

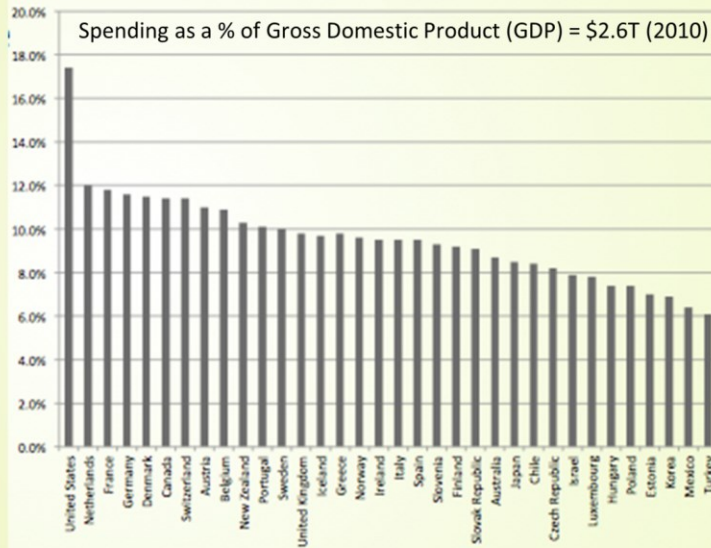
Meaningful Use and Data Analytics



REACH - Achieving meaningful use of your EHR

Welcome to the Meaningful Use and Data Analytics PowerPoint presentation in the Data Analytics Toolkit. In this presentation, you will be introduced to meaningful use and the role of data analytics in supporting meaningful use.

We spend a lot on healthcare...

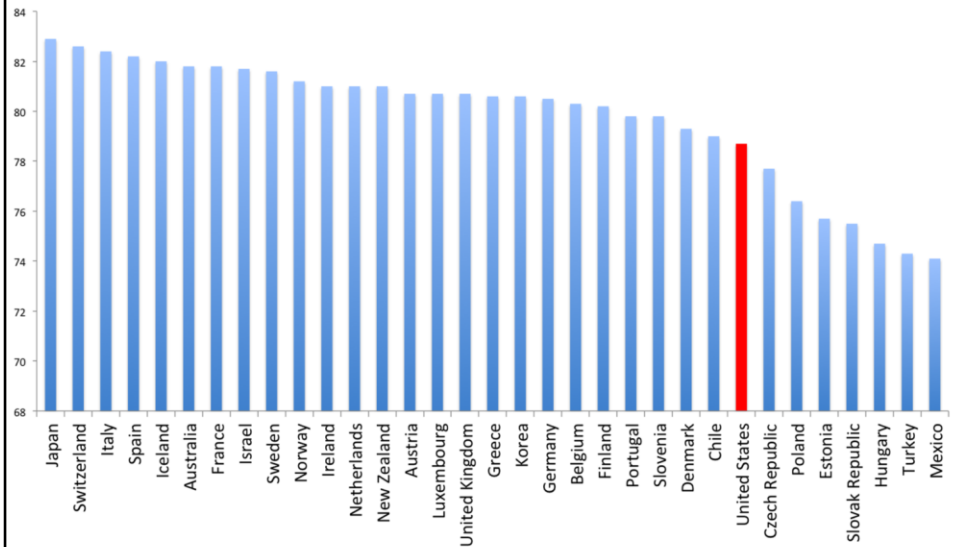


REACH - Achieving meaningful use of your EHR

In the US, we spend a lot on healthcare. In 2010, the percent of gross domestic product for healthcare related costs exceeded 17%. This was 5% greater than any other country.

...with rather poor outcomes...

2010 Average life expectancy as a surrogate marker for quality of care



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Even though the US spends a considerable amount of money on healthcare, we see rather poor outcomes. When comparing average life expectancy as a surrogate marker for quality of care, we find that the US ranks well below other developed countries including Japan, Switzerland, France, Norway, Germany, and others.

...and in the past, we didn't invest much in health information technology

Per capita spending on health information technology



Historically, the US has not invested much into health IT. In 2006, the per capita spending on health IT in the US was far less than that of Canada, Germany, Norway, and Australia.

How Did We Get Back in the Game?

2004

“...an Electronic Health Record for every American by the year 2014. By computerizing health records, we can avoid dangerous medical mistakes, reduce costs, and improve care.”

George W. Bush - State of the Union Address, Jan. 20, 2004



2009

“Computerize all health records within five years.”

