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Module 5: Performance and Process Improvement

Welcome to Performance and Process Improvement

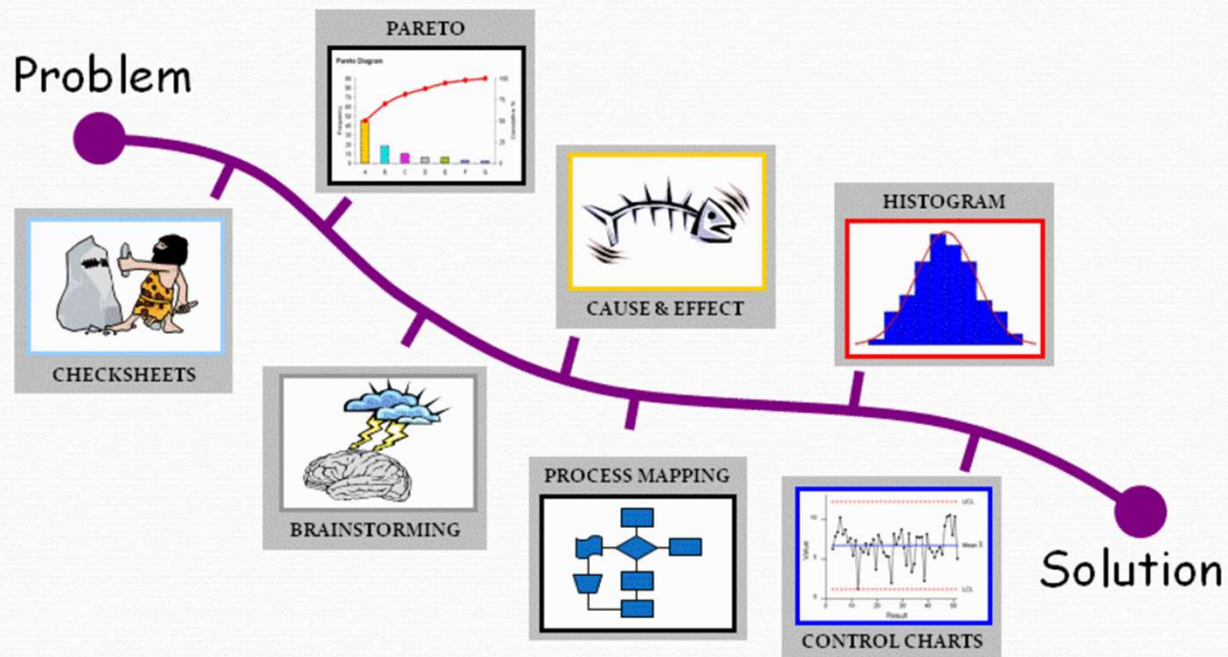
- In this module, we will cover how to:
 - Implement quality improvement training
 - Identify quality improvement opportunities
 - Participate in activities to identify innovative or evidence-based practices
 - Lead and facilitate change
 - Communicate quality improvement information within the organization
 - Establish teams, roles, responsibilities, and scope
 - Evaluate team effectiveness
 - Use performance improvement methods
 - Use quality tools and techniques
 - Participate in monitoring of project timelines and deliverables
 - Evaluate the success of performance improvement projects and solutions

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**Identify Quality Improvement
Activities**

How do I identify quality improvement activities?

Quality Tools for Problem Solving



Systems Thinking

- What is a system?
 - A system is a regularly interacting or interdependent groups of items forming a unified whole.
- A systems thinking perspective places focus on:
 - Interrelationships and benefits
 - Working conditions
 - Complexity of work

Systems Thinking

- Systems Thinking
- There are three major concepts of systems thinking:
 - A commitment to learning methods for improvement
 - The acknowledgement that being incorrect is a possibility
 - An openness to accept the viewpoints of many different participants in the system in order to see the whole picture

Benefits of Systems Thinking

- Identifying and understanding big picture
- Identifying major components
- Identifying important relationships and providing proper perspective
- Avoiding excessive attention to a single part
- Allowing for broad scope solutions
- Fostering integration
- Providing basis for redesign

Defining Value

- Using outcomes information without monitoring the process of care is inefficient
- Cost and quality are inseparable issues - cannot address one without the other

$$\text{Value} = \frac{\text{Quality of Service} + \text{Outcome}}{\text{Cost}}$$

Quality Indicators

- What are quality indicators used for?
 - Most quality indicators are useful as indicators of potential problems, not as definitive measures of quality.
- What should quality indicators be paired with?
 - Multiple measures of quality need to be integrated to provide a clear picture of the quality of care.

Establish Priorities

1st

Use a criterion-based approach considering criteria such as service, patient safety, and cost.

2nd

Meet regulatory and accreditation standards.

3rd

Maintain a competitive edge.

4th

Prioritize pay for performance.

Pay for performance and prioritization

- CMS has a number of value-based programs (Pay for Performance)
 - Other payers are also developing this type of program
- Prioritizing activities to perform well affect the bottom line of the healthcare organization
- Examples include
 - Hospital Value-based Purchasing Program
 - Hospital Readmissions Reduction program
 - Merit-based Incentive Payment System (for clinicians and group)
 - Skilled Nursing Facility Value-Based Program
 - Home Health Value-Based Program

Evidence-based practice in performance improvement

Evidence-based medicine (EBM)

- A systematic approach to clinical problem solving which allows the integration of the best available research evidence with clinical expertise and patient values. (Principles of EBM) Is focused on using the best evidence available currently to guide patient care decision-making.

Evidence-based practice (EBP)

- An approach that focuses on an objective, balanced, and responsible use of current research and the best available data to guide policy and practice decisions, such that outcomes for consumers are improved
- Promotes patient safety through provision of effective and efficient healthcare
- Results in less variation in care and fewer unnecessary procedures

Evidence-Based Practice

- Evidence-based performance and process improvement management based on:
 - Clinical research evaluating impact of intervention on patient outcomes
 - Health services research evaluating health system at micro and macro levels
- Strategy to base discussions on improving:
 - Patient experiences
 - Outcomes

Prioritization of Initiatives

- A Prioritization Matrix is used to organize:
 - Tasks
 - Issues
 - Actions
- Team consensus needed to determine:
 - Criteria that will be used for evaluating projects
 - Weighting of the criteria

Prioritization Matrix

	LOW COST	STRATEGIC PRIORITY	MEETS STANDARDS	MD CONCERN	STAFF CONCERN	TOTALS
Medication errors	3	4	2	3	4	16
High readmissions	5	2	5	0	1	13
ED Backlogs	4	1	0	2	2	9
Pharmacy delays	2	3	1	3	4	13
Patient survey results	1	5	3	3	3	15

1 = least important 5= most important

When to Use a Prioritization Matrix

- Issues are identified and options must be narrowed down
- Options all need to be done, but prioritization of sequencing is needed
- Group assigns weights of importance to the criteria
- Prioritization results must be documented in order to communicate rationale

Action planning or project development

- Who
- What
- When
- Status
- Completion

Action planning or project development

- Who
 - Define who is accountable for plan and the elements within.
- What
 - List specific steps or actions to be taken.
- When
 - Set the time frame for actions to be completed.
- Status
 - Clarify how you will assess progress and report it.
 - What outcome metrics are you trying to improve?
- Completion
 - Identify when the action plan is to be completed.

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Lead and facilitate

Change Management is Critical

- It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change.
 - Charles Darwin
- We cannot solve our problems with the same thinking we used when we created them."
 - Albert Einstein

Change Management is Critical

- **Change Management is Critical**
 - Question is not whether change is needed but rather how much and how often
 - Healthcare is a complicated system that demands change quickly to aim at being a high reliability organization
 - High reliability is desired in healthcare. When caring for patients, we must take aim at reducing harm in an extremely complex environment
- **Critical factors to assess change**
 - Limits of human performance
 - System's actual capacity to handle change

Scope of change

- Scope of change
 - Change is moving from an existing state through a transition state to a future state
 - Change is inevitable and essential for growth
- Different models and strategies are required, depending on:
 - Type of change
 - People involved
 - Scope of change

Change Management Process

- Change Management Process
 - Existing State
 - Transition
 - Future State

Change Management Process

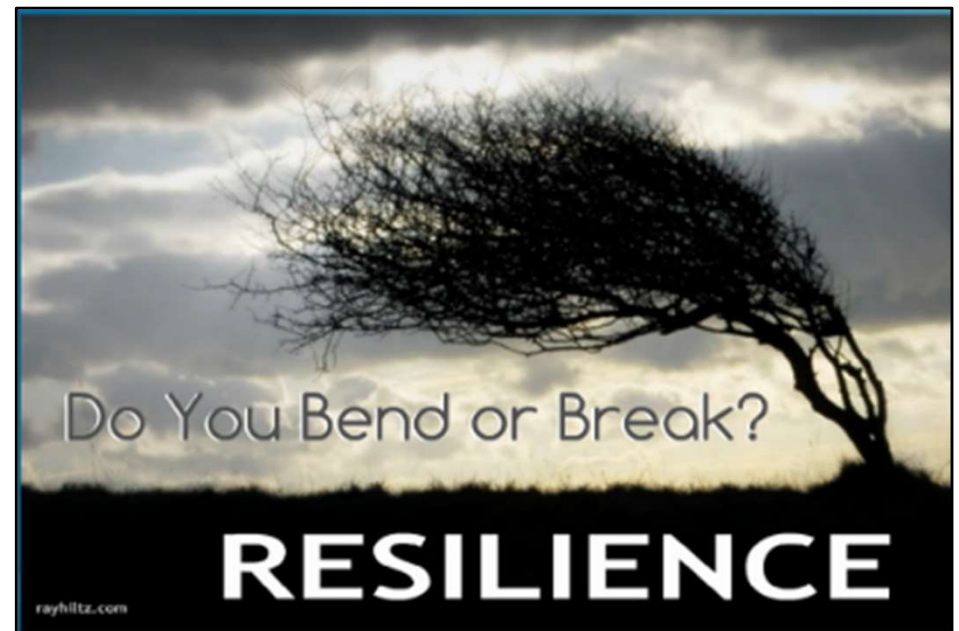
- Significant Change
 - Significant change, may cause distress and disruption (Pandemic requiring full PPE, causing high census and increased ICU cases).Transition
- Second order: Complex change
 - Complex, requires significant change in behavior (new computer system or new clinical guidelines).
- First order: small change
 - Small, requires minimal effort (new form, obtaining same product from a different vendor).

