Making Continuous Quality Improvement Work for You

VCU College of Health Professions Gerontology

ROANOKE HIGHER EDUCATION CENTER

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Learning Objectives

1. Understand **Lean Thinking** to identify waste in processes

2. Learn how to use **Lean Six Sigma Tools** to drive continuous quality improvement

3. **Practice** applying these tool to actual workplace scenarios

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Important to remember

Every single person will bring different strengths to your team because of their different preference types

A diverse team can help balance strengths and blind spots for each individual person

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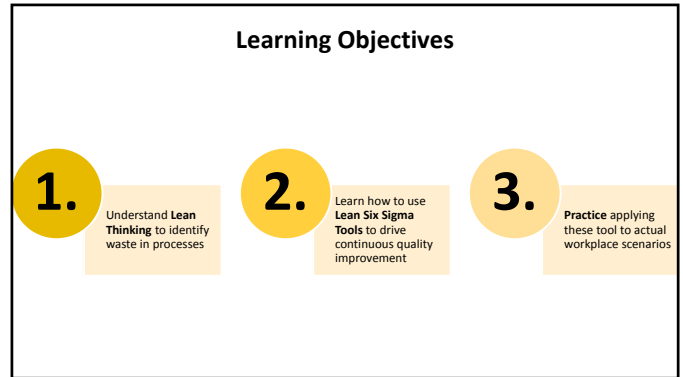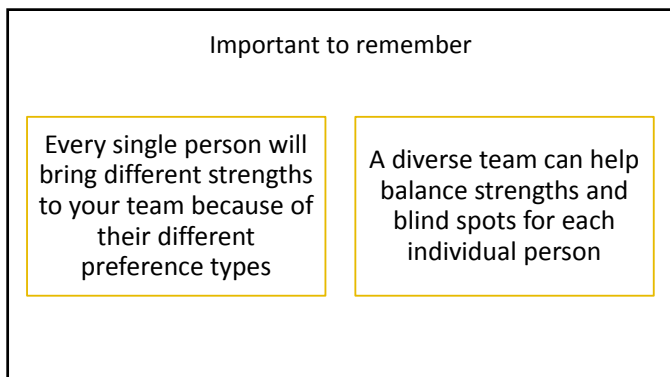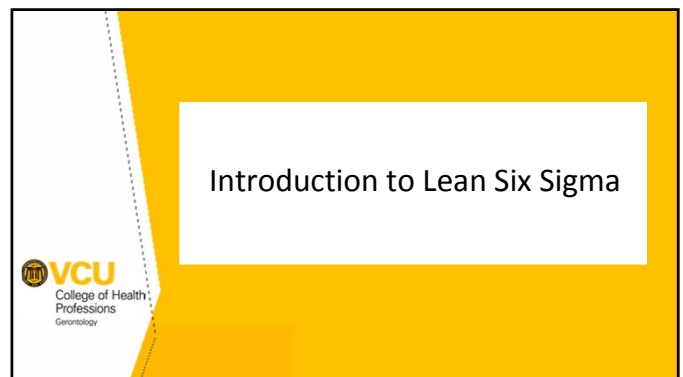VCU College of Health Professions Gerontology

Introduction to Lean Six Sigma

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POLL

What is your familiarity with Lean Six Sigma?

- ☐ I have never heard of this
- ☐ I have heard the term, but I don't really understand what it means
- ☐ I have been included in process improvement projects where LSS has been used
- ☐ I am belted in LSS (Green or Black)

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Vocabulary

| TERM	DESCRIPTION
CQI	ongoing process that evaluates how an organization works and ways to improve processes
Lean	the process of removing waste to improve efficiency
Waste	an activity that is not required to complete a process
Six Sigma	a method of efficiently solving a problem
DMAIC	the six sigma methodology

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What is Lean Thinking?
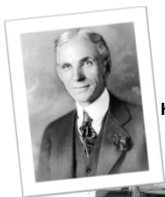
Henry Ford's "Flow Production" (1913)

Kiichiro Toyoda's "Toyota Production System" *(late 1940s)*

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What is Lean Culture?
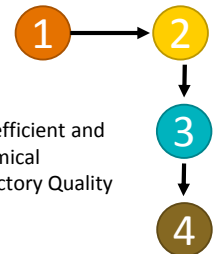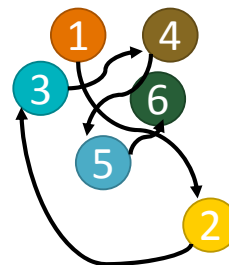
- Faster
- More efficient and economical
- Satisfactory Quality

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What is Six Sigma?

