

11-1-2011

Bend the Curve CIP-News - November, 2011

Bend the Curve Continuous Improvement Practitioners

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November 2011

Volume 6, Issue 11

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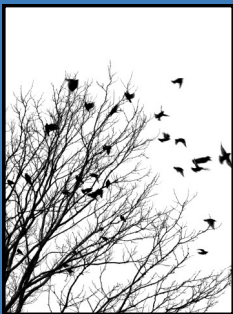
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Special points of interest:

- Next Clinicals
 - December 16
 - January 20
- Be sure to check out all the hyperlinks



The Stone and the Canvas



Every morning, as I disembark from my truck and take the short walk up to DHHS, I cast a glance across Capitol Park to the group of tents and

shelters that have been erected by the OWS protestors. It's sort of a 21st century Hooverville.

Up until today, I have viewed them with interest but from a distance. They first got my attention about a month ago when I heard them beating a drum. There were two protestors pounding away on a rather large drum, and they kept it up for most of the day. For some reason, they have pretty much abandoned the drum beating, although —while working in my office the other day — I could hear it resume. This week the drum has gone silent again.

The camp ground has changed a little since I first noticed it. The other day a teepee had been set up and a rather large square tent now dominates the scene. There are many small tents, all covered with tarps and larger tents to protect them from the recent inclement weather.

I wonder if they plan on staying through the winter, and by the looks of things I am guessing they will. This Fall has been mild and the weather has yet to really challenge them, but we Mainahs know what's coming.

I am not sure how they refer to themselves here in Augusta, Maine.

— Walter E. Lowell

Since they are camped out in Capitol Park maybe its OCP or possibly the OWS-OCP or even OWS-A (A is for Augusta). For now I'll refer to them as OWS-OCP.

In any case, they have made their presence known not only here in Augusta but they are also a visible reminder that others across the nation and world are standing or rather camping together to represent what they refer to as the 99% as opposed to the 1% - who, I am sure, are not planning on camping anytime soon.

It is a simple equation — 99% versus 1% — but represents some very powerful ideas, and the message is not lost on us here at *CI-P News*, which is why we are writing about them today.

Dichotomies such as this are always disturbing to me since I am pretty clear that I am not a 1%er but less clear about what the 99% stands for. And, therefore, where or if I even fit in. For now, though, I assume I am much closer to them than the other.

Since *CI-P News* has been exploring Lean and the economy for some time now, so in a sense, even though we at *CI-P News* are campers who are 'not camping', our sympathies for now do lie with the actual campers.

Last month we noted, for example, that if there is no Work there is no Lean. If you are an active CI-P you know what I mean. — *cont'd on p. 6*

Tools: Failure Mode & Effects Analysis

One of the almost totally predictable aspects of creating the improvement implementation plan is that barriers to change are often not identified at all or if they are they tend to be pro forma and nothing else is done with them. Yet, it is these barriers that prevent successful implementation and that we all keep hearing in plan implementation work sessions. Tried and true barriers such as *Didn't have time to do it; couldn't reach so-and-so; can't do anything until so-and-so does this or that; there's no money; we need more money; we need more staff; the law/regulations say we can't do it — or — the law/regulations say we have to do it the old way; my supervisor/manager isn't supportive; this wasn't the right thing to do; and so on.* And then there are those barriers, of course, that are more particular to the specific change action.

A techniques that you, as a CI-P, might consider using is the Failure Mode & Effects Analysis (FMEA). It is useful in designing and assessing new processes or services/products (materials, information, decisions, etc.) in their development stages prior to their implementation and evaluating the potential impact of the proposed change(s) instead of reacting after failures have occurred, costing considerable time and money. It can also be used as an operational control in assessing existing process/products/services.

