

Electronic Health Record (EHR) Meaningful Use

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Disclosures

- None

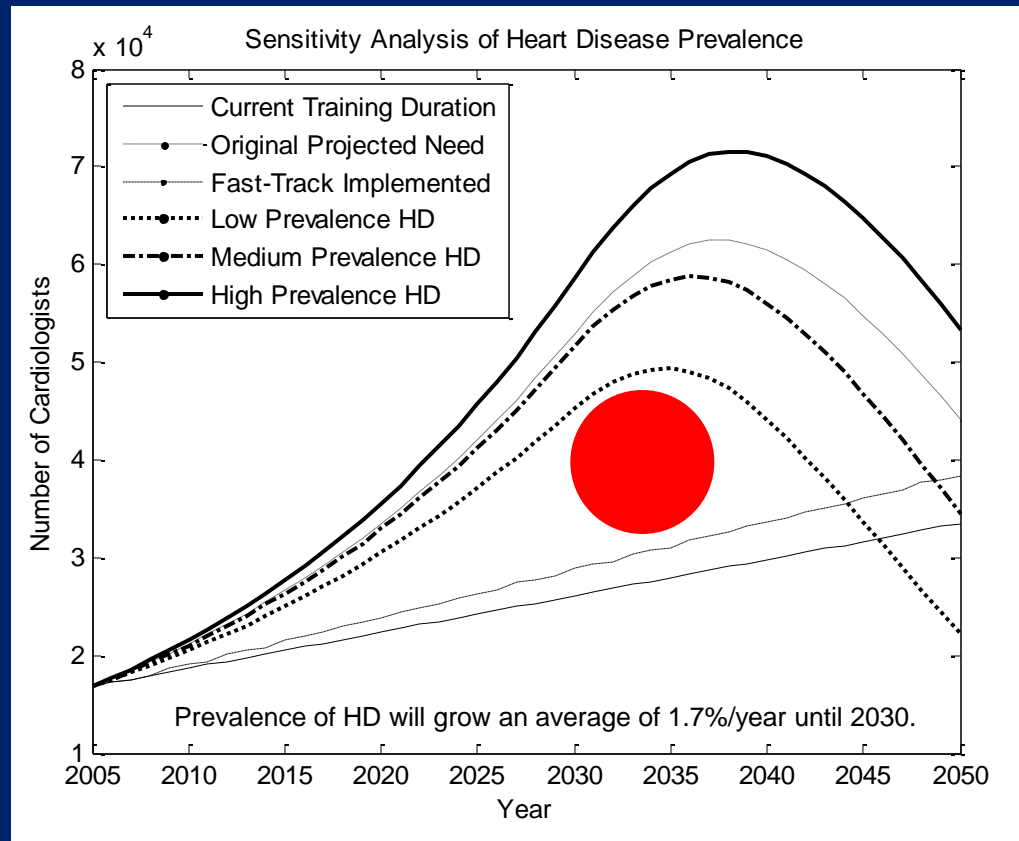


Objectives

- Be able to recognize the basic elements and requirements of the Medicare and Medicaid Electronic Health Record (EHR) Incentive Program.



Why Not Focus on Cardiology?



The red circle reflects the discrepancy between current workforce and projected workforce needs.

- As the population ages, demand for cardiology will be increasing. We will all be wearing multiple hats.
- We need the tools to work smarter.



Results of ACC Survey of Practices

- Most Commonly Used EHR's:
 - Allscripts: 28%
 - EPIC: 17%
 - NextGen: 16%
 - GE Centricity: 15%
- 34% have registered for the EHR Incentive Program.
 - 12% have received incentive payment.
- Practice administrator handled registration EP's and reporting process.

ACC Cardiology Magazine, Sept-Oct 2011, p. 23.