A way of doing business
- – Measurement standards
- – Visionary standards
- – Philosophy of work
- – A goal to achieve
- – A methodology for understanding

MOTOROLA

SIX SIGMA

1985 Bill Smith coins the term "Six Sigma"

1987 Motorola trademarks the term "Six Sigma"

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Who Benefits from CQI and Lean Six Sigma?

INDUSTRIES | FUNCTIONS

Healthcare | Hi-Tech | Government | Customer Service | Manufacturing | Accounting

Retail | Finance | Hospitality | Operations | Sales | HR & IT

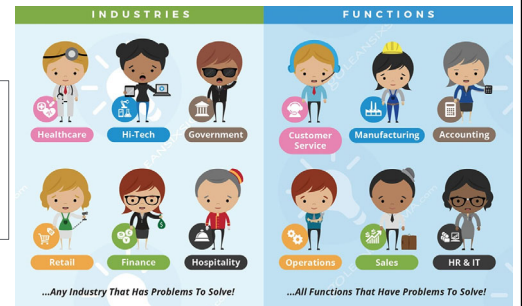*...Any Industry That Has Problems To Solve!* | *...All Functions That Have Problems To Solve!*

Image from: goleansixsigma.com

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EXAMPLE: Increases Profits

New Residents Moved In

Prospective Residents | Revenue

New Residents Moved In

Prospective Residents | Revenue

BEFORE

AFTER

Inefficient processes = less revenue
We successfully move in half of our qualifying applicants per month.

Efficient processes = more revenue
We can successfully move in MORE of our qualifying applicants per month.
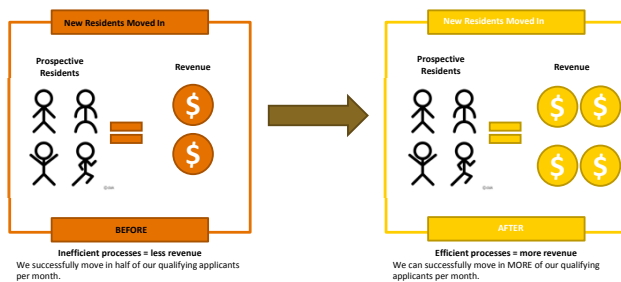
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EXAMPLE: Decreased Costs

Fundraising Event Planned

Invitations Sent | Costs due to defects

Fundraising Event Planned

Invitations Sent | Costs due to defects

0

BEFORE

AFTER

More defects = increased costs
Invitations were sent without response cards or instructions.

Fewer defects = decreased costs
All invitations had clear instructions on how to RSVP to the event.

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EXAMPLE: Efficiency & Effectiveness

Patients Seen per Provider

1 Provider — Satisfied Patients

BEFORE

Decreased efficiency = fewer successful visits
A single provider can only see four patients successfully.

Patients Seen per Provider

1 Provider — Satisfied Patients

AFTER

Increase efficiency = more successful visits
A single provider can now see six patients successfully.

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EXAMPLE: Teams and People

Sense of Ownership

Accountability

Success is shared UP and DOWN…

Success is felt by ALL employees!

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Identifying Waste…

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The 8 Wastes: DOWNTIME

Defects
Overproduction
Waiting
Non-Utilized Talent
Transportation
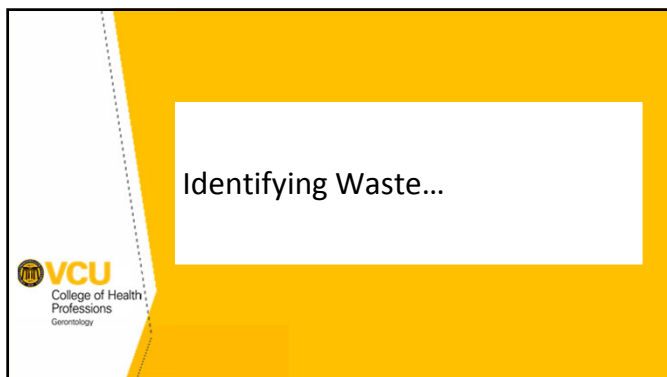**I**nventory
Motion
Extra Processing

