

**Meaningful Use Workgroup Public Hearing
On Population Health
Draft Transcript
July 29, 2010**

Presentation

Judy Sparrow – Office of the National Coordinator – Executive Director

Good morning, everybody, and welcome to the Meaningful Use Workgroup's Hearing on Population Health. This is a federal advisory committee, so there will be opportunity at the close of the meeting for the public to make comments. Just a reminder for workgroup members, we have a number of workgroup members on the telephone, as well as in the room, if you could please remember to identify yourselves when speaking. Let me ask the members who are here at the table to please introduce themselves now, beginning with Laura Kahn.

Laura Kahn – CDC – Associate Director for Science

Hello. I'm Laura Kahn. I'm the associate director for science in the Public Health Informatics and Technology Program Office in the Office of Surveillance and Laboratory Services at the Center for Disease Control and Prevention, and I was a member of the planning group to plan this day, which is why I'm here.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

I'm Paul Tang, Palo Alto Medical Foundation.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Good morning. I'm Art Davidson from Denver Public Health, Denver Health.

Jim Figge – NY State DoH – Medical Director

Good morning. Jim Figge, Medical Director at the New York State Department of Health.

Alice Brown – National Partnership for Women & Families – Director HITP

I'm Alice Brown. I'm the director of Health IT Policy at the National Partnership for Women & Families.

Judy Sparrow – Office of the National Coordinator – Executive Director

On the phone, I believe we have George Hripcsak.

George Hripcsak - Dept. of Biomedical Informatics Columbia University – Chair

Yes, George Hripcsak from the University—

Judy Sparrow – Office of the National Coordinator – Executive Director

Are there any other members of the committee on the telephone now? I know a few are coming in late. With that, I'll turn it over to Dr. Tang.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

Good morning. Thank you. This is our ... hearing before we start deliberating a bit more on revising the stage two and three criteria in September, so this is going to be on population and public health. Welcome and thank you so much for participating. I also want to thank Art Davidson and George Hripcsak and Judy Sparrow for doing such a terrific job in putting this panel together. It's a wonderful panel.

I want to thank the panelists for submitting your testimony. I think reading through some of that you get feelings of optimism, of hope, and frustration. Optimism in some areas, in some states, I mean, immunization registries are in excess of 90%, and that's just tremendous. Hope that there are so many hard working people in the public health departments that are trying to get there on such limited

resources that Americans are just grateful for your efforts. And frustration, but not despair, that there's not even more resources to put to this really good cause because the vision of having not only one unidirectional submission of data, but to have it bidirectional, be able to influence care, as it happens, and being able to have real time surveillance would be just a nirvana in terms of, I think, not only the population health, but the individual's health. That's, I think, where we're headed.

Hopefully, by the end of today, we'll have some hope in terms of how we can help. We don't have those resources, but we can help shape some of the future, both requirements and certification, in terms of public health requirements, how public health is part of this wiring of the electronic infrastructure. So, your guidance is what we're searching for and we really know that we have a lot of expertise and advice coming our way, so thank you very much.

I'd like to turn it over to Art Davidson, who played a leading role in putting this all together, and apologies that George Hripcsak is sick, and so is still joining us by phone, but from his bed in New York.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Good morning, and welcome. In particular, I'd like to thank and extend a warm welcome to our panelists for the three sessions that we have today. The individuals selected to testify in these three panels are public health leaders from around the country. We understand how busy you all are, and thank you for finding time in your schedules to educate and inform our meaningful use workgroup on your perspectives and important work around the potential for population health outcomes that we can expect from the efforts around meaningful use and adoption of certified EHRs. The information you share with us will hopefully identify themes for our group to report back to the HIT Policy Committee as potential recommendations as a federal advisory committee to the Office of the National Coordinator for future stages of meaningful use definitions, as Paul just described.

The planning for this session occurred over the last month or so and was guided by George, who is on the phone, and I'm sorry that he couldn't be here in person. I want to thank him and the ONC staff, in particular, Judy, for all the work that you do to keep us organized and targeted on task.

The focus of the testimony revolves around two primary questions. What population health effects should public health agencies expect as the nation moves toward meaningful use of certified EHRs? And how can governmental public health agencies leverage these meaningful use efforts and investments, and the goals of learning healthcare system and health system to improve population health?

The HIT strategic framework document that the HIT Policy Committee recommended to the Office of the National Coordinator back in May continues to be refined. But within that document, there is a reference to population health in numerous places. A footnote states population health includes quality improvement, biomedical research, and routine and emergency public health preparedness and response. The scope of this session is not as broad as this footnote.

At another date, issues such as biomedical research will be dealt with by a meaningful use workgroup or the HIT Policy Committee. But today's focus will be on the phrases "quality improvement" and "routine" and "emergency public health preparedness and response." Our intention is to purposely limit the scope of discussion to these areas.

To provide some guidelines and context to our invited guests, the workgroup attempted to give more clarity to the meaning of population health. Probably everybody in this room has a slightly different interpretation of what that means. Admittedly imperfect, each panelist was provided the following definitions to assure consistent context for discussion.

Population health: A conceptual approach to measure the aggregate health of a community or jurisdictional region with a collective goal of improving these measurements and reducing health inequalities, inequities among population groups. Stepping beyond the individual level focus of mainstream medicine, population health acknowledges and addresses a broad range of social determinant factors that impact the health of the inhabitants of a jurisdiction. Emphasizing environment,

social structure, and resource distribution, population health is less focused on the relatively limited impact that medicine and healthcare have on improving overall health of the inhabitants of a region.

Governmental public health: A core infrastructural entity that organizes an extended community to healthcare delivery systems, schools, social services, academia, legislative regulatory and justice systems to improve population health. The representatives of governmental public health agencies or organizations invited to testify today have authority over their respective jurisdictions. That authority comes with a responsibility to convene, collaborate, and contribute to our collective goals to enhance public health capacity. Speaking with, on behalf of the spectrum of health and healthcare system participants in their jurisdiction is a governmental role.

I'm eager and energized and excited to have you all come here today and share your knowledge with the workgroup and help us provide recommendations that may serve to inform ONC and the Centers for Medicare and Medicaid Services on anticipated population health benefits of the recent released meaningful use stage one criterion measures and those yet to be defined for stages two and three. Once again, a warm welcome to all of you.

With that, I'd like to introduce the first session's panelists. I will introduce each panel member and then have each proceed with his testimony. We'll proceed through all the testimonies and then have some discussion with the panel.

Our first panelist is Peter Briss, has been with the Centers for Disease Control and Prevention and the Commission Core of the U.S. Public Health Service for 20 years. He brings a depth of knowledge and expertise in disease prevention and health promotion, including program evaluation, research translation, and prevention in both the healthcare and community settings. He has a keen understanding of evidence-based disease prevention and control strategies gleaned from his extensive work with the community guide and the U.S. Preventive Services Taskforce. His years of service at CDC and his participation with outside groups, including the population health workgroup convened from the National Quality Forum. He has participated in public health teaching, practice, and research at state and federal levels in the U.S. and internationally. Peter Briss, Dr. Briss?

Peter Briss – CDC – Medical Director, National Center for CDP&HP

Good morning. I'm Peter Briss. I'm the medical director in the National Center for Chronic Disease Prevention and Health Promotion at CDC. We're really excited to be able to be here today. Building on existing collaborations between healthcare and public health is essential. Many of the purposes of building EHR systems, including population health, coordination of care, reducing disparities and other objectives can't be achieved by working just within the walls of the healthcare system. So I'll structure my remarks based on the questions that you asked us.

First, you asked us about our current capabilities in electronic data systems, interoperability, and existing connections to EHRs. Public health has been conducting surveillance of many health conditions for many decades. To achieve our mission, CDC houses many data systems. Most public health surveillance data comes from either surveys or from data that's reported already from healthcare data, and national systems build on state systems.

Public health actions based on these surveillance data complement actions that are taken inside the healthcare system, and we discussed several examples in our written testimony. For example, we translate surveillance data from cancer registries into programmatic and policy actions to reduce cancer burden. We use accurate and timely health information about pandemic H1N1 influenza to trigger public health communications and actions to reduce the impact of the epidemic. We identify underserved populations through immunization information systems to trigger actions to reduce disparities. These are examples of the kind of things that won't happen purely within healthcare.

Some of our systems like the Biosense system that takes data from emergency departments and uses it for syndromic surveillance already have the capacity to accept data from EHRs. Many of our systems do

not. And because our existing systems generally developed separately and have a wide range of purposes and funding streams there, they are often not yet interoperable.

The second question that you asked us was about our capacity to use the three kinds of public health data that are already to be sent under stage one. CDC, as an institution, has the capacity to receive and use immunizations, syndromic surveillance, and electronic data, laboratory data. As we've noted, however, CDC systems build on state systems and state capacities are still variable. I suspect that you'll hear that again this morning.

A recent survey of state health departments have identified a number of barriers to building state systems, and these include funding constraints, workforce needs, lack of system support, and lack of best practices. And we've noted several areas in the written testimony, including especially immunization information systems and cancer registries, for example, where CDC is working hard to build bridges between ARRA investments and ongoing public health investments to leverage both of these funding streams and to maximize public health investments from a variety of sources. Having said all of that, there's much more to do.

Your third question for us was about barriers to meaningful use, so public health data and Current, the stage one efforts for meaningful use to link to public health and to provide quality improvement in high value prevention are really important steps in the right direction. We're excited about those. There's still a lot of work left to do at broadening those connections, so we need to broaden the public health connections farther beyond sort of bread and butter public health and infectious disease realms to other areas of public health, for example, and we need to further broaden quality improvement efforts to the high value clinical preventive services and the big ticket American risk behaviors that are the leading drivers of burden in the United States.

And so, your last two questions had to do with leveraging investments and making connections, and I think I've already touched on those.

In closing, what I want to say is that although public health surveillance has been ongoing for decades and has had a lot of successes in identifying problems and driving solutions, there are yet improvements to be made. Electronic health records provide a lot of opportunities, and we too are very hopeful about the opportunities yet to be made.

In spite of all public health surveillances, successes, it still frequently feels like trying to— Somebody characterized it recently. It's like trying to drive your car based on average data about speeds on the highway from about two to three years ago. We have a lot of opportunities to improve the speed and the granularity of the data that we get, and leveraging EHR investments are going to help us get there, we think. We're really excited about the opportunities and to fully realize those opportunities, public health outside of the healthcare system needs to have a seat at the table.

Thank you. I've enjoyed the opportunity to speak this morning, and I look forward to the conversation.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you, Dr. Briss. Our next testimony will come from Gus Birkhead, who is deputy commissioner in the Office of Public Health at the New York State Department of Health. He is a chief public health physician in the department. He joined the department in 1988. He is a graduate of the CDC's EIS and preventive medicine residency program, is board certified in internal medicine and preventive medicine, has a master's degree in public health. In addition to his work at the health department, he's also professor of epidemiology at the School of Public Health at the University at Albany. Thank you and welcome, Dr. Birkhead.

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

Thanks very much for the opportunity to speak this morning. The perspective I bring you today is that of a public health practitioner in a state health department where we have statutory authority and responsibility to collect key health information on individuals to guide immediate public health program

responses, for example, to follow up on a reportable communicable disease case, and also to aggregate individual health data to better gauge the health of the population to guide and evaluate public health programs and policies.

At the New York State Department of Health, for over a decade, we have recognized the importance of gathering electronic data in the three areas of interest today: clinical lab results, childhood immunizations, and emergency department syndromic data. And we have invested a tremendous amount of effort in New York and many states in developing and funding and evaluating these systems. We now have in place universal electronic systems in New York to achieve data collection in all three areas with a degree of timeliness and accuracy that generally meets our current programmatic needs. For example, New York's Electronic Clinical Lab Reporting System (ECLRS) annually collects hundreds of thousands of clinical lab results on reportable communicable diseases to trigger follow-up field investigations to determine the source of infection and prevent further spread.

In the recent H1N1 pandemic, New York syndromic surveillance system collected on a daily basis the number of emergency department visits for influenza like illness from almost all emergency departments in the state providing a virtual and vital situational awareness of where the pandemic was in the state and which communities were being impacted. And New York's Immunization Information System (NYSIIS) is utilized by other 85% of pediatric providers outside of New York City to record all childhood immunizations. We've invested, as I've said, a lot in assuring the quality of these data that we're receiving and understanding their limitations and their timeliness. These systems are in everyday use across the state driving, guiding, and informing our public health programs, and I would point out that these systems are, in our view, achieving meaningful use of the data today. For the most part, however, without any direct link to patient electronic health records.

That said, I think we do recognize the tremendous opportunity that tapping into patient EHRs could bring to public health reporting and population data purposes. For example, in the reportable communicable disease programs, access to EHR data could provide additional clinical information like symptoms and date of onset of illness that normally is only collected through intensive fieldwork by public health staff. In syndromic surveillance, the ability to pull the final diagnosis and other detailed clinical information like laboratory test results from the emergency department EHR could greatly improve the granularity and specificity of the data, which are now crude and nonspecific. In the immunization area, we know that it is a barrier for providers to use a separate system from their normal EHR to access a child's statewide record, and so the ability to move data on immunizations from providers to the registry and back again will have added value and also enable us to have providers access features like vaccine schedulers using the state recommended algorithm, which would greatly improve the delivery of pediatric care. However, with all these potential expanded uses of EHR for public health purposes, we would need to be assured of at least the same quality and timeliness of the data as we now enjoy today.

In New York, we are taking initial steps to foster data exchange with EHRs. We have made a nearly one billion dollar public and private investment in a statewide health information network for New York, which we refer to as the SHIN-NY, including fostering the development of regional health information organizations. To align with that effort, New York is now testing a universal public health node on that statewide system designed to leverage the local information exchanges across the state for public health functions.

While this system is not yet operational, we have begun to collect immunization data to NYSIIS by batch upload from EMRs, and we have currently certified 56 billion and EHR software vendors representing over 650 practices that administer the majority of vaccines in the state outside New York City to report the immunizations to the registry via a batch upload directly from office-based systems. Additional practices are served by these vendors, but are not yet online because they have older versions of software or do not wish to pay the vendor for this service.

In addition, we are exchanging immunization data with eight large managed care plans to enable them to calculate immunization quality measures on their insured children. These systems are not yet bidirectional or real time, but we are working to achieve those goals so that providers can benefit from the

other aspects, the scheduler, the practice assessment, and other functions built in, reminder systems built into the NYSIIS system.

As part of the effort to develop the statewide information network, we've undertaken several activities with the goal of better integrating the multiple data that we have available to us at the health department, and the most advanced of these is our Child Health Information Integration or CHI² project. Using the immunization information system as a platform, we will soon be able to also make available to providers laboratory tests on all childhood lead poisoning test results, as well as the results of newborn hearing screening conducted on every child in the state in the hospital.

In the future, we are exploring adding to the system newborn metabolic screening results and data from Medicaid service utilization among other data that we have available to us in the health department. And by insuring that partners, including providers and RHIOs, are given access to this unified database of child health information available to us in the health department, we hope to reduce duplication of effort and permit data from emerging EHR and RHIOs to be transmitted and received with the ultimate goal of improving child health, which I would say is the ultimate meaningful use.

I'd like to highlight three specific barriers for the committee, as we move ahead to achieve public health meaningful use. First, public health needs to broaden its thinking. We, in public health, need to broaden our thinking about the new uses of data, which will be available as a result of health information exchange with EHRs. Public health goals, such as reducing obesity, diabetes, and cardiovascular disease, might be better tracked through collecting clinical information from EHRs such as height, weight, diabetic control measures, and blood pressure. At this time, however, public health chronic disease programs are not equipped to receive or analyze this type of clinical information and have no experience using such data to inform and evaluate public health programs. New ways of thinking, new analytic techniques to manage this potentially vast amount of information, and additional resources will be needed to achieve these capabilities.

A second challenge is a lack of funding for upgrading public health data systems to keep pace with the advances in technology. While we are spending billions in New York to develop EHRs, the statewide health information network, and the public health node on that network, the resources to upgrade the public health systems within the health department to integrate with these are lacking. In addition, current public health data system funding is siloed with each discrete program area funded separately for systems development and upgrades. Since these categorical funds often come from the federal government, changes in federal funding rules to allow more cross-program flexibility will be important.

An example is the recent announcement of the HL-7 2.5.1. Just in the area of laboratory reporting alone, we have multiple data systems, including communicable disease, HIV, childhood lead, and cancer reporting that will need to be upgraded to handle 2.5.1 messaging. The ability to collaborate across programs in this upgrade process will greatly speed the process. We need the flexibility to really think outside the silo, to leverage all available funding for this task.

And the final barrier is existing public health reporting systems will need to be maintained until there is a proven, reliable, replacement system available. We will need to be assured of the quality, validity, and timeliness of new data sources before we can fully transition public health programs to them. As a result, for a period of time, simultaneous maintenance of multiple systems, along with integration of multiple new data streams, will be necessary until all data providers are successfully reporting through the new data infrastructure. Until the transition is complete, public health reporting for healthcare providers will be complex and potentially costly.

I'd like to close by offering three recommendations to the committee for you to consider in supporting the involvement of public health in meaningful use of EHR data exchange. First, to continue to actively engage public health agencies like on this panel today to assure that the HIT goals can be achieved, sustained, and are useful for public health program purposes.

Second, develop and promote national standards for health information exchange that had been widely vetted in the public health community. Data standards needs to take into account public health data needs, which require both individual, as well as aggregate data, and need to assure, as I've mentioned, that the data are valid, accurate, and timely. Resources will be needed to assure that the validation of these new data sources and collection methods.

The third recommendation is to help assure that federal funding for categorical public health programs are flexible enough to allow cross program collaboration such as New York is undertaking with its Child Health Integration Initiative.

As I think about the technology and workforce challenges facing public health, the words of Dr. Blumenthal in the July 13th *New England Journal* resonate with me. He said, "The speed of ascent must be calibrated to reflect both the capacities of providers who face a magnitude of real world problems and the maturity of the technology itself."

Public health capacities are currently limited. We need to be at the table and actively engaged and resourced to insure that we do not merely receive EHR data, but that the information exchange and resulting data are useful and can improve public health practice. Until this is achieved, improvements in population health resulting from meaningful use of public health data will be limited. Thanks very much for the opportunity.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you, Dr. Birkhead. Our next testimony will come from Seth Foldy, who is the state health officer and administrator of the Division of Public Health for the State of Washington. Dr. Foldy practiced and taught urban community oriented family practice for 15 years in Western Mass and Cleveland, Ohio. Previously, he served as medical director and then commissioner of the Milwaukee Health Department as a pioneered electronic disease surveillance. Dr. Foldy co-founded the Wisconsin Health Information Exchange, provided consultation, and authored numerous publications in health informatics, emergency preparedness, and public health systems.

Dr. Foldy has faculty appointments at both Wisconsin Medical Schools and the University of Wisconsin, Milwaukee, and is board certified in family and preventive medicine. He serves on the boards of the National eHealth Collaborative and the State Alliance for eHealth. Thank you for coming—

Seth Foldy – Wisconsin – State Health Officer

I'd like to start speaking partly on behalf of ASTHO, the Association of State and Territorial Health Officers, and also the Joint Public Health Informatics Taskforce, which is a taskforce of public health organizations that are trying to prepare for meaningful use and other changes to our electronic environment in a unified and organized way. And on behalf of these organizations and the state of Wisconsin, really applaud the work of this panel and the committee, the ONC staff and, of course, the Congress for the wisdom of including population health as a core element of meaningful use going forward.

We think that there are many ways that incorporating population health into meaningful use adds value, some of them very simple, just decreasing the overall cost and labor involved in reporting. There's a huge amount of effort that goes on today, both in the healthcare world to send information to public health, and for public health to incorporate that information.

Again, it's already been referenced, the bidirectional exchange of information that will allow information coming from public health to be rethought, processed, and fed back to the healthcare sector. Much of the action that public health takes is through healthcare providers. But if they don't know who is missing a vaccine, or if they don't know that it is time to start looking for pertussis in their community, the quality of their care goes down, and we can help improve it.

The third is to increase the productivity and the agility and the effectiveness of public health workforce, which is small and aging and shrinking and finally, to help link consumers not only with their providers of healthcare, but also with the very important prevention opportunities in their own communities.

We think that the vision of the meaningful use workgroup and its direction in stages one, two, and three, are very consistent with these four big goals, and we applaud them. The first three use cases that we're working on together as a nation are very important. Again, Wisconsin offers some object lessons.

Our immunization registry system contains more than 90% of young children. We interact with thousands of clinicians on a real time basis who can discover right then and there if a child is deficient in vaccines and take action, or can use our system to send our reminders and recalls for those who are lacking vaccine. More than that, during the H1N1 pandemic, we were able to match our immunization registry with HMO care records and the Prism Project. We didn't do this. We collaborated with others. To help form an early detection system for possible side effects of H1N1 vaccine, just one example of the many ways these systems could be leveraged for population health.

A very practical consideration, right now 85% of records come to the immunization registry through electronic transfer, but by 7 different systems, which is why we have so many providers. But only 3% use real time HL-7 messaging as their method of moving information into the system, so as we move to a new standard, there will be considerable retro work, not just getting the system ready, but getting providers who are using one system of information exchange to start using the standardized methods.

Electronic laboratory reporting, we're celebrating getting 100% of our local and tribal health authorities online this month on the Wisconsin electronic disease surveillance system, which receives electronic laboratory reporting from the 16 largest laboratories in the state. It was of critical value during the H1N1 outbreak.

And syndromic surveillance, we're also celebrating moving to 41 hospitals, 43 emergency departments, over 150 primary care practices, over 24 counties that gave us real time situational awareness of where the H1N1 epidemic was playing out in our state, and helped us make very real decisions and very real consequences like whether or not to close a school system during the early days of the pandemic. So we have great benefit.

Unfortunately, you can look at states like New York and Wisconsin and be lulled into a sense that there is a relatively uniform degree of readiness, or that we can move forward with sure footing, even in Wisconsin, in our current situation. So I hate to do it, and I know that only part of this falls into the purview of the workgroup itself, but we need to point out some very critical barriers.

The first continues to be the absence of a clear information architecture for public health overall that stretches from the local health department, the state health department, and the federal systems that have to work together. We have put this work off for too long. The joint public health informatics taskforce, with some funding from CDC and others, is starting to gear up towards trying to create a common vision of where we're trying to go and only then can we create a consistent and system, a map, a roadmap for getting there that the many different public health authorities can work with together, not least of which are the many federal systems that continue in many cases to require information using different standards and different methods.

Second of all, the cost issue has already been pointed out. I'll point out that, to date, local and state health and territorial health departments have seen about \$25 million to get immunization and electronic laboratory systems ready for stage one compared to the \$34 billion for the healthcare sector. It is an extraordinary mismatch, and has already been mentioned. We are going to have to operate dual systems for many months and years into the future. And, on top of that, state health departments, over 40% of them, have been engaging in layoffs, furloughs, or program elimination to deal with the current economic crisis.

Workforce is a critical issue in public health, as in healthcare. We applaud ONC's early funds to address that issue. It is unclear yet to what extent they will directly benefit some of the unique needs of the public health informatics workforce. We also believe there is an extraordinary need. You get people like me coming to meetings like this, but you see the same people at every meeting. We actually need to have an informatics, interoperability, full time staffer in every state and territorial health office that can participate in standards development, in implementation profile development, and in testimony for important venues like this working as a team, a nationwide team, but located in every state and territory in the nation. That is a very low-cost item that would have enormous yield.

We also do need—this is very important—a single point of contact that is skilled and ready to work with us inside ONC for public health. They are drowning in meeting the information requests from tens of thousands of healthcare providers. They are not able to even mount a frequently asked questions item for public health applications, as we move into stage one. It's a small item. We think it could be fixed, and we think it should be fixed.

I think I will leave it there. I know that others at the later sessions are going to tell you why the directions that you've started to lay out in your early thinking around stages two and three are distinctly correct. But if we don't meet some of the very practical implementation obstacles, we will have lofty goals and poor execution and very uneven execution nationwide, and I'm concerned about that. Thank you.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you, Dr. Foldy. Our next testimony will come from Marcus Cheatham, who is the assistant deputy health officer and public information officer at the Ingham County Health Department, which serves Lansing, Michigan. In that role, he acts as informaticist for the department and is the department's liaison to the Mid-Michigan Capitol Area Regional Health Information Organization. Marcus served on the RHIO's operation committee, privacy and security committee, and quality improvement committee. He is the outgoing chair of the National Association of County and City Health Officials Informatics Workgroup and is incoming cochair of the Joint Public Health Informatics Taskforce (JPHIT).

