

# **Implementation and Use of Information Technology in Healthcare Industry**

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# Health IT and Drivers for Accountable care

- ▶ Health Care Cost
- ▶ Better, Efficient, Valuable Health care services
- ▶ Stakeholders demand for metrics across clinical, operational and financial disciplines.
- ▶ Overcoming persistent gaps between providers of care resulting in less than optimal outcome

- ▶ No Single EMR or IT application can fill all the gaps and ensure optimal operation.

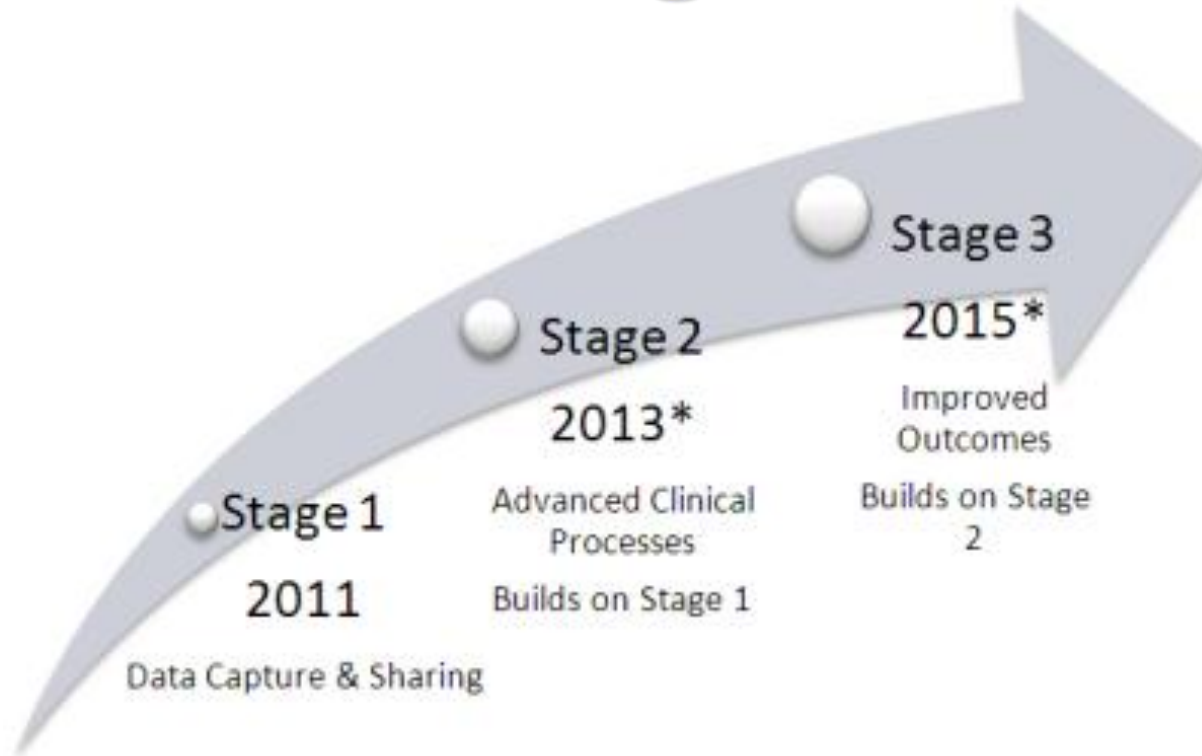
# Building blocks for better HIT applications



# Some factors to keep in mind

- ▶ IT Applications build on existing workflow
- ▶ Multiple applications should cover all gaps.
- ▶ Systems resulting in increase in users and data sets.
- ▶ Improved Analytics
- ▶ Scalable

