaders writing in minority news outlets or appearing on television create local echo effects that impel local politicians to act responsibly and support systemic policy changes.

**a. What theory/approaches do you use to get people to adopt your ideas, practices, programs, policies?**
Apply models of readiness by Asian Pacific Partners for Empowerment, Advocacy & Leadership, go to where communities live, work, play, pray, and build leadership.

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**Sally Herndon, Director, North Carolina Tobacco Prevention and Control Branch (TPCB)**

1. **Describe what you are spreading (ideas, practices, programs, policies).**

   The North Carolina TPCB works with partners to spread evidence-based practices in tobacco prevention and control. We promote all strategies recommended by the *Guide for Community Preventive Services* and CDC's *Best Practices for Comprehensive Tobacco Control Programs—2014*. This includes changing social norms through policy, particularly to raise the price of tobacco products, making all workplaces and public places smoke free, and adequately investing in tobacco prevention and control strategies, including state and community interventions, mass reach health communication, tobacco cessation interventions, surveillance and evaluation, and infrastructure, administration, and management. For today's panel discussion, I will focus mostly on spreading smoke-free policies, as that is where North Carolina has made the most progress.

2. **Please explain what spread and scale means in the context of what you do.**

   a. **What is the size or scope of the scale up/spread?**

      North Carolina tobacco control partners are working to make all workplaces and public places smoke free. We do this incrementally without closing doors on future progress.

   b. **How many organizations (e.g., schools, hospitals, communities, etc.) have adopted the strategies (programs, practices, etc.)?**

      Despite passage of the preemptive state law, TPCB worked with North Carolina Alliance for Health, the Justus–Warren Heart Disease and Stroke Prevention Task Force, and other networked partners to make incremental changes in social norms and policy, making the North Carolina General Assembly smoke free (2006), and then all state government buildings and vehicles 100 percent tobacco free, long-term care facilities smoke free (2007), all public schools 100 percent tobacco free (2008), all state prisons 100 percent tobacco free (2009), and all long-term care facilities smoke free (2007). North Carolina became the first southern state to pass a law to make all restaurants and bars smoke free (2010). This law also reinstated the authority of local governments to make government buildings, grounds, and public places smoke free, with public places defined as indoor spaces where the public is invited inside. North Carolina communities have risen to this opportunity, passing 816 county and municipal regulations since preemptive legislation was lifted in 2010. North Carolina has 38 smoke-free public housing properties and 274 smoke-free affordable housing

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properties. More than half (35 of 58) of North Carolina community colleges are 100 percent tobacco free.

c. **How many individuals (e.g., clients, patients, students, etc.) have been reached by the scale up effort? How do you measure this?**
Previously, we have counted policies, laws, and government regulations. We are working to add counts of the numbers of people protected from secondhand smoke in these venues. Southern states (the least likely to protect all people from tobacco smoke) will be meeting with CDC next week to determine some uniform measures for this.

d. **What proportion of your target population have you reached? How do you measure this?**
The North Carolina Behavioral Risk Factor Surveillance System (2013) shows that 10 percent of adults are exposed each week to secondhand smoke in the workplace, and 15 percent of adults are exposed to secondhand smoke by someone smoking in their home. In addition, 11.7 percent of adults report being exposed to secondhand smoke in the home from smoke drifting from another apartment or from outdoors. The North Carolina Youth Tobacco Survey (2013) reports that 13.6 percent of high school students are exposed to secondhand smoke in the home, and 18.4 percent report exposure in vehicles.

3. **What is your ultimate goal?**

a. **What is your timeline for achieving the goal?**
To eliminate exposure to secondhand smoke in North Carolina by 2020.

b. **How long has it taken you to scale up the ideas, practices, programs, policies to get where you are now?**
TPCB was first funded under the America Stop Smoking Intervention Study (ASSIST) project of the National Cancer Institute (NCI) in 1991. Prior to the intervention stage, which began in 1994, the North Carolina General Assembly passed "preemptive" legislation requiring that North Carolina set aside 20 percent of state government buildings for smoking, as practicable, and that local governments could not pass more restrictive regulations. Core funding moved from NCI to CDC in 1999. The Robert Wood Johnson Foundation funded tobacco control initiatives (SmokeLess States) and a Youth Tobacco Use Prevention Grant for North Carolina, and the American Legacy Foundation funded a North Carolina Youth Empowerment Grant. These funds greatly benefited North Carolina's work in tobacco use prevention and control. In 2002, the North Carolina General Assembly created the North Carolina

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Health and Wellness Trust Fund with Tobacco Master Settlement Agreement funds to focus primarily on teen tobacco use prevention and cessation. The North Carolina Health and Wellness Trust Fund budgeted between $6.2 million and $18 million per year before they were abolished by the North Carolina General Assembly in 2011.

c. **What barriers have limited your success in reaching your goals?** Let me first emphasize the positive factors to produce spread and scope. Facilitators have included using engaged data, networked partners, and multi-level leaders to advance evidence-based policies. Engaged data include the sound science of the health and economic impact of secondhand smoke on populations, communities at risk, and maps and charts of where policies have been passed. Effective champions often include not only experts and officials, but also survivors and victims. The most common barrier today is that the political will is lacking to impose regulations on private sector businesses.