DOWNTIME JUST AHEAD

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Defects

Efforts caused by rework, scrap and incorrect information

EXAMPLE: *Improperly trained staff results in documentation citations unless someone else corrects the errors. A poorly written individualized service plan written by one staff member has to be rewritten by the director of nursing to avoid a licensing citation.*
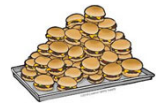

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Overproduction

Production that is more than needed or before it is needed

EXAMPLE
A new adult day program has a staff to participant ratio of 1:1.

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Waiting

Wasted time in waiting for the next step in a process

EXAMPLE
A new, community program for at risk older adults has been developed, but it cannot be implemented until the program has been reviewed by the highest level of the organization. The plan has been on their desk for 3 months...

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Non-Utilized Talent

Underutilizing people's talents, skills, and knowledge

EXAMPLE
Not all staff are invited to the table during the strategic planning retreat. Only the top-level managers are invited to contribute to the growth of the organization.

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Transportation

Unnecessary movement of products and materials

EXAMPLE

The coordinator of a multi-site intergenerational program drives the supplies for each session between all three sites each week.

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Inventory

Excess products and materials not being processed

EXAMPLE

In order to justify receiving the same supply budget for the next fiscal year, departments have spent down their remaining balances on copy paper, printer ink, and pens.

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Motion

Unnecessary movements by people (e.g., walking)

EXAMPLE

The office layout for an organization is such that the paper record-keeping system is located in a large room at the end of a long hallway, away from those who need to access the files frequently.

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Extra Processing

More work or higher quality than what is required by the customer

EXAMPLE

An older adult has hired an elder law attorney to assemble a living will and a healthcare proxy. The elder law attorney also researches options for estate planning and long-term care to present to the client as well.

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POLL or Activity

Identifying DOWNTIME in YOUR organization

Defects

Overproduction

Waiting

Non-Utilized Talent

Transportation

Inventory

Motion

Extra Processing

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Dining Services Department – Assisted Living Community

Defects	Overproduction	Waiting	Non-Utilized Talent
The dishwashing and sanitizing machine needs to be repaired. All dishes must be washed and sanitized by hand.	At our holiday dinner party we made enough food to serve 200 individuals, but only 150 people attended our event.	Our usual food order was place at the same time as always, but the delivery truck was stuck in traffic and was delayed by 1 day which created a problem for our menu.	Our dishwasher is trained as a pastry chef.
Transportation	**Inventory**	**Motion**	**Extra Processing**
All newly delivered supplies are first stocked in the kitchen closet and then restocked in other department closets.	We have boxes of unused holiday décor in the storage closet that was purchased on sale the previous year, but we usually forget we have it and buy more.	Every mealtime, servers must cross the dining room several times because the drink station and food pick up window are on opposite sides of the dining room.	Each week, the chef likes to make a brand new and overly fancy daily specials menu. This menu is often unutilized by residents who prefer to ask the servers what the daily specials are.

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Let's open our toolbox
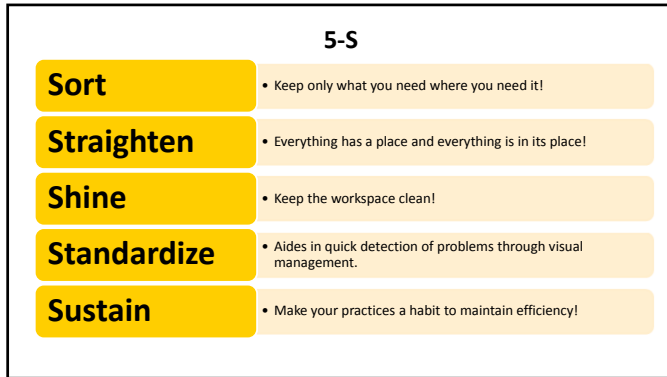
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College of Health
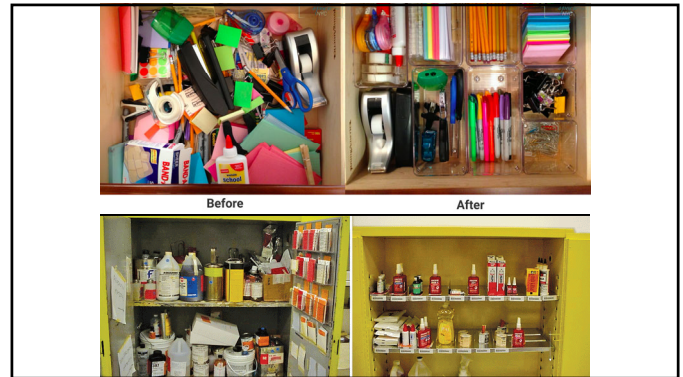Professions
Gerontology

