NATIONAL COMMITTEE ON VITAL AND HEALTH STATISTICS

May 18, 2009

David Blumenthal, M.D., M.P.P.
National Coordinator
Office of the National Coordinator for Health Information Technology
U.S. Department of Health and Human Services
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Washington, D.C. 20201

Dear Dr. Blumenthal:

On behalf of the National Committee on Vital and Health Statistics (NCVHS), I thank you for the opportunity to compile the report of the hearing on the definition of "meaningful use" for health information technology. The attached document has been constructed to report on the testimony provided, following the structure of the panels and questions testifiers were asked to address.

Under separate cover by early next week and per your request, we will be sending you observations the NCVHS has made on the content of the hearing.

We know you have a critically important task ahead of you in defining meaningful use, and we stand ready to assist in any further way possible.

Sincerely,

/s/

Harry L. Reynolds, Jr.
Chairman, National Committee
on Vital and Health Statistics

cc:
James Scanlon, ASPE
HHS Data Council Co-Chairs
Enclosure

National Committee on Vital and Health Statistics
Report of Hearing on "Meaningful Use" of Health Information Technology
April 28-29, 2009
Marriott Wardman Park Hotel, Washington, DC

Introduction and Purpose

The National Committee on Vital and Health Statistics (NCVHS) held a public meeting on April 28-29, 2009 to help define and clarify the term "meaningful use" with respect to the American Recovery and Reinvestment Act (ARRA) of 2009 directives for "Medicare incentives for adoption and meaningful use of certified EHR technology." ARRA Division A. Title XIII – Health Information Technology and Division B. Title IV – Medicare and Medicaid Health Information Technology; Miscellaneous Medicare Provisions are collectively cited as the Health Information Technology for Economic and Clinical Health (HITECH).

This report developed by NCVHS (see participants in Appendix A) summarizes the themes elaborated upon by the over 100 stakeholders who provided oral and written testimony (see list in Appendix B). The themes reported on in this report reflect where similar views were expressed by several individuals or by organizations representing a group of constituents, or where research was conducted on an array of sites, products, or individuals. In addition, singular views that represent a unique perspective are noted. The report is only a digest of testimony; no commentary or recommendations are made or should be implied. It is organized by the five main categories of questions the Office of the National Coordinator for Health Information Technology (ONC) and Centers for Medicare and Medicaid Services (CMS) posed (see Appendix C) to elicit perspectives on:

A. Vision for health and health care transformed – describing testifiers' views on how incentives for adoption and meaningful use of certified electronic health record (EHR) technology can help support improvements in the quality, efficiency, and safety of health care.
B. Meaningful use capacity – describing the challenges testifiers identified in the current state of EHR, health information exchange (HIE), and quality reporting functionality, and identifying the potential trajectory testifiers offered to achieve the goals for healthcare reform over time.
C. Paths to meaningful use – describing the challenges and critical success factors testifiers associated with achieving meaningful use for vendors, providers, population/public health, and payers.
D. Evaluation and ideal circumstances for product certification – presenting attributes testifiers described to meet this HITECH requirement.
E. Mechanisms for measuring meaningful use – presenting attributes testifiers described to meet this HITECH requirement.

A. Vision of Health and Health Care Transformed

Testifiers consistently described the future state of health and health care, utilizing health information technology (HIT), in terms of a patient-centered health care system in which an individual's personal health record (PHR) is linked to a provider's EHR. Both of these are supported by secure exchange of information among all stakeholders to coordinate the individual's health maintenance and health care. Quality is measured and reported electronically with feedback to the provider and individual to effect real time quality and safety improvements. Incentives reward both the provider and individual.

Within such a health care system, registries, hubs for exchange of health information, electronic prescribing, and other HIT tools ensure privacy and afford secure messaging. Quality measures increasingly focus on value outcomes over episodes of care. Comparative effectiveness evidence guides treatment. Best practices to improve outcomes are shared among providers and individuals.

To achieve this vision, testifiers identified that:

1. ***The vision needs to be defined by a predictable path with a phased approach to achieving the ultimate goals of quality outcomes, health status improvement, and value/control of growth in costs.*** Testifiers cautioned against setting sights too low, but rather setting realistic milestones in order to stay focused on the ultimate goal. Testifiers also observed that the vision of health and health care transformation will require multiple pathways and policy interoperability for varied needs and value propositions, some of which may be new to health care. It was noted that in the policy space, the goal is often for one size to fit all. As one testifier observed, in health care, it is impossible to pre-suppose what problems are to be solved. The real world is "messy" and problems are better solved by removing barriers and creating incentives than presuming homogeneity.

2. **The primary focus of incentives should be on *use*, not the technology itself.** A testifiers described a recent research study that evaluated how the top seven (by market share) inpatient EHRs performed when various problematic patient safety scenarios were applied. The study found a high degree of variability of performance both across vendors and within the same vended product. This suggested that achieving right outcomes is a function of right implementation and adoption, not just right (i.e., certified) product capabilities. Testifiers urged that rewards should be based on applied evidence-based practices – which may be staged over time, not on the use of a particular technology. To achieve this, testifiers observed that the influence of EHR technology on the behavior of people, not just the behavior of systems, needs to be addressed. These people include not just patients but all consumers, as well as providers, payers, populations and public health, employers, and the nation as a whole. One testifier observed that "only those who provide care can improve it." The impact (positive or negative) of the EHR on the user's workflow can be as important as the EHR functionality.

3. ***EHR and HIE should be viewed, together, as both a destination and an evolving journey.*** Testifiers acknowledged that processes for certification are important and should result in preventing fraud or faulty products, as well as preventing rewards for superficial or trivial use. Testifiers, however, also stressed the importance of assuring innovation that can lead to ever more useful products. EHRs and HIEs must embed the capability for providers and hospitals to attain meaningful use, demonstrate such attainment without undue additional reporting burdens, and support requirements for privacy and security, including those under HIPAA and HITECH. It was observed that EHR and HIE technology needs to be "meaningfully usable, meaningfully used, and meaningfully useful;" and that if usefulness can be measured – for quality, safety, access, cost, and efficiencies – usability and use may not need to be measured directly.

4. ***Quality of care must be evaluated in a credible and measurable manner, and information from quality reporting must be fed back to providers to affect patient care in real time and to provide recognizable value for use of EHR technology.*** Testifiers promoted patient-centered care; some testifiers referencing the Patient Centered Medical Home (PCMH) model. Providers and patients must be linked in sharing (potentially even

through social networking technology) not only information but in accountability and incentives. "Value begets culture change" was a statement expressed in many ways by testifiers.