Change Management (continued)

- An organization's ability to handle frequent change is dependent upon individuals and leaders
- Successful transformation requires Transformational Leadership.
- Role of leaders is to establish the culture of change, and model behaviors needed to adapt to change
- Sense of loss must be acknowledged in the early stage of change to help people transition
- The engagement of an interdisciplinary team of staff and stakeholders is key so that change seen positively is valued

Change Management (continued)

- Resilience is the process of adapting well in the face of adversity or significant stress
- Flexibility of individuals is a critical element in an organization's ability to:
 - Make changes quickly
 - Rebound from one change to another
- Individuals can build the skill of resilience



Change Management (continued)

- Change is not a linear process
 - Individuals will be at different stages of accepting and implementing change
- The quality professional's role is as change agent, improvement advisor, and facilitator
 - It is critical to continuously assess where staff is in their acceptance of the change



Assessing Change Readiness

- In this activity, you'll be tasked with assessing organizational readiness for change. There are 7 categories and choose which of the options best indicates maximum readiness for change.
- Category
 1. LEADING CHANGE
 2. CREATING SHARED NEED
 3. SHAPING A VISION
 4. MOBILIZATION COMMITMENT
 5. MONITORING PROGRESS
 6. FINISHING THE JOB
 7. ANCHORING THE CHANGE

Strategies to Support Rapid Change

- Leadership
 - Active, visible, supportive of change
 - Makes focus or goal of change clear
 - Strong communicator of change
 - Accountable for change (owns, doesn't delegate)
 - Involves all leaders and expects results
 - Manages perceptions and expectations

Strategies to Support Rapid Change

■ Structure

- Develops strong team infrastructure
- Team members are interdependent with respect to information, resources and skills
- Empowers team members
- Encouraged to use their knowledge, expertise and creativity as they work toward a successful change
- Makes resources available
- Includes the human, financial, technological resources, as well as others as needed

Strategies to Support Rapid Change

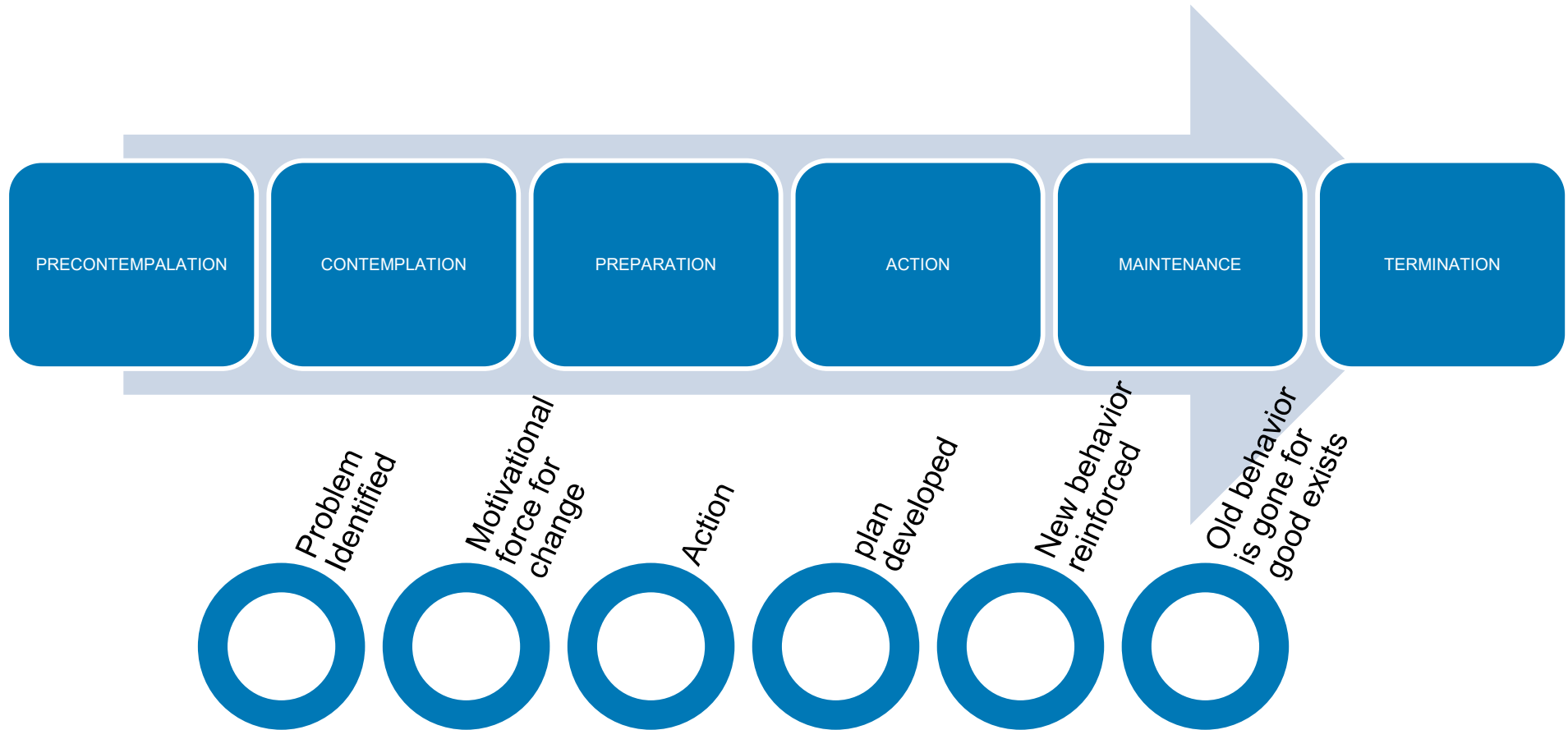
■ Culture

- Assesses readiness for change
- Supports creativity, innovation, and risk-taking
- Accepts failures, successes, and encourages ideas
- Supports participative structure (including staff levels)
- Focuses/values group learning and improvement
- Encourages diversity
- Focuses on systems/processes
- Rewards individuals and teams

Strategies to Support Rapid Change

- Techniques
 - Make tools available for teams
 - Use available tools and technology
 - Apply change models and concepts
 - Replace old ways with new customs/norms
 - Use training to reinforce the change
 - Put procedures in place to reinforce the change
 - Link promotion and pay to desired behaviors
 - Simplify, standardizes, and uses technology

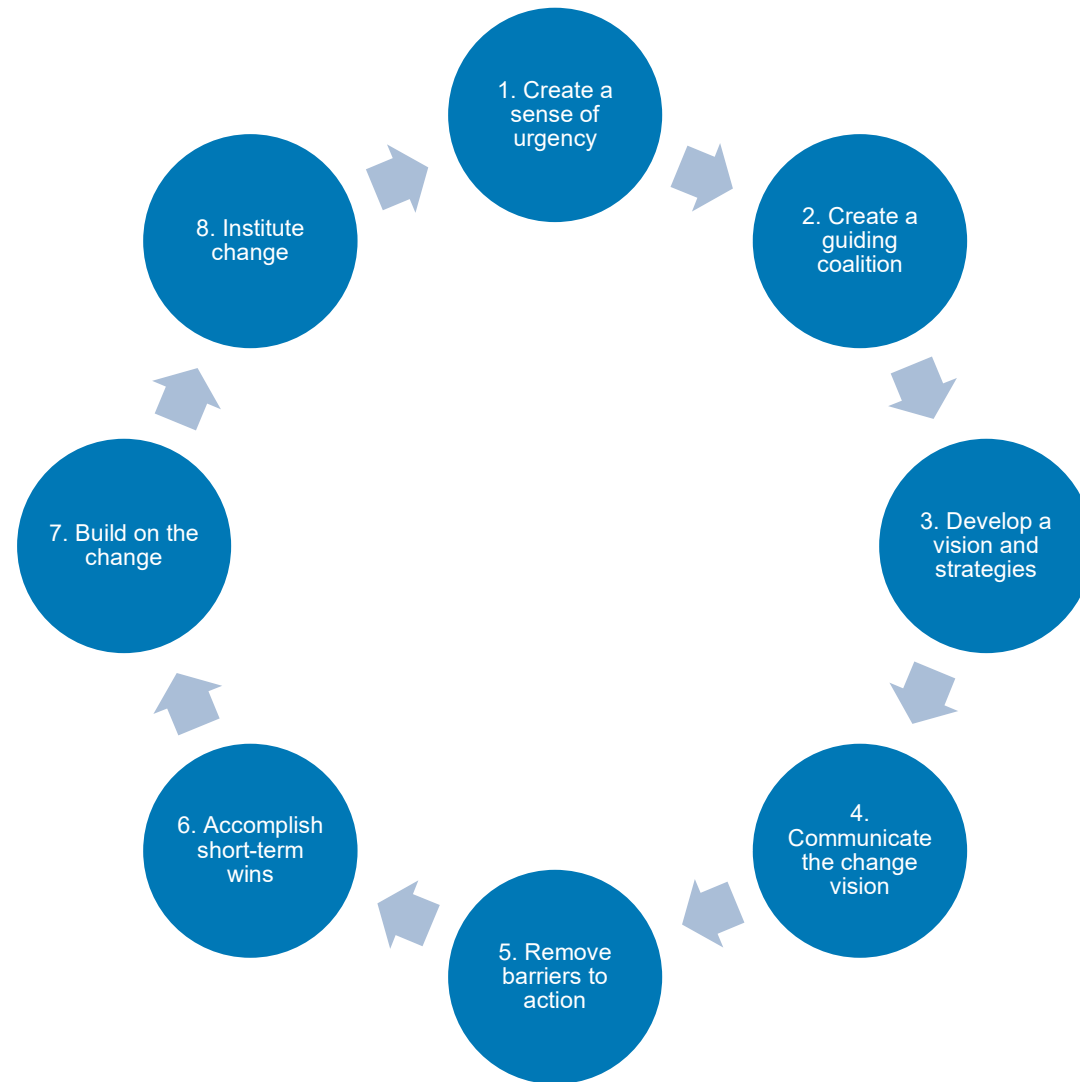
Prochaska's Stages in Changing Behavior



Kotter's Heart of Change Model

- Allowing too much complacency
 - Failing to create a sufficiently powerful guiding coalition
 - Underestimating the power of vision
 - Under communicating the vision
 - Permitting obstacles to block the new vision
 - Failing to create short-term wins
 - Declaring victory too soon
 - Neglecting to anchor changes firmly in the corporate culture

Kotter's Eight-stage Process for Major Change



Change Management Models

Common elements of change management models include:

- A description of movement from a current state to a future state
- The impetus for transition
 - This may be dissatisfaction with current state, a need to reduce cost or increase revenue, a re-allocation of resources, **changes in regulations**, or other outside influences
- Factors to identify readiness for change
- Communication strategies for change
- Leadership characteristics for change
- The approach to planning for change
- Characteristics of the change and factors of how this makes it more or less likely to be accepted

Force Field Analysis Change Model

DRIVING FORCES



Example: Proposed change is to allow families 24-hour visiting access for patients in the intensive care unit.

