Lean Systems Program
Institute of Research for Technology Development
College of Engineering
University of Kentucky

8 Step Problem Solving Method
Learning Goals

• Deepen your awareness of the importance of the 8 step process to effective problem solving

• Apply the process to your own work situation during class discussion

• Experience how the A-3 tool communicates the process thinking

• Apply in the work environment
### 8 Step Process for Problem Solving

<table>
<thead>
<tr>
<th>Steps Depth</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step 5</th>
<th>Step 6</th>
<th>Step 7</th>
<th>Step 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Go deeply on each step</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Toyota strength-standardize</td>
</tr>
<tr>
<td>Complete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Guiding Principles

Company Culture issue—follow each step completely

Use steps as a “check-sheet”
Guiding Principles

1) Customer viewpoint

Think and act for the customers

**Following process is the customer**
2) Confirm the Purpose of Your Work

Constantly question the purpose

Seek your own answers

Keep the overall goal and purpose in focus
3) Ownership and Responsibility

You are responsible for your work success

Take pride in your work

Ask:
“What can we do something about - how can we improve our work?”
3) Ownership and Responsibility

When people detect problems,

× Do not blame people
○ Appreciate people
4) Visualization

Make results and data **visible**
Clarify problems for **everyone** to see
Information is **timely**
Data is understandable to the **work group**
Guiding Principles

4) Visualization

Any variation hints there is a problem:

- Variation in the workload
- Team member has trouble
- Equipment or parts vary

Key Point: look for early indicators “near miss” thinking
Guiding Principles

5) Judgment Based on Facts

Without guessing or assuming
Go and See
at the work place,
get out of the
meeting room
(\textit{Genchi Genbutsu})

"Get Your Boots on!"
Guiding Principles

6) Think and Act Persistently

Think deeply
Complete each step of problem solving process
Don’t give up until results meet goal
Good Process=Good Results!
7) Speedy Action in a Timely Manner

Be adaptable to the work process needs - take action quickly

Keep at it until **TRUE countermeasures** are in place

- that which if implemented prevents problem from returning

If necessary, use **TEMPORARY measures**

- when a problem occurs, take action quickly
Temporary Measure

Action to stop or contain the problem--can add necessary extra work to the process

( + $ / + ♂ / + 😞 )

• When a problem occurs, take action quickly

• Purpose is to contain the problem, not solve it
Temporary Measure Example

Difference between “Temporary Measure" and “Countermeasures”

Problem

Machine over travels

Why?

Limit switch not activated (Fact)

Why?

Limit switch arm is Frozen (fact)

Why?

Limit switch is in Coolant air flow

Root Cause

(Temporary measure) Replace the limit switch

Prevents the recurrence

(Countermeasure) shield limit switch from coolant

Lean Systems Program
Select the optimal containment action on the following criteria:

- Simplicity
- Minimal modification to current process
- Time to implement

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simplicity</td>
<td>10</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Modification</td>
<td>9</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Time</td>
<td>10</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td><strong>29</strong></td>
<td><strong>27</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Rate each option relative to each other for each criteria. Sum the score and select the option with the highest score.
## Temporary Measure Implementation Plan

<table>
<thead>
<tr>
<th>Containment / Temporary Measure</th>
<th>Owner</th>
<th>Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Check at the last operation by Team Member</td>
<td>Team Leader</td>
<td>7/18/2006</td>
<td>Problem</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Identified</td>
</tr>
<tr>
<td>Team Leader Checking two bundles each shift as part of Standardized Work</td>
<td>Team Leader</td>
<td>7/18/2006</td>
<td>Temporary</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Implemented</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Follow up</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Complete</td>
</tr>
</tbody>
</table>
Guiding Principles

8) Thorough Communication

Thoroughly and sincerely communicate

Involve all stakeholders

Japanese concept of “Nemawashi”
Guiding Principles

- Find the problem
- Fix the problem
- Keep the problem from coming back
What Defines a problem in the 8 Step method?

Problems are the path toward improvement

“No one has more trouble than the person who claims to have no trouble.”
(Having no problems is the biggest problem of all.)

by Taiichi Ohno
What Defines a problem in the 8 Step method?

A problem is ... 

The **current situation** gap to the **standard** = PROBLEM
- Fact based
- Discovery driven
What Defines a problem in the 8 Step Method?

Non Value Added Work = Waste

Waste is any factor which does not contribute to the process by adding value. The goal of Lean is to eliminate any factors which raise cost without adding value to the product.
What Defines a problem in the 8 Step Method?

The 7 Wastes!

- Motion
- Overproduction
- Inventory
- Quality Defects
- Waiting
- Over Processing
- Transportation
What Defines a problem in the 8 Step Method?

Would you like to work in this place?
What Defines a problem in the 8 Step Method?

After

- Andon Cord
- Information Charts
- Safety Glasses On
- Ergo Aid Table
- Racks and Containers for Small Lot
- SOP
- Andon Board
- Scoreboard
- 5-S
- Foot-printing Floor
- Walking Aisle

See normal vs abnormal

5-S Scoreboard

What Defines a problem in the 8 Step Method?
8 Step Process for Problem Solving

Step 1. Clarify the Problem

Step 2. Break Down the Problem

Step 3. Target Setting

Step 4. Root Cause Analysis

Step 5. Develop Countermeasures

Step 6. See Countermeasures Through

Step 7. Monitor Both Results and Processes

Step 8. Standardize Successful Processes
Example of Problem A-3 Report

1. Clarify the Problem
   Ultimate Goal: No water leaks in TM/K produced cars
   Ideal Situation (Standard): Zero audit defects from Sealer area
   Current Situation: 7 water leaks on 7/28

2. Break Down the Problem
   - 7 Water leaks
     - 1 on Avalon
     - 1 on Malibu
     - 5 Tall light
     - 1 side
   - Many water leaks in the tail light