5. ***Ensure that the definition of meaningful use addresses privacy and security as providers use EHRs and HIE.*** Testifiers emphasized that appropriate protections, including appropriate notice and auditing functionality, for privacy and data security will be a necessary foundation for patient trust in any system of interoperable health records. There needs to be transparency in and consistency of data stewardship and security measures. These should not only protect privacy and ensure confidentiality, but also assure data integrity and availability. These measures need to be patient-focused, defined, implemented, governed, and regulated. There was also testimony that the disclosure requirements in HITECH might increase concerns about legal liability and could slow efforts to implement EHR and HIE. Testifiers urged policymakers to ensure that requirements adequately address privacy concerns without inadvertently hampering the broader safety, quality, and efficiency objectives.

6. ***Payment reform is critical to achieving the goals desired from meaningful use of certified EHR technology.*** Testifiers observed that the current payment approach rewards volume and procedures, while primary care, prevention, chronic care management, care coordination, and efficient use of technology go unrewarded. Value-based payments need to replace pay-for-performance, which appears to have achieved its maximum capacity for achieving health and health care improvements. Misuse and overuse of health resources could be reduced with access to existing information across providers. It was believed that savings can be used to finance care for the un- and under-insured. Testifiers also observed that more care is not always the best way to achieve more health (e.g., Medicare pays for treatment of end stage renal disease, but not for prevention). The right care, for the right person, at the right time is needed. In addition, as one testifier observed, "no patients should be left behind." All providers should be incentivized to use an EHR.

7. ***Health information technology alone will not necessarily improve care or reduce costs.*** In addition to eliminating paper, aligning incentives, ensuring privacy and security, and improving workflow, testifiers identified a number of other important priorities. These include: (a) Define and implement a national HIE architecture. (b) Clear away policy and regulatory hurdles where state and federal policies may conflict with national health information goals or with each other. This is particularly the case for (i) Medicaid incentives, (ii) rules and internal processes within state and local public health departments and federal and state-funded community health centers, (iii) privacy policies, and (iv) Drug Enforcement Agency [DEA] restrictions on e-prescribing. (c) Ensure creation of transport standards, data standards, and application functions for information exchange. (d) Address the implications for patients and providers of HIT the vendors' "hold harmless" clauses in their contracts.

8. ***Definition and measurement of meaningful use of EHR technology needs to be pragmatic, while not losing site of other useful endeavors.*** The certification requirements for 2011 must be achievable enough to encourage widespread adoption of HIT that incorporates sufficient functionality now and lays the groundwork to assure that more robust levels of meaningful use can be achieved over time. Some testifiers suggested it would take six to ten years to achieve many of the functions currently proposed by some for 2011. They observed that adding new or more complex requirements to EHR systems in order to achieve a particular meaningful use paradoxically runs the risk of raising barriers to EHR adoption, as well as posing potential usability and safety risks—the exact opposite of

the goals of HITECH. Opportunities for efficiencies must be recognized and utilized. For example, it was reported that some HIE organizations are using the same "train tracks" to deliver both HIPAA transactions and discharge summaries, medication histories, and plan formularies. Another example of an opportunity for efficiency cited was where open source software used in an HIE on the east coast has been adopted for similar use in Arizona.

9. ***Leadership is needed for medical education and training in HIT.*** Testifiers observed that the learning curve for meaningful use of EHR technology is steep. There needs to be movement from health information mastery to health information management skills, where there is continuous learning regarding system redesign, workflow and process change, quality improvement, and comparative effectiveness. For example, data collected at the point of care should contribute to collaborative quality measurement that can inform measure enhancement and ultimately return new insights to the provider.

In addition to envisioning health and health care transformed, testifiers also expressed the importance of ***obtaining clarity*** on meaningful use definition quickly and fostering provider commitment through sharing early adoption successes. Testifiers observed that providers' uncertainty as to the requirements for demonstrating meaningful use and the certification standards that will be acceptable has inhibited their willingness to make investments in new technologies and systems. Complementing clarity is the need for short-term success to achieve the long-term vision of interoperable exchange of clinical data. To drive this commitment, the initial meaningful use threshold should focus on high-value, high-return, and high-visibility functions – building on existing technology standards and certification criteria. Some testifiers requested policymakers to provide assurances, *by summer 2009,* that certification criteria will build on existing standards, and that once certified, these technologies will continue to be recognized for the purpose of EHR incentive payments.

B. Meaningful Use Capacity

HITECH defines "**meaningful EHR user**," for which Medicare or Medicaid incentives may be provided, as an **eligible professional** (EP) **or eligible hospital** (EH) **if each of the following requirements are met**:

- **Meaningful use of certified EHR technology** (including the use of electronic prescribing by EPs)
- **Information exchange** where **such certified EHR technology is connected in a manner that provides, in accordance with law and standards applicable to the exchange of information, for the electronic exchange of health information to improve the quality of health care, such as promoting care coordination**
- **Reporting on measures using EHR**, including **clinical quality measures and other such measures as selected by the Secretary of HHS. The Secretary shall seek to improve the use of EHRs and health care quality over time by requiring more stringent measures of meaningful use. In the case of eligible professionals, the Secretary may provide for the use of alternative means for meeting these requirements in the case of an eligible professional furnishing covered professional services in a group practice.**

With the vision described above and the need to adopt an initial set of standards, implementation specifications, and certification criteria through the rulemaking process, testifiers offered the following considerations concerning the capacity for meaningful use of EHR, HIE, and quality reporting.

1. **Meaningful Use Capacity/Functionality in EHRs**

    a. Testifiers identified that a stated trajectory toward *functionality for certified EHRs* is essential, including the need to (1) define the role of EHR, (2) describe requirements for discrete data vs. documents, (3) identify classes of data required for quality measures, (4) achieve the ability to get data out of EHRs easily – both for reporting and for creating panels of patients, and (5) define use in clinical decision support. Many testifiers also supported a move to a more patient-centered set of features and functions for EHR.

    b. With little variation, testifiers identified the following trajectory for the *role of EHR* technology and the *classes of data* required to achieve the goals of each stage:

        (1) 2011-2012: Improve medication management (including use of e-prescribing not only as an electronic prescription pad, but also for drug utilization review), coordination of care (including an active problem list), and reduction in duplicative services using standard information types (such as recent medications, recent test results [particularly laboratory values and when available, imaging and pathology text reports], and care summaries).
        (2) Over time: Support goals that improve outcomes and health status, improve the delivery of care, and control growth of costs using additional data types (e.g., reconciled problem lists, allergies, vital signs, images, findings, procedures, care plans, hospital discharge summaries, patient registration forms)

        Testifiers cautioned however, that while a migration path from a basic system to a more comprehensive system may be attractive, "switching" costs are huge if the product does not include an inherent migration path. For example, a basic system may be able to include a list of problems, but one that expresses problems using a standard vocabulary and is reconciled across the continuum of care is much more complex. A basic system may not be able to make such a transition over time without a high cost.

