Visual Management of Histology Workflow in Real Time and Day-By-Day

Lab Quality Confab 9/29/09
by
Dr. Katja Lehmann

Credentials

Living up to Life

- **Dr. Katja Lehmann, Manager Workflow Consulting**
  - 2001 – 2003 Quality Manager European Service Center
    Heppenheim, Germany
    - Quality control for European Demo and Service Center
    - Implemented SOP's and Process Handbooks
    - Implemented Complaint Management
  - 2003 – 2005 Six Sigma Black Belt Leica North America
    - Implemented Six Sigma in SU North America
    - Designed and Executed Yellow Belt Program
  - 2005 – 2009 Danaher Business System Leader Leica North America
    - Implemented DBS in SU North America
    - Executed 73 kaizen events
    - Coached DBS MBB's
    - Obtained MBB in RCCM and TFTI
    - Coached Policy Deployment for NAM Executive team
  - 3/09 Manager Workflow Consulting, Leica Biosystems Division North America
    - Designed and Implemented LHCS Service
    - Executed 16 Customer events / 5 new lab designs

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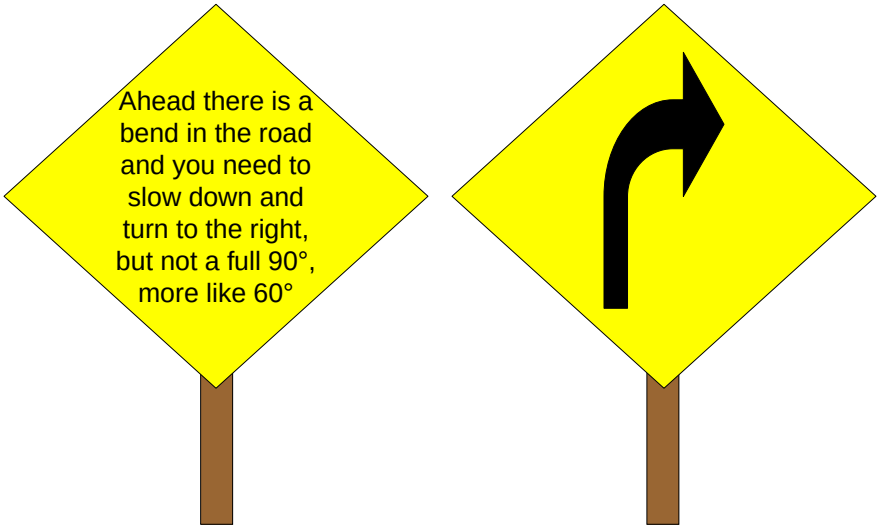

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Key questions to ask yourself

- ? How do you know you are on plan?
- ? How do you know if you are satisfying our customers needs?
- ? How do you keep track of increasing workload?
- ? How do you know what the problems are?
- ? How do you know actions are being taken?
- ? How do you know who is accountable?

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Purpose of Visual Management

- Drive Results Daily
- Drive Rootcause and Countermeasure in Real Time
- Drive Accountability
- Reduce fire fighting
- Abnormalities Visible
- Solve problems at the source
- Smoother communication among associates

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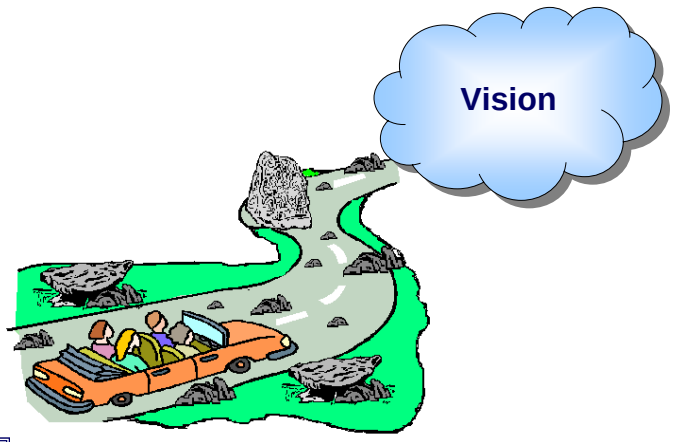
How to get started?



