Department of Health & Human Services
Office of the National Coordinator for Health Information Technology

HIT Policy Committee

Meaningful Use Workgroup Presentation

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June 16, 2009

Workgroup Members

Co-Chairs:

- Paul Tang, Palo Alto Medical Foundation
- Farzad Mostashari, New York City Health Department

Members:

- David Bates, Brigham & Women's Hospital
- Christine Bechtel, National Partnership for Women & Families
- Neil Calman, The Institute for Family Health
- Art Davidson, Denver Public Health Department
- David Lansky, Pacific Business Group on Health
- Deven McGraw, Center for Democracy & Technology
- Latanya Sweeney, Carnegie Mellon University
- Charlene Underwood, Siemens

ONC Lead:

- John Glaser

Workgroup Charges

Broad Charge

- Make recommendations to the HIT Policy Committee regarding the process for defining and revising meaningful use and national goals, proposed new meaningful use definitions and national goals and standards and policy priorities to support meaningful use and national goals.

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Workgroup Charges

Specific Charge

- Make recommendations to the HIT Policy Committee on the definition of meaningful use for 2011 and 2013 within one (1) month of the initial meeting of the workgroup and refine within two (2) months.
- Make recommendations to the HIT Policy Committee on the definition of meaningful use for 2015 within three (3) month of the initial meeting of the workgroup and refine within six (6) months.

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Workgroup Charges

Specific Charge (continued)

- Make recommendations, by the end of 2009, to the HIT Policy Committee on the process for defining and revising meaningful use and national priorities on a bi-annual basis.
- Make recommendations to the HIT Policy Committee on the policies and standards necessary to support meaningful use and the eight (8) specific national priorities of Section 3002(b)(2)(B) of ARRA.
- Review barriers to broad adoption of meaningful use and provide recommendations, to the HIT Policy Committee, for removing barriers.

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Process

- Materials disseminated to workgroup
- First conference call May 28th
- Iterative revisions made based on feedback
- Second conference call June 3rd
- Additional refinements made

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VISION FOR MEANINGFUL USE

Health IT and Transformed Health Care

- Ultimate vision is to enable significant and measurable improvements in population health through a transformed health care delivery system.

- Key goals*:
  - Improve quality, safety, & efficiency
  - Engage patients & their families
  - Improve care coordination
  - Improve population and public health; reduce disparities
  - Ensure privacy and security protections

*Adapted from National Priorities Partnership. National Priorities and Goals: Aligning Our Efforts to Transform America's Healthcare. Washington, DC: National Quality Forum; 2008

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Achievable Vision for 2015

- **Prevention, and management, of chronic diseases**
  - A million heart attacks and strokes prevented
  - Heart disease no longer the leading cause of death in the US
- **Medical errors**
  - 50% fewer preventable medication errors
- **Health disparities**
  - The racial/ ethnic gap in diabetes control halved
- **Care Coordination**
  - Preventable hospitalizations and re-admissions cut by 50%
- **Patients and families**
  - All patients have access to their own health information
  - Patient preferences for end of life care are followed more often
- **Public health**
  - All health departments have real-time situational awareness of outbreaks

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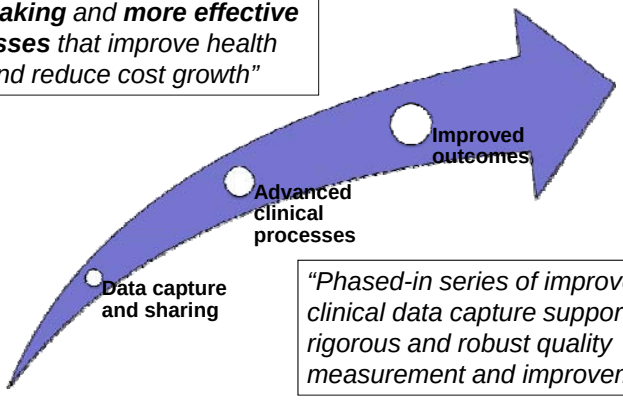
Bending the Curve Towards Transformed Health
Achieving Meaningful Use of Health Data

*"These goals can be achieved only through **the effective use of information** to support **better decision-making** and **more effective care processes** that improve health outcomes and reduce cost growth"*



"Phased-in series of improved clinical data capture supporting more rigorous and robust quality measurement and improvement."

