TETRADYN

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

A Brief Comment on H1N1 / H5N1 and other Influenza Mutations, and Practical Medical Approaches Available for Mitigation of the Global Pandemic

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Introduction

The prospects are high for multiple variations of high-lethality influenza and complications caused by reductions in patient immune system resistance coupled with other viral, bacterial, fungal or even parasitical infections that target the cardiopulmonary and gastrointestinal systems. These considerations were foreseen as being considerable threats to public health for years if not decades, and they have been voiced by many experts in virology, immunology, respiratory medicine, epidemiology and general public health for years. Our group, composed of one small research and development company plus associates and colleagues in both the private and public sectors, both academic, governmental and industrial, have been nearly unanimous in expressing the need for action to address pre-emptively the risks, and to take steps for effective preventive treatment that is not merely a matter of papers, reports, and recommendations, nor nearly-blind efforts at producing vaccines without solid knowledge of the targets, but instead a comprehensive and systematic, organized, integrated process that addresses early warning prediction, sensing, detection, diagnostics, and therapeutic as well as public response and informatics.
Other papers and documents present what has been developed and which has been ready for final implementation and deployment long before the first outset of a new influenza strain, H1N1, and certainly before that strain evolved into first a regional epidemic and then a global pandemic.

The reader is directed to those other materials and to the scientific research and clinical papers of many dedicated, objective, and acutely rational scientists and physicians. We would like to emphasize that everything coming from TETRADYN and the CUBIT Working Group (CWG) is based upon a large and solid body of evidence that begins with theory and model but extends definitively into experimental and clinical data. The fact that so much research and so much data has been produced by so many diverse and (physically, organizationally, economically, politically) unrelated individuals, teams and centers does stand for strong evidence that there is a solid foundation for statements and claims, and for the demand for action by both the general public and by institutions and agencies that have been created for the purpose of serving that public, the community, the nation, the civilization.

Readers are directed for more information in a few particular online resources:

http://tetradyn.com/practical-guide-h1n1-prevention-care.pdf (or .doc)
http://chips.tetradyn.net
http://tetradyn.com/h1n1-plus-healthcare
(mirror sites at http://h1n1.tetradyn.com, http://h1n1.nomadeyes.com, http://h1n1.instinnovstudy.org)
http://tetradyn.com/surveys

Appendix A presents one article, published on 25.Nov.2009, and it is exemplary because it “hits the nail on the head” very well about the scope of the emerging global problem of H1N1-related mutations and complications. In additional and for some weeks prior, there have been reports of somewhat

similar and also slightly different but also high-lethality outbreaks of new influenza variations and influenza complexes (with paraviral or bacterial co-infections) in Ukraine, Belarus, Bulgaria, Romania, Norway, Afghanistan and other countries.

The Risks from Complex and Multi-variate Mutations

With H1N1 alone, if it can be considered as such, the nature of this particular influenza virus appears to be that it is more readily or easily subject to mutations. At the present, definitive information is scarce and there appears to be bottlenecks or other information gaps between institutions such as WHO and the US CDC for presenting definitive information. This is why CUBIT and specifically CRAIDO were designed, and at the urging and request of many specialists including individuals at CDC.

However, the fact is that we now have a global situation where there may be multiple and different mutations that have occurred and are spreading through the population, first in localized regions, but then, inevitably, worldwide.

There is not possibility of geographic containment at the present, nor was there ever any such possibility, nor can there be, without actions that would amount to massive measures of quarantine and martial law, causing grave social unrest as well as virtual economic collapse.

An H1N1-H5N1 mutation or class of such mutations is particularly dangerous and appears to have occurred in multiple part of the world. H1N1 was detected in domesticated (livestock) turkeys in Chile back in July, 2009, and H1N1 has been detected as well in pigs (swine); in all cases the H1N1 is coming from humans to the animals. (This is somewhat ironic since the H1N1 has been termed “swine flu” in the press, but it did not particularly have any basis in domesticated pigs, at least back in Spring of 2009.)

