Sustaining Standardization and Harmonization in the Multi-Hospital Laboratory

Ochsner Health System

Dr. Gregory Sossaman
Chairman of Pathology and Laboratory Medicine
Ochsner Health System

May 1, 2012
Ochsner Health System Overview

- Ochsner Health System, located in Southeast Louisiana, is a non-profit, academic, multi-specialty, healthcare delivery system dedicated to patient care, research and education that
  - Began as a clinic and hospital
  - Includes 8 hospitals and over 35 health centers
  - Employs > 800 physicians in over 90 medical specialties and subspecialties
  - Conducts > 300 clinical research trials annually
- Ochsner has employed a laboratory model of centralization with a core laboratory located in the main hospital with one LIS
Ochsner Medical Center Only Louisiana Hospital Ranked Top 5% in Nation

Nationally Recognized for Outstanding Patient Outcomes by HealthGrades Quality Study

NEW ORLEANS, Jan 26 /PRNewswire/ -- Ochsner Medical Center, 1514 Jefferson Highway, announced today its strong patient outcomes have ranked it among the top 5% in the nation for exceptional care. HealthGrades, the nation's leading independent healthcare ratings organization, analyzed patient outcomes at each of the U.S.'s 5,000 hospitals from 2002-2003 and only 5%, or 250 hospitals, are being recognized with the HealthGrades Distinctly A hospital for Clinical Excellence™ award.

"This award is a reflection of our mission and the promise we make to our patients every day, to serve, heal, lead, educate and innovate. Patients expect to receive the best care, they put their lives in our hands, and this award shows that we've delivered on that promise," said Dr. Patrick Quintan, CEO, Ochsner Health System.

Today's announcement marks the 8th Annual Hospital Quality and Clinical Excellence Study by HealthGrades. This study highlights hospitals which have demonstrated that their patients had risk-adjusted mortality rates, on average, 29% lower than all other hospitals and risk-adjusted complication rates, on average, 3% lower than all other hospitals. Results are risk-adjusted, objective data based on patient outcomes of 26 common Medicare inpatient procedures and diagnoses.

The study states: "Patients who choose to receive their care at a Distinguished Hospital for Clinical Excellence will have a lower risk for an adverse clinical outcome relative to all other hospitals."

THE 100 TOP HOSPITALS: NATIONAL BENCHMARKS

MAJOR TEACHING HOSPITALS

Hospital City, State
University Medical Center Tucson, AZ
UC San Diego Health System San Diego, CA
North Shore University HealthSystem Evanston, IL
Rush University Medical Center Chicago, IL
Advocate Illinois Masonic Medical Center Chicago, IL
Advocate Lutheran General Hospital Park Ridge, IL
Northwestern Memorial Hospital Chicago, IL
Ochsner Medical Center New Orleans, LA
Providence Hospital and Medical Center Southfield, MI
Mayo Clinic - Rochester Methodist Hospital Rochester, MN
University Hospitals Case Medical Center Cleveland, OH
Doctors Hospital Columbus, OH
Geisinger Medical Center Danville, PA
Vanderbilt University Medical Center Nashville, TN
Scott and White Memorial Hospital Temple, TX
Before 2005

• Ochsner – Hospital and Clinic
• Network of clinics throughout region
• Laboratory network based on standard “cookie cutter” approach to services and setup
• Slow expansion with addition rehab facility, strategic partnerships
• Volume at Core Lab “inreach”, little outreach
Standardization

- High degree of harmonization of results with use of single LIS utilizing same test codes throughout system
- Test codes define reference intervals, reportable ranges, critical values
- Ochsner utilizes common EMR platforms in all sites (homegrown EMR and LIS)
Things change
Ochsner never stopped seeing patients .... even though 70 percent of its employees lost their homes.
At **Ochsner Health System**, we lived this lesson five years ago. When Hurricane Katrina hit, we faced a $70 million operating loss, more than $27 million in property damage, and 4,000 employees who relocated or were displaced. It would have been easy for us to fall victim to the storm. Instead, we tapped into a culture of resilience to not only survive Katrina but ultimately grow from a single hospital in a struggling community to a thriving regional health care system.