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What's in your TOOLBOX?

- DOWNTIME (waste)
- 5-S
- Value and Process Stream Maps
- 5 Whys
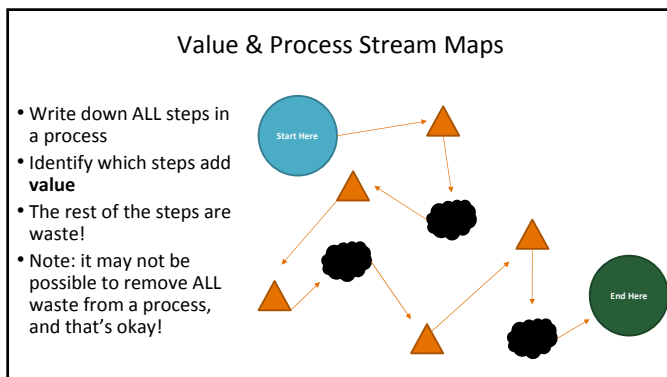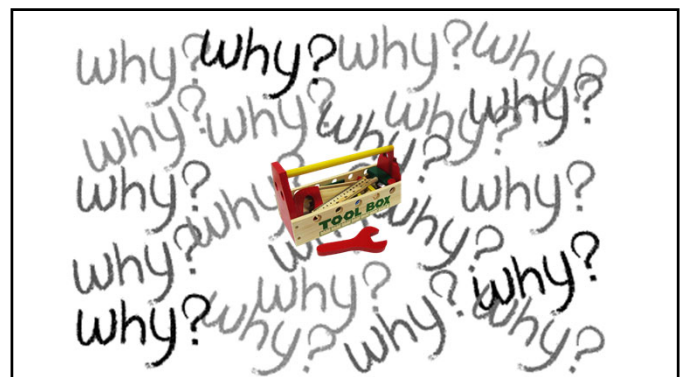- Fishbone Diagram (or cause and effect diagram)

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5-S

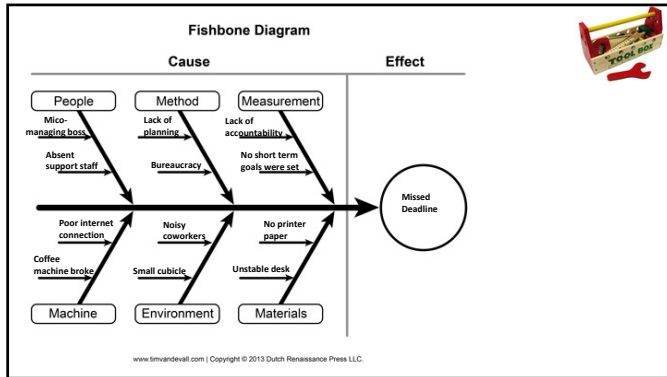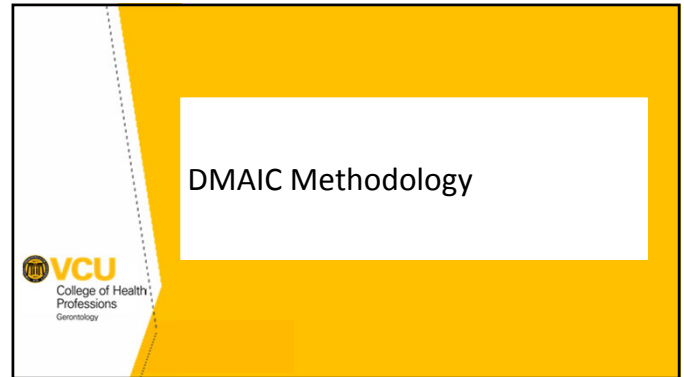| Sort	• Keep only what you need where you need it!
Straighten	• Everything has a place and everything is in its place!
Shine	• Keep the workspace clean!
Standardize	• Aides in quick detection of problems through visual management.
Sustain	• Make your practices a habit to maintain efficiency!

