The Red Bead Game
Henry Ford (1863-1947) – and Mass Production
Frederick Winslow Taylor (1856-1915)
“As the Bell System grew in size, ...(it) piled on more inspectors to oversee field installation of the complicated new switches, but often wound up with more inspectors on the job than installers.”

John Butman: Juran – A Lifetime of Influence
Walter A. Shewhart (1891-1967)
Statistical Process Control Chart: “Shewhart Chart”
Statistical Process Control Chart: “Shewhart Chart”

Common Cause Variation
Statistical Process Control Chart: “Shewhart Chart”

Special Cause Variation
“Tampering”

• Reacting to **Common Cause Variation** As If It Were **Special**
  – Overreacting to random fluctuations

• Reacting to **Special Cause Variation** As If It Were **Common**
  – Changing the whole system in reaction to a non-representative event
Deming’s “System of Profound Knowledge”
Knowledge for Traditional Improvement

Subject Matter and Disciplinary Knowledge

Traditional Improvement
Knowledge for Continual Improvement

Subject Matter and Disciplinary Knowledge

Knowledge for Improvement
- Systems
- Variation
- Psychology
- PDSA

Continual Improvement
Deming’s “Profound Knowledge”

- Understanding Variation
- Appreciation of a System
- Knowledge of Psychology
- Theory of Knowledge
The Elements of Profound Knowledge

1. Understanding Variation
The Elements of Profound Knowledge

1. Understanding Variation
2. Appreciation of a System
Appreciation of a System

If you can't describe what you are doing as a process, you don't know what you're doing.

— W. Edwards Deming —
Peter Senge: “The Fifth Discipline”
Appreciation of a System
Best Care Always: Critical Care Driver Diagram

**Outcome**
- Improve Critical Care Outcomes

**Primary Drivers**
- Provide appropriate, reliable, and timely care to critically ill patients using evidence-based therapies
- Integrate the patient and family into the care team
- Develop an infrastructure that promotes quality care

**Secondary Drivers**
- Reduce complications from ventilators
- Reduce complications from central venous catheters
- Prevent healthcare associated infections and cross contamination
- Proper sepsis recognition and treatment
- Prevent VTE
- Involve patient/family in daily goal setting process
- Promote open communication among team and family
- Ensure appropriate infrastructure and leadership to provide consistent, reliable, evidence based care
- Improve critical care throughput
- Ensure competent staff with knowledge in improvement work
- Reliable care planning, communication, and collaboration of a multi-disciplinary team
The Fifth Discipline

The 11 Laws of the Fifth Discipline

1. Today's problems come from yesterday's "solutions."
2. The harder you push, the harder the system pushes back.
3. Behavior grows better before it grows worse.
4. The easy way out usually leads back in.
5. The cure can be worse than the disease.
6. Faster is slower.
7. Cause and effect are not closely related in time and space.
8. Small changes can produce big results... but the areas of highest leverage are often the least obvious.
9. You can have your cake and eat it too---but not all at once.
10. Dividing an elephant in half does not produce two small elephants.
11. There is no blame.
The Elements of Profound Knowledge

1. Understanding Variation
2. Appreciation of a System
3. A Theory of Knowledge
The Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

When you combine the three questions with the...PDSA cycle, you get...

...the Model for Improvement.

A Model for Learning and Change

Source: *The Improvement Guide* p. 10
Repeated Use of the PDSA Cycle for Testing

Model for Improvement
- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we make that will result in improvement?

Changes that result in improvement
- Spreading
- Sustaining the gains
- Implementation of Change
- Wide-Scale Tests of Change
- Follow-up Tests
- Very Small Scale Test

Sequential building of knowledge under a wide range of conditions

Hunches
Theories
Ideas
System Design: Football

Running  Passing  Shooting  Conditioning
System Design: Chronic Illness Care

Diagram: Diagram of System Design with stages labeled as Self Care Support, Delivery System Design, Decision Support, and Clinical Information Systems.
The Value of “Failed” Tests

“I did not fail one thousand times; I found one thousand ways how not to make a light bulb.”

*Thomas Edison*
The Elements of Profound Knowledge

1. Understanding Variation
2. Appreciation of a System
3. A Theory of Knowledge
4. Psychology
Hardly a competent workman can be found who does not devote a considerable amount of time to studying just how slowly he can work and still convince his employer that he is going at a good pace.

— Frederick Winslow Taylor —
Douglas McGregor: Theory X and Theory Y

Theory X
- Authoritarian, repressive style. Tight control, no development. Produces limited, depressed culture.

Theory Y
- Liberating and developmental. Control, achievement and continuous improvement achieved by enabling, empowering and giving responsibility.
Team Manager, Mitchell Marcus, has a developmental disability.
The Elements of Profound Knowledge

1. Understanding Variation
2. Appreciation of a System
3. A Theory of Knowledge
4. Psychology

+ A “VESSEL”
The “Vessel” – A New Management System

To successfully respond to the myriad of changes that shake the world, transformation into a new style of management is required. The route to take is what I call profound knowledge - knowledge for leadership of transformation.

(W. Edwards Deming)

“..transformation to a new style of management is required....”
Joseph M. Juran (1904-2008)
Deming’s “14 Points for Top Leaders”

1. Create Consistency of Purpose
2. Adopt a New Philosophy
3. Cease Dependence on Inspection
4. Stop Awarding Business based on $$ Alone.
5. Continuous Improvement of Production Processes
6. Modernize On The Job Training
7. Institute Leadership
8. Drive out Fear
9. Break Down Department Barriers (Silos)
10. Eliminate Slogans that do not provide a Method
11. Eliminate Quotas & Work Standards
12. Remove Barriers that rob Pride from the Individual
13. Institute Programs for Education & Training
14. Structure Management to focus on 1 - 13
Dr. Joseph M. Juran’s “Trilogy”
So… What Can You Do?

1. Understanding Variation
   - Master the concept of “tampering” and stop it.

2. Appreciation of a System
   - Ask, “What am I part of?”

3. A Theory of Knowledge
   - Practice “P-D-S-A” everywhere, all the time.

4. Psychology
   - Begin with trust. In everyone you meet, see yourself.

+ The “Vessel”
   - Make “profound knowledge” the foundation for action.
A Reading List for Leaders, part 1

Jerry Langley, Tom Nolan, & Kevin Nolan: The Improvement Guide

Peter Senge: The Fifth Discipline

Chris Argyris: Overcoming Organizational Defenses
A Reading List for Leaders, part 2

Don Norman: *The Design of Everyday Things*

Karl Weick and Kathleen Sutcliffe: *Managing the Unexpected*

James Reason: *Human Error*
You can do it!

Bike video here