Executive Perspective

World AIDS Day will be celebrated on December 1. The World AIDS Campaign sponsors this day, which promotes an international commitment to fighting AIDS through policy, practice, and resource allocation. Dr. Ronald Valdiserri, Deputy Assistant Secretary for Health, Infectious Diseases, U.S. Department of Health and Human Services, is a nationally recognized public health physician who has worked tirelessly to promote sound public health approaches to HIV/AIDS. In this column, Dr. Valdiserri provides insight into the challenges of achieving an AIDS-free generation. For more information on World AIDS Day, please visit http://www.worldaidscampaign.org/world-aids-day.

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ACHIEVING AN AIDS-FREE GENERATION: IT'S THE DETAILS THAT MATTER

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The commemoration of World AIDS Day on December 1, 2012, provides an opportunity to remember those who have been lost to the epidemic of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and an occasion to honor the individuals and communities that continue to work in pursuit of its eventual end. In the speeches and remarks delivered at multiple ceremonies, events, and observances, we are certain to hear about the phenomenal scientific progress that humankind has brought to bear against this brutal viral foe—scientific advances so profound that we have actually begun to talk, in practical terms, about achieving an "AIDS-free generation." We have every reason to anticipate a generation without the burden of AIDS as well as celebrate our hard-won progress in the fight against this disease—a fight that has returned spectacular dividends in terms of improved longevity, reduced mortality, and substantial hope where once there was only fear and despair.

But as we reflect on how far we've come since those early days of the epidemic, taking pride in our achievements and marveling at the sophistication of the scientific enterprise that has added such amazing tools to our AIDS armamentarium, we would do well to keep in mind the following caution. No matter the elegance of the controlled trial, the statistical significance of the results, or the superiority of the science, we must confront this inevitable reality: We will never be able to take full advantage of our progress in HIV clinical and prevention science until we develop and sustain the human, organizational, and structural capacities necessary to implement these new scientific breakthroughs. If we fail to attend to the "on-the-ground" details of implementation, we risk dissipating the promise of new drugs, novel therapies, and enhanced interventions that could, in fact, lead us to an AIDS-free generation.

A recent Institute of Medicine report on the integration of primary care and public health highlighted five key principles for successful integration: (*1*) focus on improving population health, (*2*) engage the community in defining and addressing health needs, (*3*) align leadership to foster continuity and manage change, (*4*) build infrastructure for enduring value and impact, and (*5*) actively share and use data to achieve health goals.[1] These broad principles were not identified in the context of a categorical disease issue such as HIV/AIDS. Instead, they were developed in response to the cross-cutting question, "How can the two major sectors of our health-care system better align their efforts and resources to improve health outcomes?" But a similar question can be posed in an AIDS-specific context: "What must we do, across all sectors of society, to promote the uptake and integration of proven and emerging research findings into existing systems of prevention and care in such a way that we can reduce new HIV infections, improve access to quality HIV care, and eliminate the existing disparities in health outcomes that have been well documented in the American HIV/AIDS epidemic?"[2]

Admittedly, this is not a new question. In the realms of both HIV prevention[3] and treatment,[4] analysts have observed that the adoption of new scientific findings and other technical innovations is usually not immediate, nor is it necessarily thorough. More typically, the uptake of scientific advances into policy and practice is influenced by myriad factors: biological, social, organizational, environmental, and contextual. And any

one of these factors—sometimes several—can exert a profound impact on implementation.[5] That is why the study of how best to integrate research findings and evidence-based interventions into health-care policy and practice—namely, implementation science—is being recognized more and more as a critical element of our societal response to the HIV/AIDS epidemic.[6]

What must we do to achieve a generation free of AIDS? We must begin by accepting the premise that if we support scientific inquiry *without* attending to the details of downstream implementation, we will fall short of our goal. The five principles of successful integration, outlined previously, can be repurposed so as to emphasize this bedrock tenet.

1. ***Address the social determinants that fuel the HIV/AIDS epidemic.*** What worth has a new therapy, no matter how effectively it halts viral replication, if the people most in need of treatment are unable to remain adherent because of unstable housing or other chaotic life circumstances?
2. ***Engage communities in finding solutions to HIV/AIDS.*** If we accept the fundamental premise that health is much more than the absence of disease, then we must commit to engaging communities in defining health as they see it and supporting their efforts, along with technical experts, to design and deliver successful HIV prevention and care programs.
3. ***Align leadership across various sectors to overcome HIV/AIDS.*** We cannot successfully address HIV/AIDS in our nation if we persist in treating it solely as a medical or public health problem. The complexity of this challenge calls for everyone to be involved: educators, parents, ministers, entrepreneurs, and entertainers.
4. ***Engineer public health and medical systems so they can incorporate emerging HIV research findings.*** Stated more plainly, we must build the infrastructure necessary to deliver the product! Selling a product, no matter how worthy, doesn't begin and end with its manufacture. The same can be said about actively promoting scientific advances. Our systems, processes, and workforce must be actively prepared to incorporate and support emerging findings—otherwise, the new science lies fallow.
5. ***Anticipate and adapt to changes in the epidemic.*** Our response to HIV/AIDS must be dynamic. It's not just science that evolves over time. Changes in demographics, economics, social norms, and practices—even the virus itself—can influence the trajectory of HIV prevention and care programs. Anticipating these trends requires that we collect, share, and use data proactively.

Hyperbole aside, we are closer than ever before to seeing an AIDS-free generation. Certainly, there are gaps in our knowledge base—not the least of which is the lack of a curative treatment or a vaccine to prevent HIV infection. But the knowledge and tools we do have at hand to curb the epidemic are formidable.[7] And we can make a difference. That is, if we are willing to pay attention to the details of implementation.

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