Dr. Patrick Quinlan
CEO, Ochsner Health System
Prime Location, Needs a Little
Journey since Katrina

- Three local hospitals purchased in 2006, fourth in 2008
- After purchase of community hospitals, institutional decision to achieve cost savings through migration to common IT platforms (same HIS, RIS, LIS etc) at all sites
- Lab challenge: determine which tests could be grouped within one display in the EMR
Standardization

- High level of harmonization of results with use of single LIS utilizing same test codes throughout system
- Test codes define reference intervals, reportable ranges, critical values
- Ochsner utilizes common EMR platforms in all sites.
- Majority of lab results harmonized (exceptions include those with known biases that require own codes)
- True harmonization requires instrumentation standardization
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Creating Harmony in and Across a Health System

Integration + Standardization = Harmony
Definitions Used

**STANDARDIZATION**: among laboratories includes the use of same platforms, methodologies, reagents and procedures.

**HARMONIZATION**: among laboratories is the ability to generate results that are statistically combinable without additional manipulation.

**HARMONIZATION PROCESS (per CLSI)**: is a process of recognizing, understanding, and explaining differences while taking steps to achieve ... uniformity
Most analytes tested by clinical laboratories can be measured by more than 1 method.

Many physicians do not realize that many tests performed by 1 method cannot be reliably compared with the same tests performed on another platform.

This lack of comparability presents problems for physicians, who must consider testing location when interpreting results.

Lack of comparability also creates barriers to sharing laboratory results across healthcare systems and can have adverse consequences for patients.
### Standardization / Integration of a Health System

<table>
<thead>
<tr>
<th><strong>Standardization</strong></th>
<th><strong>Integration</strong></th>
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<tbody>
<tr>
<td>Common products, procedures, processes and practices</td>
<td>Solid and consistent linkage of common products, procedures, and practices</td>
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<tr>
<td>Requires selection and consistent use of identical or nearly identical materials and procedures</td>
<td>Requires a methodical system-wide approach of adding or deleting services, products or practices</td>
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<tr>
<td>Same clinical protocol for all ED stroke patients</td>
<td>Same LIS and middleware with consistent rules</td>
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<tr>
<td>Same HbA1C method to monitor diabetes patients</td>
<td>Consistent training / continuing education protocols</td>
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<tr>
<td>Same reference ranges and test codes</td>
<td>Consistent inventory management / ordering</td>
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**Adding a new hospital or facility into the Health System requires both Standardization and Integration over time**

**Definitions:**
Creating Harmony across Ochsner

System Wide Harmony

A system wide approach to building and maintaining standardization and integration to achieve consistent laboratory services and patient care

Requires ongoing commitment and measurement to verify that individual components perform as expected

- **System Wide Harmony** allows for:
  - Selection of scalable instrumentation and middleware
  - Easily accommodated growth due to efficiencies gained
  - System-wide QC analysis through middleware
  - Migration to new LIS
  - Easier transition to enterprise (automation) solution
How to Get There

- **STANDARDIZATION**
  - Same platforms/analyzers
  - Same reagents - esp calibrators, QC material & EQA programs
  - Same lot # of reagents if possible
  - Same test protocols

- **HARMONIZATION**
  - Introduced by ongoing monitoring of the EQA & QC data of the network & trouble-shooting out-of-specification instances.
  - Acceptable harmonization can sometimes be achieved without standardization – more difficult – less benefit
Stated Lab Goals (Analytic)

- Decrease number of instrument platforms
  - Decrease costs, footprint
  - Decrease number of tubes drawn and run
  - Decrease labor requirements (one tech per instrument in current configuration)

- Reduce TAT in general w/emphasis on key assays (i.e. Troponin)

- Minimal downtime and maintenance/startup time
  - Ease of operator use
  - Ready-to-use reagents

- High throughput
  - Accommodate anticipated increase in volume
  - >10% per year for the next 5 years

- Excess capacity
  - Expanding menu & volume
Proposed Laboratory Process Changes: Summary

By implementing the proposed changes in the instrument configuration…

- The flow of specimens will be more linear
- Instruments that run high volume tests are closer to the specimen point of entry
- Less travel time for staff between instruments and departments in lab
- Opens space for future development
Ochsner Laboratory Services

