Web-based Order Entry Portal in Support of Outreach Testing

Supporting Laboratory Outreach with Information Technology

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Pathology Informatics 2011
Testing, Reimbursement and the Laboratory

The Drive to Laboratory Outreach

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What is Laboratory Outreach?

• Outpatient laboratory testing
  – Non-registered patients (non-patients)
  – Non-credentialed Practitioners (non-Docs)
  – For profit testing!

• Laboratory testing requires
  – Ordering provider
  – Patient with a valid MRN

• Outreach originated as a way for laboratories to increase income by leveraging excess capacity as a fee for service provider
  – Driven by changes in inpatient reimbursement, CLIA 88, increased automation
What is Laboratory Outreach?

• What customers use laboratory outreach?
  – Small doctor’s practices
  – Non hospital aligned large physician practices
    • Driven by CLIA 88
    • Previously, such practices may have run their own laboratory
  – Non MD/DO practitioners
    • Naturopaths
    • Nutritionists
    • Chiropractors
    • Dentist
    • Nursing homes
How is Outreach Accomplished?
Hospital Based Outreach vs. National Laboratories

• Large national laboratory companies were early providers of laboratory services in the outreach environment
  – Some were reference laboratories that began to do more than esoteric testing
  – Some were established to do testing for non-aligned physician practices
• Hospital based laboratories with excess capacity and a vision to grow their market
  – Driven by changes in reimbursement for laboratory services
  – Consortiums supported by large reference labs such as Mayo
Hospital Based Outreach vs. National Laboratories

- Hospital labs had difficulty competing with large reference laboratories initially
  - Economy of scale; price per test
  - Test offerings
  - TAT’s
- This has changed as the hospital based laboratory has been re-tooled and technology has improved efficiency
  - Customer loyalty and familiarity
  - Seamless service offering
Historical Approaches to Outreach Workflow

- Paper based process
  - Paper requisition
  - Paper results: fax, courier
- Leverage existing LIS and HIS registration capabilities
- Outreach patients are registered at the site of presentation
  - “Mini reg”
- MD’s credentialed on the fly or pre-credentialed as a part of contracting services
- Billing back to client or to patient insurance as contracted
Modern Approaches to Outreach

• Information Technology Enabled
  – Paper processes remain important to some client, however most aspects of outreach can be supported by IT
  – Laboratory Portal
    • Order Entry
    • Requisition generation
    • Label generation
    • Shipping manifest
    • Results available electronically

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Modern Approaches to Outreach

- Information Technology Enabled
  - Sample tracking
  - Courier management and routing
  - Customer Relationship Management
    - Client management, knowledge base
    - Sales and marketing efforts
    - Issues tracking
  - Web site support
    - Laboratory users guide
    - Supplies
    - Newsletters etc.

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How to build an Outreach Program

• Consulting and market analysis
• Slow and steady wins the race
• Resource the program
  – Leadership
  – Management
  – Sales and marketing
  – IT support
    • Portal and other applications
    • Microcomputers, network
  – Couriers
• Significant investment for a new program!

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How to build an Outreach Program

• Create an infrastructure first
  – You may be able to leverage paper based processes for a short time
  – Design effective teams and processes
• Choose initial clients carefully
  – Consider them early adopters
• Don’t let sales outpace operationally capacity
• Deploy informatics solutions sequentially as the program grows
  – Select proven vendor partners that blend well with current information technology

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Outreach at Henry Ford Health System

Henry Ford Medical Labs

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Outreach at HFHS

• HFHS is an integrated delivery network
  – MD’s are employed
  – All outpatient visits are to HFHS operated clinics
  – Hospital lab is used at all HFHS sites
  – Little driver for outreach

• Some outreach activity had evolved outside the main laboratory prior to creation of the lab service line
  – Traditional approach using HIS registration and LIS

• Interest in consolidating and growing outreach was envisioned as a way attract new MD’s and patients to HFHS services

