LIFE AS A HEALTHCARE CIO

EVERY DAY I EXPERIENCE LIFE IN THE WORLD OF HEALTHCARE IT, SUPPORTING 3000 DOCTORS, 18000 FACULTY, AND 3 MILLION PATIENTS. IN THIS BLOG I RECORD MY EXPERIENCES WITH INFRASTRUCTURE, APPLICATIONS, POLICIES, MANAGEMENT, AND GOVERNANCE AS WELL AS MUSE ON SUCH TOPICS SUCH AS REDUCING OUR CARBON FOOTPRINT, STANDARDIZING DATA IN HEALTHCARE, AND LIVING LIFE TO ITS FULLEST.

SUNDAY, JANUARY 3, 2010

Achieving Meaningful Use

Now that the Interim Final Rule (Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology) and the Notice of Proposed Rulemaking (Medicare and Medicaid Programs Electronic Health Record Incentive Program) have been published, we can all finalize our policy and technology strategies for achieving Certification and Meaningful Use in our organizations and communities.

It's important to use these two documents together to understand what is required for Certification and to achieve Meaningful Use stage 1 measures (2011) by professionals and hospitals.

Certification is a guarantee of software capabilities and Meaningful Use describes the way software features should be implemented in actual workflows. Certification and Meaningful Use are related but different concepts. For example, Certification requires that a complete EHR or EHR module have the capability of recording, retrieving, and transmitting immunization information using HL7 2.3.1 or HL7 2.5.1 with the CVX vocabulary. The Meaningful Use stage 1 measure is to perform at

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least one test of the certified EHR technology's capacity to submit electronic data to immunization registries if local public health agencies are capable of receiving them. Thus, for 2011, actual submission of immunization data is not required, just the capability and a single test of that capability. Of course, by Stage 2 (2013), I expect that actual data submission will be part of every patient immunization.

How should you prepare for Meaningful Use in your own organization? I recommending printing 3 tables
1. Certification Criteria - pages 51-61 of the Interim Final Rule
2. Adopted Content Exchange, Vocabulary, and Privacy/Security Standards - pages 79-81 and page 85 of the Interim Final Rule
3. Stage 1 Criteria for Meaningful Use - pages 103-108 from the Notice of Proposed Rulemaking

Use these three documents to guide all your planning efforts. That's what I've done and here's a 25 item strawman strategy for BIDMC (which runs largely self built systems) and its affiliated community hospital, BID-Needham (which runs Meditech).

1. Use CPOE
a. For ambulatory settings - support electronic ordering of 80% of medications, laboratory, radiology/imaging, and referrals. webOMR (our self built EHR) or eClinicalworks (eCW) will be implemented based on the workflow requirements of the practice as it interacts with hospitals, labs, radiology centers, and the community. At BIDMC we will need to make improvements to our self built lab system to support lab data exchange with sites

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ABOUT ME

JOHN HALAMKA

John D. Halamka, MD, MS, is Chief Information Officer of Beth Israel Deaconess Medical Center, Chief Information Officer at Harvard Medical School, Chairman of the New England Healthcare Exchange Network (NEHEN), Chair of the US Healthcare Information Technology Standards Panel (HITSP)/Co-Chair of the HIT Standards Committee, and a practicing Emergency Physician.

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that use us as reference lab. At BID-Needham, the combination of eClinicalWorks, Quest, and Meditech will meet the need.
b. For inpatient settings - support electronic ordering of 10% of medications, laboratory, radiology/imaging, blood bank, physical therapy, occupational therapy, respiratory therapy, rehabilitation therapy, dialysis, provider consultants, and discharge/transfers. At BIDMC, our self built CPOE system already does this. At BID-Needham, Meditech version 5.6 is being implemented to do this.

2. Implement drug-drug, drug-allergy, drug-formulary checks.
a. For ambulatory settings - webOMR or eCW connected to Surescripts will meet the need.
b. For inpatient settings - our self built CPOE system or Meditech will meet the need.

3. Maintain an up to date problem list of current and active diagnoses (at least one coded entry or "No Problems exist") in ICD9-CM or SNOMED-CT for at least 80% of all patients
a. For ambulatory settings - webOMR or eCW will meet the need. Note that we have already implemented the NLM's SNOMED Core vocabulary to map our proprietary vocabularies to SNOMED-CT before we sent them to Google Health or Microsoft Healthvault, but we will need to create a new problem list picker for webOMR that uses SNOMED-CT natively. Luckily, we already have a prototype.
b. For inpatient settings - webOMR plus IMDSoft's Metavision for ICUs or Meditech will meet the need.

and Privacy Collaboration
Healthcare IT Consultant Blog
Life and Times of an IS Engineer
Nursing Online Guide to PHRs
Open Source for Professionals
Patient Safety Focus

STATCOUNTER

4. Generate and transmit permissible prescriptions electronically (the DEA does not yet allow controlled substances to be e-prescribed) for 75% of all ambulatory prescriptions. webOMR or eCW connected to Surescripts do this today.