Among other things, Marcus served on the Michigan Health Information Network's technical workgroup, which helped create Michigan State Health Information Exchange strategic and operational plans. Previously, Marcus was a health analyst leading research projects on chronic disease risks in Mid-Michigan and developing online reporting tools. Before coming to public health in 1996, Marcus was survey director at the institute for public policy and social research at Michigan State University. Thank you. Please proceed, Marcus.

Marcus Cheatham – Ingham County Health Dept. – Asst. Deputy Health Officer

Thank you very much. I work in local public health, and my remarks are going to be from the basis of local public health. I know you're well aware of the uneven preparation of local public health for meaningful use. That level of preparation depends heavily on our relationship with states.

In Michigan, we have the Michigan Care Improvement Registry, Michigan Disease Surveillance System, and the syndromic surveillance system, which are standards based through which healthcare providers, local public health, and the state exchange, the three types of data designated for use in the early stages of meaningful use. This makes local public health much more effective and efficient. Michigan State HIE Plan, which is overseen by the Michigan Department of Community Health, is designed to insure that physicians become meaningful users.

In Mid-Michigan, we have a functioning HIE, the Capitol Area Regional Health Information Organization, which is about to partner with our regional extension center to do the same thing. Our beacon submission envisions using quality improvement tools from the Michigan Primary Care Association to make measurable improvements in population health in our community. However, this level of preparation is not typical of local public health.

The National Association of City and County Health Officials estimate that only about half of local health departments have access to an immunization registry. Only about half are using electronic disease

surveillance systems. And, of those systems that are in place, less than half are standards based. NACCHO estimates the local public health workforce has shrunk by about 15% in the past couple of years, and stressed local health departments cannot take advantage of the opportunities that are out there. Only a quarter report participating in their state's HIE plan and less than one in five expect to benefit directly from HITECH or other ARRA like funds for interoperability. This leaves local public health with few options for bootstrapping itself.

Now in spite of this gloomy picture, I want to argue that public health, local public health participation in health information exchange is essential to insuring the healthiest possible population because chronic disease is concentrated in the low income and vulnerable populations that are served by local public health. We need a strategic plan for moving local public health forward.

I'm going to share four specific ideas with you. The first was not in my written testimony. My public health colleagues were aghast to see that I had left out any reference to standards, and so I want to underscore what I have here in my oral testimony.

We encourage you to continue through your rulemaking process to address issues related to the paucity of public health standards and the interaction of those standards with real world practices. Public health needs a reference model to guide developers to make it safe for them to enter the marketplace. The expertise to develop such a reference model exists if the experts can be borrowed from their day jobs. And public health needs access to cooperative agreements to implement these standards.

The next three things I'm going to mention have to do with core functions of local public health. The first is case management. The second is the delivery of categorical services, and the third is monitoring health status.

Consider the case of a Medicaid provider who makes a referral to local public health for maternal and child healthcare services. In this kind of situation, physicians and local public health nurses don't talk to each other as often as they should about the case, even though it's essential to the coordination of care. There are groups like public health data standards consortium and others who are working on the idea of a public health or a case management EHR. Can future iterations of meaningful use incentivize the exchange of information between clinical EHRs and case management EHRs? I think so.

With all that's been said about EHRs, there's been little focus on exchange within local public health, categorical services like WIC, VCCCP, sexually transmitted infections, and others. This is where many of the sickest and most vulnerable people are seen. The multiplicity of authorities for public health make it impossible for local public health acting alone to integrate these systems. Now we'd like to see a requirement for federal and state organizations to release only interoperable systems, but until that day comes, could release of federal funds for IT projects be made contingent on taking steps towards integrating local public health systems? In other words, we've said what it means for a physician to be a meaningful user. Can we define what it means for public health to be a meaningful user?

And in the final stages of meaningful use, as you well know, we envision using population data to develop registries, conduct community health assessments, and do quality improvement. The way this information is captured and accessed will depend heavily on state HIE plans. In the coming days, we're going to see which of these plans are more or less successful. Can meaningful use requirements help insure that state and local public health have a leading role in assuring the highest possible level of health for our communities? We are going to require physicians to release personal health records. Can we consider requiring the release of community health records?

When you think of the struggles of public health going forward, I hope you'll think of the examples of Michigan, Wisconsin, Minnesota, Indiana, and I guess I have to add New York to the list here. And say to yourself, "Wow. They've really done a lot to get ready." What HITECH has gotten right is it's taken the real world problems of physicians into account in developing a strategic plan to move them forward. In the same way we need to take the real world problems of state and local government into account, as we craft a strategic plan for moving toward the healthiest possible nation. Thank you very much.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you, Marcus. Our final testimony in this first panel will be from Perry Smith, who is Director of the Division of Epidemiology at New York State Department of Health and State Epidemiologist for New York. Dr. Smith oversees the New York State Department of Health's general communicable disease surveillance and control efforts and has worked extensively in HIV/AIDS, communicable disease, and public health surveillance and informatics. He's been active at the national level in the public health epidemiology area serving on the executive committee of the Council of State and Territorial Epidemiologists (CSTE) holding several offices, including the presidency.

He chaired the CSTE public health informatics team focusing on electronic national disease reporting, laboratory reporting, and national reporting standards, as well as the CSTE's surveillance policy subcommittee. CSTE is a national professional organization of over 1,000 epidemiologists who provides technical advice to the Centers for Disease Control and Prevention, and works to strength cross-border coordination among state and local agencies.

Dr. Smith is an assistant professor of epidemiology at the School of Public Health at the state university of New York in Albany and has collaborated with Eastern European colleagues on epidemiologic studies in the Czech Republic and Poland. Thank you for coming, and please proceed, Perry.

Perry Smith – NY State Dept. of Health – State Epidemiologist

Thank you very much. I want to thank all the members of the meaningful use workgroup for inviting CSTE to provide testimony today. And I'd like to start by focusing on the current status of electronic lab reporting, immunization registries, and syndromic surveillance from a national perspective since these are the three specific areas of health information exchange for public health that are included in stage one of meaningful use.

Most states have made considerable progress in implementing electronic lab reporting to public health. A 2009 survey of states and territories showed that 89% of jurisdictions have operational laboratory reporting systems, although about half of them are less than 50% operational. The most commonly cited barriers to electronic lab reporting were lack of health department staff and funding and competing information technology priorities for laboratories.

It's especially important to note that none of these electronic laboratory reporting systems, none of them receive laboratory reports from electronic health records. Reporting typically comes directly from the laboratory's information systems and also these systems are not uniform across the country. Many states have developed their own systems with some variation in standards. Also, these systems and the information they transmit have been validated, and now serve an essential function that cannot easily be replicated without considerable reprogramming and revalidation. Lastly, meaningful use requirements do not apply to commercial, non-hospital laboratories from which a significant portion or proportion of these reports to public health originate.

There's also been great progress in recent years in the implementation of statewide immunization registries. Based on CDC data for 2008, we know that about 75% of children under the age of 6 have been reported to an immunization registry with 2 or more immunizations and 42% of enrolled U.S. provider sites—I stressed the enrolled part because it's not all provider sites—but 42% of those who are enrolled to submit data actually submitted data to a registry during the 6 months prior to the survey.

Unlike electronic laboratory reporting where reporting is not directly from EHRs, some immunization reporting comes from an electronic interface with the EHRs. In 2008, there were over 1,800 provider sites that reported from their EHR and, in New York State, last year we estimate that 26% of providers accounting for 60% of all reports submitted to our organization registry from EHRs, directly from EHRs.

Moving on to the area of syndromic surveillance systems, based on another 2008 survey, we know that 83% of 52 health departments conducted syndromic surveillance with the most common source being emergency departments. In response to the 2009 influenza pandemic, CDC promoted the use of a

system called Distribute for influenza syndromic surveillance. Thirty-four states participated with eight of the health departments having over 90% emergency department visit coverage. While most states are conducting syndromic surveillance, the systems and data collected are non-uniform. In fact, the Distribute System allows each jurisdiction to define its own indicators of influenza. Also, although the data is provided electronically, it often does not originate from an EHR. For example, in New York, the emergency department chief complaint data usually comes from hospital triage systems.

An important aspect of implementing all three of these systems is the critical need to evaluate the data being transmitted, establish its validity and completeness, and to continue to monitor its quality over time. Establishing the channels and turning on the data flow are only part of what is required. Confirming that the data received matches the data that was sent and is indeed the data that was requested is no small task. The concern of public health epidemiologists being flooded with enormous amounts of unverified and unusable data is real. We all stand to benefit if we insure that public health receives useful, verifiable data, and has the resources to process it.

To summarize the current status of public health in regard to meaningful use measures, CSTE sees the glass as half full. Public health already has the capacity to use the three types of data under stage one of meaningful use. But the following conclusions are especially relevant. Implementation is only partial at this time. There is no uniformity of systems across the states. Most of the information does not currently originate from electronic health records.

Getting to the current state of these systems has been costly and time consuming. That is, these systems are not easy to build or to adapt. Experience with every one of these systems has shown that simply establishing electronic data exchange was not enough. Data validation and resources for its processing are essential. And, lastly, it's not surprising that health departments are not eager to discard these current systems in favor of direct data feeds from EHRs without adequate verification of data validity and the resources to accomplish the transfer to new systems.

CSTE, in collaboration with CDC, has been making significant progress in recent years to address the technical challenges and to develop national standards for public health reporting. For example, CSTE has updated documents that provide the details for surveillance case definitions and reporting requirements for nationally notifiable conditions, including LOINC and SNOMED codes and the ICD-9 standards. Despite this progress, we suggest that much more is needed.

Just as the Office of the National Coordinator has orchestrated and funded a huge national assessment and development of a plan to implement EHRs in the clinical setting, public health is in need of the same strong impetus and funding if we are to rapidly incorporate EHRs into public health. Without this focus and support, public health will not be able to move as fast as the clinical side to incorporate EHRs. Walt Suarez from the Public Health Data Standards Consortium refers to this as the digital chasm between clinical care and public health settings, and I think it's a real concern.

In conclusion, I'd like to leave you with these thoughts. First, health information exchange is difficult for the reasons mentioned and involves far more than simply establishing data flow. Pulling the necessary information together at the provider's end and accurately processing it at the public health end is challenging and costly. Nevertheless, incorporating public health use of electronic health records has the potential to greatly improve population health and is worth the cost and effort, but we need to insure that public health objectives are feasible and realistic. Our comments and recommendations today are offered in the spirit of trying to insure that meaningful use criteria for public health are crafted such that population health has improved. Thank you very much.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you, Dr. Smith. At this time, I think we'll now open it up to some questions from the panel here. Paul?

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

First, I just want to thank the panel. I mean, it's an overwhelming sense of gratitude in terms of what you all have accomplished in the public health sector. The feelings I had initially still stand in terms of wanting to somehow help and just mainly sharing a sense of gratitude for all you've been doing and recognizing how little the public understands on what it takes to talk about public health, not just individual health. I think that's the next transition we have to make and it's a large one.

I have a number of questions, and I don't know ... take them one at a time. First, you all talked about and we appreciate your acknowledging how we try to include public health in at least our recommendations to ONC, and it pretty much survived. You also talked about the huge gap between the lofty goals and where we are. Your problem is not magnified multiplied by 50. It's multiplied by, I think, 3,000 public health departments that seem fairly autonomous.

What is the best next step meaningful use criteria we could do to help you? Now that's a little bit constrained, but it was a really interesting point you raised, Marcus, about, well gosh, we've put some both requirements and incentives to back the efforts of providers. What could we do for public health? Unfortunately, I don't think that's in either our or ONC's statutory authority to even deal with.

It's a very interesting— It's just the same thing you point out. We had that difficulty with laboratories. There was a reach through CLIA, some work on CLIA and clarifications because those are run at the state, I believe, level as well, and the federal government can provide some guidance to the states about that. I don't know whether they can do similar things in public health. I think, even at the state level, you have trouble dealing with the local public health.

So anyway, I'm just trying to reach for what could be our next meaningful use criteria in stages two and three that would move you? David Blumenthal talked about getting on the escalator. We don't want people to fall off the escalator once we get them on there. So, what advice do you have in terms of going our next stage?

Seth Foldy – Wisconsin – State Health Officer

One problem that is an important public health problem is the ability to alert clinicians of fast moving situations in their community at the general, global level. You know, the facts that say, by the way, we're seeing a lot of pertussis, and then it's ... , of course, to think about the patient centric level in the future. By the way, you're seeing a person with three weeks of cough. And did you know there was a lot of pertussis in the community? You might want to try test A and antibiotic B. But to start small because we know that we'll tie ourselves up in knots if we try and go to the big vision, one thing is to try and make sure that the directory systems that all states will, by necessity, have to evolve as part of their state level HIE projects, begin to be also oriented towards being able to reach clinicians in the electronic record environment where the clinicians are likely to be spending a lot of their time, so alerting, and that was on your list for stage two.

The second is because case reporting by itself is already kind of difficult, so electronic laboratory is a great first case of case reporting. Gradual expansion in that area may be warranted because there are a lot of similarities. If you can get ELR right, you can report other things right. For example, cancer registry information from past labs may be one modest— It wouldn't have humongous value to the state of the nation, but it helps take a channel that you started to carve and make it deeper, which helps us do our work better.

Then, finally, to get to the bidirectionality of information that we are talking about, here I'm going to say I may say something that my immunization staff later tell me that I'm going to regret. But it does seem to me a very valuable case already suggested by this committee that helping clinicians see in their electronic medical record when immunizations appear to be lacking in the state immunization registry seems to be a great first use case at that informed, patient centric, bidirectional communication. Whether it's technically feasible for states, I should state up front, I may not be the best authority on that.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

In response to that question, I agree that facilitating the bidirectional communication sort of as a step up

from our mostly one directional communication is an important step forward to consider. The other big thing is that if we're really trying to drive improvement on the primary drivers of population health and cost in the state, right, in the United States, we're going to have to move toward more public health involvement in chronic disease sorts of areas. And we're going to have to better address high value clinical preventive services and the big-ticket American risk behaviors.

Marcus Cheatham – Ingham County Health Dept. – Asst. Deputy Health Officer

At the risk of dominating, I think, though, that all of our answers here are very dangerous in the absence of an architectural view of where we want to go and what is achievable in what stages. And, therefore, I—and I don't know what— My suspicion, obviously, the more time you give us to get ready for stage two the better. On the other hand, there may be really important work that has to take place over the next six to seven months while we're doing everything else to define jointly what is most achievable given the evolving public health information architecture.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

I think that's a really important point, and you know that we struggle with how much to put in stage one. One of the problems is the incentive goes down, so to get people to move, you know, so you appreciate that.

I'm prompted by your comments, Seth, about your number two, which is the case reporting. The University of Utah had a paper maybe two decades ago talking about the difference in reporting of incidents in a hospital. You can either rely on humans to go, one, know to report; two, find a form; three, take the time to fill out the form. Stage two was to have a pharmacist look for adverse drug events and go prompt people, and then they'll have to do the form filling out. That increased the reporting by an order of magnitude. And level three was let's go look for hints in that case the lab system or the med system, looking for antidotes to certain, so let's say treatments for adverse events. And then that raises another order of magnitude.

If we could build into our systems— We talked about a feedback button for EHR safety events. If there could be a public—I just know this is reportable. If I could click this button or pull down lists and report it and then the system do it, you could probably see a vastly increased rate of reporting that would get you information that you can start doing things with and then, through the ... arm, try to get it back to us in ways that affect our individual care.

Maybe something like that, that could be a way that manifests to address your case-reporting tool. If we could talk about to our EHR vendors, can we have this simple way to report reportable conditions by users?

Seth Foldy – Wisconsin – State Health Officer

It's never actually a unidirectional process. It's always iterative, back and forth. It's also, what you're pointing out though, is public health is at risk of receiving much higher volumes of less specific information, and so both the workforce and workflow considerations there are very important, and we have seen this with electronic laboratory reporting.

I think what that leads us to is some of the points that other speakers have made about the absolute need to develop good applications at the public health end to integrate information. For example, today, I can see in one system that somebody had a communicable disease. I have to go to another system to find out if they were ever immunized. We need the interoperable EHR and public health, which probably doesn't look exactly like the one that companies are developing for medical practices.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Other questions from the panel? Yes, Neil.

Neil Calman - Institute for Family Health - President & Cofounder

I actually want to congratulate you. I think it's easy when you have a lot of resources to do a lot of stuff, but public health has been doing a lot of stuff with not so many resources, and I think it's really admirable.

The thing that I'm concerned about is the panel has been trying to up the ante on how this public health part of our mission is really going to work. And yet, it seems like we're sort of stuck doing this backwards. The tool that we have is putting some sort of a requirement on providers. Providers, in turn, turn to the vendors and say, "Well, how can we do this if the vendors can't do it?" And the vendors then turn around and say, "How can we do this because we're doing business across 50 states, and everybody is asking us to do things differently, and there aren't standards for this."

Somehow I sort of feel like we have to figure out how to unwind that spiral that sort of is going in the wrong direction in terms of the tools that we have in hand, and so I think the work that you're talking about doing in terms of prioritizing some national standards is going to be critical because I don't think the rest of this system, at least the way it looks from the point of view of setting standards for meaningful use, can really go very far without that happening. It would be great if there would be a way to sort of put some resources into that.

And the other thing that I think also is really important that we focused on is there has to be utility. Ultimately the cost of this then will be born by providers who are going to be paying the vendors for the changes that are going to be made in these systems, as your systems evolve and whatever, and that stuff has to happen. If there's no real utility for the providers in the information they get back, it's always going to be a requirement, and we know what happens with requirements that don't have utility for the people that are being required. You never get the kind of adherence that you really want to the system.

I think we have to start, as we've tried to do, thinking about so what will be meaningful. What's the meaningful role that providers play in improving the public health? And if we think about that, I'm wondering what your thoughts are about how can we approach this given the tools that we have, a little bit picking up on Paul's point, but you know what tools we have available to us. What do we do about the meaningful use criteria given those sort of gaps in kind of the rest of the system right now because we really do want to push this forward?

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

I'll go ahead and make a couple of comments. I'd like to go back to something that Seth Foldy said in his comments earlier today, and that is to emphasize the need I think we all feel for a forum for public health to get together and make some of these difficult decisions because basically I think public health is a federation of 50 states and more territories and local government.

So, we have CDC that has taken a leadership role. We have CSTE. We have JPHIT. We have a lot of organizations that have really put a lot of time in and made progress. But there's no one place that brings everybody together, and I think we all recognize that. Until we solve that problem, we will be wrestling with the questions you're asking us this morning because it's very difficult to move ahead at a national level with meaningful use that's standardized across the country when we don't have that kind of consensus nationally from public health.

That said, it's very difficult and several of us this morning have commented on the fact that states have literally put in hundreds or tens of millions of dollars into systems that exist now that will be very difficult to change. Even if we have national agreement on public health standards and meaningful use measures for public health, it would be extremely difficult overnight or even within the timeframe of stage one, two, and three of meaningful use to switch over all of the public health systems to new meaningful use compliance systems because of the difficulties that we've enumerated. And also the state of the art of electronic health records isn't there yet in terms of providing all of the information public health now gets electronically in the timeframe that we get it.

I guess what I'm saying is this is going to be an evolutionary process and a difficult process, but I think we need to think about how we're all going to come together to—in fact, I'm addressing this to public health now, the public health side, how we're all going to come together to make these decisions. As I say, many of the professional organizations are already working on this, but it's hard to answer your questions until that step is solved.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

Three things real quickly: I can't remember if anybody mentioned feeding chronic disease registries. I think that's particularly important, and I know that's planned for later stages of meaningful use. That was really critical.

The other is I'm not an expert on how constrained you are in what you do and can't do. I understand meaningful use applies to EHRs. But sometimes when something is not defined exactly the way you'd like it to be, sometimes it's possible to push a little bit on the definitions. If a case management EHR used in public health is not currently thought of as an EHR used by an eligible provider, maybe there are ways to dig into the wording of some of those rules and expand the definition a little bit. I leave that to you to struggle with.

Then, finally, I think the awareness on the part of ONC that it currently lacks many of the powers that are required to do things that would very much be in the public interest as far as population health goes, I think it's great to see that clearly and to be able to articulate to Congress and to the CDC and others, "Look, there's this hole here. There's a gap where additional authority is required somewhere in the system. Let's put our heads together and puzzle it out." I think we appreciate very much you struggling with that issue.

Marcus Cheatham – Ingham County Health Dept. – Asst. Deputy Health Officer

If I could just add, I think, in the later stages of meaningful use, it will be good to focus on more public health examples. We identified in our health department something like 12 different data systems that had child health data in it. There's so much potential there to benefit clinical practice: lead poisoning data, WIC utilization data, Medicaid utilization data, hearing and metabolic screening, which I mentioned. We've been trying to force the providers to report to us, but we have a lot that we can give back to them, and so to focus on additional examples, we have the immunization registry. But I think many states could build on that model to provide other kinds of data.

As I mentioned, we're going to add the lead laboratory results. So to make it a system that's useful to the provider, not just something that they have to report to and hire their vendor to be sure their reports are going in, those kinds of examples. And then, with the immunization registry, not just look at the reporting, but look at the coverage levels as a meaningful use indication, not just the numbers, percentage of shots getting in.

Neil Calman - Institute for Family Health - President & Cofounder

Just one thing about both of you mentioned the lab stuff, but as more and more lab testing is going on in offices, a lot of that stuff is missing from the systems already, so I wouldn't get too comfortable saying, "Gee, we don't want to change anything because we're going to miss this stuff." On the other hand, you're going to capture a lot of stuff you're missing when people are doing lead testing in their offices and A1c testing in their offices, and you're not getting any of that stuff by just connecting to commercial labs.

Marcus Cheatham – Ingham County Health Dept. – Asst. Deputy Health Officer

It's a good point and, actually, in our immunization system, we have set it up so that providers testing lead in the office can report through the system, and they're required to report, whether they— So we're trying to provide them a mechanism to do that reporting.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

Dr. Calman's question was interesting about, we're kind of talking about what levers we have to drive change and what levers we don't have. And so I wouldn't underestimate the levers that you do have.

In terms of sort of driving change in the public health sector, you do actually own, even if you don't have anything else here, you have a fairly substantial bully pulpit. And in the public health examples, you've included already you are driving some change. You've seen it in many of the testimony on immunization registries and other things. And so continuing to use the bully pulpit to get public health to work together and move on the things that we need to move on is worth considering.

In terms of making things useful to providers, a lever that you might have some influence over is sort of what you do with quality measurement, right? And so a lot of the current quality measurement is very clinically oriented at the moment. It's a lot of the things for hypertension and smoking, for example, sort of start with, among the patient population that you've already seen twice in the last year, right? The truth is, the population that's been seen twice in the last year isn't the population regularly that I'm most worried about, right? And if we drove our quality measures to be more population oriented, you would sort of drive the healthcare system perhaps to do more reaching out and connecting with the kinds of outreach, communication, and other things that the public health side of the equation sort of can help them with.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

Yes. That's a good comment, and I'll just make one comment. Our exemplar approach in our original framework a year ago did use preventive health for a lot of— Which it was supposed to be exemplar for a number of things. Can you capture data in a standardized format? Can it come back and feed? But also, it was, and can it feed the public health registries and give an opportunity for bidirectional communication. It didn't make it to the last, but we might be able to try again in stage—

Peter Briss – CDC – Medical Director, National Center for CDP&HP

You don't have to reach nirvana in stage one of any project.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

That's right. That's where the money is.

Marcus Cheatham – Ingham County Health Dept. – Asst. Deputy Health Officer

Now you tell us.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

Yes. You could have called me earlier.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Jim?

Jim Figge – NY State DoH – Medical Director

Again, I wanted to thank the panel for the excellent discussion so far. I had a couple of ideas I just wanted to toss out to see how you might react to these. The first is the use of an interoperable continuity of care document. I think a lot could be achieved between healthcare practitioners and public health practitioners if we shared data back and forth on a standardized CCD. And, indeed, this is something that we can bring to vendors, which we started doing in New York, and saying we want you to use a standardized CCD to move data around.

I'm thinking about what Gus is talking about where the health department is trying to pull a lot of childhood-based data together into one database. If you could take that database, and then pre-populate a CCD with that information you have, and then send it out to practitioners, and they can put data in that they have and send it back. You could start getting some real coordination of care going on between the two aspects of the healthcare system. I wanted to throw that idea out and see what you think about that, and then I have two others.