4. **Describe your approach to disseminating/spreading your (ideas, practices, programs, policies).**

North Carolina tobacco control partners have strived to employ an interactive tobacco control infrastructure called the component model of infrastructure and its five interrelated core components: multilevel leadership, managed resources, engaged data, responsive plans and planning, and networked partnerships. North Carolina partners have approached the spread of smoke-free/tobacco-free policies by emphasizing the health and economic benefits of these regulations. The North Carolina partners have used the diffusion of innovation theory in taking an incremental and at times opportunistic approach to make progress toward the goal of eliminating exposure to secondhand smoke. A strategic planning resource called Nine Strategies Questions is used to take steps including identifying the goal, the decision makers, and how to reach them, and building support using the data on the health and economic impact along with key spokespersons from those communities to share the benefits with others like them. For example, we facilitated workshops for schools that went 100 percent tobacco free campus-wide to tell their success stories to other school districts. Soon, hospitals saw the need to do this as well. TPCB mapped the progress, and when the percentage of schools adopting a tobacco-free policy reached the tipping point, a well-respected senator who was also a family physician from eastern North Carolina introduced legislation to require the remaining school districts to adopt a

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100 percent tobacco-free policy, and hospitals followed suit in a similar manner with help from North Carolina Prevention Partners and a Duke Endowment grant. All state-operated mental health, developmental disabilities, and substance abuse treatment facilities became 100 percent tobacco free campus-wide in 2014, and these facilities are actively integrating tobacco cessation into treatment, where just a few years ago cigarette use was tolerated, if not encouraged, as patients worked on alcohol and other drug abuse problems.

When the house majority leader (a lung cancer survivor) began to build support for a law banning smoking in restaurants and bars, the North Carolina Restaurant and Lodging Association promoted a level playing field for businesses. Skilled state and local public health partners worked closely with skilled outside-government advocates from the North Carolina Alliance for Health and the North Carolina Association of Local Health Directors to educate the public and decision makers. After 3 years of education and building support, a strong bipartisan law was passed making all North Carolina restaurants and bars smoke free as of January 2, 2010. TPCB worked with local health directors to implement this law with fidelity across 100 counties. TPCB evaluated the impact using the CDC Evaluation Toolkit and disseminated the positive evaluation results routinely and widely. The evaluation results include the following: (1) 89 percent improvement in air quality, (2) 21 percent decline in weekly emergency department visits for heart attacks statewide the year the law went into effect, and (3) a voter approval rating of 83 percent. The CDC Foundation funds were invested through the Hospitality Project in tools to make the transition to smoke free easier for North Carolina restaurants and bars, including a video of three restaurant/bar owners talking about their positive experience of going smoke free in North Carolina and an economic analysis that showed no negative effect on business or jobs from the law's implementation. Promotional ads and bar coasters emphasized the benefits of quitting and help and support for tobacco users who want to quit through QuitlineNC.

**5. If you needed to find additional resources, how did you do it?**

Resources include funding as well as people resources that can expand support for a policy or program through social capital. Funding for tobacco control has been available (through tobacco taxes and Tobacco Master Settlement Agreement funds) but are highly unstable in changing political and economic landscapes. The North Carolina Alliance for Health benefited from small sums of private funding pieced together to maintain a coalition with focus on evidence-based

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policy, media, and grassroots development. This included small sums of funding, pieced together on an annual and sometimes monthly basis from voluntary health organizations, the Robert Wood Johnson Foundation, Americans for Nonsmokers' Rights, and Campaign for Tobacco-Free Kids.