FMEA is a systematic, prospective (generally team-driven) method that—

- Identifies potential failures in a system, process, service, or product. It is an inductive bottom-up approach and identifies potential failures that might occur — including where and when.
- Assesses the severity, likelihood, and impact of the failures identified.
- Assists in prioritizing those areas that are most at risk and in need of change.
- Assesses the availability and effectiveness of preventive controls.
- Can reduce, as a result, development and implementation time and costs.
- Is increasingly proving to be useful and productive in a transactional environment (though its roots are in the military and later aviation and automotive industries, now use in, for example, healthcare), in identifying problems in the design, implementation, and operation of systems, processes, purchases, services, and products before they occur.

This is an important point: In identifying potential failures, their relative risk, and preventive controls, action can be taken to prevent the failure, the error, before it actually occurs. It helps us get to “How can we be successful?” And save time and money and prevent any harm to the customer/client.

Failure Mode: Any way in which something might fail. An error or defect in a process, design, or item — especially any that affect the customer. They can be potential or actual.

Effects Analysis: Identifying and assessing the consequences of those failures.

When to Use FMEA:

- When a system, process, service, or product is being designed or redesigned.
- When a service or product is being applied in a new way.
- Before developing control plans for a new or modified process.
- When improvement goals are planned for an existing process, service, or product.
- When analyzing failures of an existing system, process, service, or product.
- Periodically throughout the life of the system, process, service, or product.¹

¹ Adapted from ASQ.

Tools: Failure Mode & Effects Analysis *(cont'd.)*

Action- Step- Product Function	Process				Action			Result							
	Potential Failure Mode	Potential Effect(s) of Failure	Severity 1-10	Potential Causes of Failure	Likely Occurrence 1-10	Current Controls	Detection 1-10	RPN = SxOxD	Recom- mended Action	Responsibility & Planned Target Date	Action Taken	Revised Severity	Revised Occurrence	Revised Detection	Revised RPN

* RPN = Risk Priority Number

Benefits

- Provides a disciplined, structured analysis process.
- Improves the quality and consistency of systems, processes, services, technology, and products.
- Increases customer/client satisfaction.
- Reduces the time and costs associated with failures.
- Offers clear organization/documentation
- Tracks, over time, the changes/actions taken to reduce risk.
- Provides prioritized, rank-ordered results.
- Is adaptable --easy to modify/update.
- Is versatile -- easily used for a variety of purposes.
- Integrates with other methodologies.

Types & Uses of FMEA Analysis

- Concept: In early design concept stages.
- Design: Prior to production, implementation. Design of each step/function may promote success or failure of that step/function and ultimately the system, process, service, or product. Making effective use of team expertise at this point will save time and money, well before failure and failure detection – particularly for any special characteristics.
- Equipment: Equipment design before purchase.
- Mission: Mission profile. (also Functional FMEA)
- Process: Service or product processes, including training, procedures / steps / functions, action plan, etc. This is a fundamental part of Lean, especially re: changes, error-proofing, and the development of the future state and action plan.
- Service: Operational processes before they are implemented and affecting the customer.
- Software: Software functions.
- System: Global systems functions.

FMEA Process (for use in design, control, and/or continuous improvement):

- Identify Steps/Functions/Actions in the process (*What are each of the specific steps/functions in the process and/or the change actions in the plan?*)
- For each step/function/action, identify:
 - Failure modes (*What could go wrong?*)
 - Failure causes (*Why might the failure happen?*)
 - Failure effects (*What would be the consequences of each failure?*)
- For each step/function/action, determine:
 - The risk (severity, occurrence — probability, and detection)
 - The risk priority number (RPN)
- For each step/function/action, determine:
 - Detection Controls (*What could prevent the failure and prevent it from affecting the customer?*)

— cont'd on page 4

Tools: Failure Mode & Effects Analysis *(cont'd.)*

Steps in the FMEA Process²:

1. Plan

- Define the purpose for conducting the FMEA. Is it for concept, design, implementation, or operational control?
- Identify the system, process, service, or product.
- Identify a cross-functional team of people with varied knowledge about customer needs and the system, process, service, or product.
- Identify the scope of the FMEA. What are the boundaries? At what micro or macro level should it be? If functional, are there flowcharts?

