



Lab Quality Confab 2016

Improving Your Lab's Performance:

How to Gather the Right Data, Identifying and Prioritizing Projects, Managing the Culture Change, and Benchmarking

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Session Purpose

Practical advice for anyone initiating process improvement efforts within laboratory.

...using the example of laboratory turnaround time to illustrate the elements required for performance improvement.



- 1. Gather the Right Data**
- 2. Identifying and Prioritizing Projects**
- 3. Managing the Culture Change**
- 4. Benchmarking**



Chartering

A problem well stated is a problem half-solved.

- Charles Kettering

Example Project Charter



PROJECT CHARTER

<Title of Project>

PURPOSE:	Issue to be addressed.	
PROBLEM STATEMENT:	Provide a brief description of the problem including the scope, effect on workflow, if applicable, and any other information that best summarizes the area or issue to be addressed.	
PROJECT CHARTER STATEMENT:	Provide a brief description of the improvements to work flow, resource utilizations, patient or staff safety, etc. that will result from the project.	
PROJECT SCOPE:	List what is IN & OUT of the scope of this project.	
STRATEGIC PILLARS IMPACTED:		
<input type="checkbox"/>	Provide Value to Patients	<input type="checkbox"/> Benefit the Community
<input type="checkbox"/>	Focus On Our People	<input type="checkbox"/> Make Care Accessible
<input type="checkbox"/>	Grow and Partner	<input type="checkbox"/> Deliver Integrated Care
<input type="checkbox"/>	Use Financial Resources Wisely	
PROJECT SPONSOR / STAKEHOLDER(S):	Name, Title, Department Name, Title, Department	
PROJECT TEAM LEADER(S):	Name, Title, Department	
PROJECT TEAM MEMBERS:	Name, Title, Department	Name, Title, Department
	Name, Title, Department	Name, Title, Department
	Name, Title, Department	Name, Title, Department
	Name, Title, Department	Name, Title, Department
	Name, Title, Department	Name, Title, Department
PROJECT COACH / FACILITATOR(S):	Name, Performance Management Consultant, Internal Consulting	
DELIVERABLES / OBJECTIVES / MEASURES:	Specify the detailed reason(s) that best represent the need or expected outcome from the project: . . .	
APPROVAL(S):	Executive Sponsor, Title	Date
MEETING(S):	Kick-off Meeting; Recurrence	

A project charter should be developed to help guide the initial work and keep everyone informed.