Connecting for Health, Markle Foundation "Achieving the Health IT Objectives of the American Recovery and Reinvestment Act" April 2009

Example

- Goal
  - 85% of patients with high blood pressure and cholesterol have it well controlled
- Advanced care processes
  - Use of evidence-based order sets
  - Monitoring and addressing medication adherence
  - Clinical decision support at the point of care
  - Patient outreach and reminders
  - Quality benchmarking and reporting
- Clinical data capture (can be queried and trended)
  - Systolic & diastolic blood pressure
  - Medication and Problem list
  - Laboratory tests and procedures
  - Prescription fill histories

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Relationship to Health Reform and Affordability

- Direct Cost Reduction
  - Reduction in medication errors
  - Formulary adherence
  - Fewer redundant tests due to better information
- Provides information infrastructure for health reform
  - Clinical quality measurement (outcomes)
  - Care coordination (e.g., to reduce readmissions)
  - Reduction in inappropriate care
  - Expanding primary care capacity (e.g., non-visit-based care)
  - Prevention

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Initial Metrics and Validation

- Provider makes use of, and the patient has access to, clinically relevant electronic information, not just existence of technology
- Achievable whenever possible through automatic reporting from electronic health systems to avoid creating additional unnecessary reporting burden for clinicians
- Verification to be performed by CMS
- Many suitable measures already developed and specified for automated reporting
- Consider use of PQRI EHR/ registry receiving capabilities
- Attestation will be necessary for some criteria (at least initially)
- Can use escalating thresholds

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Criteria for 2013 and Beyond

- Additional metrics required
  - Additional efficiency, “inappropriate use” measures
  - Patient safety
  - Care coordination
- Transition from “pay for reporting” to “pay for outcomes” as per the CMS EHR demonstrations

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DISCUSSION OF VISION

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ACHIEVING MEANINGFUL USE

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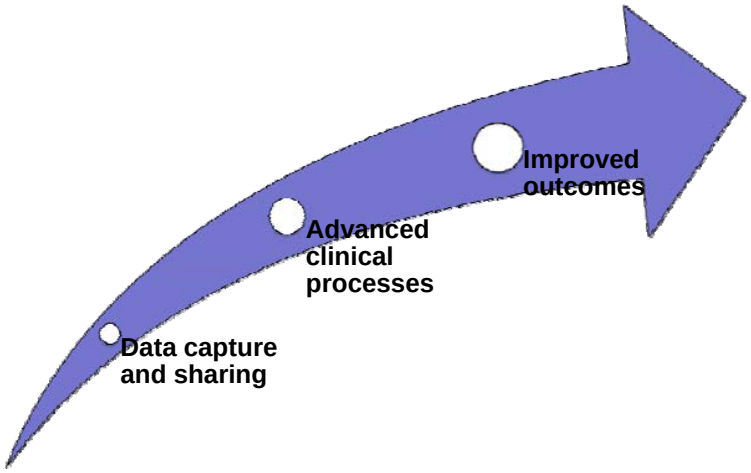
Bending the Curve Towards Transformed Health

