eHealth, eCommerce... Where’s the Beef?

HIMSS Conference 2002
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Yale New Haven Health System
Presently includes:
- Members
  - Yale-New Haven Hospital
  - Bridgeport Hospital
  - Greenwich Hospital
- Network Participants
  - Westerly Hospital

- Affiliated with the Yale School of Medicine
- Approximately 10,000 employees
- Third largest non-governmental employer in the state
- 18.4% of the state’s inpatient market
  - 72,799 inpatient discharges/1.33 million outpatient visits
- $1.5 billion in total assets
- FY01 net revenue of approximately $1 billion
Key YNHHS FY 2001 Initiatives

- Patient safety
- Patient satisfaction
- Clinical quality initiatives
- Clinical service expansion
- HIPAA
- Revenue enhancement
- Cost Savings
- ehealth strategy
Background: Major IS Projects

- System-wide Lawson MM/AP/GL/HR/Payroll Implementation
- Eclipsys’ PFM product installed at 2 hospitals
- System-wide PACs evaluation
- Eclipsys’ EPI Project across the system
- System-wide Interface Engine
- Improvements in the technical infrastructure to facilitate communications across the system
- System-wide upgrades to the Eclipsys DSM product
Issues that drove us to “eCommerce”

◆ Patient Care
  - Challenges in disseminating vital patient information to clinicians at the point of care
  - HIPAA - the need to do things in a more standard, secure, and confidential way
  - Need to seek out creative ways to improve the quality of patient care and to improve patient safety
  - Impending demands for patient management of health records, communications with physicians, etc.
  - Hope that with new technology, patients and caregivers can do more with less support

◆ General
  - Needed to “pull together” our various web initiatives into a plan to ensure that the initiatives meet our corporate objectives
  - A hope that by being more efficient, we may reduce some costs
Issues that drove us to “eCommerce”

- **eBusiness**
  - Need to streamline EDI, Supply Chain Management, and claims processing
  - Revenue enhancement processes
  - Our Lawson implementation
  - Access to / availability of new vendors that facilitate eCommerce/eHealth transactions

- **Consumer Outreach / Marketing**
  - Consumer demand to do more on the Web
  - Need to creatively seek ways to build relationships with our consumers and extend brand equity
  - Ongoing interest in enhancing market image and position
  - Efforts to promote direct contact and interaction with consumers and employees (self-service)
YNHHS eHealth Position Statement

- The Internet is intended to serve and support the business strategy of the organization.
  - To be successful - integrate these Internet initiatives into the fabric of the business strategy.
  - Incorporate advanced technology to support, enhance and complement our core business – providing health care services.

- By speeding up access to and increasing the availability of information, the Internet will significantly improve our business processes and outcomes.

- YNHHS will be an early adopter of solutions provided by commercial vendors.
  - purchase turnkey applications from commercial organizations, or
  - become development partners with commercial organizations
  - Enables YNHHS to more effectively leverage and utilize Internet-based solutions to accomplish our business strategy and stay current in a rapidly changing technological environment.
eCommerce / eHealth at YNHHS

Health Care System

Physicians
- Clinical Workflow
- Patient Communication
- Orders
- Results
- Images
- Referral Process

Patients/Consumers
- Public Web Sites
- Personal Health Records
- Physician Office Communications

Inpatient Clinicians
- SCM (Web)
- Clinical Workstation
- Wireless Technologies
- PACs Web Viewers

eSupply Chain
- Neoforma
- Lawson
- Organization
- Owens & Minor

Revenue Enhancement
- Eligibility Comm.
- Utilization Review
- Patient Data
- Claim/Status
- HIPAA EDI
- Referral Process

Employees
- Enrollment
- Self-Service
- Intranet

Medical Information Services
- Publications
- Research
- Health Bulletin
- Medical Knowledge
- Clinical Trials

Banks
- Payment Advice
- Payment Notices

Medical Information Services
- Publications
- Research
- Health Bulletin
- Medical Knowledge
- Clinical Trials
What is Electronic Commerce?

Is a dynamic set of technologies, applications and business processes that link enterprises, consumers and communities through the electronic exchange of goods, services, transactions and information…

ORACLE
**Success Factors for Transition**

**STRATEGY**
- materials management
- clinicians
- operations
- financial
- technological

**STRUCTURE**
- work process
- design
- decision making
- information systems
- rewards/incentives
- communications

**SKILLS**
- analytical
- technical
- people
- organizational
- communications

**CULTURE**
- values
- mission
- norms
- language
- leadership
- traditions
- behavior
Supply Chain Enhancement through eCommerce
Health care industry spends upwards of $200 billion on products, services and processes associated with the supply chain.