3. Target Setting
   Target: Eliminate 5 tail light area water leaks on Camry by 7/28

4. Root Cause Analysis
   - 5 water leaks in the tail light area
   - TAM leaving gaps in finish
   - TAM not turning spatulas into the seam
   - TAM not instructed in proper angle of finish when trained
   - No specification in STW for proper spatula angle when finishing

5. Develop Countermeasure
   R.C. No spec in standard work for spatula angle
<table>
<thead>
<tr>
<th>Countermeasures</th>
<th>Effort</th>
<th>Cost</th>
<th>Safety</th>
<th>Effectiveness</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add inspection process</td>
<td>A</td>
<td>A</td>
<td>O</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Train TAM's in correct angle to hold spatulas</td>
<td>A</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Repair in CART</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

6. See Countermeasure Through
   Countermeasure Plan - Train TAM's in correct spatula angle
<table>
<thead>
<tr>
<th>What</th>
<th>Who</th>
<th>When</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rewrite Standard Work</td>
<td>TL</td>
<td>7/28</td>
<td>100%</td>
</tr>
<tr>
<td>Develop SWES with Key Points</td>
<td>TL</td>
<td>7/29</td>
<td>100%</td>
</tr>
<tr>
<td>Train TAM's</td>
<td>TL</td>
<td>7/30 &amp; 31</td>
<td>100%</td>
</tr>
<tr>
<td>Check for 3 Stills</td>
<td>TL</td>
<td>8/3</td>
<td>100%</td>
</tr>
<tr>
<td>Remove Temp Action</td>
<td>TL</td>
<td>7/30</td>
<td>100%</td>
</tr>
</tbody>
</table>

7. Monitor Both Results and Processes
   Tail Light Water Leak Tracking
   - 7/28: 5 defects
   - 7/29: 0 defects
   - 7/30: 0 defects
   - 7/31: 0 defects
   - 8/1: 0 defects
   - 8/2: 0 defects
   - 8/3: 0 defects

8. Standardize Successful Processes
   Yokozuna: Contact other NAMC's to confirm no problem
   Follow-up: Have Pilot add special check for finish angle in Standardized work development
Example of Problem A-3 Report

Title: Reducing Manual Check Printing

1. Clarify the Problem

**Ultimate Goal:** TMs are compensated for work completed and paid timely and fairly

**Standard:** 100% (3300) of TM's paychecks are deposited error free

**Current Situation:** 80% (2640) of TM's paychecks are deposited error free

- GAP: 20% (660) paychecks need a manual check to correct errors

2. Break Down the Problem

- 20% (660/3300) manual checks being issued
  - Group Leader Error 35% (231/660)
  - Other 23% (151/660)
  - Salary Continuation 42% (277/660)

- Time Execution 61% (142/231)
  - Other 39% (90/231)

- STD Not Paid 30% (83/277)
  - FMLA PTO Not Paid 70% (193/277)

- FMLS Process Flow
  - T/M obtains FMLA form
  - T/M submits form to TMR by deadline
  - TMR reviews form - submits by deadline
  - Payroll system updated by deadline
  - T/M received paycheck with correct amount

- Point of Occurrence (POO)

3. Target Setting

**Target:** Eliminate 100% late submissions of FMLA forms to meet payroll deadline by March 2009. (193 of 660 total gap)

4. Root Cause Analysis

- FMLA paperwork is not received from TMR by the payroll deadline
  - Form doesn't pass review
  - Form was submitted incorrectly
  - Part "D" not complete
  - T/M thought HR was to complete
  - Instructions not clear in Part "D"

5. Countermeasure Options & Evaluation

<table>
<thead>
<tr>
<th>Options</th>
<th>Effectiveness</th>
<th>Budget</th>
<th>Speed</th>
<th>Quality</th>
<th>Overall Assessment</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post clearer instructions on T/M board</td>
<td>X</td>
<td>O</td>
<td>O</td>
<td>X</td>
<td>X</td>
<td>- Create awareness of enhancement - Help TMs who review board - Not helpful at home</td>
</tr>
<tr>
<td>Update instructions on form</td>
<td>△</td>
<td>O</td>
<td>O</td>
<td>△</td>
<td>△</td>
<td>- Would document enhancement as new standard - Dependent on T/M reading it</td>
</tr>
<tr>
<td>Have TMR instruct T/M</td>
<td>△</td>
<td>O</td>
<td>O</td>
<td>△</td>
<td>△</td>
<td>- Verbally communicate the enhancement - Cannot ensure that T/M will remember the instructions if not written down</td>
</tr>
<tr>
<td>Update instructions on form along with TMR communications</td>
<td>O</td>
<td>O</td>
<td>△</td>
<td>O</td>
<td>O</td>
<td>- Would document enhancement as new standard while confirming the instructions</td>
</tr>
</tbody>
</table>

6. Action Plan

<table>
<thead>
<tr>
<th>Item (What) (When)</th>
<th>Resp (Who)</th>
<th>Feb W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>March W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft form with clearer instructions</td>
<td>TH</td>
<td>TH</td>
<td>TH</td>
<td>TH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample T/M response; revise as needed</td>
<td>TH</td>
<td>TH</td>
<td>TH</td>
<td>TH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensus/Approval throughout HR</td>
<td>RK</td>
<td>RK</td>
<td>RK</td>
<td>RK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinate communication method with TMR and roll out</td>
<td>SE</td>
<td>SE</td>
<td>SE</td>
<td>SE</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

7. Monitor Both Results and Processes

- Number of FMLA forms from TMR not meeting payroll deadline
  - April: 193
  - W2: 100
  - W3: 98
  - W4: 20
  - May: 19
  - W2: 6
  - W3: 0

8. Standardize Successful Processes

- Document reason for adding additional instructions to form
- Standardize electronic form in database with revision date
- Yokoten: Share the new form with other NAMC’s by June 30
Step 1) Clarify the Problem

8 Steps

Step 1. Clarify the Problem

Proceedings

(1) Clarify the “Ultimate Goal” of your responsibilities & work
(2) Clarify the “Standard” of your work
(3) Clarify the “Current Situation” of your work
(4) Visualize the gap between the “Current Situation” and the “Standard”
What Defines a problem in the 8 Step method?