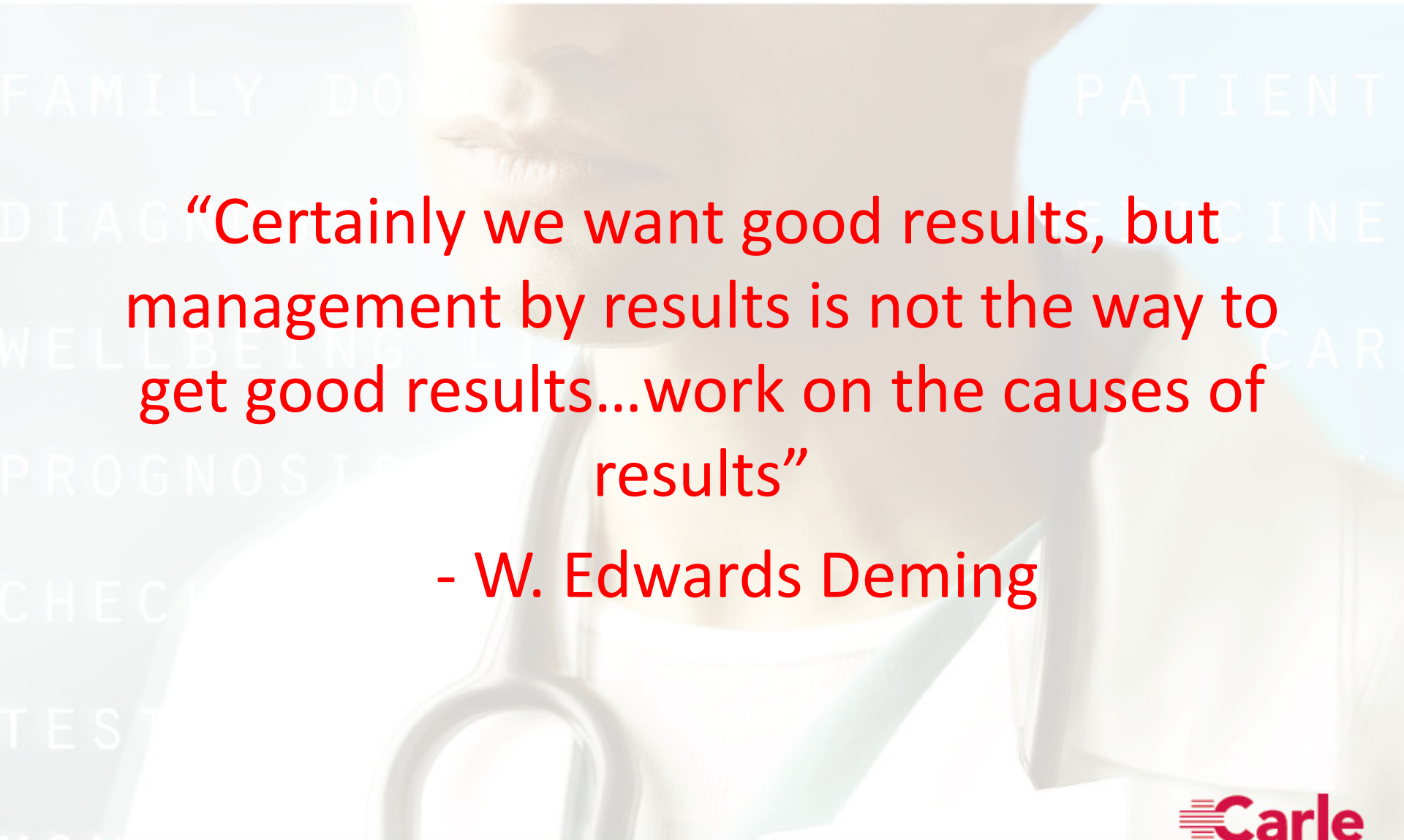
Elements of charter:

- Problem Statement
- Project team
- Overall Objective
- Facilitator (where possible)
- Milestones & Deadline
- Measures
- Approvals (if necessary)





What are we talking about?



“Certainly we want good results, but management by results is not the way to get good results...work on the causes of results”

- W. Edwards Deming



Gather the right data

What is the performance expectation?

- Your laboratory almost certainly has a defined shortlist of tests that are offered Stat, along with their expected timeframes for completion.

What is your current performance?

- Make friends with your Lab IS experts - TAT reporting functionality exists within every LIS in some form, so start by researching what reporting/analysis options you have.



Gather (#2)

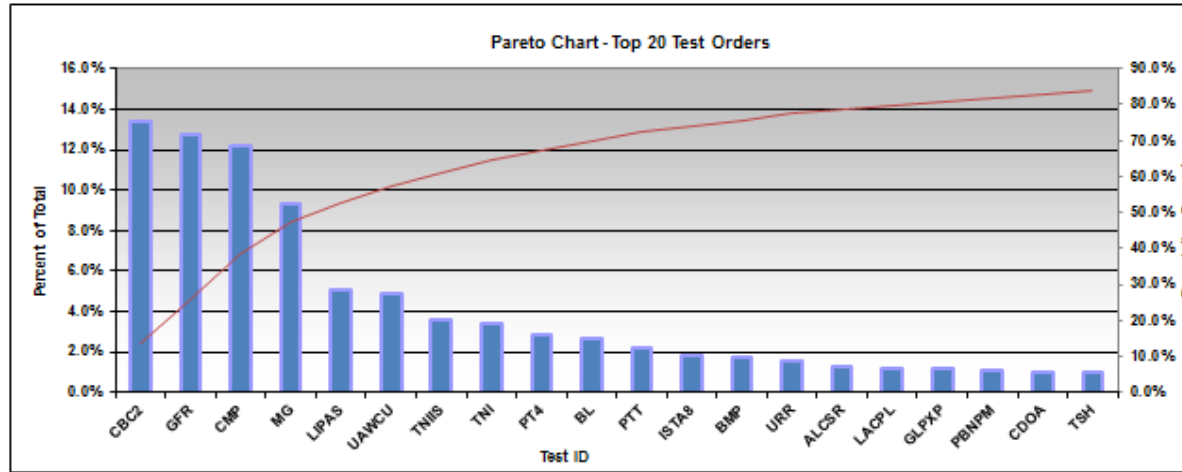
What (and how) do you measure performance?

