

Our Journey For Excellence

University of Iowa Hospitals and Clinics

About University of Iowa Hospitals and Clinics

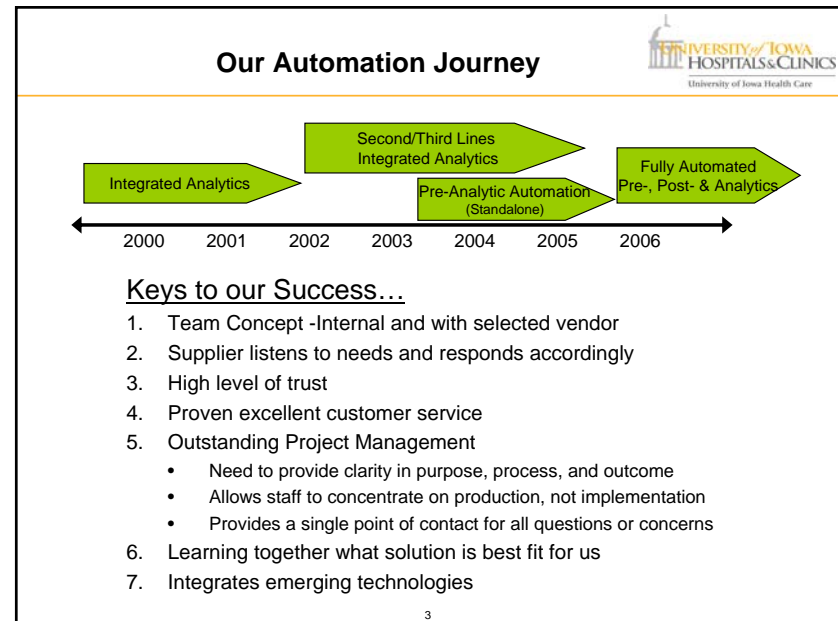
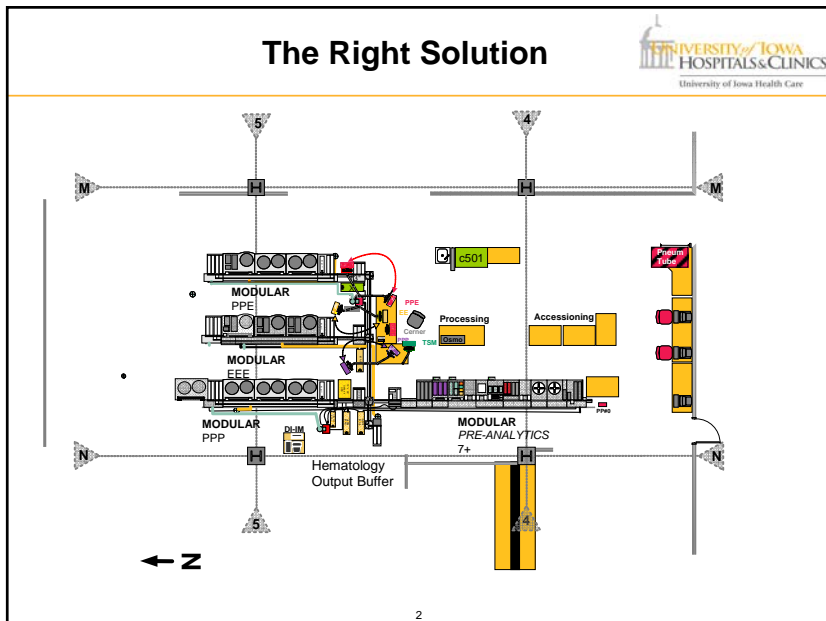


University of Iowa Hospitals and Clinics

- 735 bed health system located in Iowa City, Iowa
- Consistently ranks among "America's Best Hospitals" by U.S. News & World Report
- 12 medical specialties in the top 50 in U.S.
- Level 1 trauma center

Clinical Laboratory

- Chemistry, immunoassay, hematology, coagulation, urinalysis
- CAP accredited
- LIS by Cerner (Classic)
- 2,500-3,000 specimens/day
- 15,000+ tests/day of clinical chemistry/immunoassay
- 3.2 million annual billed tests
- >\$9 million in revenues
- **MODULAR PRE-ANALYTICS 7 Plus** (2 Flexible Sample Sorters, 2 centrifuges)
- 3 lines of integrated **MODULAR ANALYTICS** systems



Change Management Process

Goals were set...