An H1N1-H5N1 mixture-mutation does not guarantee extremely high lethality with high transmissibility and an apparent easy path to the deeper interior regions of the lungs (noted to be the evident case with basic H1N1-2009), but the probability for any such H1N1-H5N1 mutations having these very dangerous and “high-kill-ratio” potentials is very high. How high? It is simply not possible at present to quantify that, although we believe that if the CRAIDO field labstations and the complete CUBIT network of sensing, diagnostics, informatics and treatment were in place and not held back as it has been for lack of modest economic resources, then we would have a much stronger “handle” on understanding both the geographic (demographic) reach and movement of such mutant influenzas and also their lethality to different segments of the population.

There are severe risks we now face, from ignorance of molecular biological and genetic details as well as epidemiological data that could have and should have been available already through CUBIT and its components.

We do not know what are the types and numbers (variations) of the mutations, nor where they are, and how they compare with other regions of the world.
We do not know their transmission vectors; i.e., where and how they are moving to other regions of the world, as well as across species boundaries.
We do not know what are the accompanying microbial infections or systemic conditions, consequent from the H1-xxx mutations, that are affecting and exacerbating the influenza effects.
We do not know the effectiveness and optimal combinations of current medications for the new mutated strains.
We do not know the effectiveness of any of the current vaccines against the new mutated strains.

The last condition is one of the most critical. Too many people are relying upon the "magic" dream of a vaccine. Get a shot take a sniff, swallow a pill, and you have a magic shield and can go about your typical and usual lifestyle without concern – that may not be the attitude of the majority of people, certainly, but it is not an unrealistic stereotype, and in terms of practical behavior, it seems to characterize how many people are acting.

Regardless of the questions about side-effects and health problems from any vaccine, there are immense open questions about the effectiveness of any existing vaccine for viral strains that are only now emerging. Furthermore, there is no time now, today, in the midst of the annual flu season (for the northern hemisphere in particular, but truly worldwide because of our global connectivity and travel), for starting to develop a new set – not one but perhaps multiple types – of vaccines. All of that could have been addressed through early implementation and deployment of CRAIDO and other elements of the CUBIT medical methodology, architecture, and procedures.

Current vaccines may work, they might be effective, or they may not be very effective at all. Even if they help person A who has had taken the vaccine, if person A is still a contagious carrier, then persons B, C, D and any indefinite number of people coming in contact with person A during A's infectious period can contract the new influenza virus. Any number of those people may not be protected in any predictable way against the virus.

The consequent **really serious problem** is that many people, worldwide, but especially, it seems, in the USA, are letting down their defenses and feeling too comfortable, too relaxed, too strong, and simply not paying attention to practical, non-pharmaceutical, preventive measures, some of which are low-cost, some of which are no-cost, and all of which can be done by ordinary everyday people. We have spelled out many of these practical measures in the document, **Practical Public Health Guide for Prevention, Care & Resilience with respect to H1N1 and other infectious diseases** (available online at http://tetradyn.com/practical-guide-h1n1-prevention-care.pdf (or .doc)

The apparent new influenza mutations seem to be very serious and more lethal to victims. The best approach to these risks is to begin personal, family, and community preventive measures right now. That includes everything that has been encompassed within CUBIT and specifically CRAIDO. But it really requires something that cannot come from an instrument, from a vial, from an expert, from a video, from a pill, but rather from the determined Will of People to make a determined effort to protect themselves and the people with whom they come in contact at home, in school, at work, and in any settings.

We offer our help, our tools, our knowledge, our network. But the real work lies within You.