    c. There were some differences in testifier emphasis on the importance of information in *discrete data vs. document* format:

        (1) Some testifiers suggested that initial goals (e.g., for 2011) should be to share medical summary information in the Continuity of Care Document (CCD) format with coded headings and medication list, next (e.g., for 2013) adopt CCD with coded values for problems, allergies, histories, lab results and population reporting, and then (for 2015) share Level 3 CCD "push and pull" discrete data among vendor products and send the CCD summary to Social Security Administration for processing disability claims.
        (2) Testifiers also observed that an image-based approach to data integration is unlikely to improve care quality or efficiency because it does not provide the data foundation to enable relevant decision support rules that result in better care management decisions. One testifier suggested that the "main result from an image-based approach is to transform today's fax into tomorrow's electronic transmission."

d. Testifiers reported that the ability to **get data out** of EHRs easily – both for reporting and for creating panels of patients, is difficult with today's EHRs. However, it was noted that in addition to embedding registry functionality in an EHR, such functionality (and others) may better be delivered through applications and services that are not part of a single all-encompassing application, such as population or disease registries (although it was noted that these auxiliary technologies are not ready for inclusion in certification of products for use in 2011). It was also suggested that reporting functions may best be achieved through HIEs that providing registry functionality and enable on-demand use (push and pull) by stakeholders as needed.

e. The function of **clinical decision support** garnered both support and cautionary notes:

(1) Some testifiers observed that early adopters of EHRs often developed a concept of a "full-blown" system, perhaps resulting in systems that were too complex and too expensive for most organizations. This complexity also has contributed to mandating hundreds of EHR features and functions in the Commission for Certification of Health Information Technology (CCHIT) certification criteria. Recent studies were highlighted that illustrate that many of these functions go unused and result in "alert fatigue." This may negate the value of meaningful alerts. There is also the concern that entry of discrete, or structured (i.e., "computable"), data is a burden for the data gathers, resulting in unaffordable loss of productivity.

(2) Despite these concerns, virtually every testifier included the functionality of evidence-based support in the definition for meaningful use of EHR. For example, it was noted that the way to reduce duplicative testing is not to track testing, but to intelligently query other care providers for test results and use evidence-based rules in EHRs to provide information on the recommended frequency and efficacy of testing.

(3) It was also noted that evidence-based medicine and performance measures in machine-driven format should be in the public domain in order to ensure their use in clinical decision support. Knowledge database costs present a significant challenge to widespread use. An example cited was that despite the Indian Health Service adoption of LOINC codes as a standard, only about 25 percent of labs use them without requiring a premium price for their use. (Incorporating LOINC into CLIA requirements was suggested as way to improve utilization.) SNOMED provided by the National Library of Medicine was cited as a start to such public domain support.

f. A **patient centered focus** was a very common theme. Testifiers urged policymakers to incorporate patient access to and use of HIT in the definition of meaningful use, and as a requirement for earning incentives. It was noted that studies find that better informed patients result in better care. Patients should be enabled to enter some of their own information. This reduces the data entry burden and improves physician productivity with the EHR, and may result in more comprehensive data collection, such as has been shown for depression screening. A patient centered focus also includes patients' ability to indicate the scope of information sharing as they serve to make the record portable. Again, such constructs should be included as requirements for earning incentives. It was also

noted by testifiers, however, that the issue of the patient's ability to correct something in the record must be addressed.

2. **Meaningful Use Capacity/Functionality in HIEs**

   a. Testifiers described the ***vision for HIE to optimize patient outcomes*** as the link that makes the aspirations of EHR real. Also noted was that timely transfer of patient information in an *actionable format* is needed; just automating paper will not help. Testifiers urged that there needs to be "meaningful HIE" rather than fragmented HIE. Much as with EHR, testifiers described a trajectory: Focus on minimum exchange first, making data liquid. A stream of normalized data is powerful – for care, for quality improvement, and more. This empowers innovation at the edges. For example, if lab data can be exchanged today, why must they be required to be put in a CCD format? Could a hospital portal with direct interfaces serve as a basic HIE? However, testifiers also cautioned not to set the bar too low; there must be the ability to build upon basic exchange.

   b. Testifiers representing ***payers offered a trajectory for HIE*** functions and cautioned against requiring linkages to administrative data until plans and providers have undergone the massive IT systems changes required to transition to version 5010 of the HIPAA standard transactions and ICD-10-CM/PCS. The following trajectory for HIE adoption was suggested by these payer testifiers:

      (1) Capability to accept medication history from an outside source.
      (2) Capability to accept laboratory results
      (3) Capability to import or export EHR in CCD format
      (4) Capability to interoperate with other EHR systems or a personal health record (PHR)

   c. Testifiers had several suggestions regarding requiring participation in an ***HIE as part of incentive criteria***, given the ***current landscape***. (Testifiers referenced the findings from eHealth Initiative that of the 130 HIEs in existence today, only 42, or 32 percent, are operational.)

      (1) Some testifiers recommended against requiring participation in an HIE, at least for the first three or four years. They observed that stimulus funding is a way to stimulate, not sustain; and that many HIEs do not have sustainable business models today. Furthermore, there is not enough money up front to build an infrastructure, so it is necessary to get very specific on how HIE relates to EHR.
      (2) Other testifiers recommended that providers should be able to request a waiver if HIE services are not available and if they can demonstrate a viable path to achieve HIE.
      (3) Some testifiers urged consideration for new opportunities, such as vertical exchanges that Inland NW Health and Kaiser Permanente are already using, and which vendors, such as WalMart/eCW could become. Much as Visa credit cards are no longer managed regionally, it was suggested that HIE could be organized by similar EHR products, by labs servicing EHR and HIE users, or other vertical components of the health care delivery system.

d. Testifiers observed that there are now a number of **lessons learned from nationwide exchange services** that can provide guidance for inclusion of HIE in the definition of meaningful use:

  (1) Testifiers observed that dramatic progress has been made in pharmacy exchange, although it was explained by SureScripts that much of the recent increase in use has come about as a result of greater adoption of EHRs with e-prescribing functionality. Furthermore, while numbers of prescription transactions can be measured, actual use of drug utilization guidance (e.g., drug-drug interaction checking, drug-allergy checking) may not be able to be measured by SureScripts or all e-prescribing systems.

  (2) The NHIN trial implementations also represent important lessons learned for capacity in HIE. An important finding is that today's interoperability standards are "good enough." (It was also noted that the use case construct is not easy to work with and that HITSP is taking its work structured around use cases and reformatting it to be easier to access and maintain.)