- Families provide comfort and reassurance to patients during ICU stays. Long periods without family may increase stress.



- Patients have a right to have family present during illnesses.



- Families have variable work schedules and cannot always meet the hospital's schedule.



RESTRAINING FORCES









- Chief medical officer finds the open visiting policy disruptive to patient care.
- Nursing staff finds the open visiting policy disruptive to nursing routines and getting their work done.
- The open visiting hours will tire patients and not all sufficient rest.
- More families will stay overnight and crowd waiting rooms, sleeping on chairs, and couches.
- More families present in the hospital throughout the night increases security risks for the hospital.

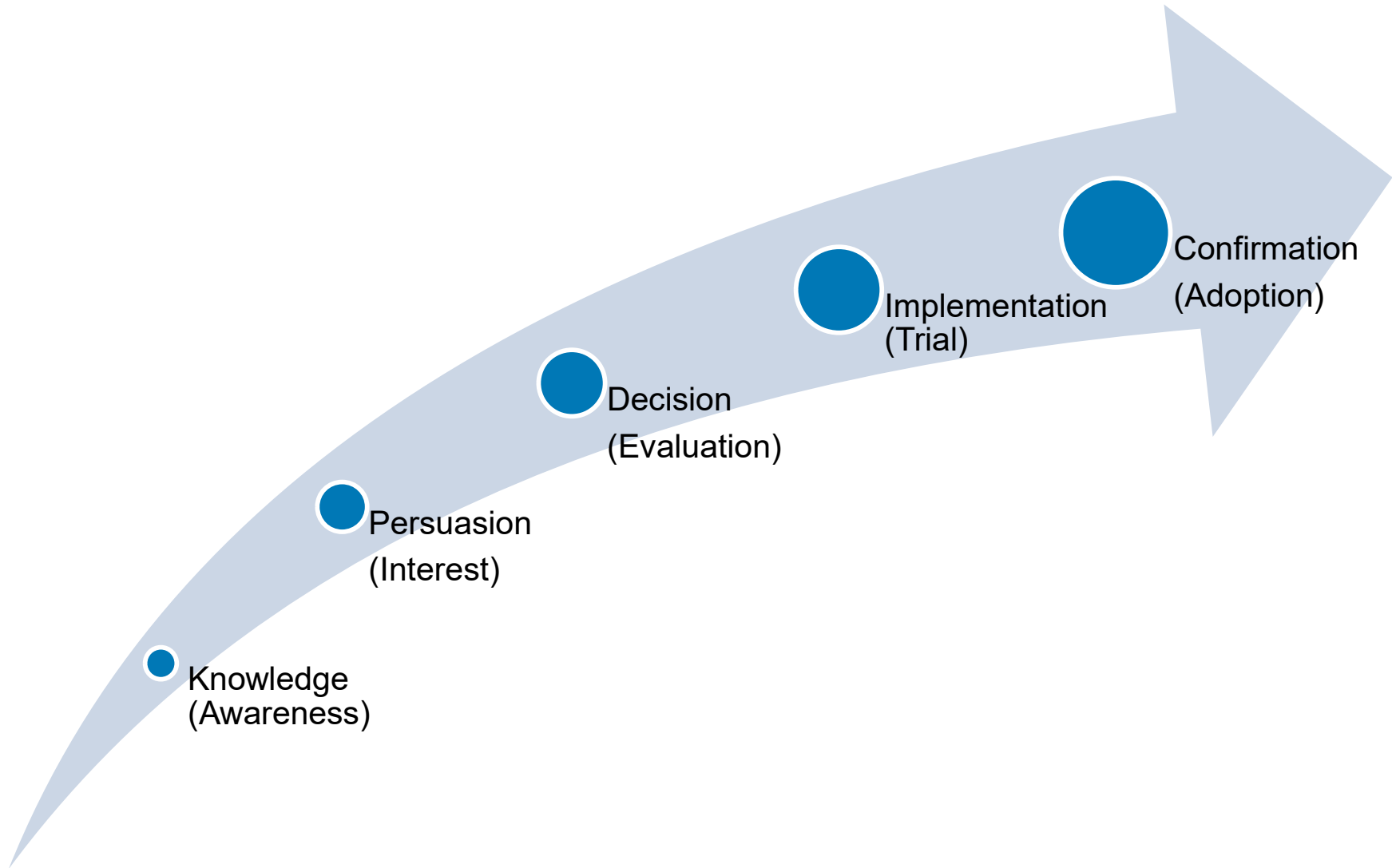


Force Field Analysis Change Model

- CQI education program

STRENGTHS	BARRIERS
Management supports program 	Lack of time 
Physicians support program 	Lack of commitment of all participants 
Have committed time and other resources to complete program 	Viewed as not important 

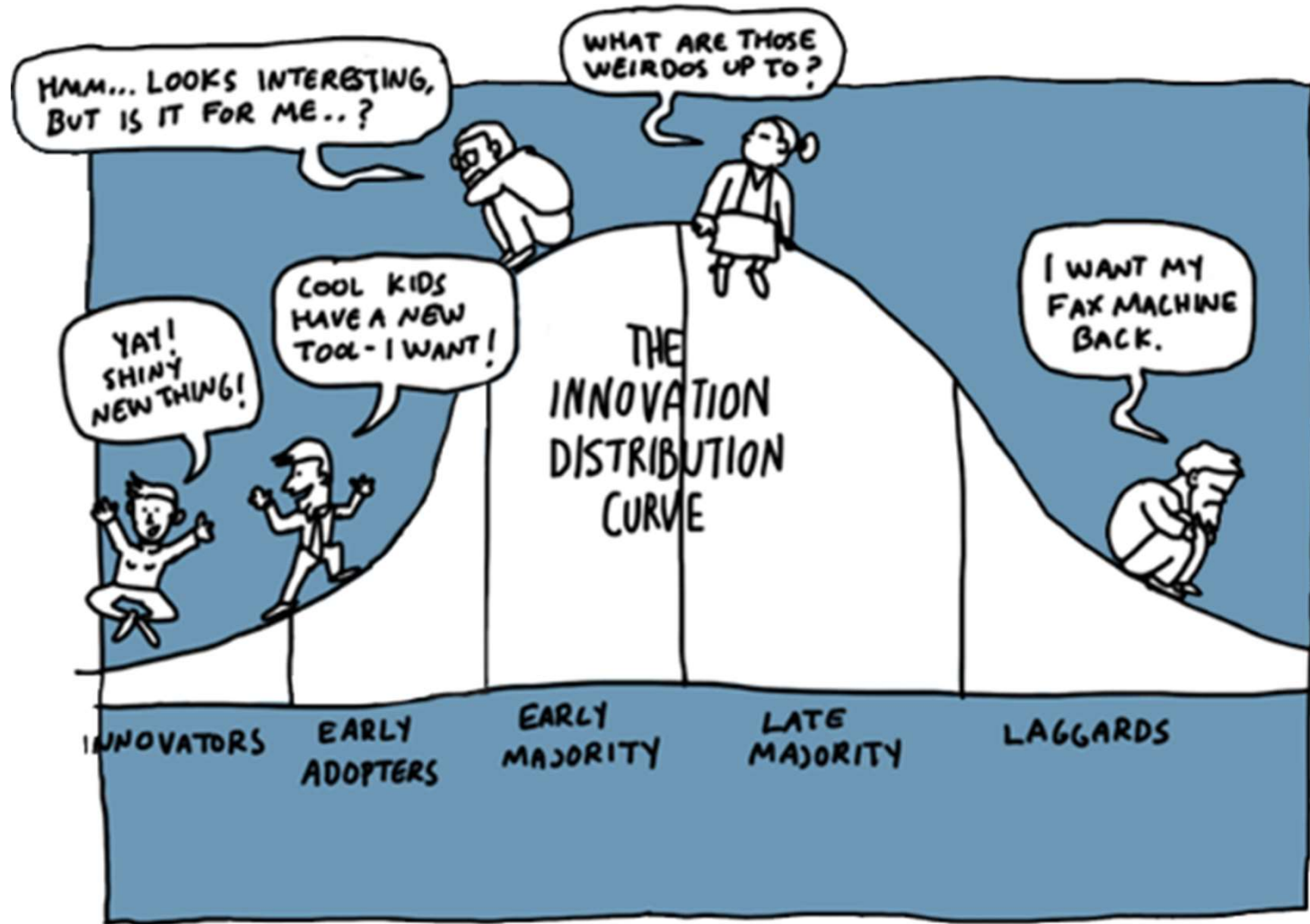
Diffusion of Innovation Model



Diffusion of Innovation Model

- Knowledge (Awareness)
 - Socioeconomic characteristics, personality variables, communication behavior.
- Persuasion(Interest)
 - Attending to perceived characteristics of innovation such as relative advantage, compatibility, complexity, visibility, and uncertainty.
- Decision(Evaluation)
 - Adoption or rejection.
- Implementation (Trial)
 - Direct application, reinvention.
- Confirmation(Adoption)
 - Evaluation of effectiveness.