Infection with a new H1N1-XXX mutant virus does not mean death. It does not mean unbearable suffering. It does mean being potentially very sick and needing to get anyone with any symptoms quickly to a clinic or hospital and to make sure that the physician and nursing staff pays attention to all of the symptoms, backgrounds, and ramifications. You have to understand that all healthcare providers, everywhere, are already stretched to near the limit and will be even more stretched by work overload – You can help by keeping accurate records of symptoms, behaviors, changes. This means taking accurate temperature readings at home, this means taking accurate measure of other symptoms, and this means making an extra-special effort at keeping any patient comfortable, warm, with plenty of fluids to drink, with plenty of nutrition, and with a clean air environment.

You can be the ones most responsible, before and with the physicians and the hospitals, for ensuring the survival and recovery of yourself and your loved ones.

Concerns about Public Information and the Media

We have noticed media reports of potentially serious changes, including mutations to the H1N1-type virus, and increased virulence and lethality, in many parts of the world, then followed by a virtual "deafening" silence. This is of grave concern. Many experts including Dr. John V. Barry ("WHITE PAPER ON NOVEL H1N1", MIT Engineering Systems Division, ESP-WP-2009-07, revised 7/27/09, available online at http://esd.mit.edu/WPS/2009/esd-wp-2009-07-072709.pdf) have pointed out again and again the importance of providing open information, education, and honest factuality to the public and to not "hide bad news" under the delusion that "hear no evil, see no evil, speak no evil" will somehow maintain and secure social stability and avoid crises.

We openly ask for an end to pressures from any sources, governmental or private, upon and within the news media, to downplay the current influenza pandemic, the very real risks of resurgences and repeats of heightened infection and transmission, and of emergences of new and more virulent, lethal strains. We openly ask for disclosure done in the context and method of sound, rational inform-ation and e-ducation, as we have been trying to do for months and years, and particularly in recent general-purpose, general-audience publications such as this document.

In fact, we ask our government agencies, and our media organizations, to openly work collaboratively with physicians, healthcare providers, scientists, engineers, and other professionals to help educate and empower the strongest tool we have against this and any pandemic, the Public, You, the People.

CHIPS

CHIPS (Civilian H1N1 and Infectious-Disease Public Service) is a volunteer program established by Dr. Martin Dudziak and TETRADYN Applied Bio Cyber Sciences, Inc. It consists of individuals from around the world who are volunteering their personal time and resources in order to ask the phones and emails, the chats, the faxes, and to help in mainly information-providing, information-gathering, and information-supplying ways so that people in need, or in anxiety and fear, can get the information and in particular the medical care that they want and deserve. This can be in the form of helping them to find where to get an alternate doctor, clinic, or hospital, or where there may be vaccine supplies, or medicines, or masks, or simply good food. CHIPS does not provide anything physically, and we are not all medical professionals, and we do not give out medical treatment. We are, in essence, a LIVE form of a social network, and we will do web searches, and data look-ups, and referrals, and we will do our best to help You.

There is a main website, still undergoing construction, at this URL:

http://chips.tetradyn.net

A Brief Word about Us

All of this work, everything that is CUBIT, CRAIDO, VSRB, MADIT, NomadEyes, and now CHIPS, comes from the dedicated collaboration, cooperation, and thus-far unfunded efforts of TETRADYN Applied Bio Cyber Sciences, Inc. (http://tetradyn.com) and the non-profit Institute for Innovative Study (http://instinnovstudy.org), plus a growing and rather large group of professionals in medicine, healthcare, biology, biomedical engineering, epidemiology, virology, and other fields from several institutions worldwide.

We provide acknowledgements to some people in Appendix C, herein, but with the proviso that we do not intend, and we apologize in advance, for any omission or error about leaving out due credit to someone upon whose work, labor, help, advice we have relied, and learned. Nor do we assert that

each and every person listed in this document or its appendices is in 100% or even "majority" agreement with all of our statements. Some persons are not even medical professionals, clinical or research. We simply want to assert that there is a scientific body of knowledge and experience that has been working both loosely and in some cases tightly together, whose knowledge and findings have gone into our work and our assertions, and that it is "high time" that the general public - and the institutions with responsibility to safeguard the public health of our society - will give voice and attention to those of us who have been identifying, detecting, describing, and working on solving some of our most critical threats. We ask this not for our "fame or gain" but simply to save our society from a lot of unnecessary suffering, pain, loss and death.