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Before   After

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Value & Process Stream Maps

- Write down ALL steps in a process
- Identify which steps add **value**
- The rest of the steps are waste!
- Note: it may not be possible to remove ALL waste from a process, and that's okay!

Start Here
End Here

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Define the problem

Business Case	Problem	Goal	Customer
• *We are in jeopardy of not getting funded for our programs after our current contract ends in three years. We still have time to make corrections to how we spend our grant money to justify continued funding.*	• *Since two years ago, we have overspent our total budget by $10,000 per year. We know it's a problem because we cannot fully meet the goals of the programs we offer.*	• *Our goal is to decrease the amount we are over budget by $5,000 this year.*	• *The granting institution expects us to spend our funds as outlined in the proposal budget. (include attachment of budget for reference)*

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Measure the problem

- Quantify the problem by using operational definitions
- Determine how the process currently performs
- Create a plan to collect data
- Ensure the data is reliable
- Gather the baseline data

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Measure the problem

Operational Definitions:
- "Over budget" is <u>any</u> amount of money spent by our organization that exceeds the $50,000 per year budget as measured by the fiscal administrator on the line labeled "amount expended in excess of grant amount" on the end of year report.

Current Process:
- Include a map of the physical process of how money is allocated and spent on projects.

Data Collection:
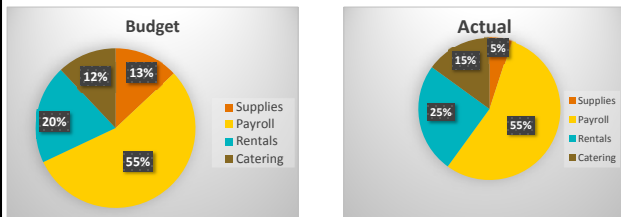- We need to pull together all invoices, receipts, proposals , and payroll records.

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Analyze the problem

- Closely examine the process
- Graphically display the data
- Look for the causes to the problem
- Verify the causes of the problem

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Analyze the problem

Budget

- 13% Supplies
- 12%
- 20%
- 55%
- Supplies
- Payroll
- Rentals
- Catering

Actual

- 5%
- 15%
- 25%
- 55%
- Supplies
- Payroll
- Rentals
- Catering

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Improve the Process

- Brainstorm solutions to fix the problem
- Select the practical solutions
- Develop maps of processes based on the different solutions
- Select the BEST solution(s)
- Measure to ensure improvement

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Improve the Process

- Complete the Fishbone Diagram exercise as a team
- Set up a tracking spreadsheet for each program with the associated expenses
- Identify less expensive rental options
- Identify less expensive food vendors
- Ask about discounts for rentals/food
- Alter food orders to cheaper options
- Ensure that necessary supplies are available year round by keeping detailed inventory
- Offer fewer programs

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Control the solution

- Ensure proper management and monitoring of the process
- Document improvements
- Apply improvements to other areas
- Share and celebrate your (collective) success!
- Continually improve the process using lean principles

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Control the solution

- Meet monthly to check the budget variances to ensure that expenses are not exceeding what is allocated
- Send around updates to the whole team
- Plan a potluck celebration at the end of the fiscal year to celebrate our success!

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Activity!

Defects
Overproduction
Waiting
Non-Utilized Talent
Transportation
Inventory
Motion
Extra Processing

Define
Measure
Analyze
Improve
Control

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Define the problem

Business Case	Problem	Goal	Customer
• The new budget for the upcoming fiscal year has allocated less funding to the dining services department for holiday meals.	• Over the past year we have created excessive food waste during holiday meals which equates to discarding food to a value of $1200 per year. We know it's a problem because this money could be used for other services.	• Our goal is to decrease the amount of food waste at the next holiday dinner by at least half, or a value of no more than $150.	• The administrator and CFO expect us to spend our holiday dinner funds such that we are not needlessly wasting money. • Residents and families expect us to continue our tradition of high quality holiday meals that are not excessive in waste.