  (3) Common nationwide policy standards for governance, however, were identified as still being needed. The NHIN trial implementations are also demonstrating ways that differences in state privacy laws can be handled locally – with the assumption that there will be no federal pre-emption of state privacy law. Even where local networks might not use NHIN interoperability standards initially, the trial implementations define where local HIE networks need to evolve over time for nationwide interoperability.

e. Testifiers also observed that there must be the capacity to **track and link patients** over time, which is essential for the data sharing needed for care coordination. It was suggested that ONC should support development of commodity-like tools for HIEs, such as record locator services.

3. Meaningful Use Capacity/Functionality in Quality Reporting

a. Testifiers described the need to set **realistic goals** to capture, retrieve, and report data for quality measurement and informed clinical decision making. They recommended starting with a small number of key measures (numbers cited by testifiers ranged from 2 or 3 to 20). The burden of measuring quality must be reduced; potentially prompting for quality data at the point of care. Testifiers urged not to define meaningful use so that 60 percent of physicians cannot report or hospitals have to continue to abstract data. A new CCHIT work group is focusing on embedding data element requirements into the certification process.

b. Testifiers identified that a **trajectory for measures** is possible: Testifiers noted that the CMS Physician Quality Reporting Initiative (PQRI) started with claims, added registries, and is moving toward EHR. It was also noted, however, that PQRI can be an underpinning, but is not well tested and today's measures are inadequate for purchaser evaluation of value. They also urged providing maximum [incentive] benefits for continuity and coordination of care.

c. Testifiers identified that the **quality reporting infrastructure** should be based on adoption of data types identified in the Quality Data Set (QDS) and measures defined by the Health Information Technology Expert Panel (HITEP) convened by the National Quality Forum (NQF) and Agency for Healthcare Research and

Quality (AHRQ). It was also observed that measures need to be more patient-centric, incorporating functional status, experience, and patient satisfaction data from PHRs. Use of PHRs is not well-defined or standardized today. It was further noted that positive patient reports do not always correlate well with EHR use. Education is needed to help patients understand benefits of HIT. Kaiser Permanente was cited as an example of where HIT is very popular with patients.

d. As *quality measure reporting to a State or Federal agency-designated* repository occurs, options were described for assuring accuracy, validity, and privacy. For example, in the future, patients can be the HIE, deciding how to share data, with measurable quality based on patient-entered data, home monitoring, etc. With such data exchange requirements, quality reporting at the HIE level may be better than at the EHR level. Functions that require data aggregation and measure calculation across provider settings are not suited to EHRs. State Medicaid agencies are also discussing ways to serve as the data steward for the population they serve. These State Medicaid agencies envision a trajectory of Medical Home advancements where patients and families participate in quality improvement activities at the practice level and which can be used as a quality improvement network.

C. Path to Meaningful Use

In addition to describing requirements and potential trajectories for achieving meaningful use capacity, testifiers offered perspectives on challenges and solutions for vendors, providers, population/public health, and payers to provide, use, and support meaningful use.

1. Path to Meaningful Use Capacity for Vendors

a. Testifiers observed that *vendor development cycle times* are typically about 18 months; and that pushing to add functionality faster to meet HITECH deadlines could introduce usability and safety risks.

b. In response to concerns about anticipated *increased product demand*, vendors noted they are ramping up and that stimulus funding for personnel training will help. It was also observed, however, that it is important to focus the training – physicians also must be trained to use EHR technology to connect and share data.

c. Testifiers discussed *product development requirements for meaningful use*, information exchange, and quality reporting for EHR technology:

  (1) Testifiers suggested that quality measurement reporting should be open source. A "quality software sandbox" was suggested that could provide a safe place for vendors to come together to build functionality for measurement reporting. Vendors were urged not to trade patient safety for market differentiation.

  (2) Non-vendor testifiers observed that EHR vendors cannot be expected to "miraculously enable substantial new functionality and capabilities particularly as they are also upgrading their technology to meet new privacy and security requirements."

d. Vendors ***anticipated changes in the marketplace*** as a result of stimulus funding:

    (1) Vendors offered that stimulus funding could provide for ***innovation***. Several who testified both on behalf of vendors and others observed the movement from traditional client/server technology to Software as a Service [SaaS] and more extensive use of Web Services. Although, it was also observed that there could be a danger of killing innovation with the meaningful use definition if flexibility were not permitted. It was noted that physicians do not want to be bound by a computer; they want to be liberated by a computer. New technologies beyond current templating and "point and click" need to be promoted. EHRs should also be open to patients to avoid electronic silos.

    (2) Testifiers urged adoption of web-based technology, citing X.509 certificates and Web Services that are open and free. They noted that just as there are not two email standards, there should not be two HIE standards. As an example, it was observed that many systems cannot use the Integrating the Healthcare Enterprise (IHE) standards; starting with the Council for Affordable Quality Healthcare (CAQH) Committee on Operating Rules for information Exchange (CORE) standards is faster and easier. Using such standards, it was observed that organizations can deliver any payload two trading partners agree to exchange, whether a HIPAA 270-271 transaction (such as is available today through CORE) or a CCD or medication history that will evolve. Testifiers urged IHE and CAQH, as well as IHE and HITSP to reconcile their protocols.

2. Path to Meaningful Use Capacity for Providers

a. ***Critical EHR functionality*** identified by testifiers included:

    (1) ***Registry functionality***, i.e., the ability to track patients, is needed but lacking from many EHR products. As a result, support for case management and care coordination is not widely available in EHR technology. Note: "self-populating registry," seemingly as a standalone system, and "registry functionality" were both referenced in testimony to describe such capability, often in reference to a phased approach to use of EHR technology.

    (2) ***Data mining*** is a critical function for quality reporting and improvement. However, testifiers observed that (a) quality measures are often established without defining source data requirements, and (b) while the technology exists, warehousing infrastructure does not exist to support such data mining. Testifiers also noted that it is very difficult to get data out of many systems; as a result, for example, hospitals have to abstract core measures data from electronic systems.

    (3) ***Decision support*** should provide information that leads to better care. It was observed that this will require a transition from basic to more advanced; such as initially providing best practices reminders (especially in medication management and for chronic care), then building to evidence-based decision support. Even basic functionality can overwhelm small practices. It was also observed that most clinical decision support requires professional judgment, and only a small minority of clinical decisions can be specified through firm guidelines. As a result, it is critical to focus on meaningful clinical decision support. Vendors have made products flexible as a result of customer demand. But as a result of such flexibility, decision support is sometimes

turned off. As described in the vision of health and healthcare transformed, product functionality does not necessarily translate into direct implementation.

b. Testifiers identified that *critical success factors* for meaningful use of EHR technology for providers entails not only functionality but attention to business processes and workflows, training, and feedback.

(1) Processes and workflow need to be patient-centric. It was observed that this would require a radical change for many providers. Such processes and workflows include responsibly receiving, using, and contributing to patient health history that is shared among all stakeholders involved with a person's care, including routinely asking patients with whom they want information shared.

