
ARTICLE

RESTORING HEALTH TO HEALTH REFORM: INTEGRATING MEDICINE AND PUBLIC HEALTH TO ADVANCE THE POPULATION'S WELL-BEING

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INTRODUCTION

It is hard to overstate the intense political and media attention given to health care. New medical discoveries and technologies are front-page news stories. In many communities, health care is either the largest or a substantial employer, and rising employee health care costs are a major concern for individual families and employers alike. That we, a wealthy society, invest more in health care than in subsistence goods signifies the value we place on high technology and spe-

cialized health services. The United States spends nearly 17% of its gross domestic product (GDP) on health care (a combination of public and private financing), or over \$7000 on each American annually.¹ This amount of health care financing is nearly double the investment made in any other highly developed country.² As such, economic and political factors explain the salience of health care in American society.

Given the expansion of the health care enterprise, it is not surprising that the American political community is deeply focused on it. For a generation, health reform has been a dominant domestic political issue. The nation recently went through the politically grueling passage of the first comprehensive health care reform since the 1960s, with cavernous political divides on the role of government in financing and delivery of care. Critics portrayed modest proposals for cost-effectiveness comparisons—routinely accepted in other advanced democracies—as “death panels,” and the final law inhibits the use of quality cost-effectiveness analysis in coverage, reimbursement, and incentive structures.³ Within weeks of the law’s passage, twenty states filed lawsuits challenging the constitutionality of the individual mandate—a fundamental component of the reform.⁴

¹ CTRS. FOR MEDICARE & MEDICAID SERVS., NATIONAL HEALTH EXPENDITURE PROJECTIONS 2009–2019, at 4 (2010), available at <http://www.cms.gov/NationalHealthExpendData/Downloads/NHEProjections2009to2019.pdf>; *NHE Summary Including Share of GDP, CY 1960–2009*, CTRS. FOR MEDICARE & MEDICAID SERVS., http://www.cms.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOffPage (last visited Mar. 15, 2011). These figures, reflecting 2008 spending, are the most recent available. Projections for 2010 spending are even greater: health care spending is expected to exceed 17% of GDP, rising to over \$8000 per person. CTRS. FOR MEDICARE & MEDICAID SERVS., *supra*; *NHE Summary Including Share of GDP, CY 1960–2009, supra*.

² The United States spent 15.3% of its GDP on health care in 2006, while spending by European states averaged 8.4% of GDP. WORLD HEALTH ORG., WORLD HEALTH STATISTICS 2009, at 114, 116 (2009), available at http://www.who.int/whosis/whostat/EN_WHS09_Table7.pdf; see also Gerard F. Anderson et al., *Health Spending in OECD Countries in 2004: An Update*, 26 HEALTH AFF. 1481, 1481 (2007) (reporting that, according to 2004 data from the Organisation for Economic Co-operation and Development (OECD), the United States spends 2.5 times as much per capita as the median OECD country on health care).

³ See Peter J. Neumann & Milton C. Weinstein, *Legislating Against Use of Cost-Effectiveness Information*, 363 NEW ENG. J. MED. 1495, 1495 (2010) (noting that language in the Patient Protection and Affordable Care Act may prohibit the use of cost-effectiveness analysis, as it precludes the use of cost per quality-adjusted life year “as a threshold” (quoting Patient Protection and Affordable Care Act § 1182, 42 U.S.C.A. § 1320e-1 (West Supp. 1A 2010))).

⁴ Lawrence O. Gostin, *The National Individual Health Insurance Mandate*, HASTINGS CTR. REP., Sept.–Oct. 2010, at 8, 8. Courts have issued conflicting decisions on the constitutionality of the mandate, which the Supreme Court will inevitably resolve. *Compare*

Despite its limitations, the Patient Protection and Affordable Care Act (PPACA)⁵ is a major achievement in meeting the nation's goal of improving access to health care.⁶ Without a doubt, it will reduce the number of uninsured Americans, a number that rose in 2009 to a record 50.7 million people, or 16.7% of the population.⁷ The Congressional Budget Office projects increased coverage through a variety of measures: imposing a tax penalty on most individuals who fail to purchase insurance, increasing Medicaid eligibility, subsidizing insurance premiums for low-income individuals, providing incentives for businesses to provide employee health insurance, establishing health insurance exchanges, and eliminating coverage barriers such as health status underwriting (i.e., excluding or charging higher rates to applicants with preexisting health conditions).⁸ By 2019, PPACA is expected to extend health insurance coverage to an additional 32 million people, covering approximately 94% of the legal, nonelderly population.⁹ Among the remaining uninsured will be illegal immigrants, low-income people who fail to enroll in Medicaid, and individuals who are exempt from the mandate or choose to pay the tax penalty in lieu of purchasing coverage.¹⁰

Virginia *ex rel.* Cuccinelli v. Sebelius, No. 10-0188, 2010 WL 5059718 (E.D. Va. Dec. 13, 2010) (holding the individual mandate to be unconstitutional), *with* Thomas More Law Ctr. v. Obama, 720 F. Supp. 2d 882, 895 (E.D. Mich. 2010) (holding that Congress appropriately exercised its Commerce Clause powers in enacting the individual mandate), *and* Liberty Univ., Inc. v. Geithner, No. 10-0015, 2010 WL 4860299, at *29 (W.D. Va. Nov. 30, 2010) (holding that the exemptions to the individual mandate do not violate the Free Exercise, Equal Protection, or Free Speech Clauses of the Constitution).

⁵ Pub. L. No. 111-148, 124 Stat. 119 (2010) (to be codified as amended in scattered sections of 21, 25, 26, 29, and 42 U.S.C.).

⁶ PPACA is, at best, an incremental advance in changing the way health care is organized, financed, and delivered. Nonetheless, if effectively developed and implemented, many provisions could transform the health care system. *See, e.g.*, Peter D. Jacobson & Johanna R. Lauer, *Health Reform 2010: Incremental Advance or Radical Transformation?*, 42 ARIZ. ST. L.J. (forthcoming 2011) (on file with authors).

⁷ In 2009, the number of uninsured Americans rose to 50.7 million, up from 46.3 million in 2008 and translating to an uninsured rate of 16.7%, up from 15.4% in 2008. CARMEN DE NAVAS-WALT ET AL., U.S. CENSUS BUREAU, INCOME, POVERTY, AND HEALTH INSURANCE COVERAGE IN THE UNITED STATES: 2009, at 22 (2010), *available at* <http://www.census.gov/prod/2010pubs/p60-238.pdf>.

⁸ *See* Letter from Douglas W. Elmendorf, Dir., Cong. Budget Office, to Nancy Pelosi, Speaker, House of Representatives (Mar. 20, 2010), *in* CONG. BUDGET OFFICE, SELECTED CBO PUBLICATIONS RELATED TO HEALTH CARE LEGISLATION, 2009–2010, at 3, 11–12 (2010), *available at* <http://www.cbo.gov/doc.cfm?index=12033&type=1>.

⁹ *Id.* at 11.

¹⁰ The intentional decision not to cover certain disadvantaged populations, such as illegal immigrants, has significant public health implications, particularly in the area of communicable diseases. Undiagnosed and untreated infectious and sexually trans-

It would be reasonable to assume that the economic and political capital expended on health care would yield significant health benefits. However, evidence does not support this conclusion. Americans' health status is poor compared with that of citizens of countries with similar levels of economic development. Among the thirty member countries of the Organisation for Economic Co-operation and Development (OECD), the United States ranks twenty-eighth in infant mortality (6.7 deaths per 1000 live births)¹¹ and twenty-third in life expectancy at birth (78.1 years for both sexes)—behind countries with half the income and half the health care expenditures per capita.¹² The World Health Organization (WHO) ranks the United States thirty-seventh among global health systems, reflecting concerns about relatively poor health indicators and sizable racial and socioeconomic disparities¹³—although PPACA will likely improve the United States' standing.

The United States' relatively poor health outcomes raise vital questions that, although self-evidently important, rarely feature in public and political discourse. Is health care reform's core purpose to improve the health of the American population? If not, should it be? Moreover, is expanded access to health care a reliable and cost-effective way to improve health?

In response to these questions, we set forth and defend three propositions. First, although there is powerful intrinsic value in making health care services accessible, the nation could achieve better health outcomes, at a lower cost, by shifting priorities toward health promotion and disease prevention, mediated principally through primary care and population-based services. Accordingly, our second proposition is that PPACA's focus on improved access through insurance reform is insufficient to improve health outcomes. PPACA includes promising public health provisions but does not make population health a focus of the reform. Third, we argue that improvements in health status will be most effectively and efficiently achieved through the integration of health care and public health. These two

mited diseases, such as HIV, syphilis, and tuberculosis (especially multidrug-resistant strains), pose a major risk to the population. See, e.g., LAWRENCE O. GOSTIN, *PUBLIC HEALTH LAW: POWER, DUTY, RESTRAINT* 415 (2d ed. 2008) (noting that disadvantaged groups with inadequate access to health care are more likely to develop drug-resistant strains of disease than those receiving timely and appropriate care).

¹¹ ORG. FOR ECON. CO-OPERATION & DEV., *OECD FACTBOOK* 2010, at 231 (2010).

¹² *Id.* at 227.

¹³ WORLD HEALTH ORG., *THE WORLD HEALTH REPORT* 2000, at 155 tbl.1 (2000), available at http://www.who.int/whr/2000/en/whr00_en.pdf.

spheres should be organized as parts of a single health system. In short, our thesis is that health care reform's core purpose should be to improve the public's health, which is best achieved through cost-effective interventions at the population level—an idea we frame as “restoring health to health reform.”¹⁴

Part I of this Article demonstrates the conceptual importance of integrating public health and health care into a unified health system.¹⁵ Our premise is that public health and personal health care are interactive fields that can and should be examined across traditional disciplinary boundaries.

Part II describes the value of public health in achieving major improvements in the population's health. Health promotion and disease prevention, which act on the major determinants of health—behavior and the environment—are mediated through primary care and public health services. We demonstrate that investing in public health is likely to achieve better results than investing an overwhelming portion of our resources in health care services and technologies. Unfortunately, as we will explain, policymakers have chronically starved population-based services of adequate and sustainable funding and political support, to the detriment of the health of communities and the nation.

In Part III, we present normative criteria against which we measure health system reform. The five criteria are prevention and wellness, human resources, a strong and sustainable health infrastructure, robust performance measurement, and reduction of health disparities. We define each criterion and describe its importance. We then illustrate why integration of the public health and health care systems will better achieve these criteria. In Part IV, we systematically assess PPACA against these criteria to determine what Congress did well and where the Act is deficient.

To inform and guide policy recommendations for future legislation and implementation (i.e., state and federal regulatory decisions), Part V shows what health reform would look like if policymakers adopted the criteria articulated in Part III. We applaud the increased access to health insurance and emphasis on prevention, but our approach would substantially alter PPACA's funding allocation, its focus on health insurance markets, and its emphasis on individual health care. To illu-

¹⁴ Peter D. Jacobson & Lawrence O. Gostin, *Restoring Health to Health Reform*, 304 JAMA 85, 85 (2010).

¹⁵ See generally LAWRENCE O. GOSTIN & PETER D. JACOBSON, *LAW AND THE HEALTH SYSTEM* (2006). Portions of this Article are adapted from the second edition, forthcoming in 2012.

strate how our approach to health reform differs from PPACA, we propose three major policy reforms: (1) changing the environment to make healthy behaviors the more likely choice; (2) strengthening the public health infrastructure at the state and local levels; and (3) developing a Health-in-All-Policies strategy that would engage all government agencies in improving health outcomes. We argue that adopting these reforms would facilitate integration and dramatically improve the population's health, particularly when compared to the health gains likely to be realized from a continued focus on health care services. These reforms involve shifting the financial and political focus away from high-cost, high-technology interventions, thereby transforming the nation's conception of medicine, public health, and health itself.

I. THE CONCEPTUAL AND FUNCTIONAL IMPORTANCE OF AN INTEGRATED HEALTH SYSTEM

Under conventional perspectives, the health enterprise is comprised of two distinct, albeit overlapping, systems.¹⁶ The health care system is devoted primarily to improving individual health outcomes, focusing on “financing, organizing, and delivering . . . personal medical services.”¹⁷ The public health system is devoted primarily to “safeguarding and improving health outcomes in the population,” focusing on community-wide interventions to reduce morbidity and premature mortality.¹⁸ Thus, health care is concerned with the individual's care and treatment, while public health is concerned with the health and well-being of populations.¹⁹

Reflecting this functional and conceptual divide, policymakers conceptualize two discrete spheres for policy formulation and implementation. We take a different approach, believing that the separation between health care and public health is exaggerated and that personal and population-based services are interconnected. We prefer to think of a single integrated “health system,” which demonstrates the importance of both perspectives, as well as the synergies between

¹⁶ *Id.* at 1.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ Allan M. Brandt & Martha Gardner, *Antagonism and Accommodation: Interpreting the Relationship Between Public Health and Medicine in the United States During the 20th Century*, 90 AM. J. PUB. HEALTH 707, 707-08 (2000); see also GOSTIN, *supra* note 10, at 4 (defining “public health law” and distinguishing public health from health care); Lawrence O. Gostin, *Introduction to PUBLIC HEALTH LAW AND ETHICS: A READER* 1, 1-8 (Lawrence O. Gostin ed., 2d ed. 2010) (analyzing further the definition of “public health”).

them. Because there is already an emerging, if inchoate, convergence between the two spheres, treating them as two separate systems is increasingly untenable. The future will be an integrated health system, and the more quickly policymakers make this conceptual and functional shift, the better the health outcomes will be for individuals and the population as a whole.

