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The Human Dimension: Strengthening The Prevention Workforce

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Progressive Ideas for a Strong, Just, and Free America

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EXECUTIVE SUMMARY

The most important element in a successful disease prevention system is its human infrastructure: the workforce. Currently, responsibility for disease prevention falls on the core governmental public health workforce. The public health worker bears the responsibility for ensuring the effective delivery of the essential services and activities of public health within the broader community. In order to fulfill that responsibility, the public health worker forges partnerships with the prevention efforts of many others, some in health or community organizations, and anyone who seeks to prevent ill health in themselves, their families and communities.

Yet a number of challenges confront public policy makers who aim to develop and sustain a prevention workforce capable of supporting a healthy public. Challenges exist in defining the terms "health" and "prevention," in identifying who provides prevention, where and how, and in measuring both the inputs and outputs of the prevention workforce. In the abstract, the field encompasses all of the organized efforts of society to prevent disease, but these efforts have no clear boundaries to help match workers to work.

Prevention is also susceptible to trivialization. For every preventable condition (and some not fully preventable), there is typically an organization that has issued some call to action — a virtual "flavor of the month" approach to public awareness. As such, it is no surprise that at times, the public is deaf to these calls and may miss the simple, over-riding prevention messages that can work to minimize multiple problems.

Prevention also crosses traditional professional and categorical lines, involving a wide array of workers in and outside the health care system. Moreover, at some level, prevention is everyone's job. Each individual must accept and ultimately demand prevention: get immunized, eat healthy foods, exercise, and reduce risk in every avenue of life — on the highway, the bike path, the workplace, and even the bedroom. Yet while everyone may be "doing prevention," no publicly identifiable, designated prevention workforce exists.

Through a properly-focused and adequately-funded effort at building such a workforce, these problems can be solved. Such an effort would strengthen the institutions that define the field of practice, train and certify experts, and employ, deploy, and ensure the quality of their work. Specifically, this effort should invest in the research to quantify the benefits of a prevention workforce and identify what works. This information can then be used to properly train a new prevention workforce, while providing continuing education programs for the current workforce.

In addition, creating favorable employment conditions are necessary to foster a large, strong, and sustainable prevention workforce. Ultimately, the nation's health leadership must address the obstacles to ensuring that prevention services from this workforce are available and accessible in every community. These infrastructure elements are the topic of this paper.

21ST CENTURY CHALLENGES IN PREVENTION

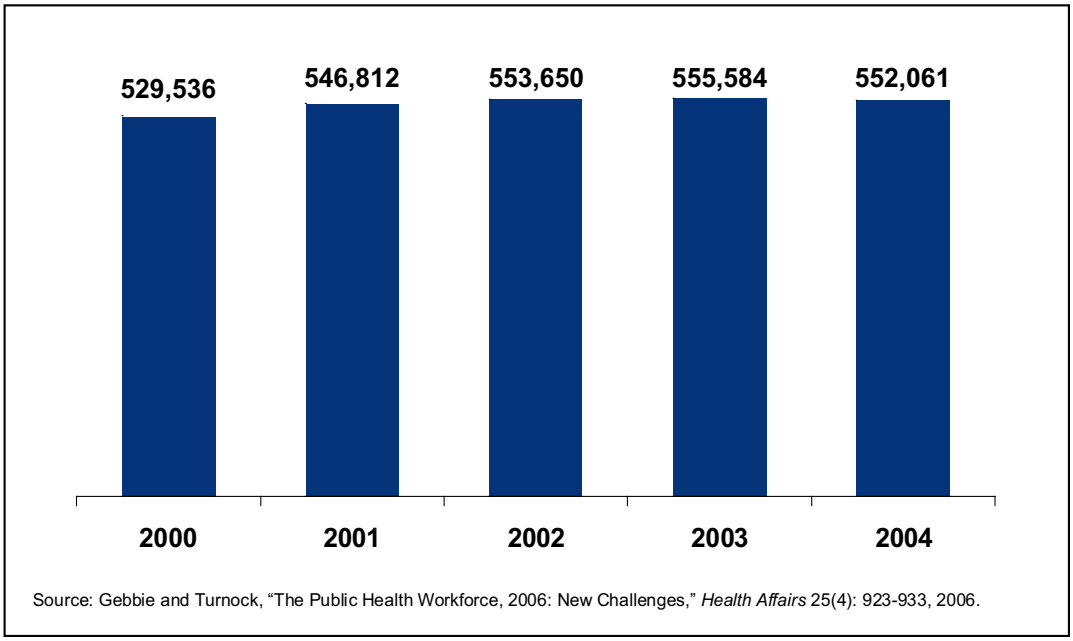
The quality and length of life in the last century improved markedly as the last millennium drew to a close,, in large part because of public health leadership in disease prevention. Since 1900, infant mortality in the United States decreased by 90 percent and maternal mortality decreased by 99 percent. Since 1972 alone, the death rates for coronary artery disease dropped by half, in part due to reduced smoking and control of high blood pressure.[1] Immunizations against many previously common diseases were developed and received by over 80 percent of children by 2003.[2]

