



Electronic Medical Records

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HEALTHCARE

A Member of

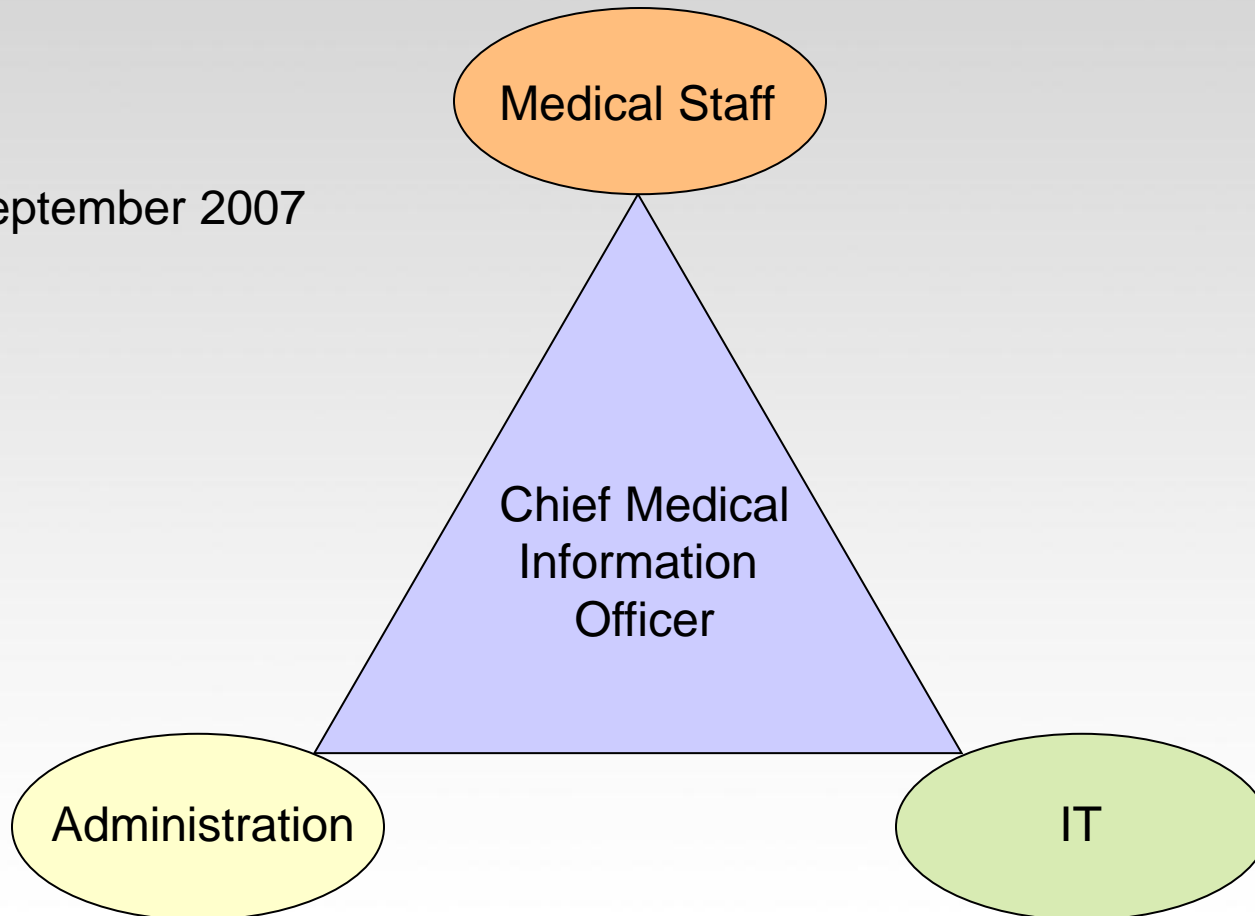


Disclaimer

- I am an employee of RMH Healthcare
- No financial interest in any IT company

What is a CMIO?

History: September 2007
at RMH



Director for Clinical Transformation

- How do we actively transform medical care in the IT world?
 - What do patients expect?
 - What does the government expect?
 - What do hospitals expect?
 - What do we as doctors expect of ourselves?
- How is medical care *passively* transformed in an IT world? Are those changes good?

CMIO

- I am not an IT “guru”, I am a doctor
- I see IT as a tool that can help improve care
- I have a great interest in helping patients benefit from new technologies
- I want to help doctors navigate through this new territory

EMR? EHR? PHR?

- Electronic Medical Record (EMR) is used in the “in-patient” setting.
- Electronic Health Record (EHR) is used in the “ambulatory” setting
 - The lines between EMR and EHR are blurred, so the terms are used interchangeably
- Personal Health Record (PHR) is maintained by the patient themselves

EMR

- Most started out as single departmental information system (lab, radiology, pharmacy, billing, etc.)
- Over time it was necessary to make the individual parts of the system “talk to each other”
- This has evolved into enterprise wide EMRs

Benefits Have Long Been Realized

- Increases safety!
 - Handwriting
 - Clinical decision support
 - Medication administration safety
- Decreases in redundancy
- Availability of data

So, why so slow to adopt?

