New Ways To Deliver Lab Orders and Results and “Meaningful Use” to Outreach Physicians

What We’ll Cover Today

- EMR adoption will accelerate
- The integration challenge gets tougher
  - EMRs get by with less functionality
  - The EMR industry is not ready for the volume
- Review the Lab-to-EMR connectivity solutions
- Preparing your lab
What’s an EMR or EHR?

(Electronic Medical Record)

<table>
<thead>
<tr>
<th>The Outpatient Clinical System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outpatient Clinic</strong></td>
</tr>
<tr>
<td><strong>PMS</strong></td>
</tr>
<tr>
<td>Administrative</td>
</tr>
<tr>
<td>• Registration</td>
</tr>
<tr>
<td>• Scheduling</td>
</tr>
<tr>
<td>• Billing</td>
</tr>
<tr>
<td><strong>EMR</strong></td>
</tr>
<tr>
<td>Clinical</td>
</tr>
<tr>
<td>• Patient charts</td>
</tr>
<tr>
<td>• Meds, problems, allergies</td>
</tr>
<tr>
<td>• Results (labs, ECG, Rad)</td>
</tr>
<tr>
<td><strong>98% Adoption</strong></td>
</tr>
</tbody>
</table>
Government Incentives Drive Adoption

ARRA Stimulus

Accelerator:
Economic Stimulus for Healthcare IT
ARRA of 2009

- $17,000,000,000 allocated to stimulate physician adoption of EMR technologies
  - Individual physicians can be reimbursed up to $44,000 (Medicare plan) for the “meaningful use” of EMR technology
  - To qualify, physicians must:
    Step 1: Adopt Certified EHR Technology
    Step 2: Achieve Meaningful Use Objectives
    Step 3: Apply for Incentive Payment
  - Certification and payments will occur in stages
- $600,000,000 for regional extension centers to support healthcare IT adoption
Meaningful Use Stages and Incentives

<table>
<thead>
<tr>
<th>Stage</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016+</th>
<th>Maximum Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>$18k</td>
<td>$12k</td>
<td>$8k</td>
<td>$4k</td>
<td>$2k</td>
<td>$0</td>
<td></td>
<td>$44k</td>
</tr>
<tr>
<td>Stage 2</td>
<td>$16k</td>
<td>$12k</td>
<td>$8k</td>
<td>$4k</td>
<td>$2k</td>
<td>$0</td>
<td></td>
<td>$44k</td>
</tr>
<tr>
<td>Stage 3</td>
<td>$12k</td>
<td>$8k</td>
<td></td>
<td>$4k</td>
<td>$2k</td>
<td>$0</td>
<td></td>
<td>$39k</td>
</tr>
<tr>
<td>Stage 4</td>
<td></td>
<td></td>
<td>$8k</td>
<td></td>
<td>$4k</td>
<td>$2k</td>
<td>$0</td>
<td>$24k</td>
</tr>
</tbody>
</table>

Any less than Stage 3 = Penalty

Source: IFR-NPRM; maximum incentive for Eligible Providers, Medicare (not Medicaid or underserved geographies)

Stage 1: Meaningful Use Checklist

Preliminary ARRA 2011 certification EHR Technology for Eligible Providers

This technology meets applicable proposed Federal standards in existence on the date of certification for certified EHR technology of its type under the American Recovery and Reinvestment Act of 2009 (ARRA). This technology has not been inspected against the Certification Commission’s comprehensive criteria and the Commission makes no representation regarding its suitability for use.

- 1. Foundational Infrastructure Security and Privacy
- 2. Computer Physician Order Entry
- 3. Drug Decision Support
- 4. Problem List
- 5. Electronic Prescribing
- 6. Medication List
- 7. Medication Allergy List
- 8. Demographics
- 9. Advance Directives
- 10. Vital Signs
- 11. Demographics
- 12. Lab Test Results
- 13. Patient Lists
- 14. CMS Quality Reporting

Items that pertain to labs:

