Achieving the High Reliability Organization:  
A New Way to Boost Lab Quality and Performance

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Detriot, Michigan
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Manager, Rapid Response Laboratory

About St. John Health

St. John Health System
• 7 hospital integrated health network
• 2,200 beds
• More than 1800 dedicated caring associates
• 9.7 million annual chemistry and immunoassay tests, 720,000 Hematology/ Urine tests
• “Core Lab” model
• “Many diverse labs, one united team”
• Medical Technology and Histo Technology schools
St. John Health’s Automated Solutions

**MODULAR PRE-ANALYTICS System**
- 90% of samples have a single process
- Efficiency, safety and clot detection
- CLS associates load and maintain
- Manages spun and un-spun samples
- Accepts different tube sizes
- Flexible Sample Sorter
- Sorts pristine aliquots for off-line special testing
- Archives samples in racks for storage and retrieval

**MODULAR ANALYTICS System**
- Consolidates 130+ tests and applications
- Parallel processing of chemistry and immunoassay
- Exceeds turnaround time goals

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**Saint John DL2000/Command Central Configuration**

- Instrument Manager Computer
- Line Controller Computer
- Command Central PN A18043
- LH1504
- DL2000 DB Server P/N: A34698
- Networked (Crossover cable)
- Networked (Crossover cable)
- Networked (Crossover cable)
What is a High Reliability Organization (HRO)?

A High Reliability Organization (HRO) is an organization that has succeeded in avoiding catastrophes in an environment when normal accidents can be expected due risk factors and complexity.
Leadership of a HRO

“The chief attribute of a highly reliable organization is paradoxical—all members are preoccupied with failure. Human error and mechanical failure are well recognized, and the knowledge of those possibilities occurring at any time without warning is built into our functioning. We do not assume that because we have policies and procedures in place to cover everything means we just need to follow them and everything will be alright.”

“Aviation safety science as an example of high reliability functioning dictates that in every moment of the flight, a good pilot is considering what bad thing might happen next, is looking for signs of that, and what would be the options to pursue if such were to occur.”

“We will have achieved success in our goal to transform to a highly reliable organization when our attention evolves from reporting and analyzing errors, to sensing and preventing future errors.”

Martha Higgins M.D.
Medical Director
St. John Health

Characteristics of a HRO

• Preoccupation with failure
• Reluctance to simplify interpretations
• Sensitivity to operations
• Commitment to resilience
• Deference to expertise
An HRO Requires:

- Reliable Processes
- Reliable Equipment
- Reliable Outcomes

HRO Requires:

<table>
<thead>
<tr>
<th>Measurement</th>
<th># Pre RIE (3/26 - 4/15)</th>
<th>1st Q 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC (Receive to Verify)</td>
<td>20 min n=2227</td>
<td>11 min n=10147</td>
</tr>
<tr>
<td>CBC (% Yield)</td>
<td>93%</td>
<td>93%</td>
</tr>
<tr>
<td>Electrolytes (Receive to Verify)</td>
<td>36 min n=2241</td>
<td>30 min n=10422</td>
</tr>
<tr>
<td>Electrolytes (% Yield)</td>
<td>88%</td>
<td>84%</td>
</tr>
<tr>
<td>Troponin T Receive to Verify</td>
<td>51 min n=1020</td>
<td>45 min n=5027</td>
</tr>
<tr>
<td>Troponin T (% Yield)</td>
<td>77%</td>
<td>89%</td>
</tr>
</tbody>
</table>
HRO Requires:

Reliable Processes

Creating “One Shift”
• Including “one for all”
• Birthday Celebration (3 parties)
• Standard Work
• Huddles and Hand offs

HRO Requires:

Reliable Equipment

Roche Modular Pre-Analytics Data:
• Data since 12/04
• 9.7 million tests per year
• 90% common Sample process

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>% Uptime</td>
<td>99.97 %</td>
</tr>
<tr>
<td>% Unscheduled</td>
<td>0.03 %</td>
</tr>
<tr>
<td>Downtime</td>
<td></td>
</tr>
</tbody>
</table>
HRO Requires:

- Reliable Outcomes

<table>
<thead>
<tr>
<th>Customer Satisfaction</th>
<th>Associates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Physicians</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality</th>
<th>BEST monthly data</th>
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</thead>
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<table>
<thead>
<tr>
<th>Cost</th>
<th>BEST monthly data</th>
</tr>
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St. John Health Laboratories
Creating A Quality Culture Shift…

 Requires:

- Focus Commitment
- Collaboration Participation
- Positive Attitude
Participation

- Met with all Associates to discuss the QA form
- Deadline established for completion of the form
- Objective was added to annual evaluation

<table>
<thead>
<tr>
<th>Upcoming Year's Goals</th>
<th>Measurement</th>
<th>How to Achieve</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Reliability Org (Quality Initiative)</td>
<td>1 per quarter</td>
<td>Complete and submit Specimen Quality checklist</td>
<td>Completed by May 31, 2008</td>
</tr>
</tbody>
</table>
If at first you don’t succeed…..

