Identifying and Prioritizing Solutions

Welcome!
Objectives

- Developing solution and effect diagrams
- Utilizing solution selection matrices & force field analysis
- Developing radar charts
- Utilizing a quadrant approach for prioritizing solutions
- Q & A
PDSA: A Four-Stage Approach to QI

Act \rightarrow Plan \rightarrow Study \rightarrow Do
PLAN

- Last time we discussed:
  - Step Three: Examine the Current Approach (flowcharts)
    - What are we doing now?
    - How are we doing it? What are the major steps in the process?
    - Who is involved? What do they do?

- During this webinar, we will be looking at:
  - Step Four: Identify Potential Solutions
    - Identify all potential solutions
    - May review best practices to help identify potential improvements
    - Pick the best solution(s)—the one most likely to accomplish your Aim statement
Solution and Effect Diagram

» Similar to the Cause and Effect Diagram

» Identifies changes and recommendations

» Effect is now made into a positive statement:
   » “What are the causes of Childhood Obesity”
   » How to prevent Childhood Obesity”
Solution and Effect Diagrams - Construction

Place the Solution and Effect Diagram opposite the Cause and Effect Diagram

Write the issue as a positive statement on the left hand side of the page and draw a box around it with an arrow running to it.

This issue is now the effect
Solution and Effect Diagrams - Construction

- Generate ideas as to what are the main Solutions of the effect
- Label these as the main branch headers
For each main Solution category brainstorm ideas as to what are the related sub-solutions that might effect our issue.

Use the 5 How techniques when a solution is identified.

Keep repeating the question until no other solutions can be identified.

List the sub-solutions using arrows.
Solution and Effect Diagram

S = Solution Category

C = Cause Category
Pre Natal Practices

Early Feeding Practices

Life Style

Less Obese Children

Genetics

Environment

Polices

More Mobility

Less TV
Community Recreational Areas
Sidewalks
Safe Housing
Example from Cause and Effect Webinar

Machinery/Equipment
- Unreliable cars
- Low Pay
- Kids own junk
- Ovens too small
- Poor handling of large orders
- High turnover
- Lack of experience

Methods
- Many new streets

People
- No teamwork
- Drivers get lost
- Don’t know town
- Rushed
- People don’t show up
- No training
- Low pay
- High turnover

Materials
- Run out of ingredients
- Inaccurate ordering
- Lack of training

Late pizza deliveries on Fri & Sat nights
Solution and Effect--Example

Personnel

Provide incentives for personnel who stay at least 6 months
Provide training to new staff, including team building

Provide drivers with GPS/company cars that reliable

Provide drivers with GPS

Enhance training for dispatchers

Improve Dispatching

Friday & Saturday pizza deliveries on time
Solution Selection Matrix

- A solution selection matrix is a cluster of factors that help the team to illustrate the relationship between the problem, root causes and solutions.
Solution Selection Matrix

Why is it used?

- To ensure the solutions selected address the significant main causes
- To guide the team in determining the effectiveness and feasibility of their solutions
- To help the team evaluate which solutions should be implemented
Solution Selection Matrix--Constructing

- Generate possible solutions which address each of the root causes
- In the box labeled “practical methods” specific tasks are listed to detail the implementation of the solution
- Rate each of the solutions on a 1 – 5 scale for effectiveness and feasibility. Higher ratings are for solutions that are more effective and feasible.
- Multiply ratings and rank solutions.
- To determine how many solutions need to implement consider resources and targets. In last column indicate if the solution will be implemented.
Forces Field Analysis

- Force field analysis is a technique developed to help teams address the issue of change. Specifically, it examines the “driving forces” that move a situation toward change and the “restraining forces” that block that movement.
Force Field Analysis

- **When is it used**
  - Before the team decides which solution(s) to implement.

- **Why is it used**
  - Forces people to think about all facets of a desired change
  - Encourages people to agree about the relative priority of factors on each side of the “balance sheet”

- **How to use**
  - List the driving and restraining forces of the proposed solution
Force Field Analysis

- Categories to consider when doing a force field analysis
  - People
  - Environment
  - Equipment
  - Cost
Example of Force Field Analysis

Driving Forces

Restraining Forces
# Solution Selection Matrix for Root Cause: "Co-existing Disease Undiscovered at Initial Work-up"

## Problem
- OR Cancellation Due to Incomplete Work Up

## Root Cause
- Co-existing disease undiscovered at initial wrk-up

## Solutions
1. **Pre-Op Screen**
   - Questionnaire at Initial Visit
2. **Pre-Surgical Wrk-up Facility**
   - Seen at least 48 hrs before surgery
3. **Procedure Based Care Maps**
4. **In-Clinic Comprehensive H&P on Surg. Decision**
5. **PROS Physician Review of Systems**

## Practical Methods
- Pt Fills Out Questionnaire at Initial Visit
- Location
- Staffing
- Equipment
- Hours of Operation
- Assemble Teams
- Prepare Maps
- Resident (Fam. Prac., Anes., Surg.) Nurse Practitioner
- Phys.-based chklist must be completed on decision for surgery

