



Quality Management in Healthcare



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What is quality?

- **Quality** must be understood before it can be managed
- *Noun and adjective*
- *The Oxford English Dictionary* defined quality as:
 - The standard of something as measured against other things of a similar kind;
 - the degree of excellence of something.
- Adjective- Excellent

What is quality?

- ISO 9001- Quality is defined as “the degree to which a set of inherent characteristics fulfills requirements”.
- It is both objective and subjective in nature.

► 5 Approaches of defining *Quality* (D. Garvin 1986)

Jimena M. Calfa

TRANSCENDENT

Scholars in Philosophy

Quality is an "innate excellence" that cannot be defined precisely, but it is intuitively understood, you know what it is
Quality it's a simple, unanalyzable property that we learn to recognize only through experience

PRODUCT-BASED

Scholars in Economy

Quality is a precise and measurable variable found in the components and attributes of a product
Quality reflects the presence or absence of such measurable and *desired* product attributes
Higher *quality* = more attributes → higher costs → expensive goods

USER-BASED

Scholars in Economic, Marketing & Operation Management

Individual consumers have different wants or needs, and those goods that best satisfy their preferences have the highest *quality* for them
"Fitness for use" (J.M. Juran)

MANUFACTURING BASED

"Conformance to requirements" (P. Crosby)

"Do things right the first time" (P. Crosby)

Preventing defects (less expensive than repair/rework) → costs reduction → improvements in *quality*

A product that deviates from specifications is likely to be poorly made and unreliable, providing less satisfaction (poor *quality*) than one that is properly constructed (high *quality*)

VALUE-BASED

Scholars in Operation Management

Define *quality* in terms of *costs & prices*: "A *quality* product is one that provides performance at an acceptable *price* or conformance at an acceptable *cost*"

This approach is becoming the more prevalent



The Dimensions of Quality (Garvin. 1988)

Dimension	Meaning and example
Performance	Primary product characteristics, such as brightness of the picture
Features	Secondary characteristics (i.e. added features), such as remote control
Conformance	Meeting specifications or industry standards, workmanship
Reliability	Consistency performance over time, average time for the product/unit to fail
Durability	Useful life, includes repair
service	Resolution of problems and complaints, ease of repair
Response	Human-to-human interface, such as courtesy of the dealer
Aesthetics	Sensory characteristics, such as exterior finish
reputation	Past performance and other intangibles, such as being ranked first/best

Definition of quality (WHO)

- *Quality is the level of attainment of health systems' intrinsic goals for health improvement and responsiveness to legitimate expectations of the population.*

WHO's dimensions of quality for Healthcare



Quality in Healthcare

- Quality Digest: “Quality is meeting the customer's needs in a way that exceeds the customer's expectations”.
- The Community Health Accreditation Program - quality as “*the degree to which consumers progress toward a desired outcome*
- National Association of Quality Assurance Professionals - quality as “*the level of excellence produced and documented in the process of patient care, based on the best knowledge available and achievable at a particular facility.*”

NHS England- Quality of care

- The single common definition of quality which encompasses three equally important parts:
 - Care that is clinically effective— not just in the eyes of clinicians but in the eyes of patients themselves;
 - Care that is safe; and,
 - Care that provides as positive an experience for patients as possible

Definition of quality of care

- Doing the right things (what)
- To the right people (to whom)
- At the right time (when)
- And doing things right first time

Definition of quality

Carrying out interventions correctly according to pre-established standards and procedures, with an aim of satisfying the customers of the health system and maximizing results without generating health risks or unnecessary costs.

Institute for Healthcare Improvement (IHI):

- Quality is turning into outcomes management, and involves minimizing unnecessary variation so that outcomes become more predictable and certain.

Institute of Medicine

- “Quality of Care” is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.

IOM's Six Aims for Improving Health Care Quality

Aim	Description
1. Safe care	Avoiding injuries to patients
2. Effective care	Providing care based in scientific knowledge
3. Patient-centered care	Providing respectful and responsive care that ensure that patients values guide clinical decisions
4. Timely care	Reducing waits for both recipients and providers of care
5. Efficient care	Avoiding waste
6. Equitable care	Ensuring that the quality of care does not vary because characteristics such as gender, ethnicity, socioeconomic status, or geographic location.

10 Dimensions of Healthcare Quality

- Availability & Appropriateness
- Accessibility & Affordability
- Equity & Equality
- Technical Competence & Skills
- Timeliness & Continuity
- Safety
- Respect & Caring (I.P. relations)
- Efficiency
- Effectiveness & Efficacy
- Amenities

3 Perspectives of Healthcare Quality

- Healthcare staff (service providers)
- Health Manager (administration)
- Clients (external & internal)



The Patient / Client



Research done shows that patients/clients want services that are with:

- **Timeliness, continuity, respect and care;**
- **Safety, positive result (effective) and affordable;**
- Provision of adequate information about their condition and treatment; and privacy (**confidentiality**);
- Provision of all the drugs they need (**availability**);
- Within physical reach and given in a language they can understand (**accessibility**);
- All and equal services with justice (**equity & equality**).

The Health Care Manager



The health care manager sees quality care as:

- Managing efficiently the available resources of the health facility (**efficiency**).
- Staff achieving set targets & are disciplined (**effectiveness & management**)
- Health staff being regularly supported and supervised (**I.P. relations, safety, equity & equality**).
- Having adequate and competent staff to provide care (**tech. competence & skills**)
- Providing enough resources for work (**availability** of inputs and **amenities**)

The Health Staff / Provider



The health provider can provide quality care if present:

- Adequate knowledge and skills (**Tech. Comp.**)
- Enough resources- staff, drugs, supplies, equipment and transport etc (**Admin support & efficiency**)
- Safe and clean workplace (**safety & amenities**)
- Opportunity to regularly improve himself/herself (**CME**)
- Is well paid and rewarded for good work (**motivation**)
- Well support & cooperation (**I.P. relations**)
- Same advantages & benefits as other staff of similar grade & category (**equity & equality**)

Availability & Appropriateness



- The availability of a needed test, procedure, treatment or service to the patient in his needs.
- The degree to which the care / intervention provided is relevant and appropriate to the patient's clinical needs, given according to the current state of knowledge.

Access & Affordability



- Everyone should have access to quality health care. Access refers to the **ability of the individuals, to obtain health services.**
- Some of the factors that can affect access are:
 - a) **Distance:** e.g. If the access to quality health care may becomes a problem due to far distance.
 - b) **Financial:** e.g. where people cannot afford the services.
 - c) **Culture, beliefs and values**

Equity & Equality



- Quality services should be provided **to all** people who need them in a similar & equal way.
- Quality services should be available in all parts of the country, in villages, towns and cities **without difference** regarding race, gender, age, religion, nationality, sects, political issues, affordability, physical appearance or any other group, etc.

Technical competence & Skills

- Technical competence as an indicator of quality assurance implies that we should have adequate knowledge and skills to carry out our functions in order to provide quality services.
- With respect to what we cannot do, we are expected to refer them to other centers or personnel who are more competent to handle it.
- Our practice should also be followed by-
Standard Treatment Guideline.



Timeless & Continuity



- The degree to which the needed test, procedure, treatment, service, or healthcare intervention is provided to the patient, **at the most beneficial or necessary time, and is coordinated** among service providers and organizations.
- Continuity means that the client gets the **full range** of needed health services, and that when the case is beyond us, we **refer** them to the right level.



Safety & Reliability



- The safety of the patient and staff. The degree to which the risk of an intervention and the **risks** in the care environment **are reduced** for the patient and others, including the healthcare provider.
- Safety means that when providing health services, we **reduce** to the barest minimum injuries, infections, **harmful adverse effects and other dangers** to clients and to staff.



Respect and Caring (Interpersonal Relations)



- The degree to which the patient or a designee is involved in his/her own care decisions and to which those providing services do so with sensitivity and respect for the patient's expectations and differences.
- It refers to the relationship among all stakeholders
We should show respect to our clients; feel for our patients; not be rude with them; not disclose information we get from them to irrelevant people.
- This all will bring about good relations and trust.
Clients consider good interpersonal relationship as an important component of quality of care.

Efficiency



- The efficiency with which services are provided. The relationship between the **outcomes** (results of care) and the **resources** used to deliver patient care.
- Efficiency is the provision of high quality care at the lowest possible cost. We are expected to make the **best use of resources** and avoid waste of our scarce resources.

Effectiveness and Efficacy



- The degree to which the care/intervention is provided in the correct manner, given the current state of knowledge, in order to achieve the **desired/projected outcomes**.
- Type of care that produces positive change in the patient's health or his/her quality of life. The uses of treatments & procedures that are known to be effective with **best possible efficacy** in relation to the patient's condition.

Amenities



- These are **indirect features** that can be provided by our health facilities to make life comfortable and pleasant for clients. They **contribute** to clients' satisfaction and make clients willing to use our services. For example, cleanliness, comfortable seats & beds, television sets, media, educational materials & videos, indication signs, best possible general facilities and physical environment etc. in the healthcare entity.