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

I think that's a great idea. Our experience sort of starting with the immunization registry and then sort of adding on one, you know, lead, newborn hearing. That's not really the way to do it. You should start with the larger vision of a comprehensive database and then figure out how to populate it with the data that we have. And I think we actually are trying to change our model. We probably need to change our public health law because each of these systems has its own authorization law. But that broader vision of a comprehensive health database CCD is a great one, I think, and that should really be how we do it in the

future rather than just sticking a new field for the lead test in the immunization registry as you go along, sort of piece it together. Absolutely agree.

Seth Foldy – Wisconsin – State Health Officer

It reminds me that public health and the Public Health Information Network Project actually went ahead and declared that HL-7 3.x was going to be our standard for the future, unfortunately, a decade ahead of the industry. But I know that our immunization staff are in fact a little bit disappointed in some ways that they're working with version 2.5 when in fact they'd like to get to CDA type architecture.

So I think there's a lot of promise that needs to be explored, and we certainly would prefer that general direction of approach than having 8 public health systems that must meet some combination of somewhere between 8 and 16 individual message structures. With some degree of ignorance since I'm not an IT technologist by training, we think there is a great deal of benefit to be had by that model.

Jim Figge – NY State DoH – Medical Director

The second idea I wanted to throw out is with regard to immunization registries. I think I heard Perry say that a number of states are a little bit further ahead in that area with respect to interoperability with electronic health records, but that it's mostly being done in a batch mode. And I would like to see that advance to real time reporting seamlessly in the background so that it goes in both directions. So when an immunization is given in the pediatrician's office, and it's logged on the EHR, the system immediately sends it to the registry. And, vice versa, when the child comes in for the visit, the EHR goes out and pulls down immediately in real time what the registry has and then analyzes the gaps and provides, I think, as Gus had suggested, provides a guideline in terms of what are the gaps and what is the recommended ... at that visit so that it's happening at the point of care in real time, so you get some real value and feedback from the use of the registry. If we could get this to a real time bidirectional system, would that add value? I'd like to hear your comments on that.

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

My sense is that our current registry systems do a pretty good job of getting the data reported to the health department, but the providers have to basically, in our state, log onto the Internet with a Web browser to look up their patients, and they're dealing with another office system, so until that, what you're saying, happens, the full use of the provider end is just not there. It's extra work for them to go to the registry. They'll rely on their system unless they get a new patient coming in from another practice. Then it's easier to get the record, but they're not utilizing the reminder functions, the scheduler functions and other things.

I guess, looking further down the line, maybe we don't need immunization registries in the future if this logic is just built into the integrated system that we are tapping into from public health. And so each EHR would, in a sense, communicate. We could pull together a record on a child or a community or a practice, but we wouldn't need to operate a standalone piece of software at the health department. It would be built into the integrated system.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

Yes. In some ways, my guess is that the immunization registry thing is already well on the way to being solved. You can kind of see the flight path for where we need to get, so as of today, 17% of immunization registry data nationwide is getting submitted in HL-7 format. Again, New York is a little ahead, right? So the program says approximately 17%, and I said not 17.3%? You know, it's right now approximately 25 states aren't in a position to receive HL-7 format data. The state, your state, or the state cooperative agreement HIT money is going to take that number from 25 to 8. And then the program is already working on getting the last eight, and so the flight plan has been defined in a lot of ways for that problem, and maybe that'll be the point of the spear that helps us figure out how to apply that sort of thought process to other problems.

Jim Figge – NY State DoH – Medical Director

If we wanted to have early, decisive success, that might be one pathway to take.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

Even that is going to take us a while, right?

Jim Figge – NY State DoH – Medical Director

Right.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

But at least we think we have a plan for that one.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Neil?

Neil Calman - Institute for Family Health - President & Cofounder

Just a comment on that: I think the thing that would trouble us is that, in a sense, there are some internal contradictions between what you guys are saying, right. What you're trying to do is perfect the system that at some point we're all hoping is going to be obsolete. We're trying to perfect the system of immunization registry, but at the same time, saying we're hoping we're not going to need a system of immunization registry.

That we'll be able to do something that's a more comprehensive solution to data gathering and exchange and alerting and other things that include lots of other things, so public health alerting wouldn't come separately from a system that says your kid needs a lead test than it comes from somebody that says there's an outbreak of legionnaires in the community or something else. I guess the question is really how much resource do we want to put into perfecting systems when you guys are visionaries, and you're already seeing a vision for a solution that's beyond what you're currently working on at all. I mean, I just throw that out.

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

It's a real dilemma. It gets to the issue of having to run dual systems. We see this vision, but in the daily work, we've got this system that we have to work with, and we're trying to build on it. And I think we have realized that just tagging on each disease to the same system is not the way. We need a more comprehensive picture, but how you make that leap, sort of need to leap to hyper drive to get there.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

The other thing about that is that the frame of your question kind of ignores what I think is a really important piece of the puzzle, so the success of immunization registries and related efforts over time hasn't just been about the technology. There's a lot of important public health work that happens in health departments with the data, right? And so it's not just about getting the data together. There have to be people on the receiving end that do something with that. And so the reason that we now have near 100% vaccination coverage for kids, and the reason that there aren't really, in most places, significant disparities around that number is because there have been decades of people in health departments and at CDC and at related places that are out in communities doing outreach and communications and identifying disparities and working on all those problems. That kind of work won't get done purely by fixing the data problem.

Seth Foldy – Wisconsin – State Health Officer

I would just also give a philosophical reaction to Jim's suggestion about the immunization registry. I think that, as has just been said, we all have a clear vision of the potential, the technological potential that these systems can do, and we all want to get there. Our experience, though, with system after system in public health and probably in any field is that it's much more difficult than the conceptual idea at first suggests. I think what Jim's suggestion is that if we had a real time national immunization registry would take, I can see, years, literally, of political negotiating about what the standards would be and how to do it, unless the HHS put the resources and the impetus behind it.

I mean, that's the question you're asking, but I don't think it would be done the way we normally operate in public health if we do it as business as usual. Our experience has been with electronic laboratory

reporting. Something as simple as that, conceptually simple, we've been working on for 10 or 15 years. And, as you hear, our states still don't have it implemented. It's just very difficult. So if you're going to make this a meaningful use standard, there's a price tag, and there has to be national commitment to the whole architecture nationally of how it would be done.

Marcus Cheatham – Ingham County Health Dept. – Asst. Deputy Health Officer

I'm trying to figure out how we can make this a win/win for both the public health practitioners and then for the pediatricians and family practitioners who are seeing the kids in their offices and clinics because both parties need to get value from where we go. The real time bidirectional data flow is, I think, where you're going to see the most value. That's why I'm putting that out on the table. I totally understand that getting across various barriers, both technological and political will take some work, but that's why we're having the discussions today to try to figure out what should the vision be and what resources can ONC put to bear on trying to help us get there.

Seth Foldy – Wisconsin – State Health Officer

Yes. I'm always concerned that talking to public health might be a little bit crazy making. We have big ideas. We want to do everything. We actually desperately have to accelerate the standardization to public health. There's no doubt about it. We can't use the old style consensus methods that have caused us to take. And standardizing national disease reporting has been a 50-year process, and it's half done, and we must accelerate, and we don't always know how. But to that point also, we also have to be very selective about where the marginal returns are of doing the hard work.

For example, real time immunization information is rarely critical. You rarely give a shot to a child one day, and it needs to be known by another provider somewhere else the next. That's not a very common use case, but there are other use cases like somebody walks into an emergency room asking for narcotics. You might want to know 20 minutes later that that happened if they walk into another emergency room requesting the same narcotics. I think, taking a very careful look at where you're going to get the greatest marginal value for a technological implementation is going to take a great deal of work. Then when you know where that marginal value is high, forcing public health to the table with itself to get the job done quickly, you'll have much more confidence.

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

And it may not have to be real time, but it could be like a daily data feed so that when the office manager is teeing up the schedule for the next day, then overnight they download that data, so it's there when the practitioner is seeing the patient.

Seth Foldy – Wisconsin – State Health Officer

Yes, I think the batch feeds in most of our states are very near real time, in fact.

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

Right, and that might be adequate for that purpose, but it definitely would need to be bidirectional, which I don't think we're there yet in any state.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Jim?

Jim Figge – NY State DoH – Medical Director

Yes, I had one other. I just wanted to follow up on Perry's discussion about lab reporting from major labs and then the need to follow up with case reporting. I think he touched upon the fact that once a pattern of activity is detected with lab reports that then there's the need for staff to go out in the field and pull together clinical information, and could this be an area that rises up in priority where Paul had mentioned the idea of case reporting. Could we develop a meaningful use criteria for case reporting when lab data is flagging the need to get those reports? Would that be useful, and could we possibly get EMR vendors to build that out in a way that health departments could use the data?

Perry Smith – NY State Dept. of Health – State Epidemiologist

I think that one area, this is, I think, one area that would be of great benefit to public health would be access to EHRs, be able to query and follow up in just the way you're proposing that if we know that there's a positive hepatitis B result from a laboratory, then we can access an electronic health record to get the clinical information from the EHR from the ordering physician. That would save public health resources tremendously, so I think that's a great idea. And, in some ways, it's already happening. Oftentimes our public health staff have to go to a hospital or onsite to access it, but if it could be done in real time from over the Internet or the Web or secure system, that would be a huge benefit.

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

I think a key point though is that the EHR have the data that public health is looking for. And some of the clinical data probably, yes, is there, but there's other data that we also look for, so the EHR has to be sensitive to what it is that we're sending staff in to look at.

Seth Foldy – Wisconsin – State Health Officer

A brief addendum, often the HIE has data that the EHR doesn't that is also of use. For example, differentiating chronic hepatitis B or C from acute. Our proposal in Milwaukee some years ago was to make sure that infection control professionals all have access to the exchange. Now this involves a lot of data use agreements so that they can in fact assemble a more meaningful and complete disease report. So there may be some human levels in there as well, but it's worth a look.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

That brings up another topic, privacy. And so let me just see if an understanding of perception that I have is correct. Yesterday, at the IOM roundtable on learning health systems, somebody put up a contract that I found very useful. In terms of privacy of health data, there are three factors that this person, and I wish I could remember who said it, but one is the whole de-identification, so sort of trying to remove identification. Another is technology to somehow protect it in a secure way. But the third component, which was very attractive, it really—and this is describing the attributes of trust—the third component was trustworthy recipient. In a sense, the other two are trying to make up for not nailing the trustworthy recipient, which is an interesting— We spent all our money trying to do that.

Now it strikes me, and this is where you can validate it, that public health is held in high regard and as trustworthy. My question is, are you not having any impediments, any major impediments as far as trust and privacy concerns in your work? Just to take one thing off the table for you.

Seth Foldy – Wisconsin – State Health Officer

I'm afraid you've added a thing to the table. As public health moves forward in this area, petrified that our high esteem and trust from the population could become tarnished, as information that we hold is shared with others, so it is actually just as critical or more critical for us to insure that the other users of HIE, for example, are fully trusted or are similarly constrained. So it's not a no-brainer here by any means.

Just a point was made in passing that needs some emphasis. The technical job of our combining data sets is just like in the private healthcare world, shrinks in comparison to the legal and agreements job. Just to give you an example in health information exchange, I heard from my staff yesterday. One of our neighboring states, which uses vital records data to help make up its information registry, is not entitled to share vital records data for any function with any clinician that does not hold a license in that state. So the construction of data use agreements that enable just one state's information registry to share information with a provider serving the same child in another state still requires attention to these regulatory privacy barriers that have gotten a lot of attention when we talk about private healthcare, but many of our public health data fonts, the fountains of data that we would like to share, have been constrained in ways because of the fear of the public that they might be misused.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

That's very interesting, so you do enjoy the trust of the public in the submission process. Once we open the bidirectional, you actually could face the same kinds of challenges and concerns, and particularly the state differences that we have.

Seth Foldy – Wisconsin – State Health Officer

And one way to assure that trust is to build into your legal structure the rules, so that you can say to the public, these are the protections that we built in. We can track every keystroke that happens in the system. We know every provider is authenticated through our system, etc. But that's what I meant when looking at combining child health data and making it available. We need to look at a bunch of different provisions of law, now some stronger than the others, and agree on what a comprehensive legal structure would be for this. I think that's important work that still needs to be done.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

It may also be true that you should have some concerns, at least in some places, about the infrastructure issues around that. Protecting confidentiality sort of depends in part on your technical infrastructure and their places where that's complicated for public health, I think.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

We sort of extended, so originally people thought of the meaningful use rule as applying to only EHRs, the provider facing, and you talked about the public health facing. One of the things we did put in was a requirement that we share with the N constituent, the patient and consumer. Do you think there's a role for PHRs in contributing data to your public health needs?

Seth Foldy – Wisconsin – State Health Officer

Yes, and we're still trying to figure out what it is.

Marcus Cheatham – Ingham County Health Dept. – Asst. Deputy Health Officer

What it is, right, again, the same issues. How trusted, how accurate, and informed is data, but clearly being able to communicate with parents about the immunization status of their child, just imagine how much more powerful that conversation might be than communicating with the clinician that child may see twice a year would be. We see enormous opportunity with huge numbers of unanswered questions. For that reason, we're very interested in developing the world of the PHR, the world of clinician PHR interaction, and we're very interested in trying to understand the world of population health PHR interaction for many of the same reasons.

Guthrie Birkhead – NY State Dept. – Deputy Commissioner, Office Public Health

It's something I think we need to learn a lot more about. With our immunization registry, we have not, at this point, given the parent the ability to come and get the data because of issues like authentication and other things, identity, and the whole issue of whether you want to continue to work through the provider or certainly we're in the age of people taking control of their own healthcare. It's that whole issue in a nutshell, and I don't think we're— Sort of the, you know, blank stare there for a minute was, we're not quite there in sort of dealing with that issue, how we would cope with it. It does raise a whole host of technical, legal, and other kinds of issues that I don't think we've really grappled with.

Peter Briss – CDC – Medical Director, National Center for CDP&HP

But if we're visioning this morning, right, the reason that I did a blank stare is that I'm not positive that we want to put multiple names on this. I can imagine some EHR or PHR that has clinical applications for providers, applications for real people for themselves, and applications for public health and perhaps other essential service organizations. And you'd rather have one system that if you want to have multiple purposes, you might rather have one system than go back to siloing, so this gets back to a fundamental thing about public health in medicine that we should all remember that all healthcare is just a minor subspecialty of public health.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

Back to the public health though, isn't it about the health status of the population? I mean, our ... is to improve the outcomes. Aren't they the owners of the outcomes, the information about the outcomes? And so isn't that something we, I mean, we never thought about before, right? We dealt with claims data, and now we're trying to ... but we truly want to know the functional status of population and how do we improve that. In some sense, I think it very definitely is a part of population and public health.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Well, I think our time is up, and I want to thank, once again, the panelists for their testimony, their written comments, the thoughtfulness they spent the time to prepare those, and the rich conversation we had this morning.

I think we're going to proceed now with the second panel. Is that correct? No break, right?

Judy Sparrow – Office of the National Coordinator – Executive Director

No.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you once again.

(Panelists Switch)

Art Davidson - Public Health Informatics at Denver Public Health – Director

We want to welcome the second panel. We've selected a number of distinguished speakers for the second panel, and the primary purpose of this panel is for these speakers to convey some of the unique projects that are ongoing under their jurisdiction that have meaningful use like characteristics. These typically will be projects that were homegrown either in a local jurisdiction such as New York City, which will be discussed by Amanda Parsons, or at the state level we have three statewide speakers and also a national speaker.

So we'll listen to each one of these presentations, which will highlight what is happening in their unique program. And then we're going to try to draw some common lessons from what we hear from each of the speakers during the discussion, which will help us have some real world guidance on how meaningful use projects have evolved and where could they point us in terms of going in the future, as we're contemplating what we want to do with stage two and stage three meaningful use.

Our first speaker is Nedra Garrett, who is the acting direction for the Division of Informatics Practice, Policy, and Coordination in the Public Health Informatics and Technology Program Office at CDC. I'm going to actually abbreviate the bios because I really want to get quickly to the content, so everybody on the panel gave me a very long and distinguished bio, but I'm going to take the liberty of abbreviating those.

Nedra worked at CDC for 11 years as an informatics health scientist in various areas. She has a Masters of Science degree in health and human performance with an emphasis in public and community health, and a Bachelor of Science degree in computer science. So she brings a very diverse background to her work at CDC, and she will have some very important information to enlighten us with.

Nedra Garrett – CDC – Acting Director DIPPC/PHITP

Good morning. First, I want to provide some very general observations and comments on my experience with meaningful use today to really express the need for including meaningful use of population data and certification to support the exchange of public health data between hospitals, labs, state and local health departments, as well as CDC, to ultimately improve population health outcomes. And so we need to make sure that the strategies allow us to capture critical preventive care data elements as well.

In addition to those three population measures that we've been hearing about today, we need to also recognize the importance of the clinical quality measures that are also important for public health. Some of these public health conditions include diabetes, heart disease, asthma, and smoking. In order to accomplish this, public health has to be at the table involved in these national health IT discussions, just like this panel here today, so I thank you for the opportunity to provide input.

In terms of applications, one of the factors that will influence the adoption and implementation of meaningful use for public health systems is our ability to develop and maintain electronic exchange of data for very specific population activities. Some of those activities at CDC that we're involved in include

the Public Health Information Network, Biosense, FoodNet, and a number of other reporting systems. The CDC public health IT applications, they have direct impact on public health surveillance, care coordination, and some of the essential services.

We've heard here a lot about bidirectional information exchange. That's critical for public health and clinical care systems. CDC is working on an application that allows us to provide public health alerts to physicians in electronic health record systems at the point of care. We were just talking about that. This application allows us to leverage the data in electronic health records to identify patients at potential risk for diseases that are of public health importance such as food born diseases. We're working with other federal and state partners to determine the extensibility of this application to other domains such as preventive care domains and screening around colorectal screening, cholesterol, and immunizations.

Someone talked about how we might be able to leverage this for other areas like immunizations, and this is an opportunity for us to use the decision support that is embedded in electronic health records—that's part of stage two—for sending these automated, electronic reminders on prevention to be able to advise and inform on laboratory tests, missed vaccines. And it is an opportunity also to provide patient education material at the point of care. So the information that's within the electronic health record can be used to help advance public health and to improve public health outcomes.

We know that there's a wealth of information that is now available to public health through these electronic health record systems, and so it's equally important for us to address a consistent way of sharing this information with public health and our partners. CDC is involved in a number of standards activities and supporting services such as the PHIN vocabulary services, which can facilitate the implementation of meaningful use objectives and measures.

It's important for us to understand and document the value of these kinds of services that we have at CDC, but there are more discussions that need to be had to get to a greater level of specificity. We need to examine new and novel ways for using this data that's now afforded to us by public health, and I would advocate that there would be opportunities to demonstrate this value. We talked about value added preventive services, population health, and that we want to be able to demonstrate this, and I think that we should be given more opportunities to do that.

The CDC is working with a number of national partner organizations like NACCHO, ASTHO, and we've heard others speak about the JPHIT work that's being done. And we also work with the Public Health Data Standards Consortium, but it's very important for us to understand what the needs and priorities are for state and local public health departments, and we're working to enhance the exchange of information through a set of consistent policies and standards and services. One of the ways that we are addressing this is through our public health information network. We are working very closely with the people at NHIN to make sure that this work is aligned with that of NHIN.

We have recently established a meaningful use advisory group at CDC that consists of leaders across the agency to provide some strategic planning for meaningful use and being able to understand the needs at the federal, state, as well as the local level. This group will be informed by these national efforts and, vice versa, we hope to inform the work at the national level and that, in turn, will inform us.

We have a number of communities of practice that we're using to educate partners on meaningful use, and one of the areas in terms of policy development is around, as we mentioned, the clinical decision support specifically related to disease prevention, health promotion, and health education. This is an opportunity for us to use the electronic laboratory data that's available in these systems to take advantage of the provider order entry in these systems for clinical decision-making.

In terms of next priorities for public health, we will continue to collaborate with ONC and NHIN on an interoperable health IT solution. We've heard a lot about having a public health information infrastructure. We want to develop and improve the implementation guides that we have to support some of the public health objectives around laboratory reporting, surveillance, syndromic surveillance, and immunization. And we want to reassess what the role is, what is the public health role of our public health information

network going forward in supporting meaningful use? And we want to continue our development of projects on implementing electronic public health alerting in electronic health records utilizing the decision support, and because these algorithms are going to be very important for helping to automate patient centric prevention educational material.

Finally, just to sum things up here, it's critical that we engage public health at all levels in these activities, as we're doing today. But as I heard on the panel earlier, we need to expand the breadth of that to involve new faces at the table. We need to support the demonstration, as I mentioned, on novel ways to use this new data that is now available to us. And I do believe personally that the personal health record does have a role in community risk and to help influence behavior of patients and delivering patient specific educational material to them, and to even alert to threats and outbreaks and things like that that are happening in the community.

With that, I want to thank you for the opportunity to provide input into this critical effort. Thank you.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you very much. Our second speaker is Amanda Parsons. Amanda is the assistant commissioner at the New York City Department of Health and Mental Hygiene. After starting her career there in the area of quality, she was asked to fill the shoes of Farzad Mostashari, who moved on to ONC, and she took over management and day-to-day activities for the primary care information network in New York City, and she also is running the regional extension center that has ONC funding at New York City.

She has her MD and MBA from Columbia, did her medical post graduate training at Beth Israel Medical Center in internal medicine, and undergraduate at Boston College. She also brings diversity of background to the table, and she'll be talking today primarily about the novel project initiated in New York City, the primary care information project.

Amanda Parsons – NY PCIP – Assistant Commissioner

Thank you and good morning. By way of brief background, with public funding back in 2005, New York City established the primary care information project. We've detailed a lot of the specifics of that. Essentially, we procured an electronic medical record, built in public health functionality, and then proceeded to roll out that electronic medical record. So far we've been successful, and over 2,100 primary care physicians in New York City have this electronic medical record. Those range a variety of settings including hospital outpatient departments, almost 30 community health centers, and over 400 small practice settings and at one correctional health facility.

We have several public health projects underway that I'd like to talk to you a little bit about today. The first is a project to evaluate the impact of electronic medical records on public health, so we have funding from AHRQ. We have been looking at the increased rates of documented clinical preventive services, before and after clinical decision support has been turned on. And I'm pleased to report that our preliminary, yet unpublished results show that there is increase around antithrombotic use, BMI, breast cancer screening, control of A1c, LDL, blood pressure control, and a host of other measures. The only one we did not manage to have an impact on yet is the number of documented smoking cessation intervention.

Another project we have underway is the development of our shared content service. The idea here is that labs have not been good about LOINC-ing or providing LOINC codes for their tests. This poses a great problem to us in our project because, without LOINC codes, we cannot trigger clinical decision support, nor can we do quality measurement or syndromic surveillance adequately for those measures that require electronic lab results. Therefore, we volunteer to step in and do LOINC mapping for them. We've got great participation from the New York City labs. They give us their lab compendiums. We provide the LOINC codes, and then we provide those LOINC mapped lab compendiums back to the EMR vendors for use.

Thirdly, we have built a bidirectional EMR interface between our citywide immunization registry and the PCIP practices, which allows information that is collected about the immunizations documented as part of

the routine care to be submitted to the citywide immunization registry. From there, it goes to the New York State immunization registry. We're in the throws of piloting the feedback loop, which is the ability to download the information from provider, so providers can download the information from the immunization registry.

We have built the health quality information network, which we call HQIN, and here providers submit automated, aggregate, provider level quality measures. We have that working with three different vendors and soon to be seven in total. And we received more than 300 practices worth of monthly fees. We leverage this data to return them back population level reports around specific measures.

With funding from the Robin Hood Foundation, we launched a pay-for-performance program called eHearts that focuses on the aspirin, prophylaxis, blood pressure, cholesterol control, and smoking cessation. We leverage the HQIN network in order to make those payments. Those payments are made all patient, and they are particularly increased for those patients with disparities: the Medicaid, uninsured, and then as well as for patients with comorbid conditions. We would look forward to the data from that work.