Change Adoption



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Reducing Resistance

SITUATION	STRATEGIES
Fear of Change	Clearly identify effect of change effort and communicate openly with those involved
Not willing to make the change (who)	Set goals, measure performance, provide coaching and feedback, reward and recognize positive efforts
Not able to perform the change (how)	Provide education and training in new skills and use various management techniques
Lack of necessary knowledge to make the change (why)	<ul style="list-style-type: none"> • Communicate what, why, how, when, and who of change process; present positive outlook • Have clear focus and goal for change for expectations • Be adaptable • Use structured approach to manage ambiguity and confusion • Plan and coordinate change • Use proactive rather than reactive approach

Outcomes of Successful Change

- Check your items off the checklist.
- Think of what factors are or are not present in your organization
 - Leadership systems are designed for results
 - Strategy is simple, aligned, and deployed
 - Design of organizational culture is intentional
 - Mission and vision are clearly understood
 - Rapid response is employed
 - Desired results are defined, measured, and aligned
 - Decisions are based on sound data
 - Customer focus is the foundation
 - Measurement is deployed at all levels
 - Organizational learning is valued
 - Human resource practices support culture
 - Employees are involved
 - Innovation is valued
 - Partnerships are created
 - Improvements are integrated into daily work
 - Focus is on improving employee knowledge

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Communicate quality improvement information within the organization

How do I communicate quality improvement?

Performance and Process Improvement Reports



Performance and Process Improvement Reports

- Provide ongoing communication with staff, units, and departments
 - Graphics (Run Charts, Pareto diagram, Histograms, etc.) from report should be shared within units and departments to see where strengths, weaknesses, and opportunities lie
 - Reports should indicate, when available, a comparison to internal data and external benchmarks
 - Report should indicate if a response is required

Organize Meeting Materials

- Different tools to communicate (reports, meetings, etc.)
- Situation-Background-Assessment-Recommendation (SBAR), provides essential, concise information

SBAR
S Situation:
B Background:
A Assessment:
R Recommendation:

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Establish teams, roles,
responsibilities, and scope

How do you organize teams?

Engaging front-line employees for Performance and Process Improvement Projects

- Improvements in quality are more likely to be realized when front-line employees are engaged in the work
- Empowerment allows employees to:
 - Take ownership of jobs
 - Make decisions concerning their areas
 - Take responsibility for decisions • Add value to jobs
- Teams outperform individuals when:
 - Tasks are complex
 - Creativity is needed
 - The path forward is unclear
 - More efficient use of resources is required
 - Fast learning is necessary
 - Implementation requires commitment of others
 - The task or process is cross functional

Team

- Group of people who are interdependent with respect to information, resources, and skills, and who seek to combine their efforts to achieve a common goal.
- Interdependent
 - Members recognize and respect contributions
- Information, resources, skills
 - You bring together the people who know the process being improved and those with the skills to lead the effort.
- Combine efforts
 - Members depend on others' contributions to get the work done.
- Common goal
 - An effective team is clear on the goal, and everyone is working in the same direction to achieve it.

Characteristics of Effective Teams

- 5-8 members with direct knowledge of the process that needs improving
- Contributions from all
- Commitment to clear, common goals
- Regular attendance
- Collaborative environment
- Leadership support and external recognition
- Non-hierarchical structure
- Competent, timely completion of assignments

Steering Committee / Quality Council

- Functions as a permanent team, and provides oversight for all quality performance activities
- Serves as clearinghouse for QI clinical/non-clinical information
- Sustains, facilitates, and expands initiatives
- Connects to strategic plan
- Is comprised of top leaders, medical staff, quality department, board and community
- Develops and approves quality programs and plans
- Lends legitimacy to quality improvement efforts
- Maintains organizational focus on goals/priorities
- Fosters teamwork for improvements
- Provides necessary resources
- Formulates policies on how processes will actually run
- Has a no blame culture - focused on improving processes, not individuals

Performance and Process Improvement Teams

- Use of teams is dependent on task complexity, task interdependence, and the task objectives
- Teams may be temporary (for a specific problem) or permanent (continuous improvement)
- **Natural work teams**
 - People who regularly work together.
- **Cross-functional teams**
 - People from various departments.
- **Department teams**
 - People with similar roles.

Project Charter

- Charter includes:
 - Clearly defined scope and project goal(s)
 - Description of team's tasks: why and who
 - People or departments
 - represented on the team
 - Outcomes, metrics for measuring success
 - Timeline for meetings, report outs, and resources available

EXAMPLE: PROJECT CHARTER

<p>Project Title: Minimize the Opportunity for COVID-19 Infections in our Nursing Facility Project Start Date: September 9, 2021</p>	<p>Project Sponsor: Nursing Home Executive Director Team Members: Director of Nursing, Assistant DON, Infection Preventionist, CNA, Staff Nurse</p>
<p>AIM: Eliminate COVID-19 infection outbreaks traced to newly admitted residents within one month and reduce exposure of resident to COVID-19 infections from visitors by 75%.</p>	
<p>Opportunity: Admission to facility had two negative COVID test prior to discharge from hospital. Admitted to skilled unit. Multiple people cared for resident. Within 2 days resident was symptomatic for COVID and tested positive. Condition warranted admission to hospital. As a result, 3 staff members and 3 residents tested positive initially. Second case was resident admitted that was fully vaccinated-admitted to regular unit. Symptomatic 1 day later resulting in 2 staff and 4 residents testing positive. Third outbreak related to visitor who denied symptoms. Two days later he tested positive, as did our resident (his wife) and her roommate.</p>	<p>Project Description: Develop admission process that minimizes the potential COVID infection of other residents and staff. Minimize the opportunity for infections caused by visitors or staff transmission with regular education and monitoring compliance of use of PPE. Barriers: By law cannot restrict visitation of residents.</p>
<p>Expected Outcome: Zero COVID-19 infection outbreaks traced to newly admitted residents from hospitals. Minimal exposure of residents to COVID infection from visitors.</p>	<p>Barriers: By law cannot restrict visitation of residents.</p>
<p>Plan: Increase infection control by 1. Quarantine all new admissions 10 days if vaccinated, 14 days if not vaccinated 2. All staff wear PPE with N-95 masks when entering room of quarantined resident 3. All staff complete Infection Control training and are fit tested for N-95 4. All visitors are educated on proper PPE and handwashing 5. All staff tested and complete symptom questionnaire each day upon entering facility 6. Residents tested based on community Transmission Level (currently HIGH so twice per week)</p>	<p>Measures: • Process: ◦ % staff completed mandatory IC training ◦ % new residents quarantined per protocol ◦ % visitors completed PPE and Handwashing education % COVID-19 testing per protocol (staff upon entry, residents X2 per week until transmission rate drops) • Outcome #COVID-19 infections (residents) monthly #COVID-19 infections (staff) monthly • Structural: ◦ Sufficient testing materials available to conduct POC tests ◦ Quarantine unit created to house new admissions</p>
<p>Project Meetings: • Review of all new admissions and compliance by visitors discussed daily at morning huddle • Team meets weekly to review weekly metrics and make modifications in plan.</p>	<p>Required CMS documentation • COVID-19 infections of residents and staff reported weekly to CMS via NHSN • COVID-19 vaccination rates of residents and staff reported weekly via NHSN</p>

SMART Goals and Objectives

- Specific
- Measurable
- Achievable
- Relevant
- Time-bound

"Eliminate COVID-19 infection outbreaks traced to newly admitted residents within one month and reduce exposure of residents to COVID-19 infections from visitors by 75%."

Goal (AIM) Statement Examples

- Reduce adverse drug events in critical care by 75% within one year
- Improve medication reconciliation at transition points by 75% within one year
- Transfer every patient from the Emergency Department to an inpatient bed within 1 hour of the decision to admit
- Reduce ICU mortality by 20% within 9 months
- Reduce waiting time to see a urologist by 50% within 9 months
- Decrease the number of rejected medical claims by 50% within 36 months
- Reduce the relapse rate in substance abuse patients by 10% within one year

Team Roles

- Sponsor
- Member
- Timekeeper or Scribe
- Facilitator
- Leader
- Champion

Team Roles: Team Sponsor

- Formal leader of performance and process improvement project
- Responsible for successful project outcomes
- Aligns resources and monitor's progress
- Holds others accountable for change
- Inspires team members
- Serves as a coach or consultant

Team Roles: Team Member

- Direct knowledge and expertise of the process that needs improvement
- Vested in outcome of team
- Responsible to actively participate in the team and share in the work required to achieve the outcomes
- Shares responsibility for focusing on objective, contributing information, analyzing data, staying on track, making decisions, managing time, continually improving team

Team Roles: Team Timekeeper/ Scribe

- Two supplemental roles that can be performed by people in other roles
- Timekeeper is in charge of ensuring team remains on track, can often be the facilitator
- The scribe records key notes from meetings, making sure information is kept on file

Team Roles: Team Facilitator

- Moves team along; not vested in outcome
- Promotes effective group team dynamics
- Is concerned with how decisions are made, not what decisions are made
- Serves as coach and consultant
- Focuses on meeting and improvement process
- Keeps team on track
- Has expertise regarding use of performance and process improvement tools

Team Roles: Team Leader

- Vested in outcome of improvement efforts
- Tasked with guiding team to achieve successful outcomes and reach established goals
- Responsible for guiding team through meeting process to achieve objectives
- Involved in meeting content and process
- Provides direction and support for the team

Team Roles: Team Champion

- Opinion leaders who provide project credibility and are integral to the social structure
- Respected clinicians or staff with influence through reputation or leadership qualities
- Support the change and work for its implementation

How Teams Develop

- STAGE 1: Forming
- STAGE 2: Storming
- STAGE 3: Norming
- STAGE 4: Performing

How Teams Develop

- **STAGE 1: Forming**
 - Get to know one another
 - Agree on vision
 - Setting team ground rules
 - Delegate tasks
 - Requires a strong team leader
 - Clearly defined tasks will make the stage shorter than other stages

- **STAGE 2: Storming**
 - Members express individuality
 - Conflict and tension arises
 - Team leader needs to manage and energize

How Teams Develop

- **STAGE 3: Norming**
 - Members develop close ties and a strong team identity
 - Group moves from 'I' to 'We'
 - Leader needs to continue to challenge
 - Remember to caution against group think
- **STAGE 4: Performing**
 - Team works harmoniously and is highly productive
 - Team is task oriented and accomplishing work
 - Team leader shares responsibilities

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Evaluate Team Effectiveness

How do I evaluate team effectiveness?