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# Appendix D

# Speaker and Moderator Biographies

**Debbie Chang, M.P.H.,** is the vice president of policy and prevention at the Nemours Foundation, where she is leveraging expertise and innovating to spread what works through national policy and practice changes with the goal of affecting the health and well-being of children nationwide. She serves as a corporate officer of Nemours, an operating foundation that is focused on children's health and health care. Previously at Nemours, Ms. Chang was the founding executive director of Nemours Health & Prevention Services, an operating division devoted to improving children's health through a comprehensive multi-sector, place-based model in Delaware. Strategic initiatives include spreading and scaling Nemours' early care and education learning collaborative approach to obesity prevention through an up-to-$20-million cooperative agreement with the Centers for Disease Control and Prevention (CDC); working with federal partners on integrating population health and clinical care and providing strategic direction on Nemours' Center for Medicare & Medicaid Innovation Health Care Innovation Challenge award that integrates population health and the medical home for children with asthma in three primary care pilot sites in Delaware; and collaborating with the First Lady's Let's Move! campaign on Let's Move! Child Care, a website that Nemours created and hosts. Ms. Chang has more than 26 years of federal and state government and private sector experience in the health field. She has worked on a range of key health programs and issues including Medicaid, State Children's Health Insurance Program (SCHIP), Medicare, maternal and child health, national health care reform, and



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financing coverage for the uninsured. She has held the following federal and state positions: deputy secretary of health care financing at the Maryland Department of Health and Mental Hygiene, with oversight for the state of Maryland's Medicaid program and the Maryland Children's Health Program; national director of SCHIP when it was first implemented in 1997; director of the Office of Legislation and Policy for the Health Care Financing Administration (now the Centers for Medicare & Medicaid Services); and senior health policy advisor to former U.S. Senator Donald W. Riegle, Jr., former chair of the Senate Finance Subcommittee on Health for Families and the Uninsured. She serves on the Institute of Medicine (IOM) Board on Children, Youth, and Families and on the IOM roundtables on Population Health Improvement and on Obesity Solutions; the Agency for Healthcare Research and Quality Health Care Innovation Exchange Board; the Winter Park Health Foundation Board; and the University of Michigan Griffith Leadership Center Board. She has published work on population health, child health systems transformation, Medicaid, SCHIP, and Nemours' prevention-oriented health system, including its CDC Pioneering Innovation Award–winning statewide childhood obesity program. Nemours is a founding member of the Partnership for a Healthier America and the National Convergence Partnership, a unique collaboration of leading foundations focused on healthy people and healthy places. Ms. Chang holds a master's degree in public health policy and administration from the University of Michigan School of Public Health and a bachelor's degree in chemical engineering from the Massachusetts Institute of Technology.

**Ogonnaya Dotson-Newman, M.P.H.,** is the director of environmental health at West Harlem Environmental Action, Inc. (WE ACT). Prior to joining the WE ACT team, Ms. Dotson-Newman worked at Loma Linda University's School of Public Health as a research associate and instructor. Born and raised in California to a family of community organizers and environmental activists, she learned at an early age the strong link between health and the environment. Her strong passion for linking social justice and science led to an undergraduate degree in environmental science. She holds an M.P.H. with an emphasis on environmental health.

**Ashley Forman,** the director of education at Arena Stage, is in her 12th season in the Community Engagement Department and is responsible for the design and development of Voices of Now. She has been asked to present on the Voices of Now model at multiple conferences and trainings, including at the American Alliance for Theater in Education, the Youth Theater Network, the Kennedy Center, the Intersections Festival, and the International Youth Theater Conference. Ms. Forman has trained

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a variety of practitioners in some of the Voices of Now techniques, including Arena Stage teaching artists, teachers in the Washington, DC, public school system, medical professionals at Montgomery County Health and Human Services, cultural attaches at the U.S. Department of State, and teachers from the Fairfax County public schools. In the past 3 years, she also led the Community Engagement Department in taking the Voices of Now program to Croatia, India, and Peru. Ms. Forman graduated from Syracuse University with a B.S. in theater, with a concentration in directing, and a minor in child development. She also spearheads Arena Stage's preschool literacy program and oversees the lesson planning for all continuing education programs.

**Cheryl Healton, Dr.P.H.,** is the director of the New York University (NYU) Global Institute of Public Health (GIPH), is the dean of global public health, and holds an academic appointment as a professor of public health at the NYU Wagner Graduate School of Public Service. In her capacity as director, she is responsible for building GIPH's academic, service, and research programs in collaboration with partners at NYU and throughout the public health community. Prior to this appointment, Dr. Healton was the first president and chief executive officer of Legacy, the foundation created by the Master Settlement Agreement between the states' Attorneys General and the tobacco industry. In this role she worked to further the foundation's ambitious mission: to build a world where young people reject tobacco and anyone can quit. During her tenure with the foundation, she has guided the highly acclaimed, national youth tobacco prevention counter-marketing campaign, truth®, which has been credited in part with reducing youth smoking prevalence to near record lows. Dr. Healton holds a doctorate from Columbia University's School of Public Health (with distinction) and a master's degree in public administration from NYU Wagner in health policy and planning. She is also an active member of the broader public health community, serving on several boards, including currently the National Board of Public Health Examiners (treasurer), the Betty Ford Institute, the Lung Cancer Alliance, and Phoenix House. Dr. Healton is a thought-provoking public speaker and has given presentations around the world. She is a frequent commentator on national and local broadcasts and print news coverage of tobacco control issues, appearing on ABC's *Good Morning America*, CNN's *Larry King Live*, NBC's *Today*, MSNBC's *Hardball with Chris Matthews*, National Public Radio, and more.