Achieving Meaningful Use of Health Data



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HIT-Enabled Health Reform

Achieving Meaningful Use

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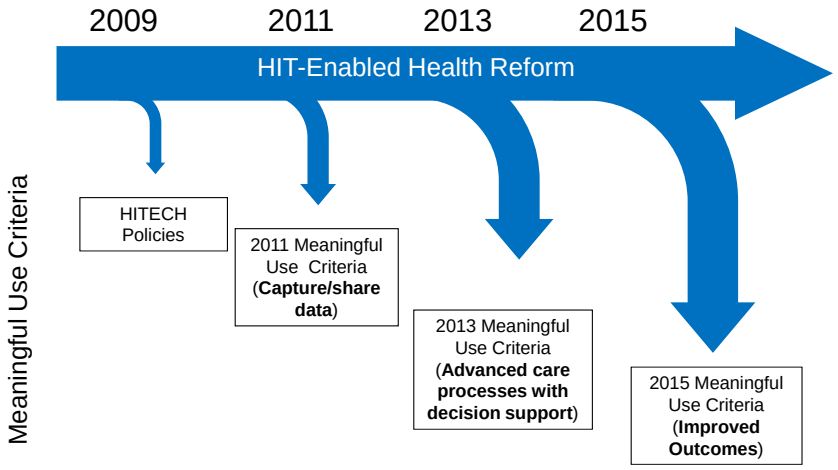
HIT-Enabled Health Reform

Achieving Meaningful Use



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Phasing of MU Criteria

Some Considerations

- Enable health reform (payment reform prerequisite)
  - Create a transformed health care system
  - Support advanced care processes
- Focus on health outcomes, not software
  - Measure health outcomes and key process changes
  - "Pull with quality; push with certification" (per Jon Perlin)
- Feasibility
  - Currently available capabilities in EHRs
  - Balance urgency of health reform with calendar time needed to implement
  - Be sensitive to issues of small practices
- Recovery Act provisions
  - Timelines fixed
  - Funding rules defined

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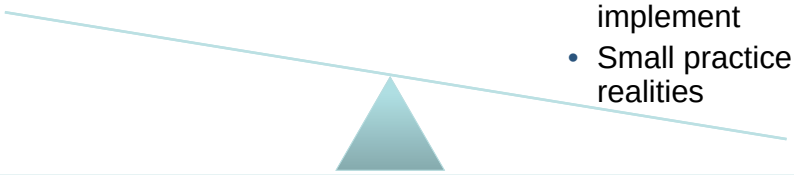
Phasing of MU Criteria: A Balancing Act

•Urgency of health reform
•Outcomes improvement

- Currently available EHR capabilities
- Time needed to implement
- Small practice realities



Availability of Technical Assistance and Exchange Capabilities

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DRAFT MEANINGFUL USE CRITERIA (FOCUSED ON 2011)

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Improve Quality, Safety, Efficiency

2011 Objectives

- Capture data in coded format
  - Maintain current problem list
  - Maintain active medication list
  - Maintain active medication allergy list
  - Record vital signs (height, weight, blood pressure)
  - Incorporate lab/test results into EHR
  - Document key patient characteristics (race, ethnicity, gender, insurance type, primary language)
- Document progress note for each encounter (outpatient only)
- Use CPOE for all order types
  - Use electronic prescribing for permissible Rx
  - Implement drug-drug, drug-allergy, drug-formulary checks
- Manage populations
  - Generate list of patients by specific conditions (outpatient only)
  - Send patient reminders per patient preference

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Improve Quality, Safety, Efficiency

2011 Measures

- % Labs incorporated into EHR in coded format
- % CPOE orders entered directly by physician
- Report quality measures using HIT-enabled quality measures (HIT-QM)
  - % Diabetics with A1c under control
  - % Hypertensives with BP under control
  - % LDL under control
  - % Smokers offered smoking cessation counseling
  - % Patients with recorded BMI
  - % Colorectal screening for 50+
  - % Mammograms for women 50+
  - % Current pneumovax status
  - % Annual flu vaccination
  - % Aspirin prophylaxis for patients at risk for cardiac event
  - % Surgical patients receiving VTE prophylaxis
  - Avoidance of high risk medications in elderly
- Quality reports stratified by race, ethnicity, gender, insurance type