Improving Quality of Health Care

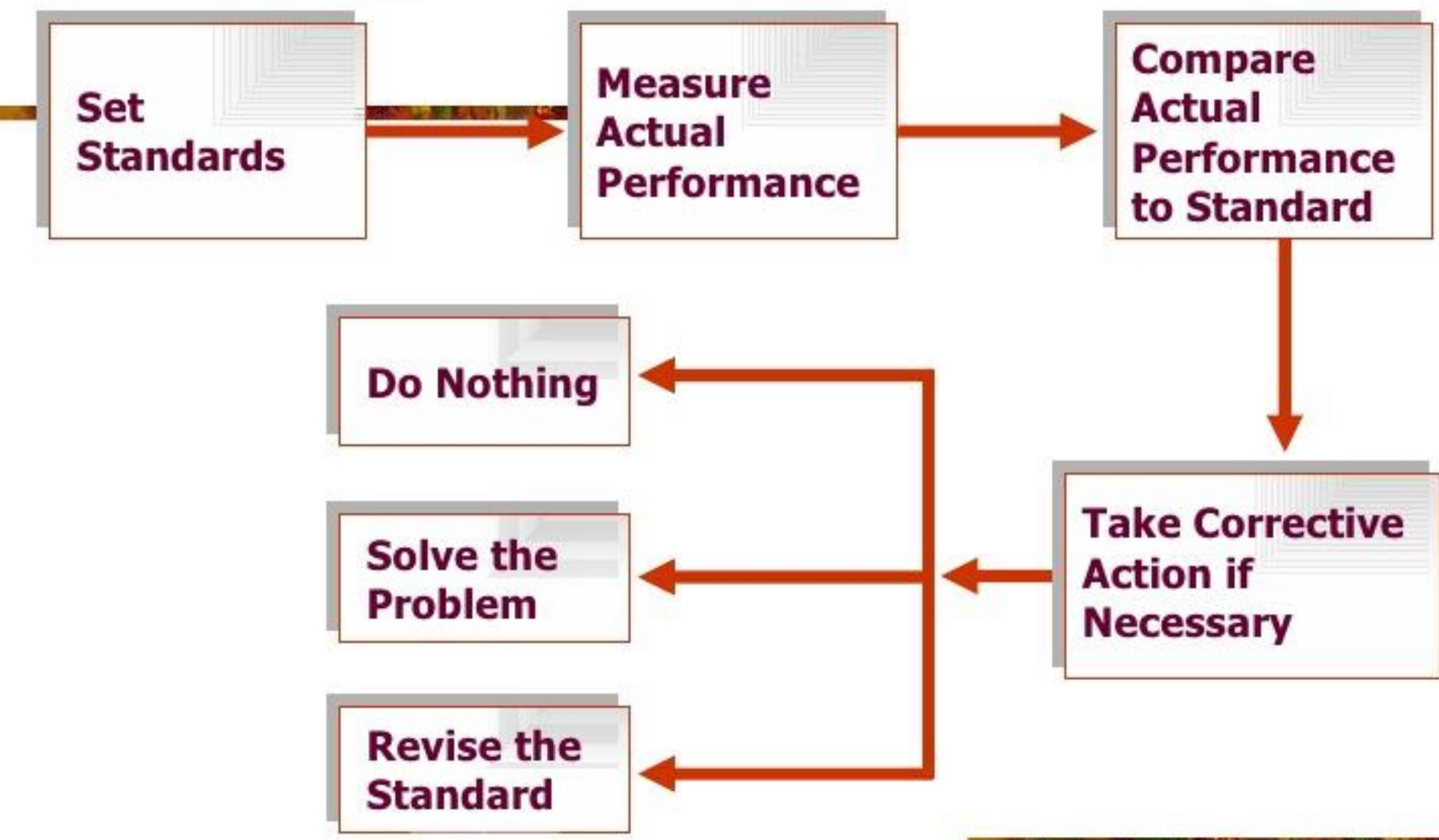


Evolution in Quality Thinking in Industry and in the Health Service

Quality Control

- Quality control (QC) is a procedure or set of procedures intended to ensure that a manufactured product or performed service adheres to a defined set of quality criteria or meets the requirements of the client or customer.

Steps in the Control Process



Quality Assurance

- **Donabedian:** all the arrangements and activities that are meant to safeguard, maintain, and promote the quality of care.
- **Drs. Ruelas and Frenk:** a systematic process for closing the gap between actual performance and the desirable outcomes
- **Dr. Heather Palmer:** process of measuring quality, analyzing the deficiencies discovered, and taking action to improve performance followed by measuring quality again to determine whether improvement has been achieved.
-

Quality Assurance

- quality assurance is that set of activities that are carried out to set standards and to monitor and improve performance so that the care provided is as effective and as safe as possible

Quality Assurance

- Quality assurance is a process to ensure that the quality of a product or a service meets a predetermined standard.
- The process of quality assurance compares the quality of a product or service with a minimum standard, often set by some external authority.
- The aim in quality assurance is to ensure that a product or service is fit for purpose

The Four Tenets of Quality Assurance

- ♦ Quality Assurance is oriented toward meeting the needs and expectations of the patient and the community.
- ♦ Quality assurance focuses on systems and processes.
- ♦ Quality assurance uses data to analyze service delivery processes.
- ♦ Quality assurance encourages a team approach to problem solving and quality improvement.

QAP's Quality Assurance Process

1. Planning for quality assurance
2. Developing guidelines and setting standards
3. Communicating standards and specifications
4. Monitoring quality
5. Identifying problems and selecting opportunities for improvement
6. Defining the problem operationally
7. Choosing a team
8. Analyzing and studying the problem to identify its root causes
9. Developing solutions and actions for improvement
10. Implementing and evaluating quality improvement efforts

QA vs. QC

- Quality Assurance makes sure that we are doing the right things, the right Way.
- QA focuses on building in quality and hence preventing defects.
- QA deals with process.
- QA is for entire life cycle.
- QA is preventive process.
- Quality Control makes sure the results of what we've done are what we expected .
- QC focuses on testing for quality and hence detecting defects.
- QC deals with product.
- QC is for testing part in SDLC.
- QC is corrective process.

Quality Improvement (QI)

- A planned, systematic approach to monitoring, analysis and improvement of performance to achieve optimal patient outcomes and patient experience
- Quality improvement is therefore primarily concerned with self or one's team, rather than external bodies (Inglis, 2005)

Quality Improvement

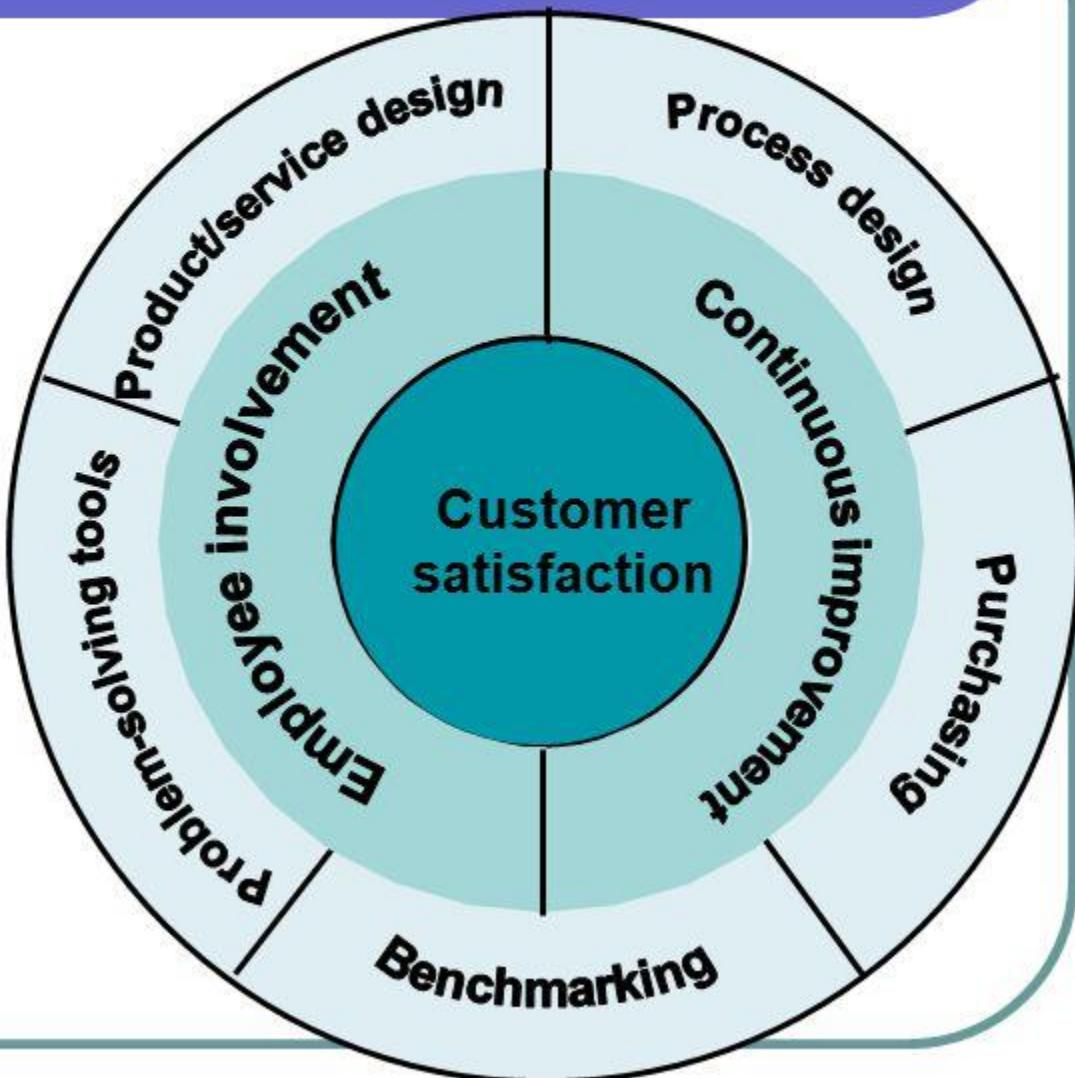
- QI work as systems and processes
- Focus on patients
- Focus on being part of the team
- Focus on use of the data