## Solution Evaluation

<table>
<thead>
<tr>
<th>Practical Method</th>
<th>Effectiveness</th>
<th>Feasibility</th>
<th>Overall</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt Fills Out Questionnaire at Initial Visit</td>
<td>5</td>
<td>5</td>
<td>25</td>
<td>Yes</td>
</tr>
<tr>
<td>Location</td>
<td>5</td>
<td>3</td>
<td>15</td>
<td>Yes</td>
</tr>
<tr>
<td>Assemble Teams</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>No</td>
</tr>
<tr>
<td>Resident (Fam. Prac., Anes., Surg.) Nurse Practitioner</td>
<td>5</td>
<td>3</td>
<td>15</td>
<td>Yes</td>
</tr>
<tr>
<td>Phys.-based chklist must be completed on decision for surgery</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>No</td>
</tr>
<tr>
<td>Problem</td>
<td>Root Cause</td>
<td>Solutions</td>
<td>Practical Methods</td>
<td>Solution Evaluation</td>
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<tr>
<td>Poor dispatching</td>
<td>Unfamiliar with town</td>
<td>Provide training to dispatchers</td>
<td>Decide on format</td>
<td>Effec. 3 Feas. 4 Overall 12 Action Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide computers to dispatchers to track deliveries</td>
<td>Develop materials</td>
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<td></td>
<td></td>
<td></td>
<td>Develop tracking system</td>
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<td></td>
<td></td>
<td></td>
<td>Evaluation</td>
<td></td>
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<td>Provide drivers with GPS</td>
<td>Prepare dispatch tracking software</td>
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<td></td>
<td></td>
<td>Purchase computers</td>
<td>Effec. 4 Feas. 2 Overall 8 Action N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Purchase GPS System to “check out” to drivers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaluate effectiveness</td>
<td>Ef. 4 Feas. 4 Overall 16 Action Y</td>
</tr>
</tbody>
</table>
Radar Chart

- Why use it?
  - To visually show in one graphic the size of the gaps among a number of both current organization performance areas and ideal performance areas.
Radar Chart

- What does it do?
  - Makes concentrations of strengths and weaknesses visible
  - Clearly displays the important categories of performance
  - Clearly defines full performance in each category
  - Captures the different perceptions of all the team members about organization performance
Radar Chart—Constructing the chart

1. Assemble the right raters
2. Select and define the rating categories
   - Chart can handle wide number of categories (5 – 10 categories on average)
   - Brainstorm to create categories
   - Define both non-performance and full performance within each category so ratings are done consistently
Radar Chart—Constructing the chart

3. Construct the chart
   - Draw a large wheel on a flipchart with as many spokes as there are rating categories
   - Write down each rating category at the end of each spoke around the perimeter of the wheel
   - The farther from the center the better the score
   - Types of measurement scales:
     - Quantitative (e.g., 1 – 5)
     - Qualitative (e.g., SA, A, D, SD)
Radar Chart—Constructing the chart
Radar Chart—Example measurement scale

SD: Strongly Disagree  
D: Disagree  
A: Agree  
SA: Strongly Agree  

0: Nothing in place  
1: Investing  
2: Minimal  
3: Basics are in place  
4: Using it on selected projects  
5: Agency-wide use with good results
Radar Chart—Constructing the chart

4. Rate all performance categories
   - **Individual**: Each person rates in silence, using multicolored markers or labels directly on the flipchart
   - **Team**: Through consensus or an average of individual scores get a team rating. Take into account both the clustering and the spread of the individual ratings.

5. Connect the ratings and a pattern will develop
A PH agency decided to rate itself on how well it was doing on performance management.

0 – 5 scale was used where:

0 = nothing in place

5 = outstanding

The agency rated itself on the four criteria below:

A. Performance Standards
B. Performance Measures
C. Reporting of Progress
D. Quality Improvement
Radar Chart—Example

The agency can set an improvement goal and add it to the radar chart.

The chart shows the gap between current performance and the goal for the future.

- **Current Performance**
- **Goal for Future**
Radar Chart—Constructing the chart

6. Interpret and use the results—a couple of notes
   □ Overall ratings identify gaps within each category but not the relative importance of the categories themselves. Work on the biggest gap in the most critical category.
   □ Update the chart as progress is made make sure and share with others as a great visual!
Pandemic Flu Top Ten Checkup Points

1. Community Preparedness
   Leadership and Networking
2. Surveillance
3. Public health and Clinical Laboratories
4. Healthcare and Public Health Partners
5. Infection Control and Clinical Guidelines
6. Vaccine Distribution and Use
7. Antiviral Drug Distribution and Use
8. Community Disease Control and Prevention
9. Public Health Communications
10. Workforce Support:
    Psychosocial Considerations and Information Needs

Rating Scale:
For each of the Top Ten Checkup Points indicate the level of performance of your organization or community during the recent Pandemic Flu event:

H – High
M - Medium
L - Low
Quadrant Approach

- Why use it?
  - To visually show in one graphic the anticipated impact and difficulty of implementation of your proposed solutions. Helps prioritize solutions.
QUESTIONS?
Thank you for joining us!

The next webinar ~

“Using Data to Study QI Results”

will be held February 8th from 9:30 to 10:30 AM.