**Daniel Herman, Ph.D.,** is a professor and the associate dean for scholarship and research at the Silberman School of Social Work at Hunter College and is a member of the doctoral faculty of the School of Public

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Health of the City University of New York. Dr. Herman's work focuses primarily on the development, testing, and dissemination of community-based interventions for persons with severe mental illness. He directs the Center for the Advancement of Critical Time Intervention (CTI), a time-limited psychosocial intervention designed to prevent recurrent homelessness and other adverse outcomes among persons with mental illness following discharge from institutional care. Listed in the National Registry of Evidence-Based Programs and Practices, which is compiled by the Substance Abuse and Mental Health Services Administration, CTI was recently recognized as meeting the Congressional "top-tier" evidence standard devised by the U.S. Government Accountability Office and assessed by the Coalition for Evidence-Based Policy. The model is currently being implemented throughout the United States and in Europe, Latin America, and Australia. Dr. Herman is a former vice president and program chair of the Society for Social Work and Research and is a fellow of the American Academy of Social Work and Social Welfare. Before joining Hunter College, he was on the faculty of Columbia's Mailman School of Public Health (epidemiology) and the College of Physicians and Surgeons (psychiatry). He began his research career after a dozen years working as a social worker in New York City's public mental health and homeless services systems. Dr. Herman holds a Ph.D. in social welfare and a master's degree in epidemiology, both from Columbia University.

**Sally Herndon, M.P.H.,** is the director of North Carolina's Tobacco Control Network and the head of the Tobacco Prevention and Control Branch of the Division of Public Health in the North Carolina Department of Health and Human Services. She has been a leader in North Carolina's public health efforts in tobacco prevention and control since 1991. Ms. Herndon helped build support for the 2010 North Carolina law that made all restaurants and bars in the state smoke free, and she was able to work with state and local partners to successfully implement the new law. Ms. Herndon is the chair-elect of the Tobacco Control Network. Previously, Ms. Herndon worked in health promotion and disease prevention in Maine from 1980 to 1986. She has an M.P.H. from the Department of Health Behavior and Health Education at the University of North Carolina. She was also a fellow at North Carolina State University's Natural Resources Leadership Institute and the Advocacy Institute Leadership Program.

**Linda Kaufman, M.Div.,** is the national movement manager for Community Solutions' Zero: 2016 work. This nationwide initiative has a goal of ending veteran and chronic homelessness by the end of 2016. She coordinates recruitment efforts. Ms. Kaufman has worked in homeless services

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in the District of Columbia since the mid-1980s, most recently as chief operating officer of Pathways to Housing DC. She was also the director of homeless services at the Downtown Business Improvement District and served as the director of adult services for the DC Department of Mental Health. In addition to her work to end homelessness, she is also involved in other issues of social justice in the District. Ms. Kaufman received a master's of divinity at Virginia Theological Seminary, and she is ordained as an Episcopal priest. She ministers at St. Stephen and the Incarnation Episcopal Church in Washington, DC.

**Steven H. Kelder, Ph.D., M.P.H.,** is the co-director of the Michael & Susan Dell Center for Healthy Living and the Beth Toby Grossman Distinguished Professor in Spirituality and Healing at the University of Texas's School of Public Health. He has more than 20 years of experience in the design and evaluation of child and adolescent research, particularly interventions directed toward youth, schools, and parents. Recently, his emphasis has been on interventions designed for the promotion of physical activity and healthy eating, obesity prevention, and substance use prevention. Dr. Kelder is one of the lead investigators for Coordinated Approach to Child Health, or CATCH, a research-based program that guides schools, families, and children in the process of being healthy, reaching more than 1 million Texas children. Dr. Kelder served on the Institute of Medicine Committee on Accelerating Progress in Obesity Prevention, which published its report in May 2012 in conjunction with an HBO documentary special, *Weight of the Nation*, on obesity in America.