As a result, we pose two fundamental questions: what separates a public health issue from a personal health issue, and what are the policy and legal implications flowing from this characterization? Our premise is that public health and personal health care are interactive fields that can, and should, be integrated into one health system. Standing alone, each sphere is necessary but not sufficient. An integrated health system will more effectively prevent and ameliorate injuries and diseases in individuals and the population.

A. *Historical Interconnections*

If system integration seems like a radical departure from the current way of providing health care and public health services, it is only because the existing organizational structure departs from historical antecedents. In contrast to the current health system bifurcation,

[t]he history of public health and personal health care in the U.S. shows their interconnectedness. Although medical care and public health have vied for dominance in resources and stature, they have more often been “mutually dependent and interactive.” In fact, sharp boundaries between the two did not emerge until the early to mid-20th century. Thus, history offers some important lessons for the development of the health system in the 21st century²⁰

For most of the nation’s history, public health services were salient, with health investment devoted principally to disease prevention and sanitation.²¹

By the middle of the 20th century, advances in medical technology and hospital care permitted more intensive and effective individual medical treatment. The development of the biomedical model and its focus on individual treatment of disease uncoupled medical care from public health’s population-based approach. At that point, personal health care began to supplant public health as the dominant system. Accordingly, spending on public health substantially declined relative to spending on

²⁰ GOSTIN & JACOBSON, *supra* note 15, at 3 (quoting Brandt & Gardner, *supra* note 19, at 708).

²¹ *Id.*

personal health. Beginning in the latter half of the 20th century, medical care dominated not just resources but public and media attention as well.²²

This arbitrary separation has had adverse consequences for the population's health and for the cost of medical care that can be remedied only through reintegration of the two spheres.

B. *The Rationale for Integration*

Integration of public health and health care has a number of advantages, including greater efficiency, cost savings, and better outcomes for patients and populations. First, policy choices in one sphere can have adverse consequences for the other. For example, fee-for-service physician reimbursement negatively affects public health by creating a disincentive to spend time educating patients on the health impacts of their lifestyle decisions.²³ Similarly, a focus on high-technology interventions, which often "add small increments to health at large cost," diverts attention away from health promotion and disease prevention.²⁴ In contrast, when public health and health care are both viewed as priorities, and resources are allocated accordingly, each is better equipped to accomplish its respective goals.

Second, effective public health "reduces the need for medical services to treat conditions that can be prevented, thereby helping to control costs and make personal health care affordable."²⁵ Instead of upfront investments in prevention and wellness, the nation spends billions of dollars on high-technology interventions to treat conditions that might otherwise have been prevented or reduced in severity. For example, patients with complex chronic diseases incur very high medical costs, which may have been avoided through general prevention efforts that reduce disease rates over time.

Third, "an effective medical care system with universal coverage virtually frees public health from playing the role of medical care provider to the poor and uninsured, thereby freeing resources to pursue population-based disease prevention and health promotion activities."²⁶ Public health agencies would not feel the need to expend

²² *Id.*

²³ See David A. Hyman, *Follow the Money: Money Matters in Health Care, Just Like in Everything Else*, 36 AM. J.L. & MED. 370, 372-75 (2010) (giving examples of the perverse patient-care incentives resulting from fee-for-service remuneration).

²⁴ Thomas G. Rundall, *The Integration of Public Health and Medicine*, 10 FRONTIERS HEALTH SERVICES MGMT. 3, 9 (1994).

²⁵ *Id.* at 15.

²⁶ *Id.*

scarce resources on safety-net health care clinics if the health care system were accessible and affordable for the entire population.

Fourth, integrating health care and public health—each with its own methodologies and bodies of knowledge—is likely to be most effective in responding to complex, multifactorial diseases. With their combination of individual and lifestyle factors, chronic diseases “belong as much to the public domain as to the private space that is the doctor-patient-relationship.”²⁷ Similarly, multidrug-resistant infections such as mycobacterium tuberculosis (MTB) and HIV complicate treatment of individuals, while posing substantial threats to the public’s health. Medicine must ensure that patients reliably take appropriate medications, while public health must prevent transmission in the community. In other words, the activities of medicine and public health are more than the sum of their parts.

A final rationale for integrating public health and health care is the avoidance of unnecessary duplication and the resulting unnecessary costs. For example, both health care and public health are increasingly dependent upon expensive information technology.²⁸ Shared information systems have the potential not only to save costs and maximize investments, but also to improve health. Independently operated databases, on the other hand, function as unlinked “‘silos’—disconnected repositories of information.”²⁹ Shared technology and information can “provide a shared situational awareness of public health threats, available resources, and options for rapid and effective health protection efforts.”³⁰

C. *Moving Toward Integration*

Greater convergence of health care and public health is already underway. Just as there is operational convergence between for-profit and nonprofit health systems (that is, they use similar strategies to generate revenue despite their divergent organizational characters),³¹

²⁷ Michèle St-Pierre et al., *Organizing the Public Health—Clinical Health Interface: Theoretical Bases*, 9 MED. HEALTH CARE & PHIL. 97, 99 (2006).

²⁸ Scott J. Leischow & Bobby Milstein, Editorial, *Systems Thinking and Modeling for Public Health Practice*, 96 AM. J. PUB. HEALTH 403, 404 (2006).

²⁹ *Id.*

³⁰ *Id.*

³¹ See Frank A. Sloan, *Commercialism in Nonprofit Hospitals*, 17 J. POL’Y ANALYSIS & MGMT. 234, 247 (1998) (“Hospitals of nonprofit and for-profit ownership are similar in the provision of uncompensated care, the quality of care, and the adoption of technology.”).

more and more aspects of health care will have public health implications. With the emphasis on wellness and prevention in PPACA, we anticipate the burgeoning integration of public health and medical care delivery. In particular, the Act devotes substantial resources to integrating prevention and wellness into primary care practice. By definition, primary care providers will rely on population-health concepts to achieve the Act's purposes. Over time, prevention and wellness could become a dominant aspect of primary care practice.³²

We offer four illustrations of emerging integration: obesity, injury prevention, health care-associated infections, and community health assessments required for nonprofit health care organizations.

1. Obesity

Obesity is a major epidemic responsible for an increasing share of rising health care costs. On one level, addressing obesity involves individual health care services: a morbidly obese patient may benefit from a gastric bypass procedure or from pharmacological interventions but may still suffer the considerable morbidity associated with chronic diseases such as diabetes, edema, arthritis, cardiovascular disease, sleep apnea, and immobility. In contrast, “[f]rom a public health perspective, obesity results as much from deficiencies in the built environment and market failures as it does in individual social choices and behaviors.”³³ For example, the patient's environment may lack recreation facilities and fresh food markets.³⁴ Treating obesity therefore extends far beyond the treatments rendered to individual patients. Obesity is becoming a complex medical and public health concern as physicians, insurers, and public health practitioners devise more effective ways to prevent risk factors and manage chronic disease. As a consequence, “it

³² There is reason to believe that many European countries provide their public health services through primary care providers and integrated health systems. During 2010, Jacobson conducted preliminary interviews in four European countries (Denmark, Spain, Switzerland, and Germany) to ascertain how they provide public health services. Although each country has a functioning public health system, most respondents indicated that primary care was the actual venue for prevention and wellness services.

³³ GOSTIN & JACOBSON, *supra* note 15, at 4.

³⁴ The Institute of Medicine's definition of public health sheds light on what distinguishes it from health care services. The goal of public health, it asserts, is “fulfilling society's interest in assuring conditions in which people can be healthy.” INST. OF MED., *THE FUTURE OF PUBLIC HEALTH* 140 (1988) [hereinafter INST. OF MED., *THE FUTURE OF PUBLIC HEALTH*]; see also INST. OF MED., *THE FUTURE OF THE PUBLIC'S HEALTH IN THE TWENTY-FIRST CENTURY* 1 (2003) [hereinafter INST. OF MED., *THE FUTURE OF THE PUBLIC'S HEALTH IN THE TWENTY-FIRST CENTURY*] (examining recent public health achievements and current public health issues).

is impossible to separate the role of the public health system from that of the personal health care system—they are inherently intertwined.”³⁵

2. Injury Prevention

Public health and personal medical care also interact in the area of injury prevention. Intersection occurs primarily when the costs of failing to use public health interventions to reduce injuries are shifted to the medical care system through expensive emergency and trauma care. For example, public health interventions “mandating the use of helmets for motorcyclists and bicyclists . . . reduce the injury-related [health care] costs” of failing to wear protective helmets.³⁶ Even though “such regulations potentially interfere with personal freedoms,” third parties, rather than the individual riders, often bear the costs of resulting injuries.³⁷

3. Health Care–Associated Infections

An emerging area of doctrinal convergence is health care–associated infections (HAIs)—hospital-based infections, such as MRSA (methicillin-resistant *Staphylococcus aureus*), that often result from the overuse of antibiotics. HAIs spread rapidly and vastly increase health care costs because they are resistant to formerly effective antibiotic regimens.³⁸ A 2007 study estimated that MRSA alone killed more than 18,000 patients per year,³⁹ and the Centers for Disease Control and Prevention (CDC) estimates that HAIs cause approximately 99,000 deaths annually.⁴⁰ The solution lies in both the health care and the public

³⁵ GOSTIN & JACOBSON, *supra* note 15, at 4.

³⁶ *Id.* at 5.

³⁷ *Id.* Similarly, new technologies that enable drivers to access the Internet while driving raise the potential for serious public health harms from distracted driving. Reducing the hazards of distracted driving requires a range of public health interventions that would limit the use of technologies that many drivers now take for granted. See Peter D. Jacobson & Lawrence O. Gostin, Commentary, *Reducing Distracted Driving: Regulation and Education to Avert Traffic Injuries and Fatalities*, 303 JAMA 1419, 1419-20 (2010) (exploring the effectiveness of different methods of managing driving distractions).

³⁸ Richard S. Saver, *In Tepid Defense of Population Health: Physicians and Antibiotic Resistance*, 34 AM. J.L. & MED. 431, 432 (2008).

³⁹ R. Monina Klevens et al., *Invasive Methicillin-Resistant Staphylococcus aureus Infections in the United States*, 298 JAMA 1763, 1767 (2007); see also Saver, *supra* note 38, at 434 (recognizing the need for cooperation between individual medical care and population health in combating HAIs).

⁴⁰ AGENCY FOR HEALTHCARE RESEARCH & QUALITY, PUB. NO. 09(10)-P013-2, ENDING HEALTHCARE-ASSOCIATED INFECTIONS I (2009), available at <http://www.arhq.gov/qual/haicusp.pdf>; see also R. DOUGLAS SCOTT II, CTNS. FOR DISEASE CONTROL & PREVEN-

health systems, including reducing unnecessary use of antibiotics among human and animal populations and promoting systematic hygiene in health care settings.⁴¹ Physicians will have to make both clinical and public health calculations going forward, balancing their ethical and legal duties to individual patients against their general obligations to the public's health more broadly.⁴² Thus, while HAIs affect individuals, they also have serious public health consequences. It is difficult to imagine a solution that would not involve a unified approach between hospitals, health care providers, and public health agencies. In fact, research shows that developing simple checklists (a population-based approach within a health care facility) can dramatically reduce HAIs.⁴³

4. Community Health Needs Assessments

PPACA requires tax-exempt hospitals to conduct community health needs assessments at least once every three years.⁴⁴ Although PPACA does not mandate methods or data collection requirements, the assessment must take "into account input from persons who represent the broad interests of the community . . . including those with special knowledge of or expertise in public health."⁴⁵ Equally important, each facility must adopt a strategy to implement the community needs identified in the assessment.⁴⁶ Therefore, the health needs assessment process advances integration by requiring health care providers and public health officials to collaborate.⁴⁷

TION, THE DIRECT MEDICAL COSTS OF HEALTHCARE-ASSOCIATED INFECTIONS IN U.S. HOSPITALS AND THE BENEFITS OF PREVENTION 5 (2009), available at http://www.cdc.gov/ncidod/dhqp/pdf/Scott_CostPaper.pdf (noting that CDC estimates of HAIs are based on data set forth in R. Monina Kleven et al., *Estimating Health Care-Associated Infections and Deaths in U.S. Hospitals, 2002*, 122 PUB. HEALTH REP. 160 (2007)).

⁴¹ See Div. of Healthcare Quality Promotion, *Presentation at Council of State & Territorial Epidemiologists Sunday Workshop: Preventing Healthcare-Associated Infections*, CTRS. FOR DISEASE CONTROL & PREVENTION, 13-16 (June 7, 2009), <http://www.cdc.gov/nhsn/RA/PDF/csteWorkshopDHQP6709Final.pdf> (outlining current efforts to prevent HAIs).

⁴² See Saver, *supra* note 38, at 454-73 (describing the competing considerations physicians must weigh).

⁴³ See, e.g., Peter Pronovost et al., *An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU*, 355 NEW ENG. J. MED. 2725, 2729 (2006) (reporting that a checklist-based patient safety design successfully reduced the rate of catheter-related bloodstream infections in 103 intensive care units in Michigan).

⁴⁴ PPACA § 9007(a), 26 U.S.C.A. § 501(r) (3) (A) (i) (West Supp. 1A 2010).

⁴⁵ *Id.*, 26 U.S.C.A. § 501(r) (3) (B) (i).

⁴⁶ *Id.*, 26 U.S.C.A. § 501(r) (3) (A) (ii).

⁴⁷ See, e.g., PEGGY HONORÉ & WAKINA SCOTT, U.S. DEP'T OF HEALTH & HUMAN SERVS., PRIORITY AREAS FOR IMPROVEMENT OF QUALITY IN PUBLIC HEALTH 1 (2010), available at <http://www.hhs.gov/ash/initiatives/quality/quality/improvequality2010>.