Goals

- 1 Increase productivity
 - 2 Improve morale
 - 3 Add VALUE to the customer
- "If it doesn't satisfy these three things, we just don't want to go down that road."*
– Jeff Kulhavy; Lead Clinical Laboratory Scientist

...and a team was established

Critical Success Factors for Effective Change

- Streamline Group
 - A group of hand-picked lab employees with diverse experience, skills and education.
 - Empowered to make decisions based on their own expertise, information and perspective
- Positive and cooperative attitude
- Dedicated time

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Streamline Group Key Lean Concepts



- Develop performance matrices
- Process map
- One-piece flow
- Workload leveling
- Monitor for daily improvement

Key objectives were to improve TAT and become Employer of Choice

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2-Step Process



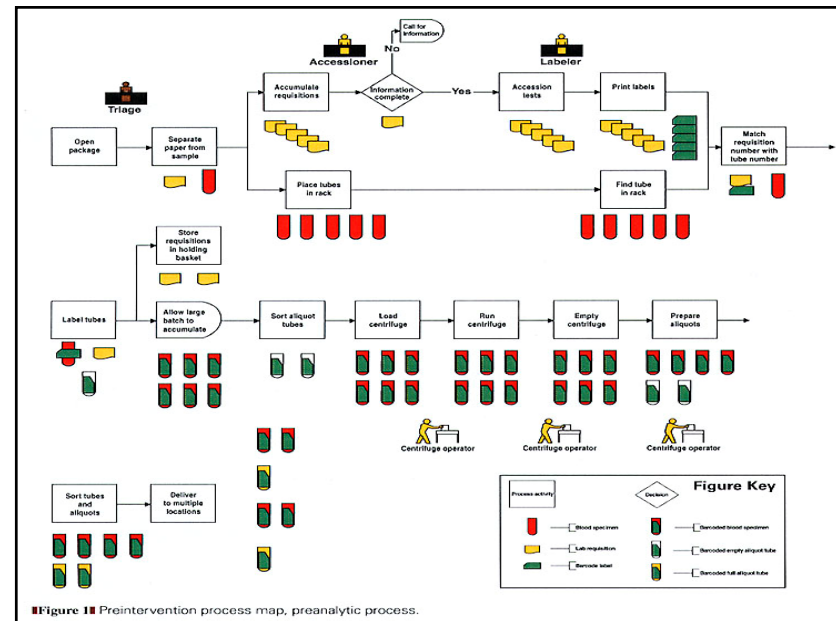
Step One: Process Map Workflow

- Don't want to automate a bad process
- Will identify waste and result in re-engineering existing processes for improved efficiencies
- Will assist in your vendor selection

Step Two: Performance Matrix

- Establish an adequate baseline for performance comparison.
- Performance parameters may include:
 - TAT for STATs
 - TAT for routines
 - Use percentiles
- Quality parameters may include samples that are:
 - Lost
 - Mishandled
 - Mislabeled
 - Aliquoting or pour-off errors
- Human Resource Issues such as:
 - Change in employee turnover rates
 - Employee job satisfaction
 - Employee training and orientation