Health Information Technology for Economic and Clinical Health (HITECH) Act

- American Recovery and Reinvestment Act 2009 (ARRA)
 - Health Information Technology for Economic and Clinical Health (HITECH) Act
 - Formal establishment of the Office of the National Coordinator for Health Information Technology (ONC)
- Funding to support regional and state initiatives to promote the adoption of electronic health record (EHR) technology and best practices
- Estimated \$17-\$19 billion in Medicare and Medicaid incentive funds for eligible hospitals and providers that adopt EHR technology before 2015
- Directed the ONC to issue regulations



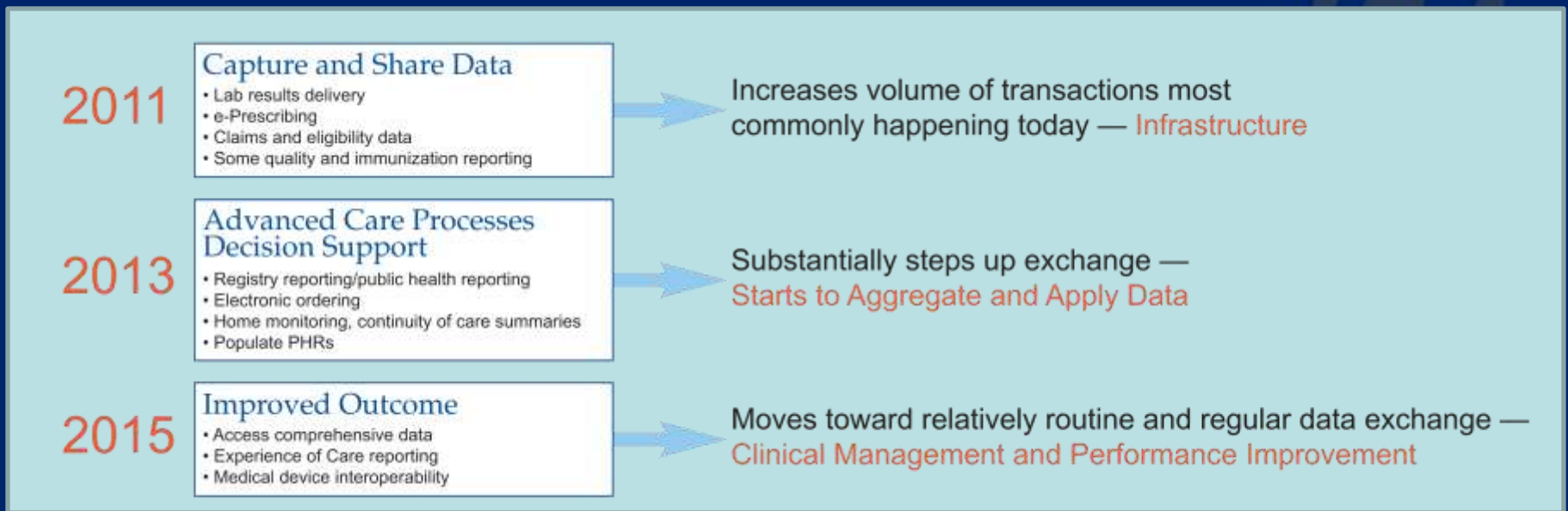
Vision and Goals for Meaningful Use

Vision of Meaningful Use:

To enable significant and measurable improvements in population health through a transformed health care delivery system.

Goals:

- Improve quality, safety and efficacy
- Engage patients and their families
- Improve care coordination
- Improve population and public health
- Reduce disparities
- Ensure privacy and security protections



- Kosinski LR, "Pressure Driving EMR Use Embracing Meaningful Use," Electronic Medical Records Symposium 2010 ACG Regional Postgraduate Course, August 27th , 2010



Evidence of EHR Effectiveness in Clinical Quality?

- Data on hospital characteristics were obtained from the American Hospital Association Annual Survey Database.
- This database includes 800 variables on more than 3900 US general acute care hospitals.
- Data on hospital quality were obtained from the Hospital Compare database for 2004 and 2007.