Consolidation & Integration Opportunities

Current & Proposed
Opportunities: Immuno-Chemistry Consolidation

Reduction of the number of analytical systems in the laboratory

- Reduce and consolidate reagents, proficiency material, calibrators, controls
- Reduce the time spent on performing maintenance on “extra” equipment
- By consolidating the IA instrumentation, there is an opportunity to bring in house testing that is currently being sent out
- By migrating the immunochemistry testing onto 1 platform
  - Decreases the need for batching
  - Less time spent processing specimens
- By consolidating instrumentation, space will be freed up for further consolidation considerations
Ochsner Pathology and Laboratory Services
Current Platforms

- 2 Abbott Aerosets
- 1 Chiron Li
- 1 Chiron iCa
- 2 Tosoh G7
- 2 Bayer Centaurs
- 1 Roche Cobas Mira
- 4 Biosite Triage Meters
- 1 Abbott AxSYM
- 3 Abbott TDx
- 1 Roche Cobas Mira
- 1 Abbott IMx
- 1 Abbott iSTAT
- 1 Dade BN II
- 1 Abbott iSTAT
- 1 DPC Immulite

Send Outs
Ochsner Pre-Standardization Platforms

Standardization • Integration = System Wide Harmony

Main Campus

Kenner

West Bank

St. Anne

BR Clinic

Northshore

Covington Clinic

Baptist

Baton Rouge

42 Analyzers
19 Platforms
Ochsner Post-Standardization Platforms

Standardization • Integration = System Wide Harmony

Main Campus

Kenner

West Bank

31 Analyzers
9 Platforms

St. Anne

BR Clinic

Northshore

Covington Clinic

Baptist

Baton Rouge
Roadmap

Form a Harmonization Group – all labs represented
  – Include Techs, Lab Mgrs and Lab Physicians – critical
  – Develop consensus on platforms & methods

Develop common SOPs
  – For assay methods
  – For introduction of new QC lots (Calibrators as well if poss)
  – For maintenance, calibration & QC actions
  – For Trouble-shooting

Develop consensus on quality monitoring activities
  – Common QC & EQA programs
  – Certification by centers of excellence
  – Sample exchange (key)
  – Regularly meetings to review monitoring results.
Ochsner Strategic Direction

**Our Mission**

We Serve, Heal, Lead, Educate and Innovate.

**Our Vision**

Ochsner will be a global medical and academic leader who will save and change lives. We will shape the future of healthcare through our integrated health system, fueled by the passion and strength of our diversified team of physicians and employees.

**Our Imperatives (6)**

- **People:** Our most valuable asset.
- **Quality:** Error-free care that’s affordable.
- **Loyalty:** Patients, families & physicians.
- **Stability:** Financially sustainable and growing.
- **Academics:** National leader with global impact.
- **Community:** Serving the greater need.

**Strategic Programs (18)**

- Change Kids, Change the Future
- Industry Thought Leader
- Community Alliances
- Collaborative Research
- Future Clinicians
- Retail Services
- Margin Optimization
- Adequate Reserves

**Service Lines**

- Change Kids, Change the Future
- Industry Thought Leader
- Community Alliances
- Collaborative Research
- Future Clinicians
- Retail Services
- Margin Optimization
- Adequate Reserves

**Strategic Tools**

- Technology
- Lean/CAP/WO
- Customer Research
- Analytics
- Educ/Dev (OLI)
- Op Cycle
- Corporate Svcs
- Governance
Current Assumptions: Vision of 2012

- CAP System Accreditation
- System wide Anatomic Pathology Department
- Common LIS: potentially a new platform
- Ochsner Blood Center services all facilities
- Standardized Policies and Electronic Document Control
- Specimen tracking
- Service Culture
Attributes of a Seamless Service Line

- System Quality Management Program
- Any patient any where (in the system)
- Standardization and Centralization (to the extent possible)
- Enterprise EMR = Electronic (Patient) Medical Record
- Enterprise Information systems
- Standard Policies
- Assumes effective courier system
Clinical Lab Testing Volumes: Requesting versus Performing