- **Ultimate Goal**
- **Standard**
- **Current Situation**
- **Gap = Problem**

**Important to the ultimate goal?**

**What is the standard?**

**Visualize (Make Explicit)**
Step 1) Clarify the Problem

Visualize the gap between the “Current Situation” and the “Standard”

- The Standard
- The Current Situation

Defects

Aug | Sep | Oct | Nov

Problem

Visualize the gap between the current situation and the standard
Step 1) Clarify the Problem

Process 1. Clarify the “Ultimate Goal” of your responsibilities & work

Ultimate Goal
To provide customers with highly functional and high-quality cars at reasonable prices in a timely manner

My job’s purpose
To meet customer demand

My work & Responsibilities
To meet Production Plans
1. Clarify the Problem

Ultimate Goal: Assure TMMK cars meet customer requirement for quality

Standard: Zero audit defects from sealer area

Current Situation: 7 water leaks on 7/28

Gap = 7
Example: Step 1

1. Clarify the Problem

Ultimate Goal: TMs are compensated for work completed and paid timely and fairly

Standard: 100% (3300) of TM’s paychecks are deposited error free

Current Situation: 80% (2640) of TM’s paychecks are deposited error free

GAP: 20% (660) paychecks need a manual check to correct errors

Current: 80% (2640)  
Standard: 100% (3300)  
Gap = (20%) 660
Step 2) Break Down the Problem

8 Steps

Step 1. Clarify the problem
(1) Clarify the “Ultimate Goal” of your responsibilities & work
(2) Clarify the “Standard” of your work
(3) Clarify the “Current Situation” of your work
(4) Visualize the gap between the “Current Situation” and the “Standard”

Step 2. Break down the problem

Proceedings
(1) Break down the problem
(2) Identify the prioritized problem
(3) Specify the point of occurrence by checking the process through GENCHI GENBUTSU
Step 2: Break Down the Problem

• Formulating a clear, concise statement from your Gap

• The statement describes the difference between the standard and current situation

• During this step, break the large problem into smaller, more specific problems

• If you can’t describe it, you can’t solve it!
Step 2) Break Down the Problem

Prioritized Problem at the Point of Occurrence (PoO)

Prioritized Problem at the Point of Occurrence (PoO)

Prioritized Problem

Prioritized Problem

Prioritized Problem

Prioritized Problem

Prioritized Problem

Prioritized Problem

What
Where
When
Who

NOT Why!
Step 2) Break Down the Problem

Narrow the problem sufficiently
Classify and quantify

7 Water leaks

1 on Avalon
1 in Mohican
5 Tail light

6 on Camry
1 side

Many water leaks in the tail light

Priority decision: tackle the biggest impact problem FIRST
Step 2) Break Down the Problem

Division points to break down the problem (classify)

Car sales not meeting the target
- By region
- By age
- By vehicle model
- By gender
- By month
- By vehicle type etc.

Not achieving cost targets
- By department (group)
- By process
- By equipment
- By expenditure type
- By month
- By types of cutting tools, etc.
Step 2: Break Down the Problem

Classify and Quantify

3% increase in SCRATCHES found on vehicle at Final Inspection

Prioritized Problem

80% Window Frame

15% Door Handle

5% Side Pnl

Left=95%

Right=5%

Frt Door=80%

RR Door=15%

Roof=0%

Hood=0%

Trunk=0%

Fender=0%

Qtr Pnl=5%
The point of occurrence (PoO) is the actual work element at the physical location where the problem is first seen.

For example, walk the line back. Check each work station, until you arrive at the station where the problem is no longer seen.
Set seat to car

Align seat to rail

Set seat to car

Pick seat from back w/carrier

Set seat to car

Align seat to rail

Set seat to car

Start to walk line back

PoO – Point of Occurrence

Direction of Assembly Line

Process #

1. Center Console Install
2. Seat Install
3. Center pillar garnish install
4. Window install
5. CSA

Interiors (15) Mutilations

Scuffed (7)
Center Console

Scuffed (4)
Kick Plate

Scuffed (4)
Headliner

Prioritized Problem

Scuffed

No Scuff Found

Standard Work of Seat Install

Locate Point of Occurrence (PoO)
Step 2) Break Down the Problem

Where is Point of Occurrence?

Prioritized Problem at the Point of Occurrence

Why is Point of Occurrence important?

For efficient use of time & effort
How to Proceed with Step Two

1st Action
List all possible breakdown classifications

2nd Action
Select highest potential classifications to pursue and quantify

3rd Action
Find the PoO at the process work element level (standard work step)

Big Gap Problem
# = x

Focus
Process

Work Elements

PoO
2. Break Down the Problem

Go and See Investigation for Point of Occurrence
1) Floor Brush--Finish lower seam on end panel
2) Engine Room Finish--Finish the area just above and below the tail light

Many water leaks in the tail light

Process

Vehicle Type

Point of Occurrence (PoO)
Example: Step 2

2. Break Down the Problem

20% (660/3300) manual checks being issued

- Group Leader Error 35% (231/660)
- Other 23% (151/660)
- Salary Continuation 42% (277/660)

- Time Execution 61% (142/231)
- Other 39% (90/231)
- STD Not Paid 30% (83/277)
- FMLA PTO Not Paid 70% (193/277)

