Introduction to A3 Thinking

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Disclosures

Presenter has no financial interest to disclose.

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Learning Objectives

At the conclusion of this activity the participant will be able to:

• Understand A3 as a management system and methodology for problem solving
• Employ tools and techniques to determine the Voice of the Customer and Voice of the Business
• Use measures and metrics to review performance
Agenda

1. What is A3 Thinking?
2. Seven elements of A3 Thinking
3. Examples of A3 Templates
4. A3’s Link to Lean Six Sigma
5. Template Box Explanation…One by One
6. A3 Problem Solving examples
• A Toyota invented problem-solving method
  – Executed on a single sheet of A3 sized piece of paper
  – “A3” is the name for a metric paper size, similar to 11” x 17” typically used

The essence distilled on to one A3 sheet
Key References

• *Managing to Learn – John Shook
• Getting the Right Things Done – Pascal Dennis
• A3 Thinking – Durward K. Sobek II & Art Smalley
• The Toyota Way – Jeffrey Liker
• The Toyota Product Development System – Morgan/Liker
• Decoding the DNA of the TPS – Spear/Bowen
• www.lean.org – webinars, excerpts, downloads
• Gemba Academy:
  • http://www.gembaacademy.com/enterprise/DoD/
  • User ID: Army
  • Password: DoDLean
A3 Thinking

• A3 is a Management Process
  • Enables and encourages learning through scientific method

• A3 Thinking
  • Team or individual application
  • Fosters consensus building
  • Simple systematic methodology
  • Communication tool w/ logical narrative
  • Makes problem solving visual
  • Tells a story (on a single page)
Seven Elements of A3 Thinking

- Logical thinking process
- Objectivity-Presenting information in a nonjudgmental way
- Results achieved and processes used
- Synthesis, distillation and visualization - Using only critical information
- Alignment of the effort with strategy/objectives
- Coherence with and consistency throughout the organization
- Systems approach to problem solving
Where Does A3 Apply?

- A3 work for all types of activities:
  - Strategic Planning
  - Problem Solving/Decision Making
  - Sharing Ideas/Proposing Change
  - Process Mapping
  - Value Stream Analysis
  - Rapid Improvement Events
  - Personal Development Plans
  - IT System Requests
  - Capital Appropriation Requests

A3 can become a key tool of making improvement at any level of activity.
• What is the problem or issue?
• Who owns the problem?
• What are the root causes?
• What are the possible countermeasures?
• How will you decide which countermeasure to propose?
• How will you get agreement from everyone concerned?
• What is your implementation plan --- Who, What, When, Where and How?
• How will you know if the countermeasures work?
• What followup issues can you anticipate? What problems may occur during implementation?
• How will you capture and share the learning?
The A3 Thought Process Provides Complete Structure

Relationship: A3 Thinking - LSS and PDCA

**A3 THINKING**
1. Issue or Problem
2. Background
3. Gap/Current and Target Condition
4. Root Cause Analysis
5. Proposed Solution(s)
6. Implementation
7. Results & Follow up

**PDCA**
Plan — Problem perceived> grasp the current situation> identify the root causes> devise countermeasures and future state> create and implementation plan> create follow up plan> obtain approval while discussing with affected parties

Do — Execute the implementation

Check — Execute the follow up plan

Act — Establish the process standard

**SIX SIGMA**
Define
Measure
Analyze
Improve
Control

UNIFORMED SERVICES UNIVERSITY of the Health Sciences
Template Examples

Plan | Do | Check & Act
--- | --- | ---
Plan | Do | Check & Act
Plan | Do | Check & Act

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Example of A3 Template

1. Reasons for Action
   - Guidance: The Reason for Action should answer the question: Why are we doing this project or improvement initiative?
     - State the business case
     - Background information
     - Expected business results
     - Justification for the project or improvement initiative
   - Where possible, include the “burning platform”
   - Identify how staying where you are is not an option; doing nothing could result in disaster
   - Look for a crisis that you can highlight
   - State the chief complaint or issue
   - Document the problem
   - Define scope (if not readily apparent)