2. Identify Failure Modes

- Assemble the cross-functional team.
- Identify specific functions/steps, its /procedures/methodology, and their purpose. Name each, using a verb followed by a noun.
- Brainstorm how each function/step could fail. Be sure to be as comprehensive as possible in identifying possible failure modes.
- If this indicates that a function/step has been omitted or is too broad, add it now or make it more detailed.

3. Determine the Effects of Failures

- Identify Effects
 - For each failure mode, identify (brainstorm) all the consequences (what is the effect) on the specific function/step
 - Also, identify the effect of each failure mode on other functions/steps, the system as a whole, related systems/processes/services/products, customers, laws and regulations, staff, etc.
 - Be as comprehensive as possible, including any critical characteristics (such as laws & regulations) that would increase the severity rating.
- Determine Severity
 - Using a scale of 1-10 (good to bad), determine the severity of each effect for the specific failure mode. If there is more than one effect, use the highest ranking in calculating the RPN for that failure mode.

Severity Levels		
#	Definition	
10	Severely High	catastrophic-perhaps without warning. Could cause harm to customer or others.
9	Extremely High	Becomes inoperative; customers angered; unsafe operation and possible harm
8	Very High	Loss of primary function, service/product not useful to customer
7	High	Loss of primary function, causes a high degree of customer dissatisfaction
6	Moderate	Partial malfunction, loss of performance can be overcome with modifications, customers annoyed
5	Low	Loss of some performance
4	Very Low	Loss of some small performance
3	Minor	Nuisance, does not affect service delivery, usually not noticed by customer
2	Very Minor	Generally unnoticed, very minor performance loss
1	None	Unnoticed, no effect on performance

4. Identify the Causes of the Failure Modes

- Identify Failure Mode Causes
 - Identify all the potential root causes for each failure mode. These can be unintentional, deliberate/built-in, environmental, cultural, etc. You can use any of a variety of methods (brainstorming, etc.) and cause analysis tools for this purpose.
- Determine the Cause Likelihood/Probability
 - For each cause, determine the likelihood or probability for the Occurrence of that particular cause, using a scale of 1-10 (good to bad). In the instance of more than one cause for a failure mode, use the highest ranking one in calculating the RPN.

Occurrence Levels		
#	Definition	
10	Very High	Persistent failure – More than once each day
9	Very High	Persistent failure – Once every 3-4 days
8	High	Frequent failures – Once per week
7	High	Frequent failures – Once per month
6	Moderately High	Occasional failures – Once every 3 months
5	Moderate	Occasional failures – Once every 6 months
4	Moderately Low	Occasional failures – Once per year
3	Low	Relatively few failures – Once every 1-3 yrs
2	Low	Relatively few failures – Once every 3-6 yrs
1	Remote	Failure unlikely – Once every 6-9 years

Tools: Failure Mode & Effects Analysis *(cont'd.)*

5. Identify Failure Detection Controls

- Identify Failure Detection Controls
 - Identify/Brainstorm the current control(s) for each failure mode. This is the capacity to detect failure and includes equipment, tests, procedures, or warning mechanisms in place to keep failures from reaching the customer (error-proofing). These controls might prevent the cause from happening, reduce the probability that it will happen, or detect failure after the cause has already happened but before it has caused harm, before the customer is affected.

Detection Levels		
#	Definition	
10	Absolute certainty of non-detection	Certain to not detect a problem (or no control exists).
9	Very Remote	Control will probably not detect.
8	Remote	Control has poor chance of detection.
7	Very Low	Control has poor chance of detection.
6	Low	Control may detect.
5	Moderate	Control may detect.
4	Moderately High	Control has good chance of detection.
3	High	Control has good chance of detection.
2	Very High	Control almost certain to detect.
1	Almost Certain	Control certain to detect cause/failure and failure is kept from affecting the customer.