- 15. Patient-Reminders
- 16. Clinical Decision Rule
- 17. Progress Note
- 18. Insurance Eligibility
- 19. Electronic Claims Submission
- 20. Patient Electronic Copy of Health Information
- 22. Patient-specific Educational Resources
- 23. Patient Clinical Summary
- 24. Exchange Clinical Information
- 25. Medication Reconciliation
- 26. Immunization Records
- 27. Immunization Records
- 28. Electronic Syndromic Surveillance
Lab-Related Stage 1 Requirements

1. Lab Test Results
   Incorporate 50% of clinical lab test results as structured data

2. Computerized Physician Order Entry (CPOE)
   Support electronic ordering of 80% of medications, laboratory/radiology/imaging, and referrals
   **Does not require electronic submission of the order**

   *This is a low bar!*
   *Not good news for labs.*

Advice from CCHIT to Physicians*

- Don’t wait
- Delaying EHR adoption =
  - Steeper climb to meaningful use
  - Lower total incentive
  - Greater risk of stumbling

* January 13, 2010 Webinar, hosted by HIMSS
  *Translating from Theory to Practice: Certification Criteria and Standards for Obtaining Meaningful Use on Meaningful Use*
EMR Adoption Advice HIMSS*

EMR Implementation Level

**Have not purchased**
- Start ASAP
- Certified Comprehensive or combination of Modular EHR technologies

**Early implementation**
- Define MU plan
- Determine if vendor(s) will be certified in time
- If not, consider Site Certification

**Advanced implementation**
- Close MU gaps
- Determine if vendor(s) will be certified in time
- If not, consider Site Certification

Increased Rate of EMR Adoption

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Duration (years)</td>
<td>14 years</td>
<td>6 years</td>
</tr>
<tr>
<td>% of Physicians Adopting EMR</td>
<td>30%</td>
<td>+ 60%</td>
</tr>
<tr>
<td># Physicians Adopting EMR</td>
<td>180,000</td>
<td>+ 360,000</td>
</tr>
<tr>
<td>EMR Implementations</td>
<td>Avg: 13,000/year</td>
<td>60,000/year (est.)</td>
</tr>
<tr>
<td></td>
<td>2009: 25,000/year</td>
<td></td>
</tr>
</tbody>
</table>

Mark Leavitt, January 13, 2010 Webinar, hosted by HIMSS
Certification Criteria and Standards for Obtaining Meaningful Use
EMR Adoption Poll
August 2009 vs. March 2010

The March 2010 survey polled practices with 10 or fewer physicians
The survey generated 269 responses

Typical EMR Adoption Timeline

Usually begin with low impact, high value modules; then "move up"

Lab results are required in 90% of EMR go-lives

Orders come later. More difficult to set up. Workflow impact is greater.

Orders

- CPOE requirement
- Complete EMR workflow

Full Encounter Documentation

- Face sheet documentation
- E&M Compliance
- Billing efficiencies
- Disease management

Medication Management

- Script legibility
- Interaction checks
- Formulary compliance

Office Communication

- Phone notes
- Virtual "to do" list
- Office efficiencies

View and Sign

- Minimal workflow impact
- Populates chart with clinical data; lab results and transcription
- Chart review from home

EMR Function Adoption Timeline
ARRA Pushes the Schedule

More functions are now required for stage 1

- Implementing orders (CPOE) at a later stage will be too late
- Twice the lab functionality is needed at initial go-live... think about automating this

EMR Function Adoption Timeline

- Orders (CPOE)
- Full Encounter Documentation
- Medication Management
- Office Communication
- View and Sign

Now Phase 1 up from phase 3-4

Same timeline as before

178 EMRs Certified By CCHIT

http://www.cchit.org/products/Ambulatory
The Scorecard On Your EMR Challenge

- **2X** Increased EMR adoption
  - 25,000/year → 60,000/year

- **2X** Twice as much functionality required at go-live
  - Results + Orders

- **?X** More EMR types than ever
  - ~ 70

- **?X** Yet EMR's aren't required to support ordering rules

**Plus......**

- Late adopter practices are less IT savvy
- Finite EMR industry resources --- geared for 25,000 new EMRs per year, not 60,000

The EMR-to-Lab Connectivity Options

The evolution of lab integration into the EMR practice
Today’s Outreach Products Without the EMR