Barack Obama - George Mason University, January 12, 2009



However, these issues were recognized by leaders in government and a national initiative was set in place to adopt health IT. George W. Bush said in his 2004 state of the union address that he will support efforts to adopt “an electronic health record for every American by the year 2014. By computerizing health records, we can avoid dangerous medical mistakes, reduce costs, and improve care.” Barack Obama shared this view and in 2009 stated that the US will “Computerize all health records within five years”.

2009 American Recovery and Reinvestment Act (ARRA)

Goals:

- Create new jobs and save existing ones
- Spur economic activity and invest in long-term growth
- Foster unprecedented levels of accountability and transparency in government spending

The Recovery Act intended to achieve those goals by providing \$787 billion in:

- Tax cuts and benefits for millions of working families and businesses
- Funding for entitlement programs, such as unemployment benefits
- Funding for federal contracts, grants and loans



In part, the efforts to nationally adopt electronic health records were supported through the 2009 American Recovery and Reinvestment Act (ARRA). The goal of ARRA was to create new jobs while saving existing ones, spur economic activity and invest in long-term growth, and foster unprecedented levels of accountability and transparency in government spending. These goals were to be achieved by providing \$787 billion in tax cuts, funding entitlement programs, and funding federal contracts, grants, and loans.

HITECH Act

- Enacted under Title XIII of ARRA
- **Improve Health Care Quality, Safety, and Efficiency**
 - \$29.2 B starting in 2011 to incent Medicare and Medicaid-participating physicians and hospitals to use certified EHR systems in a “meaningful” way



Enacted under ARRA was the Health Information Technology for Economic and Clinical Health Act (HITECH Act). The goal of the HITECH Act was to improve healthcare quality, safety, and efficiency. These goals were to be achieved by incentivizing Medicare/Medicaid-participating physicians and hospitals that use a certified electronic health record in a meaningful way. Thus, the term Meaningful Use was adopted for describing this incentive program. Approximately \$29.2 billion dollars were set aside to support the Meaningful Use program

Meaningful Use

In HITECH, Congress established three fundamental criteria of requirements for meaningful use:

1. Use of certified EHR technology in a meaningful manner
2. Certified EHR technology is connected in a manner that provides for the electronic exchange of health information to improve the quality and coordination of care
3. In using certified EHR technology, the provider submits clinical quality measures and other measures

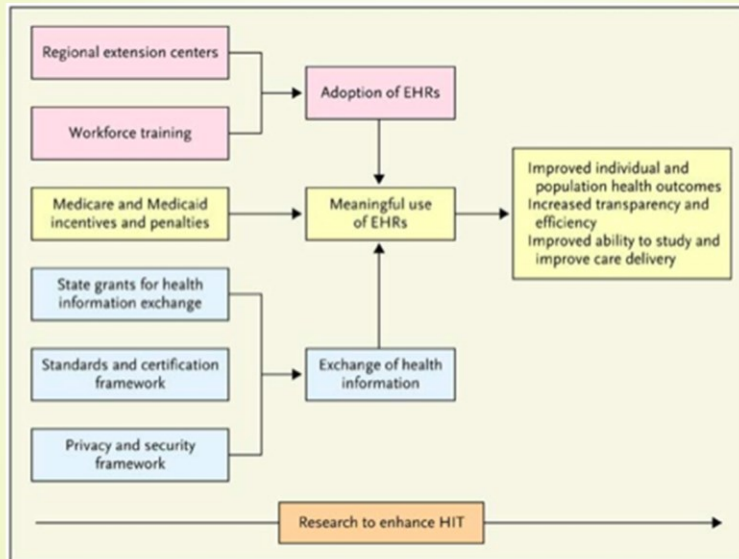
http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Meaningful_Use.html

<http://www.healthit.gov/policy-researchers-implementers/meaningful-use>



In order for physicians and hospitals to receive an incentive, they must have met 3 fundamental criteria. They must be able to attest that they use certified EHR technology in a meaningful manner, that it is connected in a manner that provides for the electronic exchange of health information to improve quality and coordination of care, and that in using the certified EHR technology, the provider submits clinical quality and other measures.

HITECH Act Framework



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The HITECH Act is a framework to support physicians and hospitals in adopting and maintaining the meaningful use of EHRs. The adoption of EHRs is supported through the development of regional extension centers where training individuals can support physicians and hospitals in choosing and implementing EHRs. Workforce training programs were also funded to help secure a workforce that can support the adoption and use of the electronic health records. In addition, the exchange of health information was supported through state grants, the development of standards and certification processes, and the establishment of privacy and security frameworks. Together, these efforts can help facilitate meaningful use of EHRs in hopes of improving individual and population health outcomes, increasing the transparency and efficiency of care, as well as the ability to study and improve care delivery.