FMLA Process Flow

- T/M obtains FMLA form
- T/M submits form to TMR by deadline
- TMR reviews form - submits by deadline
- Payroll system updated by deadline
- T/M received paycheck with correct amount

Point of Occurrence (POO)

Problem: FMLA paperwork is not received from TMR by the payroll deadline.
Step 3) Set a Target

8 Steps

Step 1. Clarify the problem
Step 2. Break down the problem
Step 3. Set a target

Proceedings

(1) Clarify the “Ultimate Goal” of your responsibilities & work
(2) Clarify the “Standard” of your work
(3) Clarify the “Current Situation” of your work
(4) Visualize the gap between the “Current Situation” and the “Standard”

(1) Break down the problem
(2) Identify the prioritized problem
(3) Specify the point of occurrence by checking the process through GENCHI GENBUTSU

(1) Make a commitment
(2) Set measurable, concrete and challenging targets
Step 3) Set a Target

1. Do not merely write down “what to do” as a target

All Employees will participate in cost reduction activities

The cost of food will be reduced 15% within this calendar year

What | How much | When
Step 3) Set a Target

2. Do not set up the method as a target

All employees will perform 5 evaluations per employee by March end

What   How much   When
Step 3) Set a Target

<STEP1>
- Standard
- Current Situation
- Big Problem

<STEP2>
- Prioritized Problem
- Point of Occurrence
- Problem
- Problem
- Problem

<STEP3>
- Target
Step 3: Set a Target

Improvement of skills

Improvement in KAIZEN mind

Improvement in teamwork

All employees can find the 5 common body surface defects by June 30

5 or more suggestions per employee by December 31

100% participation rate for safety activity by July 31
Example: Step 3

3. Target Setting

**Target:** Eliminate 5 tail light area water leaks on Camry by 7/29
3. Target Setting

**Target**: Eliminate 100% late submissions of FMLA forms to meet payroll deadline by March 2009. (193 of 660 total gap)
Example through Steps 1, 2, & 3

1. Clarify the Problem

Ultimate Goal: No water leaks in TMMK produced cars

Ideal Situation (Standard): Zero audit defects from Sealer area

Current Situation: 7 water leaks on 7/28

2. Break Down the Problem

7 Water leaks

1 on Avalon

1 in Mohican

5 Tail light

6 on Camry

1 side

Many water leaks in the tail light

3. Target Setting

Target: Eliminate 5 tail light area water leaks on Camry by 7/29

Go and See Investigation for Point of Occurrence

1) Floor Brush – Finish lower seam on end panel
2) Engine Room Finish – Finish the area just above and below the tail light
Example through Steps 1, 2, & 3

1. Clarify the Problem

**Ultimate Goal:** TMs are compensated for work completed and paid timely and fairly

**Standard:** 100% (3300) of TM’s paychecks are deposited error free

**Current Situation:** 80% (2640) of TM’s paychecks are deposited error free

<table>
<thead>
<tr>
<th>Gap = (20%) 660</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard</th>
<th>100% (3300)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>80% (2640)</td>
</tr>
</tbody>
</table>

2. Break Down the Problem

- **20% (660/3300) manual checks being issued**
  - Group Leader Error 35% (231/660)
  - Other 23% (151/660)
  - Salary Continuation 42% (277/660)
  - Time Execution 61% (142/231)
  - Other 39% (90/231)
  - STD Not Paid 30% (83/277)
  - FMLA PTO Not Paid 70% (193/277)

3. Target Setting

**Target:** Eliminate 100% late submissions of FMLA forms to meet payroll deadline by March 2009. (193 of 660 total gap)
### Step 4) Analyze the Root Cause

#### 8 Steps

1. **Step 1. Clarify the problem**
2. **Step 2. Break down the problem**
3. **Step 3. Set a target**
4. **Step 4. Analyze the Root Cause**

#### Proceedings

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1) Make a commitment | (1) Clarify the “Ultimate Goal” of your responsibilities & work  
(2) Clarify the “Standard” of your work  
(3) Clarify the “Current Situation” of your work  
(4) Visualize the gap between the “Current Situation” and the “Standard” |
| 2) Set measurable, concrete and challenging targets | (1) Break down the problem  
(2) Identify the prioritized problem  
(3) Specify the point of occurrence by checking the process through GENCHI GENBUTSU |
| 3) Specify the root cause | (1) Examine the Point of Occurrence and think of possible causes without prejudice  
(2) Gather facts through GENCHI GENBUTSU and keep asking “Why?”  
(3) Specify the root cause |
Step 4) Analyze the Root Cause

Prioritized Problem at the Point of Occurrence

Possible cause
Possible cause
Possible cause
Possible cause

Think of all meaningful possible causes

Not a fact
Not a fact
Not a fact

Fact
Fact

Possible cause
Possible cause
Possible cause

Possible cause
Possible cause
Possible cause

Not a fact
Not a fact
Not a fact

Fact
Fact

Root cause

Time for WHY

Go and See to confirm

Repeat

Idle vs. informed brainstorming
Step 4) Analyze the Root Cause

1) Confirm the situation at the point of occurrence
   – Investigate the potential cause efficiently
   – Problem occurs continuously or erratically?
   – Problem occurs in repeatable cycles?
   – Look at “connecting points” between processes
   – Ask: “What has changed?”
Step 4) Analyze the Root Cause

2) Without any prejudice

❌ Highly skilled employee, so can’t be the cause
❌ Always been this way, so can’t be the cause
❌ I just do/don’t feel this could be the cause

Experiences and intuition are important, but do not analyze root cause without thinking deeply
Step 4) Analyze the Root Cause

3) Use “4M1E” to think about possible causes

Man (Human)  
Machine  
Material  
Method  
Environment
Step 4) Analyze the Root Cause

(Example) Bad polishing of painted parts

Man (Human):
    Standard work being followed?