Despite the dazzling advances in technology, devices, informatics, and facilities, the effectiveness of the health and healthcare enterprises rests squarely upon the shoulders of the health workforce. The full-time equivalent of an estimated 552,000 people worked in public health at the federal, state and local level in 2004, the last year complete data are available.[3] This workforce consists of nurses, environmental health specialists, educators, administrators, physicians, among others.[4]

Federal agencies, such as Health Resources and Services Administration and the Center for Disease Control and Prevention, have used grant programs to invest in public health workforce development. For example, HRSA's Public Health Training Center Program — established by the *Health Professions Education Partnerships Act of 1998* — works to strengthen "the technical, scientific, managerial, and leadership skills and abilities of current and future public health professionals."[5] Public Health Training Centers are partnerships between public health agencies and organizations and accredited schools of public health that work to provide needed training to the public health workforce. Currently, these centers are in 44 states and the District of Columbia.

Identifying these workers is challenging because no clear taxonomy of public health workers exists today. Despite some apparent increases, recent evidence suggests that the workforce may be in decline (see Figure 1). Moreover, more may be needed, as public health and prevention workers face new health challenges in the 21st century. Infectious disease has declined in its importance compared to chronic disease in the economically developed world. Chronic diseases such as cancer contribute to about 70 percent of deaths and health costs in the U.S.[6]

Figure 1
Government Health Workers (FTEs)



Source: Gebbie and Turnock, "The Public Health Workforce, 2006: New Challenges," *Health Affairs* 25(4): 923-933, 2006.

The rising rate of obesity, with its serious consequences, has pushed leaders in businesses, schools, and communities to join the preventive health workforce. And, more than ever before, Americans are focused on their own health. This has clear benefits, such as reduced rates of smoking and higher rates of disease screening.[7] But it also means that morning news and talk shows highlight prevention ideas that may be more interesting than important. Preventative interventions of all kinds are marketed, generally without demonstration of efficacy (or for that matter, even safety), and the avalanche of information numbs people to the real risks and most effective actions that they could take to improve their health.

These new challenges call for new leadership in creating an effective prevention system and workforce. This prevention workforce will need to build on the dedicated workers in the public health system today, adding partners in all sectors of our communities. Public health workers, no matter how committed to prevention, are themselves faced with escalating expectations, from preparing for human-created and natural disasters to providing services to the growing number of uninsured. In the pages that follow we will outline the challenges to defining and developing a 21st century prevention workforce as well as solutions to achieve it.

CHALLENGES OF DEFINING AND DEVELOPING A PREVENTION WORKFORCE

Questions of workforce abound in the field of the health sciences and services. We are continually assessing and re-assessing whether we have the right number and combination of workers to staff our hospitals, clinics, research laboratories, and health agencies. For each attempt to count, more questions arise. What detail is needed about groups and sub-groups of workers? What assumptions are appropriate when exact numbers are not available? How can "need" be projected from current delivery patterns?