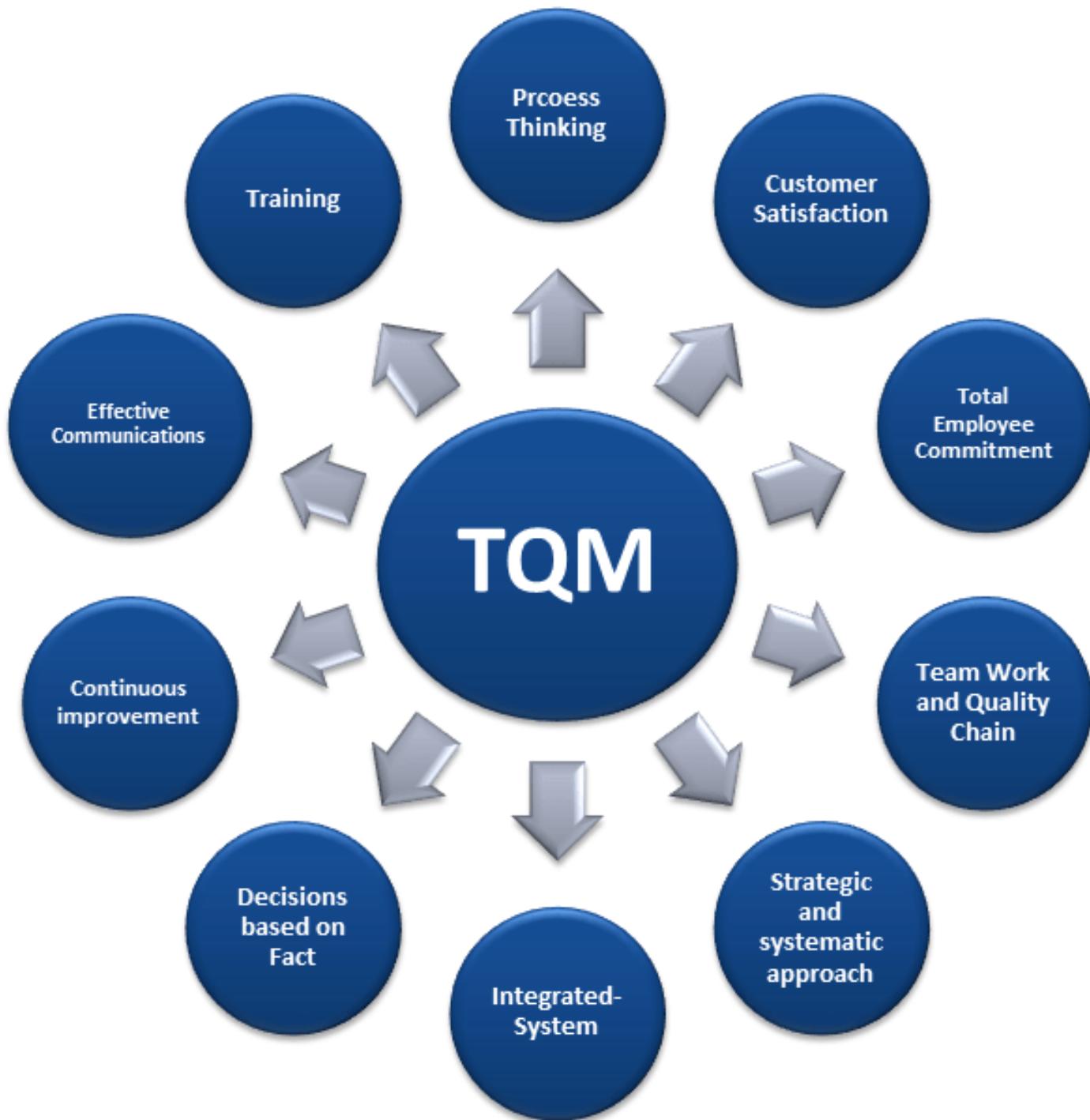
Total Quality Management

- a management approach to long-term success through customer satisfaction.
- In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work
- It uses strategy, data, and effective communications to integrate the quality discipline into the culture and activities of the organization

TQM Wheel

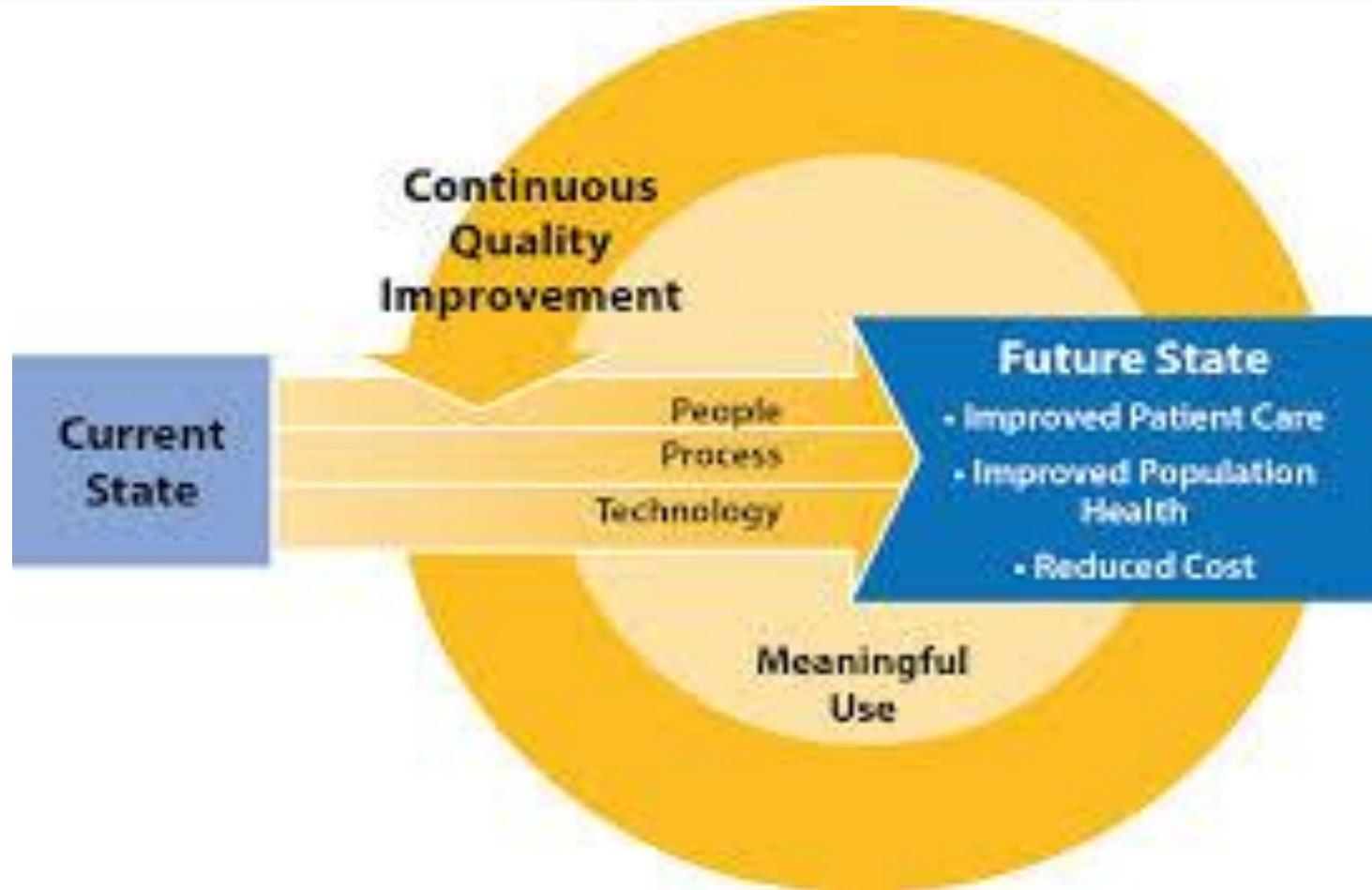
TQM emphasizes three main principles: customer satisfaction, employee involvement, and continuous improvement.