Machine:
    RPMs correct?

Material:
    Correct compound?

Method:
    Polishing standard correct?

Environment:
    Work place temperature correct?
Step 4) Analyze the Root Cause

Simply describe the facts

Example: Hand was caught in the clamp

(Why?)

✗ T/M was in a hurry, turned on the switch, then tried to adjust part after part had shifted

(Why?)

- Hand was under the clamp
- The clamp moved
Example: Welding robot stops in the middle of its operation.

Why?
A fuse in the robot has blown.

Why?
Circuit overloaded.

Why?
The bearings have damaged one another and locked up.

Why?
There was insufficient lubrication on the bearings.

Why?
Oil pump on robot is not circulating sufficient oil.

Why?
Pump intake is clogged with metal shavings.

Why?
No filter on pump intake (as designed)
# How to Proceed with Step 4

## Action Items

### Item 1
- **Brainstorm possible causes**
  - Think of all meaningful possible causes
  - Use best brainstorming
    - Fast paced
    - Time limited
    - Don’t stop to discuss
    - Everyone participates
  - Narrow the list (combine/eliminate) to select possible causes

### Item 2
- **Get input from job performers**
  - Go to work area or bring key people to classroom
    - Start with prioritized problem at point of occurrence
  - Show the narrowed list of possible causes
    - Ask: are these real/factual?
    - What are other causes?

### Item 3
- **Select the most likely cause**
  - Decide which is factual and within your control
  - Ask why the selected most likely cause is chosen
  - Repeat at each level until arriving at root cause — make “decision tree”

### Item 4
- **Create “why chain” apply “therefore test”**
  - Transfer results from “decision tree” into “5 Why chain”
  - Check logic with “therefore test”
  - Repeat/do over until logic flow is clear to the root cause

## Two Products for Presenting Step 4

1. Root cause decision tree (result of brainstorming); be able to explain what was ruled out as well as what was selected
2. “5 Why Chain,” root cause clearly labeled, with “therefore test” (see slides 63 & 64)
*Apply the “therefore” test to check thinking
Example through Step 4

Step 4) Analyze the Root Cause

**4. Root Cause Analysis**

FMLA paperwork is not received from TMR by the payroll deadline
- Form doesn't pass review
  - Form was submitted incorrectly
    - Part "D" not complete
      - T/M thought HR was to complete
        - Instructions not clear in Part "D"

*Apply the “therefore” test to check thinking*
Step 5) Develop Countermeasures

8 Steps

Step 1. Clarify the problem

Step 2. Break down the problem

Step 3. Set a target

Step 4. Analyze the root cause

Step 5. Develop countermeasures

Proceedings

(1) Clarify the “Ultimate Goal” of your responsibilities & work
(2) Clarify the “Standard” of your work
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(2) Set measurable, concrete and challenging targets

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(2) Gather facts through GENCHI GENBUTSU and keep asking “Why?”
(3) Specify the root cause

(1) Develop as many potential countermeasures as possible
(2) Select the highest value added countermeasures
(3) Build consensus with others
(4) Develop a clear and detailed action-plan
Step 5) Develop Countermeasures

Procedure for developing countermeasures

Root Cause

- Countermeasure
- Countermeasure
- Countermeasure
- Countermeasure
- Countermeasure
- Countermeasure

What are the risks involved?

Is it effective?
Step 5) Develop Countermeasures

Develop as many potential countermeasures as possible

• Think: “what will eliminate the Root Cause”
• Don’t deny potential countermeasures with preconceived ideas
• Key points when developing ideas
  • Clarify the variables/conditions
  • What can I change? Get advice from others
  • Are there any previously developed (and effective) countermeasures
Step 5) Develop Countermeasures

Develop as many potential countermeasures as possible

[Root cause]
The pallet storage area is not large enough

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Potential Countermeasure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Where</strong></td>
<td>Move to a more spacious place</td>
</tr>
<tr>
<td><strong>When</strong></td>
<td>Reduce number of pallets by changing conveyance timing</td>
</tr>
<tr>
<td><strong>What</strong></td>
<td>Make more space by making pallet shape more compact</td>
</tr>
<tr>
<td><strong>How</strong></td>
<td>Make more space by tidying up pallets</td>
</tr>
</tbody>
</table>
## Step 5) Develop Countermeasures

Select the highest value added Countermeasures

### Evaluate all potential Countermeasures

<table>
<thead>
<tr>
<th>Consider</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effectiveness</strong></td>
<td>Does it truly eliminate the Root Cause? Does it meet the Target?</td>
</tr>
<tr>
<td><strong>Cost/Manpower</strong></td>
<td>Does it consider cost and time? Does it consider the number of people required to implement/sustain</td>
</tr>
<tr>
<td><strong>Risk</strong></td>
<td>What are the risks when implementing Safety? Quality? Workability? What is the impact on previous or following work processes?</td>
</tr>
</tbody>
</table>
Step 5) Develop Countermeasures

Select the highest value-added Countermeasures

Make an evaluation matrix: Countermeasure for assembling mismatched parts

<table>
<thead>
<tr>
<th>Options</th>
<th>Factors</th>
<th>Risk</th>
<th>Overall judgment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expected effort</td>
<td>Cost / Man-hour</td>
<td></td>
</tr>
<tr>
<td>Change parts color</td>
<td>△</td>
<td>△</td>
<td>△ △</td>
</tr>
<tr>
<td>Change parts shape</td>
<td>X</td>
<td>X</td>
<td>X X</td>
</tr>
<tr>
<td>Change sequence of</td>
<td>O</td>
<td>O</td>
<td>O O</td>
</tr>
<tr>
<td>operation</td>
<td>△</td>
<td>△</td>
<td>△ △</td>
</tr>
</tbody>
</table>