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4 Pillars of Successful Visual Management

- ✓ Managing Key Metrics
- ✓ Visualization
- ✓ Problem Solving
- ✓ Leadership

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Managing Key Metrics

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Metrics should

- measure what is actionable
- measure what is meaningful
- measure to drive Improvement (Results!)

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Examples

- Turn Around Time
- Defects / Re-Work
- % of Unstained Slides Used
- Instrument Up\Downtime
- Stock out of Inventory (Control Slides, Consumables, Reagents)
- Safety Incidents
- On Time Delivery (OTD)
- 5S Level

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1. Step: Identify key metrics

- Know what are important goals for your organization -> Develop Laboratory Vision
- Analyze current process performance (Data Analysis, VSM, Process Mapping) to identify which steps in the process you will measure
- Identify Leading and Lagging Indicators for Daily and Weekly/Monthly Metrics

Tip

✓ LESS IS MORE
- » Don't measure metrics that you are not planning on improving

✓ If in doubt
- » Pick metrics that you are struggling with to limit the number

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2. Step: Define JOP and Goals

- Gather Historical Data to identify Jump Off Point (JOP)
- Define goal (monthly / weekly / daily)

Tip

✓ Lack of historical data
- » Gather data manually for one to two month to define a first JOP
- » Adjust JOP and Goal once more data is available

✓ Setting goals
- » Improve current performance by at least 20%
- » The more aggressive the goal the more likely your organization will be forced to to improve and implement sustainable processes

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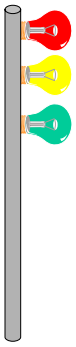
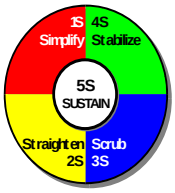
Visualization





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Weekly / Monthly Metrics

- Display in central location
- Update weekly/monthly
- Include historic data (Run-chart, Histogram, etc.)

Daily Management

- Display in central location
- Discuss Daily with Employees (Daily Huddle)

Hour-by-Hour Status

- Display at Point of Activity
- Check hourly

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Weekly / Monthly Metrics

Example: “Bowling Chart”

KPI Bowler

KPI	Target to Improve	2009 JOP	2009 YTD	Plan / Actual	JAN	FEB	MAR	APR	MAY	JUN	JUL
TAT	Decrease TAT from 3 days to 1 day by May 2009	3 days		Plan	3	2.5	2	1.5	1	1	1
				Act	3.1	2.8	2.3	1.5	1	1	1
5S	Achieve 5S level by June 2009	0S		Plan	0	3	4	4	4	5	5
				Act	0	3	3	3	4	4	5

- “Ample function” shows hit or miss in 3 seconds
- All metrics at the same chart

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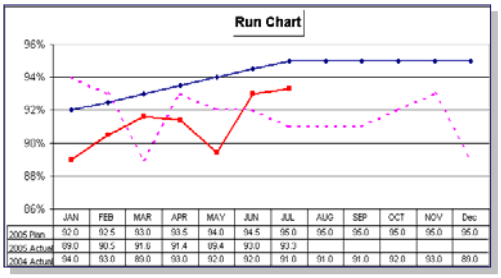
Living up to Life

Weekly / Monthly Metrics

Example: Run Chart / Histogram



- “Goal line” shows hit or miss
- One chart per metric

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Daily Management

- Display in central location
- Display Elements
  - Daily Measures
  - Problem Solving Data
  - Action Plans Countermeasures
- Discuss Daily with Employees (daily Huddle)
  - Meet with supervisor, employees, pathologists
  - “Hand-off” between shifts in person

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Daily Huddle Example

Topics

- Today's workload
- Today’s priorities
- Assign people to special tasks
- Re-Assign employees if somebody is out
- Difficulties occurred yesterday
- Include Rewards if applicable
- Include “fun part” e.g. motivational daily quote

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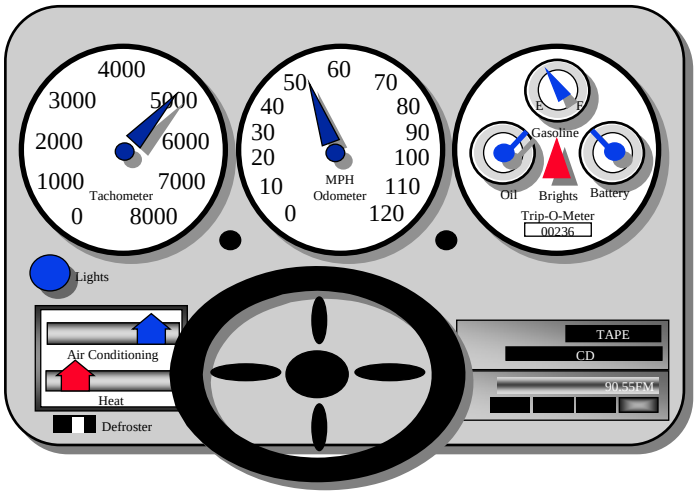
Dashboard out of LIS System



