COMMENTARY

Retooling the Uniformed US Public Health Service for the 21st Century

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THE HISTORY OF PUBLIC HEALTH IN THE UNITED STATES is marked by great advances interspersed with periods of benign neglect—eras of maintaining the status quo ended by a significant epidemiological event. Cholera, tuberculosis, plague, polio, and malaria have catalyzed significant advances in public health. These problems are now largely banished from the US landscape, but not from the global perspective. In developing countries, millions of individuals die annually from largely preventable or treatable diseases. Some of these diseases could be transported to developed countries in a new form.

New diseases are emerging at an unprecedented rate, prompting the World Health Organization to identify this issue as a global threat.[1] Even as medicine continues to find effective treatments for specific diseases, nature continues to adapt and cause illness with Legionnaire disease, Lyme disease, AIDS, *Hantavirus*, severe acute respiratory syndrome (SARS), and the Ebola and Marburg viruses, among others. Multiple drug-resistant tuberculosis and methicillin-resistant *Staphylococcus aureus* organisms are but 2 recent examples of evolving infections.

Communicable disease does not necessarily follow geographical or political boundaries. SARS demonstrated how swiftly a local aberration can become a global crisis. The 2009 influenza A(H1N1) virus took just 2 months to establish pandemic presence. Rapid global travel, international movement of goods, and increasing interdependence open the door for future pandemics. Despite this threat, the US public health infrastructure remains underfunded, disjointed, and stretched thin.[2]

A rapidly spreading infectious pathogen with a significant case-fatality rate would overwhelm local authorities and preclude effective national level coordination for prevention, treatment, and recovery. Every projection of a major, novel infectious disease outbreak, pandemic, or sizable bioterrorism attack yields the same conclusion—public health and direct care would be rapidly overwhelmed. Unprecedented operational coordination and information sharing will be the order of the day among organizations that have little experience with such activity. In addition, there are significant and increasing staffing shortages in public health; from 1980 to 2000, the number of individuals working in public health decreased by 28%.[3] If the trend continues, when increased public health presence and coordination will be most important, the resources to accomplish this would be least available.

Some argue the current system is effective, citing recent experience with the 2009 influenza A(H1N1) virus and the effective response to SARS. A more virulent influenza strain or delays in identifying new and suspected SARS cases in the Guangdong province, China, arguably would have produced a very different outcome. The structure of public health, particularly the US Public Health Service (PHS) Commissioned Corps, further limits capabilities to detect and combat disease on a global basis. Much of the current international investigative capacity for infectious disease lies with the military. These resources are highly capable but have the imprimatur of an institution viewed with suspicion in regions in which novel diseases may emerge. This is comparable with aligning the health department with law enforcement; it inherently limits acceptance of the organization and access to information.[4] Domestically, there is significant demand for PHS support across federal agencies. The US Surgeon General fields myriad requests for PHS presence, fulfillment of which would require nearly 5 times the available force. At the state and local levels, multiple key positions are funded by grants, filling an immediate need but forfeiting any sense of continuity or career progression in the process.

In 1938, de Kruif[5] likened the disease threat to that of foreign armies and navies, advocating that such a threat against the security of the nation demanded nothing less than a coordinated, substantial federal effort similar to the military. This concept is even more applicable today. The operational capabilities of public health at the state and local levels diminish under the burden of funding constraints and perceived lack of need (ie, functions are curtailed because they have not been needed), causing a broad variance in capabilities across the United States.

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The model for increased standardization and effective response already exists, as de Kruif[5] observed in the organization of and relationship between the regular, standing military and the reserve components, particularly the National Guard. Inasmuch as the defense of the United States is allocated between a strong federal presence and a state-based militia, the defense of the nation against communicable and infectious diseases also should be so structured. To this end, and to maximize the PHS's effectiveness, the following items are proposed.

First, expand the uniformed PHS from its current 6600 to a number commensurate with the demand for integrated, global public health services. Modify Title 42 of the US Code[6] to allow both active and reserve components, the latter subject to presidential mobilization in the event of a major health crisis.

Second, include in the uniformed PHS the integration, in a reserve status, of certain state and territory public health directors, epidemiologists, and reference laboratory staff, thereby creating recognized and desirable career paths based on a larger population foundation supported by scholarship and loan repayment programs. This would foster regular and standardized training across all jurisdictions and disciplines.

Third, expand the number in the PHS of administrators, planners, and ancillary specialists, such as veterinarians, sanitarians, mental health clinicians, industrial hygienists, and experts in special needs populations.

Fourth, create an enlisted corps to function like that of the military medical community, providing critical ancillary support for routine and emergency public health operations.

Fifth, embed PHS personnel more broadly in state, territory, and large city agencies, in additional federal agencies, such as the Federal Emergency Management Agency, and more personnel throughout the Department of Defense (similar to active duty military personnel assigned to reserve component units and at state National Guard headquarters). This would foster evolution of a common language, enhanced career path and development, and cross-fertilization among agencies.

Sixth, assign a PHS officer to each embassy to serve US interests and act as a health liaison, disease surveillance coordinator, and scientific representative to the World Health Organization, local government, and health officials.

Seventh, consider elevating the surgeon general to the equal of other service chiefs and on the level of an assistant secretary. This position should be independent, reporting directly to the secretary of the Department of Health and Human Services and the president, similar to the reporting relationships of military combatant commanders under the Goldwater-Nichols Department of Defense Reorganization Act of 1986.[7]

Eighth, institute common training venues and curricula, coordinated with the Uniformed Services University of the Health Sciences and across all federal medical communities, consistent with Homeland Security Presidential Directive 21.[8]

The health threats facing the United States are significant, but not unprecedented. According to Shaw, "We learn from history that we learn nothing from history."[9] The actions proposed have a price tag, but one that pales in comparison with the eventual cost of neglect of the public health function. A renewed and revised PHS would not supplant the present system or local and state capabilities and autonomy. Instead, the renewed PHS would provide multijurisdictional coordination and professional standards.

History reveals a significant health crisis is inevitable. It is axiomatic that prevention is more effective, economical, and desirable than treatment. Prevention can be practiced in the form of preparedness or await the alternative, another landmark report on what went wrong. The health of the United States cannot be separated from that of its people. While not a military force, the uniformed PHS is engaged in a battle of its own against disease, an adversary that is both global and timeless. Nothing less than a comprehensive approach can ensure the optimal outcome from the next public health crisis. The time to act is now.

Financial Disclosures: None reported.
Additional Contributions: We express our gratitude to our colleague, Stephen O. Cunnion, MD, PhD, MPH, senior fellow and medical director of the Center for Health Policy and Preparedness, Potomac Institute for Policy Studies, whose core idea served as the foundation for this work and who provided invaluable assistance during the writing of this piece. Dr Cunnion was not financially compensated for his work on this Commentary.

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