Clinical Lab Testing - Requesting Location 2009

- OMC - St Anne: 111,341 - 3%
- Ochsner Baptist: 86,555 - 2%
- Southshore Satellites: 441,619 - 11%
- OMC - Westbank: 376,893 - 9%
- OMC - Kenner: 299,634 - 7%
- Baton Rouge Satellites: 372,246 - 9%
- Northshore Satellites: 275,491 - 7%
- OMC - New Orleans: 1,892,542 - 46%
- OMC- Baton Rouge: 264,576 - 6%

Clinical Lab Testing - Performing Location 2009

- Ochsner Baptist: 63,294 - 2%
- OMC- Baton Rouge: 254,278 - 6%
- OMC - Kenner: 282,959 - 7%
- OMC - Westbank: 365,481 - 9%
- OMC - New Orleans: 2,887,582 - 70%
- OMC - St Anne: 99,810 - 2%
- Baton Rouge Satellites: 77,367 - 2%
- Northshore Satellites: 40,902 - 1%
- Ochsner Baptist: 63,294 - 2%
- Southshore Satellites: 44,063 - 1%
- Baton Rouge Satellites: 77,367 - 2%
- Northshore Satellites: 40,902 - 1%
Clinic
$ 125,525,254 - 29%

OP Ancillary
$56,552,391 - 13%

Other
$2,637,533 - 1%

Outpatient
$79,991,215 - 18%

Inpatient
$175,199,857 - 39%

PALM Gross Revenue 2009
## PALM: Attributes of a seamless service line

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Assumptions</th>
<th>Current State / Impact</th>
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<tbody>
<tr>
<td>Quality Mgt Program</td>
<td>System CAP Accreditation</td>
<td>25% System CAP Application due January 2011</td>
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<tr>
<td></td>
<td>Standard system metrics</td>
<td>Efficiency and opportunity costs</td>
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<td>System PI committee</td>
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<tr>
<td>Standardization of technical lines</td>
<td>Utilize EPAC process</td>
<td>50% Cost avoidance and savings</td>
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<tr>
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<td>Equipment and reagent std</td>
<td>(2009 standardization efforts = $400K savings)</td>
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<td>Process verification/maintenance</td>
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<tr>
<td>Any Patient Anywhere</td>
<td>Patient centric services</td>
<td>50% Quality and Customer satisfaction</td>
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<td>Access</td>
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<td></td>
<td>Service oriented culture</td>
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<tr>
<td>Centralize whenever possible</td>
<td>Central Histology Lab</td>
<td>25% Efficiency and opportunity costs</td>
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<td>Hospitals as rapid response labs</td>
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<td>Separate reference lab</td>
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## PALM: Attributes of a Seamless Service Line

<table>
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<tr>
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<th>Current State/Impact</th>
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<tbody>
<tr>
<td><strong>EMR</strong></td>
<td>Hospital EMR are given Physician practices open IT issues</td>
<td>75% (Ochsner EMR only) Physician satisfaction</td>
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<tr>
<td><strong>Courier</strong></td>
<td>Key to specimen transportation and centralization</td>
<td>25% (OHS RFP in process) Operational requirement</td>
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<tr>
<td><strong>Standard Policies</strong></td>
<td>Standard policies Document control Standardized Procedures / Processes</td>
<td>25% Operational requirement</td>
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<tr>
<td><strong>IT</strong></td>
<td>Common IT platforms Interfaces to Enterprise systems Reporting/printing for community docs</td>
<td>50% Operational requirement</td>
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Current state- 2012

- Tremendous amount of work
- Are we well positioned for the future?
- The answer is... not really
- "You've got to be very careful if you don't know where you're going, because you might not get there." or "If you don't know where you are going, you will wind up somewhere else."
Ochsner’s Goals: Vision of 2013

- Quality, Service and Market Share Leader in Submarkets
- OMC Regional Referral Center of Excellence
- Single Integrated EMR – Inpatient and Outpatient (Epic)
- Ochsner Accountable Care Network (300-500 Community MDs)
- Nationally Recognized Leader in Quality & Utilization
- Industry Thought Leader, Gov’t. Influencer, Employer Resource
- Academic Excellence – Nearly 170 UQ Students
- > $2.1B Net Patient Revenue, 3% Op. Margin, > 100 days Cash
- More Lean Organization – Focus on Cost Reduction