Incentives

- Eligible hospitals and professionals can **receive incentives** for adoption, implementation and upgrading of certified EHR technology in their first year of participation.
- “Adopt, implement, or upgrade” means:
 - Install or commence utilization of certified EHR technology capable of meeting meaningful use requirements; or
 - Expand the functionality of certified EHR technology capable of meeting meaningful use requirements at the practice site, including staffing, maintenance, and training.
 - Upgrade from existing EHR technology to certified EHR technology per the ONC EHR certification criteria.
- Incentives vary depending on if EP or hospital, but they must submit claims to Medicare and/or Medicaid



The incentives that are offered to physicians and hospitals are based on a set of measures that must be met to prove that certified EHRs were adopted, implemented, or upgraded to support meaningful use. These incentives vary depending on if the participant is an eligible professional or hospital and whether they submit claims to Medicare and/or Medicaid.

Who is Eligible?

Eligible Professionals:

- Doctors of medicine or osteopathy
- Doctors of dental surgery or dental medicine
- Doctors of podiatry
- Doctors of optometry
- Doctors of chiropractic
- Midwives*
- Nurse practitioners*
- Some PAs*

* Only eligible for Medicaid incentive



To receive incentive payments, you must either be an eligible professional or eligible hospital. Eligible professionals include providers within various roles such as a doctor of medicine or osteopathy, a chiropractor, a midwife, a nurse practitioner, as well as several others.

Who is Eligible?

Hospitals:

- Located in the 50 states
- Not a psychiatric, rehabilitative, predominantly pediatric or cancer facility
- Where average length of stay is 25 days or less



Eligible hospitals include those that are located in the 50 states and are not psychiatric, rehabilitative, or predominantly pediatric or cancer facilities. Additionally, the average length of stay for eligible hospitals must be less than or equal to 25 days.

Meaningful Use Criteria

- Adapted from National Priorities and Goals of the National Priorities Partnership:
 - Improve quality, safety, efficiency, and reduce health disparities
 - Engage patients and families in their health care
 - Improve care coordination
 - Improve population and public health
 - Ensure adequate privacy and security protections for personal health information
- Are divided into Core Criteria and Menu Criteria

http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Meaningful_Use.html



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In order for eligible professionals and hospitals to receive incentive payments, they must prove that they are using their EHRs in a meaningful way. Specific criteria were developed for measuring meaningful use of EHRs. The criteria were adapted from the National Priorities and Goals of the National Priorities Partnership. The goal is to demonstrate that EHRs are improving quality, safety, efficiency, and reducing health disparities; Engaging patients and families in their health care; improving care coordination; improving population and public health; and ensuring adequate privacy and security protections for personal health information. The specific measures that were adopted to test if these criteria are being met are divided into what is known as core and menu criteria.

Stage 1 2011-2012	Stage 2 2014	Stage 3 2016
Data capture and sharing	Advance clinical processes	Improved outcomes
Stage 1: Meaningful use criteria focus on:	Stage 2: Meaningful use criteria focus on:	Stage 3: Meaningful use criteria focus on:
Electronically capturing health information in a standardized format	More rigorous health information exchange (HIE)	Improving quality, safety, and efficiency, leading to improved health outcomes
Using that information to track key clinical conditions	Increased requirements for e-prescribing and incorporating lab results	Decision support for national high-priority conditions
Communicating that information for care coordination processes	Electronic transmission of patient care summaries across multiple settings	Patient access to self-management tools
Initiating the reporting of clinical quality measures and public health information	More patient-controlled data	Access to comprehensive patient data through patient-centered HIE
Using information to engage patients and their families in their care		Improving population health

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The core and menu criteria change depending on the stage of meaningful use. There are three stages. The core and menu criteria expand at each subsequent stage.

In stage 1, the primary goal is to demonstrate that data is being captured and shared with patients and between providers. Stage 2 advances the clinical processes where providers and hospitals must demonstrate that they are exchanging health information, readily using e-prescribing, and engaging the patient through the transmission of patient care summaries, patient portals, and secure messaging. Stage 3 is where improved outcomes must be demonstrated. These outcomes include improvement in the quality, safety, and efficiency of care. By Stage 3, the adoption of clinical decision support systems must be demonstrated along with greater patient involvement.