Process of moving purchased goods and services into and around hospitals costs as much as $23 billion nation-wide*.

Opportunity to save $11 billion on this “process-side” alone, when considering the procurement, receipt, and distribution of purchased goods and services.

Materials Management department is responsible for less than 20% of the total inventory.

There is significant opportunity for providers to engage in value-added strategic sourcing initiatives.

Typically, providers are information poor; there is little reliable information about purchases, prices or utilization.

eCommerce will...

- Cure world hunger
- Create world peace
- Make you a billionaire
- Make nurses love material managers
eCommerce should...

- Automate the purchasing process
- Reduce Procurement costs
- Reduce errors and paperwork
- Aggregate purchases for many suppliers on one Purchase Order
- Reduce price discrepancies on non-contract items
- Eliminate “maverick buying”
- Provide online access to multiple suppliers
- Provide the Buyer all the above in a “seamless” manner
**Why e-Supply Chain Solutions?**

**Provider**

- It’s the thing to do - It’s contemporary
- Manage off-contract “maverick” purchasing
- Reduce non-productive time in purchasing/AP
- Expand pool of qualified suppliers
- Save time and increase efficiency
- Reduce pricing disparity
- Make better decisions based on better, more accurate sourcing information
- Obtain more accurate and timely information to manage utilization

Source: Andersen/VHA, *Industry Study Report, June 2001*
Why e-Supply Chain Solutions?

Provider

- Value can be created in the range of 1% to 3% of total provider supply costs by fully utilizing eCommerce capabilities.
- Current use of electronic data interchange (EDI), represents about 31% of total eligible transactions.
- An integrated e-Commerce solution can reduce the rework related to processing errors by as much as 52%.
- Providers can overpay suppliers from 2% to 7% for contracted medical-surgical supplies.
- As much as 40% of buyer time and 88% of accounts payable time is dedicated to the manual processing of transactions.
**Why e-Supply Chain Solutions?**

- **Manufacturer**
  - A fully integrated e-Commerce solution can lead to revenue increases of 1% to 14% for early adopters.
    - Minimizing rework and eliminating non-value activities by sales representatives who spend 25% to 49% of their time on administrative tasks
  - Increase in net operating margin potential ranges from 2% to 57% varying dramatically depending on the type of manufacturer, current technology state and level of e-Commerce implementation
  - Fill rates can be improved if suppliers and manufacturers are able to track transactions throughout the supply chain

- **Distributor**
  - A fully integrated e-Commerce solution can help benefit distributors from 1% to 10% of Selling, General and Administrative (SG&A) expenses
  - Medical-Surgical distributors sales forces spend only 14% of their time selling products or educating customers, as a majority of their time is consumed by customer service related issues
  - Although automation of contracts, pricing and rebates have continued to increase, 2% of SG&A is spent on personnel to ensure pricing accuracy.
    - The lack of standards in the pricing process continues to impede the reduction of resources

YNHHS Supply Chain Mission

To support operations and quality patient care through the cost effective and efficient provision of supplies, capital equipment, and related services in partnership with the employees, staff, and physicians of Yale New Haven Health System
YNHHS Strategic Objectives

- Corporate Materials Management Structure
- One Business Information System across the Health System
- Identification of $8.8M potential annual savings after 3 years
Cost Savings Opportunities

Ensuring that you pay the best price for supplies commonly used will provide a first round of savings.

Focusing on proper supply selection and utilization will generate the most sustained savings opportunities.

Standardizing across your institution will provide a second tier of savings.

The progression of savings starts with paying the best price and ultimately optimizing utilization.
YNHHS Strategies

- Overall goal is to manage quality and reduce cost through rational supply selection and utilization.
- An interdisciplinary approach provides for input from the array of experts available in the facility.
- Product selection is based on establishing objective clinical specifications forming the basis to minimize redundancy.
- The clinically-indicated needs of any particular patient will always take priority over the preferred formulary product.
## Supply Chain Management Process

- **Establish Clinical Evaluation Committees (CEC)**
  - Cardiac Cath
  - Clinical Laboratories
  - Diagnostic Imaging
  - Medical/Surgical
  - Operating Room
  - Pharmacy
  - Facilities Evaluation Committee

  **TOTAL MEMBERSHIP - 77 members**

- **Price Parity**
- **Standard Information System**
- **Product Standardization**
- **Utilization**
Gathering, Correlating and Disseminating Information

- Legacy MIS systems
- Wisdom I & II, Owens and Minor
- Lawson
- Manufacturer purchasing histories - derived from manufacturers / late
- e-telligence - Allegiance (evaluating)
- Distributor reports
- Novation compliance reports
- Enable improvements
Lawson provides significant advancements in e-capabilities.