How to Evaluate Teams

CONTINUOUS EVALUATION	FORMAL DEBRIEF
Should be conducted throughout team's process, with adjustments if necessary	Should be done at the end of the project to assess the success of the team process
<p>Productivity: Progress or success in meeting team and organizational goals</p> <p>Satisfaction of team members: Extent to which members are satisfied with the team</p> <p>Individual growth: Extent to which members developed professionally</p>	<p>Includes criteria such as</p> <ul style="list-style-type: none"> • Organizational alignment with strategy • Goal clarity • Clear leadership • Roles, and norms • Team participation and organized meetings • Competency and communications • Decision making and problem-solving • Conflict and performance management • Achievement of outcomes

Change Concepts Related to Performance Improvement Methods

- **Eliminate Waste**
 - Remove any part of the process that does not provide value to the customer
- **Improve Workflow**
 - Remove reactivity and use proactive approaches to get the work done
- **Optimize Inventory**
 - Allowing you to know where inventory is stored, in a standardized method, to improve the workflow
- **Change in the work environment**
 - Ensure that the environment is ready to receive the change in processes
- **Enhance the producer-customer interface**
 - Ensure the changes made are what the customer wants
- **Manage Time**
 - A crucial element in many performance improvement activities
- **Manage variation**
 - Variation causes loss of productivity in the outcome of a process
- **Design error-proof systems**
 - Another important concept for healthcare

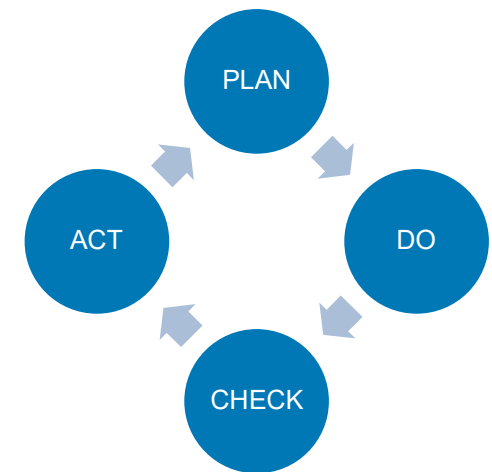
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Use performance improvement methods
(e.g. Lean, PDCA, Six Sigma)

How do I use performance improvement methods?

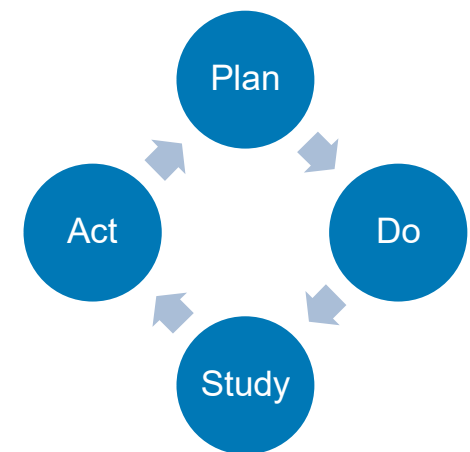
Plan-Do-Check-Act (PDCA)

- Plan
 - 1. Identify customer needs/expectations
 - 2. Describe the current process
 - 3. Measure and opportunities analyze data
 - 4. Identity improvement opportunities
 - 5. Identity root causes of problems.
- Do
 - 6. Generate and choose solutions
 - 7. Plan and implement a pilot of the solutions
- Check
 - 8. Evaluate results of pilot
 - 9. Draw conclusions
- Act
 - 10. Standardize change
 - 11. Monitor the change and hold the gains



The PDSA Cycle

- 1. PLAN
 - Objective
 - Questions and predictions
 - Plan to carry out the cycle (who, what, where, when)
- 2. DO
 - Carry out the plan
 - Document problems and unexpected observations
 - Begin data analysis
- 3. STUDY
 - Complete the data analysis
 - Compare data to predictions
 - Summarize what was learned
- 4. ACT
 - What changes are to be made?
 - Next cycle?

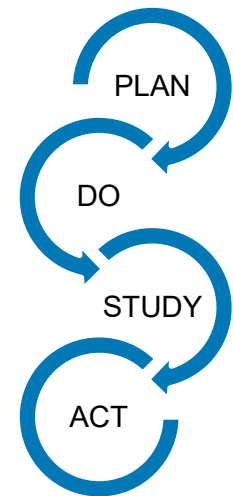


PDSA Cycles of Change

- Plan for multiple cycles of improvement in advance to support rapid-cycle movement
- Scale the scope and size of pilots so a small test can be done rapidly
- Choose people who want to work on the improvement change process
- Capitalize on existing resources, best practices, and research
- Select easy, visible wins to start
- Don't delay your project waiting for technology if it's possible to do without
- Collect meaningful measures and review results of every change cycle
- Determine if modifications are needed
- Test the change under many conditions
- Be prepared to stop or abandon the process if no improvement is seen

The Model for Improvement

- Developed by Associates in Process Improvement
- What are we trying to accomplish?
 - Setting Aims
- How will we know that a change is an improvement?
 - Establishing Measures
- What changes can we make that will result in improvement?
 - Selecting Changes

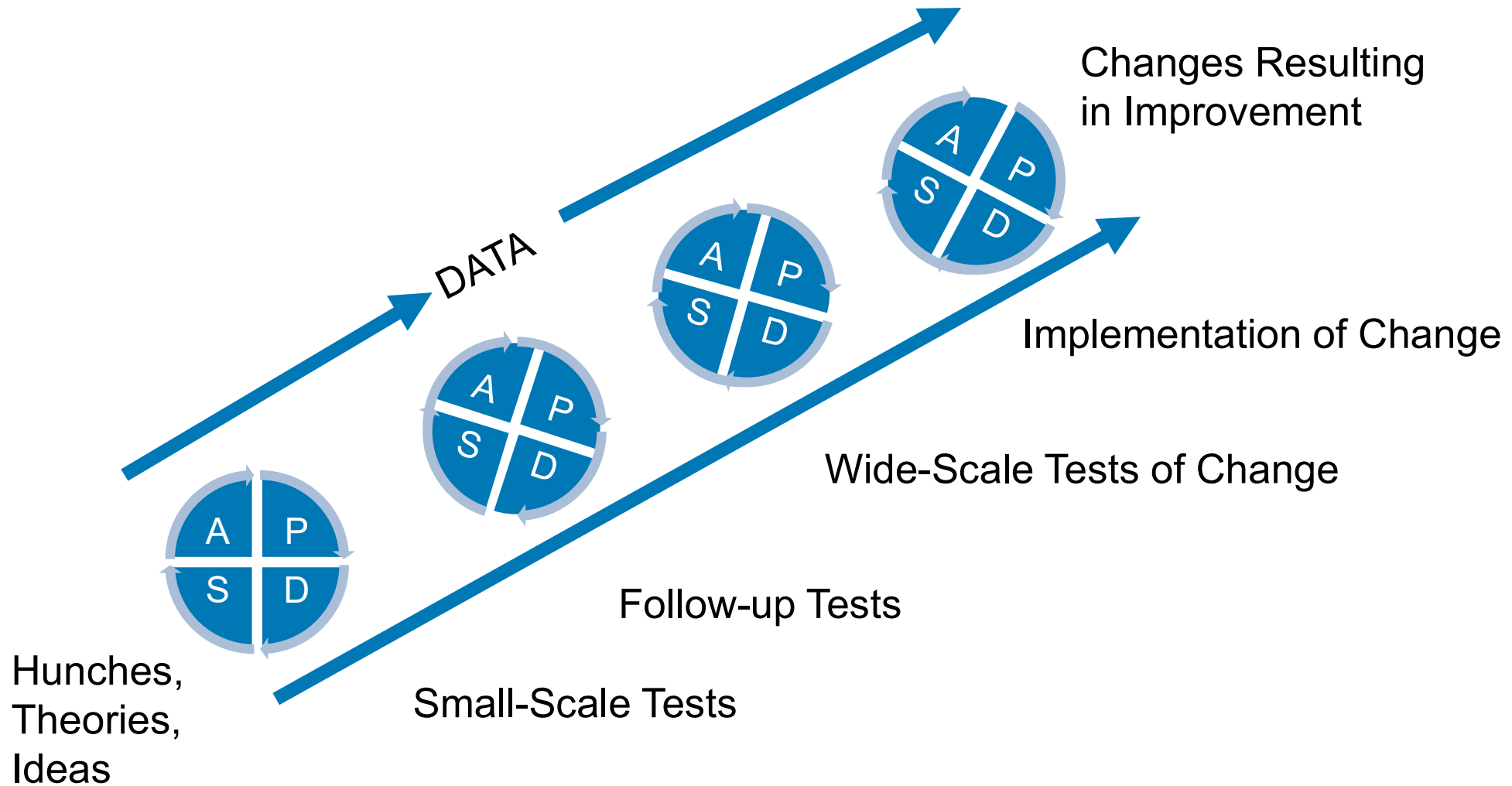


Testing Changes

Rapid Cycle Improvement (RCI)

- Identifies and prioritizes aims for improvement
- Gains access to methods, tools, and materials for evidence-based quality improvement
- Enlists a broad range of partners using evidence-based practice to improve the quality of care
- Moves very quickly through this process

Rapid Cycle Improvement (RCI)



LEAN- 8 SOURCES OF WASTE

TYPE OF WASTE	DESCRIPTION	EXAMPLE
TRANSPORTATION	Moving people, material or information unnecessarily	Moving patient between multiple rooms
INVENTORY EXCESS	Have more material than you need	Very large stock of bandages that could become outdated before used
MOTION	People or material moving unnecessarily	Nurse goes room to room looking for equipment
UNUSED CREATIVITY	Staff ideas are not heard and implemented	Staff has idea to reorganize work area to save time but is not heard
WAITING TIME	People (patients or staff) waiting too long in the process	Patient wait times or staff waiting for supplies
OVER- OR INCORRECT PROCESSING	Processing more than is needed	Ordering more lab tests than are needed to diagnose
OVERPRODUCTION	Creating more than is necessary for process	Patient signs multiple forms when they could have been combined into 1 or 2
DEFECTS OR REWORK	Errors made that require the process to be corrected	X-ray taken of right arm, when left was the injured arm

LEAN - 6S

- SORT (Get rid of it)
 - Separate what is needed in the work area from what is not; eliminate the latter.
- SET IN ORDER(Organize)
 - Organize what remains in the work area.
- SHINE(Clean and solve)
 - Clean and inspect the work area.
- STANDARDIZE (Make consistent)
 - Standardize cleaning, inspection, and safety practices.
- SUSTAIN (Keep it up)
 - Make 6 'S' a way of life.
- SAFETY (Respect workplace and employee)
 - Create a safe place to work.