- Orders are more complete and “clean”: checked for ABN, AOE is complete, insurance is complete, etc.
- No data entry at the lab, reduces errors
- Results are more accessible

Pockets Of IT In Many Practices

- Multiple lab client systems
- Other clinical systems automate
- Primarily used by the practice staff
- Physicians and patient charts are primarily on paper
When The EMR Shows Up

- It’s the practice’s clinical cockpit—all patient care activities will be managed here
- Goal:
  - Results will flow to the EMR
  - Orders will originate in the EMR

The Expectation
What The Practices Hears From EMR Vendors

"We support HL7 – you’re good"

The Reality

- Integration projects are perceived as “no problem”
- You have a new integration project
- You and your integration team must set new expectations
- Results interfaces will be demanded for go-live
- Orders will be tougher. Why?
  - Ease of use—requires a significant workflow change in the practice. Too many clicks.
  - Time consuming to model the lab order rules in the EMR (medical necessity, insurance, AOE questions, specimen)
EMR Lab Results

Not a critical situation, but be prepared to scale

Lab Results Are Not A Big Problem

- Most LISs provide HL7 results
- Adding an interface engine allows you to adapt to multiple EMR HL7 dialects
- Your outreach vendor can provide results to the EMR.
- Most EMRs can import structured lab results (OBX records)
But There Are Still Gaps With Results-Only Solutions.

- Patient ID mismatches
- Provider ID mismatches
- Order reconciliation

<table>
<thead>
<tr>
<th>EMR Capability</th>
<th>When it’s useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMR Workflow Functions</td>
<td></td>
</tr>
<tr>
<td>Can the EMR import an HL7 electronic result?</td>
<td>All</td>
</tr>
<tr>
<td>Does it import structured data?</td>
<td>All</td>
</tr>
<tr>
<td>Does it provide result code mapping services?</td>
<td>All</td>
</tr>
<tr>
<td>How are mismatched results dealt with?</td>
<td>All</td>
</tr>
<tr>
<td>How are result codes maintained?</td>
<td>All</td>
</tr>
<tr>
<td>Will it import PDFs?</td>
<td>???</td>
</tr>
<tr>
<td>Can the EMR support results from multiple labs?</td>
<td>Large practice</td>
</tr>
<tr>
<td>Will the result codes from the various labs import to the same flow-sheet?</td>
<td>Large practice</td>
</tr>
</tbody>
</table>
EMR Lab Orders

The Bigger Challenge

Letter From ACLA To HHS
(Tim Ryan of Quest)

October 20 letter to the HHS National Coordinator for Health IT.
.....from the American Clinical Lab Association.

“..examples of lost or reduced functionality when a physician migrates from a laboratory based ordering and resulting system to a EHR or HIE may include

- Lack of robust electronic ordering capabilities including billing information
- Ability to prompt physicians to print the Advanced Beneficiary Notification (ABN) for Medicare patients with identification and lab specific pricing of the limited coverage tests
- Ability to split requisitions for different specimen types (e.g. frozen and room temperature)

...........”
EMR Lab Orders: Ideal Situation

1. Fully featured
2. Setup is simple and automated

- EMR Orders
- Library
- Rules
- Check
- ABN
- AOE
- Draw
- EMR Workflow

Ideal Situation #1: Fully Featured

1. Easy to use (a single ordering library for the physician)
2. Supports exam room checks (ABN, authorized provider, billing)
3. Applies the lab-specific rules throughout the EMR workflow
4. Sends completed orders via HL7 to the right lab
5. Results update the order status (“in process” → “complete”)
6. Makes the results interface so much stronger – all IDs match
And Two “Large Practice” Features

1. Insurance-based routing to the right lab
   This allows a single ordering library for the physician
2. Rules support for all labs
3. This is "Physician-Centric" lab ordering.