Spencer S. Jones, PhD; John L. Adams, PhD; Eric C. Schneider, MD; Jeanne S. Ringel, PhD; and Elizabeth A. McGlynn, PhD, "Electronic Health Record Adoption and Quality Improvement in US Hospitals," *Am J Manag Care*. 2010, V. 16, No. 12, SP64-SP71.



Evidence of EHR Effectiveness in Clinical Quality?

Clinical Condition	% of Patients With an Indication Who Were Given a Measure of Process of Care
AMI	ACE inhibitor or ARB for left ventricular systolic dysfunction Aspirin at arrival Aspirin at discharge β -Blocker at arrival β -Blocker at discharge Thrombolytic medication within 30 min of arrival PCI within 90 min of arrival Smoking cessation advice or counseling
Heart failure	ACE inhibitor or ARB for left ventricular systolic dysfunction Evaluation of left ventricular systolic function Discharge instructions Smoking cessation advice or counseling
Pneumonia	Assessment and pneumococcal vaccination Initial antibiotics within 4-6 h of arrival [†] Oxygenation assessment Smoking cessation advice or counseling Emergency department blood culture before first hospital dose of antibiotics

ACE indicates angiotensin-converting enzyme; AMI, acute myocardial infarction; ARB, angiotensin II receptor blocker; PCI, percutaneous coronary intervention.
[†]The time threshold for initial antibiotics was 4 hours in 2004 and was extended to 6 hours in 2007.

- Prolonged availability of an EHR was associated with some significant gains in quality improvement.
- Recent adoption of or upgrade to an advanced EHR was associated with smaller quality gains.
- “Ceiling effects” may limit the usefulness of standard hospital quality measures for assessing the effects of EHR adoption on quality.
- Less complex EHR’s may be better.



Evidence of EHR Effectiveness in Clinical Quality?

EHR Capability in Both Years ^a	Clinical Condition	Performance, %		Change in Performance Between 2004 and 2007	
		2004	2007	Mean (SD), %	Adjusted Relative to No EHR, % (95% CI) ^b
No EHR	AMI	88.6	93.3	4.7 (9.0)	Comparison
	Heart failure	75.1	85.3	10.2 (14.3)	Comparison
	Pneumonia	76.3	91.5	15.2 (8.4)	Comparison
Basic EHR	AMI	88.9	93.6	4.7 (7.8)	0.3 (-0.6 to 1.3)
	Heart failure	73.9	86.8	12.9 (14.2)	2.6 (1.0 to 4.1) ^c
	Pneumonia	75.8	91.7	15.9 (7.7)	0.3 (-0.6 to 1.2)
Advanced EHR	AMI	91.4	94.7	3.3 (9.8)	-1.9 (-4.6 to 0.7)
	Heart failure	79.2	87.4	8.2 (13.1)	-0.8 (-5.4 to 3.7)
	Pneumonia	75.1	91.6	16.5 (7.7)	-0.5 (-3.3 to 2.2)

AMI indicates acute myocardial infarction; CI, confidence interval.

^aNo EHR indicates the lack of 1 or more of the following: clinical data repository, electronic patient record, and clinical decision support systems. Basic EHR indicates the full complement of an operational clinical data repository, electronic patient record, and clinical decision support systems. Advanced EHR indicates all the components of a basic EHR plus operational computerized provider order entry.

^bAdjusted differences in differences are from generalized mixed-effects regression models that included hospital size, teaching status, propensity score for baseline EHR capability, tax status, healthcare system affiliation, urbanization, and the presence of a dedicated coronary care unit. Values indicate the additional performance gains (or losses) associated with the availability of a basic or an advanced EHR vs hospitals with no EHR.

^c $P < .05$.