Consider the community-benefit requirements that not-for-profit health care facilities must meet to justify federal tax exemptions (and most state property-tax exemptions).⁴⁸ The sine qua non of meeting the community-benefit test has been to provide uncompensated care to uninsured or underinsured members of the community.⁴⁹ Suppose the health needs assessment process finds that many formerly uninsured individuals have access to health insurance due to PPACA's successful implementation. Some facilities may then fail to supply the volume of uncompensated care needed to meet the community-benefit test.

An alternative is to use population health concepts to allow facilities to meet their community-benefit obligations.⁵⁰ Instead of emphasizing the treatment of individual patients to meet an economic threshold, facilities could provide traditional public health services to the community. For instance, a facility could benefit the community through enhanced prevention services, thereby improving the health status of the community as a whole.⁵¹ These services could range from providing free vaccinations to establishing school-based clinics. Kaiser Permanente, for example, has created a national partnership, the Healthy Eating Active Living Community Health Initiative, to help local communities realize public health improvements.⁵² In Colorado, this partnership redesigned a major street to encourage walking and bicycling.⁵³ In Cleveland, the partnership worked with public schools to design healthier menus for school lunches.⁵⁴

pdf ("Mandates for community health needs assessments by certain hospitals, a traditional public health activity, provides an opportunity for greater coordination between health care and public health on quality and population health issues.").

⁴⁸ See Jessica Berg, *Putting the Community Back into the "Community Benefit" Standard*, 44 GA. L. REV. 375, 379-83 (2010).

⁴⁹ *Id.* at 387-91.

⁵⁰ See *id.* at 392 (proposing a new interpretation of the community-benefit standard that would focus on "population health care benefits").

⁵¹ See Mark Schlesinger et al., *A Broader Vision for Managed Care, Part 3: The Scope and Determinants of Community Benefits*, HEALTH AFF., May-June 2004, at 210, 211 (noting that HMOs could provide community benefit by "work[ing] with the local nonmedical infrastructure or work[ing] to shift public priorities to address underlying causes of disease").

⁵² Stephen M. Shortell et al., *The Contribution of Hospitals and Health Care Systems to Community Health*, 30 ANN. REV. PUB. HEALTH 373, 377 (2009).

⁵³ *Id.*

⁵⁴ *Id.* President Obama recently signed the Healthy, Hunger-Free Kids Act of 2010, Pub. L. No. 111-296, 124 Stat. 3183 (to be codified at scattered sections of 7, 20, and 42 U.S.C.), a \$4.5 billion measure that will provide school lunches to low-income children and give the government greater control over what food is available on school premises.

At their broadest level, public health and health care confront the same challenge—injury and disease—and further the same overarching goal—improving health. Despite their different ways of achieving this goal, these disciplines have more similarities than differences. Think about starting a health system from scratch. Would policymakers opt for two separate systems or one that integrates population and individual health? We argue that an integrated health system would benefit patients and populations and reduce overall cost.

II. THE IMPORTANCE OF PUBLIC HEALTH IN IMPROVING THE HEALTH OF INDIVIDUALS AND POPULATIONS

If the principal objective of health system reform is to significantly improve the health status of individuals and the population, then strengthening health promotion and disease prevention ought to be an integral design feature of that reform. In this Part, we briefly examine key aspects of public health that provide the context for our thesis of restoring health to health reform.

A. *Health Promotion and Disease Prevention: A Core Element of Population Health*

The core principles and values of public health are disease prevention, social justice (i.e., reducing health disparities), promotion of healthy behaviors, and community engagement. Of these, preventing disease is central to the mission of public health and is the fundamental rationale for establishing public health systems. As such, public health services are designed to facilitate changes in the natural and built environments that are conducive to healthy and secure living—a concept often framed as “Healthy People in Healthy Communities.”⁵⁵

Primary-prevention strategies address the incidence of disease. Operating at the population level, the public health system uses primary-prevention initiatives to reduce impediments to attaining “high quality, longer lives free of preventable disease, disability, injury, and premature death.”⁵⁶ In secondary prevention, public health practitioners identify and intervene with populations at higher risk for cer-

⁵⁵ See, e.g., U.S. DEP’T OF HEALTH & HUMAN SERVS., *HEALTHY PEOPLE 2010: UNDERSTANDING AND IMPROVING HEALTH* 3 (2d ed. 2000), available at <http://www.healthypeople.gov/2010/Document/pdf/nih/2010nih.pdf>.

⁵⁶ U.S. DEP’T OF HEALTH & HUMAN SERVS., *HEALTHY PEOPLE 2020*, at 3 (2010), available at http://www.healthypeople.gov/2020/TopicsObjectives2020/pdfs/HP2020_brochure.pdf.

tain diseases (e.g., socioeconomic groups at higher risk for obesity). Tertiary prevention operates at the individual level to treat those already diagnosed with a particular disease. At the clinical level, for instance, primary care providers can promote individual patients' healthy behaviors through education, including smoking cessation and better nutritional patterns.

Health promotion and disease prevention have a far greater impact on health than clinical services, in part because inadequate access to biomedical intervention is not the primary cause of premature morbidity and mortality.⁵⁷ Evidence indicates that preventative interventions targeting behavior, the environment, and socioeconomic factors (including education, economic security, social support, and community safety) account for approximately 80% of the reduction in morbidity and mortality, whereas clinical care only accounts for 20%.⁵⁸ This is because the burden of disease results from a combination of individual behavioral factors (e.g., smoking, diet, physical activity, and sexual behavior), the environment in which people live (e.g., environmental risk factors such as pollution, toxic chemical exposure, and contaminated food), and the social determinants of health (e.g., education, income, and housing).

Even though individual behavioral risk factors—smoking, poor diet, sedentary lifestyle, excessive alcohol consumption, risky sexual behavior, firearms, motor vehicle accidents, and illicit substance abuse—account for nearly half of all premature deaths in the U.S. each year,⁵⁹ public health interventions targeting these risk factors have dramatically improved health. For example, tobacco alone accounted for approximately 18% of deaths in the United States in 2000.⁶⁰ Nevertheless, prevention policies such as cigarette taxes, packet warnings,

⁵⁷ Steven A. Schroeder, *We Can Do Better—Improving the Health of the American People*, 357 NEW ENG. J. MED. 1221, 1222 fig.1 (2007) (noting that inadequate health care services account for only 10% of the risk of premature mortality).

⁵⁸ See Bridget C. Booske et al., *Different Perspectives for Assigning Weights to Determinants of Health* 5-6 (Feb. 2010) (unpublished manuscript), available at <http://uwphi.pophealth.wisc.edu/pha/match/supportingMaterials/differentPerspectivesForAssigningWeightsToDeterminantsOfHealth.pdf> (presenting various estimates). Other researchers have estimated health care's contribution to improving morbidity and mortality as being even lower. See COMM. TO BUILD A HEALTHIER AM., ROBERT WOOD JOHNSON FOUND., *BEYOND HEALTH CARE: NEW DIRECTIONS TO A HEALTHIER AMERICA* 10 (2009), available at <http://www.rwjf.org/files/research/commission2009finalreport.pdf> (estimating the effect at 10 to 15%).

⁵⁹ Ali H. Mokdad et al., *Actual Causes of Death in the United States, 2000*, 291 JAMA 1238, 1242 (2004).

⁶⁰ *Id.* at 1240 tbl.2.

advertising restrictions, and smoking bans have altered social norms, significantly reducing tobacco-related deaths.⁶¹

B. *The Social Determinants of Health*

Reducing individual behavioral risk factors is necessary but not sufficient to improve the population's health. Observers of morbidity and mortality trends have long been aware that many factors beyond individual behavioral habits determine the health of individuals and populations. Termed the "social determinants of health," these factors include physical and social environments, individual genetic attributes, and the availability of medical services.⁶² As currently organized, the health care system focuses almost exclusively on patients' immediate medical needs, while the public health system addresses physical and social environments.

Take the environment as an important determinant of health status. Research has consistently demonstrated that changing the environment will have a more dramatic effect on health than investing in medical treatment.⁶³ Interventions targeting the environment illustrate the significant contribution that public health has made to improve the population's health status. For instance, the physical or "built" environment encompasses everything in our surroundings that significantly affects health status: indoor and outdoor spaces, roads and vehicles, and consumer products and contaminants.⁶⁴ Numerous policy interventions have improved the built environment to protect the public from injuries (e.g., occupational safety laws, traffic rules,

⁶¹ See, e.g., Dominic McVey & John Stapleton, *Can Anti-Smoking Television Advertising Affect Smoking Behaviour? Controlled Trial of the Health Education Authority for England's Anti-Smoking TV Campaign*, 9 TOBACCO CONTROL 273, 273 (2000) (concluding that an antismoking television campaign "was effective in reducing smoking prevalences through encouraging smokers to stop and helping prevent relapse in those who had already stopped").

⁶² See generally WORLD HEALTH ORG., SOCIAL DETERMINANTS OF HEALTH: THE SOLID FACTS (Richard Wilkinson & Michael Marmot eds., 2d ed. 2003) (discussing these and other factors).

⁶³ See Booske et al., *supra* note 58, at 4 (noting that a comprehensive literature review reveals that social and environmental circumstances account for 28% of health outcomes, whereas health care accounts for only 14%).

⁶⁴ Shobha Srinivasan et al., *Creating Healthy Communities, Healthy Homes, Healthy People: Initiating a Research Agenda on the Built Environment and Public Health*, 93 AM. J. PUB. HEALTH 1446, 1446 (2003).

lead-based paint prohibitions, and asbestos regulations) and infections (e.g., sewage control and housing codes).⁶⁵

Likewise, exposures to microbial or toxic agents are among the leading causes of preventable premature death, causing fatal infections, cancer, neurological problems, and cardiovascular, lung, liver, kidney, and bladder diseases.⁶⁶ Individuals living in poverty are especially vulnerable to environmental toxins, which lead to higher levels of cancer and respiratory disease.⁶⁷ Even in utero exposure to toxins is strongly correlated with poor health outcomes over a child's life.⁶⁸ Improved sanitation and hygiene, potable water, and vector control (controlling, for example, cockroaches, rats, and mosquitoes) dramatically improved population health throughout the twentieth century.⁶⁹ Twentieth-century policies that have reduced the harms from environmental risk factors also include: occupational health and safety standards (contributing to a significant decline in workplace injuries); motor vehicle design standards (resulting in a significant decline in motor vehicle-related injuries and deaths); food safety regulations (reducing food-borne illnesses); and pollutant restrictions (improving air quality in major cities to lower the incidence of respiratory disease).⁷⁰

C. *The Role of Chronic Disease*

The increasing burden of chronic disease has caused a profound shift in the population's health. Chronic diseases, which now represent the majority of the American disease burden,⁷¹ are complex and multi-

⁶⁵ Lawrence O. Gostin et al., *The Future of the Public's Health: Vision, Values, and Strategies*, HEALTH AFF., July–Aug. 2004, at 96, 102.

⁶⁶ In 2000, exposure to microbial or toxic agents resulted in 130,000 deaths. Mokdad et al., *supra* note 59, at 1240 tbl.2.

⁶⁷ See Peter S. Thorne, *Predictors of Endotoxin Levels in U.S. Housing*, 117 ENVTL. HEALTH PERSP. 763, 765 (2009) (finding households in poverty to have bedding endotoxin levels 58% higher than those of nonimpoverished households).

⁶⁸ See Nicholas D. Kristof, Op-Ed., *At Risk from the Womb*, N.Y. TIMES, Oct. 3, 2010, at WK9 (citing ANNIE MURPHY PAUL, ORIGINS 177 (2010)).

⁶⁹ Ctrs. for Disease Control & Prevention, *Ten Great Public Health Achievements—United States, 1900–1999*, 48 MORBIDITY & MORTALITY WKLY. REP. 241, 241 (1999) (noting that twenty-five years of a thirty-year increase in average lifespan was attributable to public health measures).

⁷⁰ *Id.* at 242-43.

⁷¹ See *Chronic Disease Prevention and Health Promotion*, U.S. CTRS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/chronicdisease/index.htm> (last updated Mar. 22, 2011) (“Chronic diseases . . . are the leading causes of death and disability in the United States. Chronic diseases account for 70% of all deaths in the U.S., which is 1.7 million each year.”).

factorial, necessitating solutions that transcend traditional boundaries. Although the medical care system addresses chronic disease itself, it does not address the causes of disease, “as the answers are not medical or clinical but environmental and social.”⁷² While some scholars have derided the public health system’s engagement with chronic disease as exceeding its capacity and traditional focus on infectious disease, public health is better situated than medical care for population interventions to address the causes and consequences of chronic diseases.⁷³

Obesity provides the prototypical example.⁷⁴ Even the most advanced medical treatment will have only a minimal effect on the obesity epidemic because it involves a multifactorial intersection between behavioral factors and the social determinants of health. Among other causes, widespread declines in physical activity coupled with an increase in caloric and sodium intake have imposed a tremendous disease burden on the nation.⁷⁵ Reversing this trend will require policies that improve the physical and social environments. The progressive increases in obesity among children and adults necessitate population-based interventions, including changes in taxation policies, agricultural subsidies, and advertising restrictions, as well as expanding universal access to appropriate nutrition and exercise opportunities (i.e., changes in the built environment).⁷⁶ These policies have the potential to influence purchasing behavior, transportation patterns, and activity levels, and thus are critical to efficacious health promotion and disease prevention.

D. *The Lack of Economic and Political Support for Public Health*

Despite the value of health promotion and disease prevention in improving the public’s health, they have limited political and financial support. Less than 5% of health spending is devoted to health pro-

⁷² Ilona Kickbusch & Kevin Buckett, *Introduction* to IMPLEMENTING HEALTH IN ALL POLICIES: ADELAIDE 2010, at 3, 3 (Ilona Kickbush & Kevin Buckett eds., 2010), available at <http://www.sapo.org.au/pub/pub16563.html>.