Full Multiple Lab Support

- Not physician Centric
- Too many clicks to find the right lab
- Which is the right lab?
- Support team doesn’t like it much. Difficult to maintain the libraries and rules
**Reality for EMR Type #1**
Generic Orders + HL7

- Can capture the order, but not support ABN, AOE or draw requirements
- This is all the ARRA requires

**The Reality: EMR #2**
ABN + HL7

- Some EMRs perform ABN checks, but don’t support AOE or draw requirements
EMR #3: Can Do It All

- Select Tests
- ABN
- Rules Check
- AOE
- Draw

EMR Orders Library

HL7

EMR Workflow

EMR #3: Multiple Lab Support + HL7

- Support for multiple lab libraries, but require that each test library is loaded and orderable.
- Physicians don’t like it much
- Support team doesn’t like it much. Difficult to maintain the libraries and rules
Middle-ware Can Help

EMR #1 -- no rule checking

Middle-ware manages ABN, rules, AOE, printing, etc...

Middle-ware With Workflow Integration

- Supports EMR types #2 and #3
- Physician centric, but requires middle-ware
Setup and Maintenance

Ideal Situation #2: EMR Setup and Maintenance

- Where the EMR can:
  - Load your DOS (directory of services) in an automated fashion? Can it load from a compendium?
  - Load your ordering rules (requisition splitting, AOE questions, specimen requirements, ..) from a compendium?
  - Use your utilization report to create custom order lists

- Or is setup customized?
  - Customized order lists. Great for a practice’s unique workflow and a valuable EMR feature.
    - But does the customization scale to many users?
    - Is it easy to set up?
    - Is it easy to maintain?
Your Lab Information System
Setup and Maintenance

- Can your LIS
  - provide a compendium with a full directory of services (DOS)?
  - Will that compendium include ordering rules, specimen data, ABN cost data
  - Can your LIS provide a utilization report?

EMR Integration Maintenance

- Results maintenance
  - When you update a results code, what happens in the EMR?
  - When you update a test order codes, what happens in the EMR?

- Orders maintenance
  - When you update an order code, what happens in the EMR?
Lab Kit Implementation

- Build the lab kit only once – using DOS and rules from the compendium
- Then deploy at unlimited number of EMR sites
- First EMR is piloted as part of the Kit build.

Lab Kit Development Phase

Project Kickoff / Needs Assessment → Compendium Build → Development / Communication → Testing → Ready for Production

Clinic Implementation Phase

Site Kickoff / Technical Install → Workflow Review → Mapping and Set up → Customer Testing / Training → Go Live

EMR Orders Checklist

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<tr>
<th>EMR Capability</th>
<th>When It’s useful</th>
<th>EMR #1</th>
<th>EMR #2</th>
<th>EMR #3</th>
<th>EMR #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMR Workflow Functions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can an HL7 electronic order (HL7) be sent to the lab (or to outreach product)</td>
<td>All</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Is ordering easy to use for the physician? If it’s installed, is it being used?</td>
<td>All</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Is medical necessity being checked when physician places the order?</td>
<td>All</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lab specific AOE support</td>
<td>All</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can lab specific requisitions be printed?</td>
<td>All</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can the EMR support orders to multiple labs?</td>
<td>Large practice</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Must the physician choose the correct lab, or can they choose from a single list and the EMR route to the right lab?</td>
<td>Large practice</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the staff ordering workflow easy to use?</td>
<td>All</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMR Setup Functions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the setup automated? Is it derived from lab’s utilization report and directory of services?</td>
<td>All</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are order and result codes easy to set up and maintain?</td>
<td>All</td>
<td></td>
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</tbody>
</table>
Recommendations

The Situation

So…. you have 70 different EMRs coming at you, at twice the rate of last year, asking for twice as much functionality, for practices that are less prepared, with less consultants in the industry.

Here are some approaches to take.......  