- Trend volumes over time and compare them to staffing patterns and TAT performance.
- The focus should be on the **degree of variability** to highlight the need for monitoring and outlier management.
- There are analytical tools commercially available to help with this work. We use Visiun's "Performance Insights" report tool (<http://www.visiun.com/>).

Verify Date: August 2016

Criteria:
 Test: - All Total Activity: 4344
 Patient Loc 1: EDCI EMERGENCY DEPARTMENT NORTH
 Activity Measure: Verify

Summary
 Total (per Period) All Test Orders 4344



TestID	TestName	Period	Total	Pct Total
CBC2	CBC W/DIFF		3532	13.4%
GFR	GLOMERULAR FILTRATION RATE ESTIMATE		3357	12.8%
CMP	COMP METABOLIC PANEL		3197	12.2%
MG	MAGNESIUM		2452	9.3%
LIPAS	LIPASE		1329	5.1%
UAWCU	UA WITH REFLEX CULTURE IF INDICATED		1274	4.8%
TNHS	TROPONIN I, I-STAT		937	3.6%
TNI	TROPONIN I		905	3.4%

TestID	TestName	Period	Total	Pct Total
HCG03	BETA-HCG, QUANT.		124	0.5%
CRPH2	CRP, CARDIO HIGH SENSITIVITY		115	0.4%
PRCAL	PROCALCITONIN		99	0.4%
CKTOT	CK TOTAL		88	0.3%
ACETA	ACETAMINOPHEN		87	0.3%
RO	AEROBIC CULTURE, ROUTINE		83	0.3%
GS	GRAM STAIN		79	0.3%
SALIC	SALICYLATE		76	0.3%

August 2016

Criteria

Test Group: 2 EDCC_ORDS
Patient Loc 1: EDCC EMERGENCY DEPARTMENT NORTH

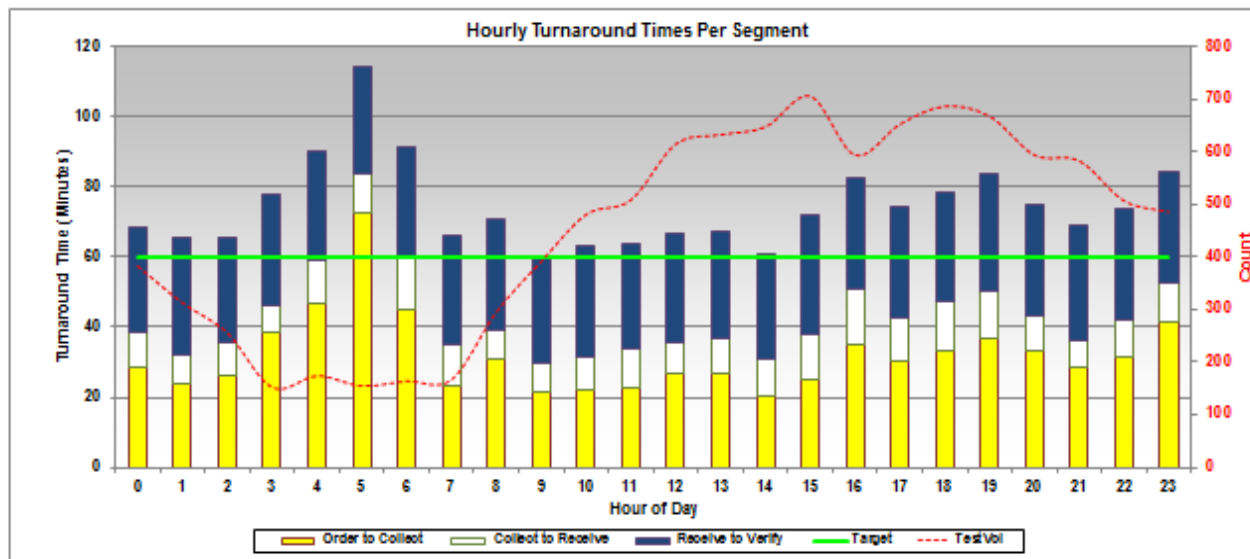
Count: 10,816

Activity Being Counted: Tests

1st Time Segment: Order to Collect
2nd Time Segment: Collect to Receive
3rd Time Segment: Receive to Verify