Six Sigma

- Philosophy that is customer-focused and data-driven
- Uses statistical analysis to measure and improve performance
 - Focuses on elimination of errors (defects) in processes
 - Based on normal distribution (bell-shaped curve) of data
 - Within six standard deviations from the mean should have only 3.4 defects per million opportunities
- Improvement model is DMAIC - Define, Measure, Analyze, Improve, Control

Process Improvement Methodology (DMAIC)

- DMAIC provides an easily governed systematic process to deliver measurable results



Process Improvement Methodology (DMAIC)

■ Define

- Who are the customers and what is the problem from their perspective?
- Define the problem - identify the opportunity for improvement, the project goals and the customer needs and expectations.

■ Measure

- How is the process performing today and how is it measured?
- Measure the problem and process performance.

Process Improvement Methodology (DMAIC)

■ Analyze

- What are the most important drivers of poor performance?
- Analyze the root causes of the problems.

■ Improve

- How do we remove the drivers of poor performance?
- Improve the process (i.e., implement some countermeasures and verify results).

■ Control

- How do we ensure that we sustain the improved performance?
- Control the process (i.e., measure and monitor to sustain the new level of improvement).

Anexas Consultancy Services

Use quality tools and techniques

How do I use quality tools and techniques?

SIPOC

- **Supplier**
 - The provider of inputs into a process
- **Input**
 - The materials, information and other resources needed to complete a process
- **Process**
 - Structured steps used to convert inputs into outputs
- **Outputs**
 - Product or services resulting from the process
- **Customer**
 - The recipient of the outputs

SIPOC



- Summarizes the inputs and outputs of a process in table form
- Use as a part of the Six Sigma process
- Useful for visualizing a business process from beginning to end

SIPOC- Prescription Processing

Supplier	Inputs	Processes	Outputs	Customers
<ul style="list-style-type: none"> • Patients • Pharmacy staff • Physicians • Nurses • Drug wholesaler 	<ul style="list-style-type: none"> • Prescriptions • Medications • Patient information 	<p>Steps</p> <p>↓</p> <p>Prescription intake</p> <p>↓</p> <p>Prescription Entry</p> <p>↓</p> <p>Prescription Production</p> <p>↓</p> <p>Prescription Verification</p> <p>↓</p> <p>Dispensing</p>	<ul style="list-style-type: none"> • Prescription labels • Completed prescription • Patient education 	<ul style="list-style-type: none"> • Patients • Families • Healthcare professionals

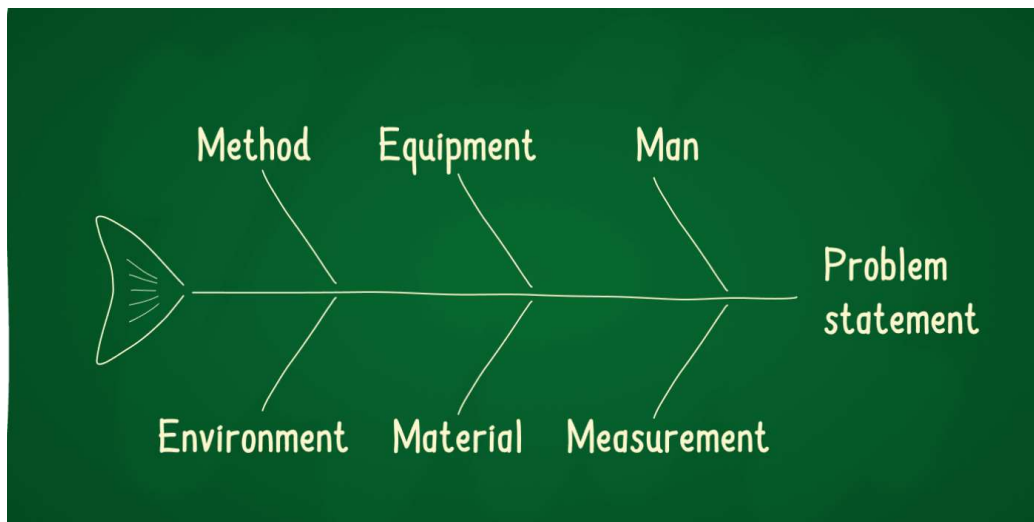
Cause and Effect Diagram

- Brainstorming tool
- Also referred to as a Fishbone or Ishikawa Diagram
- Effectively used to identify root causes
- Topics generating the most ideas can be potential areas for improvement projects
- There are generally at least 4 categories that make up the structure of the diagram:
 - Manpower, Methods, Machines, Materials
 - OR
 - Patron (user of system), People (workers), Provisions (supplies), Places to work (work environment), Procedures (methods and rules)

Looking for Relationships

- Graphic displays can help you structure possible causes to find relationships that will shed new light on your problem

Cause-and-Effect Diagram

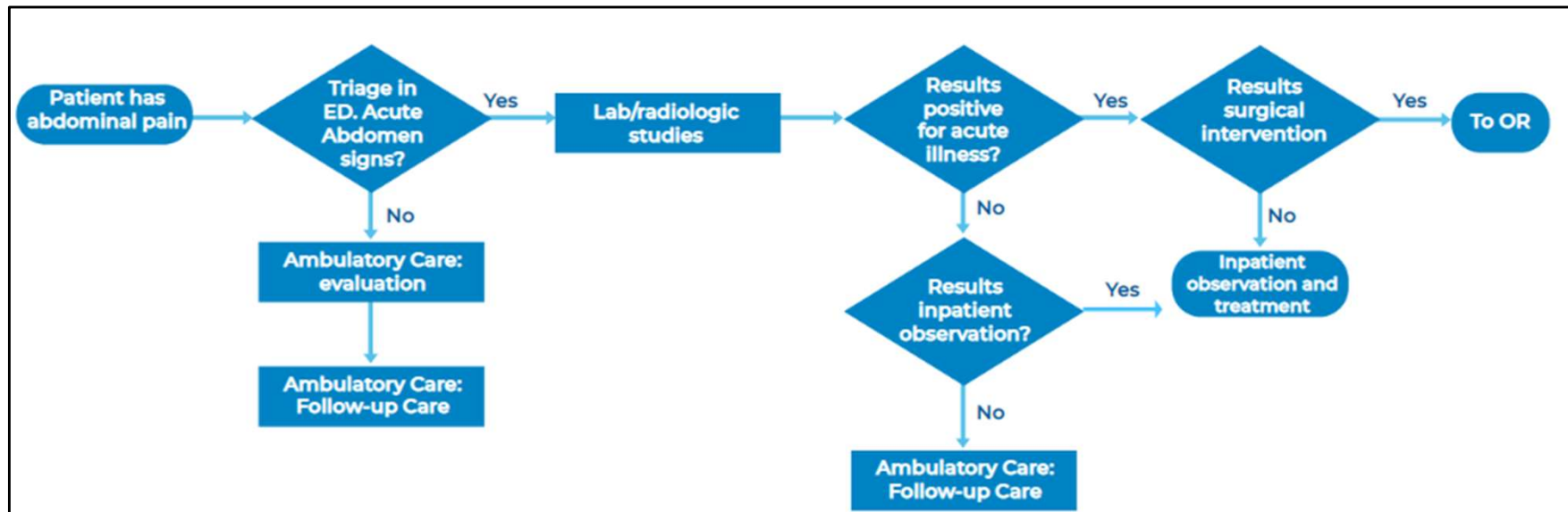


How to Create a Cause- and-Effect Diagram

- Determine the effect or the label for the diagram and put it on the far right
- Draw a horizontal line to the left of the effect
- Determine the categories (4 M's, 5 P's, etc.)
- Draw diagonal lines for half of the categories above the line and half below the line
- Brainstorm each of the categories
- Organize each of the causes on each bone
- Draw branch bones to show relationships

Process Map

- Graphic display of a process
- Outlines the sequence and relationship of the steps of the process
- Different individuals may have slightly different views of how the process really flows



Process Map

- As part of a Root Cause Analysis (RCA) or Failure Mode and Effects Analysis (FMEA)
- To anticipate any problems before implementing an action plan
- To illustrate current state and envision future state
- To develop a new process or redesign a current process
- To identify problem(s), analyze information, and plan solution(s)

What a Process Map Tells You

- A flow chart will help you:
 - Identify inefficiencies, omissions, gaps, redundancies, barriers, etc.
 - Determine what steps in the process need improvement
 - Redesign a process
 - Determine risk factors that could lead to adverse events

Common shapes used in Process Maps

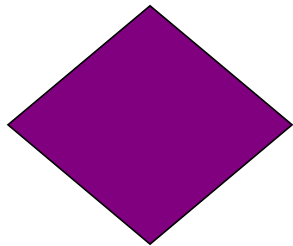
- Shown below are the 4 common flow chart shapes used during process mapping



Start / Stop



Process



Decision box



Connectors

Value-Added and Non-Value-Added Steps

- Value-added steps:
 - Customers are willing to pay for it
 - Physically change the product
 - Are done right the first time
- Non-value-added steps:
 - Not essential to produce output
 - Include:
 - Defects, errors, omissions
 - Preparation/setup, control/inspection
 - Overproduction, processing, inventory
 - Transporting, motion, waiting, delays



Brainstorming

- When to brainstorm
 - As a ground-breaker to discuss improvement
 - Use when a list of possible ideas is needed
 - When you want ideas to build on each other
 - When generating ideas for various tools
- How to brainstorm
 - Define the topic
 - Set the ground rules
 - Give everyone time to generate ideas
 - Have the participants call out ideas
 - Record ideas as they are generated
 - Add other ground rules that are appropriate for your group