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Engage Patients and Families

2011 Objectives

- Provide patients with electronic copy of- or electronic access to- clinical information per patient preference
  - Includes labs, problem list, medication list, allergies
- Provide access to patient-specific educational resources
- Provide clinical summaries for patients for each encounter

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Engage Patients and Families

2011 Measures

- % Patients with electronic access to personal health information
- % Patients with access to patient-specific educational resources
- % Encounters where clinical summary provided

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Improve Care Coordination

2011 Objectives

- Exchange key clinical information among providers of care
- Perform medication reconciliation at relevant encounters

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Improve Care Coordination

2011 Measures

- Report 30 day readmission rate
- % Encounters where medication reconciliation performed
- Implemented ability to exchange health information with external clinical entities
  - Problems, labs, medication lists, care summaries
- % Transitions in care where summary care record is shared (in 2011, could use any modality)

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Improve Population and Public Health

2011 Objectives

- Submit electronic data to immunization registries where required and can be accepted
- Submit electronic reportable lab results to public health agencies
- Submit electronic syndrome surveillance data to public health agencies according to applicable law and practice

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Improve Population and Public Health

2011 Measures

- Report up-to-date status of childhood immunizations
- % Reportable lab results submitted electronically

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Ensure Privacy and Security Protections

2011 Objectives

- Compliance with HIPAA Rules and state laws
- Compliance with fair data sharing practices set forth in the National Privacy and Security Framework

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Ensure Privacy and Security Protections

2011 Measures

- Full compliance with HIPAA
  - Entity under investigation for HIPAA violation cannot achieve meaningful use until entity is cleared
- Conduct or update a security risk assessment and implement security updates as necessary

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Looking Forward: 2013
Objectives

- Improve quality, safety, efficiency
  - Evidence based order sets
  - Clinical documentation recorded (inpatient)
  - Clinical decision support at point of care
  - Manage chronic conditions using patient lists and decision support
  - Report to external disease registry
- Engage patients and families
  - Offer secure patient-provider messaging
  - Access to patient-specific educational resources
  - Record patient preferences
  - Documentation of family medical history
  - Upload data from home monitoring devices
- Coordinate care
  - Medication reconciliation at each transition of care
  - Produce electronic summary of care at each transition
  - Retrieve and act on electronic prescription fill data

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Looking Forward: 2013 (continued)
Objectives

- Improve population and public health
  - Receive immunization histories from registries
  - Receive public health alerts
  - Electronic syndromic surveillance data sent to public health agencies
- Ensure privacy and security protection
  - Use summary or de-identified data when reporting data for population health purposes

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Looking Forward: 2015
Objectives

- Improve quality, safety, and efficiency
  - Achieve minimal levels of performance on quality, safety, and efficiency measures
  - Implement clinical decision support for national high priority conditions
  - Achieve medical device interoperability
  - Provide multimedia support (e.g., x-rays)
- Engage patients and families
  - Provide access for all patients to PHR populated in real time with data from EHR
  - Provide patients with access to self-management tools
  - Capture electronic reporting on experience of care
- Coordinate care
  - Access comprehensive patient data from all available sources

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Looking Forward: 2015 (continued)
Objectives

- Improve population and public health
  - Use epidemiologic data derived from EHRs
  - Automate real-time surveillance
  - Provide clinical dashboards
  - Generate dynamic and ad hoc quality reports
- Ensure privacy and security protection
  - Provide patients with accounting of treatment, payment, and health care operations disclosures
  - Protect sensitive health information

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Summary

- Journey to a transformed health system requires meaningful use of transformation-capable HIT
- Migration of HIT readiness from current situation to fully HIT-enabled ecosystem will evolve:
  - Capture coded data electronically
  - Adopt advanced care processes
  - Measure and improve outcomes
- Proposed MU criteria for 2011 and beyond provides escalating capabilities, balancing urgent need for reform and feasibility of what is achievable
- Meaningful use of HIT is a precursor to effective health reform, and contingent on health care financing reform