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Example Manager's Dashboard

- Allows for real-time tracking of cases in process
- Daily QA monitoring for Turnaround Time
- Real time monitoring of Pathologist Case Status
- Track cases by Histotechnologist, Cytotechnologist or stage in processing.

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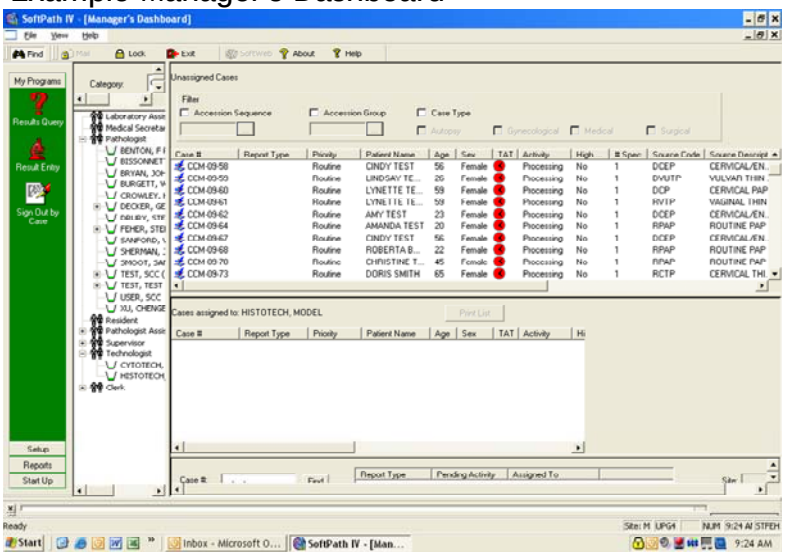
Example Manager's Dashboard



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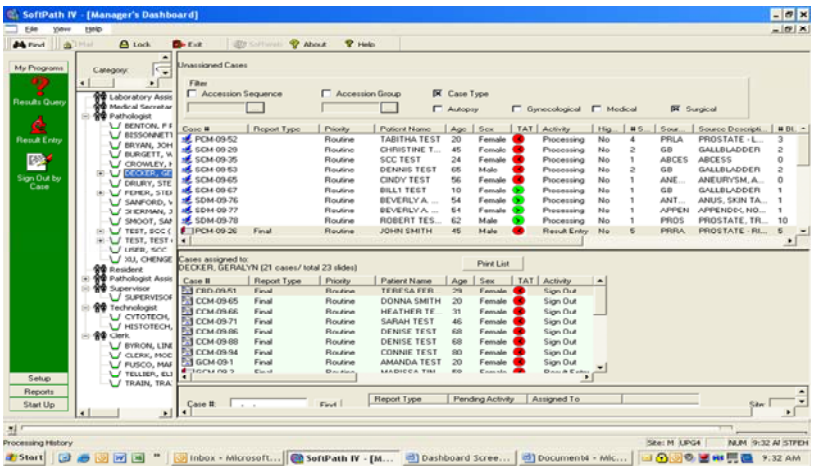
Dashboard Cases Screenshot

Example Manager's Dashboard



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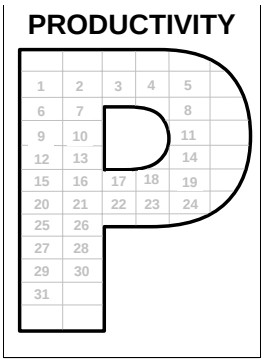
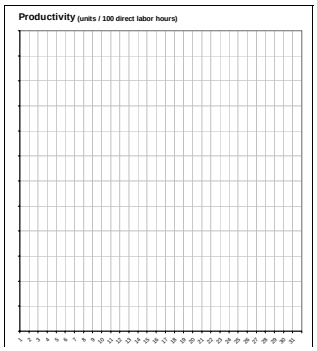
Daily Display Board Elements