Nominal group technique

- How to construct the nominal group technique
 - Define the task
 - Describe the purpose of this technique and the process to the group
 - Write the question to be answered for all to see
 - Generate ideas to address the identified question
 - List all the items as you would when brainstorming
 - Clarify and discuss the ideas
 - Give each member 4-8 cards
 - Have the members write one selection from the list on each card and assign a point value to each item
 - Collect the cards and tally the votes
 - Mark each item on the list with the value on the cards for that item
 - The item with the largest number becomes the group's selection

Nominal group technique

- When to use the nominal group technique
 - Use when team members are new to each other
 - Use when dealing with a controversial topic
 - Use when there are many different ideas that need some organization/clarification
 - Use when there is a desire that ideas remain anonymous

Multi-voting

- How to construct multi-voting
 - Generate a list of items during brainstorming. Number each item
 - Combine the items that seem to be similar
 - Renumber all items, if necessary
 - List the most important items
 - Tally the votes beside each item on the list
 - Eliminate items with the lowest scores
 - Repeat the above process until the list is narrowed-down, or priority is identified

Checklist

- **How to construct a checklist**
 - Identify critical elements to be completed
 - Make a list of all elements
- **When to use a checklist**
 - Use when reliance on memory is insufficient
 - Use when tasks for a process are critical

Planning grid

	Bob	Linda	Roy	Sally	Dom
Chart Review at Hospital	X				
Chart Review at MD Office				X	
Interview Drs #123 and #456					X
Interview Office Nurses of Drs #123 and #456		X			
Compile Data			X		
Create Graphics			X		

Matrix Diagram

	Governing Body	Administrative Medical	Middle Staff Leaders	Middle Management	Staff Members
Overview Course	▲	▲	▲	▲	▲
Team Training		■	■	■	●
Facilitator Training		■	■	■	●
Just-in-Time Training			▲	▲	▲
System Thinking	▲	▲	▲	●	
Principle Centered Leadership	▲	▲	▲	●	

▲ = Very Important

■ = Moderately Important

● = As Needed

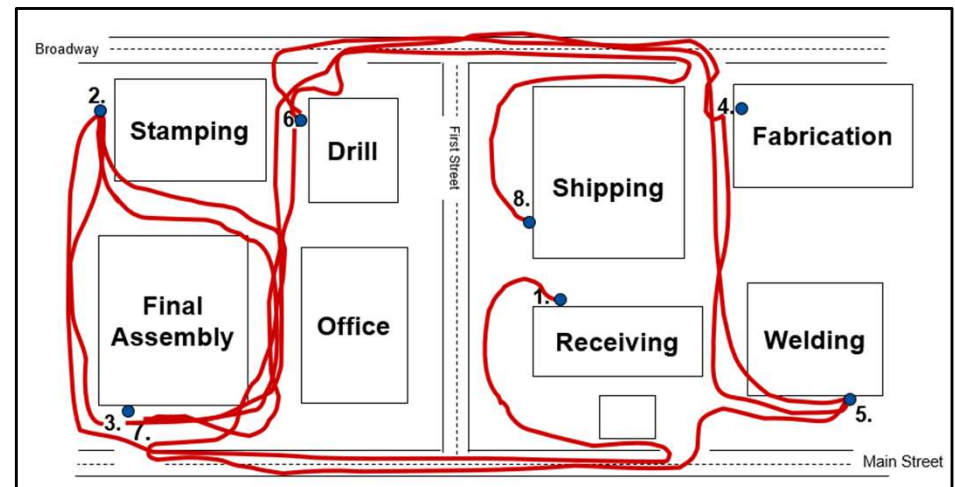
RASCI Chart

	Executive Director	Director of Nursing	Assistant DON	Infection Preventionist	Staff Nurse
Develop protocols	A	C	R	R	S
Training staff	I	S	R	R	S
Fit test for N95	I	S	S	R	S
Visitor education	I	C	R	C	C
COVID Testing	I	S	S	R	I

Role	Task
R	Responsible
A	Accountable
S	Supportive
C	Consulted
I	Informed

Spaghetti Diagram

- How to construct a spaghetti diagram:
 - Get a layout
 - Empty Room Carts
 - Pick the subject
 - Record every movement until completed
- When to use a spaghetti diagram:
 - To demonstrate flow in a process
 - To identify excess travel or movement