- Complexity
- Very expensive
- Not well standardized
- As with all new processes, there is a difficult learning curve
- Not everybody accepts that the benefits outweigh the risks

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. For the reformer has enemies in all those who profit by the old order, and only lukewarm defenders in all those who would profit by the new order, this lukewarmness arising partly from fear of their adversaries... and partly from the incredulity of mankind, who do not truly believe in anything new until they have had actual experience of it.

Niccolo Machiavelli
1532

Why so much attention now?



Meaningful Use

- \$19 Billion
- Part of the American Recovery and Reinvestment Act (ARRA)
- Incentives *and* penalties based on EMR adoption
- Medicare and Medicaid (CMS)
- Three stages, each successive stage being more advanced and difficult to achieve



Meaningful Use

- Stage 1 Objectives
 - Electronically capture health information in coded format
 - Report health information
 - Use that information to track key clinical conditions.
- 21 criteria ranging from what data needs to be captured to how orders are entered to security settings

US EMR Adoption ModelSM

Stage	Cumulative Capabilities	2008 Final	2009 Final
Stage 7	Complete EMR; CCD transactions to share data; Data warehousing; Data continuity with ED, ambulatory, OP	0.3%	0.7%
Stage 6	Physician documentation (structured templates), full CDSS (variance & compliance), full R-PACS	0.5%	1.6%
Stage 5	Closed loop medication administration	2.5%	3.8%
Stage 4	CPOE, Clinical Decision Support (clinical protocols)	2.5%	7.4%
Stage 3	Nursing/clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology	35.7%	50.9%
Stage 2	CDR, Controlled Medical Vocabulary, CDS, may have Document Imaging; HIE capable	31.4%	16.9%
Stage 1	Ancillaries – Lab, Rad, Pharmacy - All Installed	11.5%	7.2%
Stage 0	All Three Ancillaries Not Installed	15.6%	11.5%

Stage 7: Medical record fully electronic

HCO able to contribute CCD as byproduct of EMR;

- The hospital has a paperless EMR environment.
- Clinical information can be readily shared via Continuity of Care Document (CCD) electronic transactions with all entities within health information exchange networks
(i.e., other hospitals, ambulatory clinics, sub-acute environments, employers, payers and patients).
- This stage allows the health care organization to support the true sharing and use of health and wellness information by consumers and providers alike.
- HCOs use data warehousing and mining technologies to capture and analyze care data, and improve care protocols via decision support.

HiMSS Analytics



VENDORS



EMR Selection

- Capable of meeting HiMSS Stage 7
- Must be “certified” for meaningful use (MU)
- Infrastructure must be able to support the EMR
- Organizational size, workflow, geography
- Total cost of ownership (TCO)
 - Out of the box cost, support (internal & external), hardware, ancillary system costs, etc.

EMR Implementation

- Huge projects
- Require entire system workflow redesign and optimization
- Training for all employees in the new procedures
- Phased vs. “Big Bang”

Implementation from the Provider's point of view

- Old: hand writing notes, dictating documents, writing orders, writing prescriptions
- New: Template driven documentation, computerized provider order management (CPOM), eRx
- Reality: Hybrid documentation
- Future: Natural Language Processing (NLP)

Data Sharing: Health Information Exchange (HIE)

- Provide clinical summaries for each encounter
- Exchange key clinical information among providers of care (problems, medications, allergies, test results)

Meaningful Use Criteria

HIE at RMH Healthcare

- Currently data is flowing one way
- Soon to be two way flow
- Difficulty is with verifying patient identification between two systems
- Data nomenclature not well standardized between systems

Data Tracking

- Submit electronic data to immunization registries
- Provide electronic submissions of reportable lab results to public health agencies
- Provide electronic syndrome surveillance data to public health agencies

Tracking Quality Data

- CMS – Core Measures
- Physician Quality Reporting Initiatives (PQRI)
- Future meaningful use quality measures

Clinical Decision Support

- Implement drug-drug, drug-allergy, drug-formulary checks
- Condition specific clinical decision support (fluid resuscitation, creatinine clearance, therapy recommendations, etc.)
- Sending alerts to providers for time delays, interventions, tests due, etc.

Future

- Data analytics
- Predictive modeling
- Population health management
- Using social networking for data acquisition

Adoption and Implementation

- Ongoing and building speed
- Still some resistance
- The momentum is well under way

Until one is committed, there is hesitancy, the chance to draw back, always ineffectiveness. Concerning all acts of initiative and creation, there is one elementary truth the ignorance of which kills countless ideas and splendid plans: The moment one definitely commits oneself, then... a whole stream of events issues from the decision, raising in one's favor all manner of unforeseen incidents and meetings and material assistance which no man could have dreamed would have come his way. Whatever you can do, or dream you can do, begin it. Boldness has genius, power and magic in it. Begin it now!

attributed to Goethe (still debated)

Questions?