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QUESTIONS AND DISCUSSION

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Health Outcomes Policy Priorities	**Care Goals**	**2011 Objectives** ***Goal is to electronically capture in coded format and to report health information and to use that information to track key clinical conditions***	**2011 Measures**	**2013 Objectives** ***Goal is to guide and support care processes and care coordination***	**2013 Measures**	**2015 Objectives** ***Goal is to achieve and improve performance and support care processes and on key health system outcomes***	**2015 Measures**
Improve quality, safety, efficiency, and reduce health disparities	• Provide access to comprehensive patient health data for patient's health care team • Use evidence-based order sets and CPOE • Apply clinical decision support at the point of care • Generate lists of patients who need care and use them to reach out to patients (e.g., reminders, care instructions, etc) • Report to patient registries for quality improvement, public reporting, etc	• Use CPOE for all order types including medications [OP, IP] • Implement drug-drug, drug-allergy, drug-formulary checks [OP, IP] • Maintain an up-to-date problem list [OP, IP] • Generate and transmit permissible prescriptions electronically (eRx) [OP] • Maintain active medication list [OP, IP] • Maintain active medication allergy list [OP, IP] • Record primary language, insurance type, gender, race, ethnicity [OP, IP] • Record vital signs including height, weight, blood pressure [OP, IP] • Incorporate lab-test results into EHR [OP, IP] • Generate lists of patients by specific condition to use for	• Report quality measures, including: - % diabetics with A1c under control [OP] - % hypertensive patients with BP under control [OP] - % of patients with LDL under control [OP] - % of smokers offered smoking cessation counseling [OP, IP] • % of patients with recorded BMI [OP] • % eligible surgical patients who received VTE prophylaxis [IP] • % of orders entered directly by physicians through CPOE • Use of high-risk medications in the elderly [OP, IP] • % of patients over 50 with annual	• Use evidence-based order sets [OP, IP] • Record clinical documentation in EHR [IP] • Generate and transmit permissible prescriptions electronically [IP] • Manage chronic conditions using patient lists and decision support [OP, IP] • Provide clinical decision support at the point of care (e.g., reminders, alerts) [OP, IP] • Report to external disease (e.g., cancer) or device registries [OP (esp. specialists) [IP] • Conduct medication administration using bar coding [IP]	• Additional quality reports using HIT-enabled NQF-endorsed quality measures [OP, IP] • % of all orders entered by physicians through CPOE [OP, IP] • Potentially preventable Emergency Department Visits and Hospitalizations [IP] • Inappropriate use of imaging (e.g. MRI for acute low back pain) [OP, IP] • Other efficiency measure (TBD) [OP, IP]	• Achieve minimal levels of performance on quality, safety, and efficiency measures • Implement clinical decision support for national high priority conditions [OP, IP] • Medical device interoperability [OP, IP] • Multimedia support (e.g. x-rays) [OP, IP]	• Clinical outcome measures (TBD) [OP, IP] • Efficiency measures (TBD) [OP, IP] • Safety measures (TBD) [OP, IP]

		quality improvement, reduction of disparities, and outreach [OP] • Send reminders to patients per patient preference for preventive /follow up care [OP, IP] • Document a progress note for each encounter [OP]	colorectal cancer screenings [OP] • % of females over 50 receiving annual mammogram [OP] • % patients at high-risk for cardiac events on aspirin prophylaxis [OP] • % of patients with current pneumovax [OP] • % eligible patients who received flu vaccine [OP] • % lab results incorporated into EHR in coded format [OP,IP] •Stratify reports by gender, insurance type, primary language, race, ethnicity [OP, IP]				