**Brian King, Ph.D., M.P.H.,** is a senior scientific advisor in the Office on Smoking and Health within the National Center for Chronic Disease Prevention and Health Promotion at the Centers for Disease Control and Prevention (CDC). In this capacity, he is responsible for providing scientific leadership and technical expertise related to multiple aspects of tobacco prevention and control. Dr. King joined CDC in 2010 as an epidemic intelligence service officer, before which he worked as a research affiliate in the Division of Cancer Prevention and Population Sciences at Roswell Park Cancer Institute in Buffalo, New York. During his time at Roswell Park, his primary research focus related to tobacco prevention and control, particularly the evaluation of secondhand smoke exposure and smoke-free policies in indoor environments. Dr. King has worked for nearly 10 years to provide sound scientific evidence to inform tobacco control policy and to effectively communicate this information to key stakeholders, including decision makers, the media, and the general public. He has authored or co-authored more than 50 peer-reviewed scientific articles pertaining to tobacco prevention and control, was a contributing author to the 50th

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anniversary Surgeon General's report on smoking and health, and was the lead author of CDC's 2014 update to the evidence-based state guide, *Best Practices for Comprehensive Tobacco Control Programs*. Dr. King holds a Ph.D. and an M.P.H. in epidemiology from the State University of New York at Buffalo.

**Michelle Larkin, J.D., M.S., R.N.,** is an assistant vice president of the Robert Wood Johnson Foundation (RWJF) and the deputy director for the foundation's health group, where she helps to shape the foundation's strategies and policies. She views her role as one of "contributing to the foundation's intellectual and organizational development, and managing program operations to ensure that we meet RWJF's goals of reversing the childhood obesity epidemic, driving fundamental improvements in the nation's public health system, and addressing the needs of the country's most vulnerable populations." Ms. Larkin also co-leads the foundation's major initiative on public health law. In this capacity she strives to establish effective public health laws, regulations, and policies; to enhance the public health law infrastructure to support practitioners, advocates, and their legal counsel in improving health; and to promote the use of law in fields that affect health. In supporting the foundation's commitment to tackling some of the nation's toughest health and health care problems through evidence and policy, Ms. Larkin seeks to fulfill the promise she made to herself early in her career: "to create a positive impact on the lives of many and make it easier for people to live healthier lives." Previously, Ms. Larkin directed the foundation's public health team in its work to improve federal, state, and local public health systems, to build the evidence for effective public health practice and policy, and to advocate for the use of law and policy to improve health. From 2003 through 2006, she co-led the foundation's tobacco team, promoting increased tobacco excise taxes, state and local smoke-free air laws, and funding for tobacco prevention and treatment. She has also worked on the foundation's key areas of nursing, leadership development, and end-of-life care. Before joining the foundation, Ms. Larkin worked as a health policy analyst at the Office on Smoking and Health at the Centers for Disease Control and Prevention (CDC) in Washington, DC, developing and analyzing policy proposals related to state, national, and international tobacco prevention and control and contributing to the development of Healthy People 2020. She served as a Presidential Management Fellow, working as a policy analyst at CDC and as a legislative fellow for the U.S. Senate Labor and Human Resources Committee. Previously, she was an oncology nurse at the University of Maryland Medical System in Baltimore, Maryland.

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**Jacqueline Martinez Garcel, M.P.H.,** is the vice president of the New York State Health Foundation. She serves as an advisor to the president and chief executive officer and has a central role in developing the foundation's program areas, identifying emerging opportunities and strategic niches, building partnerships with other foundations, ensuring quality and accountability, and evaluating the performance of programs and grantees. Ms. Martinez Garcel provides leadership and guidance to two priority areas: improving health care for people with diabetes, and integrating mental health and substance use services. She also has a special interest in the strategic and creative development of leadership and capacity-building programs with community-based organizations throughout the state. Ms. Martinez Garcel has more than 10 years of experience in managing and developing community-based health programs for medically underserved communities throughout New York City. She previously served as the program director for the Northern Manhattan Community Voices Collaborative at Columbia University's Center for Community Health Partnerships, where she implemented and evaluated health programs. Ms. Martinez Garcel was a research associate for the City University of New York Medical School, where she conducted an analysis of peer-reviewed literature on racial and ethnic disparities in diagnosis and treatment in the U.S. health care system. She was also a program manager for Alianza Dominicana, Inc.; a National Institutes of Health fellow for the Department of Public Health in the City of Merida in Yucatan, Mexico; and an assistant coordinator for Beginning with Children, a Brooklyn-based charter school. Ms. Martinez Garcel holds a master of public health degree from Columbia University and a bachelor of science degree in human development from Cornell University. She has served as a adjunct professor of sociology at the Borough of Manhattan Community College, a board director of the Institute for Civic Leadership, and a board member of the National Alliance on Mental Illness–New York City Metro.