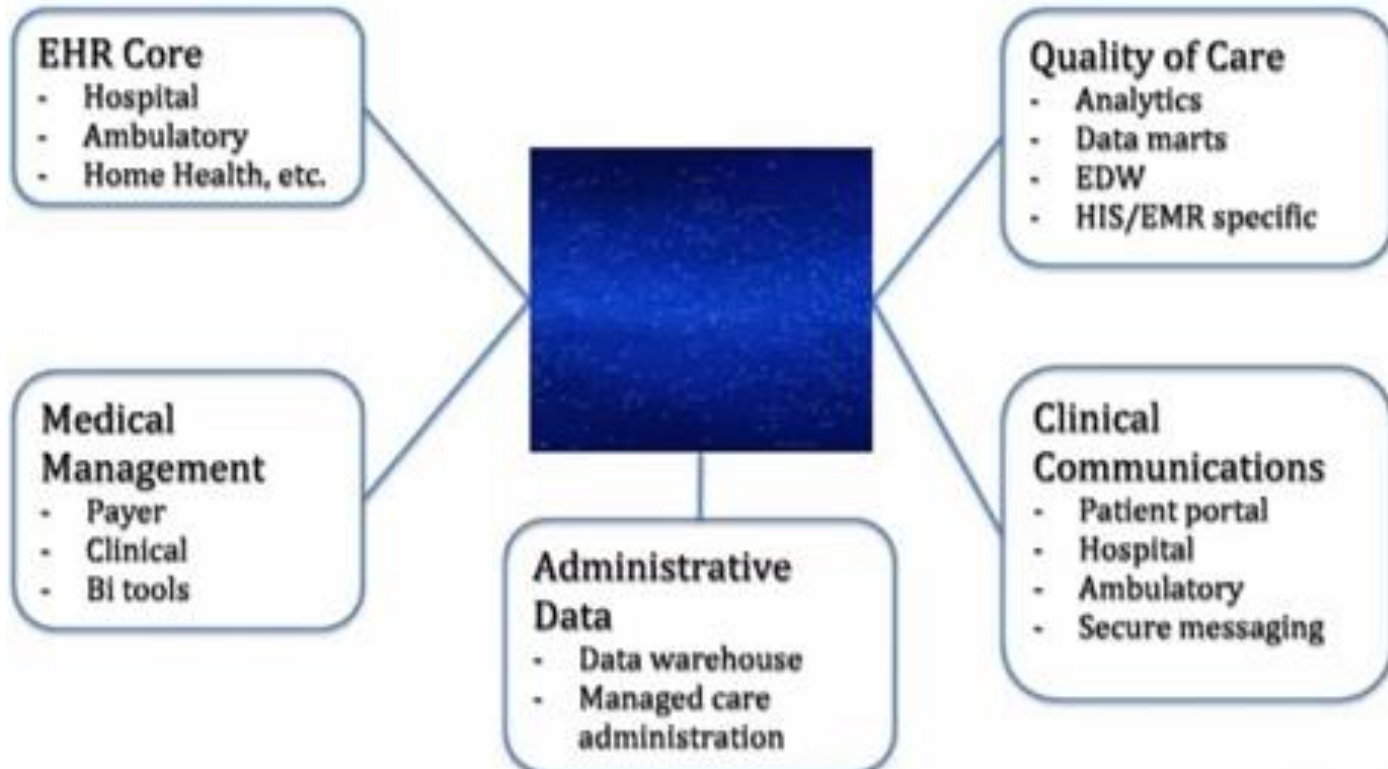
# Meaningful Use



# Components of Meaningful Use

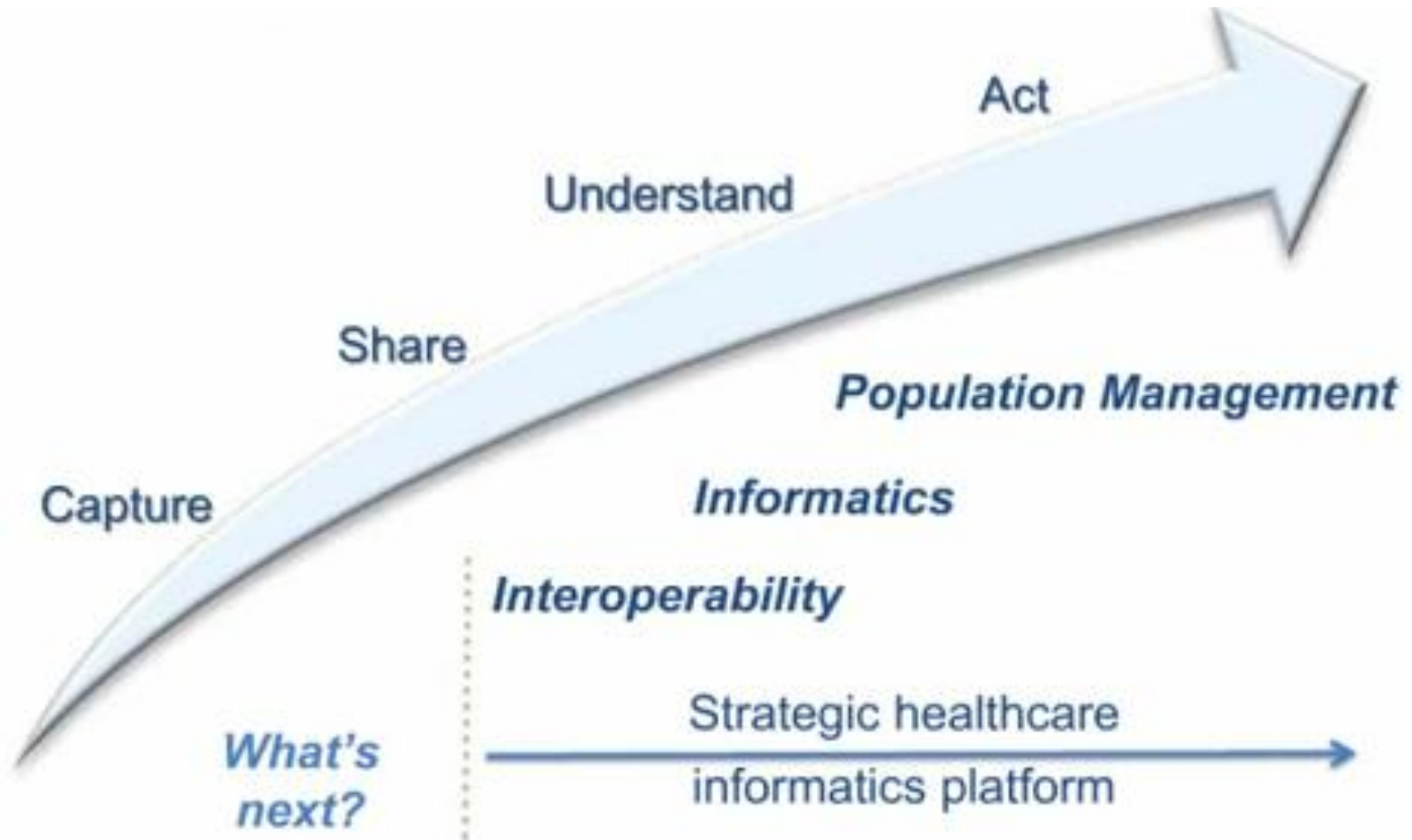
- ▶ The use of certified EHR technology for electronic exchange of health information to improve quality of health care
- ▶ The use of certified EHR technology to submit clinical quality and other measures
- ▶ The use of a certified EHR in a meaningful manner (e.g. e-prescribing)