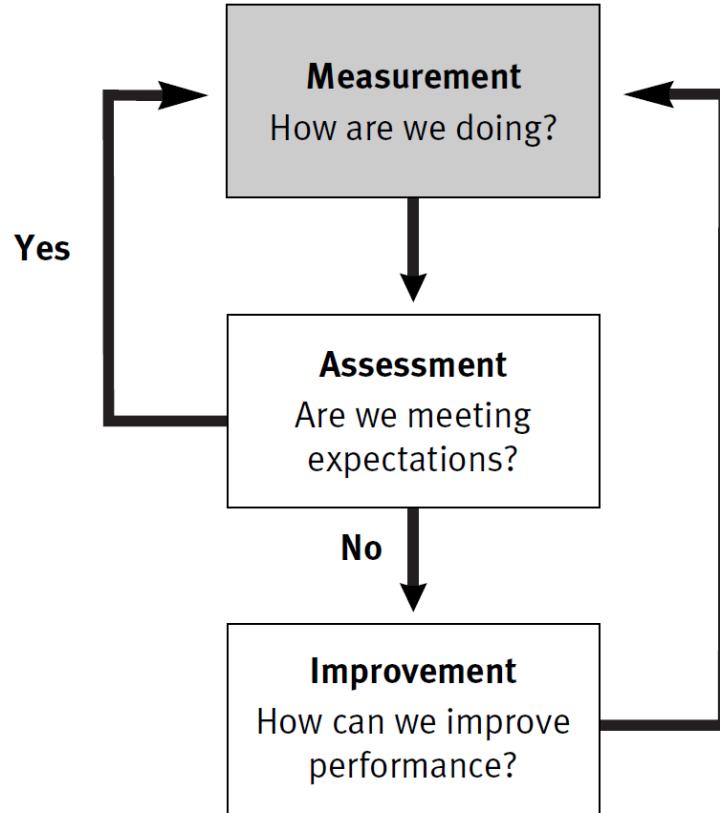




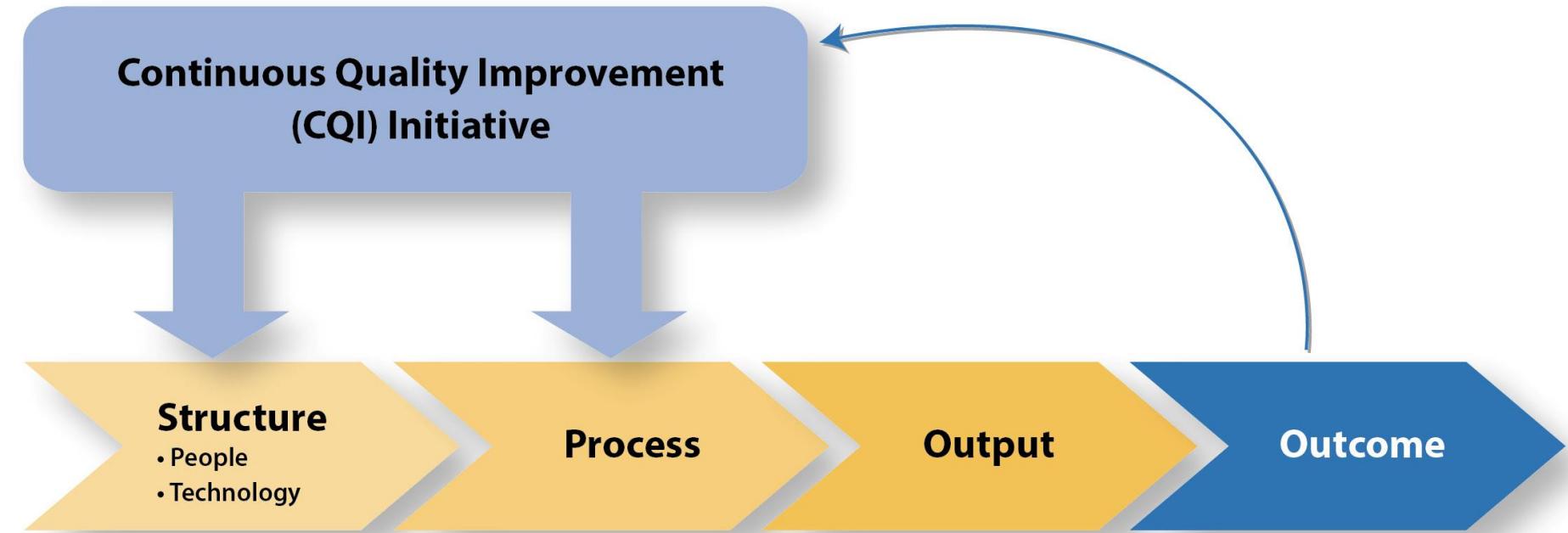
Continuous Quality Improvement (CQI)

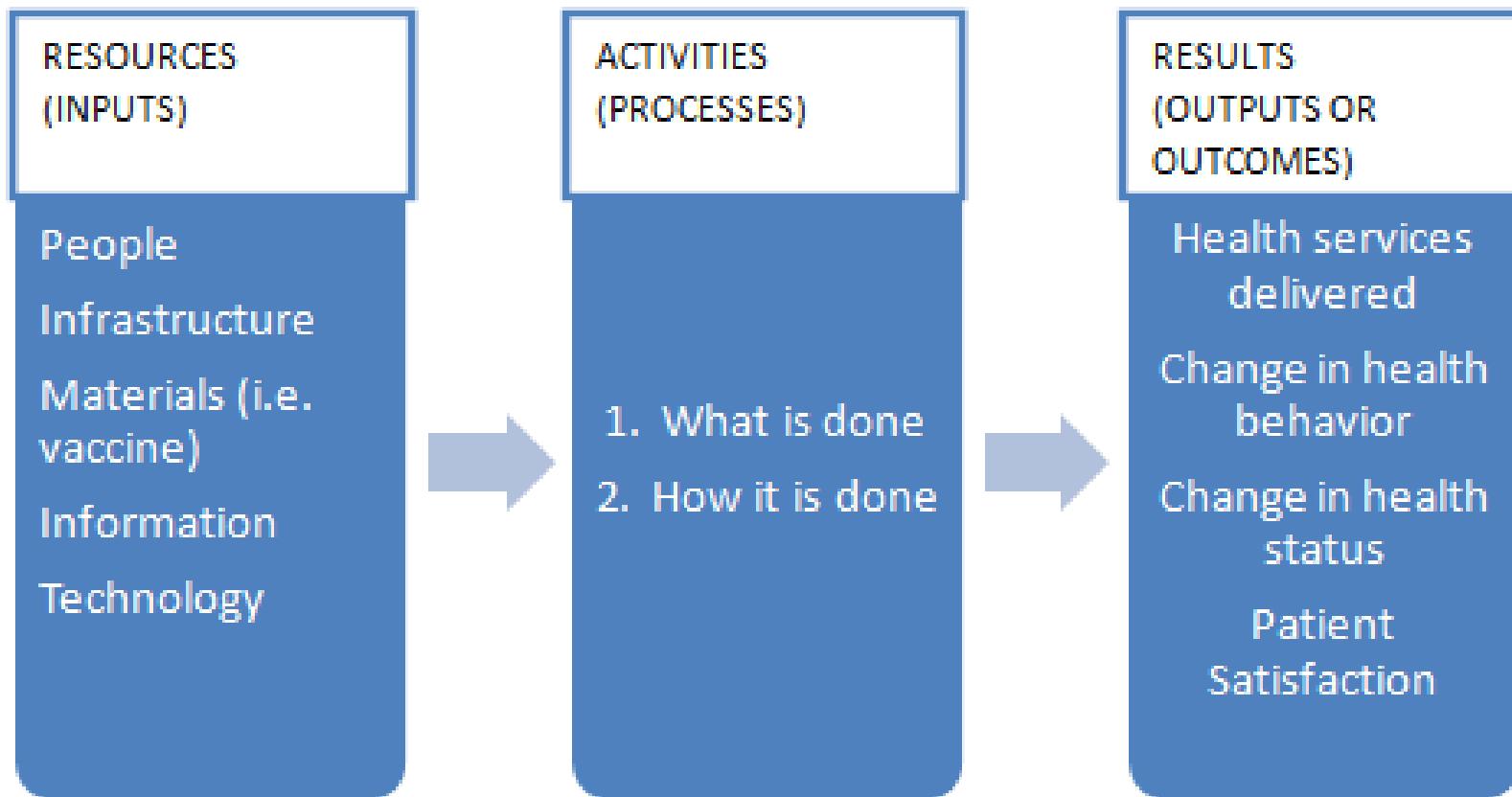
- Continuous QI is a philosophy that encourages all health care team members to continuously ask: “How are we doing?” and “Can we do it better?”(Edwards, 2008).
- More specifically, can we do it more efficiently? Can we be more effective? Can we do it faster? Can we do it in a more timely way?
- Continuous improvement begins with the culture of improvement for the patient, the practice, and the population in general.