The market is offering opportunities to use new entities as a clearinghouse for all purchasing transactions.

Pro’s:
- One stop shopping (faster access to vast supply formularies).
- Simplifies the number of (electronic) links needed to be maintained with various vendors.
- Simplifies the addition of new vendors.
- Alignment and synching of contracts and pricing on a more timely and global scale.

Con’s:
- All of our data in the hands of one vendor (potential security issues).
- Cannot replace our existing Materials I.S. Potential for duplication of system functionality.
- Most of the vital links (I.e. GL/AP) needed to make e-commerce work as advertised without Materials System are still “Vaporware.”
- Additional “middle man” functions of most E-Commerce are already available through YNHHS’ Lawson MMIS.
What has eCommerce Done for YNHHS?

- Controlled off-contract purchases
  - Templates
  - Online Contracts
- Reduced pricing disparities
  - Contracts
- Better decisions
  - Reports from Lawson
- Productivity improvements
eCommerce at YNHHS

YNHHS ERP
(Formulary, Item Master Contract Mgmt etc)

b2b Product Info Exchange

“Aligned” partners
(Ideally the majority of YNHHS Vendors)

PDADS
Units
OR
DI
Cath Lab

Lawson

Marketplace@novation

EDI

“Unaligned” vendors

Wisdom II
(Decision support & analytics)

MFG

Distr.

MFG

Service Vendor

Allegience
Owens & Minor

WPDADS:
Units
OR
DI
Cath Lab

Lawson

Marketplace@novation

“Unaligned” vendors

Wisdom II
(Decision support & analytics)
Order Entry
- Online
  - Web Reqs
  - Lawson (LID)
  - Internet Link for Office Supplies
- Internet Sourcing
  - Shopping (business only)

Lawson
- Single Item Master
- Vendor master
- Contracts
- DB/Reporting
- EDI/Fax
B2B

- Neoform / Marketplace@Novation
  - Started 4/01
  - $25MM annual rate
  - 60 POs per day
  - Good reporting
  - Limited vendors
    - Owens & Minor
    - Allegiance
    - Other

- GHX
  - Manufacturer / specialty items
  - Recent partnership with Marketplace@Novation
  - Still waiting...
eCommerce at YNHHS

- Hoped for results...
  - Reduce paper (autofax/receipt)
  - Tracking orders
  - Access to Info for decision-making

Net Result is better service at a lower cost
YNHH ranks 6th in total transactions out of 178 organizations
YNHHS ranks 4th in total transactions
YNHHS averages 65 Purchase orders per day
YNHHS average transaction time is 120 seconds from YNHHS to supplier
Marketplace@Novation Next Steps

- Connect Greenwich Hospital
- Utilize Marketplace Release 2.4
  - Order Manager, Report Manager, Links to CIS
- Convert manual suppliers to EDI
  - EM Parker, Dade Behring, Sims Portex, Roche, Nycomed
- Continue to participate in Task Forces
  - Formal feedback and input into MP
- Volunteer to partner in Beta Reviews
  - Reporting and Analytics, Contract Manager, Price Collaboration
- Leverage eCommerce
  - Reduce re-work, minimize price discrepancies/overpayment
- Promote Marketplace@Novation
  - More suppliers and more members
Pitfalls

- More vendors in Marketplace@Novation / GHX
  - User Task Force
- User training in previously low-tech areas (receiving, distribution)
  - Key Issue
- Transition to new system required significant increase in data requirements
  - Leading to no transaction efficiency
- More structured approach
  - Less ways to get around the system
Savings

- Pharmacy
- Cath Lab
- Linen
- Document Center
- PCs
I Wish I Knew These Things Before I Got Into the Business

Or … Lessons Learned

- Aggregated purchasing without compliance saves very little
- Unmanaged off-contract purchasing is very expensive
- Trading partners must reduce low and/or no value processes in order to save
- “He who dies with the most information wins!”
Things to do Differently

- Training
- Manage Expectations - Up and Down
- Reporting Limitations in Lawson
  - Wisdom II
  - Crystal
Revenue Enhancement
Pre-eCommerce