- Determine Effectiveness of Detection Controls
 - Determine the detection rating for each control, using a scale from 1 to 10 (good to bad). This estimates how well the controls can detect either the cause or its failure mode after they have happened but before the customer is affected.

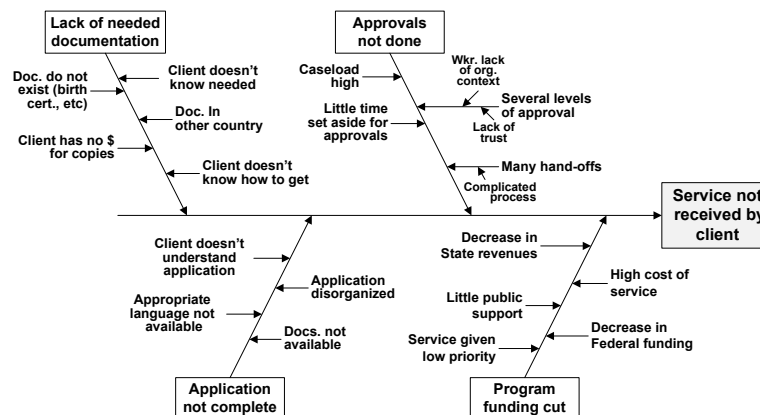
6. Prioritize Potential Failures

- Calculate the risk priority number (RPN) by multiplying S x O x D. This gives you the overall risk priority number.
- Also, you can calculate how critical a failure might be by multiplying S x O. This total gives an additional basis for identifying the order in which potential failures should be addressed.

7. Follow Up

- Develop an improvement action plan by identifying recommended change actions to lower the severity and/or occurrence numbers. Be certain to consider and include detection controls (error-proofing, poka-yoke). As with any change implementation plan, also identify the person(s) responsible for each actions as well as the target implementation dates.
- Track the progress/results and actual date for each change action. Revise the severity, occurrence, and detection ratings as appropriate, along with the new RPN. This is helpful in determining improvement progress.
- Continue doing this for the life of the system, process, service, or product.

While most Root Cause Analysis methods are typically used after a problem has been identified, they could be used prospectively in conjunction with FMEA to identify the possible cause of a potential failure and so assist in developing a more effective control.



² From many sources with similar material, including the LEI, IHI, ASQ, Mindtools, and so on.

The Stone and the Canvas (cont'd from page 1)

From their signs and comments, the OWS-OCP protest represents an appeal for fairness and justice in our government and economic system and, for many campers, it means more jobs.

From this perspective, the differences between the 99% and 1% appear to merge since no one would disagree with that end. Who would disagree with the idea of a job for anyone who wants it? It is the *means* to this end that separate the 99%ers from the 1%ers — but more on that below.

I confess that in my duties as a reporter for *CI-P News*, I took a walk over to the OWS-OCP to see for myself what was going on. Mind you, this was a gemba walk (i.e. 'a go and see') and nothing more.

What I saw was rag-tagged and rugged, typically Maine in a camping sort of way. When I asked one of the 99er's how the protest was going he responded, "Quite well, we are peaceful and the cops have not bothered us." Then he pointed to leg venison he had just taken off the grill and asked me if it was cooked properly.

I assumed either my grey beard led him to believe I had some extensive game-related culinary wisdom, or I projected a mien of a hunter. Either way, I told him that since I don't eat venison I had no idea. The campers all seemed happy enough.

There was a wonderful St. Bernard named Bandit hanging out with them, who immediately leaned into me and begged to be scratched. I thought he would keep a few people warm at night for sure. Since I was dressed for work, I started to worry they might mistake me for one of the 1%ers spying on them so I wished them a good protest and continued my walk.

As I turned on the trail, something caught my eye. I looked up and was struck by the contrast between the large, looming granite State Capitol Building dominating Capitol Park and there, right in its shadow, this small rag-tag tent city. It was then I saw that the scene before me represented the struggle between two of the great and powerful ideas facing this nation and the world: the role of government and the role of free enterprise.