(2) As vendors also observed, providers acknowledge the need for guidance on understanding pathways to achieving success with EHR. It was urged that the Regional HIT Extension Centers proposed within HITECH need to be activated quickly to help prepare physicians for 2011.

(3) Testifiers described the need to document goals, describe benefits, and identify steps toward achievement, providing immediate feedback to physicians that will motivate further success. It was suggest that providers be allowed to choose from among measures for reporting. In addition, physicians are competitive, so ensuring that measurement has a common denominator is critical.

c. Testifiers noted that, even after widespread adoption of interoperable EHRs, the need will remain to address *gaps and barriers* that arise out of technical, legal, and privacy concerns.

(1) Testifiers observed that EHRs are necessary but not sufficient for interoperability. Some solutions already in place are exemplified by the e-prescribing industry which has demonstrated that there is independent value to removing paper from the process of prescribing drugs. Leading health information exchanges, such as the Statewide Health Information of New York, are starting to test how building shared services that exist outside the EHR but interact with an EHR can reduce cost and improve quality.

(2) State and federal policies that conflict with each other and with national health information goals must be harmonized.

d. Testifiers also observed the potential for different *impacts on different types of providers*.

(1) There are different goals needed for hospitals vs. providers, and for specialty types. Child health concerns, for instance, are often overlooked in products – whether for hospital or provider settings.

(2) Differences are also compounded when the proportion of Medicare patients is considered. For example, in pediatric practices, it was noted that only one-tenth of one percent of patients are covered by Medicare. Many pediatric practices have very high volumes of Medicaid patients. As a result of lack of child health concerns in many EHR products, participating in the Medicaid incentives may be difficult for pediatric practices.

(3) Many specialists have not adopted EHRs because they often do not have specialty functionality (e.g., for ophthalmologists or dentists); and have functions that specialists do not need, such as immunization registry.

e. Testifiers observed that the **vendor upgrade cycle** must also be considered in how well providers can move along a path to increasing requirements over time. The process of implementing an EHR can take from 12 to 18 months in many cases. While it takes less time to implement an upgrade, it can take a vendor 12 to 18 months to develop a major upgrade. It was observed that such timelines particularly impact potential Medicaid incentive recipients who must be fully implementing and meeting all meaningful use criteria within the first year.

3. Meaningful Use and Population/Public Health

a. The **vision of population/public health** was described by testifiers as including collaborations between the clinical care system and public health systems and generation of meaningful data about the health of a population. Testifiers observed that data collection for population/public health is shifting from a centralized approach to one of a more distributed model. Population health data collection is everyone's responsibility. Testifiers described that such a vision is often challenged by concerns surrounding reporting requirements, "dirty" data, and time lags, and it was suggested that similar risks in quality measure reporting might be likely.

(1) In public health surveillance, incomplete participation of independent reporting entities is well known, with concerns about how the data will be used, how it will be shared, what impact it may have on the supplier, and what impact it may have on patients and their relationships.
(2) It was observed that it is well-known that when data are copied from multiple sources and analyzed centrally they are incomplete, inconsistent, or wrong (i.e., "dirty").
(3) Time lags between accounting and surveillance were also identified as being well-known in public health.

b. Testifiers addressed **priority data needs** and a **trajectory for implementation** that can be advanced by EHR functions and HIE by observing that:

(1) Lack of resources, more than standards, in the public health system limit the building of infrastructure. Many public health departments do not have the infrastructure to receive data electronically. For example, standards exist for immunizations, but many registries have old technology and cannot accept the standard data. Ensuring that lab results can be supplied to the Public Health Information Network (PHIN) and exchanged throughout a nationwide health information network would create immense value. Vital registration data need to become electronic and integrated with clinical care; and these should be tied to master patient indexes at regional levels to prevent fraud when people die.
(2) Infrastructure needs to be built as bi-directional, even if bi-directional exchange is not performed in first stage. Ability to provide feedback to providers is currently lacking, but critical to avoid duplication and gaps.

(3) Standardization of data and uniform data collection processes are needed for monitoring chronic disease. While immunization and laboratory data exchanges are low-hanging fruit, notifiable and non-reportable disease data may need to be phased in over time. It was observed that it is easy to do a good job for healthy people; but much more difficult for the chronically ill.

(4) PHR as a source of information is a good idea; but may not be early stage need for population/public health.

c. Local public health is already starting to make *meaningful use for population health*. Testifiers described providing disease management support for Medicaid; and serving as an intermediary for the Medical Home model for Medicaid beneficiaries. Local public health is a provider of health care services to many of the most vulnerable and sickest of populations.

4. Path to Meaningful Use Capacity for CMS, States, Other Payers

a. Testifiers observed that to identify specific *policy issues* associated with implementing the Medicare and Medicaid incentives programs an understanding of the big picture was necessary. It was noted that e-prescribing was an "extreme systems development" effort, from which many lessons have been learned. In addition, testifiers recommended that laws based on point-to-point transactions need to be changed to ensure transparency in re-use of data. It was suggested that there needs to be (1) confidence in privacy protection; (2) upfront guarantees of security; and (3) very severe penalties for breaches. The question was also raised concerning the appropriate use of opt out versus opt in.

b. *Challenges* anticipated in coordinating Medicare and Medicaid policy and operational issues identified by testifiers include:

(1) Maintaining the integrity of incentive payments between Medicare and Medicaid and accounting for overall industry readiness in relationship to CMS and States' readiness.

(2) It was noted that it will be especially challenging to address integration points between States, where each has different programs, different types of provider networks, and different statutes. States are just starting to come together to identify common solutions, focusing primarily on lab, x-ray, pharmacy, and emergency department utilization. In line with such utilization, it was observed that families need to be empowered to make choices that are beneficial to them. Testifiers suggested that e-learning should be available in physician offices. Testifiers anticipated that older beneficiaries will need help, but will be active users.

c. Testifiers observed that the path to meaningful use for *providers participating* in State funding could be challenging. They noted that how States used funding was often dependent on State priorities, some of which were identified as not accepting ARRA funding. It was observed that providers who qualify for support of EHR purchase under Medicaid include many safety net providers. For them, the risk of starting down the path to acquiring an EHR without having the assurance that the time to complete the process is funded is a risk. Given that the implementation and initial training period for EHRs is often a struggle – let alone being long, testifiers suggested that adding a level of systematic or more intensive use beyond

implementing the needed changes in business process and workflow for such safety net providers is not realistic within one year.

d. ***Other health plans*** identified in testimony that they can contribute to increased meaningful use by ensuring that quality improvement initiatives such as disease management, care coordination, quality measurement, and administrative processes are complementary with Medicare incentives. They also reported that they stand ready to work with providers to leverage existing data sources (e.g., claims and PHRs) and support the portability of data in PHRs to aid the transition to meaningful use of EHRs.

e. In ***promoting meaningful use of HIT in States***, testifiers outlined the following timeline:

(1) Now-2011: Structural development phase: help reengineer provider practices, connect Medicaid provider networks, patient support tools, create new relationships.
(2) 2011-2012: "Burn-in" phase: focus on productivity improvement, remove hassle factors, reduce risk of failure, connect to external sources. Medical Home 1.0.
(3) 2013-2014: Optimized use phase: Medical home 2.0, customer care, operations.
(4) 2015 and beyond: Medical home 3.0, multi-state collaboration.