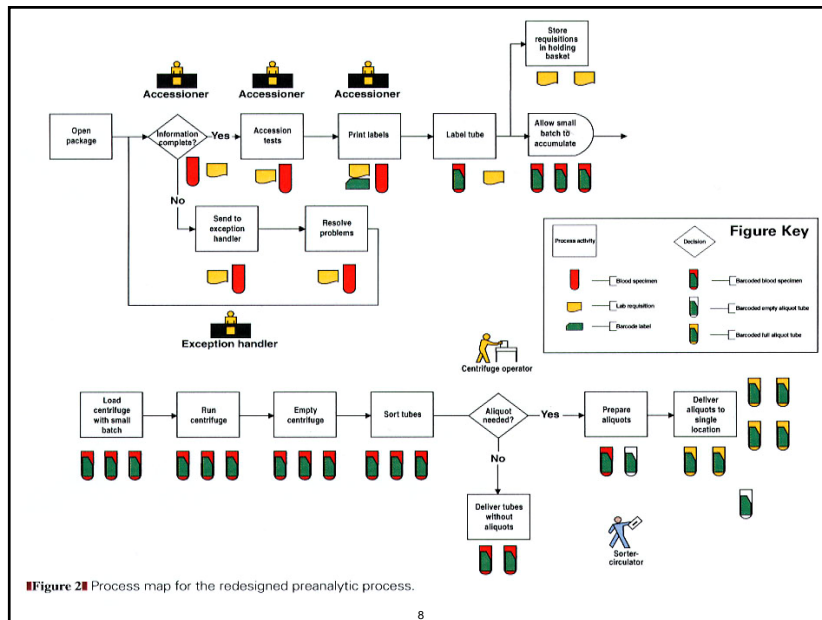
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Results from Lean 2001

- Method: Employed principles of lean production (the Toyota Production System)
- Assumptions:
 - Improve service for all customers w/o additional FTE
- Results:
 - 80% of tests in an hour or less
 - 40% of tests auto-verified
 - Reduction of mislabeled and missing tube errors
 - Median processing time reduced from 29 to 19 minutes

One-Piece Flow



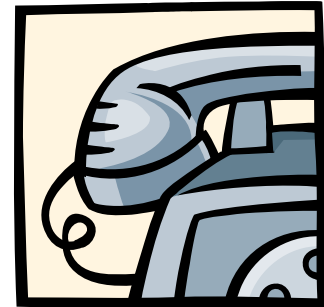
So what has happened since 2001?

- xxx

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Clinical Pathology Call Center

- Manage inbound and outbound calls
- Take add-on requests
- Call critical values



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Recovered Precious CLS Time

- Materials Management clerks unpacks, dates and stores supplies.
 - Saves 15 hours/month of CLS time
- Improve Inventory System
 - Color code
 - reagents, calibrators, & controls and
 - new lots of each



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Improved Lab's Efficiency with Pre-Analytic Automation

- Reduced errors – less manual intervention
- Improved employee safety
- Able to locate any sample quickly
- Consistently meets/exceeds TAT goals
- Increased employee morale
 - ✓ Employer of Choice



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Decreased CLS time recovering samples



Before

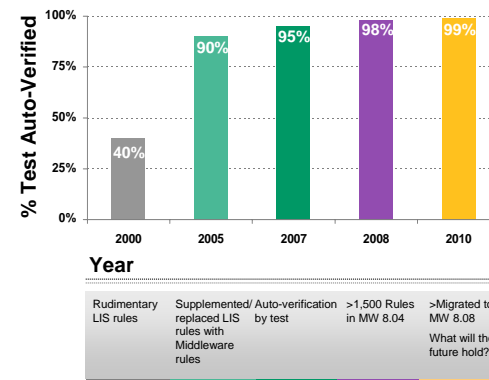
- Add-on requests
 - Physician order of additional assays on previously analyzed sample
 - Make over the add-on process
 - Replace verbal orders and read-back
 - Use Push technology. Add-ons print in Call Center
- 1000 add-ons/week
- **Future Quest**
- Post-analytical sample storage and retrieval system



After

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Greater FOCUS on Value-Added Work



- Approximately 99% of tests are auto-verified
- Recently upgraded to MW 8.08
- **One** FTE per shift releasing 14,000 tests per day
 - Prior to Roche solution, 2 FTE's releasing 9,000 tests (60%)
- Ability to locate any sample quickly
- Middleware print-outs allow finding one or multiple samples quickly

*All rules were written by the University of Iowa 15

Continue to LEAN

- Consistent results
- Fewer variances
- Decreased TAT
- Save technologist time!!!
- Less technologist stress and fatigue
- Less stress carries over to benefit other lab functions

The Chair...



...is now empty.