   **GO / NO GO**
   - Is the Reason for Action clear/shared so that it can serve as a roadblock buster?

2. Initial State
   - Guidance: Describe the baseline (“as-is”) situation.
     - What is happening right now?
     - Quantitative (data-based) attributes are preferred
     - Express the situation in time and/or units of data (that later “proves the case”)
     - If current state data is not available, include qualitative attributes
     - Use graphical charts or illustrations where possible
     - Consider including a well-defined problem statement

   **GO / NO GO**
   - Confirmation of current state data and information
   - Measures reflect business case from Box 1
   - Measures correlate with target state from Box 3

3. Target State
   - Guidance: The Target State describes what “success looks like” when we are done.
     - (It does NOT describe how to achieve it.)
     - Describe attributes of Target State
       - Include quantitative and qualitative attributes
     - Reflect on Initial State – what are the targeted improvement conditions?
     - Consider “Voice of the Customer.”
     - Objectives should be Specific, Measurable, Achievable, Realistic and Time-bound (SMART)
     - Include graphical charts or illustrations (e.g., trend charts, pareto charts, etc.)

   **GO / NO GO**
   - Improvement objectives/attributes should have a direct connection to:
     - Box 1: Reason for Action
     - Box 2: Initial State
     - SMART objectives

4. Gap Analysis
   - Guidance: Compare Target State to Initial State, and determine what is currently hindering our ability to bring us to Target State today.
   - What are the most causal reasons of these roadblocks?
   - Use root cause analysis tools such as cause and effect (fishbone) diagrams and 5 Whys when appropriate.

   **GO / NO GO**
   - Root cause(s) defined
   - Gaps are numbered and linked to Solution Approach

5. Solution Approach
   - Guidance: The Solution Approach defines the major enablers for achieving the Target State
     - All high priority gaps should have countermeasures defined
     - Express in form: “If we do this” (solution), then “we expect this” (expected outcome)
     - Where possible, assign a single point of accountability (owner) for each solution

   **GO / NO GO**
   - Does solution approach link well with the root causes identified in the Gap Analysis?
   - Does the Solution Approach express the hypothesis to be validated or adjusted through Box 7, Rapid Experiments?

6. Rapid Experiments
   - Guidance: Expect the Solution Approach to be imperfect.
   - Consider piloting some aspect of the solution approach as a rapid experiment before implementing “across-the-board.”
   - Express in form: “If we do this” (rapid experiment), then “we expect this” (expected outcome)

   **GO / NO GO**
   - Was the expected result achieved?
   - Can any emerging roadblocks be removed?
   - Is the solution approach being followed?
   - YES to all questions – go to Box 7, Completion Plan
   - NO to any question – go back to Box 4, Gap Analysis

7. Completion Plans
   - Guidance: The Completion Plan defines the action plan for achieving the Target State.
     - For each solution approach and rapid experiment item, detail the required action plan (what, who, when)
     - The A3 owner is accountable for ensuring the Completion Plan status is updated as required
     - Use A3 owner guidance for green/red/yellow ratings
     - Management should review Completion Plan status on a systematic basis and resolve any timelines or results issues
     - Is the completion plan on track?
     - What are we learning from delays or adjustments?
     - Have we achieved the desired outcome?

8. Confirmed State
   - Guidance: The Confirmed State measures progress towards achieving the Target State objectives and metrics.
     - The briefing format should be tailored such that every Target State objective and matrix can be tracked/trend charted for achieving the desired outcome

   - **GO**
   - Achieves Target State (Box 8 = Box 3) or the A3 Sponsor indicates the improvement is “good enough”

<table>
<thead>
<tr>
<th>Qualitative Objectives</th>
<th>B</th>
<th>T</th>
<th>Qi</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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<td>Results Assessment</td>
<td>Red</td>
<td>Amber</td>
<td>Green</td>
<td>Notes</td>
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9. Insights

**What went well?**

**Recommendations:**

**What didn’t go well?**

Develop Lessons Learned Periodically Through The Use of the A3
# Example of A3 Template

| **A3 Project Title** | **Project Lead:**
| Project Champion(s): | Date Updated: |
| Project Team: | **UCLA** Health System |

## INTRODUCTION/PURPOSE
- Explain why the proposal/strategy is being introduced
- What is the reason to consider it now?

## CURRENT SITUATION
- What is the organization doing now?
- What is happening outside the organization?

## PROPOSAL/ANALYSIS
- What do you want to change, add, or delete?
- Will it be effective? Does it address the root cause? How will you know?
- Will it be efficient? Does it provide the best overall balance between cost and benefits?