We have also built and are now testing a public health hub that allows us to do provider or for community level queries, no patient information. I'd like to underscore that, but the ability to say, you know, please tell us how many patients have their blood pressure in control through this network. We look forward to also being able to push alerts through this public health network in the form of, for instance, responding to certain disease outbreaks, so any patient who came from a zip code in which we knew an outbreak was occurring, we would be able to push out alerts directly into the provider's electronic medical record. Lastly, it's worth noting that we are doing syndromic surveillance on the EMR derived data, though we hope that through the public health hub, it will happen in a more automated and less administratively intense fashion than we currently do it now.

You had asked what were some of the barriers and suggestions for improvement, I believe that LOINC continues to be an issue for nationwide. We'll have solved it with our shared content service, but that will only have been essentially for New York City. We believe that ONC should require EHR vendors to use only those lab compendiums that have LOINC codes for, at the very least, the meaningful use quality measures. We hope that this market demand will spur the changes necessary on the lab vendor end.

We also believe that there needs to be an incentive in place for laboratory companies to provide bidirectional lab interfaces for small practices, particularly those in primary care who order relatively inexpensive tests, relatively infrequently, as compared to their multispecialty counterparts. We recommend that ONC ask EMR vendors to report back the number of bidirectional lab interfaces they have in play by lab companies and hopefully leveraging a transparency that is cross vendor and cross lab.

We believe it's important for patients to move their information from personal health records around. We know that some EMR vendors are reluctant to allow patients to move this information outside of proprietary, tethered, personal health records, and we believe this practice runs counterintuitive to patient centered care. We think the data should not be tethered, not either to the EHR or to the personal health record. It should be able to be moved wherever the patient or the provider deems it fit under permissible circumstances. And we ask that ONC insist on the portability of data outside of the EHRs and their proprietary portals.

I would like to offer a note of caution, particularly as you look to the state's three meaningful use measures where you'll be looking at the scores of providers on their meaningful use quality measures. We've been able to compare EMR derived measures with chart reviews, and what we can tell you is, uniformly, the EMR derived quality measures vastly under-calculate the actual practice, the actual clinical preventive care that is being documented in the practice. In some cases like in smoking cessation screening, it is less than half, so the EMR derived quality measure is less than half what the actual chart review would let you note, would suggest the practice for performance is, and that is largely due to issues

in documentation workflows and the rigidity of just where the EHR has to calculate from. It cannot calculate it from an inexhaustible set of sources.

We think it's also important to think about external stakeholders, as they receive, the start to receive electronic copies of documents, and they compare them to their paper copies, particularly those we mentioned a lot of the hybrid world, living in both the paper and the electronic feed. Oftentimes we're finding that our documentation out of the EMR is being rejected because it does not look exactly like the paper form, and we believe that there need to be some policies and procedures in place to encourage people to focus on content over format, and particularly where things like your version of your Internet Explorer can greatly affect what the document looks like, as it comes out of the electronic medical record.

And so we look forward to a lively discussion around the different measures that could be put in place around meaningful use, but I would like to suggest three. One is the ability, asking, in stage two or in stage three, asking to providers to report on their ability to download immunization history where it's feasible for patients who are new to the practice. Another would be to ask them to electronically submit universal reporting forms, even if it's through e-faxing, but health departments who are not able to absorb those in an electronic means can at least get them through an e-fax means, which somewhat replicates the paper form, but would allow providers to increase their amount of notifiable reporting. Lastly, asking the providers to attest to whether or not they have a LOINC math compendium as part of their electronic medical record. Thank you.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you, Amanda. Our next speaker is Dr. Virginia Caine. Virginia is the director of the Marion County Health Department in Indiana. She's also an associate professor of medicine at Indiana University School of Medicine in the infectious disease division. Dr. Caine has a very accomplished career, both in public health and in the HIT, HIE arena. She led the collaborative effort among hospitals to sign onto the nationally known Indiana Health Information Exchange.

She also had led significant initiatives through public health in the area of infectious disease with HIV/AIDS as two examples. She has a medical degree from New York Upstate Medical Center in Syracuse, and did her internal medicine residency in Cincinnati, and her infectious disease training at the University of Washington in Seattle. Dr. Caine also brings a wealth of experience to the table, and we're pleased to hear her presentation.

Virginia Caine – Marion County, IN Health Department – Director

I want to thank the panel for allowing me to share our experiences with our meaningful use like projects in Indianapolis and the current status of our projects. We've been experiencing some transformational change in health information systems. To date, the following public health EHR project was our syndromic surveillance. Our PHESS helps to monitor population trends and it's identified real advances of public health significance, including a very large gastrointestinal shigella outbreak in December of 2005. For instance, in our shigella outbreak, our comprehensive data exchange made the difference in determining whether our outbreak occurred predominantly in a school-age population or a particular industry, for example the food industry.

Our next project is our immunization data, which seems to be very popular among all of our panel speakers. By sharing immunization data in a bidirectional fashion between the health information exchange and Marion County Health Department, we can provide better information to care providers and public health officials. I want to introduce you to the "needle butt" baby. This is a baby that keeps getting the first of a series of vaccinations without completing the series because he or she is changing providers frequently and unaware that a prior vaccination was given.

Now this result of the baby not receiving the completed recommended immunizations in a timely manner, but from a patient safety perspective, they may not be protected from a life threatening illness when he or she is most at risk. They receive unnecessary exposure to medications with its inherent side effects. And it's compounded by the issue of wasted resources regarding time, personnel, and supplies. For our

special populations who are vulnerable in indigent populations, we can decrease our high outreach expenditures from public health and decrease the waste of duplicate procedures.

One of our other processes we looked at was that, back to our shigella outbreak, we put alerts attached to the electronic medical records to the patients to make sure that appropriate get testing and the treatment was dispensed based on susceptibility of the strain of that bacteria. Say I had shigella, but you needed to know what the resistance of the strains were, so you wanted the physicians to recommend the appropriate antibiotics.

In the case of our syphilis epidemic, doctors were sent electronic messages with algorithms for syphilis testing and prompted to do appropriate and additional syphilis testing. For example, in our pregnant mothers, an additional screening test was required in the third trimester to prevent congenital syphilis.

In a recent TB outbreak we had in our homeless population, red flags were placed on the medical records of homeless patients prompting an appropriate outbreak TB testing in certain patient settings. So you can have this backdoor effect where you can prompt the practitioner to perform additional public health testing for the patient.

We also, in the case of our situation awareness in which enhanced reporting and clinical messaging with DOCS4DOCS that during our H1N1 pandemic, we were able to give a health alert to over 2,000 doctors regarding appropriate testing, understand who should receive prophylaxis, and whether prophylaxis for family members of the index patient was done. This occurred in just a 30-minute process for over 2,000 providers.

We've demonstrated that this health information exchange can help support public health practice. But as a nation, we have to be mindful of the great interfacing burden that public health may face if they receive all this data from tens of thousands of different entities, these individual EHRs. So clearly maintaining such a data infrastructure without significant public health resource investment may be infeasible for all but the largest of health departments in this nation. Funding must be provided for all public health departments to be able to participate in health information exchanges. Strategies for managing these data flows and potentially leveraging existing data flows from organizations such as health information exchanges must be explored and promoted where feasible. Our experiences may help to form some policies in areas like the implications of privacy and security policies and procedures.

Our future priority, we want to look at surveillance, for example, in obesity. We measure the BMI of nearly every child in the city of Indianapolis. We want to be able to get it into the provider's hands, the electronic record. We're also looking at housing inspections and lead poisoning in children and getting our public health data into the hands of the electronic medical record work.

To the greatest extent possible, the future, I would picture a public health record that is going to clearly show my treatment team, not only public health staff, not only patient clinical information, but also information about the patient's social determinants of health and about the environment in which he lives. For example, if I have an obese pediatric patient living in poverty, unable to afford membership at a fitness club, no sidewalks, no access to grocery stores for fruits and vegetables, no bike trails, lack of significant physical education in the school, and I have access to the surveillance information, then I might recommend an alternative treatment strategy that is more effective than the traditional medical treatment recommendations. So I look forward to layering public health social determinant data such as where the concentrations of fast food facilities, farmers markets, recreational parks, walking and biking trails, communities with ample sidewalks, school with healthy food product, significant physical activity requirements for its students in order to have improved public health status. Finally, let's be able to track our constituent's population health status like UPS tracks our packages. Thank you.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you very much, Virginia, for your comments. Our next distinguished speaker is Dr. David Gifford from Rhode Island. Dr. Gifford has been the director of health in Rhode Island since 2005. And like many of the other speaker on this panel, has both a distinguished public health background and has been

very active in HIT and HIE. One of his major public health accomplishments has been to lead the state of Rhode Island in achieving a very high vaccination rate for H1N1, among the highest in the nation. He's also been actively working on issues such as childhood obesity and tobacco use in the reduction of ethnic disparities. And, in addition, he's been working aggressively on expanding the use of HIT.

He's working in the state to develop a statewide health information exchange and is the state's HIT coordinator. He also has extensive background in quality, having served on a committee for the National Quality Forum. He has completed his primary care residency and geriatric fellowship at UCLA, went to medical school at Case Western Reserve, and has a master's in Public Health and Epidemiology from UCLA, and is currently Associate Professor of Medicine and Community Health at Brown. We're looking forward to hearing Dr. Gifford's comments.

David Gifford – Rhode Island – Director of Health

Thank you very much. Actually, I'm here in place of Amy Zimmerman, who is our coordinator for HIT, who has a family health emergency and couldn't make it, so she apologizes. We're particularly excited from a public health standpoint. I think you heard from the current panel and the previous panel of the potential options with EMRs and health information exchange. Particularly, what we have seen in Rhode Island is it begins to transition the healthcare system from often you've heard as a sick healthcare system to really one that's more about a well healthcare system about prevention.

We have an effort that's ongoing. We have actually three medical home demonstrations going on in the state. One of them is an all payer, well, all payer except for Medicare, moving forward. Within that effort, the insurers are collectively paying for outcomes and paying for the type of sort of medical home model of care that we all would like to see. You need to be able to have an electronic medical record to do that.

With that, you have the doctors now that's been going on for three years. They are now asking for really what you were talking about, level two and level three meaningful use. If you couple payment incentives, not the type for just adopting electronic medical records, but payments to outcomes in the practice, you will see them adopt this technology and clamber for it. You will then see them come to the table and start asking why public health doesn't have money from the legislature, from CDC, and elsewhere to allow them to get the data they need, so they can get paid in the outcomes that are out there.

If you don't have the payment, then you're working on the altruistic model. And while many physicians are altruistic, the altruism only will go so far. And so I think that what we have seen is you need to link those two together as an important aspect, but it really transforms healthcare delivery to much more of a population based ... that we're excited about.

We also have an immunization registry. This registry actually, it's probably unfair to call it an immunization registry. The name is KidsNet. This has been in place since '97. We've actually merged many of the data sets that were talked about in the first panel. We have newborn screening in there. We have lead information in there. We have home visitation programs in there and WIC, and we have them for everyone in the state.

For immunizations in particular, we purchase vaccines for all providers for all kids regardless of insurance, regardless of any status. And in exchange for that, all the pediatricians and family physicians need to put information into the registry. We are now at the point where we are populating EMRs, as they adopt EMRs with that information, and some of them are able to send information into it, but not enough, and that has been a problem, as we go forward.

The other problem that was brought up before is many of the EMRs don't have the algorithms in it, and the docs don't want to log onto the Web system to look at who hasn't gotten a vaccine out there. However, this registry is incredibly powerful for us. In the H1N1, we knew exactly how much vaccine to order and to distribute to pediatricians' offices based on this registry. We also are able to track and see who is not sort of following ... standards out there and nudge those physicians along who may not be practicing standard of care in immunization practices that are out there, so it's invaluable.

We did try to get height and weight to put into it, as the EMRs are loading in with immunization, and that's not been successful. Most EMRs do not collect height and weight in a standardized way that allows us to look at BMI to calculate it, so we haven't been able to do that.

I want to talk a little bit about our effort to try to use EMRs around influenza and other disease outbreaks. We were able to use this registry when we had a pertussis outbreak in a daycare center. We had four cases, exposed over 150 kids. Within literally hours, we knew all the kids, whether they had been vaccinated or not, whether to contact their parents to get additional vaccines or not, and who to get out there. So having this data is very powerful in disease outbreaks, and I'd echo that.

During H1N1, we all, public health has sentinel physician sites. Actually, H1N1 was discovered as a sentinel physician site in California. We have a high penetration of EMRs in the state. Almost 50% of our primary care providers have EMRs. We have tried to move away from mailed postcards to actually have an EMR sending their sentinel data. They can't do that because it's actually the only way they can do influenza like illness is out of claims, and they can't.

They don't have it in a structured data field, and we know all the different EMRs in the state because we actually survey the doctors on a regular basis on all the EMRs they have. And we went to the different vendors. And they just can't do that. So having a structured data set is really incredibly important to understand how to do that because otherwise it's just been a text field. Just a simple question of fever was impossible to get out of the EMRs, so we weren't able to do it.

However, we've also had a lot of e-prescribing in the state, so we were able to actually track and have been tracking. We're working particularly with SureScripts. What is the medication that's been prescribing? We knew whether people were doing amantadine or Tamiflu during it, so back in the previous outbreak before H1N1, the circulating strain was resistant to Tamiflu, and we were able to see that most of the docs were using amantadine, and those that were subscribing Tamiflu were contacted and say, you really should be doing amantadine. With H1N1, you had to switch away from amantadine to Tamiflu, and we could actually see the crossover and graph that crossover.

We also discovered that 5% to 10% of everyone who was getting prescriptions for Tamiflu were not filling them within five days out of the database, so we could then quickly launch the campaign and could see that change, so we dropped that down to almost zero, telling people that if you wait five days to get Tamiflu, it is not effective. You might as well take a sugar pill, and so that was very instrumental, as we went forward.

We have a rod system that came out of CDC and out of the homeland security efforts of 9/11, looking and tracking chief complaints out of the hospitals. We have most of the hospitals doing that. It is HL-7 messaging. Two of the hospitals don't do that. That's been helpful for tracking and picking up some illnesses, but I would say it's really at the infancy and needs to be expanded.

I think the greatest barrier that we're seeing is that the meaningful use definitions, which we applaud and really like, and would like to see them further expanded and build more on public health, is that as the speed goes forward, they are tending to emphasize HIE as the verb, not the noun. What I mean by that is the registries that you hear about are the noun, the aggregated noun aggregate and how you do that. The verb is just making sure the data is going back and forth.

It's easier to do the data back and forth. The aggregation is more difficult. The real value to society and the population and the outcomes is having that noun component there, and I think the examples I gave and others have given have been there. The problem is, as we rush to build that noun component is expensive and difficult, we bypass it and make it less and less valuable with the point-to-point connections.

The point-to-point connections are expensive, difficult, and complicated to develop, and we're seeing that with our immunization registry and having to do point-to-point with different EMRs and different vendors, the same with our lab reporting and everything else. The point-to-point system is a very inefficient,

expensive model, and to have more of an HIE noun centralizing it and coordinating it would be extremely valuable. But what I'm seeing, and the other HIT coordinators are seeing, is that ONC's effort to move forward, including the NHIN Direct, is making that noun less and less valuable, and I think we're not going to achieve the final value out there. And I think efforts to minimize the point-to-point are going to be very important as we go forward. Thank you.

Art Davidson - Public Health Informatics at Denver Public Health – Director

Thank you very much, David. And our final speaker on the second panel is Steven Hinrichs. Steven is director of the Nebraska Public Health Laboratory at the University of Nebraska Medical Center. He's here today representing the Association of Public Health Laboratories. He has served as the past chair of that association in their informatics committee. He is also currently the national co-lead of the Public Health Laboratory Interoperability Project. He will be talking today about the opportunity to utilize meaningful use concepts in the laboratory community. We welcome Steven's comments.

Steven Hinrichs – U of Nebraska Medical Center – Director, Public Health Lab

On behalf of APHL and the laboratory community, I'd like to thank the members of the workgroup for the opportunity to provide testimony on efforts within the community to utilize meaningful use concepts. For the past four years, we have been engaged with our partners in the implementation of national data exchange standards and electronic messaging systems. The project referred to as the Public Health Laboratory Interoperability Project, or PHLIP, has developed scaleable systems and processes to achieve the electronic exchange of central laboratory test orders and results for purposes of surveillance, surge capacity, and continuity of operations. Therefore, this one measure that of ELR actually impacts many other measures incorporated into meaningful use guidelines.

While syndromic surveillance is one important use of ELR, the public laboratory community has emphasized other critical aspects of electronic messaging, and that is transmission of test orders. In general, as the term electronic laboratory reporting is applied in public health, it refers to the transmission of laboratory reports related to conditions of public health concern, also known as reportable diseases such as salmonellosis or tuberculosis or lead poisoning. However, laboratories transmit data about the organism or the chemical, the causes of the disease. Therefore, all laboratory tests require interpretation. That data must be presented in a uniform and understandable way.

Therefore, we, APHL, emphasizes the importance of common data elements, uniformity in testing methods and processes that insure quality. That is also why APHL supports the use of not only national, but international standards for laboratory test reporting. Just as diseases do not recognize artificial boundaries at the state or city borders, diseases do not also stop at national borders.

The laboratory community has learned through disasters such as Hurricane Katrina and epidemics such as swine flu that reporting of results alone does not capture the full capability of information technology. The ability of the state of Iowa to come the aid of Louisiana was made possible through establishing a Web based system for receiving test orders and submitting results. The business cases for electronic laboratory data are well defined. The application of these use cases in public health workplace are an extension of the more general issues in the private sector, meeting the need to respond to service requests by customers.

In the public sector, these customers may commonly be epidemiologists or infectious disease specialists with the need to confirm or exclude disease in a specific individual. However, the business cases for public health extends broadly to include the real time monitoring of the public health at the population level. These multiple business cases are illustrated by the need to determine changes in the number of confirmed cases of 2009 H1N1 at the national level, monitor effectiveness of current formulations of vaccine in specific states, and detect viral resistance in a specific patient or individual. Therefore, we respectfully submit that the dialog needs to progress beyond the limited concept of electronic laboratory reporting to that of laboratory information messaging, essentially bidirectionality.

This also refers to not only the transmission of laboratory test results, but also to the electronic transmission of test orders. For the purposes of a public health business case, the ability to transmit,

acknowledge, and respond to test orders is crucial. The ability to monitor test orders could be one of the earliest indicators of a change in health conditions or as a means to detect outbreaks of new disease. This approach would also lay the essential groundwork for the future of bidirectionality.

PHLIP has dramatically altered the ability of public health laboratories to participate in electronic laboratory reporting. The first pilot project established requirements, processes, and resources needed to bring public health laboratories on par with private sector laboratories. Three components were identified including the creation of electronic laboratory test message, which was accomplished by IT experts ... HL-7, the creation of the common guidelines and vocabulary, which was accomplished by a combination of laboratory experts and IT professionals and, finally, the creation of the architecture, which was largely created by individuals who had know knowledge of laboratory functioning.

PHLIP documented a wide variation of the use of different terms to describe the key elements of a lab test including the test name, the analytes or targets being tested, and the results being reported. While one approach to address these differences is the use of standardized codes, we have also documented specific problems with the common application of test orders and test result codes. While it is possible to select a high level one code that appropriately encompasses all tests for influenza, we found that more specific codes were needed to convey and discriminate the performance of a real time preliminary chain assay that is capable of detecting of influenza in 2009, but distinguish it from a non-real time PCR assay that detects influenza H1N1 of the seasonal type. This subsequently resulted in an agreement by subject matter experts in the use of appropriate descriptive language to describe the laboratory methods and corresponding LOINC and SNOMED codes or the creation of new codes when a concept such as multiplex PCR was not previously available.

The original goal of PHLIP was to develop a messaging structure and harmonized vocabulary for all tests related to 50 reportable conditions. However, the acuity of the H1N1 influenza outbreak focused all of our efforts on influenza. One outgrowth of the PHLIP effort is an initiative to work with the FDA during the new device or assay approval process to achieve uniformity and test orders and result vocabulary prior to release of new test assays.

While the process to achieve electronic exchange of laboratory data is complex, expensive, and technically demanding, we believe there are no overwhelming technical impediments to this goal. The measures of meaningful use related to ELR, syndromic surveillance, and vaccine registries do provide an appropriate base on which to build. The PHLIP program has shown that progress can be made rapidly and the public health laboratory sector can be relied on in the future to support critical functions related to public health including early detection of disease outbreaks and confirmation of disease cause. The public health laboratory community encourages the meaningful use committee to move beyond the phase one measures. Thank you.

Art Davidson - Public Health Informatics at Denver Public Health – Director

I'd like to thank the panel, and we will now open for questions from the workgroup.

M

Thank you, panel, for coming and informing us. I'd like to focus my first question to you, Dr. Parsons, about what you described as I think you said something close to in parting or putting public health functionality into the EHR. How did that whole process happen? And how did you openly decide what were the functionalities? And when you got to the point where you decided what those were, how did the physicians who were going to use that EHR ultimately feel about that or did they have any input on that? I just want to understand a little more about that because it was very interesting what you described. But I want to learn a little more about that.

Amanda Parsons – NY PCIP – Assistant Commissioner

Sure. Your question is how did we go about that process. I think it's first worth noting that the New York State Department of Health has a public health framework called Take Care New York. Within this framework, certain diseases are prioritized over others because of their impact on morbidity and mortality. For instance, not shockingly, we have priority areas around blood pressure control, cholesterol control,

smoking cessation, and other such clinical preventive services. So there already is a more narrow set of issues that we, as a department of health, choose to prioritize over others.

When we initially looked for the public health functionality— And I'm going to be completely honest, I was not at the department of health at the time, so this is a little bit of the "I heard from Farzad back in the day." They did an RFI back in 2006 to identify electronic medical records that had functionalities like built in clinical decision support that was based on the evidence. Alerts to providers to remind them to do certain clinical preventive services, quality measures that would trigger at the point of care so that you knew how well you were performing, not only on that patient, but on that chronic disease or that issue across all of your patients, the ability to have a built in registry tool so that you could identify the patients that have not walked in the door. And I think there was illusion to that in the prior panel that it is also important to have a tool to say, okay, who hasn't been in to see me? And so those are some of the public health functionality that the requirements were put into RFIs.

Sadly, none of the commercially available vendors had this at the time. But not shockingly, it does take, I think, a wealth of clinical knowledge to try to understand what should be put in there. They certainly had their wealth of billing alerts and alerts that the EMR vendors felt comfortable designing, but not the kinds that really required, you know, prioritizing one quality measure over another.

When we selected a record that would be willing to allow us to help build this into their record, we then spent about a year and a half doing what they call extreme rapid cycle development. Monday comes the functional requirements. Friday comes the product, and you basically go through a year and a half of that kind of iterative cycle to figure out whether it works.

You ask whether clinicians participated in that process, so obviously, within our group, there are a fair number of clinicians. Some of them continue to practice. But also some other health centers participated in the design. They had either already adopted an electronic medical record that was the same or different than the one that we were using, and they were brought into the fray. And we've been continuing to roll it out and make tweaks and understand how to prioritize.

In terms of the physician responses, it's been overwhelmingly positive. There are those who don't like the clinical decision support, but mostly it's because it doesn't apply to their particular patient population or the way that they like to screen patients. For instance, they say I'm not going to ask smoking cessation, smoking status on my 65-year-old patient who I have known for 30 years. I'm just not going to ask that. I know she's not a smoker. I don't want to have to fill out these questions, and so sometimes we run into those issues.

By and large, they say, why isn't there one for bone density screening? Why isn't there one for this? Why isn't there one for all these other things that they would like to see? We have been seeing the physicians very welcoming of appropriate clinical decision support. We have about 30 measures, and we don't seem to have exhausted the place where they stop paying attention.

David Gifford – Rhode Island – Director of Health

Can I add something to that? We had a slightly different approach in Rhode Island. The payers just said they're going to pay for these outcomes, and the docs then started doing everything that the New York City Department of Health did, asking for it from some of the same vendors that you guys use.

W

Dr. Parson's, I just wanted to follow up on the evaluation you spoke about between the measures coming out of EHRs and the paper records and your opinion about, is it because the data collected in the EHR isn't standardized, or it was in a weird place, or is that correctable, and how are we going to deal with that on a broad scale if you're seeing this on such a – in the scale that you've implemented it?

