



September 23, 2014

The White House Office of Science and Technology Policy
Attn: Mr. Daniel Correa
Senior Advisor, Innovation Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, NW
Washington, DC 20504

RE: Comments on the update of the *Strategy for American Innovation*

AcademyHealth is pleased to submit feedback to the White House Office of Science and Technology Policy (OSTP) and the National Economic Council (NEC) on its update of the *Strategy for American Innovation*. We represent the interests of more than 5,000 scientists and policy experts and 175 organizations that produce and use health services research to improve our nation's health and the performance of the health care and public health systems. Their work, largely funded by the federal government, has helped us understand and improve a complex and costly health system so that we can achieve better outcomes for more people at greater value.

The prior *Strategy for American Innovation* has neglected to address a critical component of America's innovation; one that arguably has an important impact on improving health—the health system itself. Health services research helps us understand health care in the real world, determining what works for whom, in what settings, under what circumstances, and at what cost. In revising the *Strategy for American Innovation*, we urge OSTP and NEC to consider the role of health services research. Understanding how to most effectively and efficiently deliver cures to patients has implications for health care quality, costs, access and ultimately health outcomes.

More recently, the President's Council of Advisors on Science and Technology (PCAST) released a report describing how the tools of systems engineering, which are increasingly used by health services researchers, could transform the health system.¹ This and other types of health services research are being used in universities throughout the United States, in communities, and health systems to promote health care delivery transformation and achieve affordable, high quality care and healthy communities.

In the pages that follow, AcademyHealth has provided background information on health services research and its innovative contributions to health system transformation and improved health. We have also provided responses to questions **1, 2, 7, 13, and 24**, including recommendations for renewed investment to be included in next year's updated strategy. We outline why health services research must be part of any innovation agenda and explain why it is shortsighted to omit this important dimension of science from any innovation framework.

BACKGROUND: Health Services Research Is Core to Innovation

The federal government has a longstanding role in supporting the health research continuum—from basic research to health services research (see Figure 1). In the same way the federal government built the interstate highway system from which all Americans benefit, the government supports health research and innovation that would not occur in the private marketplace alone and offers benefits to the nation as a whole. As highways are an engine for commerce, development, and expansion, health services research is an engine for increased productivity, innovation, and value.

Figure 1: The Health Research Continuum

These components of the health research continuum work in concert, and each plays an essential role—any one type of research on its own cannot effectively or appreciably improve health. Take heart disease as one example...

<p>Basic research discovered the contributions of elevated blood pressure, elevated cholesterol, and tobacco use to heart disease.</p>	<p>Clinical research determined which treatments were safe and effective to treat hypertension, hypercholesterolemia, tobacco addiction, and to prevent and treat heart disease, in general.</p>	<p>Population-based research identified strategies to reduce the risks of heart disease in communities through non-medical interventions, such as reduction of trans fats in food and tobacco control measures to reduce smoking.</p>	<p>Health services research determined how to best deploy these discoveries to achieve the best health outcomes. This research helped identify who had the least access, what barriers existed, and innovative strategies to mitigate them. This research also led to new quality measures that are now used to report on the quality of cardiac care.</p>
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Source: *AHRQ: 15 Years of Transforming Care and Improving Health*, AcademyHealth, Jan. 2014. Available at: <http://academyhealth.org/files/AHRQReport2014.pdf>

Imagine the government just built interstate highways and left it to individual drivers to decide how to use them—no speed limits, no traffic signs or lights, no lines, no requirement that vehicles have breaks, no agreement on which side of the road to drive. In many ways, this is the equivalent of our current health system in which insurers and delivery systems work with providers to decide how to deliver health care with little support for understanding what works and for whom. This is where health services research provides critical value—this science seeks to develop and promote the evidence needed so that providers, health systems, and payers can develop voluntary “rules of the road” so that care can be delivered that is more efficient, effective and safe.