Structure and Process



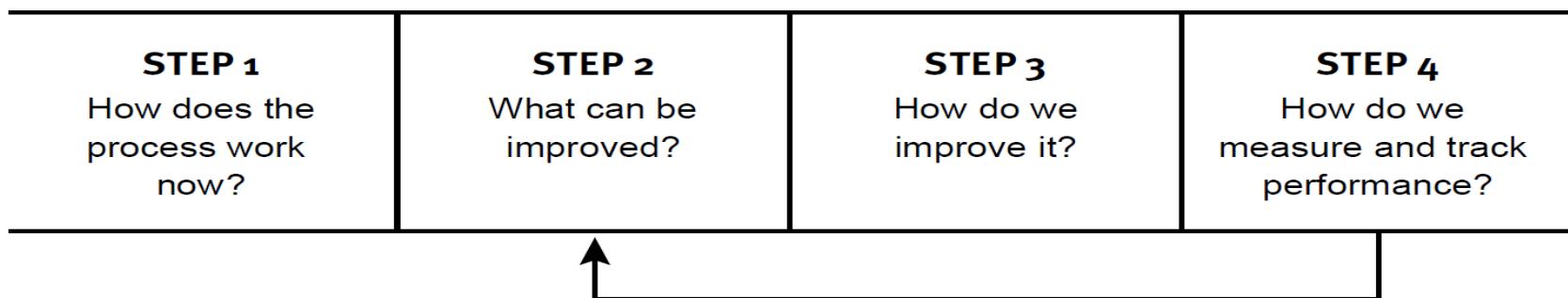


QI Programme

- Involves systematic activities that are organized and implemented by an organization to monitor, assess, and improve its quality of health care.
- The activities are cyclical so that an organization continues to seek higher levels of performance to optimize its care for the patients it serves, while striving for continuous improvement.

Improvement Project Steps

- Define the improvement goal.
- Analyse current practices.
- Design and implement improvements.
- Measure success.



Why Is a QI Program Essential to a Health Care Organization?

- Improved patient health (clinical) outcomes
 - process outcomes (e.g., provide recommended screenings)
 - health outcomes (e.g., decreased morbidity and mortality).
- Improved efficiency of managerial and clinical processes
- Avoided costs associated with process failures, errors, and poor outcomes

Why Is a QI Program Essential to a Health Care Organization?

- Proactive processes that recognize and solve problems before they occur ensure that systems of care are reliable and predictable
- Improved communication with resources that are internal and external to an organization, such as, funders, civic and community organizations

Improvement teams

- Coordinated through an *improvement team*, also known as a *quality improvement (QI) team*.
- The effectiveness of the QI process often depends on the ability of the improvement team members to work well together, and especially with the rest of the health system

Attributes of QI team members

- Respected by a broad range of staff
- Team players
- Excellent listeners
- Good communicators
- Proven problem solvers
- Frustrated with the current situation and ready for change
- Creative and able to offer solutions
- Flexible--demonstrated by their willingness to change and accept new technology
- Proficient in the areas and systems focused for improvement

Team members

- system leadership,
- technical expertise,
- day-to-day leadership

System Leadership (Team Leader)

- Leader with authority in the organization
 - to institute a suggested change and to overcome barriers that may inhibit its implementation.
 - understands both the implications of the proposed change for various parts of the system and the remote consequences the change might trigger.
 - has authority over all of the areas affected by the change.
 - This person should also be authorized to allocate the time and resources the team needs to achieve its aim

Technical expert

- A clinical technical expert knows the subject intimately and understands the processes of care.
- An expert on improvement methods can provide additional technical support by helping the team determine what to measure, assisting in design of simple, effective measurement tools, and providing guidance on collection, interpretation, and display of data

Day to day leader

- driver of the project, overseeing data collection and ensuring that tests are implemented.
- should understand the details of the system and the various effects of making change(s) in the system.
- needs to work effectively with the physician champion(s)

Key staff roles

- QIP leader- drives the work, measurement and team- communicates with key stakeholders
- QIP champion- leader to help drive change, the provider needs to be an individual who is well-respected and influential among the medical staff, works well with management, and is open to change and new approaches

Key staff roles

- **Operations person** is integrally involved in current processes and needs to be part of the team, because much of the innovative work involves designing new processes and streamlining old ones.
- **Data entry person** carries out the data-entry function, and needs sufficient time and computer access to enter data and submit reports regularly.
- **Data specialist** collects and analyzes data, and uses QI tools

QI Journey

- What are the desired improvements?
- How are changes and improvements measured?
- How is staff organized to accomplish the work?
- How can QI models be leveraged to accomplish improvements effectively and efficiently?
- How is change managed?

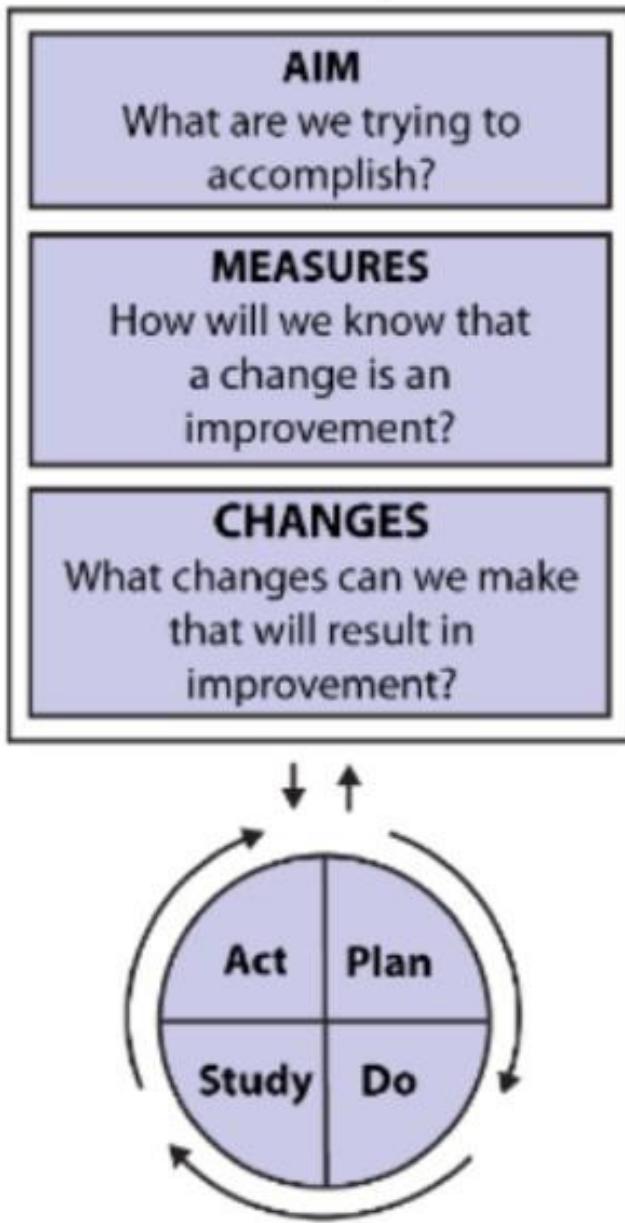
What are the desired improvements?

- High volume, affecting a large number of patients
- High frequency
- High risk, placing patients at risk for poor outcomes
- Longstanding
- Multiple unsuccessful attempts to resolve in the past
- Strong and differing opinions on cause or resolution of the problem

The Institute for Healthcare Improvement (IHI) Model for Improvement

- Developed by Associates in Process Improvement
- Simple but powerful tool for accelerating change
- Promotes improvement by seeking answers to three questions:
 - What are we trying to accomplish?
 - How will we know that a change is an improvement?
 - What changes can we make that will result in improvement?

The Model for Improvement



The Model for Improvement has two parts.

The first part looks at key questions to help guide our thinking about our improvement effort. Those questions are:

1. What are we trying to accomplish?
This provides direction and is the AIM of our work
2. How will we know that a change is an improvement?
This is about how we MEASURE where we are now and where we want to be
3. What changes can we make that will result in an improvement?
These are the CHANGES we can make to achieve our goal

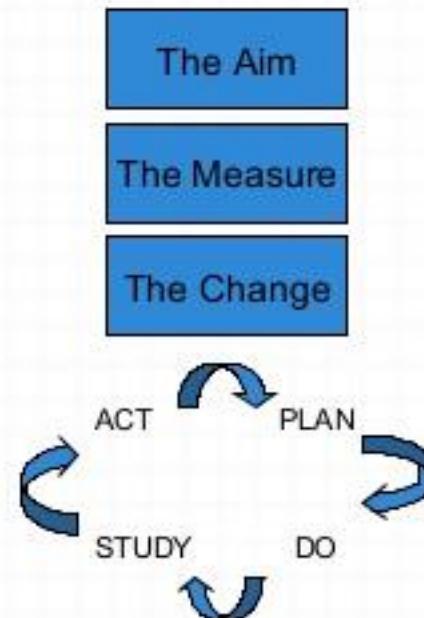
The second part is about how we TEST the changes we came up with.

It's called the Plan-Do-Study-Act cycle or the PDSA cycle for short.

It is a tool to help us learn the best way to make changes and continually improving how we work.

Executing the Model for Improvement

- Form a team
- Three Questions: The Aim, The Measures, The changes
- Test changes - PDSA Cycle
- Implement changes that work
- Spread the changes to other areas



Plan

- State the objectives of the improvement project.
- Determine needed improvements.
- Design process changes to achieve the improvement objectives.
- Develop a plan to carry out the changes (define who, what, when, and where).
- Identify data that need to be collected to determine whether changes produced desired results.

Do

- Implement the changes on a small scale.
- Document problems and unexpected events.
- Gather data to assess the changes' effect on the process.