# Constellation of Applications





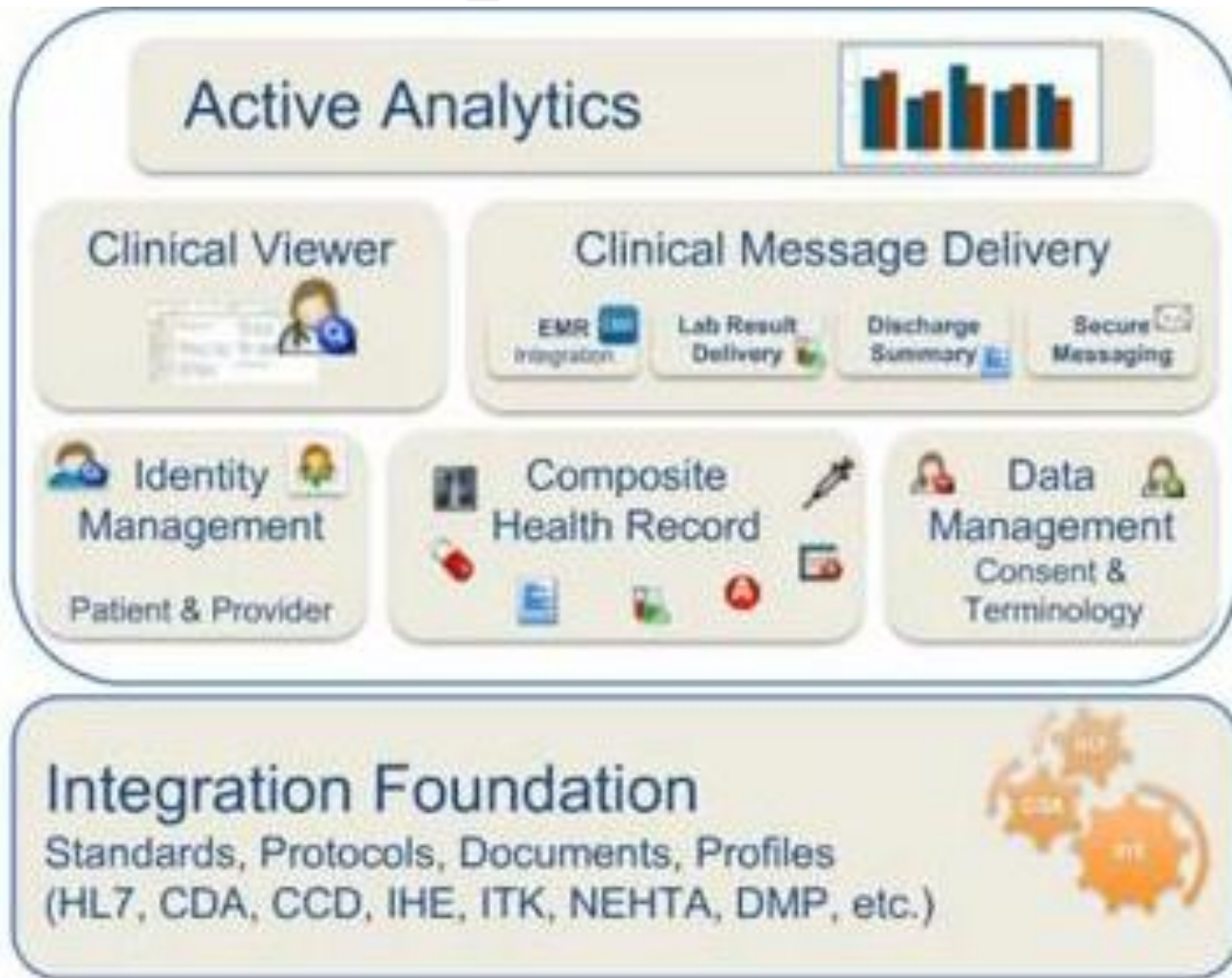
# Data Continuum for Accountable Care



# Health IT – Success and Value

- ▶ CEO, Strategy Executives (leadership, growth, profitability)
- ▶ CMIO Physician Executives (Vision, Adoption, Workflow)
- ▶ CRIO (Research, Analytic evaluations)
- ▶ Care Manager (Patient Centric Data)
- ▶ CIO (Meaningful Use, Accountable Care, ICD-10, Integration, Analytics)

# Health Care Informatics Components



# EHR Capabilities

- ▶ Workforce Management
- ▶ e-prescribing
- ▶ Data Warehouse
- ▶ Business Intelligence
- ▶ Claims Processing
- ▶ RIS/PAC
- ▶ Real Time Location Systems (RTLS)
- ▶ ICD -10
- ▶ HIE

# Workforce Management



With healthcare undergoing enormous changes, hospitals and other providers must continually focus on hiring and retaining quality workers and implementing the most efficient business practices possible to stay in the black. Workforce management applies tools such as workflow management, scheduling, and other administrative tasks associated with labor and employment to keep healthcare providers profitable.