Amanda Parsons – NY PCIP – Assistant Commissioner

The two primary reasons the data was not in the right place. One was, for instance, there were no first-time practices. They didn't have a lab interface, and so all of the LDL, HB A1c measures were available

in sort of an uploaded PDF, but not readable by the quality measure. The other big culprit in this is just the workflow of the documentation provided. We set up, for instance, the smoking smart form that triggers from an alert, and it triggers in the preventive medicine section of the chart. It does not trigger from where they want to document, which is in social history. And so the question then is, do we try to change half of the providers and get them to document where we want them to document, or do we change the quality measures and say, it should actually also trigger from where they came. I think it's that kind of ongoing dialog that we need to have with the vendors, with the providers.

But in order to do that, I just want to be very clear about the level of resourcing necessary. The chart or views that we got were actually part of a separate grant to do just that. But I cannot imagine that all extension centers or all health departments are going to be able to do exhaustive chart reviews to understand what's happening with the documentation, which is why we're very eager to publish this data and make it known that we don't want people looking at clinical quality scores that come out of meaningful use in the next couple years and say those are absolute determinants of provider behavior. I'd be happy to talk offline and show you some of the data. I brought it with me.

M

...records

David Gifford – Rhode Island – Director of Health

... said is true, but when you have the insurers and the docs working together on paying for the outcomes, this goes so much faster because the docs are like, "Oh, I really did a much better job. I better record it in the right place. What do you mean I can't get ... thing." And, then they work on the agreement to get it done. If you wait to sort of do this on this—outside it's going to be much slower. You pay for this. It's the business model and docs ... go. The payment for this makes the 44,000 or 65,000 meaningful use a drop in the bucket.

Amanda Parsons – NY PCIP – Assistant Commissioner

From your mouth to the payer's ears.

Virginia Caine – Marion County, IN Health Department – Director

In Indianapolis, we have a program called Quality Help First, where we are comparing doctors performances on 26 quality measures against their peers and looking at certain ... indicators. It's based on medical claims data. We're at the process where we had a physician set ... group, physicians who decided what indicators they wanted to look at versus the insurers coming in the same room together making a decision on those 26 indicators. And, it is an incentive program by the insurers based on their performance at the end of a period.

So, we're looking at reduced costs. We're looking at cutting down emergency room visits. We're looking at those patients who get discharged from the hospitals to quickly and they come back within 30 days for preventable hospitalization. But, it was like two forces going on at the same time with the with the physicians being very frustrated in getting them all together in the same room making a decision on what 26 indicators they were going to be evaluated on.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

So, for Dr. Caine, I had never thought about the idea of integrating social determinant data and environmental data and things and putting it in front of a clinician at the point of care. So, is that a futuristic kind of thought of yours or is that—?

Virginia Caine – Marion County, IN Health Department – Director

It's a futuristic process that we're looking at. We've actually screened nearly 100,000 children, standardized in Indianapolis where we had their BMI. So now I'm trying to make sure that they get into the providers' chart on that patient, but we want to add the other layers. So you're making a recommendation about this child and you don't know that they're not even close to a grocery store or they can't even walk. So they're looking at you like you're weird making all these recommendations, but you

have no sense of my culture or what's going on in my locality. So that's a future project, working on putting those social determinant layers in our public health data where it's available to the provider.

Alice Brown – National Partnership for Women & Families – Director HITP

It seems like that may be a place that those measures evolve in stages two and three of meaningful use that can be broadened to include some of those—

Virginia Caine – Marion County, IN Health Department – Director

Exactly. Then the other thing, I don't want to forget about school health data. There are a lot of school based clinics that are out there and trying to bring that data into place where it's integrated with all of our data. So we were talking about these immunization registries, but you have the complexity of the parents trying to bring their registration card to the school to say that my kid is immunized, we're looking at mechanisms where we can feed that immunization data to the schools so the parents don't even have to worry about trying to find those cards and do I have all of the shots. It's automatically sent to the schools based on the children that are going to those schools.

Alice Brown – National Partnership for Women & Families – Director HITP

We talked about briefly in the first panel about privacy and security structural issues for public health and Dr. Caine mentioned de-identified data. But I wanted to ask you all about less identifiable data. Obviously some public health reporting has to be done with identifiable data such as to track and stem the outbreak of communicable diseases. Others you may not need the patient's name but you would need other factors. Tracking of flu outbreak you would need presentation of symptoms and the geographical location.

I'm interested in your feedback on how you would feel about a requirement to access views and disclose only the minimum amount of data necessary to accomplish the specific public health purpose consistent with applicable law, understanding that states differ. Then the purpose of the disclosure would drive the discussion on how much data is actually needed so that if it does need to be fully identifiable, fine ... can be included, but if there incentives in place to use less identifiable data where that is all that is needed to accomplish the specific health purpose, I'm interested in how you would feel about that as we move through meaningful use.

Virginia Caine – Marion County, IN Health Department – Director

If you had a life threatening influenza outbreak where it's very contagious and you needed to make sure that those people are being prophylaxed or you're trying to remove them from a setting, there's certain minimum data we require for us to interact in order to improve the safety for the entire population. So we would have to have some identifiable data in order to make that happen depending on that particular threat of the agent that we're collecting the information for.

While I say that in terms of the information that we've been capturing and sharing with all of our providers, every major hospital, with the exception of one, is sharing the same clinical data in the city of Indianapolis. And we've had, I can probably count on one hand the folks who have been concerned in terms of the privacy issue when it's been explained to them and the rationale and the reasoning related to that.

Amanda Parsons – NY PCIP – Assistant Commissioner

I would certainly agree with the need to keep the data identification to a very, very minimum level. In fact, the way that we designed our project, we only see aggregate level information and from our interactions with the providers, that's the most that they want us to be able to see. We don't interact very much with the patients through PCAP, but particularly in some physician communities it is a very big deal for them to understand why the Department of Health is getting the quality measures.

They need to learn to trust that we're not going to take those quality measures and then in turn hand them over to Medicaid or Medicare or the payers for them to incur penalties. If they're going to be measured on them they want to know what you're going to do with the data. I think it's really important, when you think from a provider perspective and from a patient perspective what is the need to know and who needs

to know and really to access just an unknown level ... data because I can see there being significant patient concern over it.

Nedra Garrett – CDC – Acting Director DIPPC/PHITP

I think at a federal level it's a little bit different from where you're actually working in practice but at a federal level with the CDC alerting project that we're working on and putting alerts in electronic health records using decision support, we're actually using anonymized patient data because we didn't want to— And I know there would be a lot of pushback at a local level, provider level, if that information was coming out to us. So we were actually using anonymized data and really looking at what are some of those risk factors in those EHR systems that we can use to trigger alerts for those public health conditions that are important to us, but we're obviously not capturing and storing any identifiable information.

David Gifford – Rhode Island – Director of Health

The first panel talked about how public health is a very trusted source for a lot of confidential data, and that's because I think there's a good rationale for the information that we have and the way we've treated it. If we got data that we couldn't justify why we needed confidential data, then we lose that trust and there is a distrust of government having information. People intuitively understand the importance of public health, that infectious disease and other things are not geopolitical boundaries or anything, they just go back and forth. So I would say it has to really be done on a case by case basis and why you're doing it.

The only thing I'd add to Amanda's earlier comment is we've actually seen when insurers are going to collect the data and multiple ones; the providers actually would rather have us collect it because we're more trusted than the insurers collecting the data. Actually, if we collect it on behalf of the insurers, then it's one data collection for multiple insurers and they all have to use the standard data set and it's much more transparent, it's not a black box. I'd add that as just a caveat, otherwise I agree with everything Amanda said on the provider end too.

Steven Hinrichs – U of Nebraska Medical Center – Director, Public Health Lab

I guess I'm going to point out the same thing I pointed out before. I think that we're at a point in time where some day we're going to look back at this and laugh because hospitals have to report and all of that stuff has become increasingly available on the Internet and physicians have the same requirement. It's going to be out there, and whether it's collected by public health or insurers or whoever it's collected by, we're going to have to get over this really quickly because the public has a right to know about the quality of care that we provide and they're going to continue to demand more and more accountability and transparency.

So I think the issue's really not how do we figure out how to anonymize it better and do all that other stuff, I think there are projects out there that are really looking at how to make it more palatable, as you were saying, for physicians to actually know that their data is not anonymous and that in fact what's going to come from the disclosure of that data is assistance from the health department and from others to help them improve the quality of care that they give.

Jim Figge – NY State DoH – Medical Director

As I heard the presentations I was thinking that your novel projects parallel work that's being done now in terms of the patient centered medical home. And even to expand that to the idea of the patient centered medical neighborhood. So I see the public health role intersecting with the role of the primary care provider in a patient centered medical home because many of the tools that we're talking about are in common. So we heard people talk about disease registries, which links back to the Wagner chronic disease model. If you use a disease registry for a chronic disease that has significant public health impacts, for example, diabetes, asthma, hypertension, then the patient centered medical home needs to reach out into the community and look at not only those patients who come in for visits but the patients who don't come in for visits, and we've already heard some of the panelists talk about that.

So there's a real intersection between what we're hearing and some of the ideas in the patient centered medical home, and that includes the use of quality metrics to improve care. It includes the use of

structured laboratory data that we heard about. It includes reporting of quality metrics and pay for quality models with insurers. So I'm seeing a possible framework or structure in this concept of a patient centered medical home that encompasses all the ideas that we've heard presented and could be a framework for moving forward with level two and level three meaningful use by integrating these ideas of a patient centered medical home, a patient centered medical neighborhood, and the public health mission. I wondered if people could comment on that.

Virginia Caine – Marion County, IN Health Department – Director

I know one of our biggest silos is that we have great data from the hospital ..., emergency data. We have not as much focus and emphasis on ambulatory data. We have our little networks, surveillance, a few pick of the providers to get information, but we don't have great ambulatory data. This is the major area where I think we're very weak, especially for the patient centered data, having that information available for the patient. So I think a lot more resources need to be focused in regard to that.

And I would just tell you the consumer is getting more and more interested in having access to their data. They're concerned about quality of what's happening to them and they want some kind of simple mechanism so that they can look at to be assured that they're getting the kind of quality of care that they think they should get. And they're going to be looking to us from an information standpoint to make that accessible to them, for them to also determine, looking at their own data personally, whether they're getting the quality of healthcare that they're paying for in terms of dollars. I don't know if that gets at some level.

Amanda Parsons – NY PCIP – Assistant Commissioner

I love the idea of the medical home neighborhoods or the patient centered neighborhoods. I think the difficulty will be to implement those in settings that are very fragmented. I'd like to point to New York City as an area where we have many, many different payers. Most of our providers have anywhere from 10 to 20 payers that they deal with, and it's very, very hard to get ... of message and to underline and highlight what's important when you're hearing 20 different times what's important to any one different payer.

I think David hit it right on the head when he said payment will drive physician behavior. I'm so delighted to see all of the work that's happening around meaningful use. Never before have we had the attention of the vendors the way that we have them. Never before have we had the attention of the providers and other folks that are integral to that process, and it's great.

It's happening because there is real money behind it. The way the money is behind it is I think important. We will tell you right now what we will pay. If you do "x" we will give you "y," which is not the way that we're hearing the payer community think about paying for this. "Well, when we see outcomes and when we see reduction in cost then we'll jump in," and I think the importance is you've got to jump in early. It's okay to keep ratcheting up the bar, but you've got to show that you're part of the process and you've got to make it very transparent, what are you paying on, how much are you paying.

And that's what is so beautiful to me about the meaningful use framework. It just puts us all on the same page and it did it—I would say overnight, but it took most of us more than one night to read the 864 pages, maybe within 3 days many of us were on the same page.

Steven Hinrichs – U of Nebraska Medical Center – Director, Public Health Lab

I think it's important to remember that EMRs are a tool and it's ... technology, which is a good thing, but the medical home, the Wagner model, they really are hard to implement without the tool. They can be implemented without it, you could do it without EMR, it's a lot of work, but it really requires a much broader change in, you've heard the term "workflow" but it's a very different model of healthcare. And to me, that's why I go back to what I'm so excited about from a public health standpoint, is that this EMR and this discussion of medical home is transforming healthcare from a one on one, wait until it will come in, to a much different level.

I applaud ONC and you all for the definition of meaningful use, because what we saw prior to that with EMRs was very much like you saw with Microsoft Office. It was just a typewriter now on the computer. It

had all these other functionalities that we weren't using. We were seeing people digitize the manila folder on their computer. Meaningful use is making it at least digitized in a way that has the potential to go beyond it, and the fact that there's some money behind it, actually people are sort of using it, you layer at the next level up and then you'll really get it. So I think it has to be viewed in the context of Wagner and the medical home model and then when you start seeing that I believe the natural extension will be the community model where it can be played out.

You're already seeing that where physicians, at least we're starting to see it in this ... data is where physicians are starting to ask for data and input that they had never asked for. They're even starting to think about— My long term goal is that when we are trying to look at policies around smoking reduction and restricting smoking and the types of calorie posting New York City did, that the docs are going to come screaming in because they have the data that says that if we don't do that I can't address obesity and now you'll see it. But right now when you go to legislation on that, you don't have the medical community or the whole medical industry behind you. They're off dealing with their other issues. I think it brings the two together.

Art Davidson – Public Health Informatics at Denver Public Health – Director

I'd like to pick up on the quality measure side. Amanda talked about some of the deficiencies in both paper but also the electronic, where do you put the data. I want to talk about a different aspect of the quality measures and particularly the definition and particularly for New York City and Indiana quality initiatives.

Presumably you're reporting on what the external payers have asked you to, but we all know that those have mainly been defined using claims data, or administrative data sets. We also talked about the missing folks, the people you report on and then the people you don't even see. In defining someone with diabetes, let's say, the definition is if you've seen them twice in the reporting period and you have submitted a billing code— So there's a lot of conditions, which is almost a self-fulfilling prophecy, I had to not only see them, I had to think I'm working on their diabetes, as an example.

Have you also developed your own measures that say, let's identify people with diabetes or hypertension as people with that diagnosis on their problem list, which is closer to the denominator than the let's try to figure out who's got diabetes. Have you done any of that? Where do you think we should go with that? Because that is one of the regrets I have about meaningful use, at least stage one, is that a lot of the measures are the old measures and they aren't taking advantage, ironically, of the new systems of capturing information.

Virginia Caine – Marion County, IN Health Department – Director

Let me tell you what was a huge discussion, at least in talking about our measures and especially when we're talking about performance and trying to define whether a provider is doing great work so he deserves a bonus or not. One of our major concerns was— I'll just talk about diabetes. I may have a patient that my A1C is 8 and that person, I feel, is doing a fantastic job. I may have another provider whose patient has an A1C of 9, but within a year it came down from 13 down to 9, did a fantastic getting his blood sugar under control, versus that one who's 7 and was 7 a year ago because he's a Bell City employee and he makes over \$100,000, no problem getting his medications, and all those little bits.

So how do you make sure that your indicators are really measuring the quality of what's happening in that doctor's office when the patient is involved and it's a fair and equitable system, if I've got mostly patients who may be Medicaid or indigent or vulnerable versus someone who has a higher educational level? So those were the huge discussions we had trying to make the playing field level.

Amanda Parsons – NY PCIP – Assistant Commissioner

On our side, we started off not even looking at the claims data. We looked at the measures that were derived from claims data and said how we could most closely approximate those, at least the intent of the measure, in the EMR. We've definitely been cutting our teeth on this and we should be toothless at this point because it's hard, right? So there are different things that you struggle with.

We can say let's take a patient who had an encounter, who has diabetes in their problem list, absolutely, that's very doable. But then things like how do you define encounters? Because we were defining the encounter, because you want to isolate the population that's active and you don't want to penalize the providers. Some of these places have 20%, 30% churns or walk-ins, etc., so we're trying to identify the active patients. Does a telephone encounter count? Does a no-show count? I mean they were active enough to make the appointment but then they didn't show up. So they're still probably active. Different electronic medical records will count an encounter in a different way.

So those are some of the things that we've been struggling with. But frankly that's what we're going to have to struggle with in order to get EMR derived quality measures. But we definitely think that the ones in the EMR are much, much, much better, much more superior to the claims based data, particularly because we all know that the doctors are horrific at billing and coding and so if we're relying on that, well then we've got bigger—

Jim Figge – NY State DoH – Medical Director

With respect to diabetes, you submitted some written testimony on the New York City mandate to report all hemoglobin A1C values, and that is in fact a tool that could be used to identify patients with diabetes in someone's practice, regardless of whether or not the patient actually shows up to visits. I'm wondering, have you thought about using that hemoglobin A1C database in the context of population based quality metric reporting?

Amanda Parsons – NY PCIP – Assistant Commissioner

What Dr. Figge is describing, is a parallel project that's happening in a different division of the Department of Health. Basically the New York City health code law was amended in 2006 to allow labs to report A1Cs to the Department of Health and then the ... group uses that data to provide feedback to providers on their panel of patients and then also to provide feedback to patients on those who have too high A1C. The reports are very user friendly and they're very informative to patients.

While we applaud those efforts and we certainly think it's a great way to get at the patient, from a measurement perspective we like the idea of being able to query the electronic medical records themselves through the query tool that I mentioned before, to be able to say, "Okay, let's plug in all the different EMR vendors." We do miss a sphere of the hospital setting and whatnot until you can actually do this kind of querying at the HIE level, as a system level, but certainly from the electronic medical records, that is just our preferred way to get at the health of patients and their A1C control, for instance.

But they serve different purposes. The ... group is trying to get to the patients to be able to engage them and to engage the providers on their panel. We're using this data to try to understand overall what is the health of the population. We've given the providers the tool in their electronic medical records so they don't actually have to rely on this piece of paper to tell them how well their patients are doing. They could actually query their own electronic medical record to provide them that information.

Jim Figge – NY State DoH – Medical Director

Do you provide bidirectional data from hemoglobin the A1C database back to the electronic health record? So what you have in the database also is reflected in what the provider can look at in their electronic health record?

Amanda Parsons – NY PCIP – Assistant Commissioner

We do not. And that's partly because of the data that's stripped on the way to the A1C registry. You would never be able to shuttle it back into the electronic medical records because you don't have a lot of the matching that's available. But we do have bidirectional. We have been rolling out bidirectional lab interfaces in our project for several years and close to 80% of our practices have at least one bidirectional lab interface, so most of their data is in a structured form.

Neil Calman – Institute for Family Health – President & Cofounder

I think Paul's question actually is sort of a great summation of the morning, in a way, because it actually comes to the issue of how we define public health and individual healthcare. The more narrowly we

structure our quality reports, the more we basically are saying that what I'm really responsible for are the people that come into my office and not only that, only the people that come in twice and only the people for whom our providers do the right thing.

On the other hand, and we've actually run the same set of data in multiple different ways, and it's astounding the difference in the results that you get, if you think about yourself as an agent of a community and a population and that you have some responsibility for that, then you broaden the definition. You still only have information on the people that have ever come in, but you could broaden that in amazing ways.

You could look at anybody that's ever had an elevated blood sugar. You could look at anybody who's been in since the beginning of time in your system. One of the things we keep thinking about is what about the diabetic who came in two or three times, was out of control five years ago, where are they now? Maybe they're completely nowhere. Maybe they're not getting primary care anywhere. Maybe they're not even connected to the system. Maybe they're out in the community depressed and dysfunctional.

And you start eliminating those people and then you build your outreach programs around those data sets. And all of a sudden you find the people that you're doing your outreach to are the people who missed their last appointment. They're not the people who have missed their last year of appointments or two years of appointments, because they've kind of been lost out of the system. So I think it's just critical because it sort of boils down to your entire way that you think about the inter-relationship between public health and the primary care delivery system. It determines the philosophy behind how you define your measures.

When you run those measures in those different ways, we do that because we wanted to try to qualify for the NCQA diabetes recognition program, which has very narrow things and it's pretty easy to qualify for that. But then if you take your whole database and you look at how you really have done with your diabetics and the people who have been in, in the last five years and the people who have been in, even if they haven't been in at all for the last year, and you start broadening those measures, your measures just tank. You realize that there's a huge amount that we don't know about the interplay between the people who have come in with us for periods of time and then they sort of disappear and they're back out in the population measures that Dr. Caine was talking about, but not really in our measures any more within our electronic health records.

Virginia Caine – Marion County, IN Health Department – Director

The other thing I think is so important to understand is the unintended consequences when we're trying to do the quality related to the work that we're doing, and that is because I'm going to get an incentive or bonus for having good outcomes. Then I may discharge those patients who I think have got comorbidities or it's complicated. I don't want them as my patients. And I may even see them once, but I don't want to see them again because it's going to mess up with my numbers. So I think we have to be very concerned about the vulnerable and disadvantaged populations who may have comorbidities that as we're building up these incentives how do we make sure that the unintended consequences that they don't get excluded from being taken care of because I don't want to mess with my bonus that I'm getting back.

David Gifford – Rhode Island – Director of Health

Even if people aren't quite that mean, it really does disincentivize outreach to bring in new patients from the community because the new patients that come in are mostly people who are out of control and you're constantly diluting your nicely controlled, incentivized, getting payments for population with people that you're bringing in who are out of control and whatever. So I think there are subtle issues here and I think this is a really important conversation that's got to continue to take place between public health and primary care providers.

Neil Calman – Institute for Family Health – President & Cofounder

I want to quickly comment on one of the earlier questions regarding de-identification. I think what you heard from the panel, particularly as it relates to the issue of bidirectionality; the work group would be

better focused on trying to talk about the issues related to security and authorized users and documentation of that that would be on stripping more and more of the identifiable information out of the message. If you're really looking for bidirectionality and the ability to take and put data in one record and then move it into another system, you'd actually have to have more identifiers, not less.

Paul Tang - Palo Alto Medical Foundation – Internist, VP & CMIO

One population, just thinking about meaningful use, is the prison population on meaningful use. I think they've been left out and our prison ... made sure, as HIT coordinator for the state, make sure I brought it up at this, partly because a lot of people are coming— You reminded me of it, Neil, that we have a lot of individuals who leave the community health centers going to the prison, are in prison for a couple of years, and come back to the community health centers, or even just for a few months. And many of them have a lot of underlying illnesses and we actually have the prisons now getting an EMR and we're trying to look at how we do meaningful use connection between the community health centers and the prisons where a lot of the population gets their care between the two.

Art Davidson – Public Health Informatics at Denver Public Health – Director

I'd like to return to a question that Laura asked earlier regarding the quality of the quality measurements that you reported and the contrast to the statements from David regarding how you can get that to be better when there's actual incentive from the payers. We have this opportunity with meaningful use, and I'm just trying to get a flavor for is there's some way that we could structure a meaningful use measure that allows us to address this problem, because the lever we have now are the dollars for meaningful use incentives not the dollars that David described from the payers. Is there something we can do in the next go around that would help us to deal with that since you seem to say it's significant and how might we get that to work out so that the providers are using the EHR in a meaningful way by putting data in the right place?

Amanda Parsons – NY PCIP – Assistant Commissioner

I think your three levers are incentives, feedback and transparency. So putting incentives aside, if you look at feedback doctors need to know what their quality measure score is and it shouldn't be something that they calculate once in 90 days and then once for the year every year. It should be something that's available to them in the electronic medical records, like your front page. Like here's how you're doing today on all of your patients, again, whether they've been seen or not seen or however you structure that, but there should be a dashboard view that should be baked into the electronic medical records that makes it apparent how well you're doing. We have found that even just showing data to providers, their own data, their own very good data that shows that they're not performing as high as they think they are, is the first change. So maybe a measure, either a ... certification criteria that says that there has to be a dashboard from providers and/or you have to attest that you look at these measures weekly or monthly or daily, whatever it is.

The other place I think, and Neil got to this, was the issue of transparency. Do they have to report out those measures to other sources that then allow the— Then it becomes important that your score is 40% when it really truly is 60%. It's going to matter to you that it's 40% and you're going to figure out what to do to get from 40% to 60% because within the self-contained systems the doctors say, "Well, I know I'm doing smoking screening. I'm just not putting it where you want it, but I know I'm doing it. So we're going to leave well enough alone." But what if that 0% was going out into the community then would they still feel that way? Probably not. They would finally have to do it the way that it was being suggested. I think there could be, like in NCQA one of the points in ... is that you report your data to external entities and there may be something like that that I would take a look at that, patients under medical home current standards at their level eight quality reporting section.

David Gifford – Rhode Island – Director of Health

I would add to the transparency piece. I think it's a great framework ... really very nicely laid out. On the transparency piece we have a very active public reporting law in Rhode Island since '97 on individual practitioner and early on this data accuracy was just a huge, huge problem and it was taking us forever. Finally, we come on a model where we collect the data, the first round of data, it goes back to the provider and is not publicly released to anyone, they know the next round is going to be publicly released,

and we don't do it long periods of time. The next round, someone may not have fixed it, but I'm telling you within two or three rounds they have fixed that quality data really fast. And they just want to know the rules.