- There have been studies that suggest Clinical Decision Support Tools within EHR **do not** have an associated clinical quality benefit.
- Study of 255,402 ambulatory care visits. Arch Int Med, V. 171, No. 10 (May 2011)



Are EHR's the Holy Grail?

- Note the 2ft long, light-up, Lightning McQueen fishing rod.
- All EHR's (and users) are not created equal.
- The EHR is a tool that has to be harnessed correctly.



Why Strive for Meaningful Use?

- The Centers for Medicaid and Medicare Services (CMS) is in a transformation to improve quality, safety and efficiency of care by providing incentives to utilize Electronic Health Records (EHRs).¹
- The Medicare and Medicaid EHR incentive programs will provide incentive payments to eligible professionals and eligible hospitals as they adopt, implement, upgrade or demonstrate meaningful use of certified EHR technology.
- The programs begin in 2011 and they are separate from the Physicians Quality Reporting Initiative (PQRI) and e-Prescribing programs.

¹ "CMS Finalizes Requirements for the Medicare Electronic Health Records (EHR) Incentive Program," CMS FactSheets, <http://www.cms.gov/apps/media/press/factsheet>, CMS Office of Public Affairs, Friday, July 16, 2010.



Why Strive for Meaningful Use? Financial Implications

- Private Practice:
 - A qualifying Eligible Professional (EP) can receive EHR incentive payments for up to five years with payments beginning as early as 2011.
 - In general, the maximum amount of total incentive payments that an EP can receive under the *Medicare* program is \$44,000.
 - In general, the maximum amount of total incentive payments that an EP can receive under the *Medicaid* program is \$63,750.
- Hospitals:
 - Incentive payments for eligible hospitals (EH) and critical access hospitals (CAHs) may begin as early as 2011 and begin with a \$2 million base payment. May receive payment from *both Medicare and Medicaid*.
 - CAHs must have >10% Medicaid patient volume to be eligible.
 - For 2015 and later, eligible hospitals, and CAHs that do not successfully demonstrate meaningful use will be penalized.



EHR Incentive Payments

- EP Medicare Payments

Calendar Year	First CY for which the EP Receives an Incentive Payment				
	2011	2012	2013	2014	2015 and subsequent years
2011	\$18,000	---	---	---	---
2012	\$12,000	\$18,000	---	---	---
2013	\$8,000	\$12,000	\$15,000	---	---
2014	\$4,000	\$8,000	\$12,000	\$12,000	---
2015	\$2,000	\$4,000	\$8,000	\$8,000	\$0
2016	---	\$2,000	\$4,000	\$4,000	\$0
TOTAL	\$44,000	\$44,000	\$39,000	\$24,000	\$0

- EH Medicare Payments

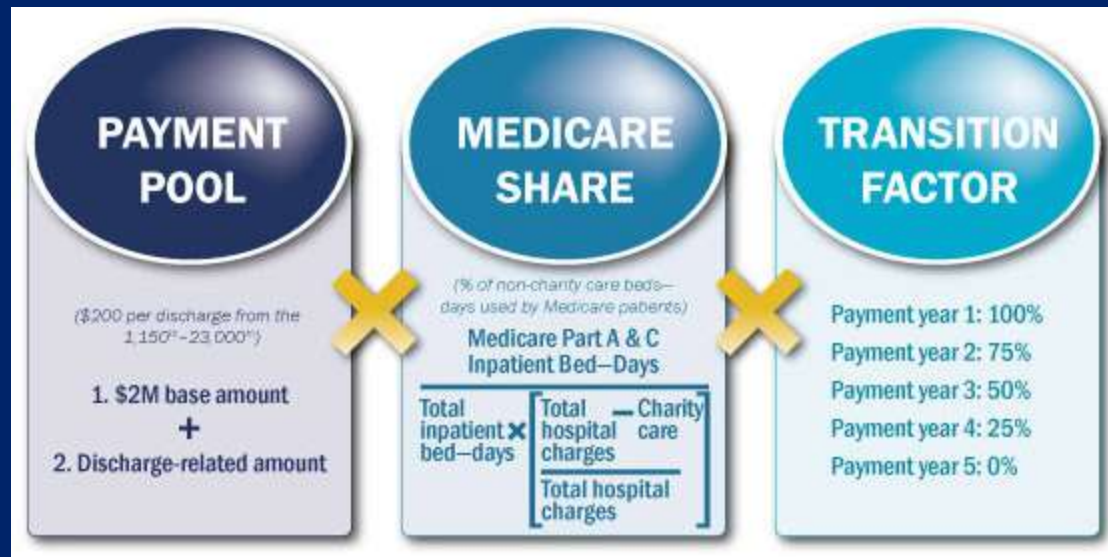
- *Incentive Payment Amount* equals [Initial Amount] x [Medicare Share] x [Transition Factor]