Study

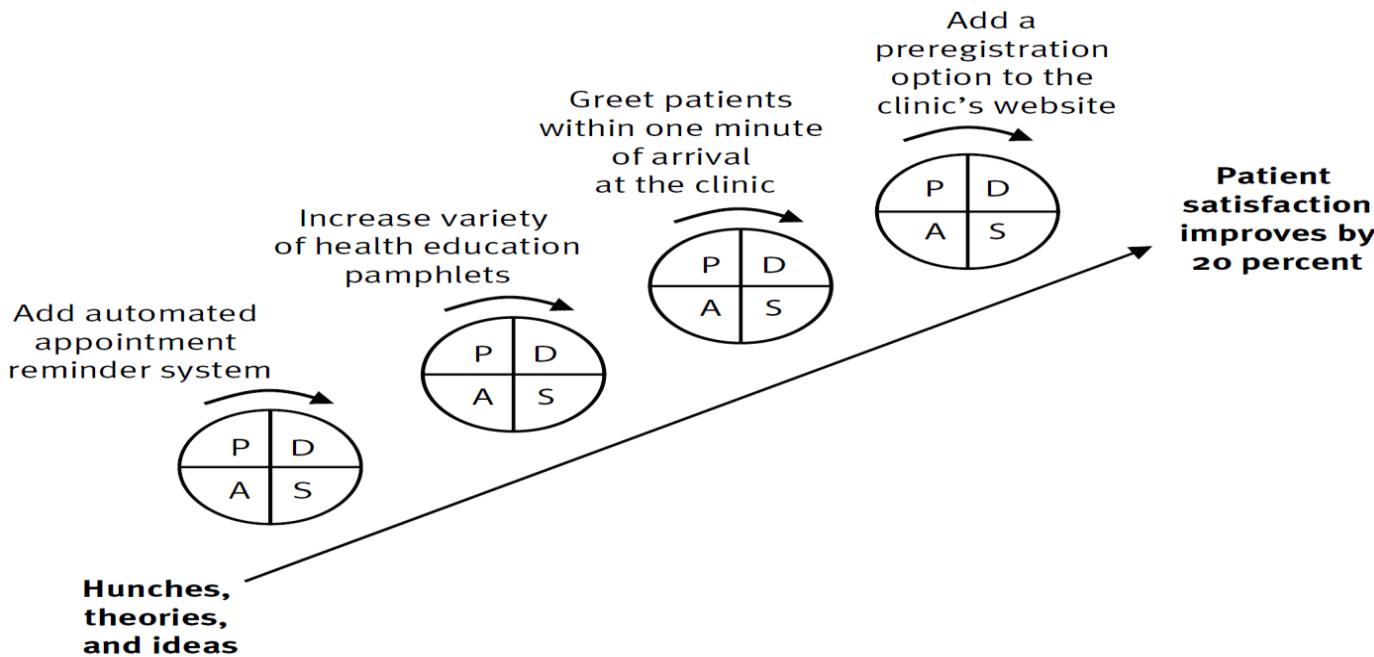
- Analyze data to determine whether the changes were effective.
- Compare results with expectations.
- Summarize lessons learned during and after implementation of the changes.

Act

- If changes were not successful, repeat the PDSA cycle.
- If changes were successful, or partially successful, modify them as necessary and implement them on a wider scale.
- Predict results.

Rapid Cycle Improvement

- An improvement model that makes repeated incremental improvements to optimize performance

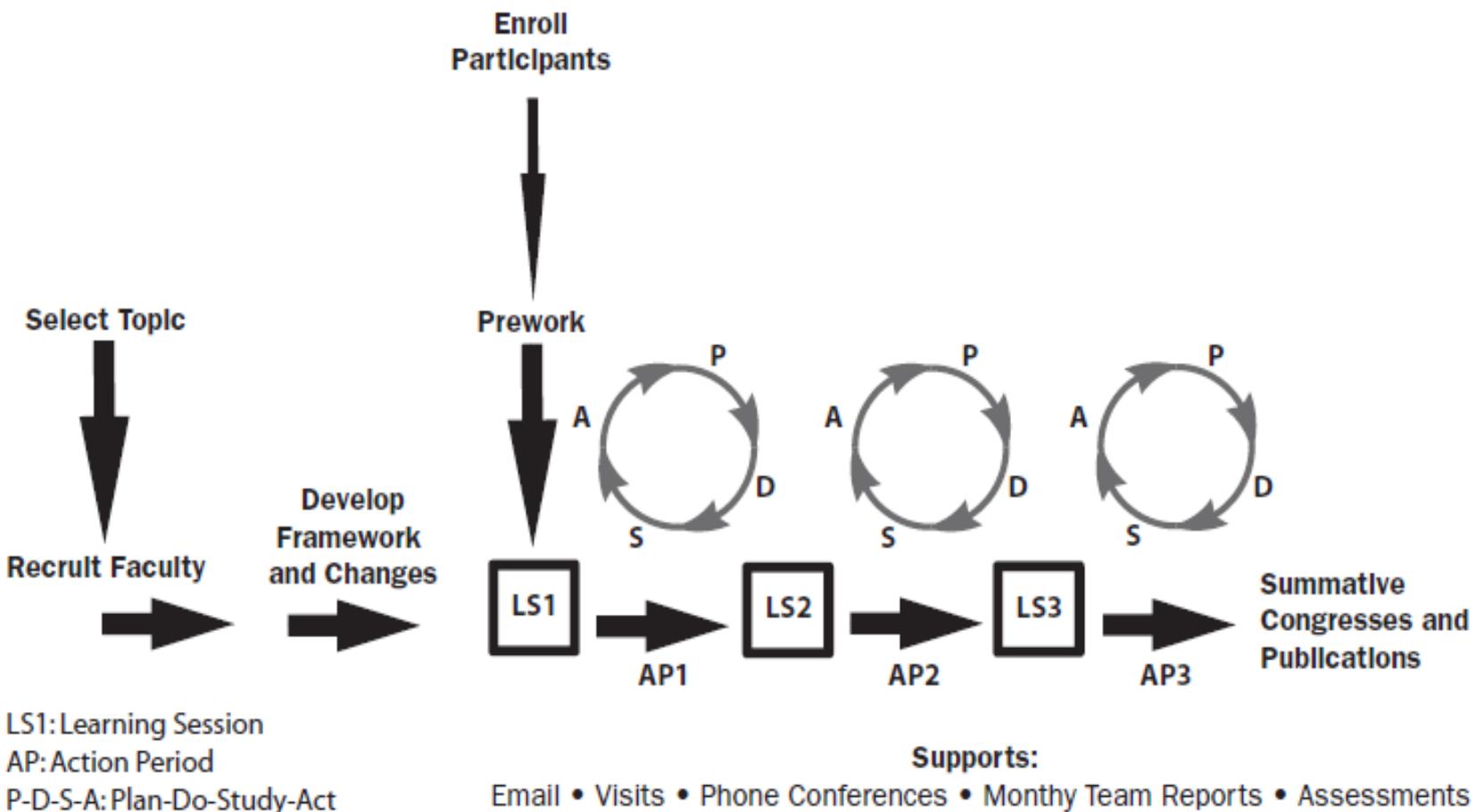


HI Breakthrough Series/Model

- Developed the Breakthrough Series to help health care organizations make “breakthrough” improvements in quality while reducing costs
- Designed to help organizations close that gap by creating a structure in which interested organizations can easily learn from each other and from recognized experts in topic areas where they want to make improvements

Development of Breakthrough Series

- was conceptualized in late 1994 when one of IHI's founders, Paul Batalden, MD, sketched the model on a napkin



Focus PDCA Model

- ◆ FOCUS phase
 - Find a process that needs improvement. Define the beginning and end of the process, and determine who will benefit from the improvement.
 - Organize a team of people knowledgeable about the process. This team should include employees from various levels of the organization.
 - Clarify the current process and the changes needed to achieve the improvement.
 - Understand the causes of variation by measuring performance at various steps in the process.
 - Select actions needed to improve the process.