## BENEFITS/EXPECTED OUTCOME
- What will happen if the proposal or strategy is adopted?
- What benefits or results should the organization expect to see after implementation?
- How will it impact the organization and the various stakeholders?

## PLAN, TIMING, COSTS
- What steps will be taken?
- Who will be responsible for implementation?
- When will the steps be taken?
- Is there costs associated with various efforts?

## OPEN ISSUES
- Are there additional issues to consider?
- Have alternative options been considered?

## PROPOSAL/STRATEGY A3-EXAMPLE

Main Objective: To provide information on a situation or event. Often used for reporting of meetings, conferences, site visits, or explaining new policies or regulations.
# Army Medicine A3 Template

## BOX 1 - ISSUE or PROBLEM

- What are we trying to do?
- What is the issue or problem?
- Who owns the issue?
- What is the scope? (Who, Where, Process, Start/End Points)
- When was the issue or problem recognized? What are the impacts if it is not addressed?

## BOX 2 - BACKGROUND

### Background of the problem

- What circumstances brought the issue to light?
- How does the issue fit in the context of the organization?
- What is the history? Is the history clearly understood?
- Is it clear why this problem is important to the organization and/or the patient?

## BOX 3 - GAP / CURRENT AND TARGET CONDITION

### Diagram of current process (or situation)

- What is actually wrong with the current state or process?
- Can the issue/problem be quantified?
- What metrics indicate we are under-performing? What is target performance?
- How was the information obtained?

## BOX 4 - ROOT CAUSE ANALYSIS

- List Problem(s)
  - Most likely direct (or root) cause:
    - Why:
    - Why:
    - Why:
  - Are the root causes directly related to the current condition identified?
  - Are the root causes clearly and sufficiently identified?

## BOX 5 - PRIORITIZED SOLUTIONS

### What are the prioritized solutions?

- What are the expected benefits?
- What is the measure of success? (% Yield, SQL, PLT, PCT, etc.)

### Financial:

- Are there any cost savings as a result of the project (i.e., $ that can be diverted to another initiative)?
  - Cost Savings = Baseline process cost - (Revised process cost + One-time implementation cost)
  - Note: If the cost per unit decreases due to a more efficient process, it is NOT savings, rather cost avoidance

## BOX 6 - IMPLEMENTATION PLAN

- Is a pilot needed?
- Please describe required resources

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<th>Action</th>
<th>Responsible</th>
<th>Due Date</th>
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## BOX 7 - RESULTS AND FOLLOW-UP

- Operational and Financial Results
- How will gains be sustained?

<table>
<thead>
<tr>
<th>Target or Planned Result</th>
<th>Actual</th>
</tr>
</thead>
</table>
Box 1—The Issue or Problem to be Addressed

• Key Items for Box 1
  • What is the issue or problem?
  • Who owns the issue?
  • What is the scope?
    • Who, Where, Process Start/End Points
  • When was the issue or problem recognized
  • What are the impacts if the issue or problem is not addressed
Box 2—Background

• Key Items for Box 2
  • What circumstances brought the issue to light?
  • How does the issue fit in the context of the organization?
  • What is the history?
  • Is the history clearly understood?
  • Why is the problem important to the organization?
Box 3—Gap/Current State and Target Condition

- Key items for Box 3
  - What is actually wrong with the current state or process
  - Can the issue/problem be quantified?
    - What measures indicate we are under-performing
    - What is target performance?
  - How was information about the current state obtained?
    - Did you go to the Gemba?
      - Actual place
      - Actual work
      - Actual people who do the work
Box 4—Root Cause Analysis

• Key Items for Box 4
  • List the root causes of the issue or problem
    • 5 Why Analysis
  • Are the root causes directly related to the current state?
  • Are the root causes clearly understood?
Box 5—Prioritized Solutions

• Key Items for Box 5
  • What are the prioritized solutions?
  • What are the measures of success?
  • What are the costs to implement the solutions?
  • Are cost savings expected? How much?
**Box 6—Implementation Plan**