D. Certification and Meaningful Use: EHR Product Certification

HITECH defines a "qualified EHR" as one that:

- **Includes patient demographic and clinical health information, such as medical history and problem lists**
- **Has the capacity:**
  - **to provide clinical decision support;**
  - **to support physician order entry;**
  - **to capture and query information relevant to health care quality; and**
  - **to exchange electronic health information with, and integrate such information from other sources.**

1. Role of Certification in Promoting Meaningful Use

a. Testifiers observed that, in general, certification mitigates risk. For CCHIT, initially certification served as a confidence builder. Certification was needed because risks were significant and often consumers were not readily able to evaluate product quality and suitability. Now its role is changing to become a coupling mechanism. Certification can drive a marketplace to comply with evolving policies.

b. Testifiers emphasized that certification must be validated after implementation to ensure capabilities are enabled and that they are used. It should be clear what capabilities must be available. However, certification should be structured to allow some flexibility in criteria, innovation, and bundling of features.

c. It was observed that for SureScripts, certification ensures that products can connect to the network in a secure manner, with required information (e.g., provider identification), and using NCPDP and X12 standards.

2. **Strengths and Weaknesses of CCHIT for Promotion and Measurement of Meaningful Use**

   a. CCHIT observed that the current certification process provides a transparent, consensus-based development process; a robust, repeatable and efficient inspection process, with 100 percent compliance with criteria required, and with staff and zero-tolerance for conflict of interest among staff and jurors; and substantial industry engagement, vendor compliance, and payer/purchaser confidence – as evidence by the many incentives contingent upon the certification. CCHIT has received federal recognition as a certification body, and its current renewal has been extended by six months.

   b. CCHIT identified a number of challenges yet to be addressed:

      (1) The current certification policies, in general, are not compatible with open source technologies. Another certification may be needed for open source software. Testifiers recommended that the gap between "certified EHR technologies," "open source," and "best of breed" needs to be reconciled. ("Best of breed" was defined as a collection of multiple different products being used to address functionality.)
      (2) Buying certified products is not a guarantee of success. Usability, user satisfaction, implementation process, and successful use are issues on CCHIT's agenda for incorporation into certification criteria.
      (3) Certification fees are a possible barrier for nonprofit EHR developers serving vulnerable populations. Grant funding is being sought to partially defray costs for such certification.
      (4) A cost-effective approach to certifying self-developed and self-assembled EHRs not for commercial resale is needed.
      (5) Pace of progress has been limited by market acceptance; with incentives, it is expected that faster progress can be made

   c. Other testifiers noted that certification has played an important role and is reasonable under HITECH as one foundational pillar of promoting an HIT marketplace which meets certain standards and needs. However, EHR certification alone has not been particularly successful at driving rapid adoption. Redirection of certification is needed on outcomes, to promote better quality and safer care, more efficient care, and new models of care. Other testifiers put it similarly: certification is one linked step in an improvement cycle of certify – validate – measure – feedback – reward.

3. **Changes Needed in Certification Process for 2011 and Beyond, including Multiple Certification Programs or Bodies**

   a. CCHIT recommended that certification should remain in the private sector for connection to market and speed of responsiveness, but with federal funding at its core to reduce cost and avoid perception that vendors have undue influence.

Some testifiers suggested there was an opportunity for more than one certifying body.

b. In general, testifiers observed that to take advantage of incentives, providers and hospitals will have to buy systems today. There is insufficient time to add new specifications and new requirements and still have a solid number of EHR systems available for users to meet the 2011 deadline. As such, many testifiers urged that certification criteria be based on existing HITSP specifications and CCHIT requirements. Testifiers also suggested that product certification should be valid for two years, with six months notification of changes. Some testifiers suggested that use of non-certified EHRs must be considered in the mix, so long as they are able to be used to report quality measures.

c. Many testifiers described the need for multiple levels of certification (e.g., basic to comprehensive) and types of certification (e.g., general and specialty, inpatient and ambulatory). It was noted however, that while it is valid to give users an easy first step, this cannot be a dead end or a trap – there must be a clear roadmap to achieving greater functionality and performance.

d. Testifiers noted that the assumption in HITECH is that physicians will use an EHR if incentivized. While some testifiers observed that some providers are drawn to incentives, without usability physicians may use an EHR with bare minimum interaction which could result in more errors. They urged policymakers to understand the human aspects of meaningful use and measure clinical interactions and outcomes. Performance was identified as a key test of achieving value.

e. Testifiers also stressed that functionality that is certified should also reflect patient consent. For example, SureScripts relies upon providers to capture patient consent to get medication history. HITECH has made a huge leap in privacy, not all of which is amenable to technology. However, the ways in which privacy can be supported by technology need to be considered in certification. Some testifiers indicated that quantifiable criteria derived from the HISPC, and the HIPAA/HITECH privacy and security rules are a possible way to measure meaningful use from a privacy or security perspective.

f. It was observed that, in general, regulation is needed if certification is not rigorous. CCHIT believes there is greater value and heightened responsiveness if the process is not regulated. However, it was also noted that HITECH sets up a number of regulatory options, so regulation or accreditation may be an issue sooner rather than later. The following comparison was drawn between product certification, implementation testing, accreditation/validation of use of product, and regulation:

    (1) Certification is a demonstration of product capabilities to achieve specified objectives.
    (2) Implementation success addresses how well a product is implemented and its usability. An example is the Klas reports on user satisfaction.
    (3) Accreditation is a validation that the system is being used to achieve its objectives; it should be performed through the technology itself. The Leapfrog Group patient safety testing was cited as an example.

(4) Regulation is a process where a regulatory body conducts an inspection process. It was observed that AHRQ considers HIT to be a therapeutic, much like medical devices.