Health Outcomes Policy Priorities	**Care Goals**	**2011 Objectives** ***Goal is to electronically capture in coded format and to report health information and to use that information to track key clinical conditions***	**2011 Measures**	**2013 Objectives** ***Goal is to guide and support care processes and care coordination***	**2013 Measures**	**2015 Objectives** ***Goal is to achieve and improve performance and support care processes and on key health system outcomes***	**2015 Measures**
Engage patients and families	• Provide patients and families with access to data, knowledge, and tools to make informed decisions and to manage their health	• Provide patients with electronic copy of- or electronic access to- clinical information (including lab results, problem list, medication lists, allergies) per patient preference (e.g., through PHR) [OP, IP] • Provide access to patient-specific educational resources [OP, IP] • Provide clinical summaries for patients for each encounter [OP, IP]	• % of all patients with access to personal health information electronically [OP, IP] • % of all patients with access to patient-specific educational resources [OP, IP] • % of encounters for which clinical summaries were provided [OP, IP]	• Offer secure patient- provider messaging capability [OP] • Provide access to patient-specific educational resources in common primary languages [OP, IP] • Record patient preferences (e.g., preferred communication media, advance directive, health care proxies, treatment options) [OP, IP] • Documentation of family medical history [OP, IP] • Upload data from home monitoring devices [OP]	• Additional patient access and experience reports using NQF-endorsed HIT-enabled quality measures [OP, IP] • % of patients with access to secure patient messaging [OP] • % of educational content in common primary languages [OP, IP] • % of all patients with preferences recorded [OP] • % of transitions were summary care record is shared [OP, IP] • Implemented ability to incorporate data uploaded from home monitoring devices [OP]	• Access for all patients to PHR populated in real time with data from EHR [OP, IP] • Patients have access to self-management tools [OP] • Electronic reporting on experience of care [OP, IP]	• NPP quality measures related to patient and family engagement [OP, IP] • % of patients with full access to PHR populated in real time with EHR data [OP, IP]

Health Outcomes Policy Priorities	**Care Goals**	**2011 Objectives** ***Goal is to electronically capture in coded format and to report health information and to use that information to track key clinical conditions***	**2011 Measures**	**2013 Objectives** ***Goal is to guide and support care processes and care coordination***	**2013 Measures**	**2015 Objectives** ***Goal is to achieve and improve performance and support care processes and on key health system outcomes***	**2015 Measures**
Improve care coordination	• Exchange meaningful clinical information among professional health care team	• Exchange key clinical information among providers of care (e.g., problems, medications, allergies, test results) [OP, IP] • Perform medication reconciliation at relevant encounters [OP, IP]	• Report 30-day readmission rate [IP] • % of encounters where med reconciliation was performed [OP, IP] • Implemented ability to exchange health information with external clinical entity (specifically labs, care summary and medication lists) [OP, IP] • % of transitions in care for which summary care record is shared (e.g., electronic, paper, eFax) [OP, IP]	• Retrieve and act on electronic prescription fill data [OP, IP] • Produce and share an electronic summary care record for every transition in care (place of service, consults, discharge) [OP, IP] • Perform medication reconciliation at each transition of care from one health care setting to another [OP, IP]	• Additional public reports using NQF-endorsed HIT-enabled quality measures [OP, IP] • % of transitions where med reconciliation was performed [OP, IP] • % of encounters where fill data accessed [OP] • % of encounters where clinical information is shared with external clinical entities [OP, IP]	• Access comprehensive patient data from all available sources	• Aggregated clinical summaries from multiple sources available to authorized users [OP, IP] • NQF-endorsed Care Coordination Measures (TBD)