- As a lab
- As an industry group
Your Plan: Get Involved in the EMR Selection

- Learn the “meaningful use” criteria. There will be three stages. I deal with phase one today.
- Create an RFP for lab-to-EMR integration (use the Results and Orders checklist in this presentation)
- Conduct your own EMR assessment
  - Ask your interface team to rank the EMR that were easiest to deploy.
  - Ask your middleware vendor to rank EMRs for integration (have them to plan bandwidth for your upcoming projects)
- Partner with your physicians in selecting the EMR. Share your RFP and assessment results.
- Ensure they include lab integration as part of the evaluation... not just a “check in the box”

Your Plan: Look Internally

- Look at your LIS capabilities
  - Can it accept an electronic order from an outpatient EMR?
  - Must it receive a registration event from the HIS first? Is this really a show-stopper?
  - Can your LIS provide a utilization report?
  - Can your LIS provide a compendium for your lab ordering rules?
- Your interface engine (or middleware) capabilities
  - Is your team ready for 2X the volume?
- At your processes for providing lab-to-EMR integration
  *you’re welcome to use the Ignis project plan as a starting point.
Your Plan: Reach Out

- To the practices in your region.
  - Host an EMR open house
  - Tell them you’ll help with meaningful use
  - See where they are in their EMR adoption
  - Offer to assist them in the evaluation
- To the Regional Extension Centers (RECs) in your region
  - Do you have any CHC that you support? The Regional Extension Center is chartered with helping the CHC.
- To other labs. Compare notes on which EMRs integrate well

An Industry Plan

- Drive for standardization of compendiums
  - Already started with the eDOS proposal
  - Insist that EMR vendors import the compendium for setup and maintenance
  - Provide your own evaluation of EMR interoperability. The industry standards are very low in phase one
- Create your own EMR integration score-card
  - Workflow functionality
  - Setup and maintenance
Some EMR-LIS Middleware Vendors

- Antek (Physician Office Lab LIS)
- Atlas
- CareEvolve
- Emdeon
- Halfpenny Technologies
- Ignis Systems
- Lifepoint
- Novo Innovations (Medicity)
- Orchard (Physician Office Lab LIS)

To Wrap Up

- $17,000,000,000 will change things—EMR adoption will accelerate
- For reimbursement, EMR orders are now mandatory, not an option
- EMRs are not all alike—look beyond the industry certification levels
- You can help your practices achieve meaningful use—get ahead of the game now
Enjoy the Ride!

Questions and Discussion
**Backup Slides**

**Lab Kit Implementation**

- Development cycle to complete the build of the kit, once kit is build it can be repeatedly implemented at additional clinics.
- Pilot (or first implementation) is typically managed in conjunction with the development phase.

**Lab Kit Development Phase**

- Project kickoff / Needs Assessment
- Compendium Build
- Development / Communications
- Testing
- Ready for Production

**Clinic Implementation Phase**

- Site kickoff / Technical install
- Workflow Review
- Mapping and Set up
- Customer Testing / Training
- Go Live

Iterative development
Typical Project Cycle, Development → Pilot

<table>
<thead>
<tr>
<th></th>
<th>Average Duration</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td></td>
<td>Only Project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basic Kit (no comm.)</td>
</tr>
<tr>
<td>Full Bi-Directional Kit</td>
<td>8 to 10 weeks</td>
<td>8 to 12 Weeks</td>
</tr>
</tbody>
</table>

Key Requirements for a Successful Kit Development Project
- Compendium build process based in the Ignis Specifications, must be a repeatable compendium build process.
- Clinic site readiness and available resources.

Typical EMR-Link Kit Development Team Roles

**Lab**
- Project / Account Manager
- Lab Operations Expert
- IT / Connectivity
- Compendium Expert
- Tester
- Billing Expert

**Clinic**
- EMR / Workflow Expert
- IT / Technical
- Tester
- Clinical, Test code mapping
- Trainer

**Ignis Systems**
- Program / Project Manager
- Developer / Technical
- Workflow Design
- Trainer

Note: One resource can cover multiple roles

Resources

- ARRA-sponsored Regional Extension Centers
- About the ARRA
- Ignis Systems
  [www.ignissystems.com](http://www.ignissystems.com)
Levels of EMR Functionality

**CCHIT**
- Basic Order Functionality
- Basic Result Functionality

**KLAS**
- Consumer report of HCIT
- Service Focus: Did the EMR vendor do what they said they’d do?

**Extra Mile**
- Rules based routing
- Image system ordering/reporting

**EMR-Lab "Mature" Integration**
- Incorporate the lab order rules
- Closed order-result loop