We thank people who have helped with their minds, their souls, their physical work, their travel, and their funding support. We do ask for serious support now, for all of our benefit, particularly from elected officials, members of the social service, local health, and legal fields, and from the financial sector, hoping that by now there are at least a few people in that financial sector who will understand the importance and value and merit to support this work going forward for our society's benefit.

References, Credentials, Acknowledgements, Validations

Please consult other documents that are available through the online resources mentioned in the Introduction, or in Appendix C, or Appendix B. Otherwise, simply contact and ask for formal documentation. The present piece is not meant to repeat endlessly lists of bibliographies and names of degreed personnel, but to simply put out in relatively "plain-english" some facts, some proactive statements, and some recommendations.

APPENDIX A Pandemic Flu Mutation

China expert warns of pandemic flu mutation

Wed Nov 25, 2009 12:08pm EST

By Stefanie McIntyre

HONG KONG (Reuters) - China must be alert to any mutation or changes in the behavior of the H1N1 swine flu virus because the far deadlier H5N1 bird flu virus is endemic in the country, a leading Chinese disease expert said.

Zhong Nanshan, director of the Guangzhou Institute of Respiratory Diseases in China's southern Guangdong province, said the presence of both viruses in China meant they could mix and become a monstrous hybrid -- a bug packed with strong killing power that can transmit efficiently among people.

"China, as you know, is different from other countries. Inside China, H5N1 has been existing for some time, so if there is really a reassortment between H1N1 and H5N1, it will be a disaster," Zhong said in an interview with Reuters Television.

"This is something we need to monitor, the change, the mutation of the virus. This is why reporting of the death rate must be really transparent."

The World Health Organization warned on Tuesday that H5N1 had erupted in poultry in Egypt, Indonesia, Thailand and Vietnam, posing once again a threat to humans.

"First, it places those in direct contact with birds -- usually rural folk and farm workers -- at risk of catching the often-fatal disease. Second, the virus could undergo a process of "reassortment" with another influenza virus and produce a completely new strain," it said.

"The most obvious risk is of H5N1 combining with the pandemic ... (H1N1) virus, producing a flu virus that is as deadly as the former and as contagious as the latter."

Zhong told the Chinese media last week that China may have had more H1N1 flu deaths than it has reported, with some local governments possibly concealing suspect cases.

The doctor is known for his candor and work in fighting Severe Acute Respiratory Syndrome in 2003, when nationwide panic and international alarm erupted after it emerged that officials hid or underplayed the spreading epidemic.

Cover-ups by local governments in 2003 during the SARS epidemic led to the sackings of several officials. More than 300 people died in that outbreak.

China, the world's most populous country, has reported around 70,000 cases of H1N1 and 53 death from the virus.

While some regions simply lack the technology to test for H1N1, other areas have been treating deaths as cases of ordinary pneumonia without a question, Zhong said.

"Some local healthcare authorities are reluctant, unwilling to test patients with severe pneumonia because there's some latent rule which says the more H1N1 deaths, the less effective the control and prevention work in your area," Zhong said.

Zhong said China's health minister Chen Zhu rang him up last week and agreed with his views. A notice then appeared on the ministry's website threatening severe punishment for officials caught concealing deaths from H1N1 swine flu.

WHO reported more than 526,060 laboratory confirmed cases of H1N1 worldwide on November 15, with at least 6,770 deaths. However, it has stressed for months now that the figures were only the tip of the iceberg.

It urged countries to place more resources on mitigating the disease rather then on costly prevention measures or testing everyone. All WHO and the U.S. CDC will say is that "millions" have been infected.