**M. Rashad Massoud, M.D., M.P.H., F.A.C.P.,** is a physician and public health specialist internationally recognized for his leadership in global health care improvement. He is the director of the Applying Science to Strengthen and Improve Systems Project at the U.S. Agency for International Development. He is a senior vice president at the Quality and Performance Institute at University Research Co., LLC (URC), where he has led URC's quality improvement efforts in more than 40 countries. Dr. Massoud pioneered the application of collaborative improvement methodology in several middle- and low-income countries. He helped develop the World Health Organization strategy for the design and scale up of antiretroviral therapy to meet the "3 by 5" target, and he was

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involved in large-scale improvement in the Russian Federation, improving rehabilitation care in Vietnam, developing the Policy and Regulatory Framework for the Agency for Accreditation and Quality Improvement in the Republic of Srpska, and developing plans for the rationalization of health services in Uzbekistan. He founded and led the Palestinian health care quality improvement effort for several years. He was a founding member and chairman of the Quality Management Program for Health Care Organizations in the Middle East and North Africa, which helped improve health care in five participating Middle East countries. Dr. Massoud chaired the April 2012 Salzburg Seminar, Making Health Care Better in Low- and Middle-Income Economies: What Are the Next Steps and How Do We Get There? Dr. Massoud speaks English, Arabic, Russian, and French.

**Joe McCannon** is a co-founder and principal of the Billions Institute, a nonprofit organization that helps successful local initiatives expand broadly and rapidly. He is also currently a consultant to The Bill & Melinda Gates Foundation. He was the former senior advisor to the administrator at the Centers for Medicare & Medicaid Services (CMS) in the U.S. Department of Health and Human Services. At CMS he helped to introduce major pieces of the President's Affordable Care Act legislation, including the Center for Medicare & Medicaid Innovation and several national programs. Before joining CMS, he was a vice president and faculty on large-scale improvement at the Institute for Healthcare Improvement (IHI), where he led the organization's collaboration with the World Health Organization on the 3 by 5 Initiative and directed its major domestic initiatives to improve patient safety, the 100,000 Lives Campaign, and the 5 Million Lives Campaign. He has advised or consulted with other large-scale quality improvement efforts in the Canada, Denmark, England, Japan, and United States. He has also been involved with large-scale initiatives outside health care in areas, including homelessness and corrections. He is a graduate of Harvard University and was a Reuters and Merck Fellow at Stanford University.

**Anita McGahan, Ph.D., M.B.A.,** is the associate dean of research, the Ph.D. director, a professor, and the Rotman Chair in Management at the Rotman School of Management at the University of Toronto. She is cross-appointed to the Munk School of Global Affairs, is a senior associate at the Institute for Strategy and Competitiveness at Harvard University, and is the chief economist at the Massachusetts General Hospital Division for Global Health and Human Rights. In 2013 she was elected by the Academy of Management's membership to the board of governors and into the presidency rotation. In 2014 she joined the MacArthur Foundation

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Research Network on Opening Governance. Her credits include 2 books and more than 100 articles, case studies, notes, and other published material on competitive advantage, industry evolution, and financial performance. Dr. McGahan's current research emphasizes entrepreneurship in the public interest and innovative collaboration between public and private organizations. She is also pursuing a longstanding interest in the inception of new industries. Her recent work emphasizes innovation in the governance of technology to improve global health. Dr. McGahan has been recognized as a master teacher for her dedication to the success of junior faculty and for her leadership in course development. In 2010 she was awarded the Academy of Management BPS Division's Irwin Distinguished Educator Award, and in 2012 the Academy conferred on McGahan its Career Distinguished Educator Award for her championship of reform in the core curriculum of business schools.

**Fareed Mostoufi, M.A.,** the community and training programs manager at Arena Stage, is in his fourth season working as a director and educator in the Community Engagement Department. Mr. Mostoufi joined Arena Stage after teaching English as a second language and Spanish for 2 years in the District of Columbia public schools as member of the 2010 Teach for America Corps, through which he earned an M.A. in teaching from American University. As a recipient of a 2009 Fulbright Scholarship to Argentina, Mr. Mostoufi shadowed local devised theater companies in San Miguel de Tucuman, Argentina, while teaching culture, literature, and playwriting at a local teacher's college. In collaboration with the Ministry of Education there, he created the workshop Drama Techniques for English Language Learners, which applied theater games to English language learning and was presented to more than 400 public school teachers throughout the Tucuman province. Mr. Mostoufi received his B.F.A. in dramatic writing from New York University in 2008.