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Outreach at HFHS

- Consultants were engaged to do market analysis, provide direction on approach and IT services (2007)
- MD leadership was recruited to lead development of outreach program (2008)
- An IT solution was selected via an RFI/RFP process
  - Atlas LabWorks (2008)
  - LabWorks was designed and implemented prior to any clients or formal resources were involved
- Sales and marketing staff were hired and clients recruited (2009)
- Manager hired (2010)
- Informatics team reorganized (2011)
Consultant Recommendations

• Start slow in a focused region of our catchment area
• Recommended Sunquest Encompass as the best fit for our environment
• Leverage current courier routing
• Use traditional approaches to outreach as lab portal and other technology’s and teams were being developed
• HFHS Response?
  – For a variety of reasons that defy logic we ignored most of these suggestions
    • You get what you listen to and do from what you paid for from consultants!

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Outreach at HFHS
Impact of Design Choices on Informatics

• Due to evolution of the program, the IT infrastructure was well established prior to resources for sales and couriers were hired
  – IT oriented build, with little business driven insight in the design
  – Key customers weren’t involved in IT design
• Cultural clash between sales and informatics created tension, unfulfilled expectations, client relationship challenges
• Informatics and technology requirements were significantly complex and could not keep pace with sales activities
  – Happily, this is resolving as we have gotten the correct pieces in place

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Outreach at HFHS
Current Status

• Recently formed dedicated section of the informatics division to support portal, client build out
• Standardization of IT platforms where possible
  – Vendor to support microcomputers and internet setup
• Sales staff, informatics and laboratory service center working in lock step
• Operations manager in place
• New dedicated courier hired (now at three)
• Result: increased capacity, higher quality, smoother operations
  – Revenue on pace to double for this year
The Portal

Deployment
Web Portal Deployment

- Atlas Labworks interfaced to Sunquest CoPathPlus and Sunquest Clinical lab using HL7 interface
  - No information transmission to HFHS EMR
  - True Stand alone implementation
- Billing information
  - 3rd party billing vendor
  - ADT files from Sunquest and testing and result files from sunquest
- 3rd party company recruited to provide microcomputer deployment, support and internet lines implementation
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**SURGICAL PATHOLOGY / HFHSURG**

**Main Source:** DERMATOLOGY

**Date of Surgery:** 09/30/2011

**Clinical History/Radiologic findings:** Multiple skin lesions

**Pre-Op/Post-Op diagnosis:** Possible BCC's
Physician Information
Name: Tuthill, Mark
Account #: 168
Acct. Name: Dr. Tuthill's Office
Address: 2799 West Grand Blvd. K8
Detroit, MI 48202
(313)916-2824

Patient Information
Name: TEST, APTWO
Pat ID: TUT000028
POR0000003
DOB: 01/01/1961
Gender: Male
Room:
Address: 11111 somewhere
1 w grand blvd
DETOUR, MI 48202
Phone: (313)111-1111
Billing Type: Patient

Order Information
Order #: RR0148166
Coll Date/Time: 09/30/2011 14:46
User Initials: Tuthill, Mark

Primary Insurance
Name:
Type:
Address:
Policy #:
Group #:
Subscriber:

Secondary Insurance
Name:
Type:
Address:
Policy #:
Group #:
Subscriber:

Clinical Info:

Notes:

Copy-To Info:

Ordered Procedures
Specimens | Temperature | ICD-9 Codes
--- | --- | ---
1) MFM SURGICAL PATHOLOGY | | 244.8, 250.01, 428.0

Date of Surgery............... 09/30/2011
Clinical History/Radiologic findings. Multiple skin lesions
Pre-Op/Post-Op diagnosis........... Possible BCC's
1. RR011481661 - DERMATOLOGY - HEAD - CURETTING
2. RR011481662 - DERMATOLOGY - NECK - EXCISIONAL BIOPSY
3. RR011481663 - DERMATOLOGY - BACK - PUNCH BIOPSY
Surgical Pathology Report

Patient Name: TEST, APTWO
Med Rec #: TUT000028
DOB: 11/1/1961 (Age: 50)
Gender: M
Physician(s): Mark Tuthill