(Writing by Tan Ee Lyn; Editing by Bill Tarrant)

APPENDIX B Validations Implicit and Direct

Here are excerpts from a major CDC report that validate and in fact recommend precisely TETRADYN's CUBIT [2] research, architecture, technology and products (including CRAIDO [3], VSRB [4], and MADIT [5]

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

Hightlighted 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

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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 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

[2] Coordinated Unified Biothreat Identification and Treatment
[3] Community Rapid Response for Infectious Disease Outbreaks
[4] Virtual Sample Repository Bank
[5] Mutation Anomaly Detection, Identification and Tracking

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 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**.
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.
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

APPENDIX C Acknowledgements

Some acknowledgments, to persons and institutions who have helped us in different ways, through knowledge, their work, their support. This is a definitely incomplete list, we will continuous update it, and for now we are brief but any of these people can be found via the web and contacted if you so wish. However, please respect their privacy, their needs and obligations, and don't overload anyone with requests. For that, there is the CHIPS organization, and its active volunteers. Please let these folks keep on doing their work, in science, medicine, and other fields.

Note that not everyone, not in this list or elsewhere, can be expected to be in 100% or any particular degree of support of anything from TETRADYN, the Institute for Innovative Study, or CHIPS. This is not a list of people who can be automatically called "validators" or "stampers of approval" for everything in our work, practical or theoretical. However, I believe that everyone in this list does genuinely care about You and Your Health. Each person knows about all of our work to some degree, and each person is a mature expert in their field and with genuine good character, in our opinion. We recommend that you read some of their papers and books, too! Thus we acknowledge their work, their contributions, their discoveries, their efforts, without which we would (in my opinion) be nowhere at the point that we are presently.

Ms. Anna Abram, Staff, Senator Richard Burr (NC)
Dr. Larry Anderson, Director, Div. of Viral Diseases, Centers for Disease Control (CDC)
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Appendix D Vaccines (repeated from an earlier paper)

This is an incredibly short section, and I hope you will all understand why.
There are vaccines for H1N1, and the following holds true presently:

1. They are in very, very short supply, and there is no point right now to raising a ruckus about blame, conspiracy, etc. – they are simply in short supply. You have to accept the fact that there will not be enough for all those who want it. You also need to accept the fact that the risks of side-effects are far outweighed by the benefits, for those who are most at risk – children and youths and pregnant women.

2. You can get yourself sicker, and also get H1N1, more likely from the stress you create for yourself, and/or from spending hours and hours or days in line, generally outside under inclement weather conditions, and with people who may include sick people- sick with H1N1, or with something else contagious. I strongly recommend that you do Not get into the line-waiting phenomenon. You have all seen photos and news clips of people standing in line, often with their children, from 6:00am and for hours, in the cold rain, hoping to get a vaccine. That is plain Stupid.

This is also why we have created CHIPS in order to help those people who want the vaccine, or medical care, or medical advice, to get connected, networked, referred, by our volunteers, to doctors, clinics, hospitals, and live people at places that can set them up or take them in. What you don't need is a busy signal, answering machine, or bla-bla-bla automated response that does not help you.

3. If you want the vaccine for yourself or a family member, do what you can to arrange an appointment. But don't get yourself sick and more vulnerable, or contract H1N1, by standing hours in some lines!

4. We designed CRAIDO - Community Rapid Response for infectious Disease Outbreaks – as a network of both stationary and fully mobile (trailer based) labs to give fast (2 hour) diagnoses, accurate diagnoses, for H1N1 and other related infectious diseases, and to provide information – live, in person, and by webcasts and broadcasts on the sides of the CRAIDO stations. We had hoped and tried and done our best to get these out into the streets and cities by this past Summer of 2009!!! We were stymied and blocked , frankly and truly, by bureaucrats and politicians, yes indeed, but especially by so-called investors, venture capital firms, private equity firms, and essentially "Wall Street." We are not going to waste your time with the sad story about those "losers" who could not see the value and importance of CRAIDO and the whole CUBIT Suite of healthcare and public health tools for You. This is just another sign of our times about rampant freed, avarice, and selfishness, whether it is in a venture capital clique or a bureaucracy in Virginia.