- Key items for Box 6
  - Are the solutions expensive or risky?
  - Is a pilot needed?
  - Describe the resources required

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<th>Action</th>
<th>Responsible</th>
<th>Due Date</th>
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</tbody>
</table>
Box 7—Results and Follow Up

• Key items for Box 7
  • Compare the actual results with the expected results
    • Operational and Financial Results

<table>
<thead>
<tr>
<th>Target or Planned Result</th>
<th>Actual Result</th>
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– How will gains be sustained?
  • Monitoring, reporting frequency
  • Checklists, job aids, SOPs
A3 Example

ED Front End Triage Project

Problem Statement:
Needed to enhance patient safety, quality, and service by decreasing time to care for those presenting as walk-ins to the UCLA Emergency Department. Decrease time from door to triage nurse by 50% for each acuity level.

Current State:

- Door to Triage RN times vary for each patient, range from X to Y
- Lack of standardized work for tech/reg/RN
- Patient tells 3x their chief complaint
- Patient is waiting to see a triage RN
- Inconsistent flow path

- Median time from door to MD = 44 minutes
- Median time from door to triage = 9 minutes
- Peak time is at 12pm

Goals and Dashboard Metrics: Patient door to initial MD assessment ~ 42 minutes, target ~ 20 minutes.
Patient door to triage nurse = 5 minutes; target = 1 minute

Analysis:

Triage Flow

Time from patient arrive to triage room = 3 minutes

Potential Solutions:

Future State Process Flow Diagram for Triage and Back Reg

Action Plan:

Sustain the Results and Next Steps:

Dashboard Metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Baseline</th>
<th>Target</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Door to RN Visual Assessment</td>
<td>9 min</td>
<td>1 min</td>
<td>&lt;1 min</td>
</tr>
<tr>
<td>LWBS Rate</td>
<td>3.5%</td>
<td>&lt;2.0%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Projects Team: Jessamy Fisher, Corinna McKeen, Manny Pastoriza, Tara Indriew, Jennifer Zanotti, Andrew Zayas, Juana Martinez, Jason Willis, Helen Contreras, Jose Torres, Dr. Day, Dr. Graham, Andy Nguyen, Brian Hand, Anna Lotakov
A3 Example

Oracle/PeopleSoft HR System Proposal

Introduction/Purpose:
To purchase and implement an enterprise-wide (ERP) human resources information system that will serve as the central repository of all workforce data including affiliate groups. This will provide an integrated single solution for HR management that includes onboarding, compensation, performance management, training & development, and succession planning.

Background:
No Human Capital Management System (HCMS) currently in place.

The following are being used instead:
- UCLA maintains Payroll Personnel System /Employee Database (PPS/EID) system developed in 1992, designed to primarily serve as a Payroll system.
- General Payroll/Personnel system provides basic employee demographics including off emergency action & HR info.
- 28 disparate HR applications developed in-house to support compliance competency tracking, training & development, disability management, worker's comp, turnover, layoff & seniority points, etc.
- Inability to track affiliate staff such as DaVita, Precise, Hyperbaric staff, and Volunteers.
- Multiple systems must be accessed to retrieve needed data; history is still maintained on manual cards. Lack of use.

Proposed System - 1 app

Open Issues:
- Sign contract with Oracle P5 prior to June 1st to save additional 4% on software pricing.
- Payment of $599K deferred to Sept 2010.
- Minimize MITS and Procurement involvement.
- UCOP Sale Sourcing Agreements - Software and Implementation Vendor.
- ASP hosting for first three to five years - evaluate process after year three.
- DSSOM System replacement - consider after Hospital System is implemented successfully.

Plan / Timing:
- HR Information Systems staff fully dedicated.
  - 1.0 FTE Project Manager
  - MITS Support - 20 FTEs for initial set up
  - Interface Review
  - AD connectivity
  - Project Management
  - Procurement - 25 FTEs

Software Expense

CAPITAL EXPENSE

Software Support $195,000  $153,000  $153,000  $153,000  $153,000
Training $25,000
Capital Total $220,000

CONSULTING EXPENSE

Software Support $195,000  $153,000  $153,000  $153,000  $153,000
Consulting $25,000
Consulting Total $220,000

Oracle/PPS - Single screen Manager Task Lists
- Reporting Licenses by employee name.
- Staff Education & Training Due Date.
- Team Members List and Demographics.
- Performance Management.
- Disciplinary Actions by Employee.