Metric –
hit or miss

ISSUE	ACTION	WHO	DUE	STATUS

Root Cause and
Countermeasure –
Action Plan



Historic Data –
Trend

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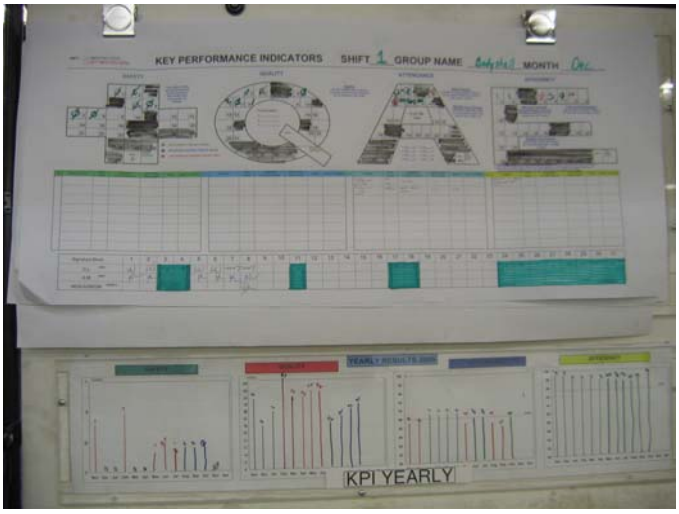
Daily Display Board



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Example Daily Board

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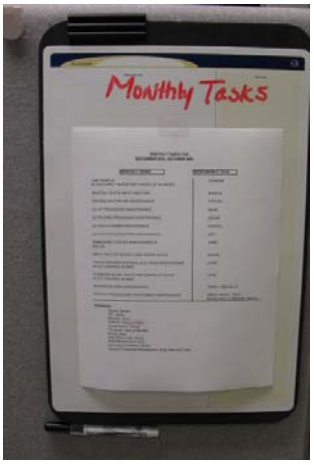
Examples



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Hour-by-Hour Status

- Scorecard / Productivity Board
- Display at Point of Activity
- Check hourly
- Solve problems right away
- Re-Assign manpower where needed

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Scorecard

Hourly Scorecard

Hour	People	Plan	Actual	Delta	Issues/Comments	Supervisor	Manager
to							
to							
to							
to							
to							
to							
to							
to							
TOTAL							

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Productivity Board

Name of Laboratory						
DAILY RESULTS GROSSING						
DATE:				AREA:	AP IHC CLINICAL	
					(NOTE: Circle which Area)	
# of Cases	SHIFT #1		SHIFT #2		SHIFT #3	
HOUR	PLAN	ACTUAL	PLAN	ACTUAL	PLAN	ACTUAL
1						
2						
3						
4						
5						
6						
7						
8						
TOTAL	0		0		0	
(NOTE: SCRAP AND REWORK NUMBERS NOT INCLUDED IN PRODUCTION NUMBERS ABOVE).						
SCRAP OR REWORK BLOCKS	0		0		0	
(NOTE: MANPOWER IS THE NUMBER OF FTE's ON THE SHIFT)						
MANPOWER	1		1		1	
(NOTE: HOURS WORKED IS THE HOURS WORKED BY EACH FTE)						
HOURS WORKED	8		8		8	
(NOTE: TOTAL HOURS IS MANPOWER x HOURS WORKED)						
TOTAL HOURS	8		8		8	
(NOTE: HOURLY PRODUCTIVITY IS TOTAL ACTUAL PRODUCTION / TOTAL HOURS)						
PRODUCTIVITY	0.0		0.0		0.0	
ABSENT ASSOCIATES						
DOWNTIME (LIST TIME DOWN AND WHAT EQUIPMENT)						
COMMENTS FOR SHIFT						

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- ✓ Charts & signs must be visible at a distance.
- ✓ Should be directed toward a group, not individuals where appropriate
- ✓ Visuals should communicate a Plan and Actual.
- ✓ Involve all employees in the visual management process.
- ✓ Do not use visual management as a means to control or punish…Drive to solve problems in a blameless environment.
- ✓ Should be understandable…consider the audience.
- ✓ Should be “At-a-glance” (think “three-second” rule).
- ✓ Should be standardized (over time). Everyone should know what they are looking at in your facility
- ✓ A barometer of “health” for a specific area (i.e., the “right” metric to tell you if you are doing well)
- ✓ Be Maintained (don’t measure if no one will take action!)
- ✓ Have a Process around their use
- ✓ Be Actionable by Associates at the level they are used