Printed & Other Matters

Organizational culture distinguishes top-performing hospitals in patient outcomes from heart attack

AHRQ, Research Activities, No.370, June 2011

"Hospitals with the lowest mortality rates for patients with acute myocardial infarction (AMI) or heart attack don't differ much from hospitals with high mortality rates in their use of evidence-based protocols and processes. Organizational culture is what distinguishes the top-performing hospitals, according to a new study....The researchers found that staff at the high-performing hospitals shared organizational values of providing exceptional, high-quality care. In these hospitals, senior management exhibited unwavering commitment to high-quality AMI care through providing adequate financial and nonfinancial resources, by using quality data in their strategic planning, and by fostering staff accountability for poor performance and recognition for high performance....High-performing hospitals were more likely to have physician-champions for quality AMI care, empower their nurses, and involve pharmacists in patient care.... Finally, coordination among teams and units and innovative problem-solving by front-line staff were routine in the high-performing hospitals."

Study: "What distinguishes top-performing hospitals in acute myocardial infarction mortality rates? A qualitative study." Leslie A. Curry, Ph.D., Erica Spatz, M.D., Emily Cherlin, Ph.D., M.S.W., Harlan M. Krumholz, M.D., S.M., Elizabeth H. Bradley, Ph.D., et al. *Annals of Internal Medicine*. 154(6), pp. 384-390. March 15, 2011.

The Stone and the Canvas (cont'd from prior page)

As public theater goes, it was a set piece. A perfect contrast written in stone and canvas — well, actually nylon and plastic.

In his book, *Beyond Culture*, [Edward Hall](#) developed the idea of 'extension transference'. He postulated that humanity's rate of evolution has and does increase as a consequence of its creations and that we evolve as much through our 'extensions' as through our biology. Examples of these 'extensions' include not just physical technology (i.e. the computer) but also social/cultural values (i.e. Lean). Moreover, these 'extensions' are capable of enabling humans to adapt much faster than genetics. As evidence of this concept, think of how incredibly complex and connected the world has become in our own lifetimes.

What we as CI-Pros have come to know as Lean is one of Hall's 'extensions', enabling humanity to design production systems that when adopted by organizations enable them to become highly efficient and competitive in allowing them to deliver products and services quickly, at low cost and with high quality. In the real market place and in the market place of ideas, 'Lean' represents another step forward for human progress. Lean is a competitive advantage for suppliers and producers by meeting customer demand cheaply; enabling more products and services to more people. Since Lean continuously seeks to use resource efficiently (i.e. to reduce waste both in materials and human resources), it

has an added benefit of reducing stress on the Environment. Lean is also Green. All humanity benefits from this invention. This assumes, of course, a healthy economy.

By failing to adopt these new methods, government continues to waste resources. This should come as no surprise to anyone in or out of government. Until recently, a typical government strategy has been to do more with more, more people, more resources, more rules and regulations, and more taxes. This strategy has exhausted its utility, and part of the revolution the 99% represent is the seeking of a new one.

While the OWS-OCP has many other issues driving it, at least one claim is that our government is no longer is responsive to the 99%. For evidence, one need only look at [Gallup polls](#) recent report on the public's satisfaction with Congresses, now at a historic low.

We as citizens must now urgently address the role of government giving rise to two questions: The first, What role should government play in the lives of its citizens if it no longer can provide services efficiently and effectively—better, faster and cheaper? And the second, How do we make government responsive to all its citizens — the 99% and 1%ers?

The scene is set, the stone and the canvas.
And the drum beats.