Performance Summary

	Turnaround Time (minutes)			Outliers (above target)	
	Average	Median	90% Completion	n	% of Total
Overall Target	60.0	60.0	60.0		
Total	67.2	59.0	99.0	5,014	46.4%
Order to Collect	30.0	17.0	52.0		
Collect to Receive	10.9	6.0	18.0		
Receive to Verify	31.6	36.0	50.0		



Verify Date: August 2016

Criteria

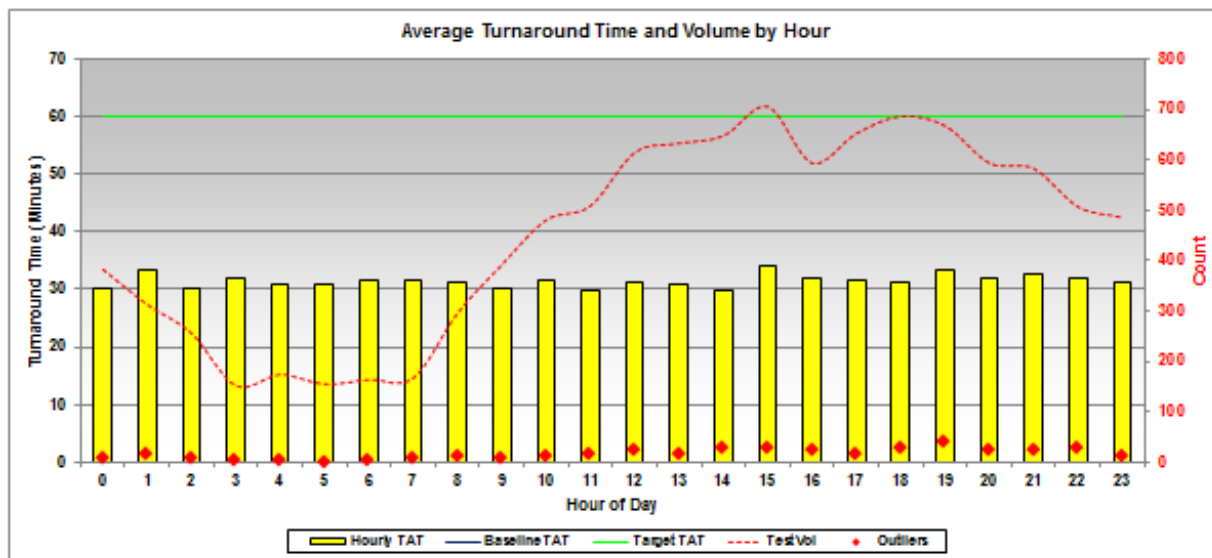
 Test Group: 2 EDCC_ORDS Count: 10,816
 Patient Loc 1: EDCC EMERGENCY DEPARTMENT NORTH

Activity Being Counted: Tests

Measurement: Receive to Verify

Performance Summary

	Turnaround Time (minutes)			Outliers (above target)	
	Average	Median	90% Completion	n	% of Total
Target	60.0	60.0	60.0		
Baseline (N/A)					
August 2016	31.6	36.0	50.0	388	3.6%





Every enterprise has four organizations: the one that is written down, the one that most people believe exists, the one that people wished existed and finally, the one that the organization really needs.

...and then there's night shift!

Typical Deming - PDCA Cycle

Plan–Do–Check–Act Procedure:

- **Plan.** Recognize an opportunity and plan a change.
- **Do.** Test the change. Carry out a small-scale study.
- **Check.** Review the test, analyze the results and identify what you've learned.
- **Act.** Take action based on what you learned in the study step.

If the change did not work, go through the cycle again with a different plan.

If you were successful, incorporate what you learned from the test into wider changes.

...use what you learned to plan new improvements, beginning the cycle again.

From <http://asq.org/quality-progress/2002/05/problem-solving/the-benefits-of-pdca.html>



Identify the projects

Data should guide the work

Be careful following “hunches” or feelings without some level of critical review or analysis.

Process mapping is very useful

Examining the workflow from “order” to “result posted” helps shine light on the multiple variables impacting workflow and performance.