Results of the 1st attempt:

Number of associates………. 32
Number of issues identified … 0

New Plan

- Specimen Pending log
- e-mail specimen ID with deadline date
- Compile data and group into like categories
- Develop Action Plan
- Share Plan at Staff Meeting
- Share progress of plan
### Specimen QA Action Plan

<table>
<thead>
<tr>
<th>Issue Identified</th>
<th>Who</th>
<th>When</th>
<th>What</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transport</strong> – Samples not being sent from off-site to Core Lab in a timely manner.</td>
<td>Ralph &amp; Pam Melcher</td>
<td>Week of March 9, 2009</td>
<td>Core lab representative will visit off site labs beginning with Macomb, to watch process and make recommendations.</td>
</tr>
<tr>
<td><strong>Transport</strong> – Samples being removed from Core Lab storage without checking that testing has been completed.</td>
<td>MOB staff Send out staff</td>
<td>Week of March 16, 2009</td>
<td>Samples should be scanned for completeness prior to removing from Core Laboratory.</td>
</tr>
<tr>
<td><strong>Specimen</strong> – Samples from Macomb are sent to the Core Lab as aliquots. This aliquot needs to be shared by several workstations. This is a manual process and samples often get stored before all of the testing is complete.</td>
<td>Macomb Lab</td>
<td>Week of March 23, 2009</td>
<td>Have Macomb send primary tube so the Core Lab can have the automation make the appropriate aliquots for each testing area. Reduce number of front loaded samples by 10%</td>
</tr>
<tr>
<td><strong>Specimen</strong> – Samples ordered and labeled with “Run &amp; Hold”. No reference ranges apply for these samples. Tech has to manually enter results into the patient report.</td>
<td>Specimen processing LIS</td>
<td>LISR-09-0013</td>
<td>Eliminate use of “Run &amp; Hold”</td>
</tr>
<tr>
<td><strong>Specimen</strong> – Less than optimal volume “Short draws”</td>
<td>RRL staff Phlebotomy Nursing</td>
<td>By end of April 2009</td>
<td>Feedback will be provided to the collector of delays resulting in manual processes. Received time to result time against optimal (automated) times.</td>
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### HRO Outcomes to SJH

- Alignment with Organizational Goals (BEST)
- Associate Engagement
- Associate Satisfaction (Work Environment Survey)
- Associate Retention (Turnover Rate)
- Fresh Ideas
## St. John Health System 2010 Balanced Scorecard (Building the BEST)

<table>
<thead>
<tr>
<th>2010</th>
<th>Measure</th>
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<tbody>
<tr>
<td>B</td>
<td>Budget</td>
</tr>
<tr>
<td></td>
<td>Meeting financial commitments</td>
</tr>
<tr>
<td>E</td>
<td>Experience</td>
</tr>
<tr>
<td></td>
<td>Patient Care Experience</td>
</tr>
<tr>
<td>S</td>
<td>Safety</td>
</tr>
<tr>
<td></td>
<td>Providing safe, high quality care</td>
</tr>
<tr>
<td>T</td>
<td>Team</td>
</tr>
<tr>
<td></td>
<td>Highly engaged associates and physicians</td>
</tr>
</tbody>
</table>

## Associate Engagement

- 6 S
- Peer Interviewing
- Strive for 5 Huddles
- D.O.I.T’s
- Burnt Toast
- Work Environment Survey
- Rapid Improvement Events
- High Reliability Organization
Burnt Toast

- **Name:**
- **Problem:** (Describe what problem you are trying to fix)
- **Desired outcome:** (What will the process/fix look like when you are done?)
- **Action:** (What are you going to do?)
- **Measurement:** (How will you know if your actions changed anything?)

What would be the advantage of your organization becoming a HRO

- Time (Avoid Root Cause Analysis)
- Engaged Associates
- Organizational Reputation and Trust
- Lab can lead (Health Care Initiatives)
Things We Do Well

• “Farm Team”
• Associate Engagement
• Associate Retention
• Best Practices
• Share feedback from customers that visit
• Beyond Lean to next generation “Quality Systems”

Things we can do better

• Connecting front line Associates with Leadership
• Mid level supervisor development
• Succession planning