Meaningful Use Resources

- Description of Stage 1 Criteria: https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/downloads/Hosp_CA_H_MU-TOC.pdf
- Presentation about Eligible Providers: http://www.khareach.org/sites/default/files/Bootcamp-Professional_v2011-11-30.pdf
- Presentation about Eligible Hospitals: http://www.khareach.org/sites/default/files/Bootcamp-Hospital_v2011-12-27.pdf
- Meaningful Use Case Studies: <http://www.healthit.gov/providers-professionals/meaningful-use-case-studies>



To successfully attain meaningful use incentive payments, organizations must be familiar with the specific measures and analytic approaches for achieving these measures. CMS and other organizations such as the Key Health Alliance (KHA) published resources on meaningful use that can help in understanding the specific measures. There are also case studies published by the Office of the National Coordinator (ONC) that can provide real-world examples from providers and hospitals surrounding different aspects of Meaningful Use.

Core Quality Measures Resources

- Requirements for Eps:
https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/CQM_EPs_2012_02_02.pdf
- Requirements for Hospitals:
https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/CQM_Hospitals_2012_02_02.pdf



CMS also published documentation that offers an in-depth explanation of the specific core quality measures that must be met by eligible professionals and hospitals in addition to the core and menu objectives.

Example of Meaningful Use Core Objective

- Initial patient population
 - Age ≥ 2
- Denominator
 - All unique patients in the initial patient population
- Numerator
 - All unique patients age 2 and over, seen by the EP where height, weight, blood pressure, and BMI are recorded as structured data
- Excluded from this objective if:
 - You don't see any patients 2 years or older
 - You don't believe any of these vital signs are relevant to your scope of practice
- Requirement
 - 50% of unique patients 2 yrs and older should have vitals reported



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To provide context to a meaningful use measure, here is an example of a stage 1 core objective for eligible hospitals. Hospitals must show that the proportion of unique patients ages 2 and up that had height, weight, blood pressure, and BMI recorded as structured data in the EHR, must be at least 50%. Eligible hospitals that do not see patients 2 years old or older or don't believe that vital signs are relevant to their scope of practice are excluded from this measure.

There are numerous other objectives that must be met. It should be noted that these objectives may differ for eligible professionals and eligible hospitals.

Implications of the information

- We are collecting a lot of data
 - Has implications for carrying out analytics to determine how MU is impacting care providers!
 - The calculation of Core Quality measures is complicated and required data analytics competency

EXAMPLE:

- How are different specialties keeping up?
- This dataset reports the rate at which eligible providers are attesting for each measure <http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/DataAndReports.html>



Overall, meaningful use is important for demonstrating that EHRs are supporting quality, safety, and efficiency of care. However, in order for facilities to report on such measures, there is an overarching need to understand data, analytics, and the computerized architecture. The adoption of analytics can help with such evaluations to determine how meaningful use impacts care providers, patients, and overall health outcomes. Also, meaningful use includes core quality measures which, due to their complexity, demand a greater understanding of the data and analytics.

Organizations and individual providers should be concerned with not only achieving meaningful use, but also taking advantage of the meaningful use data for evaluating the performance of their own facility relative to others. For example, if a provider within a particular specialty wanted to determine how their specialty is keeping up with the demands of meaningful use, they would need knowledge of analytic techniques for such an evaluation. Additionally, they would need to understand where they could obtain data for such an evaluation. CMS actually publishes datasets that report the rate at which eligible professionals are attesting for each measure and also include the specialty of those physicians. Knowledge of analytics and the data that is available can be very powerful for organizations in evaluating their own performance and ultimately achieving improvements in care.

Why Should You Care about Meaningful Use?

- It is your job to understand the benefits and failures of health IT
 - Implications
 - How to measure outcomes
 - How to avoid failure
- It is important that health IT provides meaningful use for healthcare and the patient



It is our jobs to understand the benefits and challenges of health IT. The implications of adopting the EHR are promising. However, we must actually evaluate if technologies such as the EHR are in fact leading to those promises. Therefore, we must use our knowledge of analytics and healthcare to determine if health IT is leading to improvements in outcomes and lower costs. We must understand how to avoid failure to meet these objectives, otherwise there can be dire consequences.

How this Toolkit Will Help

- You will learn how to use real healthcare data to complete the following tasks:
 - Manage projects and data related to analytics
 - Develop queries to “pull” patient data
 - Conduct statistical analyses on that data to determine if you meet MU criteria and improving patient care
 - Describe how data mining can assist in understanding big data
 - Design reports that clearly summarize your analyses



The purpose of this toolkit is to educate a wider audience on analytic skills and data management related to Meaningful Use to avoid such consequences.

Through a series of presentations and drawing attention to specific resources, this toolkit will provide education on using real healthcare data to manage projects and data related to analytics, develop queries to pull patient data for analytical purposes, conduct statistical analyses on that data to determine if you meet meaningful use criteria and are improving patient care, describe how data mining can assist in understanding big data through knowledge discovery, and design reports that clearly summarize your analyses.

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