Identify potential improvement areas

My suggestions follow.



Identify the projects

You will need help and input

Formal and informal leaders responsible for phlebotomy, processing and testing must be involved.

Involve ED, OP, Surgery, etc. as stakeholders *when and where appropriate.*

Brainstorm ideas and group them together logically

There may be multiple related suggestions.



Process Mapping

There are numerous process mapping tools available.

This “101 on Process Mapping” is a good read, but there are lots of resources:

<http://www.modernanalyst.com/Resources/Articles/tabid/115/ID/892/Process-Mapping-101-A-Guide-to-Getting-Started.aspx>

8 Wastes

Adapted from Taiichi Ohno's "7 Wastes":

- 1. Defects (Correction):** Inspection, rework, and scrap.
- 2. Overproduction:** Producing ahead of what's actually needed by the next process or customer. The worst form of waste because it contributes to the other six (*seven*).
- 3. Waiting:** Operators standing idle as machines cycle, equipment fails, needed parts fail to arrive, etc.
- 4. *Not utilizing talent:*** *Involving individuals in non-value add activities or "silo" approaches*



8 Wastes (#2)

- 5. Transport (Conveyance):** Moving parts and products unnecessarily, such as from a processing step to a warehouse to a subsequent processing step when the second step instead could be located immediately adjacent to the first step.
- 6. Inventory:** Having more than the minimum stocks necessary for a precisely controlled pull system.
- 7. Motion:** Operators making movements that are straining or unnecessary, such as looking for parts, tools, documents, etc.
- 8. Excess Processing:** Performing unnecessary or incorrect processing, typically from poor tool or product design.

From <http://www.lean.org/lexicon/7-wastes>



Factors in turnaround time PI

- Batching vs single piece
- Manual vs Computer orders
- Physician vs Nurse ordering
- Computer interface delays
- Add on testing frequency
- Notification of phlebotomy
- Nursing collections
- Priority usage
- Identification of priority samples
- Sample processing steps
- Centrifugation
- Equipment availability
- Stat vs. routine sample testing
- Test methodology
- Alerts for results availability
- Overdue result flagging
- Critical call process
- Re-spin, dilution, repeat and hemolysis rates



It's all good stuff, but you have to start somewhere...



Prioritize the projects

Once you develop a list of possible changes (or “tests”), where do you begin?

Criteria:

- *What do we think the potential improvement is?*
- *Do we have the authority to make changes to this process?*
- *Does the change require external stakeholder involvement?*
- *Can the change we propose be made (and unmade) **relatively** quickly?*
- *How will we measure performance before and after the change?*



Prioritize (#2)

Avoid the pitfall of “someday/maybe” ideas.