Salary History Card (PC)
HRIS standalone web apps

Current Systems - 28 apps

Oracle/PeopleSoft Agreement

Phase III - MCM - Go Live

Phase III - MCM - Go Live

Phase II - Performance Management/Compensation Go Live

Phase II - Performance Management/Compensation Go Live

Proposed System - 1 app

Dept: Health System Human Resources
Proposal Lead: Kety Duron
Proposal Facilitator: Brian Hand
Proposal Champion: Mark Speare

UCLA Health System

Date: May 18, 2010

Oracle/PeopleSoft Agreement


Phase III - MCM - Go Live

Phase III - MCM - Go Live

Phase II - Performance Management/Compensation Go Live

Phase II - Performance Management/Compensation Go Live

Sign Oracle/PeopleSoft Agreement

NRMC/Meade/Improve Coding Process

Champion: COL Armstrong/Col Jaghab
Team: Ms Denise Schultz, Ms Reba Nelson, Mr Morales, LTC Hawkins, AOSIM Staff, Meade Coding Staff, Ms Laura Dance, LTC Jones
Belt: Ms Donna Stiltner, MBB
Start Date: 5 Oct 12

BOX 1–ISSUE
The coding process throughout the region is currently operating with a staff shortage of coders to support the full clinical needs. The shortage of coders has an effect on the coding accuracy and productivity of the clinics.

BOX 2–BACKGROUND
The inefficiencies in the coding process affect the reimbursement (PBAM) for the facility, quality of medical documentation which affects patient care.

BOX 3–GAP / CURRENT AND TARGET CONDITION
The goal of this project is to improve the Coding Process by increasing the number of records coded (6,594 in Sep 12); 86% overall coding compliance based on CARA audit results as of Jun 2012 to 95% compliance based on Data Quality Standards. ICD-9 compliance is at 93%; E&M compliance is at 79%; CPT compliance is at 76%; increase in RVU generation.

BOX 4–ROOT CAUSE ANALYSIS
List Problem(s)
Most likely direct (or root) cause:
- Why: Shortage of coders to review coding accuracy
- Why: Providers' lack of knowledge to fully document encounters
- Why: Providers' lack of knowledge to accurately code records
- Why: Lack of staff to train providers
- Why: MTF lack funding to hire qualified coders
- Why: Coding Backlog (Dormant workload) prior to ICD 10 Implementation

BOX 5–PRIORITIZED SOLUTIONS
- Fort Meade Virtual "GS" Coding Pilot
- Regional Contract coders: Coders, Auditors and trainers
- Create a centralized regional coding hub
- Establish Virtual (tele-coding/remote) process and standards
- Establish staffing goals tailored to MTF capabilities- (GS coder staff (80%) and On-site GS coder/auditors 20%)

BOX 6–IMPLEMENTATION PLAN

<table>
<thead>
<tr>
<th>Action</th>
<th>Responsible</th>
<th>Due Date</th>
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</thead>
<tbody>
<tr>
<td>Brief HQS CoS for approval</td>
<td>Ms Schultz</td>
<td></td>
</tr>
<tr>
<td>Develop standards/Processes</td>
<td>Ms Schultz/Ms Nelson</td>
<td></td>
</tr>
<tr>
<td>Utilize current coding contract</td>
<td>Ms Schultz</td>
<td></td>
</tr>
<tr>
<td>Manage current coding contract staff</td>
<td>Ms Schultz</td>
<td></td>
</tr>
<tr>
<td>Orient GS Staff</td>
<td>Ms Nelson</td>
<td></td>
</tr>
<tr>
<td>Establish IT Connections, Labtop imaging</td>
<td>Mr Morales</td>
<td></td>
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<tr>
<td>Tele-work process review/guidance</td>
<td>Ms Dance</td>
<td></td>
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BOX 7–RESULTS AND FOLLOW-UP

Operational and Financial Results

Financial -- Increase in PBAM reimbursement from approximately $29,000 (Sep 12) to approximately $99,000 (Sep 13)