Confirm the facts by interviewing related people and departments
Step 5) Develop Countermeasures

Build consensus with others

- Explain and discuss plans with all relevant parties
- Set up a cross functional committee
- Organize the meeting to present the analysis & ideas
- Hold update meetings to share latest info/progress

Present to management for approval to go forward—

A-3 format is a standardized and efficient tool

Note: thru Process step 5, planning phase is completed
Step 5) Develop Countermeasures

Develop a clear and detailed action-plan

When creating the action-plan, be sure to clearly identify the four W’s of the countermeasures


<table>
<thead>
<tr>
<th>Action items</th>
<th>Operator</th>
<th>July</th>
<th>August</th>
<th>September</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine the best color for parts per model</td>
<td>A</td>
<td>1W 1W 3W 4W</td>
<td>2W 3W 4W 1W</td>
<td>2W 3W 3W</td>
</tr>
<tr>
<td>Prepare trial parts</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Discuss color
- Discuss and decide in a team meeting
- Request to prepare
- Test by using trial parts
- Confirm test results
- Report to managers

Clarify the roles and responsibilities of people and departments involved

Clarify the schedule and order of actions to implement
Example: Step 5

5. Develop Countermeasure

R.C. No spec in standard work for spatula angle

<table>
<thead>
<tr>
<th></th>
<th>Effort</th>
<th>Cost</th>
<th>Safety</th>
<th>Effectiveness</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add inspection process</td>
<td>Δ</td>
<td>Δ</td>
<td>0</td>
<td>Δ</td>
<td>Δ</td>
</tr>
<tr>
<td>Train T/M's in correct angle to hold spatula</td>
<td>Δ</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Repair in CART</td>
<td>X</td>
<td>X</td>
<td>0</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Temp Action
Add inspection key points at quality gate and feedback to T/M's - 7/28

Make a Plan

<table>
<thead>
<tr>
<th>WHAT</th>
<th>WHO</th>
<th>WHERE</th>
<th>WHEN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Example: Step 5

### 5. Countermeasure Options & Evaluation

<table>
<thead>
<tr>
<th>Options</th>
<th>Effectiveness</th>
<th>Budget</th>
<th>Speed</th>
<th>Quality</th>
<th>Overall Assessment</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Post clearer instructions on T/M board       | ✗             | O      | O     | ✗       | ✗                  | - Create awareness of enhancement  
- Help T/Ms who review form  
- Not helpful at home                                                        |
| Update instructions on form                  | △             | O      | O     | △       | △                  | - Would document enhancement as new standard  
- Dependent on T/M reading it                                                     |
| Have TMR instruct T/M                        | △             | O      | O     | △       | △                  | - Verbally communicate the enhancement  
- Cannot ensure that T/M will remember the instructions if not written down        |
| Update instructions on form along with TMR communications | O             | O      | △     | O       | O                  | - Would document enhancement as new Standard while confirming the instructions               |
Step 6) See Countermeasures Through

8 Steps

Step 1. Clarify the problem

Step 2. Break down the problem

Step 3. Set a target

Step 4. Analyze the root cause

Step 5. Develop countermeasures

Proceedings

(1) Clarify the “Ultimate Goal” of your responsibilities & work
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(2) Narrow down the countermeasures to the most practical and effective
(3) Build consensus with others
(4) Develop a clear and detailed action-plan
Step 6. See countermeasures through

- With all members united, implement countermeasures with speed and persistence
- Share information with others by informing, reporting and consulting
- Never give up, and proceed to the next step quickly
Step 6) See Countermeasures Through

Prompt response from the team

Be persistent

Never give up and act persistently

Proper checking

Speedy action together as a team

Timely reporting, informing, consulting
Step 6) See Countermeasures Through Implement Countermeasures with speed and Persistence after consensus (*Nemawashi*) building

1) Concentrate efforts

2) Check progress regularly

“On-the-floor” standup at the progress boards — relate to “jishuken” room
Share information with others by informing, reporting and consulting

- Share bad news quickly
- Contingency plans for unforeseen risks/events
Step 6) See Countermeasures Through

Never give up. If you cannot achieve the expected results, try other countermeasure ideas

1. Planned trial and error is OK
2. Loop back in process if problem develops
3. Importance of the culture—keep going, don’t pull the plug
4. Correct process = good results!!
Example: Step 6

6. See Countermeasure Through

<table>
<thead>
<tr>
<th>Countermeasure Plan - Train T/M's in correct spatula angle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What</strong></td>
</tr>
<tr>
<td>Rewrite Standard Work</td>
</tr>
<tr>
<td>Develop Standard Work Key Points</td>
</tr>
<tr>
<td>Train T/M's</td>
</tr>
<tr>
<td>Check for 3 Shifts</td>
</tr>
<tr>
<td>Remove Temp Action</td>
</tr>
</tbody>
</table>

Additional tracking method -

- 100% Complete
- 75% Complete
- 50% Complete
- 25% Complete
### Example: Step 6

#### 6. Action Plan

<table>
<thead>
<tr>
<th>Item (What) (When)</th>
<th>Resp (Who)</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft form with clearer instructions</td>
<td>TH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample T/M response; revise as needed</td>
<td>TH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensus/Approval throughout HR</td>
<td>RK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinate communication method with TMR and roll out</td>
<td>SE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progress Checks</td>
<td>BJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*TH Sample T/M response; revise as needed.*

*TH Consensus/Approval throughout HR.*

*SE Coordinate communication method with TMR and roll out.*

*BJ Progress Checks.*
### 8 Steps

<table>
<thead>
<tr>
<th>Step 1. Clarify the problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2. Break down the problem</td>
</tr>
<tr>
<td>Step 3. Set a target</td>
</tr>
<tr>
<td>Step 4. Analyze the root cause</td>
</tr>
<tr>
<td>Step 5. Develop countermeasures</td>
</tr>
</tbody>
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### Proceedings

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---

Lean Systems Program
Step 7) Evaluate Both Results and Processes

8 Steps

Step 6. See countermeasures through

Step 7. Evaluate both results and processes

Proceedings

(1) With all members united, implement countermeasures with speed and persistence
(2) Share information with others by informing, reporting and consulting
(3) Never give up, and proceed to the next step quickly

(1) Evaluate the results and the processes, and share it with members involved
(2) Evaluate from three key perspectives: customer’s, 8 step’s, and your own
(3) Understand the reasons of success and failure
Step 7) Evaluate Both Results and Processes

~Evaluate both results and processes and learn from both success and failure~

Did the results and processes achieve the target?