5. Maintain an active medication list (at least one coded entry or "No Medications taken") for at least 80% of all patients
a. For ambulatory settings - webOMR or eCW will meet the need. We are using First Data Bank in webOMR and Medispan in eCW. Both qualify as appropriate controlled vocabularies in 2011 because they are included in RxNorm.
b. For inpatient settings - our self built CPOE system or Meditech will meet the need.

6. Maintain an active allergy list (at least one entry or "No Allergies reported") for at least 80% of all patients. Note that no coding/vocabulary is required for 2011
a. For ambulatory settings - webOMR or eCW will meet the need.
b. For inpatient settings - our self built CPOE system or Meditech will meet the need.

7. Record demographics including preferred language, insurance type, gender, race, ethnicity, date of birth, and date of death/cause in the event of inpatient mortality for 80% of patients.
a. For ambulatory settings - webOMR or eCW will meet the need. Note that we already do this using controlled vocabularies and report the data to the Boston Public Health Commission as part of their effort to measure

disparities in healthcare.
b. For inpatient settings - our self built registration/scheduling system called CCC or Meditech will meet the need.

8. Record vital signs including height, weight, blood pressure, Body Mass Index (calculated) and growth charts for children 2-20 years for 80% of patients.
a. For ambulatory settings - webOMR or eCW will meet the need.
b. For inpatient settings - webOMR plus Metavision for ICUs or Meditech will meet the need.

9. Record smoking status for 80% of patients 13 years or older
a. For ambulatory settings - webOMR or eCW will meet the need.
b. For inpatient settings - webOMR plus Metavision for ICUs or Meditech will meet the need.

10. Incorporate 50% of clinical lab test results as structured data using LOINC codes
a. For ambulatory settings - webOMR or eCW. At BIDMC we will need to make improvements to our self built lab system to support lab data exchange with sites that use us as reference lab. We already have a single hub for all eCW/Quest lab data exchange.
b. For inpatient settings - webOMR plus Metavision for ICUs or Meditech will meet the need.

11. Generate a least one report listing patients with a specific condition. The concept is that such reporting can be used for quality improvement, reduction of disparities, and outreach.

a. For ambulatory settings - webOMR includes numerous data marts that already provide such reports such as our BIDMC/Joslin diabetes registry. Also our work with the MAeHC Quality Data Center will support numerous reports for our clinicians using webOMR and eCW data.
b. For inpatient - BIDMC homebuilt systems use our data marts. For Meditech, we'll have to rely on built-in reporting tools.

12. Report aggregate numerator and denominator quality data to CMS in 2011 and exchange it using PQRI XML by 2012

The MAeHC Quality Data Center project includes the ability to gather all detailed metrics from home built and eCW systems for reporting to our clinicians, the state, and CMS using the adopted standards. It will go live for all Beth Israel Deaconess Physician Organization clinicians in 2010.

13. Send reminders to at least 50% of all patients who are 50 years and over for preventative care/followup. The intent is to allow the patient to choose between post card, email, phone reminder, or PHR reminder.

At present, BIDMC has this ability via our tethered PHR, Patientsite. We already send reminder cards via email and make calls via automated phone systems. Documenting patient preference for which modality to use may be a challenge.

14. Implement 5 clinical decision support rules relevant to the clinical quality metrics (Notice of Proposed Rulemaking pages 123-138 from ambulatory and pages

Page 153-160 for inpatient)

We already have implemented numerous decision support rules in BIDMC self built systems.

We're activating eCW decision support rules a few weeks after implementing each practice to enable clinicians to adjust to the EHR before alerts/reminders start popping up.

15. Check insurance eligibility and submit claims electronically for at least 80% of patients.

Since 1997, the New England Healthcare Exchange Network (NEHEN) has provided this functionality to all the payers and providers in Massachusetts.

16. Provide 80% of patients who request an electronic copy of their health information in the CCD or CCR format within 48 hours of their request
a. For ambulatory settings this will include the problem list, medication list, allergies, and diagnostic test results. We do this today via Google Health and Microsoft Healthvault.
b. For inpatient settings this will include discharge instructions and procedures. We do this today via a self built discharge application that provides a human readable document for the patient and routes a CCD via the NEHEN gateway to the primary care provider.

17. Provide 10% of patients with online access to their problem list, medication lists, allergies, lab results within 96 hours of the information being available to the clinician.

Today, any patient can get access to their BIDMC records via Patientsite, our tethered personal health record. For eCW, we'll be implementing the eCW Patient Portal this Spring.

18. Provide a clinical summary for 80% of all office visits (problem lists, medication lists, allergies, immunizations, and diagnostic test results) in paper or CCD/CCR format

Today, any patient of BIDMC can receive a CCR via Microsoft Health Vault or Google Health. For eCW, we'll be implementing the eCW Patient Portal this Spring.

19. At least one test of health information exchange among providers of care and patient authorized entities.

In 2009, we implemented a CCD interface to the Social Security Administration so that we can send complete patient summaries with patient consent to a Federal agency.