Health Outcomes Policy Priorities	**Care Goals**	**2011 Objectives** ***Goal is to electronically capture in coded format and to report health information and to use that information to track key clinical conditions***	**2011 Measures**	**2013 Objectives** ***Goal is to guide and support care processes and care coordination***	**2013 Measures**	**2015 Objectives** ***Goal is to achieve and improve performance and support care processes and on key health system outcomes***	**2015 Measures**
Improve population and public health	• Communicate with public health agencies	• Submit electronic data to immunization registries where required and accepted [OP, IP] • Provide electronic submissions of reportable lab results to public health agencies [IP] • Provide electronic syndrome surveillance data to public health agencies according to applicable law and practice [IP]	• Report up-to-date status for childhood immunizations [OP] • % reportable lab results submitted electronically [IP]	• Receive immunization histories and recommendations from immunization registries [OP, IP] • Receive health alerts from public health agencies [OP, IP] • Provide sufficiently anonymized electronic syndrome surveillance data to public health agencies with capacity to link to personal identifiers [OP,IP]	• % of patients for whom an assessment of immunization need and status has been completed during the visit [OP] • % of patients for whom a public health alert should have triggered and audit evidence that a trigger appeared during the encounter	• Use of epidemiologic data [OP, IP] • Automated real-time surveillance (adverse events, near misses, disease outbreaks, bioterrorism) [OP, IP] • Clinical dashboards [IP, OP] • Dynamic and Ad hoc quality reports [OP, IP]	• HIT-enabled population measures TBD [OP] • HIT-enabled surveillance measure [OP, IP]

Health Outcomes Policy Priorities	Care Goals	2011 Objectives	2011 Measures	2013 Objectives	2013 Measures	2015 Objectives	2015 Measures
Ensure adequate privacy and security protections for personal health information	• Ensure privacy and security protections for confidential information through operating policies, procedures, and technologies and compliance with applicable law • Provide transparency of data sharing to patient	• Compliance with HIPAA Privacy and Security Rules and state laws • Compliance with fair data sharing practices set forth in the Nationwide Privacy and Security Framework[1]	• Full compliance with HIPAA Privacy and Security Rules • An entity under investigation for a HIPAA privacy or security violation cannot achieve meaningful use until the entity is cleared by the investigating authority • Conduct or update a security risk assessment and implement security updates as necessary	• Use summarized or de-identified data when reporting data for population health purposes (e.g. public health, quality reporting, and research), where appropriate, so that important information is available with minimal privacy risk	• Provide summarized or de-identified data, when sufficient, to satisfying a data request for pop. health purposes	• Provide patients, on request, with an accounting of treatment, payment, and health care operations disclosures • Protect sensitive health information to minimize reluctance of patient to seek care because of privacy concerns	• Provide patients, on request, with a timely accounting of disclosures for treatment, payment, and health care operations, in compliance with applicable law • Incorporate and utilize technology to segment sensitive data

[1] The Nationwide Privacy and Security Framework was released by The Department of Health and Human Services in December 2008. It is anticipated that further revisions may be made to this document during the calendar year 2010.

"Meaningful Use: A Definition"

Recommendations to the Health IT Policy Committee from the Meaningful Use Workgroup

The American Recovery and Reinvestment Act authorizes the Centers for Medicare & Medicaid Services (CMS) to provide a reimbursement incentive for physician and hospital providers who are successful in becoming "meaningful users" of an electronic health record (EHR). These incentive payments begin in 2011 and gradually phase down. Starting in 2015, providers are expected to have adopted and be actively utilizing an EHR in compliance with the "meaningful use" definition or they will be subject to financial penalties under Medicare.

FRAMEWORK FOR DEFINITION

In 2008, the National Priorities Partnership, convened by the National Quality Forum (NQF), released a report entitled "National Priorities and Goals" which identified a set of national priorities to help focus performance improvement efforts. Among these priorities were patient engagement, reduction of racial disparities, improved safety, increased efficiency, coordination of care, and improved population health. These priorities were used to create the framework for "meaningful use" of an electronic health record. An additional area related to privacy and security has also been included to emphasize the importance of preserving patient protections and ensuring patient trust in the use of electronic health records. The matrix represents a set of objectives and care processes that the workgroup believes should inform the ultimate definition of meaningful use.

