



TETRADYN

**Applied Bio Cyber Sciences
in BioThreat Protection, Monitoring,
& Emergency Response**

Here are excerpts from a major CDC report that validate and in fact recommend precisely TETRADYN's CUBIT¹ research, architecture, technology and products (including CRAIDO², VSRB³, and MADIT⁴

I can't think of much better words than from the NBAS which consists of many recognized experts in public health, epidemiology, weaponized and natural biothreats, and general medicine

Highlighted in bold and color are texts that specifically match up with and support what TETRADYN provides TODAY.

Improving the Nation's Ability to Detect and Respond to 21st Century Urgent Health Threats: First Report of the National Biosurveillance Advisory Subcommittee

**Report to the Advisory Committee to the Director, CDC
April 2009**

April 30, 2009
Eduardo Sanchez, M.D., M.P.H., F.A.A.F.P.
Chairman
Advisory Committee to the Director, CDC
1600 Clifton Road NE
Atlanta, GA 30030

Dear Dr. Chairman,
On behalf of the National Biosurveillance Advisory Subcommittee (NBAS) and in keeping with our mandate to ensure that the federal government is enhancing state and local government public health surveillance capability, I am pleased to submit the report *Improving the Nation's Ability to Detect and Respond to 21st Century Urgent Health Threats*. The report provides recommendations for action that describe how the United States could deploy people and technologies at all levels of government to improve the collection, flow and interpretation of data

¹ Coordinated Unified Biothreat Identification and Treatment

² Community Rapid Response for Infectious Disease Outbreaks

³ Virtual Sample Repository Bank

⁴ Mutation Anomaly Detection, Identification and Tracking

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in a timely way as a means of preventing and mitigating threats to the health of communities. In this report, NBAS identifies a matter of great importance to U.S. national security, namely, the ability to use *biosurveillance capabilities* to detect and respond effectively to public health emergencies of national significance. Effective biosurveillance is essential to the management of catastrophic health events; it is also essential to routine public health practice and disaster response.

This report is the culmination of quick work in fact-finding, consultation, and deliberation by the Committee. NBAS is grateful to the many individuals who shared their knowledge and perspective with us in the development of this report.

We appreciate the opportunity to address this important area and hope that our deliberations and recommendations will be helpful to you and the incoming leadership in the new administration.

Sincerely,

Larry Brilliant, MD, MPH

Chair, National Biosurveillance Advisory Subcommittee

Recommendations

How We Can Better Recognize Public Health Hazards, Manage Crises, and Respond to Disasters

The Subcommittee recommends engaging the leadership of President Obama's Administration to embrace and establish a well-functioning and cost-efficient national biosurveillance capacity.

The following high-level, cross-cutting recommendations should be considered by the newly appointed Cabinet officials. As part of the work of the NBAS in 2009, additional, more detailed recommendations will be generated and published for review by the appropriate agencies and parties.

1. The Executive Branch must define the strategic goals and priorities of federal investments in biosurveillance activities and technologies, implement a plan to achieve, fund and periodically assess progress toward these goals. To accomplish this, the White House should establish an Interagency Biosurveillance Coordination Committee ("the Committee").

The Committee should be established by the White House and chaired by a representative from the Executive Office of the President (EOP), perhaps from the National Security Council or the Office of Science and Technology, and should include representatives from all federal agencies with a substantive stake in biosurveillance issues. Among federal agencies and departments, the ones that should be represented, but are not limited to the following: Health and Human Services/Assistant Secretary for Preparedness and Response (HHS/ASPR), National Institute of Allergy and Infectious Diseases (NIAID), Centers for Disease Control and Prevention (CDC), Food and Drug Agency (FDA), Department of Homeland Security (DHS), U.S. Department of Agriculture (USDA), Department of Defense (DOD), Department of Veterans Affairs (VA), Office of the Director of National Intelligence (DNI).

Note: TETRADYN has specific positive recommendations from such persons as Dr. Anthony Fauci (NIH), Dr. Nancy Cox (CDC), Dr. Martin Meltzer (CDC), Dr. Thomas Cellucci (DHS), and quite a few others in the intelligence, health, defense, and security administrations.

The Committee should define the strategic goals and priorities of the National

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Biosurveillance Enterprise, **particularly in the context of detecting and responding to catastrophic health events, and, in collaboration with federal, state and local health officials, clearly delineate the specific biosurveillance responsibilities of particular federal and state agencies or parties.**

Note: this is precisely CUBIT (CRAIDO) and Nomad Eyes as the communication architecture for precisely this.