In 2013, Ochsner will be the Integrated healthcare Delivery System that Effectively Manages Populations of Care
Real Reform Must Come From Us

New National Health Reform Law

Does:
- Expand Insurance Coverage
- Impose Insurance Rules – Requirements for Medical Cost Rates
- Fund Demonstration Pilots
- Institute Quality Based Penalties
- Cut ~$500 Billion in Total Medicare Payments
  - $200B - Physician
  - $156B - Medicare Advantage
- Increase Medicaid Enrollment

Opportunity:
Profit Pools Will Shift Among Healthcare Stakeholder Groups

Insurers
Medical Device Companies
GPO's/Distributers
Pharma Companies

Does Not:
Reform the Organization & Delivery of Healthcare

This is Our Job
We have to Take the Lead
Successful Systems of the Future Will…

- Clinically, Economically, Structurally
- Integrate with comprehensive Network of Services

- Manage Transitions across entire System of Care
  (1/4 heart failure patients re-admitted in 30 days)
- Integrate Patient Health Records into single EMR

- 14% Avg hospital cost reduction needed to sustain current margins at Medicare rates
- New innovative Models of Care including eHealth
- Control cost by focusing on Wellness & reducing unnecessary Utilization (70% behaviorally driven)
- Be Quality Leader in both Acute & Chronic Care

Source: Sg2
"The Times They are A Changing"

Current State
- Uninsured
- Fragmentation
- Fee For Service
- Total Choice of Providers

Metrics of Today
- Inpatient Admissions
- Visits/RVUs
- Cost Per Procedure
- Mortality/Complication Outcomes

Healthcare Reform
- Insured
- Coordination of Care
- Payment Reform
- Accountable Care Networks

Metrics of Tomorrow
- Avoidable Admissions
- Unique Patients/Medical Utilization
- PMPM Cost
- Mortality/Complication Outcomes
What’s Different....... 
✓ Better Quality & Pay for Performance 
✓ Better Information Technology (EMR) 
✓ Engagement of Patients (Wellness & Behavior) 
✓ Engagement of Employers & Insurers
Ochsner Accountable Care Network

A clinically integrated network that engages providers & payers in community health improvement and cost containment through a full range of payment models incl. shared savings opportunities.

New “Pluralistic” entity

Ochsner Accountable Care Network

Ochsner

Patient

Consistent contract terms

Aligned goals and incentives – Speaks with one voice

Joint Contracting

Ochsner Hospitals

Ochsner Group Practice

PCPs

Specialists

SNF

Incorporate full continuum

EPIC

BCBS

Aetna

United

Humana

Cigna

BDC Advisors LLC
We Will Earn of Future Rate Increases by Developing Savings & Sharing in the Value We Create – Today it Goes to the Insurer
Network Contracting Model

Funds the Community Physician’s ability to provide Quality Patient Care through Bonus Pool

Ochsner Accountable Care Network

Ochsner Accountable Care Network Data Warehouse
- Registry
- Claims data
- Other
Stakeholder Value Propositions

*Network has Potential to Create Value for All Stakeholders*

**Value for Community Physicians**
- Align with recognized Quality Leader
- Gain Access to Quality Bonus Pool
- Potential Subsidy for Leading EMR
- Ochsner on Call for Quality of Life
- Convenient Multi-Payer Model

**Value for Employers/Payers**
- Demonstrate Real Value
- Differentiate vs Insurance Exchange
- Reward Consumers for Behaviors
- Mitigate Premium Increases
- Manage Cost, Quality, and Risk

**Value for Ochsner Physicians**
- Accountable for more Population
- Less Fragmented Care
- Sharing of Clinical Best Practices
- Increased Quality & Efficiency
- Gauge fit of Potential Additions to the Group
Lessons learned

• EMR or LIS changes great time to standardize
• One physician group and/or unified leadership structure greatly increases rate of adoption
• Physician/administrator partnership
• Systems require systems (i.e. health networks complicated to standardize, health systems x3)
Lessons learned

• **Staying** standardized is harder than becoming standardized; both take substantial time and leadership

• Two key components- LIS and instrumentation

• Local autonomy will always be an issue but philosophy is key...
So, remember
Questions?
References

• Inter-Laboratory Harmonizationion Theory & Practice
  Dr J Penman