- See Handout for Calculation of EH payment.



Hospital EHR Incentive Payment

- Incentive Payment Amount equals [Initial Amount] x [Medicare Share] x [Transition Factor]
- Initial Amount equals \$2,000,000 + [\$200 per discharge for the 1,150th – 23,000th discharge]
- Medicare Share equals Medicare/(Total*Charges)
- Medicare equals [number of Acute Care Inpatient Bed Days for Beneficiaries Where Payment May be Made under Part A] plus [number of Acute Care Inpatient Bed Days for MA Beneficiaries]
- Total equals [number of Total Acute Care Inpatient Bed Days]
- Charges equals [Total Charges minus Charges for Charity Care*] divided by [Total Charges]



Critical Access Hospitals are Eligible for EHR Cost + Reimbursement

- Medicare EHR Incentive Program
 - Total Reasonable EHR Cost: \$500000
 - Total Cost * 60% Medicare Share * 20% bonus
 - \$400000 Reimbursement in single payment year.
- Standard Medicare Cost Reimbursement
 - TREHR Cost: \$500000 * 35% Medicare Util.
 - \$175000 reimbursement paid over 3-5 years depending upon depreciation method used.
- Medicaid EP's may be eligible for 85% costs.



Differences Between Medicare and Medicaid EHR Incentive Programs

Medicare	Medicaid
Federal government will implement.	Voluntary for states to implement.
Payment reductions begin in 2015 for providers that do not demonstrate MU.	No Medicaid payment reductions.
Must demonstrate MU in Year 1.	Adopt/Implement/Upgrade option for 1 st participation year.
Maximum incentive in \$44000 for EPs (10% bonus for EPs in HPSAs)	Maximum incentive is \$63750 for EPs.
Meaningful Use definition is common for Medicare.	States can adopt certain additional requirements for Meaningful Use.
Last year a provider may initiate program is 2014; Last year to register is 2016; Payment adjustments begin in 2015.	Last year a provider may initiate program is 2016; Last year to register is 2016.
Only physicians, subsection (d) hospitals and CAHs.	5 types of EPs, acute care hospitals (including CAHs) and children's hospitals.



Getting Started with EHR Meaningful Use

- Eligible Providers (EPs)
 - The registration for the EHR Incentive Programs begins in January 2011 and payments for eligible professionals begin in the spring of 2011.
 - The last year to initiate participation in the Medicare EHR Incentive Program is 2014.
- CAHs
 - Registration for the Medicare EHR Incentive Program begins on January 3, 2011 though the reporting year for eligible hospitals and CAHs began October 1, 2010.
 - The last day for eligible hospitals to begin their 90-day reporting period to demonstrate meaningful use for the Medicare EHR Incentive Program is July 3, 2011.
 - The reporting year ends for eligible hospitals and CAHs on September 30, 2011



Eligible Providers

- A Medicare EP is a doctor of medicine or osteopathy, a doctor of dental surgery or dental medicine, a doctor of podiatric medicine, a doctor of optometry, or a chiropractor, who is legally authorized to practice under state law.
- Eligible Providers who furnish substantially all their services (>90%) in a “hospital setting” are not eligible for incentive payments; a hospital-based EP performs substantially all of their services in an inpatient hospital setting or emergency room.
- First year EHR Reporting Period is 90 days for any continuous beginning and ending within the year. For every year after the first payment year, the EHR reporting period is the entire year.