Public health workforce information is even more difficult to come by than that of acute or long-term care. Public health and prevention are approaches encompassing a range of work rather than a single profession, technical category of activities, or even a place of work. Moreover, the public health infrastructure itself, according to experts, remains in disarray.[8,9,10] Each of these factors, which make defining a 21st century prevention workforce difficult, is described below.

Broad Content of Prevention Work

Identifying the human resources needed for prevention is complicated by the challenge of matching worker to work. Estimation of the needed workforce requires quantifying exactly how much any one worker can be expected to perform and how much work is to be accomplished. After that, in theory, workforce planning becomes arithmetic. The work of prevention encompasses all of the organized efforts of society to prevent disease. This simple definition raises numerous questions. Which diseases and interventions count? What is the method for counting? When is a service such as the effective management of diabetes considered prevention rather than acute care? Are community bike paths simply community development or are they also health maintenance or disease prevention?

Particularly in an era in which high priority is claimed for prevention, the proliferation of activities, efforts, practices, and those who advocate for them has resulted in blurred lines between proven practices, folk medicine, quackery and fads. Consider, for example, what are called holistic health interventions. The term "holistic" evokes sentiments of mysticism, comprehensiveness, creativity, and broad strategies to advance health. The term "health" in this context may not simply be the absence of disease but the presence of some higher state of being. But without an evidence-based definition of prevention in workforce policy, what practices would one count in the inventory of holistic health work? And which holistic practitioners would one consider essential to the prevention workforce?

Numerous Settings for Prevention Work

That's why a series of work settings would be appropriate to include in the count of the prevention workforce: public health agencies, school health programs, worksites, voluntary agencies providing population-based education, and, of course, the health and medical care system itself. But which workers to count when almost all of the workers in these settings have additional functions that might not meet the standard of "prevention"? With the limitations in access to personal health care in many communities, public health agencies have often developed extensive clinical services, treating and managing chronic conditions with little or no connection to the prevention of those same conditions.

In addition, community organizations have been successful in delivering population-based preventive services.[11] Within hospitals, many workers promote prevention—such as intensive care nurses' commitment to reinforcing anti-smoking messages— yet the bulk of their work is not prevention. Making a decision to count only those workers who spend the majority of their time on prevention will exclude a substantial portion of the full-time equivalents dedicated to prevention.

A "default position" often used for enumerating the prevention workforce is at least to count those who work for the health component of a government agency. But this too has limits. The health work of the Department of Defense and Veterans Administration, for example, is primarily curative, not prevention.

Multiple Types of Prevention Workers

"Prevention worker" is not a formal designation. A typical public health professional might be counted as a member of a certain educational group, such as a physician, as opposed to someone who is employed in a certain job title, such as a senior public health specialist, or someone who is fulfilling a specific public health function, such as a hospital epidemiologist who participates in developing public health policy to control chronic disease. Furthermore, much work is completed by people without widely-recognized health care credentials such as medical doctors or registered nurses. Licensed health professionals can be found through the boards that register them. The administrators, outreach workers, community educators, and neighborhood leaders may be difficult to find and count, but are essential elements of the prevention workforce infrastructure.

Conversely, the healing and helping professions may all count themselves as essential to the prevention effort. Ask any primary care physician, nurse, nurse practitioner, pharmacist, dentist, dental hygienist, environmentalist or sanitarian, health administrator, health educator, medical social worker, or community aide: each will likely state that the most important aspect of their work is promoting health and preventing disease. But ask them to quantify their prevention — enumerate the tasks and parcel out the time — and the answer is far less definitive.

The answer to the question of what work is prevention also depends on who is asked. Employers, educational institutions, and individual workers may have different answers to questions about the content, context, and professional mix for prevention work. Similarly, those who pay for care may draw the boundaries of prevention in different ways. Medicare, for example, has a narrow, statutory definition of preventive services. As such, prevention may be defined as some different component of care if that is what is needed to secure reimbursement, if payers do not cover preventive services.