If the rules are I'm going to be measured for reporting or for payment or whatever and it's going to come out of the social history section, I'll put it in the social history section. If it's going to come out of this section just tell me what the rules are. But if you don't have that sort of hold your feet to the ground and have a date and a time that you're going to go live with it, it will take forever. It will just take forever. Go live with it. It happens. Just don't go live without giving them an opportunity to know the rules and an opportunity to make a change. If you have that in there and then make it a narrow timeframe it will speed it along.

Jim Figge – NY State DoH – Medical Director

I want to thank the panel very much for the outstanding presentations and very informative discussion. I guess it's time for lunch.

M

Thank you.

(Break for Lunch)

Art Davidson – Public Health Informatics at Denver Public Health – Director

Welcome back from lunch. We had a wonderful morning of just learning a whole lot of information and getting educated and exchanging ideas about public health and how we can make sure that its needs are considered and move the ball forward.

Now, I think at lunch we were commenting on, "Well, there's so much that's been said this morning, what does the third panel do?" There's always saying it in a different way and wrapping up, so I'm sure there's still much left to be said. Laura Kahn is going to moderate this session, so I'll turn it over to Laura.

Laura Kahn – CDC – Associate Director for Science

Good afternoon. I had heard those same comments over lunch, and we had a chance this morning to reflect on where we are with the three measures in stage one and some meaningful use like projects and some opportunities that we're already seeing to use the kind of data that we'll get from EHRs for public health purposes. But thinking about this panel and where we're going is what this is about.

So what do we have to look forward to in the future for stage two and stage three and how do we get there? We have six panelists on this panel, so I'm going to do brief introductions and then let you each speak and leave hopefully enough time at the end for discussion.

Dr. Martin LaVenture is our first speaker. He's the Director of the Center for Health Informatics and eHealth at the Minnesota Department of Health. Dr. LaVenture is currently leading the statewide Minnesota eHealth initiative and he's the principal investigator from grants from the Robert Wood Johnson Foundation and the U.S. Department of Health and Human Services. In 2008 he was named as one of the top 100 influential health leaders in Minnesota. Dr. LaVenture has a master's degree in Epi and a Ph.D. in Health Informatics from the University of Minnesota.

Martin LaVenture – Minnesota HHS – Director, Center for Health Informatics

My thanks to the community for the opportunity to talk with you today and thank you also for holding this very important meaningful use workgroup activity. It is, I think, a very important element in looking at the health of our communities.

What I'll be speaking about is from a perspective of a state health department and a director of the Office of Health Information Technology and eHealth, which covers both a public and private perspective. The eHealth initiative in Minnesota is an activity involving a public and private collaborative to adopt health

information technology to improve the health of individuals in the community. We've been working since about 2004 integrating public health and the broader care community along with the personal health information to that process.

What I hope to share at the end of my comments will be really two major themes. One is that meaningful use and what you've done already can and will have a significant impact on helping achieve the vision for both healthier individuals and communities. And although there can be a gap in what you've heard so far in perhaps the speed at which the public health community can achieve that, what's happening is much better than the alternative of not including public health in the activities already.

The second major theme will be that there are I think three types of categories as you move forward in thinking about stage two and stage three. The first is the notion of expanding the scope of the current requirements, and I'll talk about that in just a little bit. The second is adding the new types of requirements associated with meaningful use, things like we've heard this morning on disease reporting, chronic disease related activities, and alerting. The third is I think validating or perhaps as a type of harmonizing of the elements that are already collected primarily for clinical purposes, things like BMI and weight and others, the CCD types of information that can be more effectively used through use of the regulations. Those are the three types of areas that I'll be focusing on as you move forward.

The opportunities and benefits clearly for population helped improvements of the individual communities we believe are both significant and achievable in the path that meaningful use is headed, but not without challenges. Public health organizations clearly can lead the community focused population health efforts in helping to utilize, we believe, primary prevention services and optimize systems for disease surveillance analysis, alerting and coordination especially among chronic diseases.

One of the emerging areas of course is the care coordination in diseases such as diabetes, asthma, and hypertension, and in particular public health organizations we believe can lead collaborative efforts to really implement the clinical decision support systems that better integrate to diagnosis and prevention and treatment guidelines. We have, for example, working through asthma guidelines that are being closely integrated from a public health development and coordination into usage within the decision support systems. So it's a very collaborative effort. And all of this will help, we believe, be very important, particularly among individuals that have comorbidities and the use of decision support will be essential for that activity and really effective keys to disease management, and public health agency measures to monitor and to help ... the information is very important.

While there certainly are many challenges to the federal organizations at each level to achieve this vision, we believe that activities that you've heard about in part, the modernization of the infrastructure, advancing the skills of the workforce, the commitment to the development of the common business processes are all activities that need to occur and perhaps through the meaningful use criteria we believe there are some levers to help aid in the achievement of that.

The questions that you raised dealt with several areas, such as the policy, legal and technical issues that you perceive as barriers. I'll highlight just a couple of those that we believe that a commitment for the common business processes leveraged through meaningful use in the standards process that come out of that are going to be very important, particularly around the specifications for the interoperability, because we believe there are two kinds of dimensions in the public health sphere. One is, we've got the adoption issue of integrative technologies, if you will; EHR equivalent for public health. There's also the exchange component, and the elements are related but distinct important elements that we believe leverage can assist with.

The second would be policy, a transition to policies that really encourage integrative approaches to programs. Even on the small grants that have come through CDC from the ONC funding, there's still a siloed dedicated approach, and how do we leverage some of that in a more broad way for the policies.

The second area you asked for comments were related to specific approaches for data standards and aggregation and infrastructure that would help achieve better population health outcomes. We believe

that one of those, for example, would be completing the standards for the full set of transactions on a stage one meaningful use.

For example, we talked a bit about immunizations this morning, and clearly adding the ability to query and return a history would be a next stage dimension requirement and making the options for forecasting ability and retrieving that so that it wouldn't have to be built in necessarily but a shared service that could be available is an important option for stage two and stage three standards requirements. Also, completing the standards and transactions relating to alerting functions, the number of stories related to that, so those can be better embedded back into the decision support process, and then certification of the applications, at least the transaction applications associated with the public health software overall and the whole notion of the public health software is an important element.

The third area you indicated was how should public health contribute to the concept of a learning health system, and we believe there are a number of those. A couple would relate to that first is the common agreement that the public health agencies really are essential to the success, so building on the current learning processes, the contributions of the knowledge of aggregate information that is contributed becomes an important element, as well as public health ... leadership and really focused efforts that benefit the communities in a number of ways related to prevention services. I think they need to be looked to as important component in that future ring of information that's integrated and tied in with the individual consumer.

The last area that you mention of an area of interest dealt with the notice of what future state we might envision as public health agencies gain access to population health information. We believe that the big opportunity here deals with the factors related to chronic disease to increase compliance with both primary and secondary prevention, but also subsets of data that are essential for follow up, a number of programs in Minnesota that involve community activities in the assessment of risk, including the BMI, smoking history, nutrition and others would value greatly from the availability of that information to help develop that community profile we talked about this morning and personal neighborhood, if you will, of information that can help better define the context in which individuals are both receiving their care and hopefully are being helpful.

We would like to close by just reiterating, I believe, that this is a very important step. The steps you take are essential and they do make a big difference with regard to the gap and we'd encourage you to look actively and be as directive in the way in which we can add activities related to meaningful use because they do have important impact on advancing the broad agenda at state and local agencies in particular. Thank you for the opportunity to speak with you today.

Laura Kahn – CDC – Associate Director for Science

Thank you, Dr. LaVenture. It's my pleasure to introduce our next speaker, Dr. James Buehler. He's the acting director of the Public Health Surveillance Program Office at the CDC. From 1981 to 2002 he served as a medical epidemiologist at the CDC, working in the areas of epidemiology, maternal and child health, HIV/AIDS, and for a brief period in 2001, Anthrax.

In 2002 he joined the faculty at the Rollins School of Public Health at Emory University as a research professor in the Department of Epidemiology. In 2009 he returned to the CDC to coordinate the development of a new system for monitoring emergency room department visits for influenza-like illness as part of the national response to the H1N1 pandemic. He has assumed his current position in January of this year.

James Buehler – CDC – Acting Director, Public Health Surveillance Program

Thank you very much. I represent a new office at CDC's Public Health Surveillance Program Office, which came into being earlier this year. We are responsible for managing several surveillance systems that have cross-cutting utility at CDC, but the process of conducting surveillance is something that is shared by virtually every part of the organization and we have a convening and supportive role to help that work more effectively. So issues like meaningful use are an issue that we are very interested and concerned in because this is something that is of concern across CDC and we look forward to working

very closely with the office that Laura represents, the Informatics Office, which is a sister office within the new part of our organization.

I agree with everything that others have said. I can probably finish at that, but let me just recap a few points. Public health surveillance is an activity that is embedded in the practice of public health. Public health programs need information about whatever it is that they're trying to prevent or control in the populations that they serve. The conduct and surveillance then involves in the context of those programs to meet that specific need.

The reason we have lots of different surveillance systems is because we have lots of different public health programs. Integral to the very nature of what surveillance is, is the concept of feedback; feedback not only to improve ongoing development of the public health program targeting where the resources should be directed, but also feedback to the community, in particular the healthcare community, so that healthcare providers can understand how the patient that walks into their office, what may be going on with that person is affected by what's happening in the community. If every health department in the country were at the level of capacity and ability that's been evidenced by the health departments that we've heard from today, we'd be in great shape. But that's not the case.

But it's important to remember that. It's great to hear from the innovators but not everybody is at that level. I think the challenges that we confront in taking advantage of the opportunities that meaningful use presents to us can be framed by the spectrum of the three population health measures that we now have. If you think about what is the level of identification of the individual that those need, what is the level of timeliness that those systems need, what is the level of specificity of the data of the diagnostic information that's needed, what's the level of the state capacity to do the surveillance for that, or in the case of syndromic surveillance, what's the level of the state's interest in doing that, that's been a relatively controversial enterprise and not all states have embraced that. And while that's increasing it's not universally adopted.

What's the extent to which the information from the specific systems that we're talking about, immunization registries, electronic lab reporting, or syndromic surveillance, what's the extent to which that bit of information, that piece of information that they have is useful by itself or needs to be combined with information from other sources. These are different for each one of those three examples and for many of the other scenarios that we've heard discussed. So that spectrum of need and the spectrum of approaches I think then shapes how we address the questions that we are asked to address. To me the policy issues really boil down to answering the question, who needs what? Who needs what when? How much do you need? How good is good enough for your program? Who doesn't need what is probably equally important.

One of the dangers that we face is that if we collect information that we don't use and are not able to take advantage of feedback, then we risk losing some credibility. The answer to those questions also varies depending on whether you're a local health department, a state health department, or at a federal agency like CDC.

There's also some variability in the pathways that different federal agencies are asking hospitals to take advantage of electronic information. For example, the typical pathways we've heard for much of the disease surveillance that occurs is from the healthcare provider, the hospital, the local health department, to the state ... CDC. But, for example, with our funded requirements from CMS for hospitals to monitor healthcare associated infections and the indicator of the quality of care, that's a reporting that goes directly to the federal government, and yet the individual patient whose laboratory results and the ... that carry the information about that, there's different pathways and uses that that may go.

From the legal perspective, the tradition of public health surveillance grows up under the authority that constitution grants the state health departments, and this is predominantly something that's done under the authority of states. The general structure of these laws is that public health departments are given the authority to specify that certain conditions are notifiable or they have authority to monitor conditions that

may not be notifiable but it's within their purview to conduct surveillance if there are situations that indicate a potential public health threat, there's an authority to investigate them.

The enterprise of syndromic surveillance is a little different because here we're asking for information about every patient that walks across the threshold of the emergency department, not just those that have certain categories of disease. This has been something that's been accepted within the current ... of public health laws on the grounds that we may anticipate certain problems. But as we move away from a concern about the threat of bioterrorism, which prompted much of the development of syndromic surveillance and as we think about applying that approach to a broader spectrum of disease, we may be called upon to revisit and reconsider those authorities.

Just one additional point, but clearly issues of privacy and confidentiality are paramount, and the ability to conduct public health surveillance and the authority that we have to do that depends entirely on our ability to maintain the trust of people. That means that while we have some authority to intrude, we do that in a way that respects the individual's interest and privacy and we take very seriously the authority that we have to be stewards of the information that we hold about people.

On the technology side I think the key points have been raised. From my perspective and where I sit two of the programs that I'm now responsible for in our office are the Biosense system and the national electronic notifiable disease surveillance system. Each of these are systems that have represented substantial investments, and yet have not completely fulfilled the expectations. So we have a responsibility to address the problems, the unfinished business of those systems. We can't wait for everything that we envision here to be in place, but I think we can do that in a way that looks to both the near term and eventually to longer term future.

Regarding the issue of the learning system, to me the concept of a learning system is what public health surveillance is all about, because the notion of feedback is inherent to that and because it's linked to the programmatic function. What diseases are prevalent in a community, who is at risk, what is the nature of particular illnesses, what are the patterns of antiviral or antibiotic resistance, etc., these are all things that ideally can be provided to the clinician to understand how to consider the differential diagnosis of a patient, perhaps what test to order or what therapies to provide.

Looking to the future, what I see is an alignment of disciplines, an alignment of the notion of what the discipline of healthcare quality is doing and what the discipline of public health surveillance is doing. They share a deep kinship. It's all about taking aggregate information and trying to make either healthcare or public health services better. Clearly, many public health objectives, particularly those that relate to chronic disease, are going to be achieved in large part by the delivery of primary preventive healthcare services in the clinical setting. Clearly, doctors are going to continue to see patients who are affected by disease outbreaks or hazardous exposures that are occurring in the community.

A parallel kinship that I see stepping a little bit away from surveillance is the relationship between the discipline of healthcare services research and the emerging discipline that's somewhat more junior of public health systems research. And I think that the bringing together of those disciplines will help to provide some of the information base that we'll need to answer the questions that we're facing. One point I would like to emphasize in closing is that if we think we can depend on the electronic tools to solve our problems, we'll be badly mistaken in that ultimately the technology needs to be in the hands of people that have the capacity to use it and have the relationships between public health and the healthcare world and the relationships across different levels of government to make effective use of that information. Thank you.

Laura Kahn – CDC – Associate Director for Science

Thank you, Dr. Buehler. Our next speaker is Eileen Storey. She's the Chief of the Surveillance branch division of Respiratory Disease Studies at the National Institute for Occupational Safety and Health, or NIOSH, at the CDC. Dr. Storey is leading an effort across NIOSH to ensure the integration of information regarding work history of patients in the electronic clinical record to improve patient care and to support public health surveillance efforts. She's the Vice President for federal agencies of the Public Health

Standards Consortium. And prior to joining NIOSH, Dr. Storey was on the faculty of the University of Connecticut School of Medicine, where she was the chief of the division of Public Health and Population Sciences. She completed her medical degree in an MPH at Harvard University and is board-certified in internal medicine and occupational medicine.

Eileen Storey – NIOSH – Chief, Surveillance Branch, Respiratory Disease Studies

Thank you for the opportunity to meet with you today. Coming from NIOSH, I'm coming to you from a different point of view of the public health spectrum. Listening this morning, I'm very impressed with how far along really the dialogue is between the public health side and the clinical side with regards to infectious disease. I'm sad to say, and I'm a little bit bold to say, that I think occupational health falls behind that, but I also think that occupational health has some of the most powerful opportunities in the electronic health record world and that's why I'm going to try to convince you with my five minutes that this is worth taking on.

The written testimony provides you with a lot of the data and factual background of why occupation plays such an enormous role in the health of the United States' population. I'm not going to recap those facts, but this population includes the 140 million workers and 70 million retirees, and so the likelihood that they are healthy or not healthy has a great deal to do with the work that they are doing now or have done in the past. What I hope is that in phase two or at least phase three you will agree that work should be added to height, weight, blood pressure, BMI, smoking status, and immunization status in the electronic health record as a very fundamental feature of someone's health risk and health likelihood. I think this would greatly enhance the electronic health record as a tool to improve clinical care, to identify opportunities for prevention, to promote appropriate diagnoses and treatment, and to facilitate appropriate management of chronic illness.

I want to start with the sentinel event model, which has really guided the thinking in occupational health over the last 30 years in this country. Occupational lung disease, I'm going to narrow my thinking to that because that's my area, whether it's asthma, coal worker's pneumoconiosis, silicosis or hypersensitivity pneumonitis, among many, is fundamentally a preventable condition. Once established at work early recognition intervention can lead to complete reversal or at least to a substantial improvement in prognosis and outcome and a requirement for less treatment. A sentinel case is one which when diagnosed leads the clinician or the public health agency back to the workplace where it came from and a cause can be discerned and mitigated. This has a tremendous impact both on an individual patient and on all the co-workers affiliated with that exposure.

A number of states have instituted case based reporting systems for occupational lung disease in the last 30 years. These combine active outreach and education to clinicians, formal reporting requirements and mechanisms, industrial hygiene followed back to implicated workplaces, and feedback to reporting clinicians.

I want to tell you a story of a situation in Connecticut that I think demonstrates what electronic health records could do to transform this landscape. In Connecticut in 1990 we passed a new law that required all occupational illnesses be reported to the state. It came in as a dual report to the Department of Labor and the Department of Health because they couldn't agree on who was the lead agency. So there were two envelopes. Prior to that, silicosis had been a reportable condition since the 1930s, and about ten cases came in on a piece of paper every year and they were dutifully filed in a file drawer and I did see the file drawer and they were all there. Our new statute created a network of clinical and public health resources that provided consultation and education for clinicians and workplace evaluations in response to these cases. That led to an increase of about 150 to 300 cases of occupational lung disease per year, about half of which resulted in workplace evaluations.

The power of this sentinel event is illustrated in a particular case. In 1997 three cases of apparent pneumonia were seen over the space of one week in three different hospitals in three different cities in Connecticut. The cases were seen by physicians who had been contacted through the surveillance mechanism and outreach system. And so they called to ask a question about whether there was any relationship to work. Within that week it was recognized that all three patients worked in one metal

working facility in the central part of the state and all three were then referred to one occupational medicine unit, which happened to be where I was.

At that time hypersensitivity pneumonitis had been described in metal working in the United States but it was an emerging condition whose cause was unknown and it was very controversial even how to diagnose it. Appropriate plant management to reduce the risks was also unknown, but there was enough experience to provide guidance and to suggest that microbial growth in water-based coolants which had been brought in to replace the cancer causing oil-based coolants, was implicated and that overuse of biocides had actually exacerbated the problem by changing the microbial flora.

We were able to work with plant management and identify several more active cases, conduct surveillance of the workforce of 120 people to ascertain the extent of the problem, and document that about a third of this workforce was affected with hypersensitivity pneumonitis. It took a full year to develop a successful strategy to mitigate the problems, and after that no new cases occurred and about half of the affected workers were able to go back to work. Unrecognized, this outbreak would have decimated this plant and the workforce would have developed chronic lung disease which may have just been diagnosed as recurrent pneumonia, as non-specific interstitial lung disease, but with no recognized work related cause.

We support five states to conduct case-based surveillance for occupational lung disease, and through that mechanism NIOSH has been able to work with these states and with CSTE to develop standardized reporting for the National Notifiable Disease System. I've given you an example of hypersensitivity pneumonitis because I think it demonstrates beautifully how physicians' ability to recognize the problem made all the difference in jumping on an outbreak.

Asthma is far more common than hypersensitivity pneumonitis and it's thought that about 15% of adult asthma is directly related to work, and another 25% is significantly affected by work, causing more requirement for treatment and more healthcare. An electronic health record that captured information on occupation, industry and employer would greatly enhance intervention and prevention by providing immediate information to treating physicians as to the nature of the work with which the patient is engaged, could provide clinical decision support in the form of information about likely exposures, and what kinds of diseases should be considered and diagnostic strategies.

The other two examples that I was going to mention, but I'll only give you 30 seconds, is in the modern world right now we're following – there are 410,000 people who were potentially affected by the World Trade Center, and in our effort to understand the impact of that disaster on that population we've set up some very aggressive and very important surveillance systems and clinical care systems. But if we had, in the electronic health record, knowledge of where people were when and what kind of work they did, we'd have much more success in following them. It's interesting that about 70% of the people in the surveillance registry, which is about 71,000 people, are self-identified, which means by definition we're seeing at least the worried if not the more sick among the population.

Now with this evolution of the deep water horizon response in the Gulf there's a desperate need to understand the impact of environment and occupation on people in that region. Unfortunately, despite the fact that we do have some of these systems in place, none of them are capturing occupation or where people are in an effective way.

What I hope we can accomplish is that we can get occupation and industry into the record in a manner that's useful to clinicians so that they actually see it when they're taking care of patients, so that we can develop quality indicators that demonstrate the use of this information. For example, that we demonstrate the use of occupation ... with new onset asthma. It's important that the data collection that occurs supports reporting to the states, and it was very interesting this morning to hear the conflict between current state reporting mechanisms for immunization, for example, and this development now of a health information exchange where we can lose some of the specificity of the reports. But it is possible for these electronic health records to generate reports right out of the record and take that burden away from the

clinicians and administrative staff. Finally, we need enhanced capacity at the state and federal agencies to receive and analyze these data and to provide feedback to the clinicians. Thank you.

Laura Kahn – CDC – Associate Director for Science

Our next speaker is David Ross. He's the Director of the Public Health Informatics Institute. He became the director of All Kids Count, a program at the institute supported by the Robert Wood Johnson Foundation in 2000 and subsequently the Institute also with funding by RWJ. His experience spans the private healthcare and public health sectors. Before joining the institute Dr. Ross was an executive with the Private Health Information Systems firm, a public health service officer at the CDC, and an executive in a private health system. Dr. Ross holds a doctoral degree in Operations Research from Johns Hopkins University, where he was involved in health services research.

David Ross – Public Health Informatics Institute – Director

Thank you, Laura. Like the others I think I will echo what has been said earlier, so I suppose I'm part of the "amen and hallelujah" chorus, so I'll try to be very brief. My perspective as coming from the institute that I run is basically that of an agent of service to public health state and local practice and also federal government, and also as an agent of change, which means I'm here really as an advocate. We work closely with all levels of public health, including CDC and HRSA at the federal level.

As far as policy barriers, the one I'll refer you to my submitted written testimony so I'll just make a few summary comments, we as a country really haven't addressed financing population health, nor do I think we have for the purposes of meaningful use done a good enough job of defining it in ways that we could actually operationalize it. So more needs to be done there, but it's clear that just as in healthcare delivery that payment drives provider behavior, certainly payment and funding will drive public health behavior. I think we want to see a more community centered approach. Just as in healthcare we want to drive toward patient centered care, I think we want to see community centered care, the way I would refer to the concepts of population health.

But to do that we're going to have to invest in it, and you've heard some great people speak this morning coming from standout organizations, but that is not really reflective of the whole of the country. Public health needs financial support in doing this and let's not delude ourselves that the patchwork quilt of categorically funded activities could be just re-knitted together in a way to build the information infrastructure that is needed within the public health sector. I think it will take additional investment, possibly the prevention trust health reform funding will advance this. I think ONC can play a role in helping promote the growth of an enterprise architecture that promotes standards that public health can build upon. That's certainly something that needs to be done.

The other point that I would like to make in my remaining two minutes and four seconds is that the business of public health has not been adequately described. Marty LaVenture referred to this, the mantra that I preach is that defining the business process of public health is work that still remains largely to be done. We as an industry describe ourselves in terms of programs and diseases. We have yet to take a hard look at what are the underlying processes that are common to all parts of public health that when automated rigorously will both reduce the numbers of systems but also provide an opportunity to have more robust systems that can link in a continuous way in the evolving world of the National Health Information Network, at least that concept. Until public health fully defines its business processes I don't think we will ever have the adherence to architectural standards that are needed. So that is something that both ONC and this committee could help reinforce, just the need that that be done.

One final point having to do with the investment in our people, we need a more informatics savvy workforce. The people who run public health programs need to understand more about basic concepts, and that kind of investment in people is going to be critical because they enable change within an organization or they become an obstacle to change. Adopting new systems and new technologies is changing organizations, so we have to look at the people that are involved and hopefully we can invest in them. With that, I'll close. Thank you.