Eligible Hospitals

- An eligible hospital for Medicare incentive payments is a “subsection (d) hospital” that is paid under the hospital inpatient prospective payment system (IPPS). Hospitals must be located in one of the 50 states or the District of Columbia.
- For the first year an eligible hospital demonstrates meaningful use of certified EHR technology, the EHR Reporting Period equals any 90 continuous days beginning and ending within the year. For every year thereafter, the EHR reporting period is the entire year.



Stages of Meaningful Use

- Stage 1 sets the baseline for electronic data capture and information sharing.
 - The reporting period in the first year is 90 days and one year subsequently.
- Stage 2 (est. 2013) and Stage 3 (est. 2015) will continue to expand on this baseline and be developed through future rule making.
- The reporting may be yes/no or numerator/denominator attestation. Eighty percent of patients must have records in the Certified EHR Technology. A list of currently certified EHR platforms may be found at: <http://onchpl.force.com/ehrcert>.



EP Stage 1 Requirements

- 15 Core Objectives (see Table 2)
- Five Objectives out of 10 from the Menu Set (see Table 3)
- Six total Clinical Quality Measures (CQM).
 - These six total Clinical Quality Measures may consist of three Core or Alternate Core (see Table 4) and three out of 38 from the Alternate Set (see Table 5).



15 EP Core Objectives

1. Record patient demographics (sex, race, ethnicity, date of birth, preferred language, and in the case of hospitals, date and preliminary cause in the event of death)	2. For individual professionals, provide patients with clinical summaries for each office visit; for hospitals, provide an electronic copy of hospital discharge instructions on request	3. Record smoking status for patients 13 years of age or older
4. Record vital signs and chart changes (height, weight, blood pressure, body-mass index, growth charts for children)	5. On request, provide patients with an electronic copy of their health information (including diagnostic-test results, problem list, medication lists, medication allergies, and for hospitals, discharge summary and procedures)	6. Implement capability to electronically exchange key clinical information among providers and patient-authorized entities
7. Maintain up-to-date problem list of current and active diagnoses	8. Generate and transmit permissible prescriptions electronically (does not apply to hospitals)	9. Implement one clinical decision support rule and ability to track compliance with the rule
10. Maintain active medication allergy list	11. Computer provider order entry (CPOE) for medication orders	12. Implement systems to protect privacy and security of patient data in the EHR
13. Maintain active medication list	14. Implement drug–drug and drug–allergy interaction checks Functionality is enabled for these ch	15. Report clinical quality measures to CMS or states



Five EP Objectives out of 10 from the Menu Set

1. Implement drug formulary checks	2. Provide summary of care record for patients referred or transitioned to another provider or setting
3. Incorporate clinical laboratory test results into EHRs as structured data	4. Submit electronic immunization data to immunization registries or immunization information systems
5. Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, research, or outreach	6. Submit electronic syndromic surveillance data to public health agencies
7. Use EHR technology to identify patient-specific education resources and provide those to the patient as appropriate	8. Send reminders to patients (per patient preference) for preventive and follow-up care
9. Perform medication reconciliation between care settings	10. Provide patients with timely electronic access to their health information (including laboratory results, problem list, medication lists, medication allergies)



Six total EP Clinical Quality Measures

Must have 3 Core or Alternate Core

Core Set CQM	Alternate Core Set CQM
HTN: Blood Pressure Measurement	Weight Assessment and Counseling for Children and Adolescents
Preventive Care and Screening Measure Pair: a) Tobacco Use Assessment, b) Tobacco Cessation Intervention	Preventive Care and Screening: Influenza Immunization for Patients 50 Years and Older
Adult Weight Screening and Assessment	Childhood Immunization Status