PROGRESSION TOWARDS ULTIMATE GOAL

We recommend that the ultimate goal of meaningful use of an Electronic Health Record is to enable significant and measurable improvements in population health through a transformed health care delivery system. The ultimate vision is one in which all patients are fully engaged in their healthcare, providers have real-time access to all medical information and tools to help ensure the quality and safety of the care provided while also affording improved access and elimination of health care disparities. This "north star" must guide our key policy objectives, the advanced care processes needed to achieve them, and lastly, the specific use of information technology that will enable the desired outcomes, and our ability to monitor them. For example, demonstrating improved performance and reduced disparities in blood pressure control among patients with diabetes will require a host of new care processes for many outpatient providers (e.g., monitoring medication adherence, use of evidence-based order sets, clinical decision support tools at the point of care, patient outreach and reminders). In order to

effectively use the tools that undergird these processes, and to monitor progress towards the outcomes of interest, key information generated in the delivery of care (vital signs, problem lists, medications, procedures, lab tests) must be digitized and queriable. We recognize that changing products and changing workflows will be an evolving process, but providing a clear roadmap of the future (as we have attempted to do in this proposed definition of meaningful use) will help give purpose and meaning to these activities. We recommend a progression similar to the Electronic Health Record demonstration initiated by the Centers for Medicare and Medicaid (CMS) in 2008, wherein "meaningful use" is ultimately linked to achieving measurable outcomes in patient engagement, care coordination, and population health.

In developing the recommended criteria and prioritizing the progression towards a fully interoperable health information system, we have found it necessary to balance the competing goals of encouraging provider participation while promoting progress towards reform of our current health care system. We seek specific stakeholder feedback on whether the recommended timeline of requirements is overly aggressive based on the current state of technology and the demands on new provider workflows, or not challenging enough to result in significant transformation, in light of the declining level of Medicare incentives in future years.

TRANSFORMED HEALTHCARE

As a result of increased effective use of health information technology, considerable improvements will be realized in the prevention and management of chronic diseases including diabetes and heart disease, preventing hundreds of thousands of unnecessary amputations and premature deaths. Medication errors will be averted. Patients will be able to promptly access their own health information, and their end of life preferences will be heard. The nation will be better prepared for the next pandemic. Health care disparities will be systematically identified and addressed. This transformed healthcare delivery system will also enable and amplify the effectiveness of a host of new reimbursement models that will reward more organized, more coordinated, and more efficient care.

PROVIDER TYPE

The recommended definition of "meaningful use" will depend on the healthcare setting in which it is employed. Thus, some features and capabilities will be recommended as required in an ambulatory setting before similar functions are expected to be widely used in the hospital. This reflects both the availability of the technology in these different settings as well as the potential impact of these features on the health of the population served. Although some recommended measures used to assess meaningful use in 2011 may apply to specific chronic diseases, the recommended 2011 objectives are meant to establish a foundation for affecting a more comprehensive set of health outcomes in the future. Many of the current proposed EHR-

generated quality measures apply to primary care providers and are derived from NQF-endorsed measures. New measures under development, by NQF, and other recognized organizations will also address the work of specialists. The Workgroup anticipates that future recommended meaningful use objectives and measures will reflect emerging national priorities.

MEASURES

In identifying potential criteria for "meaningful use" of an electronic health record, it became apparent that there are considerable gaps in EHR-generated measures available to monitor key desired policy outcomes, (e.g., efficiency, patient safety, care coordination). While these measures will not be required for Medicare and Medicaid incentive payments until 2013 , the Workgroup is seeking feedback on how to best frame these measures including measurement of key public health conditions, measuring health care efficiency, and measuring the avoidance of certain adverse events. These comments will be used to help revise the recommended measurement strategy to include more extensive and refined outcome measures for "meaningful use" in 2013 and beyond.