Lack of Defined Competencies for Prevention

Education for prevention must, like all professional education, be based upon the competencies expected of the practitioner at the end of the training. Thus, an examination of the curriculum in nursing, medical, dental, and health schools should offer clues to counting the workforce. But more than other areas of health care, the prevention curricula is rife with euphemisms such as "integrated into practice in all settings" and "part of everything we do." This creates difficulties in accounting for the content, amount of training, and measurable competencies among other standards. Further, studies of professional education show that the prevention aspects of the training are regularly sacrificed at the altar of high-technology and the more dramatic interventions of modern healthcare.

WHAT NEEDS TO BE DONE?

The new challenges in disease prevention confront a public health system that struggles to address its old ones. Promoting prevention is hampered by lack of access, financing, prioritization, and accountability for the services that ought to be provided. The 1988 report on *The Future of Public Health* from the Institute of Medicine found this system to be in disarray, with little accountability for delivery of preventive services at the community level, and little coordination among the multiple sources of such preventive services when they were in fact available.[12] The IOM report made far-reaching recommendations for a distributed governmental infrastructure in "every community, no matter how small or remote," staffed by professionals and community workers trained and competent in the science of prevention. In re-visiting its recommendations in 2003, the IOM concluded: "In many ways, the public health system which was in disarray in 1988 remains in disarray today."[13]

During this period, however, new ideas on what constitutes essential public health and preventive services and how to organize them have emerged. Public health leaders have generally adopted a system of accountabilities for services under the categories of assessment, policy development, and assurance — developed by the Public Health Functions Work Group.[14] Public health system performance standards have been, with CDC support, developed, field-tested, and now widely applied. They provide communities with a metric by which they can assess the availability of preventive services and the competent workforce to advance them.

In *Who Will Keep the Public Healthy*, the IOM recommended steps to support education at all levels, to reconsider the positions and competencies for employing workers, to design new incentives for career development, and to develop a program of research that links worker education and effort to the outcomes of preventive efforts.[15] We draw from this work to identify five priority policy initiatives that would advance a 21st century disease prevention workforce.

Defining the Content and Benefits of Prevention

A strong, effective system for disease prevention will be created only when its value is recognized by U.S. leaders in politics, business, and health care. As such, a quantification of the true potential of prevention—what could be achieved if we really set our minds to it—is needed. We need to expand and extend the work of the U.S. Preventive Services Task Force and the National Commission on Prevention Priorities which assess the effectiveness of services and rank evidence-based preventive services on their health and cost impacts.[16]

This work should be done for community-based as well as clinically-oriented prevention, building on recommendations of CDC's Community Preventive Services Task Force. To do so, public health systems research should better assess what it is that workers contribute to the public health infrastructure and how that contribution advances the health of the public. Once we have a clear vision of the goals and the infrastructure to achieve them, we can then ask the workforce question properly: who would be needed to get that job done? Otherwise our workforce efforts will be, perforce, incremental at best. And our progress will be regularly thwarted by the more dramatic interventions to save lives from the diseases which could have been prevented.

To generate this type of vision, two courses of action should be pursued. First, a nationwide ongoing assessment of the state of the system and comprehensive plan should be developed. It is a mistake to rely solely on the IOM and other organizations to do periodic reviews on an issue that should be considered regularly as a continuous national priority. Second, public health system research funding should be significantly increased to provide the type of information needed to invest wisely in a prevention workforce. Over the last quarter century, an organized approach has led to a substantial body of health services research that facilitates understanding of the care system, informing policy makers in ways never previously possible. Public health systems research, similarly supported, would yield similar gains.