Must have 3 of 38 from the Alternate Set (only Cardiology shown)

Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	Smoking and Tobacco Use Cessation, Medical Assistance: a) Advising Smokers and Tobacco Users to Quit, b) Discussing Smoking and Tobacco Use Cessation Medications, c) Discussing Smoking and Tobacco Use Cessation Strategies
Coronary Artery Disease (CAD): Beta-Blocker Therapy for CAD Patients with Prior Myocardial Infarction (MI)	Coronary Artery Disease (CAD): Drug Therapy for Lowering LDL-Cholesterol
Coronary Artery Disease (CAD): Oral Antiplatelet Therapy Prescribed for Patients with CAD	Heart Failure (HF): Warfarin Therapy Patients with Atrial Fibrillation
Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	Ischemic Vascular Disease (IVD): Blood Pressure Management
Ischemic Vascular Disease (IVD): Complete Lipid Panel and LDL Control	Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic
	Controlling High Blood Pressure



Eligible Hospital Stage 1 Objectives

- Hospitals must complete 14 Core Objectives (see **Table 2**)
- Five Objectives out of 10 from the Menu Set (see **Table 3**)
- Fifteen Clinical Quality Measures (CQM, see **Table 4**)



EH Fourteen Core Objectives

1. Record patient demographics (sex, race, ethnicity, date of birth, preferred language, and in the case of hospitals, date and preliminary cause in the event of death)	2. Provide an electronic copy of hospital discharge instructions on request	3. Record smoking status for patients 13 years of age or older
4. Record vital signs and chart changes (height, weight, blood pressure, body-mass index, growth charts for children)	5. On request, provide patients with an electronic copy of their health information (including diagnostic-test results, problem list, medication lists, medication allergies, and for hospitals, discharge summary and procedures)	6. Implement capability to electronically exchange key clinical information among providers and patient-authorized entities
7. Maintain up-to-date problem list of current and active diagnoses	8. Report clinical quality measures to CMS or states	9. Implement one clinical decision support rule and ability to track compliance with the rule
10. Maintain active medication allergy list	11. Computer provider order entry (CPOE) for medication orders	12. Implement systems to protect privacy and security of patient data in the EHR
13. Maintain active medication list	14. Implement drug–drug and drug–allergy interaction checks Functionality is enabled for these checks for the entire reporting period	



Five EH Objectives out of 10 from the Menu Set

1. Implement drug formulary checks

2. Provide summary of care record for patients referred or transitioned to another provider or setting

3. Incorporate clinical laboratory test results into EHRs as structured data

4. Capability to submit electronic immunization data to immunization registries or immunization information systems

5. Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, research, or outreach

6. Capability to submit electronic syndromic surveillance data to public health agencies

7. Use certified EHR technology to identify patient-specific education resources and provide those to the patient as appropriate

8. Record advance directives for patients 65 years and older.

9. Perform medication reconciliation between care settings

10. Capability to submit electronic data on reportable (as required by state or local law) lab results to public health agencies and actual submission in accordance with applicable law and practice.



Fifteen EH Clinical Quality Measures

1. Emergency Department Throughput – admitted patients Median time from ED arrival to ED departure for admitted patients

2. Emergency Department Throughput – admitted patients –Admission decision time to ED departure time for admitted patients