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Standard Work Daily Management

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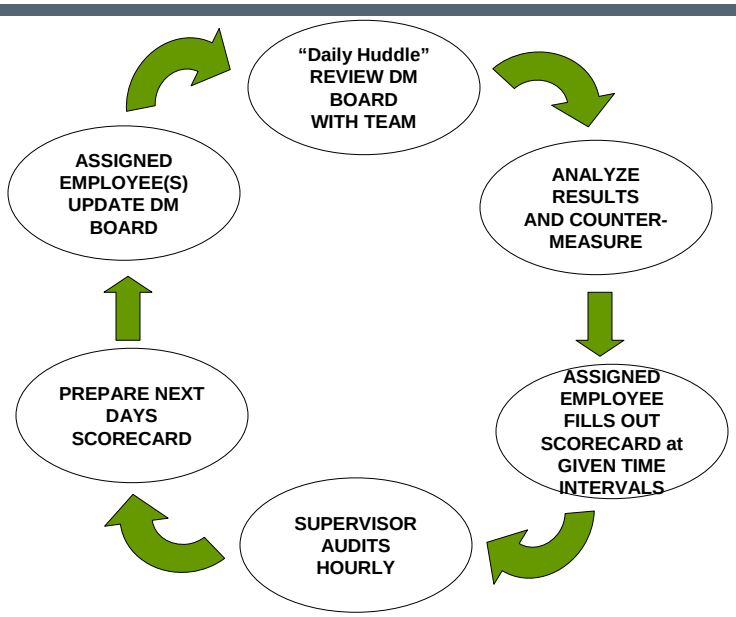

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Problem Solving

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Problem Solving

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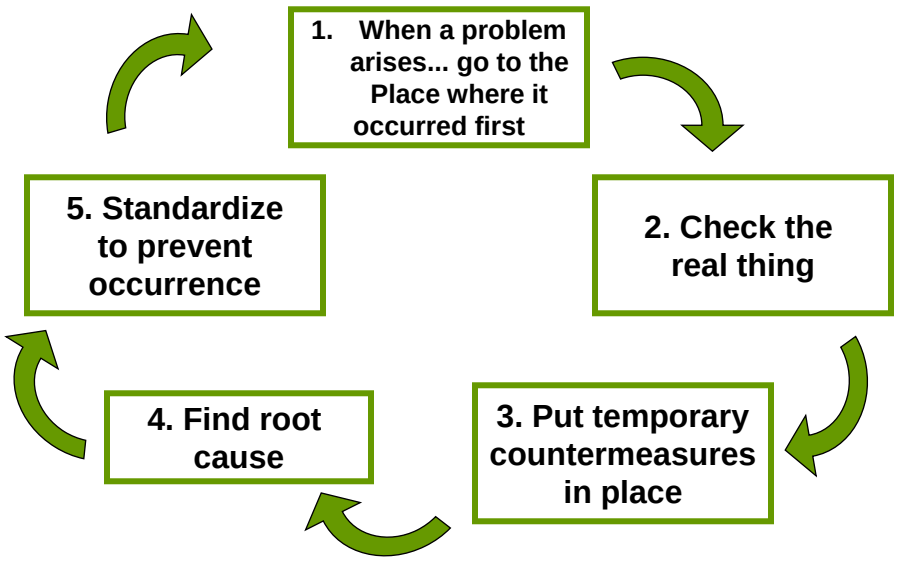

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Problem Solving

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1. Go To Place of Occurrence First

- Go to the laboratory as the first step in the problem solving process
- Don't try to solve problems in your office
- Observe the problem where it occurred at the source

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2. Check the Real Thing

- Need to see the problem for ourselves and take action
- Someone else's interpretation is not enough – don't just rely on reports
- Stay objective and identify the problem

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3. Take Temporary Countermeasures Immediately

- Take temporary countermeasures on the spot
  - We must insulate our customer from the problem
  - Even though this addresses symptoms only… We must continue to run our business