# ePrescribing



e-Prescribing is the ability to electronically send an accurate, error-free and understandable prescription directly to a pharmacy. Included in the Medicare Modernization Act of 2003, it represented an important means to improve the quality of patient care and it did. The July 2006 Institute of Medicine report on the role of e-prescribing in reducing medication errors expanded its popularity, which helped spread awareness of its benefits.

# Data Warehousing

- ▶ Data warehousing is the recording and storing of healthcare information. A storage device can hold information, process information or both. Devices that process data (data storage equipment) can either access a separate portable recording medium or a permanent component to store and retrieve information.
- ▶ Electronic data storage requires electrical power to store and retrieve data. Electromagnetic data may be stored in either an analog or digital format on a variety of media. This type of data is considered to be electronically encoded data, and most electronically processed data storage media are considered permanent storage, or data that will remain stored when power is removed from the device.

# Business Intelligence



Business intelligence is a collection of computer-based techniques used in extracting, identifying and analyzing business data. BI technologies provide current and predictive views of business operations. Common functions of BI technologies are reporting, online analytical processing, data mining and more. Its aim is to support better business decision-making and, as a result, a BI system can also be known as a decision support system (DSS).

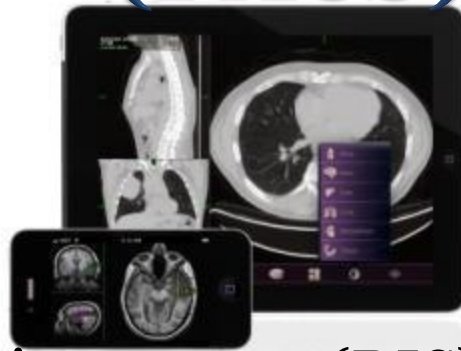


# Claims Processing



Independent of accounting or billing, claims processing is the part of the revenue cycle where claims for reimbursement sent from a provider to a payer are taken in, verified, and paid (or denied). As the healthcare system continues its transition from a paper-based to a digital system, electronic claims processing has become a much larger component of the industry. Further efficiencies are promised as more and more health data become cloud-based, enabling providers and payers to access the same data instantaneously.

# Radiological Information System (RIS)/Picture Archiving System (PACS)



Radiology information system (RIS) and picture archiving and communications systems (PACS) are used in conjunction with a hospital's EHR and information systems to store, analyze and distribute medical images. RIS/PACS can be implemented across a single provider, such as a doctor's office or a hospital, or across a wide network. The radiology images can be accessed via desktop computers or mobile devices.

# Real Time Location Systems (RTLTS)



Real-time location systems can track the location of people or objects within a specific area. RTLTS systems are wireless, with transmitter tags attached to items or personnel being tracked.

# ICD-10



The International Classification of Diseases, 10th revision, Clinical Modification (ICD-10-CM) is a revision of the ICD-9-CM system. Physicians and other providers use the system to classify and code all diagnoses, symptoms, and procedures recorded in conjunction with hospital care in the US.

# Health Information Exchange (HIE)



Health information exchange is the transmission of healthcare-related data among facilities, health information organizations and government agencies, according to national standards for interoperability, security and confidentiality. It is an important part of the health information technology (HIT) infrastructure under development in the U.S., and the associated National Health Information Network (NHIN).

# New in HIT

- ▶ Cloud Computing
- ▶ Mobile Apps

# Cloud Computing

- ▶ According to a recent Gartner Group study, annual spending on cloud-related transactions may grow to almost \$150 billion worldwide by 2014. Although health care is a market segment that has generally resisted jumping into the technology explosion taking place "in the cloud," according to the CDW 2011 Cloud Computing Tracking Poll, 30 percent of health care organizations are now either implementing cloud-based solutions or are already operating such solutions.