Phone #: (313)111-1111
Client: 8-Portal
Location: TUT (POR)
MPID: POR0000003
Accession #: PS11-2
Taken: 5/11/2011
Received: 5/11/2011
Reported: 5/11/2011

Clinical History
Clin fix test

Operative Diagnoses
OP dx test

Operation / Specimen
A: Skin, curettage, head
B: Skin, excision, scalp
C: Skin, excisional biopsy, neck
D: Skin, punch biopsy, chest

Pathologic Diagnosis
A. Skin, curettage, head: test
B. Skin, excision, scalp: test
C. Skin, excisional biopsy, neck: test
D. Skin, punch biopsy, chest: test

Comment
Dx comm test

***Electronically Signed Out By JM Tuthill, M.D., System Manager***

jnt2/5/11/2011
J.M. Tuthill, M.D., System Manager

Intra-Operative Consultation
IOC test

Gross Description
Key Components for IT Support of Outreach

Problems and Pitfalls

Solutions

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Key Components for IT Support of Outreach

- Core systems: LIS, ADT systems
- Lab portal
  - Orders, requisitions, labels, e-results, printing
  - Billing
  - Courier management and routing
  - Tracking
- Microcomputer support, networking
- Supply requests
- EMR Interfaces
- Customer relationship management tools

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Technology Development Strategy

• Align with core informatics teams
  – Develop strategy to support outreach
• Plan communication
• Leadership involvement
• Technology selection
  – Features versus core technology and integration
• Business workflow
  – Constantly redevelop
  – Political barriers
• Parallel Pathways with hospital planning and programs
  – Duplicative, disruptive
Operations

- Application Support
  - Complex system in our world
    - Simplify where possible
  - LIS, Portal, multiple test catalog management, interface engine
- Micro computing and networking
  - PC and Internet in offices
- Workflow smoothing
  - Many efforts require development
  - Bug fixes, enhancements, activation of features
Operations

- Daily support
  - On call
  - Issues resolution
  - Communications
  - Vendor complexity
    - LIS
    - ASP
    - Third party vendors
    - Internet providers
    - Office IT groups
Development Support

• System fixes
• Workflow enhancement
• New sites
  – Implementations
  – New requirements
  – Each site is unique
  – Setup is complex and time consuming
• Typical working 30-40 issues
  – Over 250 issues resolved this year to date
• System stability and consistent site implementation has been elusive to date

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Microcomputer and Network Setup and Support

• Most client offices require PC and Internet services
  – Some office want to use their network and computers
do to space and other constraints
  • This results in the use of non standard PC’s which
    can be difficult to support
• Hospital IT which provides PC’s, networking and support
  was not able to be leveraged for outside customers
• Contracted with 3rd party vendor (Suntel Inc.) to provide:
  – PC’s
  – Procure and manage internet installation (ATT and
    Comcast
  – Support of PC’s and printers with issues

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Microcomputer and Network Setup and Support

• Each setup has been unique and complex
  – Back in the computer support business!
• Timelines vary by requirements and are not pleasing to sales team
  – Internet line can take up to 30 days
  – A simple office setup can take a week
• Develop service level agreements with sales and clients
• Many office have contract IT groups which can increase complexity
• Teams involved in a typical setup: Internet provider, Suntel, Atlas, Pathology Informatics, Sales, Operations teams

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Customer Service Center
Laboratory Support Center

• We utilized our current customer support team and process to support outreach
  – Initially the design of the team, space, process and procedures were not well adapted to support outreach customers
• Team was re-organized with a dedicated outreach support team
• Many process are done on paper or spreadsheets with client configuration and contact information
  – This is inefficient, time consuming and decreases customer satisfaction with issues resolution
Customer Service Center
Laboratory Support Center

• We have re-defined support processes and issues resolution pathways to create standard work
  – Communication to Pathology Informatics
  – Communication with Sales and operational team
  – Communication with customer
  – Documentation