The United States spent \$2.8 trillion—17.2 percent of our economy—on health care in 2012. Health services research has shown we waste as much as 30 percent of what we spend on health care on unnecessary services, inefficiently delivered services, and missed opportunities for prevention.² Finding new ways to get the most out of every health care dollar is critical to our nation’s long-term fiscal health and our ability to be competitive in a global market. Health services research is our nation’s research and development, or ‘R&D,’ enterprise for such innovations. Like any corporation making sure it is developing and providing high quality products, the federal government—as the nation’s largest health care purchaser—has a responsibility to get the most value out of every taxpayer dollar it spends on Medicare, Medicaid, the Children’s Health Insurance Program, and veterans’ and service members’ health.

While medical research discovers cures for disease, *health services research discovers innovative cures for the health system.* This research diagnoses problems in health care and public health delivery and identifies solutions to improve outcomes for more people, at greater value (see Figure 2). Innovations from health services research can be used right now by patients, health care providers, public health professionals, hospitals, employers, and public and private payers to improve care today.

Figure 2: Contributions of Health Services Research to Quality Improvement

<i>Thanks to health services research, we know that health care sometimes falls short...</i>
An estimated 1.7 million hospital-acquired infections occur each year, leading to about 100,000 deaths. ³
Patients do not receive the care recommended for them by evidence. For example, patients with diabetes receive recommended preventive care only 21 percent of the time.
Health care is increasingly complex and for patients with multiple chronic conditions, poor coordination results in unnecessary tests, hospitalization, and readmissions. One study found that almost one-fifth of Medicare patients were re-hospitalized within 30 days. ⁴
<i>Thanks to health services research, we know that falling short costs money...</i>
In 2008, costs attributable to medical errors were estimated at \$19.5 billion—more than half of the National Institutes of Health’s annual budget. ⁵ Medication errors alone cost as much as \$2 billion each year—equivalent to the federal annual investment in health services research. ⁶
The average cost of care for a patient with a catheter-related blood stream infection is \$45,000, costing up to \$2.3 billion annually nationwide. ⁷
Medicare spends \$12 billion a year on preventable hospital readmissions—more than double the discretionary budget of the Centers for Disease Control and Prevention. ⁸
<i>Thanks to health services research, we have identified innovations that work...</i>
Systematic reviews of adverse events have been instrumental in improving health care safety and the wellbeing of patients. For example, a report documenting the adverse events related to ephedra was instrumental in the withdrawal of the substance after a well-known baseball player died after using it. ⁹ Another report documented the potential harmful side effects of atypical antipsychotics in the elderly, which led to a new FDA black box warning. ¹⁰
Implementation of computerized physician order entry could prevent between 570,000 and 907,000 serious medication errors each year. ¹¹
Quality improvement approaches, including improved primary care, discharge planning, and follow-up care can prevent or reduce hospitalizations and rehospitalizations. ¹²

Responses and Proposed Actions

(1) What specific policies or initiatives should the Administration consider prioritizing in the next version of the Strategy for American Innovation?

(2) What are the biggest challenges to, and opportunities for, innovation in the United States that will generate long-term economic growth, increased productivity, sustained leadership in knowledge-intensive sectors, job creation, entrepreneurship, and rising standards of living for more Americans?

Health-related inefficiencies and less than optimal quality of care are a significant threat to American competitiveness and innovation. As documented in the National Research Council and Institute of Medicine report *Shorter Lives; Poorer Health*, health outcomes in the United States across all ages groups are significantly worse compared to other high-income countries.¹³

One of the contributors to suboptimal health outcomes is the failure to consistently deliver existing innovations to the patients who can benefit. This results in widespread variations in care quality, outcomes and costs. This in turn contributes to substantial health burdens in some communities, which then have repercussions to the economic wellbeing of the community as a whole, as employers increasingly seek healthier communities, with lower health care costs in which to locate their businesses. There is far too little understanding of, or support for, innovations that can revolutionize how health systems, providers, and patients can more quickly and reliably benefit from discoveries and improve the care of patients and populations today.