E. Measuring Meaningful Use

HITECH describes demonstration of meaningful use of certified EHR technology and information exchange through means specified by the Secretary of HHS, which may include:

- **an attestation:**
- **the submission of claims with appropriate coding (such as a code indicating that a patient encounter or inpatient care was documented using certified EHR technology);**
- **a survey response;**
- **reporting of measures using EHR; and**
- **other means specified by the Secretary.**

1. **Strengths and Limitations of Methodology Provided in Statute/Feasible and Reliable Methods for Compliance and Associated Incentives:**

   a. **Attestation**

   (1) Several testifiers noted that attestations can be cumbersome, and it is difficult to ensure accuracy with regard to which EHR a provider is using (e.g., version), and whether it is certified (as definitions change). Periodic audits were recommended to maintain accuracy. Other testifiers suggested that if attestation was used, it should be subject to audit.
   (2) A health plan testifier observed that one vendor reports which providers are using which products to the plan as the basis for its incentives. This could complement attestations by providers, where vendors could report to CMS aligned to their National Provider Identifier (NPI).

   b. **Submission of claims with appropriate coding (such as a code indicating patient encounter documents using certified EHR technology)**

   Testifiers observed that use of codes, such as using G codes to attest to having a qualified e-prescribing system, may be an appropriate early step for attesting to using a certified product. As with e-prescribing, migrating to a more automated process, such as using Part D data for e-prescribing use, is necessary to assure that the technology is actually being used (see 4.b. below). As noted above, testifiers observed that meaningful use is more than merely having the existence of technology in an organization.

   c. **Survey response**

   Testimony from public health agencies observed that incomplete participation in public health surveillance reporting is well known, and that there may be similar concerns for quality measure reporting.

d. **Reporting quality measures**

    (1) For the short term, testifiers recommended focusing on areas of quality deficits, high variation, inappropriate utilization, and high costs. Many testifiers urged policymakers to keep the number of measures low – such as using a subset of existing NQF-endorsed measures that align with national quality and performance goals, and there should be flexibility in selecting which measures to report.

    (2) Other testifiers, such as America's Health Insurance Plans (AHIP) and the Healthcare Information and Management Systems Society (HIMSS), outlined some very specific, yet contrasting, measures over specific, and differing, trajectories. All testimony from the hearing that was provided in electronic form is posted on the NCVHS web site at www.ncvhs.hhs.gov/090428ag.htm and provides further detail.

    (3) Some testifiers observed that more mileage needs to be gotten from administrative (i.e., billing) data, and that there needs to be continued build out of the HIPAA transactions and code sets that could leverage use of administrative data in support of quality measures.

    (4) Other testifiers suggested that the industry is beyond claims-based measures. Reference was made to *The Boston Globe* article on using ICD codes to populate PHRs, where even patients have discovered that administrative data is not very granular.

e. **Other means**

    (1) Several testifiers recommended using patients to report on some measures.

    (2) Testifiers recommended that within some number of years providers should become a part of a quality improvement network that would be used to report measures. This should include comparative effectiveness of HIT to feedback into certification.

    (3) Testifiers observed that the Leapfrog Group provides a stress test process that could serve as a model for certifying continuously at the provider site. Such a process would focus on usability and the effectiveness of training and workflow and process improvement.

    (4) Although audit logs were identified by some testifiers as a means for measuring use, it was also noted that audit logs are buried in the structure of data and very difficult to get out.

    (5) Some testifiers suggested that an independent verification process to evaluate the demonstration and measurement of meaningful use.

2. **Standards for quality measures, including hospital vs. physician office**

Testifiers referenced quality measures defined by the Health Information Technology Expert Panel (HITEP) convened by the National Quality Forum (NQF) and Agency for Healthcare Research and Quality (AHRQ). See also Section B.3 above.

3. **Implementable mechanism for 2011 and trajectory for enhanced reporting and accountability over time**

a. Testifiers observed that the deadline of 2011 does not provide time for new initiatives, new processes, or significant additions to functionality. They urged

policymakers to define meaningful use in a way that allows people to meet the requirements with reasonable effort; then provide incentives that account for direct and indirect costs. The pressure of time cannot eliminate necessary testing and validation of measures and functions.

b. Some testifiers also suggested adopting a data reuse philosophy. For example, one measure that connects a lab or gets medication information could assume similar functionality for other measures.

4. **Most appropriate mechanism (electronic, least burdensome, most precise) to measure and verify provider's use of EHR functionality and conduct of information exchange)**

a. Some testifiers observed that it may be expedient to use existing quality measures and measurement systems, such as PQRI, but if data get hand-keyed into the EHR for this purpose, there is no value.

b. Testifiers observed that documentation of meaningful use should be collected and submitted electronically, or the risk of fraud would be high. CCHIT offered the following concept that certified EHRs should be able to:

(1) Register their existence and usage by provider
(2) Generate and display a "meaningful use" dashboard to users
(3) Sign and securely submit dashboard statistics to a designated entity when provider applies for incentives
(4) Retain audit trails for future verification

Appendix A: Hearing on Meaningful Use, April 28-29, 2009 – NCVHS Participants and Staff

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Appendix B: NCVHS Hearing on Meaningful Use, April 28-29, 2009, List of Testifiers

3m Health Information Systems, Inc.

Alliance for Nursing Informatics

Alliance for Pediatric Quality

Altarum Institute

American Academy of Ophthalmology
American Society of Cataract and
Refractive Surgery
American Optometric Association

American Association of Homes and
Services for the Aging
American Health Care Association
American Health Information Management
Association
American Medical Directors Association
Center for Aging Services Technology
National Association for the support of Long
Term Care
National Center for Assisted Living

American Health Information Management
Association

American Hospital Association

Kristine Martin Anderson
Principal, Booz Allen Hamilton

Rod Baker
President, EOBreeze, a division of FV Tech

Justin Barnes, Vice President
Greenway Medical Technologies
Chairman, HIMSS Electronic Health Record
Association (EHR Association)

Lee Barrett
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Network Accreditation Commission
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SVP HIT Services, Masspro

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Vice President and Co-Founder, ProVation

Ann Richardson Berkey
Senior Vice President, Public Affairs,
McKesson

Bill Bernstein
Chair of the Health Division, Manatt, Phelps
and Phillips

Edmund Billings, MD
Chief Medical Officer and EVP Product,
Medsphere

Rachel Block
Executive Director, New York eHealth
Collaborative

Carmella Bocchino
America's Health Insurance Plans

Francois de Brantes
CEO, Bridges to Excellence

Arlyn Broekhuis, CIO
Dennis Hofer, Executive Director I.T.
Denise Schoolmeester, Director I.T.
Lance Nygaard, Clinical Project Manager
Sanford Health

Jack Callahan
Executive Vice President of Corporate
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Terri Ripley, MIT, Director Systems
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David Classen, MD, MS
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Bill Conroy
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Theresa Cullen, MD, MS
Rear Admiral USPHS, CIO, Indian Health
Service

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Associate Professor, University of Chicago

Helen Darling
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Don E. Detmer, MD, MA
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Carol Diamond MD, MPH
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Donald A. Deieso, PHD
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Fresenius Medical Care

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State Health Officer, Kentucky Department
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CIO, Harvard Medical School and Beth
Israel Deaconess Medical Center
Chair, U.S. Healthcare Information
Technology Standards Panel (HITSP)

Elizabeth P. Hall
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John Haughton, MD, MS
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Health Story Project Executive Committee
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MedEDocs, MedQuist, Transcend Services,
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Andy Kapit
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Joel C. White
Executive Director, Health IT Now Coalition

Appendix C: NCVHS Hearing on Meaningful Use, April 28-29, 2009, Questions for Panel Input

Panel 1: Vision of Health and Health Care Transformed

1. What are the critical characteristics and enablers of a safe, patient-centric, high-quality health care system that optimizes patient outcomes?