3. Ischemic stroke –Discharge on anti-thrombotics

4. Ischemic stroke –Anticoagulation for A-fib/flutter

5. Ischemic stroke –Thrombolytic therapy for patients arriving within 2 hours of symptom onset

6. Ischemic or hemorrhagic stroke – Antithrombotic therapy by day 2

7. Ischemic stroke –Discharge on statins

8. Ischemic or hemorrhagic stroke –Stroke education

9. Ischemic or hemorrhagic stroke – Rehabilitation assessment

10. VTE prophylaxis within 24 hours of arrival

11. Intensive Care Unit VTE prophylaxis

12. Anticoagulation overlap therapy

13. Platelet monitoring on unfractionated heparin

14. VTE discharge instructions

15. Incidence of potentially preventable VTE



LCA Case Study

- 15 Core Objectives (see Table 2)
- Five Objectives out of 10 from the Menu Set (see Table 3)
- Six total Clinical Quality Measures (CQM)



LCA Case Study: Menu Set Items

1. Implement drug formulary checks	2. Provide summary of care record for patients referred or transitioned to another provider or setting
3. Incorporate clinical laboratory test results into EHRs as structured data	4. Submit electronic immunization data to immunization registries or immunization information systems
5. Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, research, or outreach	6. Submit electronic syndromic surveillance data to public health agencies
7. Use EHR technology to identify patient-specific education resources and provide those to the patient as appropriate	8. Send reminders to patients (per patient preference) for preventive and follow-up care
9. Perform medication reconciliation between care settings	10. Provide patients with timely electronic access to their health information (including laboratory results, problem list, medication lists, medication allergies)

- Five of 10 from the Menu Set Items that LCA uses:
 - Formulary Check (no percentage required)
 - Labs via EHR (>40%)
 - Generate list of patients by diagnosis. (attestation, no % required)
 - Patient Education Resources (>10%)
 - Any BMI > 30 or <22 given dietary guidance.
 - Provide summary of care record.



LCA Case Study: Menu Set Items (cont'd)

- Menu Set Mandatory Items:
 - Report Immunizations however does not apply to LCA.
 - Submit to public health agency.
 - There is no public health agency with the capability to accept!
- LCA will have exemption from both.



LCA Case Study: Core Set Items

- 3 Mandatory: HTN, Weight, Smoking
- 3 Optional: ASA in CAD, Statins in CAD, Beta Blocker for LVSD.
 - Can use different elements for each doctor.
 - Do not need percentage threshold rather just report/attestation.
 - Though will likely expand to quantify performance.
 - E-Prescribing: The only two facilities in our region that do not accept Erx's are Lebanon VA Medical Center and Carlisle Barracks!

Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	Smoking and Tobacco Use Cessation, Medical Assistance: a) Advising Smokers and Tobacco Users to Quit, b) Discussing Smoking and Tobacco Use Cessation Medications, c) Discussing Smoking and Tobacco Use Cessation Strategies
Coronary Artery Disease (CAD): Beta-Blocker Therapy for CAD Patients with Prior Myocardial Infarction (MI)	Coronary Artery Disease (CAD): Drug Therapy for Lowering LDL-Cholesterol
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Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	Ischemic Vascular Disease (IVD): Blood Pressure Management
Ischemic Vascular Disease (IVD): Complete Lipid Panel and LDL Control	Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic
	Controlling High Blood Pressure



EHR Incentive Program Summary

- The Medicaid/Medicare EHR Incentive Programs encompass the largest federal government resource allocation into expanding the use of Electronic Health Records.
- They are implemented in a stage-wise fashion and provide financial incentives each year of participation for up to five years.
- It is wise to work with your own particular EHR vendor to develop an implementation plan and start discussions sooner rather than later.



Acknowledgements

- Good Samaritan Hospital
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- PA Chapter of the American College of Cardiology
- Our patients



Regional Extension Centers

- <http://www.pareacheast.org/Pages/Meaningful-Use.aspx>
- What is an REC?
- –HIT Regional Extension Centers (REC) were made to assist providers throughout the country in adopting and using EHRs to achieve meaningful use
- •RECs launched in February 2010
- •PA Reach East and Quality Insights of Pennsylvania



CMS EHR Incentive Website

- Much of the preceding information was adapted from the CMS EHR Incentive Program website:

<http://www.cms.gov/EHRIncentivePrograms>.