- **Action:** To advance our ability to improve care, we need to establish federal policies that build a robust environment to produce health services research and includes:
 - Federal funding for research and the infrastructure—data, methods, and people—needed to produce it.
 - Policies that encourage—and do not unnecessarily restrict—the production of health services research.
 - Policies that enhance the quality, availability, timeliness, and affordability of data and tools used to produce research.

(7) What emerging areas of scientific and technological innovation merit greater Federal investment, and how can that investment be structured for maximum impact?

During the first 40 years of investment in health services research, the emphasis was on documenting, describing, and understanding the many factors that drive ultimate health outcomes for patients and their quality of life. More recently, health services research has focused on interventions that improve care. To address the suboptimal performance of the U.S. health system, a concerted focus on health services research that discovers new and effective ways to bring biomedical discoveries (past and future) from the bench, to the patient's bedside, to the community's curbside is needed. This is a vast country and many types of approaches and modalities will likely be needed to meet the needs of diverse populations and communities.¹⁴ For

example, one cannot assume that strategies to improve the care for a patient with diabetes and heart disease that are effective with urban, African American patients will be effective in a remote town of New Mexico with a largely Native American population.

Different population, community, system and employer characteristics factor into whether health care innovations actually reach the patients and communities who need them. Finding out what works, for whom, under what circumstances is critical to improving the care and health of Americans and eliminating health disparities, which are further reducing our productivity.

As part of this enhanced focus, the growing role and potential for information and communication technologies, including health information technology, is enabling breakthrough opportunities to improve the delivery of effective innovations to individuals and populations that are tailored to their specific needs and thus move us to a system that is truly delivering personalized medicine.

- **Action:** Increased and sustained funding for health services research is needed across the federal government, including the Department of Health and Human Services (HHS) (including the Agency for Healthcare Research and Quality, the Centers for Disease Control and Prevention, and the National Institutes of Health), the Veterans Health Administration, the Department of Defense, the National Science Foundation, and the Patient Centered Outcomes Research Trust Fund. This research needs to include behavioral, social science, and economic research, a focus on the six dimensions of quality as defined by the Institute of Medicine, as well as the comparative effectiveness of the interventions.¹⁵

Skilled Workforce Development

(13) What emerging areas of skills are needed in order to keep pace with emerging innovations or technologies? What are successful models for training workers with these skills to keep up with emerging innovations?

The strength, relevance, and important contributions of the field of health services research to improved health rest on its human capital and its multidisciplinary nature. The federal government supports the development of the health services research workforce through essential individual and institutional training grants. While a majority of the field has historically worked in academic settings, the explosion of new health-related data and the evolution toward a learning health system has expanded employment opportunities in the private sector. Thus, training and career development activities are evolving to ensure a workforce that is trained in new and innovative methods and data and able to advance innovation regardless of the setting of their work. At the same time, the underrepresentation of certain racial and ethnic minority groups in science also exists in health services research. Thus concerted attention to diversifying the workforce is also needed.

- **Action:** Sustained and expanded federal support of a variety of training grants for both individuals and institutions is needed.

(24) Which new areas should be identified as “national priorities,” either because they address important challenges confronting U.S. security or living standards, or they present an opportunity for public investments to catalyze advances, bring about key breakthroughs and establish U.S. leadership faster than what might be possible otherwise.

As noted above, the suboptimal performance of the U.S. health system is contributing to health outcomes for Americans that fall short of other high-income countries. Just as important is the fact that health outcomes and health care also varies significantly by geography, type of insurance, and patient/community characteristics.¹⁶ The diffusion of life saving innovations often occurs differentially thus worsening existing disparities.

- **Action:** The next draft of the *Strategy for American Innovation* needs to include specific attention and innovations to overcome existing disparities in health and health care and ensure that future innovations are deployed such that they do not create new disparities.