• Implementing the Sunquest Outreach Advantage
  Customer relationship management (CRM) module
  – Issues tracking
  – Client configuration knowledge base
  – Sales and marketing activities

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Reporting

• The heart of the laboratory business is report to our customers
  – With outreach there is a loss of control for report distribution
  – This can lead to a return to couriered paper reports or faxing!
• We using auto-printing and auto-faxing solutions with Atlas when possible
  – Failure of report printing or faxing is the most common issue we receive at the helpdesk
• No clients are using e-reporting as the primary method of reviewing lab results
  – Think of ways to incentivize clients to use the portal to review results

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Sample Labeling
Foreign CID

• Our goal was to produce instrument ready labels at the client site
  – This was a key component of the RFP and vendor selection process
• This has been very challenging due to
  – Issues with Sunquest
  – Limitation to FCID functioning as a true CID
• Instrument requirements
  – Limitations in the number of characters that instrument will support in a bar code
• Label design issues

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Sample Labeling
Foreign CID

- Our approach has been to utilize true CID’s from Sunquest in our large draw areas (Patient service centers)
  - Data sent from Atlas to Sunquest with the label being printed from Sunquest
- In offices that do phlebotomy we produce an FCID that can be used for non complex testing
- In the worst case scenario we re-label tubes when we have to
  - As the volume of testing increases, this will become decreasingly palatable!

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EMR Interfaces

• Interest in EMR implementation is being driven by:
  – Meaningful use
  – Creation of the Henry Ford Physician Network (HFPN) our ACO

• Continual challenge
  – Can take weeks to months
  – Many vendors and versions of EMR’s
  – EMR’s handle laboratory data poorly
    • Data Integrity
    • Data display and report printing issues
    • Compliance issues with CLIA 88
  – Building orders sets in client EMR is daunting!

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EMR Interfaces

• Validation of data display
  – We use Software Testing Solutions to order and result in the laboratory system
    • Interface design testing using vendor test case
    • Detailed scenario testing (HFH created)
    • Volume testing of all results
  – Design of the interface typically goes rapidly
    • Bottleneck for these interfaces is the receiving system’s display and printing problems
      – These can take weeks to months to resolve
    • Frustrating for sales and clients

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EMR Interfaces

• Possible solutions and approaches
  – Work to set appropriate expectations for leadership, sales and clients
  – Carefully choose EMR’s and client for whom interfaces will be established with leadership
    • This can be a source of tension for sales team and outreach growth
  – Limit EMR interfaces to results which significantly simplifies the implementation
  – Use of PDF’s to display data in EMR versus HL7
  – Technology solutions such as Atlas Ion or Sunquest outreach connect
    • These are not magic and will not mitigate display problems on the vendor side
    • They can decrease effort for second connection to an identical EMR
  – Ultimately we need standards base EMR solutions to streamline setup

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Summation
Summation

- Outreach is a difficult undertaking for the hospital laboratory as a new enterprise
  - Cultural clash
- Success in outreach is most dependent on:
  - Planning
  - Appropriate resources
  - Communication across teams
- Aligning expectations of leadership, sales, and operations teams requires continued care and feeding
- Technology solutions can increase success but are not a panacea as technology can increase complexity and the time it takes to setup a site.

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Summation

• Despite challenges HFML is succeeding and we continue to learn and refine our processes
  – Revenue continues to climb and is doubling every six months
  – Revenue goals for five year vision were achieved in two years
  – Outreach revenue has created a positive financial picture during the economic downturn
  – Customer satisfaction surveys show a high degree of satisfaction
  – We are competing well against commercial laboratories!

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Outreach at HFHS
Next Steps

• Continued expansion of client base
• Formalization of operational processes
• Implement Sunquest Call back module
• Implementing Sunquest CRM tool (part of outreach advantage package)
• Interfacing of portal results to EMR’s
  – Hospital
  – Physician Office
• Additional IT capabilities
  – Courier
  – Tracking

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Web-based Order Entry Portal in Support of Outreach Testing

Time for Questions???

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