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Measure the problem

Operational Definitions:
- "Food waste" is defined as <u>any</u> food or beverage item that is left over after an event that cannot be reused and must be discarded.

Current Process:
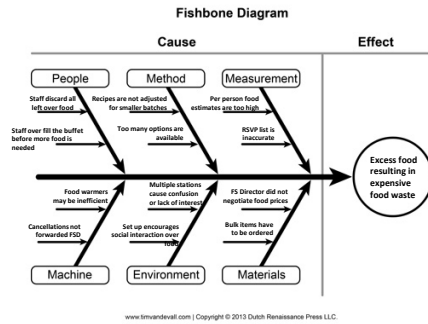- Special holiday dinner events are scheduled from 5-8 and food is served buffet style from multiple stations set up around the dining room. Food is replenished throughout the evening. Back up food is stored ready to serve in the kitchen.

Data Collection:
- We should pull together data from holiday menus, food orders, RSVPs and attendance lists, dining services resident and family surveys, and dining staff.
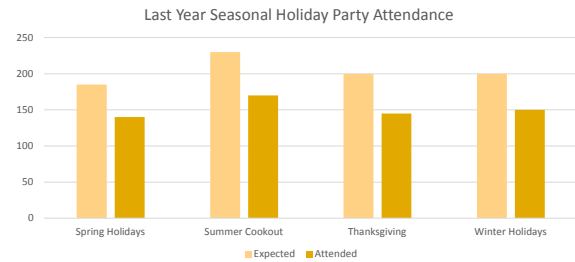
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Slide 55

Analyze the problem

Fishbone Diagram

	Cause			Effect

People — Staff discard all left over food — Staff over fill the buffet before more food is needed

Method — Recipes are not adjusted for smaller batches — Too many options are available

Measurement — Per person food estimates are too high — RSVP list is inaccurate

Food warmers may be inefficient — Multiple stations cause confusion or lack of interest — FS Director did not negotiate food prices

Cancellations not forwarded FSD — Set up encourages social interaction over food — Bulk items have to be ordered

Machine — Environment — Materials

Excess food resulting in expensive food waste

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Slide 56

Analyze the problem

Last Year Seasonal Holiday Party Attendance

Bar chart showing Expected vs Attended for Spring Holidays, Summer Cookout, Thanksgiving, Winter Holidays. Y-axis 0 to 250.
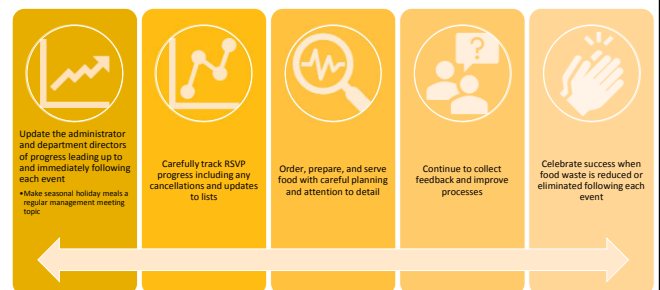
Legend: Expected, Attended

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Slide 57

Improve the Process

Possible Solutions:

- Review and Revise the RSVP process
- Prepare food based on average historical attendance
- Reduce the number of buffet stations
- Negotiate food costs with vendor
- Change format to plated meal
- Consider changing the day of the week or date of events
- Consider adjusting menus for less costly food choices

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Slide 58

Control the solution

Update the administrator and department directors of progress leading up to and immediately following each event
• Make seasonal holiday meals a regular management meeting topic

Carefully track RSVP progress including any cancellations and updates to lists

Order, prepare, and serve food with careful planning and attention to detail

Continue to collect feedback and improve processes

Celebrate success when food waste is reduced or eliminated following each event

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To be a more effective leader, you need to be more self aware	• Leaders accomplish objectives through others • Leaders use MBTI® to understand their own and other people's behaviors
Effective leaders have both high IQ and high EQ	• Leaders use MBTI® knowledge to positively influence others and manage conflicts • Leaders create open and healthy dialogue about performance
Effective leaders support people by continuously improving systems	• Leaders utilize a variety of tools to identify process weaknesses • Leaders work with teams using continuous quality improvement technique

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