MUIRLAB

The Future of Laboratory Medicine

Extract the Right Metrics

from your LIS to Drive Workflow Improvements

Presentation Objectives

- **Key Terms**
- **QM Principles**
- **Issues with LIS**
- **What Metric**
- **Technical Solution**
- **Case Study - LBOO**

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Key Terms

- **Business Intelligence (BI)**
- **Business Analytics (BA)**
- **Clinical Insight (CI)**
- **Clinical Analytics (CA)**
- **Object**
- **Document**
- **Operational Insight**

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Key Terms

Business Intelligence (BI)
Analyzing business data. Business Intelligence uses a consistent set of metrics to both measure past performance and guide business planning, which is also based on data and statistical methods.

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Key Terms

Business Analytics (BA)
Skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning. Based on data and statistical methods.

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Key Terms

Clinical Insight (CI)
Analyzing clinical data. Clinical insight focuses on using a consistent set of metrics to both measure past performance and guide clinical process. Focus on patient outcomes, compliance, quality, longitudinal trending for disease tracking and other associated measurable clinical data.

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Key Terms

Clinical Analytics (CA)
Continuous iterative exploration and investigation of past clinical performance indicators potentially guiding clinical process planning, outcomes, quality and performance. Developing new insights and understanding of clinical performance based on data and statistical methods.

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Key Terms

Object
Referring to anything that has dimension or may be capable of action.

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Key Terms

Document
A logical collection of like or related information in any format.

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Key Terms

Operational Insight
Real time analysis of business or clinical data.

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QM Principles

Uniting laboratory IT systems with quality management creates a framework to design lab processes and systems engineered to be scalable, repeatable and cost-effective while driving quality improvement.

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QM Principles

- **Provide leadership**
- **Involve customers**
- **Involve people**
- **Organize activities**
- **Organize processes**
- **Demand improvement**
- **Focus on facts**
- **Nurture relationships**

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QM Principles

Provide leadership

Provide clarity of direction with well understood goals and objectives. Create framework of involvement and participation to establish unity of purpose and direction for the organization.

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QM Principles

Involve customers

We depend on our customers (internal and external) and must understand their current and future needs. This is particularly important as we move forward with implementation of Healthcare Reform.

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QM Principles

Involve people
People at all levels are the core asset to any organization. People by definition are your intellectual capital.

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QM Principles

Organize activities
Desired outcomes are more effectively and efficiently realized when interrelated activities and resources are grouped and managed as a cohesive process.

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QM Principles

Organize processes

Identify, group and manage interrelated processes as a system.

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QM Principles

Demand improvement

Processes and systems are not static; they continually evolve and by default create opportunities to continually improve.

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QM Principles

Focus on facts

Effective decisions are based on analysis of data; rendering information which can be acted upon.

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QM Principles

Nurture relationships

We depend on our venders and suppliers; to create value our interaction must be mutually beneficial.

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Issues with LIS

- **Optimized for transactional data**
- **Highly configurable**
- **Standard management reports lacking**
- **Investment in custom reporting tools**
- **Requires data analyst in addition to application analyst**

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Issues with LIS

Optimized for transactional data

LIS systems store limited aggregated information. In addition while highly configurable they are unable to perform all the abstractions required by an organization.

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Trouble with LIS

Highly Configurable

The double edged sword; highly configurable allows systems to be highly customized to clinical/business requirements… it also makes them complex to support and for your LIS staff to keep on top of.

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Issues with LIS

Standard Management Reports Lacking

Another impact of highly configurable systems… Unless you implemented a "standard" system, "canned" reports are largely useless.

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Issues with LIS

Investment in Custom Reporting Tools

Most organizations have invested in additional reporting tools whether Crystal Reports, Desktop Intelligence or Business Intelligence… Leverage the organizations investment in these tools!

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Issues with LIS

Requires Data Analyst in Addition to Application Analyst

It is critical to develop both data and application analytical skills within your team. If your LIS team doesn't understand the fundamental database structure of your systems, you will be unable to predict impact of process / configuration changes on your data, and thus your ability to successful measure the change.

