Lab Integration at a Large HealthCare Enterprise
Session Learning Objectives:

• How we improved physician workflow
• Ways to keep lab results cross references files up to date
• How we improved operations
• How the labs can keep the ordering categories up to date (so they receive the ordering information they need)
About Medstar

As the largest healthcare provider in Maryland and the Washington, D.C., region, MedStar is recognized regionally and nationally for excellence in medical care, providing primary care, urgent care, adult day care, and home health care services in communities and homes across the region.

• Our Facilities:
  – Over 36,000 associates and affiliate physicians.
  – 10 hospitals with individual hospital labs
  – 130 Ambulatory and Outpatient sites
  – Over 15,000 Centricity users.
  – Official medical team of the Baltimore Ravens

• Our EMR staff
  – Two full time support folks
  – Full time Centricity account reps for each site
  – Implementation staff and consultants
Our Diagnostic Testing Facilities

• Labs:
  – LabCorp
  – Quest Diagnostics
  – St. Mary’s Hospital Lab
  – Hospital Lab at every MedStar hospital

• Radiology/Imaging departments
Challenges We Faced

- More projects, more mandates, same resources
  - New Meaningful Use requirements
  - Continued demand for EMR efficiencies/functionality

- Workflow challenges:
  - Physicians choosing the correct lab, based on patient insurance
  - Updating the EMR’s lab order status.
  - Call backs from the lab when the order was unclear or incomplete.
  - Lab requesting more insurance information
  - When a resident orders, who views the result?
    (getting the right lab result to the right care provider)

- Support challenges
  - Keeping our lab result cross reference files up to date.
  - Maintaining the separate ordering categories for each lab.
  - Each lab has a different order code…for the same test.
Our Approach

• Initially, tried different vendors for the interface engine solution.

• Today, we partner with a single vendor that specializes in lab ordering/resulting/ and interfaces:
  – They had tools. Cross reference editor, orders kit creation.
  – They did much of the IT work (HL7 interfaces, connectivity,
  – They tune the workflow (single ordering category, lab specific requisitions, ….)

• Both Quest and LabCorp recommended EMR-link from Ignis/Liaison.
  – (plus, Quest and LabCorp paid for it)
<table>
<thead>
<tr>
<th>Problem:</th>
<th>Approach</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keeping our lab result cross reference files up to date.</td>
<td>Cross reference editing tool. Shows us the correct new code, we select it.</td>
<td>It’s always up to date, populating our flowsheets</td>
</tr>
<tr>
<td>Maintaining the separate ordering categories for each lab</td>
<td>A single order category in Centricity, EMR-Link maps to the right order codes.</td>
<td>Labs get the clean orders they need</td>
</tr>
<tr>
<td>Call backs from the lab when the order was unclear or incomplete</td>
<td>The order abides by the ordering rules of the lab.</td>
<td>XX time saved in handling call-backs</td>
</tr>
<tr>
<td>Keeping our order status current</td>
<td>EMR-Link includes logic to allow for auto-complete upon signing the result</td>
<td>XX hours of saved staff time keeping orders manually up to date.</td>
</tr>
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## Our Outcomes

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<tbody>
<tr>
<td>Orders for patients across state borders.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowing when insurance requires a specific lab</td>
<td>System evaluates patient’s insurance and routes to labs accordingly</td>
<td></td>
</tr>
<tr>
<td>Support for residents and attending physicians (getting the right lab result to the right care provider)</td>
<td>System allows for</td>
<td></td>
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How It All Works………..

MedStar’s EMR-LINK Account

- Rules-based routing (insurance and location)
- Clinic specific mapping of EHR-to-Lab data
- Order Entry Questions
- Requisition printing
- ABN printing
- Label printing

Clinic’s mapping tables

<table>
<thead>
<tr>
<th>EHR data</th>
<th>Lab 1 Data</th>
<th>Lab 2 Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider Names</td>
<td>UPIN/NPI</td>
<td></td>
</tr>
<tr>
<td>Order codes</td>
<td>Lab order codes</td>
<td>Lab order codes</td>
</tr>
<tr>
<td>Insurance</td>
<td>Lab Insurance</td>
<td>Lab Insurance</td>
</tr>
<tr>
<td>Location of Care</td>
<td>Lab account #</td>
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Other

- ABN Validation

3

Requisition Completion

6

HL7 Order

- Manifest Reports
- Future Orders
- Billing interface back to PM

MedStar’s EMR-LINK Connector

2

EMR-Link Connector

4

Your EMR Order Codes

1

EMR-LINK Connector

9

Clinics EHR

- Secure HTTPS downloads

Lab

Lab compendiums (eDOS)

LabCorp

Quest

Lab

- HL7 compliant ORM
- Complete order information to lab’s requirements

Orders

Results

8

Auto-Completion

Provider desktop notification

Electronic (HL7) Result

LIS

9

Lab Result Manager

8

- Manifest Reports
- Future Orders
- Billing interface back to PM
The Labs Update EMR-Link When They Change Codes...

Clinic's EMR-LINK Account

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Labcompendiums (eDOS)

1. Your EMR Order Codes
2. EMR-Link Connector
3. ABN Validation
4. LinkLogic
5. LabCorp
6. Lab Result Manager
7. Electronic (HL7) Result
8. Auto-Completion
9. Secure HTTPS downloads

- HL7 compliant ORM
- Complete order information to lab's requirements

- Manifest Reports
- Future Orders
- Billing interface back to PM

- Secure HTTPS downloads

Lab

MedStar Health
What We Learned (or might do differently)

- The labs pay for this. Who knew?
- Might have standardized lab order names. We started with many, based on the practice preferences.
What’s Next

• Adding other labs to the system.
  – St. Mary’s Hospital Lab – Using Cerner Hub with EMR-Link
  – MedStar Enterprise Lab – Using Cerner Hub with EMR-Link
  – MedStar Radiology