**Jeannette Noltenius, Ph.D.,** is the former national director of the National Latino Tobacco Control Network. She is recognized nationally as a leader in the field of Latino and minority health and as an expert in tobacco, alcohol, and other drug policy issues. An immigrant from El Salvador, she obtained a master of arts degree in counseling psychology from Antioch College in Keene, New Hampshire, and then a master's in economics and a doctorate in social sciences from the University of Paris 1, Sorbonne, in France. Dr. Noltenius has worked in Colombia, Costa Rica, Ecuador, El Salvador, France, Guatemala, Guyana, Haiti, and Honduras. She speaks Spanish and French. Dr. Noltenius is an independent consultant based in Washington, DC. She provides technical assistance, training, and strategic planning services on health and health care policy issues to clients nation-

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ally and internationally. She has worked at the Pan American Health Organization/World Health Organization working on health planning, environmental health, violence prevention, and health promotion. She has also worked in community mental health settings utilizing psychodrama with children and families and at a psychiatric hospital addressing substance abuse and mental health issues. Dr. Noltenius is a member of the Board of the North American Quitline Consortium and several other boards. She is a founding member of the Out of Many, One, a multicultural coalition working on a common agenda to achieve equity in health and health care in communities of color.

**Wynne E. Norton, Ph.D.,** is an assistant professor in the School of Public Health at the University of Alabama at Birmingham. Her research focuses on advancing the science of implementation of evidence-based practices and programs in health care and public health settings; she has received funding for her work from the National Institutes of Health (NIH), the U.S. Department of Veterans Affairs (VA), the Agency for Healthcare Research and Quality, The Bill & Melinda Gates Foundation, Commonwealth Fund, and the Donaghue Foundation. Dr. Norton routinely lectures on implementation science and scale up/spread to a variety of research, practice, and policy audiences. In 2010 she co-chaired a conference to advance the science and practice of scale up and spread in health care and public health in Washington, DC. Dr. Norton received her Ph.D. in social psychology from the University of Connecticut and completed a 2-year fellowship in the NIH/VA-funded Implementation Research Institute at the Washington University in St. Louis.

**Mary Pittman, Dr.P.H.,** is the president and chief executive officer of the Public Health Institute (PHI). A nationally recognized leader in improving community health, addressing health inequities among vulnerable people, and promoting quality of care, Dr. Pittman assumed the reins at PHI in 2008, becoming the organization's second president and chief executive officer since its founding in 1964. Her primary focus has been guiding the development of a strategic plan that builds on existing PHI program strengths to achieve greater impact on public policy and practice in public health. "In a changing environment, strategic planning is an ongoing process, not an end product," she said. Dr. Pittman's overarching goal is for PHI to become known for leadership in creating healthier communities. To this end, PHI continues to work closely with the state on many programs, including the Supplemental Nutrition Assistance Program. What's more, she advocates that all PHI projects take the social determinants of health into account to better address health disparities and inequities. Under Dr. Pittman's leadership, PHI has emphasized support for the

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Affordable Care Act and the Prevention and Public Health Fund, the integration of new technologies, and the expansion of global health programming. Other top priorities are increasing advocacy for public policy and health reform and addressing health workforce shortages and the impacts of climate change on public health. Under Dr. Pittman, PHI has created Dialogue4Health.com, the online platform for conferencing and social networking and has been recognized as a preferred place to work. She strives for PHI's independent investigators to work together to achieve a synergy in which the sum of their contributions is greater than the whole. Dr. Pittman has deep, varied, and multi-sectoral experience in local public health, research, education, and hospitals. Before joining PHI, Dr. Pittman headed the Health Research and Educational Trust, a Chicago-based affiliate of the American Hospital Association, from 1993 to 2007. Previously, she was president and chief executive officer of the California Association of Public Hospitals and a director of the San Francisco Department of Public Health. Dr. Pittman has authored numerous peer-reviewed articles in scientific journals and two books. She has served on the PHI board of directors since 1996. Dr. Pittman also serves on numerous boards and committees, including the World Health Organization's Health Worker Migration Global Policy Advisory Council and the National Patient Safety Foundation's board of governors.