Training the Next Generation of Prevention Workers

Training the next generation of prevention workers, by definition, involves a broad array of workers and settings. As such, we recommend four distinct educational tracks for new workers. First, training should begin in primary and secondary schools, with health classes including public health content in all grade levels. At the secondary school level, public health sciences such as epidemiology could become elective courses for students with advanced standing. Integration of mathematics, history, sociology, and civics into case study courses or exercises that look at how societies have responded to

epidemics in the past, or how we might deal with a new disease, can provide exciting opportunities for small groups or whole classes. This could be promoted in several ways, such as Department of Education grants to schools, as a pre-requisite for schools receiving Federal funding for health programs, or as support for creative partnerships between health departments and school districts.

Second, public health courses should be available as electives in all post-secondary institutions, as recommended by the IOM. This would expose the next generation of college-educated adults to public health literacy. Many schools of public health have begun to explore this option, but could move more quickly with additional support to explore and test models in both associate degree and baccalaureate degree curricula. One area for meaningful investment would be educating administrators and accreditors of post-secondary institutions about the need for prevention and public health literacy and the benefits to be had from such programs.

Third, increased, direct support is needed for students choosing public health as a central career focus. The most common route to public health for students with undergraduate degrees is through a school or program in public health. These educational programs, however, can absorb a large influx of students interested in the practice of public health only if there is an increase in federal financing. Additional funds would support, for example, additional faculty prepared to teach public health as a practice discipline.

Support would allow for expansions of partnerships with public health agencies and organizations in which students can test their developing skills and be mentored by expert practitioners. Current research grant support for schools of public health does not typically allow funds to be used for this type of activity. The program dedicated to fund these changes, the Health Resources and Services Administration's Public Health Training Centers, is slated to end within a year. It should be continued and expanded, along with faculty support in the form of research and project funding parallel to that available to medical schools through the National Institutes of Health.

Fourth, in addition to the workforce development in schools of public health, public health and prevention training must be increased for the core health professions: medicine and nursing. All members of these two fields have opportunities to promote prevention in their daily work, and are often seen as community leaders on issues of health. Thus, it is critical that they receive a solid grounding in principles and practices of prevention.

Unfortunately, faculty in these professional schools often lack the needed level of expertise in public health and prevention. A faculty development program, with support for curriculum innovation, would make an enormous difference. The unique contributions of physicians who take the extra measure of training and examination to qualify as board-certified in the specialty of preventive medicine should not be overlooked in this inventory. Indeed, the Institute of Medicine is currently conducting a rigorous study of post-graduate education of physicians for public health careers because of the well-identified current and projected shortages in this area. The bodies accrediting schools of nursing and medicine should pay special attention to faculty qualifications for the teaching of prevention. Use of an internist to teach surgery, or a pediatric nurse to teach midwifery would not be tolerated; clear qualifications in prevention should be necessary to teach the subject.

Likewise, since these are expensive educational commitments for students, an expanded stipend, scholarship or loan forgiveness program for students electing a prevention career track would enable a larger number of interested students to make this choice a reality. Ideas to accomplish this include enhanced funding for preventive medicine residencies for physicians by expanded use of Medicare Graduate Medical Education funding and support for students through the Title VII health professions education funds.

Training this Generation of Prevention Workers

Despite their importance, it is not possible to change a field of practice by considering only the new generation of workers. The vast majority of workers at any point in time are those who are already employed in the field. A meaningful lifetime learning commitment entered into jointly by employers and the employed is essential. Too many in public health believe that, when budgets are tight, training is the first thing to be cut. Failure to facilitate the continuing education of the workforce is a sign of short-sightedness on the part of organizational leaders and policy-makers. Especially in a field in which the science is rapidly evolving, a reasonable proportion of every budget (perhaps as much as 5% or 10%) should be set aside for educational and professional developmental opportunities. This could be part of Federal grant requirements or, alternatively, a Federal continuing-education fund could be established.

At the professional level, academic reform is needed as well. To sustain lifetime learning, the educational system needs to prioritize. Continuing education and on-the-job training programs have never enjoyed the status of degree programs. And promotion and tenure in academic centers tend to give faculty members credit for the more “academic” pursuits — particularly prestigious research grants and peer-reviewed publication — rather than hours of community service in the training trenches. Workers are often eager to learn more, but the courses and learning opportunities are not readily available, or are not taught by the most senior or knowledgeable academicians.