The Committee should carefully consider the critical roles that state and local health agencies serve in contributing to the National Biosurveillance Enterprise and assess whether the current federal and state allocation of public health resources is adequate to sustain a **viable Enterprise view of the national security threats the country confronts** and how a more sustainable and coherent approach might be structured and funded.

The Committee should ensure that federally-funded biosurveillance programs are subject to **objective performance assessments**. The effectiveness of different biosurveillance approaches should be examined in light of **actual experiences, exercises and simulations**. This information should be shared widely in government and the private sector.

Note: CUBIT and specifically CRAIDO are based upon more than ten years of academic, corporate and government research including but not limited to simulations.

To assess the costs, approaches, and effectiveness of biosurveillance systems, the biosurveillance program itself must be well defined with clear criteria to evaluate activities core to achieving the program strategy, goals and objectives. To that end, the Committee should recommend that Congress assign a budget activity line for all federally-appropriated biosurveillance activities. **Performance measurement and evaluation of biosurveillance appropriations could then be tracked** and reported to the Office of Management and Budget (OMB). The Committee should recommend that OMB conduct a cross-agency budget analysis and review of biosurveillance programs to ensure that critical programs are adequately funded, to **eliminate redundant activities and to ensure that top priorities are being met.**

Note: TETRADYN's architectures and products were specifically designed to provide such self-tracking, self-accountability, and strong fault-tolerance, even to the level of "fail-safe" features.

The Committee should consider initiating and/or leading an interagency **review of food safety biosurveillance that meaningfully engages the appropriate agencies and private sector actors. Food safety is exceedingly complex scientifically, organizationally and politically and involves issues of human, animal and plant health.** The Subcommittee recognizes that food safety requires urgent review and improvement.

Note: this is precisely the TETRADYN method, process, and solution-set for food safety!

2. The U.S. National Biosurveillance Enterprise must include global health threats in its purview and scope

In today's "flat" and richly interconnected world, the United States has compelling security, economic, development and humanitarian interests in global health security. Improving international biosurveillance capabilities should be a priority for U.S. national and homeland security and for U.S. foreign policy. Moreover, the revised International Health Regulations **obligate the United States to participate in global disease surveillance activities.**

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Note: TETRADYN's method, process, and solution-set for biodefense and public health (pandemic prevention and abatement) is precisely favored by specific ranking officials in: China, Russia, Canada, Mexico, Colombia, and through the UN including WHO, UNESCO and ISTIC.

The EOP representative to the Interagency Biosurveillance Coordination Committee should lead coordination of U.S. government policy on global biosurveillance, along with a lead federal agency designated by the President. The designated lead agency would coordinate global biosurveillance policy and programs, and should improve **communication across U.S. federal agencies and with key donor organizations.**

Note: Experts within the consortium, from the recognized top influenza and virology research centers including CDC, have stated the precise benefits of CRAIDO and VSRB in this respect.

The EOP representative to the Interagency Biosurveillance Coordination Committee along with the lead agency on global health should craft, coordinate and implement **multilateral initiatives that strengthen core capacities in global biosurveillance and respond to public health emergencies in order to support the effective and sustainable implementation of the International Health Regulations of 2005.**

Note: These regulations and guidelines, plus others from WHO, are what governed the design and implementation of everything within the CUBIT Suite and Ensemble.

3. The federal government must make a sustained commitment toward ensuring adequate funding to hire and retain highly competent personnel to run biosurveillance programs at all levels of government.

Federal public health preparedness funding allocated to state and local health departments and schools of public health beginning in 2002 has greatly enhanced biosurveillance capacity for both emergencies and for important non-emergency public health conditions. As a result of this funding, a trained corps of epidemiologists and laboratory personnel has been created that is our current biosurveillance capacity. **It is critical to maintain rather than allow further erosion of the public health preparedness funding that supports this added capacity since 2002** until the objectives and funding needs of a more integrated National Biosurveillance Enterprise have been defined.

National leadership should undertake a sustained effort to **recruit, hire and retain highly competent and properly trained personnel to plan, evaluate, design and execute biosurveillance programs at all levels** of government. Consideration should be given to establishing tuition-for-service programs and to attracting technical experts to government with Intergovernmental Personnel Assignments (IPAs) and other mechanisms.

To improve interagency cooperation and data sharing, and to enrich civil servants' understanding of the resources available across the government, agencies that are a part of the National Biosurveillance Information System (NBIS) should establish career tracks that ensure that appropriately skilled and senior civil servants perform interagency service and participation in NBIS. Individuals who rotate through the NBIS should see the assignment as a growth opportunity rather than as a diversion from their career path.