Laura Kahn – CDC – Associate Director for Science

Thanks, David. Our next speaker is Gib Parrish. Gib is an independent public health consultant with expertise in surveillance and information systems. He does a lot of collaborative work with the Public Health Informatics Institute, and is a past colleague at the CDC, where he spent 20 years. He trained at medical school at UCLA and as a pathologist at the University of Washington.

Gib Parrish – Independent Public Health Consultant

Thank you, Laura. Thank you for inviting me to speak at today's hearings. I will address three points during my brief remarks; first, the definition of population health; second, the contribution that healthcare records in general and EHRs in particular can make to population health; and third, the need for a more coherent, coordinated and comprehensive approach for providing population health data and information.

First, of the two definitions provided to the panelists, which Art Davidson read this morning, I greatly favor the one defining population health as a conceptual approach to measure the aggregate health of a community or jurisdictional region with a collective goal of improving those measurements and reducing health inequities among population groups. Population health is influenced by a broad range of health determinants, including the natural and built environments, political, economic, social, and working conditions, discrimination and inequity, and individual and group lifestyle. Although healthcare contributes to population health, its contribution is minor. Despite this, health related perceptions, policies, programs and resources in the United States are overwhelmingly directed towards individual healthcare rather than population health.

This leads me to my second point. Because healthcare makes only a minor contribution to population health, information derived from healthcare records and EHRs can only make a minor contribution to the information needs of population health. Nevertheless, information from EHRs can be used for population health and governmental public health in at least seven ways. Of these, four relate to population health. First, improving the reporting and investigation of notifiable conditions discussed at length this morning. Second, identifying sentinel diseases, injuries and events, and Dr. Storey alluded to this just a few moments ago. Third, populating registries, including disease and vital event registries, and fourth, providing information on the population burden of disease insofar as the burden is reflected by healthcare encounters.

Most of the information needed for measuring population health, however, comes from population surveys, including economic and social surveys, from environmental assessments and monitoring, and from registries, including vital registration. Population health could benefit from more attention to and resources for population based data collections, particularly at the local level ... with some comments that Dr. Ross just made.

Enhanced surveys could provide accurate and reliable local estimates of health and the determinants of health to better guide population health improvement policies and programs. Innovative approaches are needed to improve survey response rates as well as the development of other sources of population based data to augment survey and registry data.

My third point concerns another critical piece for improving population health, namely making population based information more available, more accessible, and more useful. To this end, my colleague, Dan Friedman and I published an article in the current issue of ..., in which we provide a conceptual description of a population health record, or PopHR. We define a PopHR as a repository of statistics, measures and indicators regarding this data and influences on the health of a defined population. The PopHR must be available in a computer processable form, stored and transmitted securely and accessible by multiple authorized users. The PopHR would address the current lack of a single common and easily accessible source for basic population health data across regions, states, metropolitan areas and counties.

As it now stands, U.S. population health data are scattered widely and in various agencies and Web sites in various forms, with various statistical and reporting conventions and their use requires various levels of statistical and computing expertise. For example, the U.S. Department of Health and Human Services

currently manages at least two dozen publicly accessible Web-based data query systems, and CDC alone currently maintains about a dozen such systems.

The PopHR would be based on an explicit population health framework and a standardized logical information model. It would contain information about the health and the determinants of health of a population in the form of statistics, measures and indicators. It would not contain any information on individuals. Its content would derive from a wide range of information sources on population health and factors influencing it, such as ongoing population surveys, vital registration, public health surveillance, environmental sampling, Medicare and other payer claims, and population synthesis. Healthcare, including the EHR, could serve as a source of data for the PopHR, although their contribution would be limited.

At least three factors could facilitate and enable implementation of a U.S. PopHR. The first would be a concerted and coordinated effort to portray the two key stakeholders that PopHR is a public good that would enable monitoring, comparing and evaluating national, state and local health interventions and policies.

The second would be establishing clear and transparent governance structures for a PopHR. The third factor would be providing incentives for the development, implementation, and maintenance of a PopHR. It is my colleague Dan Friedman's and my thinking that the Office of the National Coordinator could be a powerful force in facilitating the development of a U.S. PopHR.

Thank you again for inviting me to join you today. This concludes my remarks.

Laura Kahn – CDC – Associate Director for Science

Thank you very much. Our final speaker is Don Detmer. Don's a Senior Adviser at the American Medical Informatics Association and immediate past President and Chief Executive Officer. He's also a professor emeritus and professor of medical education in the Department of Public Health Sciences at the University of Virginia, and Senior Associate of the Judge Business School, University of Cambridge. He is co-chair of the Blue Ridge Academic Health Group, and Chairman of MedBiquitous. He's a lifetime associate of the National Academy and a Fellow of the AAF, American College of Informatics, ACS, and ACSM. Dr. Detmer's research interests include contributions to national health information policy, quality improvements, administrative medicine, vascular surgery, sports medicine, and master's level educational program for clinician executives.

Don Detmer – American Medical Informatics Association – Senior Adviser

Thank you, Laura. Thank you for this invitation. My oral testimony is at some variance from my written testimony, plus I noted a minor revision that I'll send to you. My comments relate principally to policy. Ralph Waldo Emerson noted that "Health is the first wealth," and I believe that most people in economically developed societies accept his statement as valid today.

Like Secretary Sebelius, the Policy Committee seeks at least two things of policy: base it on evidence and science, and convincingly protect the privacy of personal health data. I call this enlightened public policy and yet moving forward I think it's a risk. Current evidence shows that only with a learning healthcare system based upon secure yet wide access to health related data combined with continuing inter-sectoral learning will we dramatically improve the health status of Americans. This requires an evidence-based ... mixture of policies and activities to properly balance all the social determinants of health over time. With this we can build upon the meaningful use electronic health records through an architecture that incorporates interactive patient, personal, and population records and creates a genuine national health system worthy of the name.

The ... HITECH and the Patient Protection Affordable Act give new opportunities to reach new horizons. Today the U.S. now has a sufficient policy platform to protect privacy and guarantee access to insurance for basic healthcare services. Building on a trustworthy privacy platform we must add direct public participation to ensure data improvement, greater safety through authentication and data access for

quality improvement and research. Additional federal legislation is needed to assure a learning healthcare system.

I suggest a health research and safe care act to create the opportunity for citizens to do the following: opt out from a unique health identifier or research databases, plus an opt out for the same identifier to be used for routine healthcare as well. Two, opt out from automatically consenting to the use of an un-anonymized personal health data for approved research. Three, opt out from automatically consenting to similar use of genetic information for approved research. Four, continued access from anonymized data without explicit consent and five, have a public private partnership to allow citizens the opportunity to be contacted for research that might potentially relate to their particular illness.

Why do we need to directly engage citizens in such an effort, and why in the form I proposed? Recent social science research suggests that human beings don't innately favor modern sociality. That is, society is not just a random group of people living within a shared territory. It's a group of shared cognitive frames and social norms. Our nation should not assume that the public will support indefinitely a learning healthcare system with wide access to personal health data if they're not given a direct stake in the decision and an opportunity to decline being seated at the table for whatever personal reason. Such an approach will force us to be more transparent regarding our data policies and procedures, it will drive us to use more trustworthy practices whether covered by law or not, plus ensuring a public communications strategy worthy of the name.

Additional research shows that human behavior is more complex and less idealized than traditional market or economic rational choice. Nudging people toward making good choices that are good for their own health and also for the health of all people is the essence of good representative government. Plus, we need to get practical about not wasting scarce resources, so we can assure we can improve care. Opt in is more expensive to manage and also quite a bit more expensive. We don't have all the data we need, but we have enough to say that statement, I believe. Efficiency should also be considered a valued social virtue in more than name only.

Finally, I wish to go on record as fully supporting the PopHR vision of Friedman and Parrish's that you just heard about. I intend to write a more robust paper to support the thrust of my testimony in the weeks to come. Again, I thank you for this opportunity. I agree with almost everything I've heard today and I wish you the best in your critical work. It's really important to the health of all of us, and I think all our well being and particularly the citizens of this country. Thank you.

Laura Kahn – CDC – Associate Director for Science

Thanks, Dr. Detmer. Thank you to all of the panelists for your preparation and insightful comments to the workgroup. I'll open it up to workgroup members for comments, questions.

Neil Calman – Institute for Family Health – President & Cofounder

I'll start with a question for you, Jim. You mentioned something about error reporting that's required for hospital acquired infections and reporting to CMS, did I get that right? I just wonder, given the discussion we had earlier this morning, what sort of transparency do you see that we might drive for in meaningful use if it were not reported to some federal agency but reported more locally? Did I misunderstand that?

James Buehler – CDC – Acting Director, Public Health Surveillance Program

I'm not sure I understand the question. But the context in which this came to my attention is we at CDC are working with CSTE and others, what's the unfinished business around the current state of affairs of electronic laboratory reporting and how do we advance that. At the same time, our colleagues in another part of CDC who are responsible for the issue of healthcare associated infections, are living in an environment where a growing number of states are requiring the reporting of those infections as a state mandate and CDC as a service collects those data from hospitals and provides it back to the health departments as well.

As I understand it, and there may be others here that are more knowledgeable about the particular requirement under CMS that that's also part of the Recovery Act is that one of the quality measures that

CMS is expecting of hospitals is to monitor information on healthcare associated infections. So here you have two, maybe three separate activities. If a patient with a healthcare associated infection happens to have a disease that's notifiable, there's a mandate to report that to the local or state health department. Depending on the state's regulations for reporting to the state a healthcare associated infection, the state may have to also report that separately to a separate channel to the hospital report ... at the state health department, and one of the ways that that might happen is through a utility that CDC manages and that states or hospitals can elect to use. So there the pathway is from the hospital to CDC back to the state.

A third potential report is if that's indeed a healthcare associated infection that the hospital may need to report that to CMS, at least the number of them, not the individual case. I'm not knowledgeable about the specifics of that mandate, so the issue is you have different pathways, different groups of people trying to solve what's basically this same problem but the information is going in a variety of ways. I think what you're seeing is that the capacity to do things electronically allows the information to go in lots of different directions simultaneously, that may or may not respect the traditional role. So the point is simply we have to have a conversation about who's doing what and how we coordinate our efforts so that if there's the potential for duplication of effort in that we can avoid it.

Jim Figge – NY State DoH – Medical Director

This is for Eileen Storey. I'm fascinated because, again, the idea of figuring out what role occupational information could play in an electronic health record is something I hadn't really given much thought to, so thank you for putting that out there. My question is, how far away are we from a place where— You had written in your written testimony that there were systems being developed that could basically take what would be the name of an occupation that somebody would type in to an electronic health record, not through a dropdown or something, and basically try to match that to some occupational category. Is there a way to track that to a set of—that doesn't actually tell you what the person's doing but it tells you what their job category is, because we've taken over a couple of workplace practices and then sort of link that to risk and link that to how that could become useful information for a provider at the point of care. So how far along is that process? How ready for primetime, I guess I'm asking if one were to want to experiment with something like that?

Eileen Storey – NIOSH – Chief, Surveillance Branch, Respiratory Disease Studies

The good news is that we're well down the road of being able to use an automated system to code occupation if we have occupation and industry. The reason you need both is that an occupation can vary substantially depending on where you are, so if you take even nurse, for example, and you classify that job in a school it's going to be different than in an ICU. So you want to know where the person works not just what their job title is. We do have a system that's probably going to be ready within another year that will be very useful for things like death certificates and vital records, where you've got time to code them.

Where it's not clear to me it's going to be useful is in the clinical setting, where you'd really like that information much faster to be useful to the clinician. So that's why in my written testimony I had described some efforts up in Massachusetts to work with different systems. Some clinics seem to like the dropdown menu and it seems that if you do it on a regional basis within a couple of months you've got enough of the local occupations and industries down that your dropdown is pretty good. I think that might be the way to go, would be to have almost a system that builds itself over time for practice or a regional health unit.

Are we ready for primetime? One of the things that I suggested in my written testimony was that we do some proof of concept projects, because I really think we're not far from being able to do it, but we need some real on the ground experience to make this work.

Now, your next question of how quickly can you link it to risks and to know more based on getting that information about the patient, there are databases that we could link to, but again, we have to build that. But I don't think it would take us very long. We know what the risks are associated with these different jobs and we can characterize the likely exposures. It gets you to a place where the clinician has to make a decision whether they want to spend that next five minutes, never mind half an hour. And what we would build into any of these systems is a referral opt out so that all you have to do is recognize that you

should be concerned and maybe you want to get that person to someone who can take a detailed occupational history. But I think we could build systems where a lot of clinicians that I've worked with over the years, they would prefer to hang on to that and learn more about it, especially if it's likely that they're going to see the same problem in another two weeks, and then their own knowledge base growth. So I think primetime we're not quite there, but if we had a couple of good projects to work this out I bet we could do this in a couple of years.

Jim Figge – NY State DoH – Medical Director

Just as a follow up, I think it's not just about risks, it's not just about seeing somebody with a disease and trying to figure out if it is based upon occupation or an exposure, but actually the proactive part of being able to help counsel people about risk reduction, so that people will know—things that I assume should be being done at the workplace but aren't always—about the kinds of things people can do to mitigate their risks in different circumstances.

You brought up the issue of the Gulf cleanup. We've all seen these pictures now in the newspaper every day of people without any kind of protective equipment out there on the beaches handling these materials with their bare hands and walking around bare footed. It's kind of scary to think that—

Eileen Storey – NIOSH – Chief, Surveillance Branch, Respiratory Disease Studies

Quite honestly, we're downright schizophrenic about it. I spent two weeks down there when the oil had barely hit the shore in some parts of the Gulf and the workers were suited up in Tyvek and vinyl gloves and the whole bit, and then next to them was a three-year-old swimming in the water with the parents there, but it's true.

M

Without the Tyvek suit.

Eileen Storey – NIOSH – Chief, Surveillance Branch, Respiratory Disease Studies

Well, of course. But on the other hand we wasted a lot of Tyvek because the oil hadn't come in yet, and they should wait until— So we're a little nuts about this.

Jim Figge – NY State DoH – Medical Director

I just wanted to throw out another possible model to think about in terms of a public health record and interface with primary caregivers, and this would be in the area of newborn screening and hearing screening. This is a public health function that is conducted by all of the states. We don't know a lot about what happens to the long term follow up of children who have been identified with, let's say metabolic conditions or with a hearing disorder, this would be a fairly simple model where one could develop a public health record that would interface with the clinician's electronic health record and some simple metrics could be developed whereby you would ask first did the newborn screening result or the hearing screening result make it over to the primary care practitioner.

And if it did, did the primary care practitioner actually move to the next step, and in most cases there are evidence-based guidelines in terms of what you do next if there's an abnormality. It might be as simple as referring the child to a metabolic center or ordering a confirmatory test, and we don't really know if that happens all the time, especially I'm in the Medicaid program and we see this time and time again where a child is identified in newborn screening and then we find out that they never got a confirmatory test.

Then you can have a simple metric asking did they get the confirmatory test and then report it back to the newborn screening program so that we maintain a record of at least a short term follow up. And in some cases the newborn screening conditions follow a patient through their whole life so that there's an opportunity for that to move along with them when they transition from pediatric care to adult care, and that can be an opportunity for longer term follow up. But this is a fairly simple model that we haven't talked about much today, but I just wanted to throw it out to see what the panel thinks about that being the basis for a couple of meaningful use criteria in phase two or phase three.

David Ross – Public Health Informatics Institute – Director

I agree with you. In my written remarks I mentioned newborn screening. We worked under funding from the Maternal Child Health Bureau at HRSA for the past almost decade on this problem of newborn screening. I think you're exactly right, that because it's universal it's therefore systemic. It's a way to look at the healthcare delivery system and the public health system, where they have to work in partnership. We worked in a partnership with multiple states over the last few years to define the entire set of processes that are involved from following kids from birth, the identification of metabolic disorder or hearing disorder, through what becomes a fairly complex interaction of parties in the follow up. Now that that set of processes is understood and it's effectively been endorsed by the multiple professional communities involved, it is a way to have us indicate whether the health system is really working on behalf of these kids correctly. Right now it's not.

I'll give you stories. The one that comes to mind I won't name, but when asked about how they were doing and assuring that the kids who had been identified were being followed, of the last 500 that they had found through newborn screening testing, they had no information on 498 of them. So basically we are today lobbing the information over the wall to the healthcare system and saying our approach to assurance is a hope and a prayer rather than knowing that the kids were getting the right service. So I think that would be a great indicator to go after.

Jim Figge – NY State DoH – Medical Director

Just from my perspective in the state Medicaid program where we have about 40% of the children in the state and 45% of the births we see exactly what you're saying, that there's a lack of follow up through any information.

Don Detmer – American Medical Informatics Association – Senior Adviser

Yes, I really resonate as well with that. In fact, I think your point earlier this morning about tying this concept of my healthy medical home, primary care home, and my health community really— Because I think unless we make these things both real intellectually, if you will, but also real in the real world, I think what we're really trying to do I think in this is a great opportunity to heal that schism between clinical care and public health that Carl Weitz has been writing about for way too long. But this is our chance to achieve it, and I think those are exactly the ways we'll get it.

Gib Parrish – Independent Public Health Consultant

Just a quick note to that, depending on the state there may also be a very substantial role of the maternal and child health part of the public health agency in terms of attempting to assure the follow up and continuity of care. So thinking back to Dr. Caine's points about the kind of information that an outreach worker may have about the circumstances of a child's environment and the family's environment, that might be very important information to help feed back. So I think that's a really excellent example of the potential for continuity of care to fall through the cracks or be achieved in the partnership between healthcare and public health.

James Buehler – CDC – Acting Director, Public Health Surveillance Program

I'll add to that from a state's perspective that in fact is a good deal of organizational discussions of how that can work between a laboratory and maternal and child health programs and effectively making the information and follow up processes improve. So I think there's a willingness, a readiness, and understanding of the importance of that coordination going on, and so it is an area of important opportunity for us in public health.

David Ross – Public Health Informatics Institute – Director

I'd reflect on one other way to think about this challenge. I think the newborn screening is a precise example that one could track over time, that tells a lot about the relative sickness or wellness of the overall health system's ability to do what it needs to do. But from the public health perspective, it speaks also to one of the challenges we have, and that is that if you go to a public health agency, very few of them, Dr. Gifford spoke this morning about Rhode Island's Kid Sense, one of the few that can actually act as a singular point of presence to deliver comprehensive, complete information that the public health agency has to the provider in a way that the provider can actually use it in meaningful provision of care,

understanding whether the kid has been tested for lead and is being followed appropriately or essentially has a newborn metabolic disorder or hearing disorder, whatever it is.

Very few public health agencies can integrate that information and I think there's going to have to be focused attention to help figure out how to do that, accepting that public health is very categorically funded and organized and then actually for some good reasons. But it makes it darn hard to act as a singular node on the National Health Information Network. A public health agency needs to be a node rather than 500 different discrete programs. We on the whole within public health can't do that today.

Gib Parrish – Independent Public Health Consultant

One more quick comment, in some ways what you're describing to me is a person based governmental public health record that would be distinct from the regular electronic health record and it's distinct from the population health record I described before, which is population based or geography based, as opposed to person based. Actually, there was some modeling done back in the late '90s at CDC trying to put together an information model that has person based public health type records and data in it. It was never completed, but it was at least started at that point.

Art Davidson – Public Health Informatics at Denver Public Health – Director

We haven't touched on this I don't think the entire day, but speaking of silos and 500 entities, you also don't want an individual to be 500 different individuals. What does public health think about that issue, just identifiers?

M

I'll take it.

Don Detmer – American Medical Informatics Association – Senior Adviser

I don't even know—

M

I'll give you a chance to say it.

Don Detmer – American Medical Informatics Association – Senior Adviser

But back when HIPAA originally had the idea of a personal identifier and I in fact in the proposal I'm making here is essentially using, if you will, a back door approach in a sense to saying you'll have one unless you opt out. It looks like at least 75%, 80% of Americans wouldn't opt out from sharing their data and also wouldn't opt out from using the same number for research databases to be used for their regular care.

I've tried to ... this at the national level, as you know, and I've also approached it at the state level on additional icons on your driver's license so that you actually have that option through a state approach, because I've given up, frankly, on being able to approach this straight up. But I think with national health insurance and a privacy platform that I think we now have I think we can come back at that.

What I worry about is that if we simply go for that in and of itself I don't think we'll necessarily get to the learning healthcare system. When I was chairing NCVHS and we started to talk about the person population and personal records and so forth, we didn't talk about research and development and we didn't talk about education as an absolute piece of what that's all got to be if you're going to really have a learning healthcare system. Well, we didn't have that construct at that time. We were talking about safety and quality. So my point is, is that I'd like to see us, we have to get there, I believe.

I was on President Bush's interoperability commission and one of the things, and a lot of people on that group felt that this was something that's not an issue, it's even a privacy issue. We finished the hearing and presented a report and that afternoon was an ...meeting and a woman in the audience said, "I hope you're going to fix my problem. I'm Mary Smith. There are too many Mary Smith's. I don't want them getting my data. I don't want me getting their data and then my doctor doing something to me because he doesn't know which Mary Smith."

Now there are algorithms, I don't think we would take a simple approach to it, but there is no question almost everybody I know that I've talked to that does this says that if you did have another good, unique number, even though it would have noise associated with it, you would step up the level of authentication. I think we need it for the research databases too. So that's kind of where I am, but obviously others have more to say to this too I'm positive.

James Buehler – CDC – Acting Director, Public Health Surveillance Program

I'll just make a comment about the general practice of public health surveillance, and that is if a surveillance system does collect identifiers then typically that information resides locally or at the state, but doesn't come to CDC. If, for example, a case of disease is of interest to CDC, then they will follow back to the state health department which would then do further investigation. But that's a general principle of how public health surveillance is practiced.

Don Detmer – American Medical Informatics Association – Senior Adviser

But then how do we do the longitudinal and how do we understand risk and what happens to people if we can't track them?

James Buehler – CDC – Acting Director, Public Health Surveillance Program

I think then the question becomes what are you trying to do with surveillance as opposed to something that's more of a study. But then some surveillance systems, for example the HIV and AIDS surveillance system, the state may require that a person is reported when they're diagnosed with HIV and then if the disease progresses and they develop additional illnesses, the information would be added back to that and then the status of the case report changes. One of the challenges that CDC faced with AIDS surveillance is that an individual may be reported from two states so that the process of attaching a code to the case report was developed so that there could be some ability to see if there were duplicate reports, but not in a way that would allow the federal government to identify an individual.

But this is the issue that comes up over and over. Another anecdote from AIDS surveillance, when tuberculosis was added to the case definition the proposal was made, well, we'll link the TB in the AIDS registry to update our AIDS case reports now that TB is a part of that. Yet there was a fair amount of concern in the advocacy community about that, even though the advocacy community had been very vocal in supporting adding that to the definition, in part just because the traditions of almost hyper attention to privacy and security were somewhat different. But I think it's just an example of how potent the issue of privacy and confidentiality is and particularly when you talk about information flowing out to higher levels of government, a reluctance, at least in surveillance systems, for the federal government to have identifiers.

David Ross – Public Health Informatics Institute – Director

I'd add one other thing. I think what Don said is correct. What we have to do is help the American public understand what's in it for them and I think they would be far more supportive of their information being used since they have to understand that until we use that information we won't learn from it. If we don't learn from it, healthcare won't get better and they're not going to benefit. So they haven't really been brought in to the equation correctly.

I'd also just point out that we've actually been growing a unique identifier now for a long time. Newborn screening, if you look at the form on the specimen collection, the number on that specimen collection form is a unique number when you couple that with the state, and it's actually linked to your DNA. We have a unique identifier now for, well, what newborn screening's been universal for 30 years, and we have a large number of people in the United States who have a unique identifier that we don't just accept.

Don Detmer – American Medical Informatics Association – Senior Adviser

That could become the search identifier for research databases, and then if somebody said, I don't care. You can use it for my healthcare.

David Ross – Public Health Informatics Institute – Director

We have different traditions as our group has worked on the challenge of integrated child health information systems all over the country you really see the variations of approach. The state of Missouri has roughly 80% of the state population in the public health information system with a unique ID. It's just culturally accepted there because they accept that their government is going to do something good for them. That would never work in certain Northeastern states.