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What Metric

Key performance indicators in addition to workflow data points should be considered:
– Volume
– TAT
– Clinical Performance
– Profitability
– Audit Systems

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What Metric

Volume
What volume metric do you want to measure and for what purpose? Tests performed, billable tests performed, billable tests, requisitions counts, specimen counts, etc.; all the above and more?

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What Metric

TAT
What perspective do you want to measure?
Physician order to result received (Physician
view) or specimen received to result issued
(performing lab view) or any possible
combination of the workflow?

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What Metric

Clinical Performance
Which metric to choose? What frequency is
a test ordered, how is that linked to patient
outcome? Do we have the data links
established to make this association? Can
you include it into your CI strategy?

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What Metric

Profitability

What profitability metric? Clients, business segments, lab tests, territories, sales staff? Can you include it in your BI strategy?

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What Metric

Audit Systems

Which workflows (systems)? Registration and order entry workflow? Audits to support proactive intervention to ensure data quality assurance?

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Technical Solution

- **Map your LIS Database**
- **Integrate into Dashboard**
- **Integrate into BI Strategy**
- **Cross Discipline Support Team**

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Technical Solution

Map Your LIS Database (Universe)

Leveraging investment in Business Objects; mapped universes (smart objects that define data relationships) for our lab systems

– HLAB

– HBB

– AP

– HLF

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Technical Solution

Integrate into Dashboard (SAP Xcelsius)
We have created source types that allow longitudinal roll ups of data (time objects) capable of delivering pre-aggregated results. These objects traverse repository and OLTP data stores delivering immediate operational insight and warehouse ready data points.

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Technical Solution

Integrate into BI / CI Strategy
- Build an operational structure for warehousing reusable data elements
- Leverage structured reusable objects that return consistent, accurate real-time results
- Consolidate methods for fetching data into a single class of reusable data objects

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Technical Solution

Cross Discipline Support Team

– Implement Support Team with stakeholders from each area of discipline. Members are chartered to coordinate extraction, storage, aggregation, warehousing and architecture.

– Team would provide quality, business, clinical, strategic and financial information to the organization utilizing a common tool set
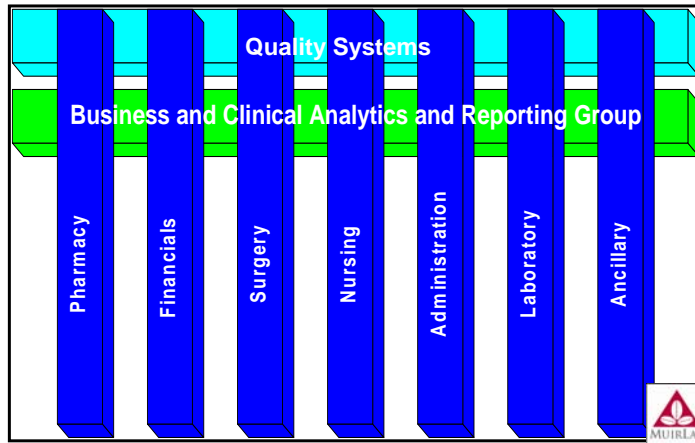
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Technical Solution

Quality Systems

Business and Clinical Analytics and Reporting Group

Pharmacy

Financials

Surgery

Nursing

Administration

Laboratory

Ancillary

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Case Study - LBOO

Redesign billing workflow
– Implement Horizon Lab Financials replacing Antrim
– Exception rules based workflow, reduces manual intervention to prepare and process claims

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Case Study - LBOO

– Reduction of billing costs by $1.5M (built into 2011 & 2012 operating budgets)
– Increased revenue - $1.2M by elimination of missing information that resulted in large number of non-billed claims.
– Decrease denied claims – down from 20% to 14% by increase accuracy of payer identification
– Decrease PSC average transaction time by 2 minutes

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Questions?

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