20. Perform Medication reconciliation for at least 80% of relevant encounters and transitions of care

We're already at 90% compliance with ambulatory and inpatient medication reconciliation.

21. Provide a summary of care record for at least 80% of transitions of care and referrals. This also implies the ability to receive a record and display it in human readable format

For ambulatory and inpatient settings, the NEHEN

network can route data securely (in this case CCD) among providers (and payers). We already send ED and Inpatient discharge summaries in CCD format with automated integration into EHRs such as eClinicalWorks. We have not added the ability to receive a CCD into our home built EHR, webOMR, since so few commercial EHRs are capable of sending a summary in any format. We will need to add CCD and CCR receiving ability and we'll display them as human readable notes in webOMR.

22. Perform at least one test of the EHR capacity to submit electronic data to immunization registries.

Since the Boston Public Health Commission is joining NEHEN so that it can receive disparity and surveillance data via one secure gateway, it is a logical choice as our immunization pilot.

23. Perform at least one test of the EHR's capacity to submit electronic lab results to public health agencies.

As above, the NEHEN gateway connected to the Boston Public Health Commission is the solution.

24. Perform at least one test of the EHR's capacity to submit syndromic surveillance data to public health agencies.

We already submit 4000 data elements every day to the CDC and send ED utilization data to Boston Public Health Commission using proprietary approaches. Converting these to the GIPSE standard and routing them through the NEHEN gateway is a local approach.

25. Conduct or review a security risk analysis and implement updates as necessary

In the past, we've had Third Brigade (now a part of TrendMicro) do white hat hacking penetration testing and risk analysis. My security team plus external partners will ensure we have the right policies and technologies in place. For example, we're currently evaluating Imperva products to protect all our externally available websites as part of layered defense approach to security.

These 25 steps to meaningful use may seem like a tall order. However, we can leverage numerous projects already in process including our community HIE initiatives, RHITEC plans, Beacon Community planning, and hosted EHR rollouts to accomplish them. Many will feel stressed by meaningful use. My advice is to approach it stepwise, breaking it down into discrete projects which are doable. That way, the 25 step plan above will not lead to a 12-step program for your staff!

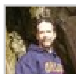
POSTED BY JOHN HALAMKA AT 3:00 AM

7 COMMENTS:

e-Older American said...

Dear Dr. Halamka,

I'm currently participating as a consumer on HITSP's Consumers Preferences Tiger Team and



Harmonization Subcommittees. I would like to express my appreciation for all your work and contributions toward "achieving meaningful use". The importance to consumers of your summary on how the Interim Final Rule and Notice of Proposed Rulemaking should be used together can't be overestimated.

Thank you!

Sincerely,
Fred Buhr, MSSW

JANUARY 3, 2010 1:57 PM

Brian Ahier said...

Thank you so much for sharing this John! This is the best summary and plan of attack I have seen thus far and will be very helpful to organizations that are grappling with how to approach achieving meaningful use.
Welcome to 2010 :-)

JANUARY 3, 2010 6:55 PM

Bruce Kusens said...

Good Morning Dr Halamka,

Thank you for your efforts in maintaining this highly informative publication. I have a question for you and/or your readers.

Is anyone aware of how PARTIAL COMPLIANCE with the required "meaningful use" relate to Stimulus funds payments? For example if we

satisfy 24 out of 25 , does that consitute eligibility (or prorated eligibility) for stimulus payments.

If so is there a weighting system that determines which criteria are more important than others to acheive and the impact on eligibility for stimulus payments.

I would also appreciate any references to where regulatory guidance for this can be found.

Thank You.

Bruce Kusens
InterMedHx, Inc.

JANUARY 4, 2010 4:49 AM

Nick Orlowski - Ankhos Oncology EMR said...

Bruce,
Excellent question. The project I am developing is custom-made for my client and we are developing to his standards, not the meaningful use guidelines. He is more concerned with productivity than compliance(at this point). The project is also very specific to his chemotherapy treatment clinic. As such, things like drug store prescriptions are much more rare than chemotherapy prescriptions administered in the office. Is a prescription only considered 'e-prescribed' if it goes through an external vendor and to a drug store? Just another question for thought.

-Nick

JANUARY 6, 2010 9:06 AM

Mary Jo Nimmo said...

Dr. Halamka,
Thank you so much for your dedication to helping the providers sort through the quagmire of ARRA and HIT. Working as a CIO in a Community Hospital that has always valued Health IT, I use all available resources to sort through and make sure we stay on top of the regulations. I can say without a doubt reading your blog has been a great help!
Thanks Again,
Mary Jo Nimmo, RN
MIS Director

JANUARY 7, 2010 7:26 AM

suze said...

John,

Thank you for sharing your well thought out and hard work. I know this will make my job as IT Director easier in the months and years to come.

Sincerely,

Susan

JANUARY 7, 2010 7:52 AM

Adil Siddiqui said...

Excellent summarization and highlights of the significant requirements. This will be a helpful quick reference.

JANUARY 7, 2010 8:47 AM

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