<table>
<thead>
<tr>
<th>Base</th>
<th>After Improvement</th>
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<tbody>
<tr>
<td>Records Reviewed (Sep 12) - 6,594</td>
<td>Records Reviewed (Sep 13) - 15,211 (111% increase)</td>
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</table>
RIE #9: Lab Excluding Point of Care Testing
ED Value Stream
Dates of Event: 07/09/12 – 07/13/12

Problem:
- Patients experience delays as a result of compromised samples requiring redraws
- Placement of labels on specimens create a delay for patients
- Patient experience delays as a result of adding tests
- Patients wait due to delayed phlebot obtain response time to gather samples

Root Causes:
- Delayed visual management due to automation line rejecting the sample
- Lack of education and following standard work of labeling tubes appropriately – Accountability
- ED does not have add on worklist
- Lack of staff to be located in the ED

Solutions Implemented:
- Eliminate double labeling
- Streamline communication
- Have a dedicated phlebotomist in the ED

Benefit:
- Decrease over processing
- Decrease patient waiting
- Decrease patient waiting and lab turn around time

<table>
<thead>
<tr>
<th>Metric</th>
<th>Initial State</th>
<th>Target State</th>
<th>Final Result</th>
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<tbody>
<tr>
<td>Time Order to results PVH</td>
<td>55 min</td>
<td>49.5 min</td>
<td>53.5 min</td>
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<tr>
<td>Time Order to results MCR</td>
<td>57 min</td>
<td>51.3 min</td>
<td>48.5 min</td>
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* Metric last measured on 12/2012

Team Members:
A3 Example

RIE #1: Change RN Documentation Requirements for ESI 4/5 Patients
ED Value Stream
Dates of Event: 11/14/11 – 11/18/11

Problem:
- The content of fast track assessments require too much data, is duplicative, and inconsistently completed – 100% of the time. Documentation requirements: Weight/Height, Content of Fast Track Assessment.
- Staff are not consistently performing the work required to prepare the patient for medical provider. Incomplete standard work.
- Staff have implemented workarounds due to lack of real-time communication.

Root Causes:
- Chief complaint documented in 4 areas reason for visit needs to be more detailed than general Chief Complaint. ESI can be documented in 3 places
- Allow variability
- Lack seamless real-time communication

Solutions Implemented:
- Streamline required documentation for ESI 4/5
- Define standard work to include parameters for data entry
- Define rapid treatment as a process not a place
- Define and optimize roles of all staff

Benefit:
- Decreased triage time and reduce average length of stay
- Decrease variability, increase quality, increase efficiency
- Increase accountability
- Increase throughput
- Decreased needed room and increase capacity

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<tr>
<th>Metric</th>
<th>Initial State</th>
<th>Target State</th>
<th>Final Result</th>
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<tbody>
<tr>
<td>RN Assessment</td>
<td>6 min 52 sec</td>
<td>6 min 11 sec</td>
<td>3 min</td>
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<td>ESI 4/5</td>
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* Metric last measured on 12/2012

Team Members:
Mora Brower, Cindi Brown, Lori Cameron, Jennifer Cobb, Chris Connin, Debbie Delp, Ric Delihnan, Leanna Harpman, Michelle Hines, Robert Mitchell, Dan Robinson, Dr. Jamie Teumer, Shawna Wall, Tracey Dockery, Jose Bustillo

UNIVERSITY OF COLORADO HEALTH
• Market Manager for the eMSM containing Valhalla, Olympus and Cisifus requested a Value Stream Analysis of three perceived problem areas in order to meet the eMSM goals.
  • Effectiveness of Care/Healthy Behaviors
  • Enrollment/Access to Primary Care
  • Recapture/Referral of Specialty Care
Introduction to A3 Thinking

Donna Whittaker, Ph.D.
Lean Six Sigma Deployment Director
Directorate of Strategy Management, G-8/9
US Army Medical Command/HQDA, Office of The Surgeon General
donna.s.whittaker.civ@mail.mil
Office: 703.681.8031
Obtaining CME/CE credit

• If you would like to receive continuing education credit for this activity, please visit:

http://medxellence.cds.pesgce.com