What was the result?

What was the process?

Evaluation

Customer’s Perspective

8 Step ’s Perspective

Your Own Perspective

Lean Systems Program
Step 7) Evaluate Both Results and Processes

Evaluate results and processes, and share it with stakeholders

1) Evaluate the results

Evaluate whether or not the target was achieved

Target Achieved
Not Achieved
Step 7) Evaluate Both Results and Processes

Evaluate results and process, and share it with stakeholders

2) Evaluate the process for achieving the results

Did we analyze the true root cause?

Did we follow the Problem solving 8 steps completely?

What was most effective?

- Machine modification
- Change the order of processes
- Change Material
Step 7) Evaluate Both Results and Processes

Evaluate results and processes, and share it with stakeholders

3) Confirm positive and negative effects

Achieved target

Positive effects

Repair hours

Negative effects

Cost for machine modification
### 7. Monitor Both Results and Processes

<table>
<thead>
<tr>
<th>Date</th>
<th># of defects</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/28</td>
<td>5</td>
</tr>
<tr>
<td>7/29</td>
<td>0</td>
</tr>
<tr>
<td>7/30</td>
<td>0</td>
</tr>
<tr>
<td>7/31</td>
<td>0</td>
</tr>
<tr>
<td>8/1</td>
<td>0</td>
</tr>
<tr>
<td>8/2</td>
<td>0</td>
</tr>
<tr>
<td>8/3</td>
<td>0</td>
</tr>
</tbody>
</table>

**Tail Light Water Leak Tracking**

**Tail Light Water Leaks**

- Remove Temp Action

[Graph showing defect trend over dates]
Example: Step 7

Step 7 Expectation
Develop a tracking chart or graph (make the standard/target easy to see
• What data is needed?
• Where do we get the data?
• What is the required time period?
• Who will collect and summarize data?

7. Monitor Both Results and Processes

Number of FMLA forms from TMR not meeting payroll deadline

<table>
<thead>
<tr>
<th></th>
<th>April W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>May</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>193</td>
<td>100</td>
<td>98</td>
<td>20</td>
<td>19</td>
<td>6</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Step 7 Expectation
Develop a tracking chart or graph (make the standard/target easy to see
• What data is needed?
• Where do we get the data?
• What is the required time period?
• Who will collect and summarize data?
Step 8) Standardize Successful Processes

8 Steps

1. Clarify the problem
2. Break down the problem
3. Set a target
4. Analyze the root cause
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Proceedings

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8 Steps

- **Step 6.** See countermeasures through
- **Step 7.** Evaluate both results and processes
- **Step 8.** Standardize successful processes

Proceedings

1. Evaluate the results and the processes, and share it with members involved
2. Evaluate from three key perspectives: customer’s, 8 step’s, and your own
3. Understand the reasons of success and failure

Additional steps:

1. With all members united, implement countermeasures with speed and persistence
2. Share information with others by informing, reporting and consulting
3. Never give up, and proceed to the next step quickly

Additional actions:

1. Set successful processes as new standard
2. Share the new standard (YOKOTEN)
3. Start the next round of KAIZEN
Step 8) Standardize Successful Processes

Procedure for Standardizing successful processes

(1) Successful processes as new standard

(2) Share the new standard (YOKOTEN)

(3) Start the next round of KAIZEN
Step 8) Standardize Successful Processes

Set successful process changes as new Standards

Anyone, anytime, without muda, mura, or muri can implement the method/standard

< Examples of standardization >

Manual  Forms  Checklists  Flow-chart
Step 8) Standardize Successful Processes

Share the new Standard (YOKOTEN)

<Examples of YOKOTEN>

- To opposite shift
- Meeting
- Hard copy or Electronic Circulation
Step 8) Standardize Successful Processes

Process 3. Start the next round of KAIZEN

Kaizen
Standardize
Solve one problem
Repetition of problem solving
Process to get best result
## Example: Step 8

### 8. Standardize Successful Processes

**Yokoten:** Contact other NAMC's to confirm no problem

**Follow-up:** Have Pilot add special check for finish angle in Standardized work development
**Example: Step 8**

8. **Standardize Successful Processes**

- Document reason for adding additional instructions to form
- Standardize electronic form in database with revision date
- Yokoten: Share the new form with other NAMC's by June 30
Example: Steps 1-8

1. Clarify the Problem

   **Ultimate Goal**: No water leaks in TMMK produced cars

   **Ideal Situation (Standard)**: Zero audit defects from Sealer area

   **Current Situation**: 7 water leaks on 7/28

   \[ \text{Gap} = 7 \]

2. Break Down the Problem

   - 1 on Aviation
   - 6 on Camry
   - 1 in Mohican
   - 5 Tail light
   - 1 side

3. Target Setting

   **Target**: Eliminate 5 tail light area water leaks on Camry by 7/29

4. Root Cause Analysis

   - 5 water leaks in the tail light area
   - TMM leaving gaps in finish
   - TMM not turning spaulula into the seam
   - TMM not instructed in proper angle of finish when trained
   - No specification in STW for proper spaulula angle when finishing