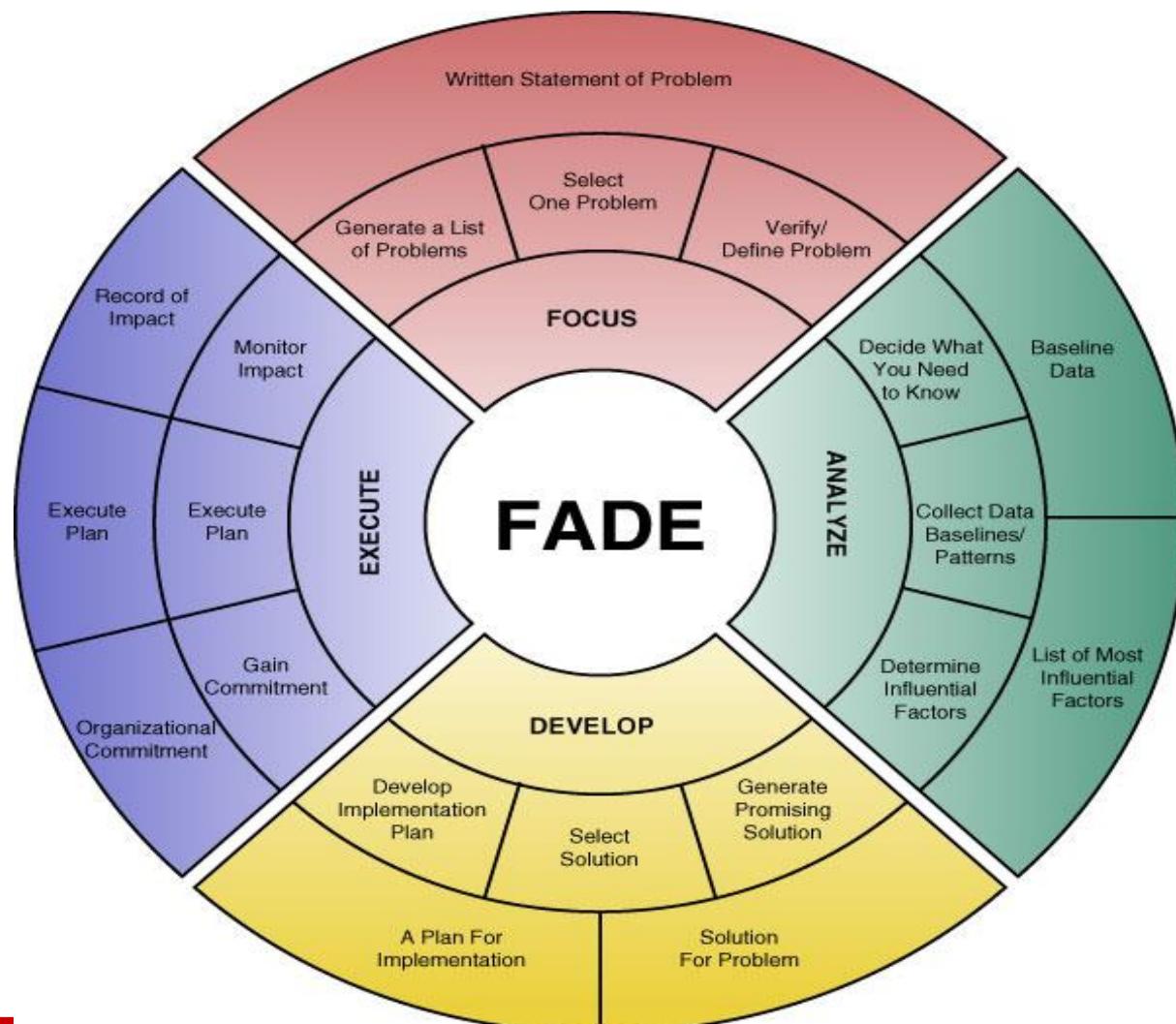
PDCA Phase

- ◆ PDCA phase
 - Plan the change by studying the process, identifying areas needing improvement, and determining ways to measure success.
 - Do the change on small scale, and gather data to measure success.
 - Check the data to determine whether the change produced desired improvements. Modify the change if necessary.
 - Act to maintain the gains. Implement the change if it is working well. Abandon the change if it is ineffective, and repeat the PDCA phase.

FADE QI Model

- There are 4 broad steps to the FADE QI model:
 - **FOCUS:** Define and verify the process to be improved
 - **ANALYZE:** Collect and analyze data to establish baselines, identify root causes and point toward possible solutions
 - **DEVELOP:** Based on the data, develop action plans for improvement, including implementation, communication, and measuring/monitoring
 - **EXECUTE:** Implement the action plans, on a pilot basis as indicated, and
 - **EVALUATE:** Install an ongoing measuring/monitoring (process control) system to ensure success.