Health care innovations will fall short of their potential if we don't determine how to best deploy them to physicians and patients. Put plainly, health services research helps maximize the return on investment in basic and clinical research, ensuring that patients have access to and truly benefit from drug discoveries and medical advances. We look forward to working with OSTP and NEC in determining how to best to better integrate health services research into the *Strategy for American Innovation*, and move biomedical discoveries from the bench, to the bedside, to the curbside and beyond.

If you have questions about these comments, please don't hesitate to contact Dr. Lisa Simpson, President & CEO of AcademyHealth, at 202-292-6747 or lisa.simpson@academyhealth.org.

¹ President's Council of Advisors on Science and Technology. *Report to the President—Better Health Care and Lower Costs: Accelerating Improvement Through Systems Engineering*. Washington, DC: Executive Office of the President; 2014.

² Institute of Medicine, Best Care at Lower Cost: The Path to Continuously Learning Health Care in America. September 2012. www.iom.edu/Reports/2012/Best-Care-at-Lower-Cost-The-Path-to-Continuously-Learning-Health-Care-in-America.aspx

³ Thomas EJ, Studdert DM, HR B, et al. Incidence and types of adverse events and negligent care in Utah and Colorado. *Med Care* 2000; 38:261-71.

⁴ Institute of Medicine, Best Care at Lower Cost: The Path to Continuously Learning Health Care in America. September 2012. www.iom.edu/Reports/2012/Best-Care-at-Lower-Cost-The-Path-to-Continuously-Learning-Health-Care-in-America.aspx

⁵ 2010 National Healthcare Quality Report, U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, Publication No. 11-0004, p. 135. March 2011. See also: www.ahrq.gov/qual/qdr10.htm

⁶ The Leapfrog Group FACT SHEET, Computerized Physician Order Entry. April 2008.

⁷ Pronovost P et al. An intervention to decrease catheter-related bloodstream infections in the ICU. *New England Journal of Medicine*. Dec. 2006. Pp. 2725-32.; and O'Grady NP, et al. Guidelines for the prevention of intravascular catheter-related infections. Centers for Disease Control and Prevention. *MMWR Recommendations and Reports*. 51 2002:1-29.

⁸ Report to Congress: Promoting Greater Efficiency in Medicare. MEDPAC. June 2007. Ch. 5, p 108.

⁹ Shekelle P, Morton SC, Maglione M, et al. *Ephedra and Ephedrine for Weight Loss and Athletic Performance Enhancement: Clinical Efficacy and Side Effects*. (Prepared by Southern California Evidence-based Practice Center). AHRQ Publication No. 03-E022. Rockville, MD: Agency for Healthcare Research and Quality. March 2003. <http://archive.ahrq.gov/clinic/tp/ephedtp.htm>.

¹⁰ *Off-Label Use of Atypical Antipsychotics: An Update*, Comparative Effectiveness Review No. 43 (Prepared by the Southern California Evidence-based Practice Center). Rockville, MD: Agency for Healthcare Research and Quality. September 2011. <http://effectivehealthcare.ahrq.gov/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productID=1193>

¹¹ Birkmeyer JD, et al. Leapfrog patient safety standards: the potential benefits of universal adoption. Washington, DC: The LeapFrog Group; 2000.

¹² The Commonwealth Fund Commission on a High Performance Health System, Why Not the Best: Results from the National Scorecard on U.S. Health System Performance, 2008, The Commonwealth Fund, July 2008.

¹³ Woolf, Steven H., and Laudan Aron, eds. *US Health in International Perspective: Shorter Lives, Poorer Health*. National Academies Press, 2013.

¹⁴ NIH Advisory Committee to the Director, Working Group on Diversity in the Biomedical Research Workforce, The National Institute of Health, June 2012.

¹⁵ Institute of Medicine (US). Committee on Quality of Health Care in America. *Crossing the quality chasm: A new health system for the 21st century*. National Academies Press, 2001.

¹⁶ Institute of Medicine, Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. *Unequal treatment: confronting racial and ethnic disparities in health care*. Washington, DC: National Academy Press; 2003.