5. Develop Countermeasure

   **R.C. No spec in standard work for spaulula angle**

<table>
<thead>
<tr>
<th></th>
<th>Effort</th>
<th>Cost</th>
<th>Safety</th>
<th>Effectiveness</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add inspection process</td>
<td>A</td>
<td>A</td>
<td>O</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Train TMM's in correct angle to hold spaulula</td>
<td>A</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Repair in CART</td>
<td>X</td>
<td>X</td>
<td>O</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

   **Temp Action**
   Add inspection key points at quality gate and feedback to T/M's - 7/28

6. See Countermeasure Through

   **Countermeasure Plan - Train TMM's in correct spaulula angle**

<table>
<thead>
<tr>
<th>What</th>
<th>Who</th>
<th>When</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rewrite Standard Work</td>
<td>T/L</td>
<td>7/28</td>
<td>100%</td>
</tr>
<tr>
<td>Develop SWES with Key Points</td>
<td>T/L</td>
<td>7/29</td>
<td>100%</td>
</tr>
<tr>
<td>Train TMM's</td>
<td>T/L</td>
<td>7/9/31</td>
<td>100%</td>
</tr>
<tr>
<td>Check for 3 Skills</td>
<td>T/L</td>
<td>8/3</td>
<td>100%</td>
</tr>
<tr>
<td>Remove Temp Action</td>
<td>T/L</td>
<td>7/10</td>
<td>100%</td>
</tr>
</tbody>
</table>

7. Monitor Both Results and Processes

   **Tail Light Water Leak Tracking**

   - 7/28: 5 defects
   - 7/29: 0 defects
   - 7/30: 0 defects
   - 7/31: 0 defects
   - 8/1: 0 defects
   - 8/2: 0 defects
   - 8/3: 0 defects

   **Tail Light Water Leaks**

8. Standardize Successful Processes

   **Yokota**: Contact other NAMC's to confirm no problem

   **Follow up**: Have Pilot add special check for finish angle in Standardized work development
Example: Steps 1-8

Title: Reducing Manual Check Printing

1. Clarify the Problem

**Ultimate Goal:** TMs are compensated for work completed and paid timely and fairly

**Standard:** 100% (3300) of TM's paychecks are deposited error free

**Current Situation:** 80% (2640) of TM's paychecks are deposited error free

GAP 20% (660) paycheck need a manual check to correct errors

2. Break Down the Problem

- **Group Leader Error:** 35% (231/660)
- **Other:** 23% (151/660)
- **Salary Continuation:** 42% (277/660)

**Time Execution:**
- STD Not Paid 61% (142/231)
- Other 39% (90/231)

**FMLA Process Flow**
- T/M obtains FMLA form
- T/M submits form to TMR by deadline
- TMR reviews form - submits by deadline
- Payroll system updated by deadline
- T/M received paycheck with correct amount

**Point of Occurrence (POO):** FMLA PTO Not Paid

**Prioritized Problem:**

- **FMEA:**
  - Process Flow
  - FMEA 1: Time Execution
  - FMEA 2: Group Leader Error
  - FMEA 3: Other

3. Target Setting

**Target:** Eliminate 100% late submissions of FMLA forms to meet payroll deadline by March 2009. (193 of 660 total gap)

4. Root Cause Analysis

- FMLA paperwork is not received from TMR by the payroll deadline
  - Form doesn't pass review
  - Form was submitted incorrectly
  - Part "D" not complete
  - T/M thought HR was to complete
  - Instructions not clear in Part "D"

5. Countermeasure Options & Evaluation

<table>
<thead>
<tr>
<th>Options</th>
<th>Effectiveness</th>
<th>Budget</th>
<th>Speed</th>
<th>Quality</th>
<th>Overall Assessment</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post cleaner instructions on TM board</td>
<td>X</td>
<td>O</td>
<td>O</td>
<td>X</td>
<td>X</td>
<td>-Create awareness of enhancement -Help TMs who review board -Not helpful at home</td>
</tr>
<tr>
<td>Update instructions on form</td>
<td>Δ</td>
<td>O</td>
<td>O</td>
<td>Δ</td>
<td>Δ</td>
<td>-Would document enhancement as new standard -Dependent on T/M reading it</td>
</tr>
<tr>
<td>Have TMR instruct T/M</td>
<td>Δ</td>
<td>O</td>
<td>O</td>
<td>Δ</td>
<td>Δ</td>
<td>-Verbally communicate the enhancement -Cannot ensure that T/M will remember the instructions if not written down</td>
</tr>
<tr>
<td>Update instructions on form along with TMR communications</td>
<td>O</td>
<td>O</td>
<td>Δ</td>
<td>O</td>
<td>O</td>
<td>-Would document enhancement as new standard while confirming the instructions</td>
</tr>
</tbody>
</table>

6. Action Plan

<table>
<thead>
<tr>
<th>Item (What) (When)</th>
<th>Resp (Who)</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft form with cleaner instructions</td>
<td>TH</td>
<td>W4 March W1, W2, W3, W4</td>
</tr>
<tr>
<td>Sample T/M response; revise as needed</td>
<td>TH</td>
<td></td>
</tr>
<tr>
<td>Consensus/Approval throughout HR</td>
<td>RK</td>
<td></td>
</tr>
<tr>
<td>Coordinate communication method with TMR and roll out</td>
<td>SE</td>
<td></td>
</tr>
</tbody>
</table>

7. Monitor Both Results and Processes

Number of FMLA forms from TMR not meeting payroll deadline

8. Standardize Successful Processes

Document reason for adding additional instructions to form
Standardize electronic form in database with revision date
Yoko Ten: Share the new form with other NAMC's by June 30
The 8 Step Process…

A systematic pattern of work that integrates the wisdom of all “team members” resulting in continual growth and increased job satisfaction
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