⁷³ Compare Richard A. Epstein, *Let the Shoemaker Stick to His Last: A Defense of the “Old” Public Health*, 46 PERSP. BIOLOGY & MED. S138, S139 (2003) (arguing that “new public health extends regulation into inappropriate areas”), with Lawrence O. Gostin & M. Gregg Bloche, *The Politics of Public Health: A Response to Epstein*, 46 PERSP. BIOLOGY & MED., S160, S162-65 (2003) (arguing that “new” public health is an outgrowth of the traditional concerns of the field and is a positive development).

⁷⁴ See *supra* subsection I.C.1.

⁷⁵ Lawrence O. Gostin et al., *Assessing Laws and Legal Authorities for Obesity Prevention and Control*, 37 J.L. MED. & ETHICS 28, 29-33 (2009).

⁷⁶ *Id.* at 29-32.

motion and disease prevention,⁷⁷ even though “[n]ine preventable conditions are responsible for more than 50% of all deaths in the United States.”⁷⁸ While health care expenditures have risen dramatically over the last decades, public health spending has remained stagnant or, in some areas, decreased.⁷⁹ Between 2001 and 2006, CDC funding increased by a mere 2.5% for chronic disease and decreased in the areas of infectious disease (1.9%), injury prevention (8.5%), and HIV (21.4%).⁸⁰ In 2009, states collectively eliminated \$392 million from public health programs.⁸¹ Moreover, a significant proportion of state public health funding finances the delivery of individual health care services, such as those offered in well-baby and STD clinics.⁸² For instance, one study concluded that 68.7% of Florida’s public health resources fund individual services.⁸³ Thus, not only is public health spending declining, but much of it is not being allocated toward population-based interventions.

At the same time, there is enormous geographic variation in public health funding. The National Association of State Budget Officers estimates that in 2003, state government funding for public health services varied from more than \$400 per person in Alaska and Hawaii, to less than \$75 per person in Iowa, Arkansas, Idaho, and Utah.⁸⁴ Estimates of local variation were “even larger, ranging from less than \$1 per capita to

⁷⁷ See Arthur L. Sensenig, *Refining Estimates of Public Health Spending as Measured in National Health Expenditures Accounts: The United States Experience*, 13 J. PUB. HEALTH MGMT. PRAC. 103, 104, 108 tbl.1 (2007) (reporting that public health represented 3% of total health expenditures in the U.S. in 2004); see also Jeanne M. Lambrew, *A Wellness Trust to Prioritize Disease Prevention* 11 (The Hamilton Project, Discussion Paper 2007-04, 2007) (noting that, pre-PPACA, insurers had little incentive to cover preventive services).

⁷⁸ Katharine Atwood et al., Commentary, *From Public Health Science to Prevention Policy: Placing Science in Its Social and Political Contexts*, 87 AM. J. PUB. HEALTH 1603, 1603 (1997).

⁷⁹ See JEFFREY LEVI ET AL., *SHORTCHANGING AMERICA’S HEALTH* 1 (2010) (finding that federal public health spending has not changed in the last five years and state governments have recently cut spending).

⁸⁰ Jeffrey Levi et al., *Financing Public Health: Diminished Funding for Core Needs and State-by-State Variation in Support*, 13 J. PUB. HEALTH MGMT. & PRAC. 97, 99 tbl.1 (2007).

⁸¹ LEVI ET AL., *supra* note 79, at 1.

⁸² See Christopher Atchison et al., *The Quest for an Accurate Accounting of Public Health Expenditures*, 6 J. PUB. HEALTH MGMT. & PRAC. 93, 98-99 (2000); Robert G. Brooks et al., *Aligning Public Health Financing with Essential Public Health Service Functions and National Public Health Performance Standards*, 15 J. PUB. HEALTH MGMT. & PRAC. 299, 304 (2009) (“Our findings demonstrate that the vast majority of resources dedicated to public health in Florida . . . provide individual services to patients and clients . . .”).

⁸³ Brooks et al., *supra* note 82, at 304.

⁸⁴ Glen P. Mays & Sharla A. Smith, *Geographic Variation in Public Health Spending: Correlates and Consequences*, 44 HEALTH SERVICES RES. 1796, 1797-98 (2009).

more than \$200 per capita” in 2005.⁸⁵ Economically disadvantaged communities require more resources to address the health risks of vulnerable populations, particularly in light of their limited tax base.⁸⁶

The lack of public health investment has resulted in inadequate information systems, laboratories, and workforce capacity, impairing the nation’s ability to respond effectively to emerging infectious diseases, public health emergencies, and noncommunicable diseases. The Institute of Medicine recommends substantially increased public health funding.⁸⁷ Estimates indicate that annual funding of \$4.3 billion is necessary merely to sustain support for public health activities,⁸⁸ while the overall cost of building a modernized system is estimated at \$18 billion annually.⁸⁹

Why has public and political support for public health been so low? We offer four reasons: shortsightedness, invisibility of beneficiaries, invisibility of benefactors, and industry opposition.⁹⁰ First, unlike medical interventions, which generally provide a recognizable and immediate benefit, the benefits of public health vest in the future, long after tax dollars are spent. Elected officials who invest in public health incur the costs, while future administrations often reap the benefits. Second, while the beneficiaries of medical interventions are identifiable patients, public health typically saves “statistical lives.”⁹¹ Individual patients, whose plights garner sympathy with the assistance of the media, attract more political support.

Third, the American public is largely unfamiliar with public health science and leadership, as well as public health professionals’ activi-

⁸⁵ *Id.* at 1798.

⁸⁶ *See id.* at 1799; *cf.* Michael Barry & Ron Bialek, *Tracking Our Investments in Public Health: What Have We Learned?*, 10 J. PUB. HEALTH MGMT. & PRAC. 383, 388-90 (2004) (discussing state-to-state differences that made comparisons based on expenditure difficult).

⁸⁷ INST. OF MED., *THE FUTURE OF PUBLIC HEALTH*, *supra* note 34, at 144.

⁸⁸ Levi et al., *supra* note 80, at 100.

⁸⁹ *Id.*

⁹⁰ *See* David Hemenway, *Why We Don’t Spend Enough on Public Health*, 362 NEW ENG. J. MED. 1657, 1657-58 (2010) (offering these four reasons for the underfunding of public health); *see also* Scott Burris, *The Invisibility of Public Health: Population-Level Measures in a Politics of Market Individualism*, 87 AM. J. PUB. HEALTH 1607, 1608-09 (1997) (arguing that proponents of reducing the social resources allocated to public health services disregard the collective nature of the threats that face public health); Vincent L. Marando & Alan C. Melchior, *Public Health as a County Government Priority: Problems and Solutions for the Political Arena*, 11 AM. J. PREVENTIVE MED. 17, 17 (1995) (“The problems that face public health in the political arena are related to the fact that many public health activities are not highly visible as political issues.”).

⁹¹ Hemenway, *supra* note 90, at 1657 (internal quotations omitted).

ties.⁹² As a result, individuals are not often aware when they benefit from public health interventions such as clean water or reduced air pollution or food safety. Finally, the lack of political commitment to population health is in part attributable to resistance to public health powers—ranging from political and societal disinterest to outright opposition. Public health often requires societal or behavioral changes that are difficult to achieve, particularly when they impede the efforts of powerful industry groups or interfere with the strong cultural sense of individual liberties.⁹³ Unlike public health, powerful industries (such as pharmaceutical companies) and influential interest groups (such as the American Medical Association) support health care.

III. NORMATIVE CRITERIA FOR HEALTH SYSTEM REFORM

Access to high-quality health care services is necessary but not sufficient to achieving and maintaining health. A multitude of determinants extending far beyond the doctor's office affect the public's health status. Reform that merely addresses delivery of care will thus do little to achieve real improvement in the health of the population. In other words, health reform's success in improving the nation's performance on long-term health indicators (e.g., infant mortality, life expectancy, and maternal health) will hinge on successful implementation of public health interventions at the individual and population levels. We propose five criteria, the fulfillment of which will result in significant health improvements: prevention and wellness, human resources, a strong and sustainable health infrastructure, robust performance measurement, and reduction of health disparities. Here we describe each criterion, explain why it is important to public health, and use it to illustrate the importance of public health's integration with health care delivery.

A. *Criterion 1: Prevention and Wellness*

Cost-effective preventive strategies necessitate a multipronged approach that tightly integrates health care and public health services. Clinical prevention services—mediated principally through primary

⁹² See *id.* (“[T]he American public, through no fault of its own, has almost no idea what public health professionals and programs do.”).

⁹³ See, e.g., Robert A. Cherry, *Repeal of the Pennsylvania Motorcycle Helmet Law: Reflections on the Ethical and Political Dynamics of Public Health Reform*, 10 BMC PUB. HEALTH 202, 204 (2010) (arguing that Pennsylvania repealed its mandatory motorcycle helmet rule, in part, because it infringed on “the strong sense of individual liberty and choice that is part of American political culture”).

care—include (1) testing for and early diagnosis of cancer (e.g., mammography and pap smears), cardiovascular disease (e.g., cholesterol and blood pressure readings), and infectious disease (e.g., HIV, STD, and MTB tests); (2) childhood and adult vaccinations (e.g., rubella, chickenpox, and hepatitis B); (3) patient education and counseling to reduce behavioral risk factors (e.g., smoking, diet, physical activity, and sexual activity); and (4) managing chronic diseases (e.g., asthma, diabetes, and cardiovascular disease) to reduce their severity.

Prevention and wellness, of course, extend far beyond the clinical setting. In fact, they must occur in all the places where people live, work, eat, and recreate. Public health agencies engage in a broad range of population-based activities designed to reduce risk behaviors and create healthier and safer communities, including (1) health education campaigns (e.g., tobacco cessation, safer sex, seat belt, and helmet programs); (2) consumer information (e.g., health warnings, labeling, and advertising restrictions); (3) safety standards (for, e.g., food, drugs, and lead paint); (4) occupational health and safety requirements; and (5) creation of healthier and safer neighborhoods (e.g., supermarkets, bicycle and walking paths, and playgrounds).

Prevention and wellness require integration of health care and public health, with active interaction and coordination between the two systems. At the individual level, primary care physicians and nurses provide counseling, early detection, and treatment for primary and secondary disease prevention. At the population level, public health officials engage in surveillance and monitoring, social marketing, safety standards and inspections, and control of infectious diseases. Individuals and society at large need health care professionals attending to the needs of each patient, as well as public health officials acting on broader socioeconomic determinants of health.

B. Criterion 2: Human Resources—An Adequate, Equitably Distributed, and Well-Trained Workforce

If health promotion and disease prevention are mediated through primary care and public health, then they both require a body of well-trained health professionals accessible to patients and communities. The accessibility of primary care workers plays a critical role in public health. Patients who see primary care physicians and nurses are more likely to be tested, vaccinated, and counseled, and to receive appropriate management of their chronic conditions. In turn, these patients are less likely to develop infectious or chronic diseases or to find themselves with an advanced prognosis requiring invasive intervention. Pa-

tients who use primary care as a gateway into advanced health care services also are likely to receive more appropriate care than those who elect to see specialists at their own discretion.⁹⁴ In these ways, primary care workers provide a direct link between the public health and patient care systems. Maximizing access to affordable primary care promotes the public's health by reducing risk on an individual level.

At the population level, public health professionals monitor health trends, identify disparities, and design community-based interventions, among other functions. Modern health challenges place unprecedented demands on these professionals, as infectious diseases cross borders rapidly, bioterrorism threats grow, chronic disease rates continue to rise, and natural and manmade disasters destroy environments and societal infrastructures. The need for skilled epidemiologists, biostatisticians, social and behavioral scientists, and environmental health experts has never been greater. Moreover, demand for professional training continues to expand, as the causes of diseases and effective interventions become increasingly complex and multifactorial—often entailing interactions among genetics, behavior, and the environment.⁹⁵

It is also necessary to ensure that public health is integrated into the curriculum of health care provider education.⁹⁶ To detect and treat diseases effectively, providers must be able to address the symptoms comprehensively through medical interventions, as well as the underlying behavioral or environmental causes. Training in public health is also necessary because health care providers are called upon

⁹⁴ Financial incentives aside, medical professionals argue that patient care is best facilitated by a general practitioner who serves as a primary point of entry into the health system. See, e.g., BARBARA STARFIELD, PRIMARY CARE: BALANCING HEALTH NEEDS, SERVICES, AND TECHNOLOGY 126-29 (1998) (describing the benefits of the primary care physician as a “gatekeeper”). Of course, monetary incentives for primary care physicians to limit specialty referrals, offered by managed care organizations, can distort otherwise sound professional practice. See *id.* at 127 (“When restriction in access to specialists is linked to financial incentives for the primary care physician, there is a potential conflict of interest between physicians’ concerns about their income and concern about the welfare of patients.”).

⁹⁵ See INST. OF MED., WHO WILL KEEP THE PUBLIC HEALTHY? 4-26 (2003) (summarizing the new challenges facing public health professionals and the resulting need for changes in education).