- Manual Eligibility verification (i.e. telephone)
- Multiple non-standard methods and formats of Claim submission:
  - Limited Electronic EDI - 837
  - Electronic Print image (NEIC Clearing house)
  - Paper bills via US Mail
- Multiple non-standard methods and formats of Remittance:
  - Limited Electronic EDI-835
  - Electronic non-ANSI
  - Paper reports via US Mail - manual posting
- Secondary Billing:
  - Manual recording of Coins/Deductibles
- Multiple contact points and systems for bill and remittance processing.
Enhancing Revenue through eCommerce

2001/2001

- Automated Electronic Eligibility verification.
- Limited & standard method and format of Claim submission:
  - Increased % of Electronic EDI - 837
  - Paper bills via US Mail
- Limited & standard method and format of Remittance
  - Electronic EDI-835
  - Paper reports via US Mail - manual posting
- Automated Secondary Billing,
  - Automated recording of Coins/Deductibles.
  - Automated EOB generation.
- Limited contact points and systems for bill and remittance processing (Clearinghouses can consolidate diverse transactions).
- Additional functionality.
  - Electronic claims tracking.
  - Electronic claim status inquiry and response.
**Benefits**

**Lower days in AR, due to:**
- Eligibility Verification
- Electronic billing
- Electronic Remittance
- Claim status & prioritization

**Lower Staffing Requirements, due to:**
- Automated Eligibility Verification
- Standardization of Bills
- Standardization of Remittances
- Fewer points of contact

**Additional Benefits:**
- Lower maintenance costs
- Mandatory availability of payor direct electronic connections
Intranet

Current Sites:
- System and Hospital Intranet
- Clinical Workstation
- Healthflash

Core Functionality

Priority One Functionality
- CBT’s
- Content Management
- Executive Information System/Balanced Scorecard
- Access from anywhere (Extranet)
- Roles Based Authentication
- Interactive Project Management Tools (Healthflash)

Priority Two Functionality
- Departmental Customization
- Internal Recruitment Process
- Customized Views by User

Priority Three Functionality
- Employee Directory
- Document Management (currently ltd.)

Priority Four Functionality
- Form Maker
- Clinical Protocols
- Employee Self Service

Employee Health
FAQ’s
Advanced Searching

Current Sites:
- System and Hospital Intranet
- Clinical Workstation
- Healthflash
YALE NEW HAVEN HEALTH

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WEB APPLICATIONS

Lawson Web Reqs
MDlink
Healthflash
YNHHS Staff Directory

UPDATES AND NEWS

What is Manager Self-Service? Manager Self-Service is a tool for managers to maintain current data on their most important assets, their employees. Managers will have user-friendly, Web-based access to human resources information for employees within their span of control. (more...)

If you have any questions or comments please contact us.

DOCUMENTS

Graphic Design Standards
JCAHO Manual

RESOURCES

HIPAA
Lawson Web Training
Directions
System Fact Sheet

DEPARTMENTS

Information Systems
Welcome to The YNHH Clinical Workstation...

Clinical Apps
- CCSS
- Chartview
- ClinicalLab
- Diagnostic Imaging
- MDLink
- ESA
- Logician
- Surgical Pathology
- PACS
- ECGs

Administrative
- Format the A Drive
- GroupWise E-mail Web Access
- Biomed E-mail
- MS Word
- Housestaff Training
- Delineation of Clinical Privileges
- YNHHS Directory
- EPIC
- CW Locations
- ANSOS Acuity

Library/Resources
- Micromedex
- OVID
- e-Journals
- e-Textbooks
- Up to date
- Human Resources
- Policies/Documents
- Infection Control Manual
- YNHHS Documents
- NOMP
- MDConsult
- Ethics manual
- Formulary
- Local Pharmacies
- Bloodborne Pathogen Training
- YNHHS Abbreviations
- YSM Library

New Links
- Up to Date
- Logician

Procedure Recorders
- Medical
- Emergency Department
- OB/GYN
- Surgery

News
- Ovid will be changing in September
- Logician will soon be on all Clinical Workstations

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Last Updated: Aug 22, 2001 - LM
System Approach

Objectives are:
- Lower Costs
- Increased interactive functionality- (personalization, nursery, calendar…)
- Reduced burden on multiple hosting companies
- Continue to strengthen the brand that we have already established

Shared functionality such as calendar, employment, physician referral (by area), etc.
- Calendar of events to be initially displayed with “initiating” hospital’s information
- Physician Referral by Zip Code. Will take feeds from Call Center.