2. What have been the major barriers to system-level improvement in the health care system?

3. How can incentives programs best be structured to support health reform?

Panel 2: Meaningful Use Capacity/Functionality in EHRs

1. What EHR capacities/functionalities are absolutely required to enable a safe, patient-centric, high-quality health care system that optimizes patient outcomes?

2. What are the critical EHR functionalities (*e.g.*, e-prescribing, decision support, problem list management) of which providers should be required to demonstrate use in order to be earn an incentive as a "meaningful user" of certified EHR technology in 2011? Should the functionalities or other specific requirements to meet the statutory "meaningful use" criteria be different or specific to provider type (*i.e.,* eligible professionals, hospitals)?

3. Are these functionalities supported in current certified EHR products? If not, what are the gaps?

4. What additional functionalities would be most important to require providers use by 2014 or 2015?

Panel 3: Meaningful Use Capacity/Functionality in Health Information Exchanges

1. What are the ways in which health information exchange enables a safe, patient-centric, high-quality health care system that optimizes patient outcomes?

2. What will the health information exchange landscape look like in 2011 (*e.g.*, penetration of operational HIOs, e-prescribing networks), and how would that enable or constrain meaningful information exchange requirements?

3. What would be the trajectory over time of increasingly robust requirements for information exchange as more opportunities for exchange become available?

4. How might the incentives criteria be constructed so as not to penalize providers in areas not serviced by HIOs, and how would this change over time?

Panel 4: Meaningful Use Capacity/Functionality in Quality Reporting

1. What are realistic goals for certified inpatient and ambulatory EHRs to achieve with respect to capture, retrieval, and reporting of data needed for quality measurement and informed clinical decision making in 2011?

2. What is the trajectory over time toward a "quality data set" to enable broader standardization of electronic data capture and reporting with EHRs needed to support clinical care and quality measurement? Describe the end goal and any interim milestones, barriers and enablers?

3. What other infrastructure or policy requirements need to be considered for HHS to enable and prepare for the sharing of electronic data for quality measurement?

4. Insofar as quality measures reporting using EHRs would be to State or Federal agency designated repository, what if any potentially practical mechanisms or other implications for assuring accuracy, validity, and privacy of submitted data should be considered?

Panel 5: Path to Meaningful Use Capacity for Vendors

1. What is the "time to market" cycle from adoption of standards to installation across the client base? How does that enable or constrain criteria for 2011 for eligible professionals? Hospitals? Later years?

2. What are vendors' expectations with respect to increased product demand in 2011 and after, and how do they expect to meet it? What are potential risks (for example, need for additional technical support to assure successful implementations) and how can they be mitigated?

3. How will vendors need to adapt their product development and upgrade cycles to synchronize with progress toward increasingly robust requirements for meaningful use, information exchange, and quality reporting?

4. What changes are anticipated in the vendor marketplace between now and 2016 as a result of the incentives?

Panel 6: Path to Meaningful Use Capacity for Providers

1. What do providers see as the critical EHR functionalities to enable a safe, patient-centric, high-quality health care system that optimizes patient outcomes?

2. What are the critical success factors needed for robust participation in the incentive programs by eligible professionals in 2011? By hospitals? What factors would promote continued participation in later years?

3. What are provider perspectives on potential barriers to health IT adoption and what are their major concerns? What education and tools could mitigate them?

4. Are there specific anticipated impacts on small providers? Rural providers? Providers with significant Medicaid populations? Early adopters?

5. How will providers need to adjust their business processes and product refresh/version upgrade cycles to adapt to the requirements over time?

Panel 7: Meaningful Use and Population/Public Health

1. What is your vision of population/public health practice in an era when the health care of all Americans is supported by EHRs?

2. What high priority population/public health data needs can be advanced by EHR functions and health information exchange?

3. What specific requirements for meaningful EHR use, including information exchange, will most significantly benefit population health?

4. How can public and population health needs/requirements translate into meaningful use criteria that are practical to implement for 2011? How might they affect or be affected by the path to 2016 and beyond?

Panel 8: Path to Meaningful Use Capacity for CMS, States, Other Payors

1. What are the most important policy issues associated with implementing the Medicare and Medicaid incentives programs (e.g., setting 2011 criteria high enough while still assuring widespread participation)?

2. What are the challenges associated with coordinating meaningful use policy and operations across Medicare and Medicaid in 2011 and as requirements become more robust over time?

3. What are the critical success factors associated with provider participation in the incentives programs, in 2011 and later years?

4. How will other health plans be affected by the incentives programs, and how can they contribute to increased meaningful use?

5. What is the role of states in promoting meaningful use of health IT?

Panel 9: Certification and Meaningful Use: EHR Product Certification

1. What role does certification, in general, play in promoting meaningful use?

2. What are the strengths and weaknesses of the current CCHIT certification processes, particularly as they relate to the promotion and measurement of meaningful use?

3. How do the statutory requirements of ARRA/HITECH change how we should think about certification?

4. How should the certification process work in 2011, and how should it develop over time in support of increasingly robust requirements for meaningful users in 2016 and later?

5. In an ideal circumstance, would multiple Secretarially recognized certification programs or bodies be available?

Panel 10: Measuring Meaningful Use

1. What are the strengths and limitations of the various methodologies provided in the statute for demonstrating meaningful use (attestation, submission of claims with appropriate coding, survey, reporting of quality measures, or other means)? Based on this, what are the most feasible and reliable measurement methods to ascertain compliance with these requirements for meaningful EHR use and associated incentives?

2. The third criterion for a provider to be determined to be a meaningful user is the reporting of quality measures using EHRs. What, if any, additional standards are needed to enable providers to report and CMS/States to successfully accept quality measures from EHRs? Are the needs different for measures applied to different settings (e.g. hospital or physician office)?

3. How could the various methodologies be combined to establish an implementable mechanism for 2011, as well as a trajectory to enhanced reporting and accountability over time?

4. What mechanism would be most appropriate (e.g., electronic mechanisms, least burdensome, most precise, etc.) to measure and verify a provider's use of EHR functionality and conduct of information exchange?