# Cloud Computing

- Patient's information would be stored in a cloud
- Accessed and managed over the Internet
- Since we are on a paperless route, this is a great idea to store information
- Authorized users
- Information on one cloud is connected to bigger clouds
  - Ex. Big Bend RHIO connected to the NHIN



# Risks involving Cloud Computing in Health Care

- Since information is stored over the Internet, precautions must be taken
- Cloud system must conform to the HIPAA act
  - Personal Health Information
  - Secure transmission of PHI over the Internet
  - Need to maintain a secure, safe, and authorized environment for the prevention of information leakage

# Advantages of Cloud Computing

- Low costs
  - Outsourcing information reduces amount spent on new technology
  - Easier to maintain
- More secure
  - Companies are hired to watch over the information
- Interoperability
  - Access information from anywhere
  - Can be accessed using different devices

# Advantages of Cloud Computing

- Increases the adoption of EMRs
- Beneficial for small companies
- Easy to share information among different organizations and doctors



# Cloud Computing Disadvantages

- Security is the main disadvantage of cloud computing
- Consumers are worried about Insurance companies getting a hold of their information and discriminating based upon current medical conditions they may have or medical conditions that they could develop later in life.
- They are also worried about government agencies getting a hold of their information and exploiting it to third party vendors, or their place of work.

# Cloud Computing Disadvantages

- The cloud companies do not always handle all of the security themselves and sometimes pass it off to third party vendors
- Consumers need to make sure to thoroughly check out these companies to see who else they are involved with and check out their reputation to see if you trust them to not share your information with any other outside sources. If the third party vendor looks trustworthy then you are probably safe to send your medical records over the cloud safely.

# Challenges of Implementing Health IT

- ▶ Small Practices, Service providers have shown longer learning curves
- ▶ Adoption has been slow and measure of ROI has not been consistent.
- ▶ Rural and community hospitals are yet to develop an effective plan of action that unites IT departments, internal administration and clinical providers to have the best chance of meeting meaningful use
- ▶ Cost of educating end-users and effective change management

# What Cogent Infotech Corporation Does in HealthCare IT

- ▶ Cogent is a reseller and Implementation partner of Allscripts EMR, a 1.2 billion company
- ▶ Cogent designs, implements and supports Infrastructure needs for EMR implementation.
- ▶ Cogent configures and customizes AllScripts COTS based product based on Health Care provider workflow and needs.
- ▶ Cogent provides on-site/remote support to end-users in order to help clients implement and use EMR effectively.

# Mobile Apps

- ▶ Mobile Apps in Health IT is on the rise
- ▶ According to Healthcare Information and Management Systems Society (HIMSS), 95 percent of respondents said they have policies in place for laptop use, 79 percent for smartphone use and 57 percent for the use of tablets designed for healthcare.
- ▶ According to MobiHealthNews Report, more than 3,660 medical apps are available to iPhone users alone.
- ▶ Medical imaging apps have sprung up at impressive rates, too. Radiology 2.0 for iOS uses Yale University medical content to create case based imaging presentations. Developer 3D4Medical creates apps like Shoulder Pro, where doctors can manipulate nine 3D anatomical image layers of a human shoulder.



# 2012 mHIMSS Mobile Technology Survey Results from HIMSS Analytics!

- ▶ **Maturity of Mobile Technology Environment:** Respondents characterized their mobile environment with a middle rate of maturity, with an average score of 3.33 on a scale of one to seven, where one is not at all mature and seven is a high level of maturity. The results this year reflect a slight decline from the 3.88 reported in 2011.
- ▶ **Integration of Mobile Devices and Electronic Medical Records:** Nearly one quarter of respondents (22 percent) indicated that all of the data captured by mobile devices was integrated into the organization's EMR.
- ▶ **Impact of Federal Initiatives on Mobile Technology Policy:** Nearly half of respondents (46 percent) indicated they are incorporating the information included in federal policies and regulations into their organizations' existing policies. Individuals will need a profile on [mHIMSS.org](http://mHIMSS.org).