Important that we do not lose functionality that we currently have
**Physician Portal**

**MDlink**

Guiding Principles:
- Single view of clinical data across the system
- Secure
- Integrates into MD and Office workflow
- Easy access

**Connectivity to Hospital Systems**
- Remote Access to Hospital Clinical Information System
- Reference Materials - MDConsult and Dxplain
- Access to Envoy for Eligibility and Referral Management
- Secure eMail Messaging

**True Web Integration & Patient Interaction**
- End of visit doc, annotated results, clinical decision support, super bill templates
- Patient entered clinical data and health maintenance alerts

**EMR Functionality**
- Interfaces to/from current hospital systems for results to be displayed using a web browser
- Drug/drug/allergy alerting
- Structured Messaging - prescriptions, appts
- Patient Interaction

**Billing**
- Secure eMail Messaging

**Guiding Principles:**
- Single view of clinical data across the system
- Secure
- Integrates into MD and Office workflow
- Easy access
### Carter, Mel

**10y Male MRN: 603540**

#### Results Viewer

- **Show only tests with results**
- **Print**

**08/02/2000 02:17 PM**

#### CBC

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eHealth at YNHHS

Physician/Patient Strategy

The Real Action!

- Secure Interactive Patient Care
- Physician Workflow
- Physician Patient Interaction
- Clinical Messaging
- Tools & Resources
- Interactivity

Physician Reference Content
- YSM
- MDconsult

Integrated Clinical Content
- Lab
- Diagnostic Imaging
- ADT
- Pathology

Tools & Resources
- Envoy
- PHO Site
- Structured Messaging
- Prescription Writing

Consumer

Health Content
- LaurusHealth

Integrated Content
- MyHealthRecord
- Calendars
- Pre-Reg Forms
- Current Web Sites

www.ynhhs-mdlink.org

www.yalenewhavenhealth.org
Business Case Analysis: Physician Strategy
Why a Business Case?

- We needed to
  - evaluate how opportunity and risk were balanced in this initiative
  - clearly identify the benefits and how it helps us to achieve our strategic objectives
  - evaluate whether potential Return on Investment could help to fund some of the costs
  - achieve buy in from the hospitals and Sr. Management

- ROI Process
  - Developed teams for evaluating each area
  - Analyzed Return on Investment and Soft Benefits
  - Held facilitated focus groups with physicians and their office managers
Qualitative Benefits

Improve relationships with physicians and patients

Improve quality of care and patient safety (reduce adverse drug events)

Provide secure, accurate, and timely clinical information to physicians at the point of care

Be ready to support the demand for patient interactivity / patient management of medical records

Meets our Objectives

What are our competitors doing to attract doctors? attract patients?
The Real Dollars

- Revenue Enhancements
  - $ Volume growth - inpatient and outpatient
  - $ Improved billing and reduced claims denials

- Expense Reductions
  - $ Reduction in redundant procedures
  - $ Reduction in AR Interest
  - $ Reduction in Malpractice Suits with improved documentation

- Expense Avoidance
  - $ Incremental costs related to increases in outpatient volume
  - $ Contribution margin related to the maintenance of inpatient admissions
  - $ HIPAA consulting services (if outsourced)
What did we get out of this?

- The process helped us
  - Attain organizational buy in - including senior management as well as physicians
  - Come to a better understanding of what is important to us
  - Learn more about the Internet and how it impacts healthcare
  - Realize that the cost to develop a similar solution on our own would be astronomical and that an ASP solution is the preferred option

- Value identified will be used as metrics for success
What does it mean?

- Clearly, we are unable to justify eHealth initiatives with ROI alone.
- Soft benefits must play a significant role in the decision making process.
  - Improved physician relationships, quality of care, and patient satisfaction may not have a direct monetary benefit, but nevertheless are vital to our organizations.
- Being an early adopter is largely a leap of faith, but due diligence helps to ease the trepidation.
  - Budget constraints.
  - Increased competition.
  - Higher patient and physician expectations.
  - All leads to no easy answers.
Primary Inhibitors for Physician Strategy

- Plans to take a system approach
  - Slower decision making
  - Need for an Enterprise Master Person Identifier (EMPI)
  - Design / strategy around the conversion to standard Internet sites

- Maturity of public sites

- Security
  - Challenges in incorporating security into Physicians’ workflow
  - Lack of stability in the market place for security solutions
General eCommerce Barriers

◆ Organizational Barriers
  – Organizational and reporting relationship structure of the eHealth group
  – Funding of initiatives
  – Culture and operating orientation of the overall health care organization
  – A process for approving and prioritizing initiatives according to ability to support goals
  – Need for buy in from Senior Leadership, physicians, and others at all levels in the organization
  – Uncharted territory

◆ Technical Barriers
  – Security
  – Performance and reliability
  – Uncharted territory
Questions?

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