"Autoverification saves time for the filing person. It eliminates mistakes by people when interpreting results."

"Autoverification lessens the workload at the filing bench to allow me to perform other tasks required in the immediate area."

"One person can run chemistry by themselves the others can help where needed."

"Easier to file – not much tech intervention is needed."

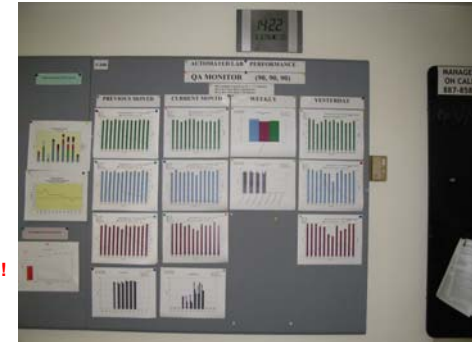
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Monitor for Daily Performance

Prior to May 2007, our goal had been 80% within one hour

How are we doing now?

- 90% of samples loaded on MPA7 in < 5 minutes
 - **97% of samples meet this goal!**
- 90% of P tests done in <40 minutes
 - Average TAT 30 min
 - **96% of P tests meet this goal!**
- 90% of E tests done in <50 minutes
 - Average TAT 40 min
 - **95% of E tests meet this goal!**

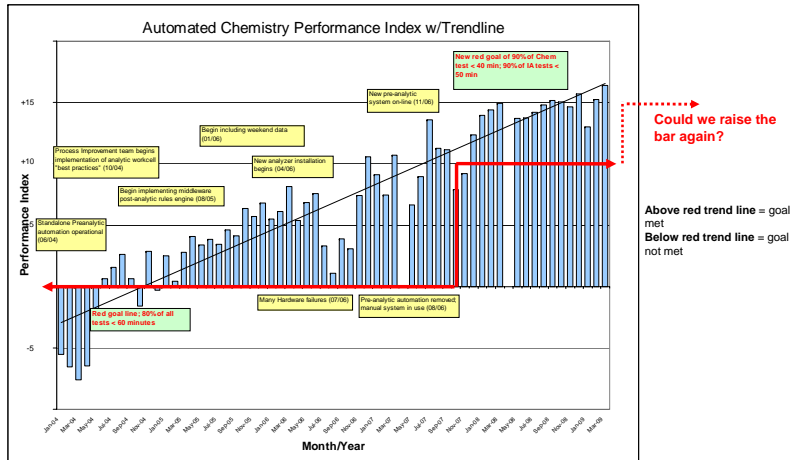


The Entire Lab Knows EXACTLY How We Are Doing...Every 2 Hours

"I am usually 100% satisfied with the service they provide us. Great job." T. Burstain, MD

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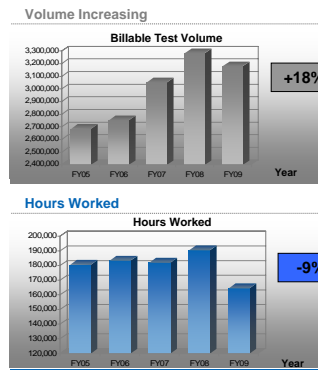
We Are Delivering Reliable & Predictable Results



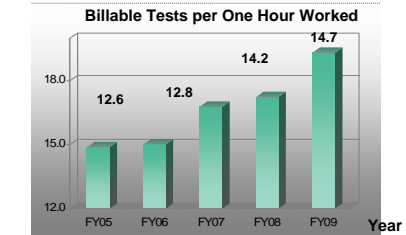
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We are doing More with Less

From Fiscal Year 2005 to Fiscal Year 2009, billable test volume is up 18%, while hours worked is down 9%.



Productivity Increasing



*University of Iowa Results Fiscal Years 05 - 09

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Accomplishments



- Significant improvement in morale
- Improved productivity and efficiency
- Added Value to our customers; UIHC staff and the *patient*

Lessons Learned

- Keep in frequent contact
- Stay on task
- Involve the people doing the work
- Create order from chaos
- Paint the vision for the future
- Focus on improving the surrounding processes

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Questions?



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