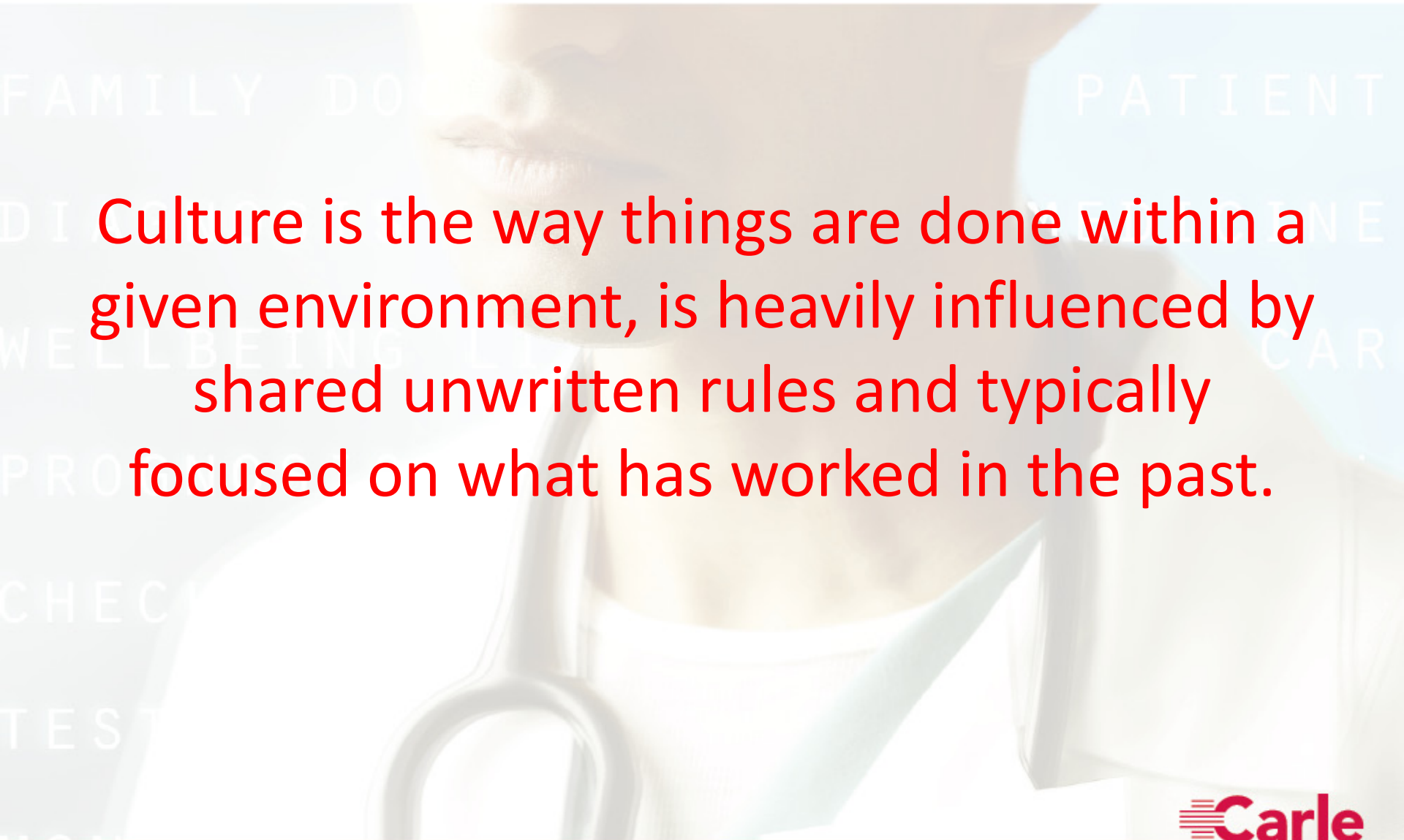
Large capital projects or significant staffing changes are unlikely to happen overnight.

By focusing on items that can be tried and tested quickly, you are more likely to create momentum.

Identify your resources and timelines

For each test identified, you need to estimate the time and resources it will take.

Realistically schedule these tests.



Culture is the way things are done within a given environment, is heavily influenced by shared unwritten rules and typically focused on what has worked in the past.



John Kotter- Change Management

From “Leading Change” by John P Kotter:

1. Increase urgency
2. Build the guiding team
3. Get the vision right
4. Communicate for buy-in
5. Empower action
6. Create short-term wins
7. Don't let up (build on the change)
8. Make change stick

Check out <http://www.kotterinternational.com/the-8-step-process-for-leading-change/>



Manage

The team is the most critical element

- Credible, engaged and supportive personnel are vital.
- Team must be comfortable with data and understand the objective.

Other important considerations

- Find a permanent spot for reporting.
 - Post team member names, team charter, goals and results.
 - Identify who should be approached with questions and feedback.
- Get feedback from people involved and/or impacted.



Manage (#2)

Recognition and Celebration

- Every effort should have milestones and celebrate them – this is both recognition of the effort and a clear signal that change is occurring.

Management for Daily Improvement concept

- Rounds with some sort of dashboard review support the practice of regular outlier management.



Benchmark

Internal metrics

- Internal performance comparisons over time:
 - Shift to shift
 - Weekday vs. Weekend
 - Team member to team member

Informal metrics

- Call around - speak to other labs and ask them about their measurement of variability and ask what they have done to improve.



Benchmark

External metrics

- Visiun TAT performance benchmarking
 - <https://www.visiun.com/benchmarking.aspx>
- Chi Labs productivity benchmarking
 - <http://www.chisolutionsinc.com/services/laboratory-benchmarking/>
- CAP's "Qtrack" & "Qprobe" studies
 - https://estore.cap.org/OA_HTML/ibeCCtpSctDspRte.jsp?section=10111&sitex=10020:22372:US



- Many thanks!

- Questions?