⁹⁶ See generally Rika Maeshiro et al., *Medical Education for a Healthier Population: Reflections on the Flexner Report from a Public Health Perspective*, 85 ACAD. MED. 211 (2010) (describing progress toward this goal).

both to treat patients and to protect the community when a public health emergency occurs.⁹⁷

C. *Criterion 3: A Strong and Sustainable
Public Health Infrastructure*

Robust surveillance systems, modern information technology, and well-equipped laboratories are integral to monitoring health status, delivering public health services, and responding to emergencies. The importance of a strong infrastructure is irrefutable: identifying the source of food-borne illnesses, containing infectious disease, developing sophisticated health information campaigns, inspecting restaurants, enforcing safety standards, and responding to disease outbreaks and bioterrorism threats all require well-functioning public health agencies. Emerging infectious diseases (e.g., SARS and novel strains of influenza), food-borne outbreaks (e.g., e. coli and salmonella), drug-resistant infections (e.g., streptococcal and MTB), and chronic diseases associated with lifestyles (e.g., cancer, cardiovascular disease, and respiratory infections) are just a few of the urgent threats stressing the contemporary public health system.⁹⁸

Individual patient care also depends on a strong public health infrastructure: biomedical advancements would not be possible without systematic, extensive surveillance and laboratory capacity.⁹⁹ Developing vaccines, antiviral medications, and antibiotics for resistant strains requires systematic tracking of infection and transmission rates, as well as laboratories with the capacity to perform time-sensitive testing. Improving infant/maternal health requires maternal and newborn screening, nutrition, and vaccination, which are shared responsibilities of health care and public health professionals. When knowledge of the status of populations guides clinical care, resources are allocated more efficiently. Tracking HIV transmission rates, for example, allows providers to shift prevention efforts toward the most vulnerable

⁹⁷ See INST. OF MED., GUIDANCE FOR ESTABLISHING CRISIS STANDARDS OF CARE FOR USE IN DISASTER SITUATIONS 5-6 (2009) (urging community and provider engagement in an effective, national public health disaster response).

⁹⁸ Food-borne illnesses, for example, cause over 300,000 hospitalizations and 5000 deaths each year. See AM. PUB. HEALTH ASS'N, FOOD SAFETY: PROTECTING OUR NATION'S FOOD SUPPLY, available at <http://www.makeourfoodsafesafe.org/tools/assets/files/APHA-FoodSafetyFact.pdf>.

⁹⁹ See, e.g., AM. PUB. HEALTH ASS'N, PUBLIC HEALTH LABORATORY CAPACITY (2009), available at <http://www.apha.org/NR/rdonlyres/16093859-CFE2-421E-B2C9-102CBB02CAEF/0/PHLabcapacityrevised09.pdf> ("Public health laboratories serve life-saving roles in all types of public health emergencies.").

populations as the disease itself shifts—from men who have sex with men to intravenous needle users to discordant heterosexual couples.

D. *Criterion 4: Performance Measurement—Continuous Quality Improvement Based on Scientific Evidence*

Although the importance of assessing the effectiveness of health services to realizing improvements in health and effective resource utilization may seem obvious, there is often inadequate scientific evidence in this regard. Performance measurement has gained greater traction in health care than in public health, but robust comparative effectiveness research and reimbursements tied to better outcomes have been slow to develop. Prevailing values of physician discretion and patient autonomy have thwarted efforts to mandate or incentivize the use of clinical practice guidelines, care pathways, and other evidence-based tools.¹⁰⁰

Public health agencies have been even slower to embrace performance measurement. In part, this is attributable to two factors that complicate the assessment of public health interventions: (1) population-based interventions must account for diverse personal, social, and environmental factors; and (2) the benefits of public health interventions are not realized for many years—necessitating lengthy longitudinal studies.¹⁰¹ Yet confounding factors aside, chronic starvation of public health resources has precluded the level of research seen in the biomedical world.

Performance measurement's role in public health is twofold. First, performance measurements evaluate the capacity of and processes carried out by health departments—whether the infrastructure supports systematic surveillance, accurate identification of problems, and timely response. Examples include tracking the number of inspections of food processing plants and workplaces, recording vaccination and infection rates, and closely monitoring reportable dis-

¹⁰⁰ For example, physician groups and hospitals in the United States have been slower than those in other high-income nations to adopt proven systems-based methodologies that promote error reduction. See, e.g., KAREN DAVIS ET AL., MIRROR, MIRROR ON THE WALL: HOW THE PERFORMANCE OF THE U.S. HEALTH CARE SYSTEM COMPARES INTERNATIONALLY 5-6 (2010) (comparing “safe care measures” adopted by providers in seven high-income nations and concluding that “[t]he U.S. ranks last . . . on safe care overall”).

¹⁰¹ See, e.g., Peter J. Neumann et al., *Measuring the Value of Public Health Systems: The Disconnect Between Health Economists and Public Health Practitioners*, 98 AM. J. PUB. HEALTH 2173, 2177-78 (2008) (discussing challenges in quantifying the value of public health services); see also INST. OF MED., FOR THE PUBLIC'S HEALTH: THE ROLE OF MEASUREMENT IN ACTION AND ACCOUNTABILITY 2-21 to 2-22 (2011) (same).

eases. Second, performance measurements can evaluate not only health department functions but also the quality and effectiveness of their services. Results-oriented measurements are complex because it is difficult to causally link a single intervention to a discrete health outcome. Yet the need for advanced performance measures in public health is patent: empirical data linking public health interventions with improved outcomes is essential both to garner increased investment and to spend scarce health resources more effectively. Finally, maximizing the value of any performance measurement requires health officials and academic researchers to use common data sets, coordinate activities, and derive information that is useful to the local community, the state, and the nation.¹⁰²

Measuring public health performance requires integration and active collaboration with the health care sector, as primary care physicians provide preventive services that affect health outcomes at the population level.¹⁰³ Partnership with the health care industry is not only necessary, but also highly informative. Providers and payers have embraced performance measurement more readily than public health professionals. Hospitals and large insurers now regularly track errors, readmissions, and outcomes to increase overall accountability.¹⁰⁴ This trend has facilitated the development of more evidence-based practices, allowing physicians to make scientific calculations about treatment decisions previously steeped in guesswork.¹⁰⁵ The public health system can learn from this movement as it embarks on a parallel endeavor.

It is also critical to integrate public health and health care performance measures. Comparative effectiveness reviews should not

¹⁰² See INST. OF MED., *supra* note 101, at 2-13 to 2-21 (recommending increased collaboration and data sharing). See generally Kathryn E. Newcomer, *Using Performance Measurement to Improve Programs*, NEW DIRECTIONS FOR EVALUATION, Fall 1997, at 5, 5 (reviewing “the state of the art in performance measurement” and identifying associated challenges).

¹⁰³ For example, tracking the number of individuals without access to primary care services or the number of obese or diabetic patients regularly receiving weight management interventions or insulin treatment is a public health assessment that necessitates collaboration with the health care industry. See generally PATRICIA LICHIELLO, *GUIDEBOOK FOR PERFORMANCE MEASUREMENT* 30, 65-66 (1999) (noting the importance of collaboration in collecting data for performance measurement).

¹⁰⁴ See Stuart E. Greene & David B. Nash, *Pay for Performance: An Overview of the Literature*, AM. J. MED. QUALITY, Mar.-Apr. 2009, at 140, 145 (describing the increasing collection and use of data to measure physicians’ performance).

¹⁰⁵ See Alan M. Garber, *Evidence-Based Coverage Policy*, HEALTH AFF., Sept.-Oct. 2001, at 62, 65-66 (describing evidence-based medicine as “a movement that promotes the adoption of medical practices whose effectiveness has been demonstrated in a convincing body of well-designed studies”).

merely compare one medical intervention to another or one public health intervention to another. To increase political and financial support for public health interventions, it is essential to continue to amass evidence that population-based interventions are more cost-effective in improving health status than are health care interventions.

E. *Criterion 5: Reducing Disparities in Health*

Stark disparities in health characterize the U.S. population: hypertension, cardiovascular disease, obesity, diabetes, and eye diseases have affected minority patient populations at far higher rates than Caucasians.¹⁰⁶ While a genetic predisposition to certain illnesses may explain some variation in prevalence, glaring discrepancies in life expectancy, infant mortality, and disease outcomes make plain that the environmental, social, and economic determinants of health vary considerably across racial and class lines.¹⁰⁷ Furthermore, research demonstrates variation in clinical practice based on race, even controlling for disease prevalence among ethnic populations.¹⁰⁸ Thus, improving health at the population level necessitates reducing health disparities. This goal demands action from both the health care and the public health sectors, including greater coordination between the two.

The health system reduces health inequalities primarily by identifying and addressing the major determinants of health.¹⁰⁹ Thus, at a minimum, public health departments must drive research on disparities, recruit professionals from minority communities to translate findings into implementable policy, and educate providers on reducing disparate outcomes.¹¹⁰ Additionally, comprehensive public health in-

¹⁰⁶ NAT'L INST. OF HEALTH, FACT SHEET: HEALTH DISPARITIES (2006), available at <http://www.nih.gov/about/researchresultsforthepublic/HealthDisparities.pdf>.

¹⁰⁷ See, e.g., ROBERT WOOD JOHNSON FOUND., OVERCOMING OBSTACLES TO HEALTH 16-19 (2008) (comparing the correlation between health statistics and socioeconomic factors).

¹⁰⁸ See Carolyn Clancy, Editorial, *Improving Care Quality and Reducing Disparities*, 168 ARCH INTERN. MED. 1135, 1135-36 (2008) ("Practice variations associated with patient race, ethnicity, socioeconomic status, geography, and other factors not attributable to clinical manifestations are prevalent and reflect suboptimal return on our investment in health care.")

¹⁰⁹ See generally Nancy E. Adler & Katherine Newman, *Socioeconomic Disparities in Health: Pathways and Policies*, HEALTH AFF., Mar.-Apr. 2002, at 60 (describing socioeconomic factors that determine health and exploring means by which they could be reduced).

¹¹⁰ This is part of the mission of the National Institutes of Health's Center on Minority Health and Health Disparities, but state and local health departments have not implemented it consistently. See Jeffrey Engel, *Prevention in Health Care Reform: The Time Has*

terventions demand a broader approach that catalyzes action among all parts of government, the private sector, and civil society.

Reducing disparities requires not only attention to broad population-based policies, but also direct interaction with health care delivery. Targeting unusually high rates of cardiovascular disease among African Americans, for example, requires primary care providers to identify hypertension in a timely manner and provide advice on behavioral and pharmacological interventions. Similarly, Hispanic patients may require more frequent ophthalmology referrals to receive timely preventive services. Weight and diabetes management is another area in which physicians must emphasize screening and disease management for high-risk patients. Public health departments educate health care providers on risk factors, as well as collect data directly from primary care offices on the effectiveness of targeted interventions for particular groups.

IV. HOW DOES PPACA MEASURE UP AGAINST THE KEY NORMATIVE CRITERIA OF HEALTH SYSTEM REFORM?

In the decades leading up to health reform, persistent neglect of the population's health had left us with a sick society turning towards invasive interventions at increasing rates.¹¹¹ Increased investment in the biomedical sphere was not matched in public health, leaving the system under severe stress: state health departments were operating with dwindling workforces, outdated information technology, and overburdened laboratories and surveillance systems.¹¹² Not surprisingly, public health departments had neither modernized their organizational structure nor adopted evidence-based performance measures; public health services were not precisely defined, and outcomes were rarely measured. The field of public health, therefore, was in dire need of leadership, investment, and direction to define the mission, size, and scale of public health departments; to build the workforce,

Come, 71 N.C. MED. J. 259, 260-61 (2010) (noting that "PPACA elevates the National Center on Minority Health and Health Disparities at the National Institutes of Health from a center to a full institute, reflecting an enhanced focus on minority health," but, nevertheless, "timelines are not yet defined" for implementation at the state level).

¹¹¹ See Jonathan E. Fielding, *Public Health in the Twentieth Century: Advances and Challenges*, 20 ANN. REV. PUB. HEALTH, at xiii, xxiii (1999) (explaining that during the twentieth century, "[h]ealth care became our largest industry . . . without much discussion of what investments could yield the greatest health dividend").

¹¹² See *supra* notes 87-89 and accompanying text.

support laboratories, and surveillance systems; and to define the local, state, and federal responsibilities to provide for the public's health.

The new law will advance the public's health, because expanding access to care and promoting prevention were two of the driving forces behind health reform. Yet PPACA does not delve deeply enough into public health reform to truly restore health to the health system. Here, we analyze PPACA against the five criteria the previous Section introduced. We find that while the law is steeped in public health rhetoric, it does not provide the innovative reform and increased investment necessary to fortify the public health system.

A. *Criterion 1: Prevention and Wellness*

PPACA initiates four reforms to increase capacity and improve effectiveness in prevention and wellness. First, as this Section will describe, the law makes prevention a federal priority by creating new task forces within the U.S. Department of Health and Human Services and earmarking a federal fund for prevention activities. Second, the law reduces patient costs for preventive services. Third, the law supports community initiatives to reduce disease and disparities and promote wellness at the local level. Finally, PPACA enables employers to incentivize healthy lifestyles among employees, both in and out of the workplace.

Evidence-based prevention design is a clear PPACA priority: PPACA charges a federal Preventive Services Task Force with evaluating the clinical and cost-effectiveness of prevention services,¹¹³ and it tasks a National Prevention, Health Promotion and Public Health Council with making recommendations for a national prevention and health promotion strategy and funding.¹¹⁴ PPACA does not mandate implementation of these recommendations, but the newly created Prevention and Public Health Fund (Prevention Fund) will facilitate federal action.¹¹⁵ The Prevention Fund, however, is insufficiently

¹¹³ The Clinical Preventive Services Task Force (under the Agency for Healthcare Research and Quality) is responsible for developing recommendations regarding the efficacy of clinical preventive services. PPACA § 4003(a), 42 U.S.C.A. § 299b-4 (West Supp. 1A 2010).

¹¹⁴ *Id.* § 4001(a), (d), 42 U.S.C.A. § 300u-10. The Department of Health and Human Services's Advisory Group on Prevention, Health Promotion, and Integrative and Public Health will advise the National Prevention, Health Promotion and Public Health Council, chaired by the Surgeon General. *Id.* § 4001(f), (b), 42 U.S.C.A. § 300u-10. The Council is in the process of developing a National Prevention Strategy and will issue recommendations to Congress by the end of 2011. *Id.* § 4001(g)–(h), 42 U.S.C.A. § 300u-10.