Don Detmer – American Medical Informatics Association – Senior Adviser

Well, interestingly enough, though, upwards of 90+% opt in to share their data in the Massachusetts network, which is a little different issue. But nonetheless it's kind of interesting and certainly not what inside the Beltway would lead you to guess Massachusetts would do, and meanwhile out in Utah they have opt out and only 3% of parents opt their data out from their kids' immunization records being shared around the whole state. And sometimes those folks out west— I was there—get pretty antsy about the government.

So the fact is we are starting to amass some data that would suggest, again, that you can't just do it, you have to prepare for it and thoughtfully go at it. But I think we're in a different space. When you could lose your insurability for the rest of your life, that's a very different matter than it is, frankly, and also we didn't have privacy protection. That's why I talked to Senator Bennett in 1995 to start trying to get some laws on the books, and we finally got HIPAA and so forth.

David Ross – Public Health Informatics Institute – Director

Yes, and I think the national immunization registry experience over the last 20 years has shown that even though states that initially started with forced opt in, many of them turned the law around after they realized that it was a problem and that opt out is the way to go, and the citizenry accepts that data are being handled properly, public health has a tremendously positive record of stewardship with data. And as was pointed out this morning, we just have to make sure that that doesn't change.

Laura Kahn – CDC – Associate Director for Science

Jim, did you have a comment?

Jim Figge – NY State DoH – Medical Director

I think oftentimes we hear things made that if this information is shared or this is reported, that may discourage people from seeking care. I think it's important, in the changing environment, to study that and document it and not have that be anecdotal. So it's part of a research agenda I think that needs to accompany this what are the public perceptions, what is the level of acceptance, etc., of these efforts.

Laura Kahn – CDC – Associate Director for Science

I was just going to make one— Art, do you have one?

Art Davidson - Public Health Informatics at Denver Public Health – Director

Go ahead.

Laura Kahn – CDC – Associate Director for Science

I was just going to make one final thing that hasn't been talked about today but that came up at lunch, is injury and injury control and prevention. I got to thinking about that. Every year when I take my kids to the doctor they ask me about did they wear a bicycle helmet and are they in a car seat, and it's collected and I suspect it could be easily captured and provided back to injury programs. It's not my area of expertise, but I just wanted to mention that as something out there. Art?

Art Davidson - Public Health Informatics at Denver Public Health – Director

Yes. I'm intrigued by the PopHR suggestion that you have, Gib, and wanted to just explore a little bit about how you think that might relate to the discussion we had earlier today with Dr. Caine and her vision of— And I think Jim alluded a little bit to this when he said about outreach workers, but a physician or a nurse practitioner and how even though you sort of eschewed the idea that EHR is going to contribute much to the PopHR, is it possible or do you think that the PopHR might serve to inform the EHR? And

might that be something for us to consider as part of meaningful use, maybe not next stage but maybe the third stage? If I could just get your comments on that, anybody.

Gib Parrish – Independent Public Health Consultant

Sure. The answer is yes. I think that definitely it can be used as a tool. Dr. Caine mentioned it this morning, although in a slightly different way, but for physicians as they're treating people to have some sense of, for example, disease prevalence in their community of certain things, it was alluded to earlier in terms of perhaps there's been an increase in certain diseases within the community, knowing that, because that can be contained in that kind of a record. Having some basic information about the social and economic situation in the community in which the person comes from, all of those things I think could help inform clinicians at the point of treatment in terms of having some better perspective on what the person might have to conclude, for example, in a differential diagnosis or if I'm going to send this person back out into the community what are some of the resources that may or may not be available for that, the kind of economic resources, social situation, etc. So I actually do think, if you had enough granularity in the data, that it could potentially be very helpful going at it ... way.

Don Detmer – American Medical Informatics Association – Senior Adviser

In fact, actually when I became vice president for ... Virginia years ago I was kind of curious, we had a catchment area, quite an area there in Virginia and yet we didn't have any data on what were the primary illness problems in the communities around ... and Charlottesville. So I commissioned such a thing and it turns out that they didn't all have the same problems. One of them had a very high teenage pregnancy rate, another community had a very high substance abuse. All of these things were happening in all of these places. Another had very heavy obesity and diabetes problems. Well, we ended up taking targeted strategies to those communities and ultimately ended up doing some work even at the state level on tobacco things and ultimately got legislation that bought farmers out of planting tobacco.

So this kind of thing becomes very powerful once you put it into play. And that's why I think this architecture of the patient personal population records so that the architecture ... can feed each other, really does, I think, lead to quite remarkable things and not as far down the line as you might think.

James Buehler – CDC – Acting Director, Public Health Surveillance Program

There's a parallel conversation about developing community data indicators or community health indicators. One example of that is the ... project model of community or county health rankings that was recently disseminated by the University of Wisconsin, where they took data from a variety of sources, the ... risk factor surveillance system ... records, as well as the other things I believe like arrest records or something like that, a mix of different measures and then you have to make some decision about how to weight each one of those, put it together, and come up with a number to, in their case, produce a ranking which I think they were using to try to draw attention to health status. But if those rankings or if those ratings of a community health status have value or have some predictive value about the environment that the patient's living in and how that might affect optimal delivery of healthcare, then I think maybe that's a parallel conversation that needs to be joined more actively with this one.

Don Detmer – American Medical Informatics Association – Senior Adviser

Can I come back with a final comment about Laura's point about injuries? It is interesting. I think, again, down the line, I don't think this is a near term thing, but as more evidence rolls in on a very interesting international project going on, on a checklist for treatment of trauma across the world and you can go on this checklist thing and ... leading to this, but the point is it's becoming much more evidence based and eventually I think you may find on the quality side that this sort of thing will be feeding into meaningful use too because it so demonstrates improved outcome. But I think today's not the time to be really doing it. It's not too early to keep an eye on that kind of evidence as it develops because I think we will want to do it.

James Buehler – CDC – Acting Director, Public Health Surveillance Program

Could I add to that, if I may? That's a yes?

Laura Kahn – CDC – Associate Director for Science

Very quickly.

James Buehler – CDC – Acting Director, Public Health Surveillance Program

Okay, very quickly. I would have endorsed the injury piece because particular actions can be taken based on either risk or injuries that have occurred through the various associations, particularly with regard to emergency department type of injury notification efforts. So the feedback and the immediate impact of the community really ties together a number of activities and it provides real information back to individuals with regard to risk and the providers in supporting reducing of that risk. And that would encourage you to look at injuries as a part of phase three in particular.

Laura Kahn – CDC – Associate Director for Science

On behalf of the workgroup members, I thank the panel one more time. I appreciate your thoughts today.

Paul Tang - Palo Alto Medical Foundation – Internist, VP & CMIO

So now we have about 20 minutes to do some discussion, sort of a debriefing from this panel. It almost from this last panel seemed like we need a meaningful use incentive program for state public health departments, they certainly can use the money. So thoughts or observations?

Art Davidson - Public Health Informatics at Denver Public Health – Director

I'll start. I'd kind of characterize what I heard today in two basic categories. One is that we actually as a workgroup are trying to achieve some ideas for what we had with meaningful use, but other areas of context that we need to convey I think to the policy committee and to the Office of the National Coordinator in terms of what we might need to address. I think, just as Paul said, there's plenty that needs to be addressed that may bar or be barriers to our ability to get many additional meaningful use criteria for public health well established in the communities that we're talking about. The issues that I heard today are ones that have been spoken about in the public health community for years, issues of silos that need to be integrated and how can that happen. And it doesn't seem like that's going to happen by giving dollars to doctors for meaningful use of the EHRs. But that's an issue that came up in the first panel and subsequent panels and that sort of bleeds into this area of an enterprise architecture that's required for us to move forward, and that requires a full business process analysis be conducted prior to establishing whatever that enterprise architecture is.

If we get to that point, and there's a question whether we will and whether there's a political ... there, I did hear a plea for some certification of public health systems, and that may fit into some of the work that ONC is trying to promote with certification for EHRs, and if there is an enterprise architecture, then we'd at least have some guidelines about how to move forward with certification of one, the EHR, or two, a PopHR or something that happens in the public health environment. So that may be getting closer to some concepts that we could bring back to the policy committee that would point towards some meaningful use criteria. In terms of meaningful use criteria that I heard today, and I'll just kind of blurt them out and we'll have to reorganize them later, but the one is around this interoperable CCD that I think Jim brought up, and that's something that the EHR needs and the PopHR and population health and public health need to start thinking seriously about getting to some standardized mechanism for sharing across all these different programs information with many other people or organizations that can use the information.

I thought another meaningful use criteria that I heard was the, "send it to public health" button. That's something that could be included in the EHR development and vendors could certainly, if the criteria were established for what it means to hit that button and send it to states, and if all the states could agree on some standard, that would be excellent. I heard the other concept about dashboards for providers, and maybe that a little bit of this concept I think I first heard in the dashboard for providers was in the discussion with Dr. Parsons about how I'm doing, but I don't know, there could be something about dashboards for providers allowing them to see more public health issues as well, which may be the early form of the last question I asked of Gib.

The other thing that I thought I heard today was around how we need to really keep working on transparency about some of the measures that we think are of significance for public health and

population health, and how that transparency can be included in the development of these EHRs, whether it's to a provider themselves or as a reporting mechanism to the local environment or the state environment where the practitioner is. So maybe I'll stop there.

Paul Tang - Palo Alto Medical Foundation – Internist, VP & CMIO

I think you described it ... the case reporting button, in a sense does enforce whether we hand it over to HIT standards they can come up with the standards that would help the interoperability problem in the public health sector. Another area, and this is clearly in 2015, is to have, you know how we have CDS rules and we talked about CDS for preventive health, when we get to that bidirectional we could have the CDS rule that included as input information from the public health department.

Clearly that could be related to flu vacs or H1N1 or whatever that's going to be in that year, but that's a really good example of one, it will have to have the standards, it will have bidirectional interfacing, and it will start this cultural change in how physicians look at population health as it applies to an individual. I think that's just as important and ... it's everything, risks and things like that. So in our waning years of the incentive program in 2015 maybe we can kick off that kind of cultural attitude about how we consider— Everything is ... health. It's not just one individual, we're all connected. I think that's all I had to add. Anybody else?

Jim Figge – NY State DoH – Medical Director

For me, I came into the room thinking that public health and personal healthcare were much more closely aligned than we have historically allowed them to be, and today was a great example of bringing a group of people in who spend their lives in the public health domain, like I spend my life in the personal healthcare domain, and you begin to realize how interdependent we really are. I think that whatever we can do to help build that bridge in the next couple of years in the things that we put out there will benefit us and the health of the people that we're responsible for.

But I think we have to think that through. Every time we have one of these hearings I'm struck by the wraparound criteria. It's like when we were talking about privacy and security and said, well, privacy and security really shouldn't be a separate thing. It wraps around everything. Then when we did patient engagement we said, gosh, patient engagement, why did we call that out as a separate thing? It really wraps around everything. Now I'm leaving here feeling like public health, why did we call that out as a separate thing? It really is everything that we're doing and everything is everything that we're doing.

With that profound remark, I need to run off and catch a train. Thank you all. I thought today was incredibly educational and I really appreciated how much effort went into the preparation of the statements that were made.

Paul Tang - Palo Alto Medical Foundation – Internist, VP & CMIO

And, I would echo that. I would say that just as you educated us in terms of public health's ever present impact on individual health, I think I was a little surprised that incorporating information from the patients wasn't something that you latched on to right away, actually. We have to solve the authentication and security aspects of that, but we had to do that for our own reasons. But it sure seems like patient generated information couldn't help but help public health and population health management reporting understanding.

Don Detmer – American Medical Informatics Association – Senior Adviser

I'd have to agree with the comments that were already made. I think from the first panel, I think the idea of doing something with the CCD should be pursued. I think the idea of the case reporting button is good, particularly when it relates, as Perry was talking about, to compilation of abnormal labs that are coming in. And public health needs to get the clinical data, if there was an easy way for the EHR to submit that data that would be very useful. I think we should also pursue some of the ideas of bidirectional data flow. We talked about that with the immunization registry and with some of the other aspects including newborn screening data reporting back in the other direction as well.

So I think there are a couple of simple models, immunizations being one, newborn screening being another, where we could look at the bidirectional data flow. I think the ability of ONC to have something to do maybe in collaboration with HRSA and CDC in terms of developing national data standards would be critical for some of this. I think maybe we don't have direct control over that, but we can report that up to Dr. Blumenthal that that's a high priority area. I think I heard that loud and clear today. Then I think we probably have to do something along the lines of a patient identifier of some sort if we want to ever be able to track longitudinal cases. So that might be something to think about. I'm not sure that we know what the answer is, but it certainly needs to be thought through.

Paul Tang - Palo Alto Medical Foundation – Internist, VP & CMIO

Okay, we can open up to the public. Do we have any comments?

Judy Sparrow – Office of the National Coordinator – Executive Director

Thank you all; a very good hearing. Now is the public comment portion of the meeting. There's a microphone in the room if anybody in the room cares to make a comment, I know Natasha from Genetic Alliance will be making a comment.

Natasha – Genetic Alliance

Good afternoon. I'm here presenting comments on behalf of Genetic Alliance. Genetic Alliance is the world's leading non-profit health advocacy organization committed to transforming health through genetics. We actively engage in improving access to information for individuals, families and communities while supporting the translation of research ... services. Genetic Alliance is pleased by the commitment of the meaningful use working group to fully understand the impact of meaningful use in the context of public health and population health. We believe that the combined work of the HIT standards committee and the HIT policy committee have laid out an achievable and appropriate framework for moving forward.

Genetic Alliance suggests that the committee include newborn screening as an area ... for meaningful use for 2013. I'm glad that this has already come up today. The newborn screening system is a federally supported, state mandated public health initiative that includes screenings, diagnosis, and follow up care for those detected to have early onset condition, which can include hearing deficiencies, metabolic disorders, and other genetic inherited conditions. This system experiences considerable disparities and standards of collection, storage and transmission of information by each state. Annually, over four million babies are screened by state newborn screening labs and despite the large portion of the population that it serves, standards have yet to be harmonized between these state systems.

To remedy this, Genetic Alliance suggests that the Office of the National Coordinator consider incorporating newborn screening as a focus area. Experts such as the Secretary's Advisory Committee on ... Disorders in Newborns and Children, HIT working group which is administered by HRSA, is currently planning for the integration of the new regulations into these public health programs. The creation of the newborn screening coding terminology guide developed by the National Library of Medicine as a vocabulary standard for the inclusion of newborn screening data into electronic health records is another initiative that positions this public health program to be the next testing ground for meaningful use measures and their compatibility with the mission and capacity of public health agencies.

This NLM vocabulary guide will allow for the inclusion of newborn screening results into electronic health records and for the standardized reporting to state departments of health. By including newborn screening specific language in meaningful use for 2013 electronic health record systems will be able to meaningfully capture and collect data about normal and out of range newborn screenings in a way that will facilitate the information being used for clinical decision support, as well as secondary research purposes in future stages. A child's electronic health record could and should be beginning with one of the first places of clinical information, the newborn screening result.

Genetic Alliance acknowledges the task at hand for this committee and pledges its support for the committee and its processes. We commend this opportunity for the public to comment and look forward to working with the leaders of both the committee and the working group to make sure that this important

topic is included in future discussions about meaningful use and its long term benefits to the general population. Thank you, again.

Judy Sparrow – Office of the National Coordinator – Executive Director

Thank you very much. We do have one caller on the line, if you could please identify yourself.

Operator

Our next comment is from Marjorie Greenberg with the National Center for Health Statistics.

Marjorie Greenberg – NCHS – Chief, C&PHDS

Thank you. I'm with NCHS, CDC and also executive secretary to the National Committee on Vital Health Statistics. I want to congratulate the workgroup on this really excellent hearing. I was there with you this morning and then heard the rest on the phone. I would have to say that you really did a service to our field by holding this hearing, you had many of the best and the brightest and I was delighted to be able to listen in on it. Like Don Detmer, I think I would have to say that I agreed with almost everything that I heard.

There was one activity that I think, one public health data activity that did get mentioned a few times and I noted it in several people's written testimony and also a few people's spoken testimony, but really it did not get much focus. And I felt that I really wanted to tell you that we here at NCHS CDC are working on developing standards for linking electronic health records with vital records.

I think it's probably not an exaggeration to say that vital records can really serve as the bookends of a longitudinal health record, you're born and you die and we're really, I think, interested in what happens in between. But both of these events often take place in a healthcare institution of some type and are very relevant to population health and they're really the numerator and denominator data for our population health data. So we have been working with HL7 on developing a vital records domain analysis model and a vital records functional profile which is about to be balloted and we're working with ... and the states on these important standards.

I really would hope that you would consider perhaps in stage three of the meaningful use and somehow recognizing this work and supporting it. I think several people I want to commend the presentation by NIOSH and also industry and occupation is something that we used to collect and mortality data, it's very valuable to have it in those data, but we haven't had funding for that for some time. But I think just as Eileen mentioned, the need for proof of concept projects, that is critically needed in this area of the exchange between electronic health records and vital records. Not only a lot of the information in the electronic health records is similar or the same as information in vital records and thus could populate it if we have confidence in the quality and the timeliness of the data, but also with access to longitudinal health records we would have much better I think information on underlying and multiple cause of death. And the reason we're working on these standards with HL7 is towards certification of products that are well exchanged data between electronic health records and vital records.

So I just wanted to mention that to you and again to thank you for the hearing and to say that although I can't speak fully for the NCVHS subcommittee on population health, I will certainly send all of this information to them and I'm sure they would welcome the opportunity to work with you in this important area.

Judy Sparrow – Office of the National Coordinator – Executive Director

Thank you, Dr. Greenberg. We appreciate your comment. I believe we have one more final comment on the telephone.

Operator

Our next comment is from Lee Stevens with the Food and Drug Administration.

Lee Stevens – IGA Policy Advisor – Office of Programs & Coordination

My name is Lee Stevens. I work with the FDA Data Standards Council. I wanted to just inform the group that one, FDA is also considered part of the public health framework and oftentimes in many of these hearings and other presentations our use case seems to be combined with public health but marginalized. So I wanted to just inform the group that within the context of talking about public health agencies at the federal level that we don't lose sight of some of the other agencies like FDA and ARC, who are actually working in this space to create standards and try to address some of the suggestions for focused areas.

Specifically in line with what the NCVHS is working on for vital records, there is also a project within HL7 to create a public health reporting domain analysis model that could be used as an artifact to address a lot of the issues that have come up throughout the day about the need for standard ... and convergence, because many of the standards that were included in stage one don't really support the future work that we're trying to do in harnessing the electronic health record data. So I just want to make that comment that we ... not lose sight of the other federal agencies who are already doing work in this area to try to address this issue about being able to share data in a consistent format and also address the vocabulary needs. That was my general comment.

Judy Sparrow – Office of the National Coordinator – Executive Director

Thank you for that reminder, Ms. Stevens. I'll turn it back over to Dr. Tang.

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

Okay, if there are no further comments then we'll adjourn until next week.

Elliston Effinson – National Association of County and City Health Officials

My name is Elliston Effinson from the National Association of County and City Health Officials, NACCHO, just a couple of things. One, I would encourage you to pursue this button for clinicians ... public health. We had a demonstration for it last year in a small rural county in Washington State that did that very thing, for various reasons I wouldn't suggest ... that exactly, but it can and has been done. So I'd encourage you to pursue that.

The other thing I wanted to think about this dashboard notion or this idea of pumping more information to physicians, I don't work with a lot of physicians but one of the comments or the feedback I do hear is about information overload with alerts, especially with clinical decision support. I would encourage your thoughts or other thoughts from the panel about how we can manage this problem or potential barrier or opposition we might get from clinicians ... information overload.

Judy Sparrow – Office of the National Coordinator – Executive Director

Thank you. Dr. Tang?

Paul Tang - Palo Alto Medical Foundation - Internist, VP & CMIO

Okay, we'll see you next week at the care coordination hearing. Thank you. Goodbye.

Public Comment Received During the Meeting

1. Our experience as private providers has been as follows: in rural states, where there is a shortage of providers, prevention is done as best as it can be done, but time constraints are the issue. State public health entities apply for specific disease management grants and established programs. Once the funding stream goes away, either the program goes away or they want it transferred to private providers, who often don't have the dollars or resources to keep going. So it's not really fair to the population that is being addressed through that grant. This system also creates silos where electronic systems are created specific to that particular program, often without relationship to anything else. The other issue is that there is a lack of community level public health data. In our state, the lowest level of data obtainable is county and the amount of data is very sparse. Taking statewide or national CDC data and trying to extrapolate it to address local public health disparities is not very effective.

2. I think it would be great to have a national ID for people that was not the SSN. As a former practice mgr, it is very challenging having so many people who do not want to share their SSN. If a person had the same identifier all over the country thHIT Pat would be very helpful.

3. Standardization -- Using EHR and EMR interchangeably is most confusing. EHR is the complete Health Record for an individual - a "detailed-header record" for instance. EMR is/are the med records inputted into an individual's overall health record - the "detail" info to the header. Thoughts on making this a standard?

4. Can you please provide a resource listing for public health agencies and state immunization registries that were able to receive data per the standards in the final rule? Thank you

5. Will there be a published resource listing public health agencies capable of receiving electronic syndromic surveillance data in the standards identified in the final rule?

Public Comments by Genetic Alliance
HIT Policy Committee: Meaningful Use Workgroup
July 29, 2010

Genetic Alliance is the world's leading nonprofit health advocacy organization committed to transforming health through genetics. Our open network of over 10,000 organizations connects members of parent and family groups, community organizations, disease advocacy organizations, professional societies, educational institutions, corporations, and government agencies, including state public health departments and federal institutions, to create novel partnerships. We actively engage in improving access to information for individuals, families, and communities, while supporting the translation of research into services.

Genetic Alliance is pleased by the commitment of the Meaningful Use Workgroup to fully understand the impact of meaningful use in the context of population health. We believe that the combined work of the HIT Standards Committee and HIT Policy Committee have laid out an achievable and appropriate framework in moving forward.

Genetic Alliance suggests that the Committee include newborn screening (NBS) as an area of focus for meaningful use for 2013. I am glad that it came up already today.

The NBS system is a federally supported, state mandated public health initiative that includes screening, diagnosis and follow up care for those detected to have an early onset condition (including hearing deficiencies, metabolic disorders and other genetic/inherited conditions). This system experiences considerable disparities in standards of collection, storage, and transmission of information by each state. Annually, over 4 million babies are screened by state newborn screening labs¹ and despite the large portion of the population that is served, standards have yet to be harmonized between these state systems. To remedy this, Genetic Alliance suggests that the Office of the National Coordinator consider incorporating NBS as a focus area. Experts such as the Secretary's Advisory Committee on Heritable Disorders in Newborns and Children's HIT working group (administered by the Health Resources and Services Administration) is currently planning for the integration of the new regulations into these public health programs. The

¹ National Newborn Screening Information System (NNSIS) <http://www2.uthscsa.edu/nnsis/>

creation of the Newborn Screening Coding and Terminology Guide², developed by the National Library of Medicine (NLM), as the vocabulary standard for the inclusion of newborn screening data into electronic health records is another initiative that positions this public health program to be the next testing ground for meaningful use measures and their compatibility with the mission and capacity of public health agencies. This NLM vocabulary guide will allow for the inclusion of NBS results into EHRs and for the standardized reporting to state departments of health. By including NBS specific language in meaningful use for 2013, electronic health record systems will be able to meaningfully capture and collect data about normal and out of range newborn screenings in a way that will facilitate the information being used for clinical decision support and secondary research purposes in future stages. A child's EHR could and should begin with one of the first pieces of clinical information – the newborn screening results.

Information entered as free text poses a risk that those fields maybe left out of a record if the transmitting or receiving electronic medical record system does not have a reciprocal field. Furthermore, information kept as free text will not be as easily indexed by electronic medical systems and for this reason it will be less likely that the whole records will be meaningfully used by provider and payer systems. The NBS system, since it exists in all 50 states and territories, should be an excellent model system for electronic health information exchange in the service arena. This is a unique opportunity for both public and personal health – the first health information exchange in a mandated services system that needs integration across several entities.

Genetic Alliance acknowledges the task that is ahead of the HITPC and pledges its support for the committee and its processes. We commend this opportunity for public comment and look forward working with leaders of both the committee and working group to make sure this important topic is included in future discussions about meaningful use and its long-term benefit to the general population.

² Newborn Screening Coding and Terminology Guide. National Library of Medicine.

<http://newbornscreeningcodes.nlm.nih.gov/>