**Jennifer J. Raab, J.D., M.P.A.,** is the 13th president of Hunter College, the largest college of the City University of New York (CUNY). Since assuming the presidency in 2001, she has led a successful effort to enlarge the faculty and recruit distinguished professors and artists. Standards throughout the college have been raised, and fiscal management has been modernized and strengthened. Entering SAT scores increased by 89 points in just 7 years and are now 137 points above the national average. Hunter has won new levels of government awards, private grants, and philanthropic contributions and has launched the first capital campaign in its history. Since her tenure began in 2001, President Raab has been responsible for more than $152 million in philanthropic support to Hunter College. Major changes include the renovation and reopening of the historic Franklin and Eleanor Roosevelt House, which is now the Public Policy Institute at Hunter College, and the construction of a $131 million home in East Harlem for Hunter's renowned School of Social Work that also houses the new CUNY School of Public Health at Hunter College. The reforms and improvements are reflected in Hunter's rising national standing. The Princeton Review has ranked it among the top 10 best value public colleges in the nation for 3 consecutive years. In *U.S. News & World Report*'s college rankings for 2012, Hunter placed seventh among the top 10 public regional universities in the north, and Hunter

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has moved up 18 positions in just 4 years to No. 34 among all regional universities (public and private) in the north. Hunter is one of only seven colleges in the nation to be awarded an "A" by the American Council of Trustees and Alumni in a study measuring the breadth of undergraduate core requirements. President Raab's role as an educational leader continues her long career in public service, from lawyer to political campaign adviser to government official. Her career in government began in 1979, when she became special projects manager for the South Bronx Development Organization, an agency that played a critical role in the renewal of one of the city's most distressed areas, and she was later named director of public affairs for the New York City Planning Commission. President Raab went on to become a litigator at two of the nation's most prestigious law firms—Cravath, Swaine & Moore and Paul, Weiss, Rifkind, Wharton & Garrison. Quickly earning a reputation as a strong but fair advocate, she was appointed chairman of the New York City Landmarks Preservation Commission, a post she held from 1994 to 2001. She was known for her effective and innovative leadership of the agency that protects and preserves the city's historic structures and architectural heritage. In a 1997 profile, the *New York Times*' David Dunlap said she had "developed some untraditional ideas about who belongs to the preservation community," adding that the changes—which could have been made "only by an outsider"—had greatly reduced the city's historic battling over preservation. Crain's New York Business named her as 1 of New York's "100 Most Influential Women in Business" in 2007 and 1 of the "50 Most Powerful Women in New York" in 2009 and 2011. She has been honored by many New York and national organizations, including the Martina Arroyo Foundation, United Way, the Bella Abzug Leadership Institute, and the League of Women Voters of New York. Long active in civic and national affairs, President Raab is a member of the Council on Foreign Relations and serves on the board of directors of The After School Corporation and on the steering committee of the Association for a Better New York. She was appointed a member of the 2004–2005 New York City Charter Revision Commission by Mayor Michael Bloomberg. A graduate of Hunter College High School, President Raab is a Phi Beta Kappa graduate of Cornell University, holds a master's degree in public affairs from the Woodrow Wilson School of Public and International Affairs at Princeton and received her law degree cum laude from Harvard Law School. Harvard has named her to the Law School Visiting Committee, which reports to the University Board of Overseers. President Raab is the 2012 recipient of Albany Law School's Miriam M. Netter Award, which is awarded annually to the school's Kate Stoneman Day keynote speaker, in honor of Stoneman's lifelong commitment to actively seeking change and expanding opportunities for women.

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**Darshak Sanghavi, M.D.,** is the director of the population and preventive health models group at the Center for Medicare & Medicaid Innovation, where he oversees the development of large pilot programs aimed at improving the nation's health care costs and quality. Recently, he was the Richard Merkin Fellow and a managing director of the Engelberg Center for Health Care Reform at the Brookings Institution, where he directed efforts to better engage clinicians in health care payment and delivery reform. Dr. Sanghavi is also an associate professor of pediatrics and the former chief of pediatric cardiology at the University of Massachusetts Medical School, where he was charged with clinical and research programs dedicated to children's heart defects. An award-winning medical educator, he also has worked in medical settings around the world and published dozens of scientific papers on topics ranging from the molecular biology of cell death to tuberculosis transmission patterns in Peruvian slums. A frequent guest on NBC's *Today* and past commentator for NPR's *All Things Considered*, Dr. Sanghavi is a contributing editor to *Parents* magazine and *Slate*'s health care columnist, and he often writes about health care for the *New York Times*, *Boston Globe*, and *Washington Post*. His best-seller, *A Map of the Child: A Pediatrician's Tour of the Body*, was named a best health book of the year by the *Wall Street Journal*. He speaks widely on medical issues at national conferences, advises federal and state health departments, and is a former visiting media fellow of the Kaiser Family Foundation and a winner of the Wharton Business Plan Competition. He previously worked for several years as a U.S. Indian Health Service pediatrician on a Navajo reservation.

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