¹¹⁵ *Id.* § 4002(a), 42 U.S.C.A. § 300u-11.

funded,¹¹⁶ with weak promises to address unmet needs through additional “sums as may be necessary,”¹¹⁷ provided by “any monies in the Treasury not otherwise appropriated.”¹¹⁸

The new law also encourages patient utilization of preventive services by reducing or eliminating cost sharing for many prevention services. Medicare, Medicaid, and private insurers can no longer impose costs on patients for services the Preventive Services Task Force determines to be of moderate or substantial benefit or for immunizations the Advisory Committee on Immunization Practices recommends.¹¹⁹ Preventive care for infants, children, adolescents, and women recommended by the Health Resources and Services Administration will also be free of charge to the patient.¹²⁰ We can expect increased utilization of screenings for HIV, blood pressure, cholesterol, cancer, and blood sugar, as well as vaccinations, annual exams for infants and children, prenatal care, and smoking cessation or weight reduction counseling.¹²¹ Finally, the new law authorizes, but does not require, Congress to fund state-based demonstrations to improve vaccination rates.¹²² To increase availability of this care, PPACA incentivizes new physicians to enter into primary care, particularly in underserved areas.¹²³

¹¹⁶ The establishment of the Fund marks the first guarantee of federal monies appropriated towards prevention on an annual basis. The amounts, however, are nominal: \$1.5 billion in the fiscal year 2014 and \$2 billion per year thereafter. *Id.* § 4002(b), 42 U.S.C.A. § 300u-11.

¹¹⁷ *Id.* § 4201(f), 42 U.S.C.A. § 300u-13.

¹¹⁸ *Id.* § 4002(b), 42 U.S.C.A. § 300u-11.

¹¹⁹ *Id.* sec. 1001, § 2713, 42 U.S.C.A. § 300gg-13. States cannot impose cost-sharing for annual check-ups on any Medicaid beneficiaries, *id.* § 4106, 42 U.S.C.A. § 1396d(a)(13) (West Supp. 1B 2010), and must also cover smoking-cessation services free of charge for pregnant women immediately and for all beneficiaries by 2014, *id.* § 4107(a), 42 U.S.C.A. § 1396d. While states are not required to eliminate cost-sharing for other preventive services, they will receive a one-percent increase in federal medical assistance for doing so. *Id.* § 4106(b), 42 U.S.C.A. § 1396d(a)(13).

¹²⁰ *Id.* sec. 1001, § 2713, 42 U.S.C.A. § 300gg-13(a)(3)–(4) (West Supp. 1A 2010).

¹²¹ See Howard K. Koh & Kathleen G. Sebelius, *Promoting Prevention Through the Affordable Care Act*, 363 NEW ENG. J. MED. 1296, 1296 (2010) (“[T]he Act provides individuals with improved access to clinical preventive services. A major strategy is to remove cost as a barrier to these services, potentially opening new avenues toward health.”); Robert Pear, *Health Plans Must Provide Some Tests at No Cost*, N.Y. TIMES, July 15, 2010, at A16 (noting “significant benefits for consumers—if they take advantage of the services that should now be more readily available and affordable”).

¹²² PPACA § 4204(b), 42 U.S.C.A. § 247b (West Supp. 1A 2010); Koh & Sebelius, *supra* note 121, at 1297 (“[T]he Act authorizes states to use their funds to purchase vaccines for adults at federally negotiated prices.”).

¹²³ See *infra* Section V.B.

PPACA also encourages prevention at the community level, an important strategy for improving population health. A state-based grant program will fund the development and evaluation of Medicaid initiatives promoting behavioral change, such as smoking cessation, weight loss, and blood pressure reduction.¹²⁴ Federally directed media campaigns are designed to promote behavioral change in the population.¹²⁵ A federal task force will evaluate the effectiveness of these and other prevention strategies targeting chronic disease and health disparities by reporting to Congress on the gaps in research and publishing a guide to community preventive services.¹²⁶ A Creating Healthier Communities grant program will fund health departments implementing these proven community-based initiatives.¹²⁷

Finally, the new law reinforces prevention strategies by enabling employers to motivate employees to make healthy choices in and out of the workplace. “Wellness plans,” or incentive packages that reward smoking cessation, weight loss, blood pressure reduction, and diabetes management, can substantially reduce health care costs and increase productivity, but they have not been widely adopted.¹²⁸ To stimulate adoption of these strategies, PPACA increases the incentives an employer may offer and sets aside grant money for small employers implementing wellness initiatives for the first time.¹²⁹ The law also directs the Secretary of Health and Human Services to assess

¹²⁴ PPACA § 4108, 42 U.S.C.A. § 1396a note (West Supp. 1B 2010).

¹²⁵ For example, the CDC is authorized to spend up to \$500 million on an Education and Outreach Campaign. *Id.* § 4004, 42 U.S.C.A. § 300u-12 (West Supp. 1A 2010).

¹²⁶ *Id.* § 4003, 42 U.S.C.A. § 299b-4.

¹²⁷ *Id.* § 4201, 42 U.S.C.A. § 300u-13.

¹²⁸ As of 2008, fewer than thirty percent of private-sector employees had access to wellness incentive programs, Eli R. Stolfus, *Access to Wellness and Employee Assistance Programs in the United States*, BUREAU LAB. STAT. charts 2-3 (Apr. 22, 2009), <http://www.bls.gov/opub/cwc/cm20090416ar01p1.htm>, even though for every dollar spent on a wellness promotion, employers save up to nearly five dollars on health care costs and lost productivity. See *Prevention Makes Common “Cents,”* U.S. DEP’T HEALTH & HUM. SERVICES, 23 (Sept. 2003), <http://aspe.hhs.gov/health/prevention/prevention.pdf> (noting that a study of nine large private employers found their health promotion and disease management programs “with the range of benefit-to-cost ratios, ranging from \$1.49 to \$4.91 in benefits per dollar spent on the program”).

¹²⁹ PPACA authorizes the Department of Health and Human Services, Department of the Treasury, or the Secretary of Labor to increase the incentive valuation cap to up to fifty percent of the value of the plan. PPACA sec. 1001, § 2705(j)(3)(A), 42 U.S.C.A. § 300gg-4. Federal wellness program grants will distribute \$200 million between 2011 and 2015 to employers with fewer than 100 employees. *Id.* § 10408, 42 U.S.C.A. § 280l note (West Supp. 1B 2010).

the effectiveness of these programs and educate employers on potential improvements.¹³⁰

Although PPACA significantly expands prevention and wellness, it focuses primarily on facilitating utilization of clinical services already available. The law does not assume a broad view of health promotion, for example, by changing the economic or built environment to incentivize healthy behaviors within the population.

B. *Criterion 2: Human Resources—An Adequate, Equitably Distributed, and Well-Trained Workforce*

As specialized, high-technology patient care has overshadowed public health, the number of public health and primary care professionals has declined.¹³¹ This trend is not a product of lack of demand, but rather of deteriorating federal tuition assistance, shrinking schools of public health, and disparities in reimbursement rates among health care providers.¹³² PPACA addresses the dearth of primary care physicians and public health professionals, albeit inconsistently. Considerable legislative attention was devoted to the shortage of primary care physicians; efforts to rebuild the public health workforce, on the contrary, were considered insubstantial.

PPACA invested significant resources to increase the number of primary care providers. Half of the Prevention Fund's \$500 million to be spent in 2010 will support primary care by funding residency program capacity, the training of physician's assistants, and nurse practitioner-led clinics.¹³³ Moreover, the law creates incentives for

¹³⁰ Pub. L. No. 111-148, § 4402, 124 Stat. 119, 588 (2010).

¹³¹ Workers without formal training now fill approximately eighty percent of the 450,000 salaried positions in public health, and many have assumed positions of authority: less than a quarter of chief executives leading local health departments hold graduate public health degrees. INST. OF MED., *supra* note 95, at 51; *see also* ASS'N OF SCH. OF PUB. HEALTH, CREATING A CULTURE OF WELLNESS: BUILDING HEALTH CARE REFORM ON PREVENTION AND PUBLIC HEALTH 2 (2009), available at <http://www.asph.org/UserFiles/Prevention-and-Public-Health-Strategies-for-HC-Reform-asph-policy-paper2009.pdf> (noting that a key strategy for the transformation of the health system is to "rebuild the public health workforce").

¹³² Enrollment in schools of public health has steadily declined since the 1980s. *See, e.g.*, INST. OF MED., *supra* note 95, at 48-51 (reviewing the factors that have led to the decline in enrollment).

¹³³ *See generally* Fact Sheet: *Creating Jobs and Increasing the Number of Primary Care Providers*, HEALTHREFORM.GOV, <http://www.healthreform.gov/newsroom/primarycareworkforce.html> (last visited Mar. 15, 2011) (outlining the allocation of the first \$500 million for the Prevention Fund). This is significant not only for its monetary value, but also because the Prevention Fund was created to strengthen nonclinical

medical residents to enter into primary care, particularly in underserved areas,¹³⁴ and funds primary care delivery in mental health centers.¹³⁵ To monitor primary care shortages, a National Health Care Workforce Commission and National Center for Health Care Workforce Analysis will track provider availability and advise Congress on supply and demand.¹³⁶

PPACA's commitment to strengthening the public health workforce is much weaker: the \$23 million appropriated in 2010 pales beside the \$250 million that will support primary care development.¹³⁷ Although PPACA increases federal investment in loan repayment programs for public health practitioners,¹³⁸ creates new loan and scholarship options for graduates entering government agencies or seeking continuing education,¹³⁹ and establishes a public health sciences track within the U.S. Public Health Service,¹⁴⁰ it does not provide sufficient investment to rejuvenate an eroding workforce, nor does it address the lack of public health training for primary health care providers (for example, in medical schools). States facing budget deficits will continue to struggle to replenish health departments, and the need for expanded federal funding will persist.

C. *Criterion 3: A Strong and Sustainable Public Health Infrastructure*

The public health infrastructure has deteriorated substantially over the past several decades. Laboratories are understaffed and starved of resources, and surveillance systems operate with outdated information technology and under inconsistent and antiquated grants of authori-

preventive activities. *See* PPACA § 4001(d)(2)–(4), 42 U.S.C.A. § 300u-10 (West Supp. 1A 2010) (describing the public health-promoting purposes of the National Prevention, Health Promotion and Public Health Council). Allocating such a substantial portion of the Fund towards clinical providers defeats this goal in part.

¹³⁴ PPACA sec. 10501, § 749B, 42 U.S.C.A. § 293m (West Supp. 1A 2010).

¹³⁵ *Id.* sec. 5604, § 520K, 42 U.S.C.A. § 290bb-42.

¹³⁶ The Commission and Center will produce a National Care Workforce Assessment. *Id.* sec. 5103, § 761, 42 U.S.C.A. § 294n.

¹³⁷ *See* Press Release, Trust for Am.'s Health, Prevention and Public Health Fund to Jumpstart Community-Based Prevention Programs (June 18, 2010), available at <http://healthyamericans.org/newsroom/releases/?releaseid=215> (detailing the allocation of money from the Prevention and Public Health Fund component of PPACA).

¹³⁸ PPACA sec. 5204, § 776, 42 U.S.C.A. § 295f-1.

¹³⁹ *Id.* sec. 5206, § 777, 42 U.S.C.A. § 295f-2; *id.* sec. 5313, § 399V, 42 U.S.C.A. § 280g-11; *id.* sec. 5314, § 778, 42 U.S.C.A. § 295f-3.

¹⁴⁰ *Id.* sec. 5315, § 271, 42 U.S.C.A. § 239l.

ty.¹⁴¹ Given the importance of a robust infrastructure to protect the public's health—detecting the source of food-borne illness, identifying and responding to bioterrorism threats, containing influenza outbreaks—the extent to which PPACA will rebuild the fraying infrastructure of the public health system is of paramount importance. Unfortunately, PPACA does little to improve the public health infrastructure.

PPACA makes a very limited investment in information technology, surveillance, and laboratory capacity. When funding for primary care and the public health workforce is deducted from the \$50 million in the Prevention Fund, the remainder will do little to ensure a robust and sustainable infrastructure. This nominal funding must stretch across all state and local health agencies, and it pales in comparison to the funding necessary to sustain the health care system's infrastructure.¹⁴² Thus, the National Laboratory Training Network and the Epidemiology and Laboratory Capacity Program will remain chronically underfunded, and surveillance capacity will not meet demand. Moreover, while stimulus legislation funneled resources into the health care sector to boost information technology development,¹⁴³ no such funding has reached public health departments. In fact, tracking patterns of infectious and chronic disease, as well as monitoring preventive strategies, continues to be an ideal, rather than a norm.

PPACA fails to facilitate integration of public health with the health care system. For example, the new law does not expand funding for the National Environmental Public Health Tracking Program, one of the few federally coordinated public health surveillance efforts. Nor does it empower state and federal agencies to collect data from

¹⁴¹ Laboratory staffs make up only three percent of the public health workforce, and state laboratories are chronically understaffed, jeopardizing the performance of important functions like bioterrorism-preparedness work and the containment of infectious diseases. See AM. PUB. HEALTH ASS'N, PUBLIC HEALTH LABORATORY CAPACITY 2 (2009), available at <http://www.apha.org/NR/rdonlyres/16093859-CFE2-421E-B2C9-102CBB02CAEF/0/PHLabcapacityrevised09.pdf> (identifying shortages in public health laboratory resources).