4. Government investments in electronic health records and electronic laboratory data should be leveraged to improve how they serve biosurveillance and public health missions. Note: The VSRB is a prime example of this, and CRAIDO is already pre-designed to tie in with Electronic Health Records at individual, local, state and federal levels.

The President has initiated an intense effort to establish electronic health records (EHRs) nationwide as a key component of health reform and of economic recovery investments. The American Recovery and Reinvestment Act (H.R. 1) of 2009 has allocated \$2 billion for development of a nationwide health information technology infrastructure that improves health care quality and efficiency, but also "improves public health activities and facilitates the early identification and rapid response to public health threats and emergencies, including bioterror events and infectious disease outbreaks." Priorities for State grants under this section should include the **establishment of electronic laboratory reporting to public health agencies and nationwide electronic death surveillance. Establishing these surveillance capacities would greatly improve situational awareness during large-scale public health emergencies and routine public health practice.**

Note: this is precisely, exactly what was designed into CRAIDO and the rest of CUBIT functions – and the reason for doing so is exactly what is described above.

The Act also provides for approximately \$30 billion dollars in Medicare and Medicaid **incentives to providers who demonstrate "meaningful use" of qualified EHR systems. Clinical care data provide the highest quality, most specific inputs for biosurveillance of populations, but most commercial EHRs are not oriented toward data sharing between public health agencies and clinical care providers. The criteria for qualifying EHRs and meaningful use must include functionality and use that improves prevention by enabling bidirectional communication between clinicians and public health officials.**

Note: TETRADYN's technology and products are precisely so oriented!

Widespread use of increasingly **electronic clinical data for public purposes (whether in research, quality measurement, or biosurveillance)** will require a policy foundation and sound network architecture for information sharing that can earn and keep the public's trust. This framework would also help to define and facilitate data sharing among federal, state, and local officials. The federal government must lead an **open and transparent process** to develop these policies, or endorse an existing set of principles such as the **Connecting for Health Common Framework.**

Note: CUBIT is precisely doing and providing this, designed for this, and is the most mature solution meeting these needs.

5. The federal government must make strategic investments in new technologies to strengthen U.S. biosurveillance capabilities.

The National Biosurveillance Enterprise should **support and encourage innovative ideas, technologies and applications. Next generation biosurveillance technologies, including genomics-based and digital innovations** could transform **the way we recognize, assess, communicate and respond to risks to individual and population health.**

Note: Right on the money" – CUBIT as a whole, the whole Suite, but specifically CRAIDO, VSRB", MADIT, and Nomad Eyes, remembering that these are all components of the Same Whole.

Innovation in biosurveillance technologies and approaches would be furthered by continuous benchmarking of performance against specific objectives such as **earliest possible detection of pathogen or disease events; rapid agent identification with potential to obtain forensic data; prediction and projections of temporal-spatial progression of disease outbreaks and bioterror attacks; producing actionable information; advancing situational awareness after an event, etc.**

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Note: this is basically a definition and description of what we have designed, architected, and are able to Provide.

Many issues related to data sharing, intellectual property and federal contracting and regulations have high impact on the likelihood, cost and ease of designing innovative technology platforms and approaches to biosurveillance. The Biosurveillance Coordinating Committee should be cognizant of potential barriers to innovation and suggest efforts to minimize or remove them.

Note: TETRADYN believes that it has mastered the approach to solving these issues, beginning with its own core technology, intellectual property, and contracting methods.

The federal government should make strategic investments in efforts to develop rapid, point-of-care clinical diagnostic tests that can be used quickly to identify ill persons and to help isolate contagious persons from those who are well. Clinical diagnostic tests could have important strategic value in managing an epidemic, particularly if there were shortages of vital medicines or supplies.

Note: this is CRAIDO specifically, and why so many people connected with CDC, NIH, FDA, and NBAS have said so many positive things about our work, our capability, our team, our technologies.

Contact data for TETRADYN and the CUBIT Working Group:
<http://tetradyn.com/contact.php>

A good starting point: <http://tetradyn.com/h1n1-plus-healthcare>

Thank you and let's all work Together and overcome all the negativity from fear, avarice, and inertia. We have too much to gain by working together, as partners, and too much to lose by following separatism and divisiveness.

Sincerely,
Dr. Martin Joseph Dudziak

October 26, 2009