Academic reform is also needed to create lifetime learning strategies for field-based public health workers, based on competencies. Several examples now exist that can tie lifetime learning to interim "certificates" of competence short of a degree. Such course work should also be allowed to apply toward to a masters' degree in public health should the professional subsequently seek enrollment in such a program. In addition, the Public Health Foundation created a web-based clearinghouse that helps public health professionals find continuing education classes at the local, state, national, and international levels.[17] Public health workers can access a nationwide database for on-site or distance-learning courses and create an individual learning transcript to track competency-based learning.

Beyond the professional workforce, continuing education is needed for the set of support workers, outreach workers, and part-time contributors to prevention efforts. The proposed ongoing educational program must include these individuals who, for the most part, will need full support (both tuition and paid time) for participation. This investment can pay off, however, if it is tied to a career ladder opportunity in which today's community health aide can be tomorrow's school health worker with a master's degree in public health. This will not come cheaply. The twenty CDC Centers for Health Promotion cost a million dollars each for twenty years to achieve their vision of a dynamic research community able to demonstrate effective strategies for supporting health in the community.

Creating Prevention Certification

A promising approach to improving quality and broadening the prevention work force is national certification. Most areas of specialization within health (and other key professional sectors, such as education) have a system of acknowledging those who have mastered the complexities of the specialty and are ready to put it to work. This takes many forms within prevention: the medical specialty board process, advanced certification in nursing, registration for sanitarians, and a host of other opportunities.

There has never been a common certification program available for the remainder of those who end up in a public health or prevention career track, meaning that individuals can claim expertise based on experience or desire, with no standard way to separate the truly competent from the wishful thinkers. For these reasons, concern for the quality and competitiveness of public health workers has led to a call for an increase in standards and education.[18]

A newly established National Board of Public Health Examiners is beginning to work toward a national certification examination, starting with graduates of schools and programs of public health. The board is largely modeled upon the National Board of Medical Examiners, and has in fact contracted with the NBME to create its examination. Testing will cover the five core areas taught in schools and programs of public health: health services administration, biostatistics, epidemiology, behavioral sciences/health education, and environmental health statistics, as they are influenced by cross-cutting issues such as human biology and cultural competence.

The first examination is scheduled to be offered in the summer of 2008.[19] Consequently, its potential is not yet known, nor is it entirely clear how this general certification will intersect with existing certifications for health educators, sanitarians, or preventive medicine physicians. If proven effective, a certification program could extend the reach of the prevention workforce in sites like schools and office buildings. Large companies, for example, could be encouraged or required to have human resources staff certified to provide on-site preventive services. Pharmacies could use certified personnel to provide immunizations or counseling.

Making Jobs in Prevention Sustainable

As part of achieving the goal of an effective prevention system, planning is needed to determine exactly which jobs require prevention competencies and what type or level of worker should be recruited into those positions. With the governmental public health agencies forming the backbone of the prevention system, it is essential that those hired into public health employment have the right competencies, be employed at competitive salary levels, see opportunities for advancement, and be encouraged to grow personally and professionally.

However recent work at the University of Pittsburg suggests that the current civil service employment systems are far from prepared to recruit, employ, and retain workers competent to support prevention.[20] Consider the sustainability of a public health prevention professional career. In the private sector, career mobility includes portability of benefits including accumulation of pension resources. In a public health career, professional growth may come at a cost. A prevention specialist who moves from the local to state to the federal level, with each promotion and job succession, stands to lose any accumulated pensions.

Moreover, while public employment has made great strides in equal employment opportunities, its workforce is not always representative of the communities it serves, despite research regularly demonstrating how important this is for successful prevention efforts.[21] One reason for limited public support of public health and prevention programs may be the inability of communities to identify with the workers employed therein.