¹⁴² PPACA authorizes the Secretary to award up to \$190 million in grants in each of fiscal years 2010 to 2013 to build state epidemiology and laboratory capacity. PPACA sec. 4304, § 2821, 42 U.S.C.A. § 300hh-31. In contrast, the National Institutes of Health spends \$41 billion on biomedical research each year. OFFICE OF THE BUDGET, NAT'L INSTS. OF HEALTH, ENACTED APPROPRIATIONS FOR FY 2008–FY 2010 (2010), available at http://officeofbudget.od.nih.gov/pdfs/FY11/FY_2010_Enacted_Appropriations.pdf.

¹⁴³ See Health Information Technology for Economic and Clinical Health Act, Pub. L. No. 111-5, § 13301, 123 Stat. 226, 246-47 (2009) (codified at scattered sections of 42 U.S.C.) (devoting funding to invest in the infrastructure for health information technology).

electronic health records or health plans to track benchmarks in health outcomes and preventive care, which would create a tremendous opportunity for expanded surveillance efforts.

D. *Criterion 4: Performance Measurement—Continuous Quality Improvement Based on Scientific Evidence*

Evidence-based practices in public health remain nascent. Substantial federal investment is needed to develop and disseminate proven interventions based on objective and reliable outcome measures. Although federal goals for health outcomes have created uniform performance measures for preventive services, these measures have not been widely adopted and do not apply to a wide range of services public health agencies provide.¹⁴⁴

PPACA creates and funds several demonstration projects to examine and ultimately inform best practices for preventive care and behavioral change. Community Transformation Grants will fund state and local health departments that implement preventive services the Community Preventive Services Task Force finds efficacious, including the promotion of active lifestyles.¹⁴⁵ The law also promotes research in behavioral change, both through a Childhood Obesity Demonstration Project¹⁴⁶ and through state-based grants for the study of interventions to promote healthy eating, activity, and weight and blood pressure reduction.¹⁴⁷

PPACA, however, misses opportunities to develop and use electronic records for public health improvement. Stimulus legislation authorized incentive payments in Medicare and Medicaid for providers that exhibited “meaningful use” of electronic health records.¹⁴⁸ “Meaningful use” includes valuable public health measures to track

¹⁴⁴ The Department of Health and Human Services has developed national objectives for prevention outcomes, including uniform performance measures. *See generally* U.S. DEP’T OF HEALTH AND HUMAN SERVS., *supra* note 55, at 24-44; U.S. DEP’T OF HEALTH & HUMAN SERVS., *supra* note 56, at 1-2.

¹⁴⁵ PPACA § 4201, 42 U.S.C.A. § 300u-13.

¹⁴⁶ *See id.* sec. 4306, § 1139A(e)(8), 42 U.S.C.A. § 1320b-9a(e)(8) (appropriating \$25 million to the program).

¹⁴⁷ \$500 million of the Prevention Fund’s appropriations for the fiscal year 2010 will support the implementation of evidence-based interventions to address tobacco control, obesity prevention, and disparities in HIV, and to increase physical activity and promote good nutrition. *Id.* § 4002, 42 U.S.C.A. § 300u-11; *see also* Koh & Sebelius, *supra* note 121, at 1297 (describing these and other prevention-related changes).

¹⁴⁸ Health Information Technology for Economic and Clinical Health Act, § 4101, 123 Stat. at 467-68 (codified at 42 U.S.C. § 1395w-4(o)(1)(A)(i)).

diagnoses, smoking and weight trends, and disparities.¹⁴⁹ However, the stimulus law mandates neither the collection of these data nor the submission of reportable laboratory results to public health agencies.¹⁵⁰ Because public health departments must access medical records to track injuries, diseases, and health disparities, as well as to respond to health hazards in a timely manner, it will be necessary to mandate interoperability between the two data systems. This change would build the evidence base in public health without requiring substantially increased investment.¹⁵¹

E. Criterion 5: Reducing Disparities in Health

PPACA addresses health disparities in two ways. First, the law will indirectly reduce disparities by significantly expanding access to health care. Enhanced access will help low-income individuals receive timely and effective clinical prevention and treatment, reducing the need for avoidable emergency interventions that involve high cost and invasive procedures. PPACA increases health care access by significantly expanding private and public insurance coverage,¹⁵² affording greater health security by reducing the risk that a beneficiary will lose protection upon falling ill or exceeding yearly or lifetime benefit caps,¹⁵³ and funding a pilot program implementing wellness programs in health centers located in low-income communities.¹⁵⁴

Second, PPACA increases identification and tracking of health disparities. The Act creates an Office of Minority Health within the Department of Health and Human Services,¹⁵⁵ broadens the National Institutes of Health's Center on Minority Health and Health Dispari-

¹⁴⁹ *Id.* § 4101 (codified at 42 U.S.C. § 1395w-4(o)(2)). For a concise analysis of mandatory and discretionary "meaningful use" of electronic health records, see David Blumenthal & Marilyn Tavenner, *The "Meaningful Use" Regulation for Electronic Health Records*, 363 NEW ENG. J. MED. 501 (2010).

¹⁵⁰ Blumenthal & Tavenner, *supra* note 149, at 501.

¹⁵¹ *See, e.g.*, Brian Robinson, *Health IT Key to National Health Security Plan*, GOV'T HEALTH IT (July 27, 2010), <http://www.govhealthit.com/newsitem.aspx?tid=74&nid=74316> ("Development of ways to link regional health IT systems . . . are some of the key elements of a plan for achieving U.S. national health security.").

¹⁵² *See* PPACA, Pub. L. No. 111-148, tits. I-II, 124 Stat. 119, 130-353 (2010) (to be codified as amended at scattered sections of 26, 29, and 42 U.S.C.).

¹⁵³ *See* PPACA sec. 1001, §§ 2711-2712, 42 U.S.C.A. §§ 300gg-11 to 300gg-12 (West Supp. 1A 2010).

¹⁵⁴ *See id.* sec. 4206, § 330, 42 U.S.C.A. § 245b.

¹⁵⁵ *See id.* sec. 10334, § 1707, 42 U.S.C.A. § 300u-6.

ties into an Institute,¹⁵⁶ and increases funding for minorities seeking health care training.¹⁵⁷

Aside from increasing health care access and surveillance, PPACA does little to fund or mandate decisive interventions to reduce health inequalities based on race, income, or other factors. Further action will be necessary to develop disparity-reduction initiatives, both in the health sector and in government activities that address the socioeconomic root causes of ill health, such as housing, education, employment, and welfare.

In summary, PPACA undoubtedly enhances prospects for population health improvement by expanding health care access, making prevention and primary care high priorities, and creating crucial institutional structures and demonstration projects in public health research and practice. Yet, the Act fails to truly modernize public health. Most importantly, the law does not create a sufficient or sustainable funding stream for public health departments to build durable programs, hire well-educated professionals, or evaluate evidence-based practices.¹⁵⁸ The Prevention Fund, although vitally important, authorizes funding that is both categorical and time-limited.¹⁵⁹ Moreover, the Prevention Fund is politically fragile, and recent attempts have been made to divert funding to other programs, which is emblematic of public health's second-rate standing.¹⁶⁰ Even if the Fund endures budgetary challenges, it will not be sufficient to support the infrastructure needs of faltering health departments.¹⁶¹ What is needed is a well-endowed

¹⁵⁶ See *id.* sec. 10334, § 1707A(c), 42 U.S.C.A. § 285t to 285t-3.

¹⁵⁷ See *id.* sec. 5303, § 748, 42 U.S.C.A. § 293k-2(c)(3); see also *id.* sec. 5315, § 273, 42 U.S.C.A. § 239l-2(a)(2)-(b)(1)(A).

¹⁵⁸ PPACA does not guarantee future funding but rather provides "such sums as may be necessary" for each fiscal year out of any monies in the Treasury not otherwise appropriated. Letter from Douglas W. Elmendorf, Dir., Cong. Budget Office, to Congressman Jerry Lewis, Ranking Member, Comm. on Appropriations 1 (May 11, 2010), available at http://www.cbo.gov/ftpdocs/114xx/doc11490/LewisLtr_HR3590.pdf.

¹⁵⁹ Federal task forces and advisory committees are funded only as available through the annual budget process. PPACA sec. 4003, § 915, 42 U.S.C.A. § 299b-4(a)(7).

¹⁶⁰ Shortly after President Obama signed PPACA into law, Senators Johanns and Thune introduced an amendment to divert \$11 billion from the Prevention Fund into the general federal budget to compensate for lost tax revenue that would have resulted from the proposed repeal of small business tax reporting requirement. See 156 CONG. REC. S7061 (daily ed. Sept. 14, 2010) (rejecting a cloture motion on the amendment by a 46-52 vote).

¹⁶¹ The Prevention Fund is designed to provide baseline funding of public health activity, supplemented as necessary. For the fiscal year 2011, the Senate Appropriations Committee allocated approximately \$6 billion to the CDC, in addition to \$663 million from the Prevention Fund. S. REP. NO. 111-243, at 69 (2010). This allocation

Public Health Investment Fund—originally part of both House and Senate bills¹⁶²—that would award grants to state health departments to rebuild the public health workforce, develop evidence-based practices, and modernize laboratories and information technology.

V. TOWARD A ROBUST HEALTH REFORM TO SIGNIFICANTLY IMPROVE THE PUBLIC'S HEALTH

What would a genuine, population-based health reform look like if policymakers adopted the criteria articulated in Part III? We propose three major policy reforms that could significantly improve the public's health, particularly compared to the health gains likely to be realized from a continued focus on health care services: (1) changing the environment to make healthy behaviors the more likely choice; (2) strengthening the public health infrastructure at the state and local levels; and (3) developing a Health-in-All-Policies strategy that would engage all government agencies in improving health outcomes.

As we have stressed throughout this Article, improving health means far more than just providing access to high-technology medical care. Thus, our policy approach focuses on shifting the emphasis from individual health factors to the broader determinants of health. Continued investments in high-technology solutions will result in ever-increasing health care costs without commensurate population health benefits. Taken together, the policies we discuss below represent a fundamental change, not just for public health, but also for the way in which the nation organizes and provides health care.

pales in comparison to federal spending in other areas, such as national defense (\$707 billion in 2010). OFFICE OF MGMT. & BUDGET, UPDATED SUMMARY TABLES: BUDGET OF THE U.S. GOVERNMENT—FISCAL YEAR 2010, at 8 tbl.S-4 (2009), available at <http://www.gpoaccess.gov/usbudget/fy10/pdf/summary.pdf>.

¹⁶² Section 2002 of H.R. 3962, the Affordable Health Care for America Act, as passed by the House of Representatives, provided for a Public Health Investment Fund amounting to \$4.6 billion in fiscal year 2011 and increasing to \$9 billion in fiscal year 2015. H.R. 3962, § 2002(a)(2) (as passed by House of Representatives, Nov. 7, 2009). The Senate eliminated this provision, and the final text of the law, the Preservation of Access to Care for Medicare Beneficiaries and Pension Relief Act of 2010, did not include a Public Health Investment Fund. See Pub. L. No. 111-192, 124 Stat. 1279 (codified at scattered sections of 29 & 42 U.S.C.). The Senate, however, had also considered a similar fund. At a hearing on June 17, 2009, the Senate Health, Education, Labor, and Pensions Committee introduced the Affordable Health Choices Act, which would have created a Prevention and Public Health Investment Fund authorizing up to \$10 billion annually in public health spending. S. 1679, subtit. D (as reported by S. Comm. on Health, Educ., Labor, & Pensions, Sept. 17, 2009).

A. *Changing the Environment*

As described above, the environment—and the behaviors it facilitates—is a core determinant of health. Yet PPACA offers minimal financial support for improvements in the built environment that would reduce the incidence of obesity and other harms. Congress should make PPACA-authorized state grants contingent on state and local laws that impose minimum requirements for public school physical education periods and on zoning regulations that alter the built environment to maximize activity and access to healthy foods. Although National School Lunch Act funding is already subject to the incorporation of physical activity into the school day,¹⁶³ state requirements vary widely, and many schools have shortened or eliminated recess and gym periods in response to budget deficits and low achievement scores.¹⁶⁴ As a result, over seventy-five percent of children are not active for even thirty minutes a day.¹⁶⁵ Increasing childhood activity levels nationwide would slow childhood weight gain¹⁶⁶ and would likely produce results that would continue into adulthood.¹⁶⁷ In addition, attaching federal funding to state and local zoning policies that improve the built environment would provide incentives to develop sidewalks, bike paths, and farmers' markets in low-income neighborhoods and might encourage the dilution of fast-food restaurant clusters.¹⁶⁸

¹⁶³ See Child Nutrition and WIC Reauthorization Act of 2004, 42 U.S.C. § 1751 note (2006) (requiring participating school systems to include “goals for nutrition education, physical activity, and other school-based activities that are designed to promote student wellness in a manner that the local educational agency determines is appropriate”).

¹⁶⁴ See, e.g., David Satcher, *Healthy and Ready to Learn*, EDUC. LEADERSHIP, Sept. 2005, at 26, 26 (“During the last two decades, many school systems have abolished recess and cut back on physical education and extracurricular sports.”); *State Physical Education Requirements: 2005*, NAT’L CONF. ST. LEGISLATURES (Dec. 2005), <http://www.ncsl.org/Default.aspx?TabID=14027> (charting the differences in physical education requirements by state).

¹⁶⁵ Satcher, *supra* note 164, at 26.

¹⁶⁶ See Kevin Patrick et al., *Diet, Physical Activity, and Sedentary Behaviors as Risk Factors for Overweight in Adolescence*, 158 ARCHIVES PEDIATRICS & ADOLESCENT MED. 385, 386 (2004) (finding among a sample of adolescents that inadequate activity was the only risk factor consistently associated with being overweight).

¹⁶⁷ Increased physical activity has proven to have a lasting impact on weight. See Rachael W. Taylor et al., *Two-Year Follow-Up of an Obesity Prevention Initiative in Children: The APPLE Project*, 88 AM. J. CLINICAL NUTRITION 1371, 1371 (2008) (finding that benefits to body mass index remained apparent in children two years after they participated in an obesity-prevention initiative).