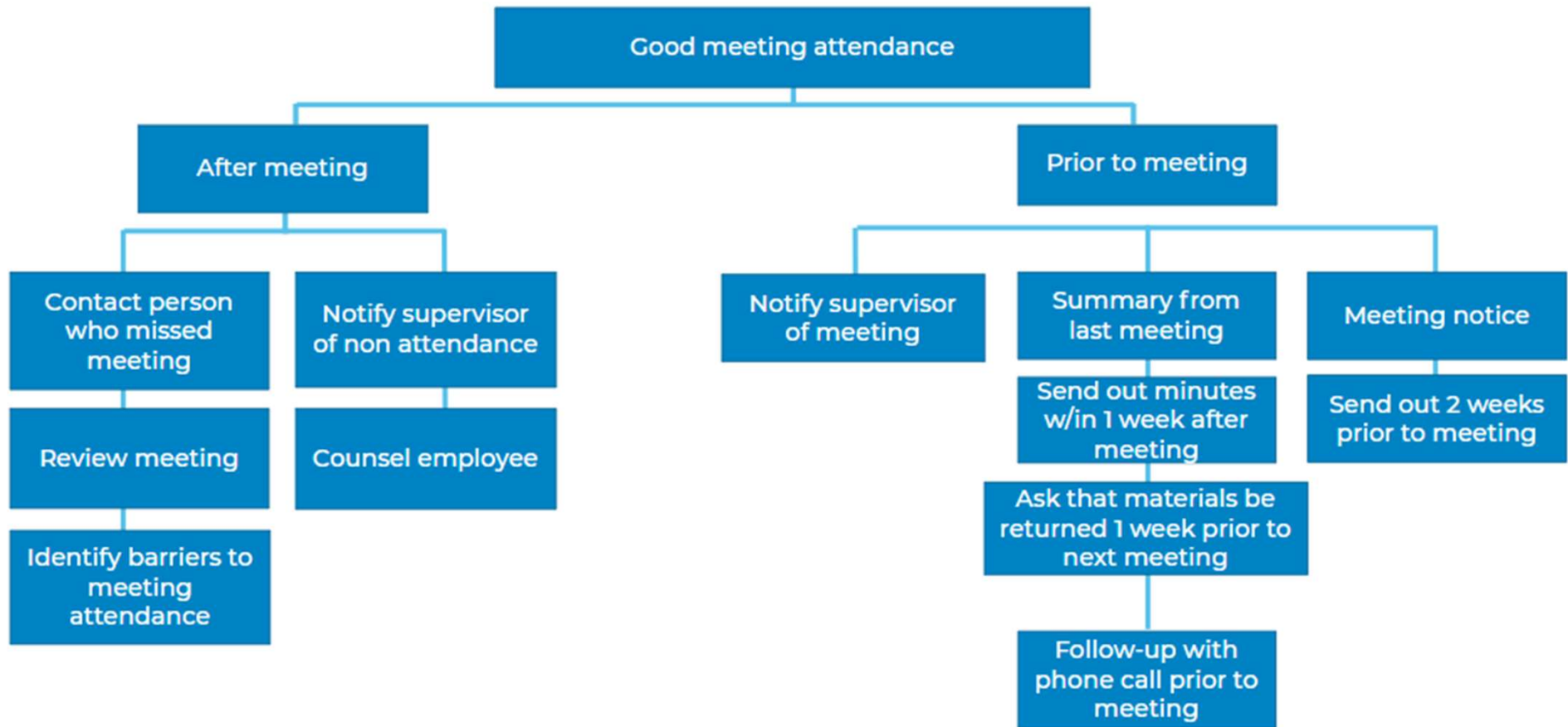


Affinity Diagram

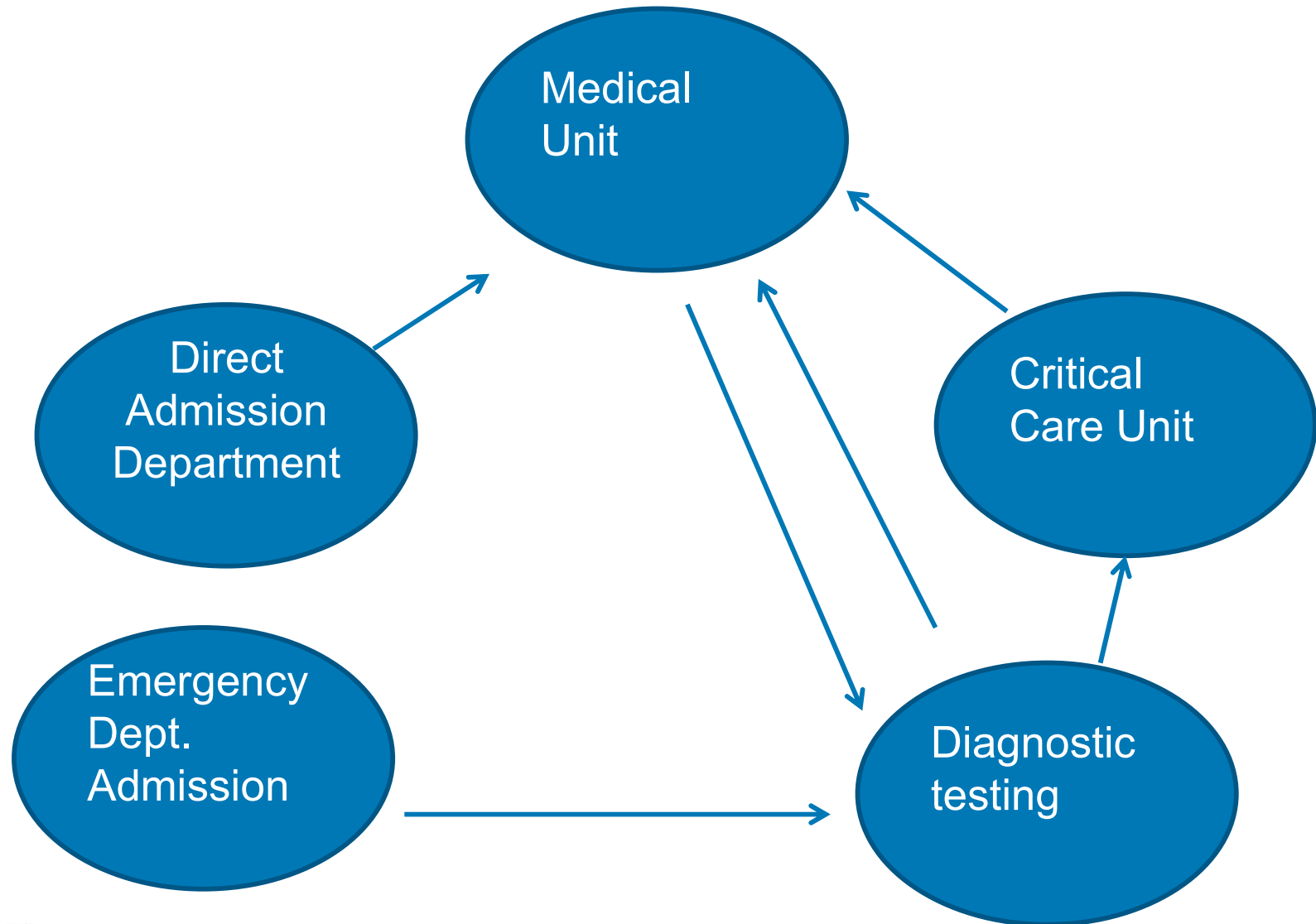
- CQI Overview Course



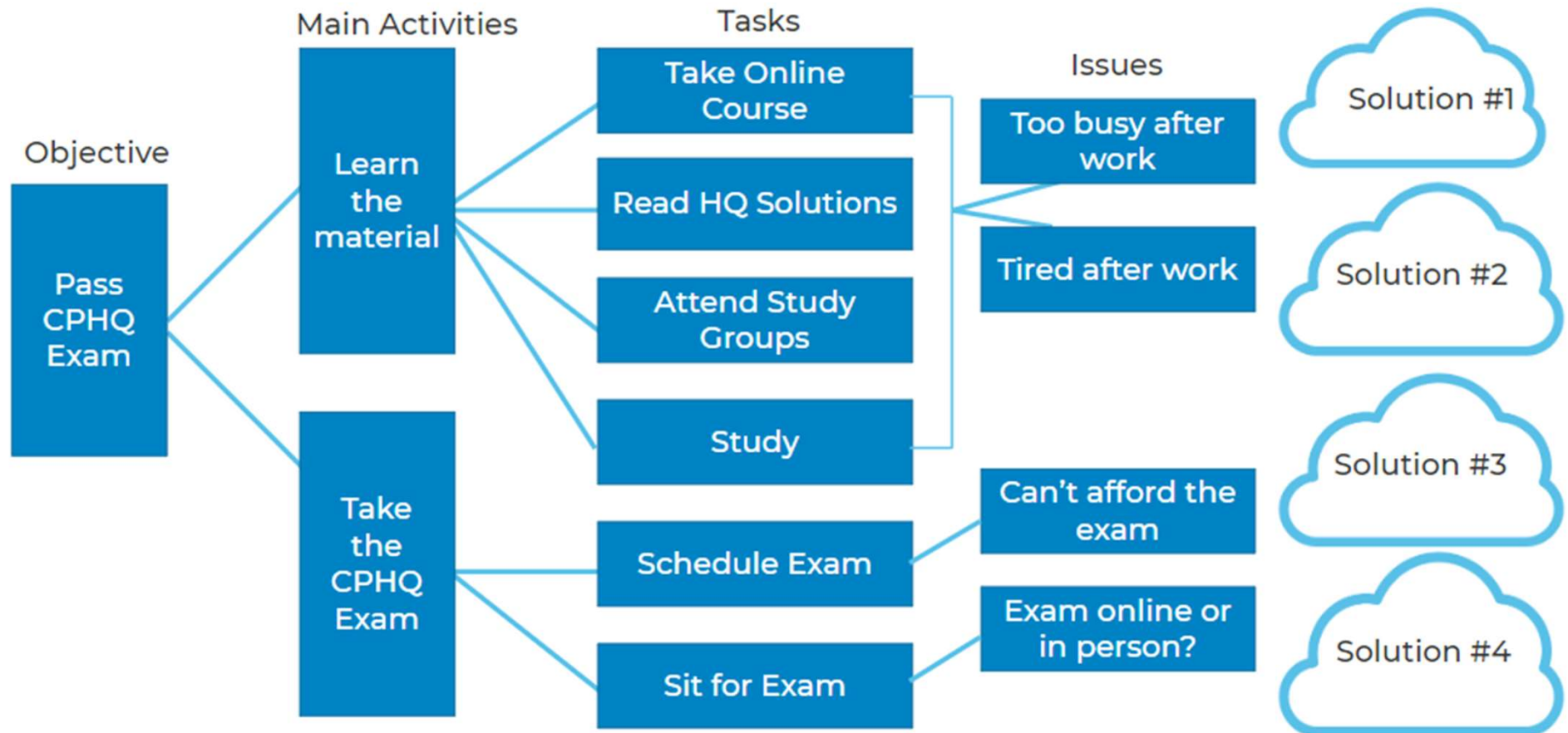
Tree Diagram



Interrelationship Diagram



Process Decision Program Chart



Three Different Measures

PROCESS

- **Process Measures**
- % staff completed mandatory Infection Control (IC) training
- % new residents quarantined per protocol
- % visitors completed PPE and handwashing education
- % COVID-19 testing per protocol

OUTCOME

- **Outcome Measures**
- Number of COVID-19 infections (residents) monthly
- Number of COVID-19 infections (staff) monthly

STRUCTURE

- **Structure Measures**
- Sufficient testing materials available to conduct Point Of Contact (POC) tests
- Quarantine unit created to house new admissions

Anexas Consultancy Services

Evaluate the success of performance improvement projects and solutions

Evaluate the Success of the Projects

<p>Project Title: Minimize the Opportunity for COVID-19 Infections in our Nursing Facility Project Start Date: September 9, 2021</p>	<p>Project Sponsor: Nursing Home Executive Director Team Members: Director of Nursing, Assistant DON, Infection Preventionist, CNA, Staff Nurse</p>
<p>AIM: Eliminate COVID-19 infection outbreaks traced to newly admitted residents within one month and reduce exposure of resident to COVID-19 infections from visitors by 75%.</p>	
<p>Opportunity: Admission to facility had two negative COVID test prior to discharge from hospital. Admitted to skilled unit. Multiple people cared for resident. Within 2 days resident was symptomatic for COVID and tested positive. Condition warranted admission to hospital. As a result, 3 staff members and 3 residents tested positive initially. Second case was resident admitted that was fully vaccinated-admitted to regular unit. Symptomatic 1 day later resulting in 2 staff and 4 residents testing positive. Third outbreak related to visitor who denied symptoms. Two days later he tested positive, as did our resident (his wife) and her roommate.</p>	<p>Project Description: Develop admission process that minimizes the potential COVID infection of other residents and staff. Minimize the opportunity for infections caused by visitors or staff transmission with regular education and monitoring compliance of use of PPE. Barriers: By law cannot restrict visitation of residents.</p>
<p>Expected Outcome: Zero COVID-19 infection outbreaks traced to newly admitted residents from hospitals. Minimal exposure of residents to COVID infection from visitors.</p>	<p>Barriers: By law cannot restrict visitation of residents.</p>
<p>Plan: Increase infection control by 1. Quarantine all new admissions 10 days if vaccinated, 14 days if not vaccinated 2. All staff wear PPE with N-95 masks when entering room of quarantined resident 3. All staff complete Infection Control training and are fit tested for N-95 4. All visitors are educated on proper PPE and handwashing 5. All staff tested and complete symptom questionnaire each day upon entering facility 6. Residents tested based on community Transmission Level (currently HIGH so twice per week)</p>	<p>Measures: • Process: ◦ % staff completed mandatory IC training ◦ % new residents quarantined per protocol ◦ % visitors completed PPE and Handwashing education % COVID-19 testing per protocol (staff upon entry, residents X2 per week until transmission rate drops) • Outcome #COVID-19 infections (residents) monthly #COVID-19 infections (staff) monthly • Structural: ◦ Sufficient testing materials available to conduct POC tests ◦ Quarantine unit created to house new admissions</p>
<p>Project Meetings: • Review of all new admissions and compliance by visitors discussed daily at morning huddle • Team meets weekly to review weekly metrics and make modifications in plan.</p>	<p>Required CMS documentation • COVID-19 infections of residents and staff reported weekly to CMS via NHSN • COVID-19 vaccination rates of residents and staff reported weekly via NHSN</p>

Evaluating Progress

Outcome Tracking Table Start Date:
Sept 9, 2021

XX Nursing and Rehab

Measure	Goal	Baseline	Month	Month	Month	Month	Month	Comments
			Oct. '21	Nov. '21	Dec. '21	Jan. 22	Feb. '22	
% staff completed mandatory IC training	100%	21%	55%	91%	100%	98%	100%	Added new staff. Trained in orientation
% new residents quarantined per protocol	100%	55%	100%	100%	100%	100%	100%	
% Visitors completed PPE and handwashing education	100%	40%	75%	86%	76%	84%	97%	Some visitors refuse training. Holidays more difficult due to new visitors for residents and they refuse.
% COVID-19 testing per protocol(staff upon entry, residents X2 per week until transmission rate drops)	Res=96% Staff=75%	Res=100% Staff=100%	Res=100% Staff=100%	Res=98% Staff=100%	Res=100% Staff=100%	Res=100% Staff=100%	Res=100% Staff=100%	Resident refused in Dec. '21
# Resident COVID-19 infections	0	5	1	2	3	5	4	Traced to family member. Resident in private room.
#staff COVID-19 infections	0	5	1	2	3	5	4	Staff ID's upon entry prior to providing care. 1 staff traced to COVID + resident.

Congratulations

Summary :

- Learned how to identify quality improvement opportunities • Identified how to use innovative and evidence-based practices Learned how to prioritize project ideas and develop action plans or projects on those priorities
- Discovered how to lead and facilitate change
- Identified tools to communicate quality improvement information
- Learned how to use teams in your performance improvement work
- Studied the performance improvement methods and tools Learned how to monitor project timelines and evaluate the success of performance improvement projects