A range of new options for expanding and sustaining the workforce should be developed, tested, and implemented. This could include different job descriptions, hiring processes, worker assessments, career ladders, job rotations, and continuing education. This may be best accomplished through creative partnerships among civil service systems, state personnel boards, successful private health employers, and representatives of major groups of public health and prevention workers. As with other areas, challenge grants or ongoing external support might be necessary to begin these types of partnerships. This might take the form of support to governmental units willing to re-write employment specifications in civil service to be competency-based, or grants to private health employers interested in experimenting with new prevention job titles and descriptions within their personnel systems.

Lastly, the idea of a national public health services corps should be explored. The existing National Health Service Corps has greatly extended primary care services to underserved areas of the country, both urban and rural. In return for support during their professional education or forgiveness of educational loans, physicians, nurses, dentists, and midwives have been placed in community health centers, Indian Health Service hospitals, and medical practices previously unable to meet care demands.

Even though there is turnover, and the program has not been perfect, it has made the difference in available care for hundreds of thousands of individuals. A similar program to support the education of core public health workers, including public health physicians and nurses, epidemiologists and sanitarians, health educators and outreach workers, in return for service in areas with limited prevention services would be appropriate.

A VISION FOR THE PREVENTION WORKFORCE: THE WAY FORWARD

The health system in the United States may best be characterized by its paradoxes. It spends the most in the world on health care, yet the health of its population lags far behind that of other nations with similar economies. It increasingly values health but invests less in research on how to preserve it than on how to restore health once it is lost. It spends years training doctors to cure diseases but virtually no time teaching them to prevent them. And while prevention is ultimately a responsibility of all individuals, the nation lacks a strong prevention workforce policy.

The prevention gap is partly a symptom of the larger neglect of public health. Despite its importance, especially with the new threats of this century, and clarion calls to end its disarray, the U.S. still has not strengthened its public health infrastructure, a weakness that has a serious impact across the health system. The gap exists in part because of the challenges in defining the terms "health" and "prevention," identifying who provides prevention, where, and how, as well as measuring both the inputs and outputs of the prevention workforce.

These problems can be solved through an ambitious, properly-focused, and adequately-funded effort at building a prevention workforce. The first step in this effort is investing in the research to quantify its benefits and identify what works. This, then, can be used to assure the proper focus in training a new prevention workforce. Such training must occur at multiple levels: elementary and secondary schools, colleges, schools of public health, and health professions programs.

In addition to training the next generation of workers, we need to continue to educate the present generation by giving current prevention providers the latest, most effective tools via continuing education with an emphasis on lifelong learning. For both continuing and new workers, prevention certification should be explored. By standardizing education and competencies, both the quality and quantity of preventive services could be increased. For example, one creative certification effort could focus on human resource managers in companies to promote prevention in the workplace. Lastly, favorable employment conditions are necessary to foster a large, strong, and sustainable prevention workforce to meet the challenges of the 21st century.

These specific policies reflect a set of building blocks for a larger preventive and public health system. These actions are for policy makers, leaders in the field, payers of services, and employers of the workforce. They include:

- Build the science: Produce evidence to support and sustain an emphasis on prevention and public health systems;
- Build the field: Set the parameters and metrics of prevention; define and support the infrastructure within which prevention is practiced;
- Build the workforce: Agree on accountabilities, including evidentiary standards; project need not upon what we are now doing, but what we should be doing; and hold the peripheral practitioners to the same standards as the mainstream practitioners (and vice-versa);
- Build to sustain the workforce: Agree on sustainable partnerships for professional and continuing education, career ladders, and opportunities to move across organizations without penalty;
- Build effective demand: Help the consumer understand and demand the evidence-based interventions for prevention.

The prevention workforce is the human dimension — and the true power — of a system to employ all proven tools to avert disease. Correctly wielding these tools and keeping them sharp and updated requires trained, competent, and properly deployed workers. And this, in turn, demands public support and political will. The clear value to society will be not solely preventing or containing the epidemics but making health improvements in this century which surpass those of the last.

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