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4. Find Root Cause → 5. Standardize

- Use 5 Whys or other Problem Solving Techniques to drive to root cause
- Standardize new process to prevent problem from reoccurring
- Follow up to ensure the problem has been solved

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CAUSE AND EFFECT DIAGRAMS

RUN CHARTS

5 Why's

HISTOGRAMS

SIX SIGMA

PARETO CHARTS

VARIATION REDUCTION KAIZEN

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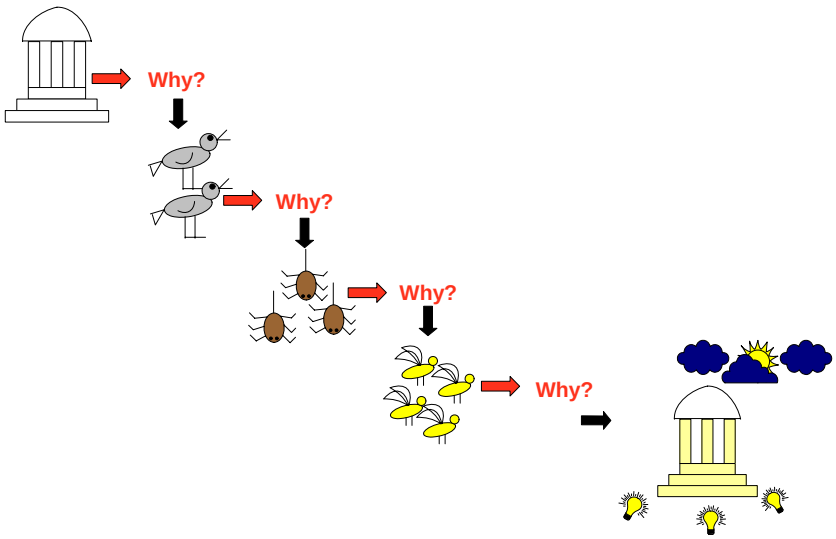
5 Whys – Jefferson Memorial Graph



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Differentiate between Symptoms and Systems Issues

- Your child has a fever, is this a symptom or a systems issue?

BE A SYSTEMS THINKER: Understand the Interdependence of everything!

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Differentiate between Symptoms and Systems Issues

Focus on:

- What Happened?
  - Tell the story!
- Where it Happened?
  - Give the background!
- When it Happened?
  - Be specific!
- Then go to the How / Why
  - Play Dominos!

This process will help you do systems thinking!

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Countermeasure Types

- Short-term Countermeasure
  - The purpose of Countermeasures is to develop actions to quickly get back on target
- Long-term Countermeasure
  - Needed when the short-term countermeasure is not sustainable
  - Tend to address & resolve systemic issues

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Leadership

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Elements of Rigorous Leadership

- Define the Parameters
- Set People Up to Win
- Uphold the Parameters

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Define the Parameters

- Set Expectations
- Make it clear what Winning looks like
- Make it clear what Losing looks like
- Only define expectations that you are serious about

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Set People Up to Win

- Are they set up with the right resources, people, time, dollars, capital?
- Do People know what you think of their work?
- How do you communicate to them?
- How do you manage with positive expectancy?

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Uphold the Parameters

- Inspect what you expect
- React to what you find
- Consistency is critical across the facility
- Apply feedback that is:
  - Immediate
  - Specific
  - Positive and negative
  - Coach to Win
- The daily walk through the laboratory upholds parameters

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Applying the Leadership Elements to Delegation

- Delegation Effectively
  - Taps the whole organization
  - Affords managers to coach and not fix
  - Allows managers to be enablers
  - Drive accountability to the whole team

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Apply Rigorous Leadership by

- Walking the Laboratory
- Holding Stand up Meetings
- Auditing

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Walk the Laboratory

- Walk the laboratory EVERYDAY
- Schedule time if necessary to ensure that you will walk the laboratory
- Reach ALL areas of the laboratory regularly – don't just stay on the main isles
- Talk with Employees and Listen
- Act immediately to implement issues that can be resolved short-term

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Daily Huddle

- Why: Communicate key information to start the shift operations
- When: Daily (morning or shortly after shift start for every shift)
- Duration: 10 min. max
- Where: Standing in the team area
- Who: Supervisor, employees, pathologists, etc.

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QUESTIONS ?