¹⁶⁸ See, e.g., Roger S. Magnusson & Ruth Colagiuri, *The Law and Chronic Disease Prevention: Possibilities and Politics*, 188 MED. J. AUSTL. 104, 104-05 (2008) (suggesting that zoning laws could be used to improve the built environment significantly).

As a supplement to improving the built environment, policies that encourage the availability of healthy foods and decrease the barriers to healthy eating and lifestyles can help prevent some chronic diseases, including obesity and diabetes. Congress should use its taxing and spending powers to shape purchasing behavior. Consumers are highly responsive to fluctuations in price and can be persuaded or dissuaded from selecting certain foods based on their comparative cost value. In an extensive literature review, Andreyeva and her coauthors found that soft drinks and food eaten away from home were particularly sensitive to changes in price. Purchasing trends are inversely related to price change, however nominal.¹⁶⁹ Moreover, price influences purchasing behavior more than nutrition information does.¹⁷⁰ Thus, there is strong evidence that excise taxes would discourage consumption of calorically dense (e.g., sugared soft drinks) and sodium-rich foods, just as they have discouraged smoking.¹⁷¹

B. Strengthening the Public Health Infrastructure

Before there can be a truly integrated health system—and a system that is designed to improve population health—the infrastructure of the existing public health system needs to be substantially improved. As it is currently organized, there are serious questions as to

¹⁶⁹ See, e.g., Tatiana Andreyeva et al., *The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food*, 100 AM. J. PUB. HEALTH 216, 218-19 (2010) (finding that soft drinks and food eaten away from home were particularly sensitive to changes in price); Simone A. French et al., *Pricing and Promotion Effects on Low-Fat Vending Snack Purchases: The CHIPS Study*, 91 AM. J. PUB. HEALTH 112, 114 (2001) (finding that 10, 25, and 50% reductions in the price of low-fat vending machine snacks increased sales of those foods by 9, 39, and 93%, respectively, with no change in overall sales); Simone A. French et al., *Pricing Strategy to Promote Fruit and Vegetable Purchase in High School Cafeterias*, 97 J. AM. DIETETIC ASS'N 1008, 1008-09 (1997) (finding that a 50% reduction in the price of fruit and vegetables in a high school cafeteria resulted in a fourfold increase in fruit sales and a doubling of carrot sales, with all sales returning to baseline levels when the price reductions were removed).

¹⁷⁰ See Katherine Battle Horgen & Kelly D. Brownell, *Comparison of Price Change and Health Message Interventions in Promoting Healthy Food Choices*, 21 HEALTH PSYCHOL. 505, 510 (2002) (demonstrating that reduced prices increased sales of lower-fat foods significantly more than prominent displays of nutritional information did).

¹⁷¹ Experts project that a one-dollar-per-pack increase in cigarette taxes could reduce the number of adult smokers by 6.25%. See ASS'N OF SCH. OF PUB. HEALTH, *supra* note 131, at 8; see also Dan E. Peterson et al., *The Effect of State Cigarette Tax Increases on Cigarette Sales, 1955 to 1988*, 82 AM. J. PUB. HEALTH 94, 94-95 (1992) (noting that decreased sales have followed increases in state and federal excise taxes on cigarettes).

the public health system's capacity to meet the challenges at hand.¹⁷² Unfortunately, neither state nor local governments are in a position to invest in the public health infrastructure, and PPACA provides only limited funding for capital improvements.

Lack of consensus on how to rebuild and reorganize public health capacity compounds the problem. Should public health services be centralized at the state level or decentralized at the local level? Should public health services be provided along regional lines or along county lines, as is the current system? Should the emphasis be on emergency preparedness or on routine public health issues? What role should the private sector play, particularly in an integrated system? How can public health services be measured? Should public health attempt to become more entrepreneurial?

As important as these questions are, they are secondary to the fundamental need to invest in the public health infrastructure. The system's organizational structure significantly affects the public's health. It influences practitioners' ability to respond to public health emergencies and to adapt to changing circumstances. As society is willing to devote only limited resources to public health, it is essential that the structure allocate those resources as appropriately and efficiently as possible. This is especially true when the public health system is expected to incorporate multiple mandates, both funded and unfunded.

Although it is beyond this Article's scope to specify the shape of a reimagined public health system,¹⁷³ two points raised above seem essential for a viable public health system. The first is bricks and mortar; the second is a well-trained public health workforce. As indicated above, PPACA makes some progress on the latter, but none on the former.

A legitimate question, though, is whether the government should invest in public health while simultaneously calling for a more integrated system. The answer is an unequivocal yes. For PPACA's investment in prevention and wellness to be effective, a strong public health system is essential. Without a robust public health system, the health care system cannot effectuate PPACA's prevention and wellness

¹⁷² See generally Nicole Lurie, *What the Federal Government Can Do About the Nonmedical Determinants of Health*, HEALTH AFF., Mar.–Apr. 2002, at 94 (noting the public health system's current inefficacies and discussing ways it could be improved).

¹⁷³ The Institute of Medicine has devoted two committees to this task. See generally INST. OF MED., *THE FUTURE OF THE PUBLIC'S HEALTH IN THE TWENTY-FIRST CENTURY*, *supra* note 34; *Activity: Public Health Strategies to Improve Health*, INST. MED. NAT'L ACADS., <http://www.iom.edu/Activities/PublicHealth/PHStrategies.aspx> (last updated Mar. 9, 2011).

objectives. Provided that the government commits to strengthening the public health infrastructure, a new, integrated system will emerge that embeds population health into its core mission. Until then, it is vital to invest in the bricks and mortar needed to sustain the public health system. In fact, failure to invest will impede the transition to an integrated health system.

C. *Adopting a Health-in-All-Policies Approach*

In an integrated health system, all government policies must reflect the goal of improving the health of the population. As we argued above, it is crucial to focus not only on traditional public health goals—effective infectious-disease response, health promotion, and disease prevention—but also on the amelioration of social and economic disparities, which profoundly influence health status. Indeed, “[i]nvesting in health . . . will contribute not only to increased well-being but also to economic stability and growth. This, in turn, may strengthen the financial sustainability of health care systems.”¹⁷⁴

A Health-in-All-Policies (HiAP) or “All of Government” approach requires the government to consider the impact of all of its policies on the population’s health status and the impact of health on other sectors of society. A strategy to strengthen the link between health and other social policies, HiAP addresses the effects on health of areas as diverse as agriculture, education, the environment, urban planning, fiscal policy, housing, and transport. The fundamental insight of HiAP is that health is not just a function of medical care or even broader public health; health status is also determined by food, income, environmental, and other policies. As such, “HiAP is not confined to the health sector and to the public health community, but is a complementary strategy with a high potential towards improving a population’s health, with health determinants serving as the bridge between policies and health outcomes.”¹⁷⁵

Put somewhat differently, HiAP examines the determinants of health that spheres other than the health system control.¹⁷⁶ Health transcends governmental policy portfolios, organizational boundaries,

¹⁷⁴ HEALTH IN ALL POLICIES, at xxiv (Timo Stahl et al. eds., 2006).

¹⁷⁵ *Id.* at xviii.

¹⁷⁶ See Marita Sihto et al., *Principles and Challenges of Health in All Policies* (“The core of HiAP is to examine determinants of health . . . , which can be influenced to improve health but are mainly controlled by policies of sectors other than health.”), in HEALTH IN ALL POLICIES, *supra* note 174, at 3, 4.

and academic disciplines. A HiAP approach requires integration between health and other sectors through cross-disciplinary collaboration and cooperation; shared and compatible data systems; and new organizations, partnerships, and initiatives that cut across traditional boundaries. The WHO has drawn attention to the need for “joined-up” government action and has called on member states to increase collaboration across traditional boundaries and generate cross-sector policy design.¹⁷⁷ In a report that emerged from a recent Health in All Policies International Meeting, the WHO details the extent to which all sectors—including the economy, housing, agriculture, the justice system, transportation, and education—affect and are affected by population health.¹⁷⁸

Nonetheless, the United States overinvests in expensive, high-technology health care to treat disease, while underinvesting in strategies to prevent or ameliorate the causes of morbidity and mortality. The current bifurcation between public health and medical care and its attendant lack of coordination exacerbates the problem. In this context, HiAP must support an integrated health system in reducing the burden of chronic diseases.

The profound effect of urban planning on health illustrates the importance of a HiAP approach. Half of Americans now live in suburban settings, which increases reliance on automobiles.¹⁷⁹ This creates air pollution, which is linked to chronic respiratory ailments, and facilitates increasingly sedentary lifestyles, and such lifestyles directly contribute to weight gain.¹⁸⁰ Despite this close connection between health and urban planning, public health officials have been largely absent from urban-planning policy decisionmaking.¹⁸¹ Similarly, agricultural subsidies resulting in the overproduction of corn have significantly increased food manufacturers’ use of high-fructose corn syrup, which contributes to consumption of calorie-dense foods.¹⁸² Assessing the impact of all government policies on health would ensure that the determinants of health are addressed in a more systematic and effective

¹⁷⁷ WORLD HEALTH ORG. & GOV’T OF S. AUSTRALIA, ADELAIDE STATEMENT ON HEALTH IN ALL POLICIES, ADELAIDE 2010, at 2 (2010).

¹⁷⁸ *Id.* at 4.

¹⁷⁹ Wendy Collins Perdue et al., *The Built Environment and Its Relationship to the Public’s Health: The Legal Framework*, 93 AM. J. PUB. HEALTH 1390, 1390 (2003).

¹⁸⁰ *Id.*

¹⁸¹ *Id.* at 1390-91.

¹⁸² Cf. Liselotte Schäfer Elinder, *Obesity, Hunger, and Agriculture: The Damaging Role of Subsidies*, 331 BMJ 1333, 1333 (2005) (“[I]t is equally important to tackle the over-supply of food, driven by agricultural subsidies.”).

manner. Through the community health needs assessment process described earlier,¹⁸³ PPACA begins to integrate population health into the medical care system. Expanding this approach to incorporate a health-impact analysis into policy development for all sectors of government would be an important next step toward a HiAP approach.¹⁸⁴

To reduce premature morbidity and mortality and spend medical resources most effectively, we believe that policymakers should adopt the reforms we have proposed. We recognize that our reforms would not be easy to implement and could face significant political obstacles. For instance, what are the logistics of integrating population health and medical care into one system? What skill set is needed for practitioners to include population health with medical care? Where does accountability reside, especially for current public health services, such as surveillance and quarantine? What are the consistent themes that should animate a Health-in-All-Policies strategy?

Regardless of the likely implementation difficulties, adopting the three reforms discussed in this Part would strengthen the public health system's capacity to respond to injury and disease threats, improve health status, and prepare the nation for an integrated health system. As we have argued throughout this Article, improving population health will require disruptive change, but the benefits of an integrated system far outweigh the challenges.

CONCLUSION: THE BUILDING BLOCKS OF HEALTH

Our core premise is that health reform's central purpose ought to have been the improvement of the population's health. Although PPACA is a major step forward in improving access to health care services, shifting priorities toward health promotion and disease prevention would achieve better health outcomes—at a lower cost. PPACA improves access to preventive care and provides modest additional funding for public health services, but it fails to make population-based services a central component of health reform. As a result, the Act will not realize the substantial gains in health status associated with robust health promotion and disease prevention initiatives.

¹⁸³ See *supra* subsection I.C.4 (explaining how the health-needs assessment process advances integration).

¹⁸⁴ See, e.g., Kickbusch & Buckett, *supra* note 72, at 18-19 (describing the “third wave” of HiAP, in which governments “ensure that health considerations [a]re included in all government policies”).

We have argued that public health and health care should not compete for political and financial attention, but rather should be organized as two parts of a single health system. In other words, “restoring health to health reform” necessitates a return to a unified health system, one in which we move beyond disciplinary and organizational boundaries.

To illustrate the value of an optimally functioning “health system,” we presented five normative criteria against which we evaluated health reform. These are the building blocks of health: prevention and wellness, human resources, a strong infrastructure, performance measurement, and disparity reduction. Analyzing health reform in the context of these criteria allows policymakers to assess the extent to which the legislation will improve the population’s health status. PPACA falls short because it fails to fund adequately or reform imaginatively the public health enterprise. Furthermore, it does not advance the integration of public health and health care. In short, the Act’s focus on clinical preventive services and expanded coverage is notable, but too narrow to achieve marked progress in population health.

To ensure a safer and healthier population, PPACA’s implementation and future legislation should address the building blocks of health and transform health policy in the following ways. First, by reshaping the natural and built environments in which people live, federal and state policymakers can make healthy behaviors the more viable choice. Second, by strengthening and modernizing the public health infrastructure, policymakers can ensure sustainable capacity to monitor and respond effectively to injuries, diseases, and public health emergencies. Finally, by facilitating progressive thinking about the Health-in-All-Policies approach, a wide range of government agencies could contribute to the public’s health, cognizant that health care actually plays a relatively minor role in health.

We are mindful that reigniting the health reform flame may prove politically treacherous, but we remain steadfast in our belief that the movement cannot rest here. Thus, we end with a call to stakeholders (health professionals, health institutions, health advocates, and the academy) to catalyze full integration of public health and health care—and to advocate the policies we have argued embody its value. These stakeholders have the knowledge, skill, resources, and political clout to expedite integration. To date, however, few have acted as informed advocates for public health. Most consider population health to be an afterthought in the shadow of a far more visible and powerful health care industry. Yet true integration is not feasible so long as

public health remains an orphan specialty in the health care community. And much is at stake as the nation moves into the post-health care reform era—not only for patient access and economic cost but, more fundamentally, for the health of this nation.