— *Walter*

BTC Lean Schedule

Date	Time	Topic	Location	Contact
Nov. 18	8:15-4:30	Clinical Supervision	221 State, Lean Lab	WEL/ASD
Dec. 5-9	8:15-5:00	DOP 1-7 (tentative)	221 State, Lean Lab	WEL/ASD/JR/JK/MAD
Dec. 16	8:15-4:30	Clinical Supervision	221 State, Lean Lab	WEL/ASD
Jan. 20	8:15-4:30	Clinical Supervision	221 State, Lean Lab	WEL/ASD
Feb. 17	8:15-4:30	Clinical Supervision	221 State, Lean Lab	WEL/ASD

* To add or see more events or detail, go to the Bend the Curve Calendar in Outlook's Public Folders.



Department of Health
and Human Services
Maine People Living
Safe, Healthy and Productive Lives

Paul R. LePage, Governor

Mary C. Mayhew, Commissioner

The primary purpose of the *Bend the Curve* Team is to provide support, consultation, assistance, and leadership in continuous improvement approaches and activities for State staff, work teams, and leaders as they seek to continually improve their work culture, systems, processes, and environments – in order to meet the mission of Maine State government and the expectations of Maine citizens.

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We're on the net !
<http://www.maine.gov/dhhs/btc>



**Continuous Improvement Practitioners:
BTC Intervention Facilitation Status**

DHHS		DOL		DAFS	
Kate D. Carnes	C-L	Jorge A. Acero	C-O	Wendy Christian	I-O
Nancy Cronin	C-O	Michael T. Brooker	I-O	Rebecca S. Greene	I-L
Marcel Gagne	LCL	Deidre A. Coleman	I-O	Lyndon R. Hamm	I-LCL
Julita Klavins	L	Joan A. Cook	LL	Billy J. Ladd	I-LCL
Walter E. Lowell	L	Merle A. Davis	L	Michaela T. Loisel	I-L
Jerrold Melville	LCL	Eric Dibner	O	DOC	
Ann O'Brien	L	Peter D. Diplock	I-O	Gloria R. Payne	I-O
Cheryl Ring	C-LCL	Brenda G. Drummond	I-O	DOT	
Terry Sandusky	L	Anita C. Dunham	I-LCL	Michael Burns	C-O
Bonnie Tracy	C-O	Karen D. Fraser	C-L	Jessica Glidden	I-O
		Timothy J. Griffin	L	Rick Jeselskis	I-O
Sec.of State-BMV		Gaetane S. Johnson	I-O	Robert McFerren	I-O
Scott Thompson	O	Michael J. Johnson	O	Sam McKeeman	C-O
OPEGA, Legislature		James J. McManus	I-LCL	Jeffrey Naum	I-O
Matthew K. Kruk	I-O	Scott R. Neumeyer	I-O	Mark S. Tolman	I-O
Univ. of Maine		John L. Rioux	L	DEP	
Kim Jenkins	O	Sheryl J. Smith	C-O	Carmel A. Rubin	I-O
Community – Private Sector *					
Rae-Ann Brann*	I-L	James Fussell*	I-LL	Henry B. McIntyre*	LCL
Stephen C. Crate*	I-O	Kelly Grenier*	LL	Jack Nicholas*	I-O
Arthur S. Davis*	L	Alicia Kellogg*	I-O	Anne Rogerson*	O
Nancy Desisto*	L	Maayan L. Lahti*	I-O	Clough Toppan*	LCL
Jane French*	I-L				
Town of Durham, New Hampshire					
		David Kurz	I-O	Steve McCusker	I-O
		Michael Lynch	I-O	Todd Selig	C-O

* Community CI-P	I - Inactive	C - "Champion for Lean" - not facilitating
L - Lead (LL-Learning)	LCL - Learning Co-Lead	O - Learning Observer

More Miller workshops & next DOP 1 scheduled !

Additional workshops with Ken Miller are still being planned. We'll keep you posted.

An introductory week-long CI-P Bronze level training DOP 1 is tentatively scheduled for December 5-9, 2011.

You can also check the Bend the Curve Calendar in Outlook's Public Folders & come to the planning meetings for Clinicals and other events.