What we must do is overcome those obstacles, and we are doing this now with the Virtual CRAIDO, which is CHIPS – Civilian H1N1 and Infectious Disease Public Service, a volunteer organization.

4. If you do not want the vaccine because of known or prior bad reactions with other flu vaccines, you should think carefully about getting it, and perhaps under your circumstances, you will be less likely to contract H1N1.

5. If you are afraid of the vaccine because it has not been well-tested and because back in 1976 there were specific problems with a totally different vaccine, a totally different era of production quality and testing, and a different influenza virus (in spite of the shared name of "swine flu"). then you are welcome to not get the vaccine, but you really need to examine the trade-offs, and you sure better make a big effort to follow the other guidelines in this paper and in many others!

6. There is no solid scientific evidence that the current H1N1 vaccine is harmful. Could this change with new research and new findings? Yes! Do I and many other scientists - who are definitely not under pressure or with any possibility of personal or professional gain from the vaccine business – of the opinion that it is harmful or will be found to be harmful? The answer is No. Could there be some new unforeseen side-effects and consequences? Yes, but the probability of such is very low. Am I myself going to get the vaccine? Probably not, because I believe I will do alright, at worst be very sick, and I would rather see the supply be available to those who choose to get it.

7. No one should be forced against their will or with any physical or psychological threat to get the H1N1 vaccine. Is there evidence that this will happen? So far, I do not see such, but I do see some extremely disturbing trends and actions going on in certain circles of local and state governments, particularly in Virginia, that give me grave concerns. However, I do not believe that the federal government would embark on some of the feared "forced vaccinations," home invasions, etc.

8. Could events arise where it becomes very, very clear that the vaccine is alright, and that massive numbers of people should be vaccinated in an organized program that involves going to schools, workplaces, etc.? Possibly, but here, let's get base to point # 1. As far as the USA is concerned, unlike apparently China and several other nations, we are very unprepared as far as the vaccine supply! There will NOT be enough for all those who want it, during this present pandemic. That is pretty obvious. There are many reasons. Were CUBIT and CRAIDO supported and not blocked by some (Lockheed-Martin for one, and a whole slew of bureaucrats and private-equity/venture capital investors who said there is no pandemic, will be no pandemic, this is not good business, this is not profitable enough, etc.), then I do genuinely believe we would all be in a much better situation at present. Vaccine production may have started earlier, with better knowledge of the specific gene sequences required. Better information would be in the hands and minds of many local, state and federal agencies, and hospitals both private and public, and with general-practice family physicians, if CUBIT, CRAIDO, the VSRB, and the MADIT methods were fully deployed, or even partially/widely deployed Today, and Yesterday.

But it does no good to cry about it, complain about it, mope about it. What is the best thing that can be done now is for you, the reader, to understand what is written here and in the writings, papers, videos, presentations, educational cartoons, etc. from many others, and to do everything within your power to help us to get CUBIT, CRAIDO, VSRB, MADIT, and everything into the public's hands and into public service.

Go read Appendix A here. That is the final report produced by a special CDC committee. Several $millions of dollars have been spent thus far for a group of high-profile, big-name experts, many of whom are actually good scientists and professional, to produce a tiny several-page recommendation report. What they are recommending is 1:1, precisely, exactly, what we at TETRADYN and within the CUBIT Working Group (CWP) of university, national lab, private, and public experts have produced, are working on, and are trying to put into your hands and for your service.

Help get CUBIT and CRAIDO and everything into operation, and you will be doing the best thing that you can to help protect your family, friends, neighborhood and community.