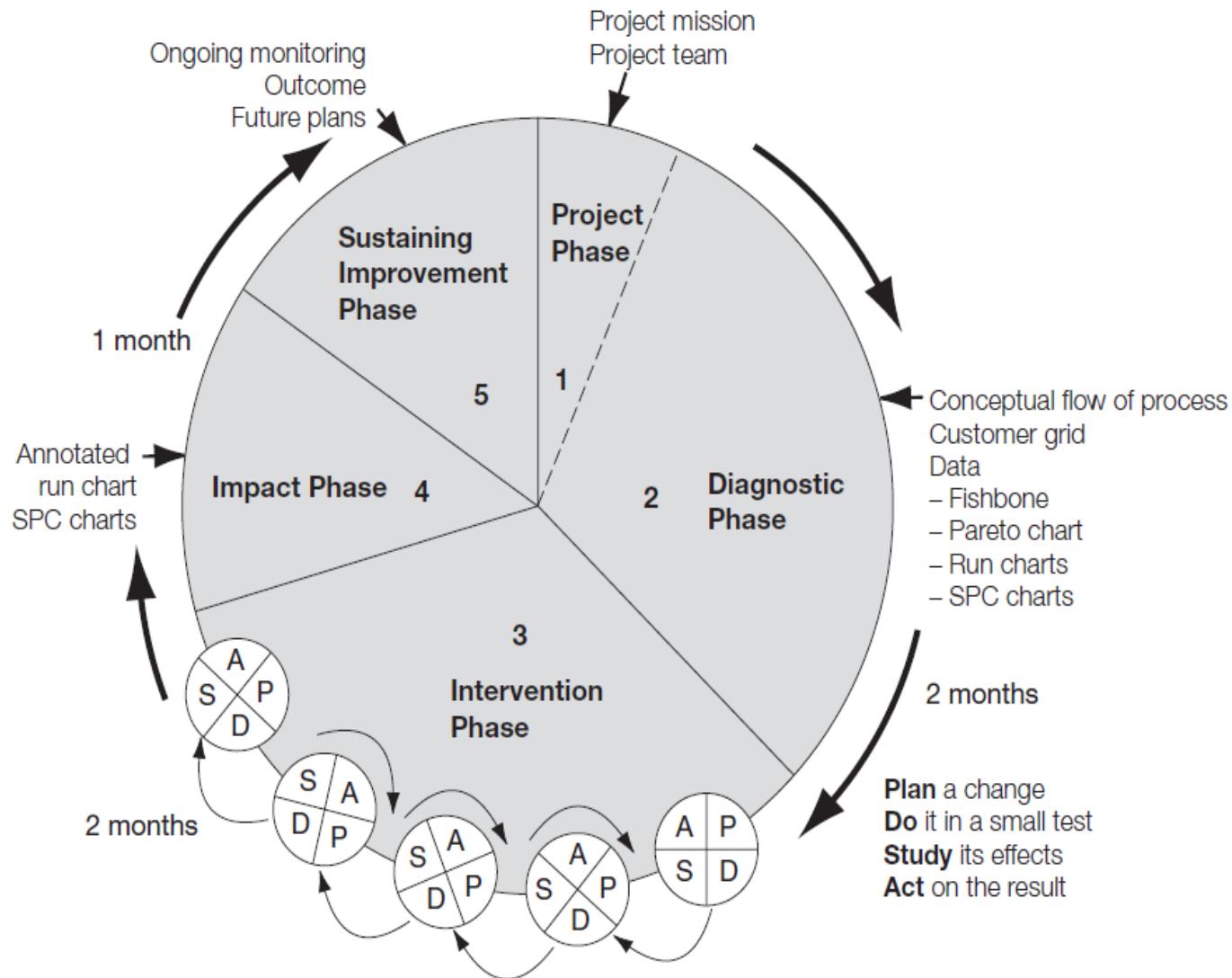
FADE Model

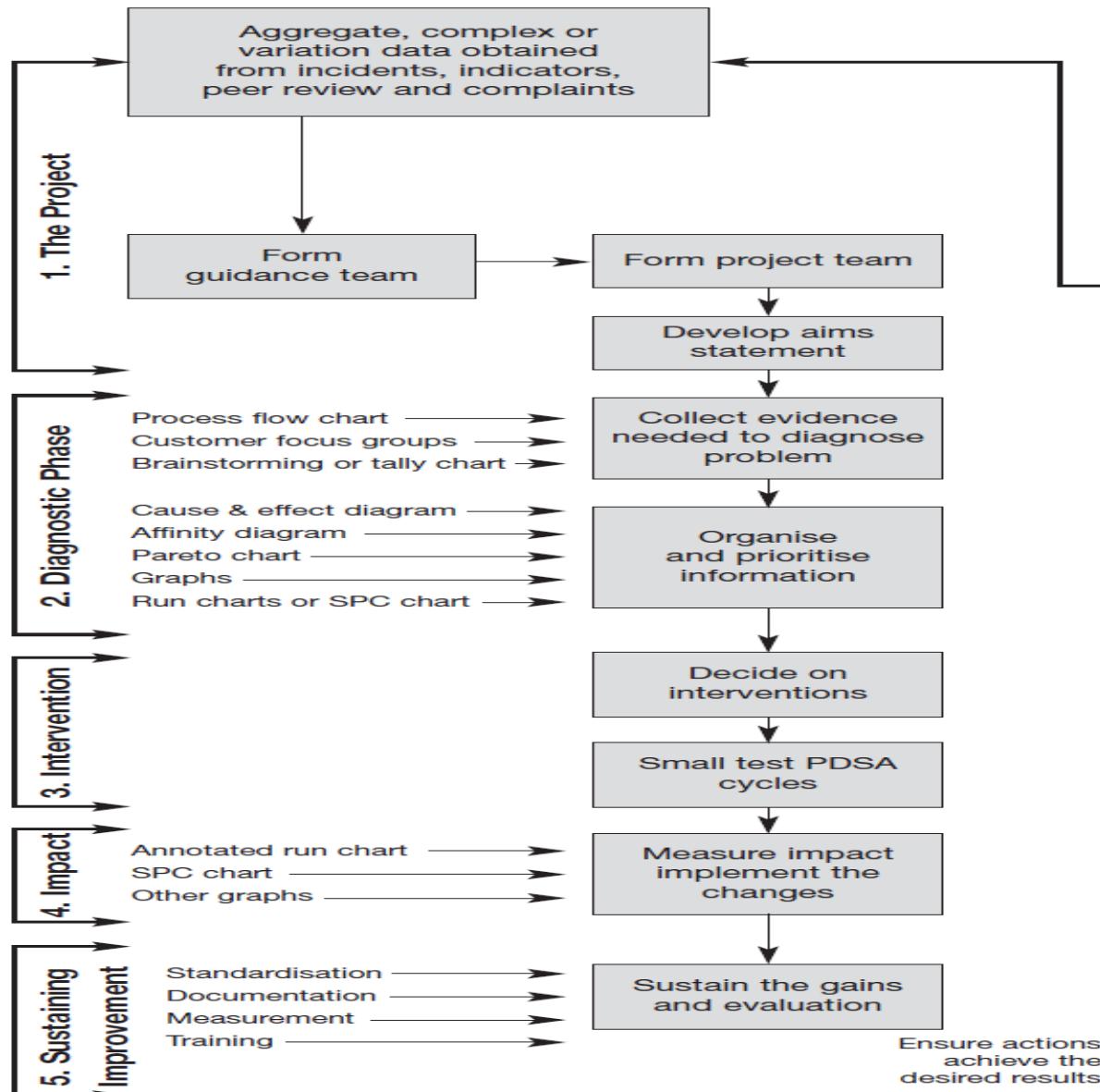


Clinical Practice Improvement (CPI)

- a description of the model used to improve processes of care and service delivery

Improvement Process





Six Sigma

- A method that provides organizations tools to improve the capability of their business processes.
- This increase in performance and decrease in process variation lead to defect reduction and improvement in profits, employee morale, and quality of products or services.
- Six Sigma quality is a term generally used to indicate a process is well controlled

What is Six Sigma?

- q Six Sigma is a statistical measure of quality:
 - q It is based on rigorous process based performance measures.
- q A Process for Continuous Improvement:
 - q Six Sigma is a “generic” structured methodology for continuous improvement, that can be used to improve any process in any business.
- q An Enabler of Cultural Change:
 - q Six Sigma changes the way organisations work and the way they think.
- q A disciplined process focussed on delivering near perfect products and services.

Six Sigma

- A process operating at a 6-Sigma level
 - So little variation, that the process outcomes are 99.9997% defect free
 - Six Sigma = 6 , 6 Sigma, or 6s
- 6 sigma is equivalent to 3.4 defects or errors per million.

Six Sigma

- Methodology aimed at
 - Error reduction
 - Eliminating variation
- Goal
 - Design/improve processes so it is impossible to make an error
 - Reliance on performance measurements and statistical analysis

Six Sigma Concepts

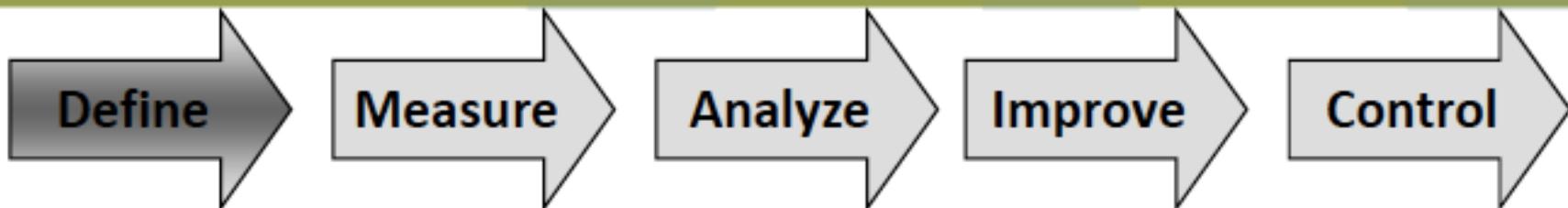
- Critical to Quality (CTQ)
 - – How the customer judges our products/services
- Y = The outcome measure of the process
- X's = Inputs or variables that affect the Y
- Defect - Failure to deliver what the customer expects
- DPMO – Defects per million opportunities
- Variation
 - The enemy of predictable output and customer satisfaction
- Sigma
 - An expression of process yield, based on the number of defects per million opportunities (DPMO)



Tools of Six Sigma

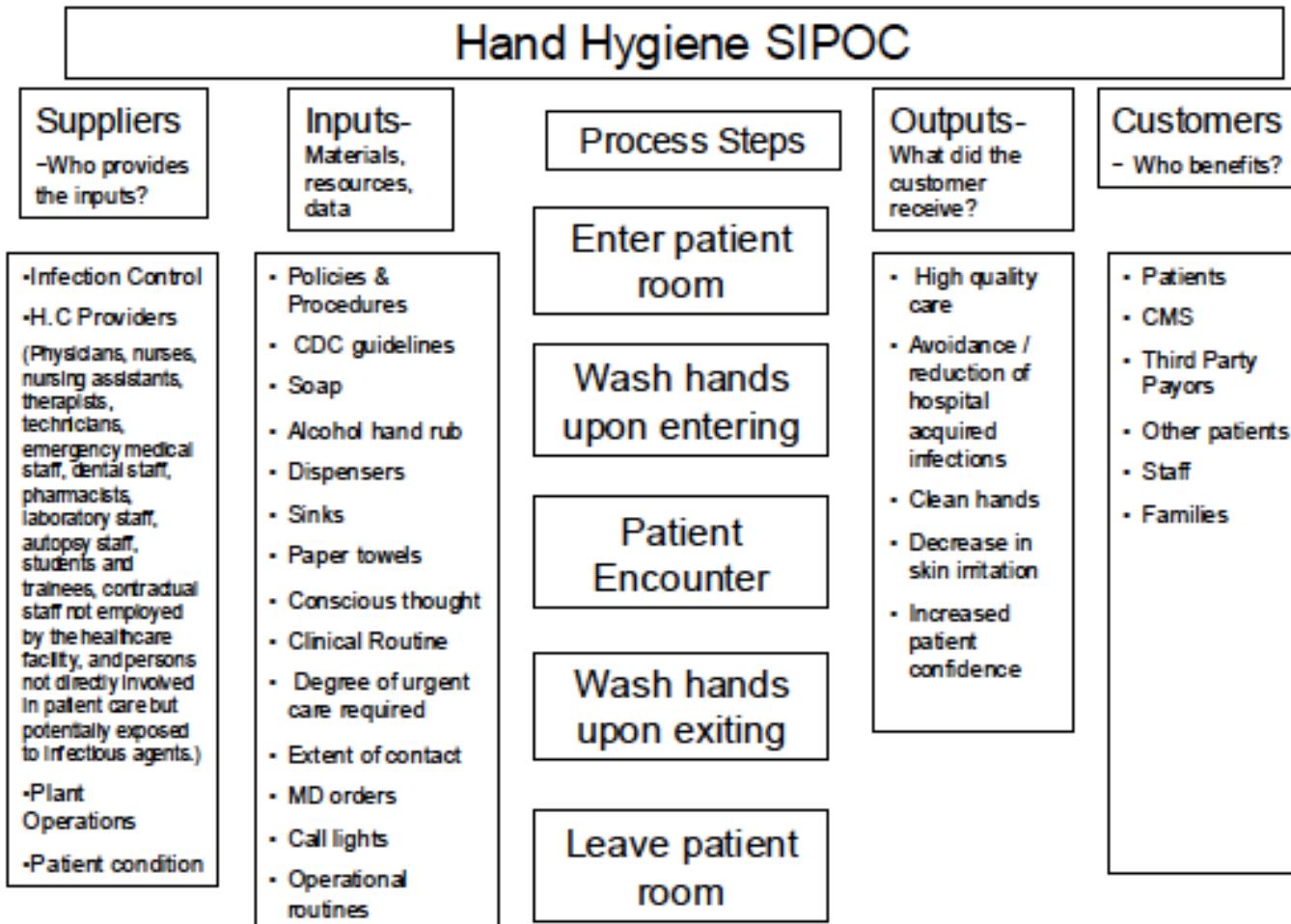
- $Y = f(X,x)$
- Process Map
- FMEA (Failure Mode and Effects Analysis)
- Cause – Effect Diagram
- Pareto Diagram
- Gage R&R
- Process Capability
- Multi-Vari Charts
- Regression
- Hypothesis Test
- 95% Confidence Interval
- ANOVA
- DOE (Design of Experiments)
- Control Plan
- Statistical Process Control

Six Sigma Model -DMAIC



- Charter project
 - Problem statement - How do we know we have a problem?
 - Goal Statement - How will we know if we have made an improvement?
 - Project Scope and Team
- High Level Process Map
- Identify Customer CTQs
- Stakeholder analysis
- Review historical data

SIPOC Example





Voice of the Customer

Establish Voice of the Customer (VOC)

- Identify and prioritize all customers
 - Who is impacted the most by the process?
 - Who is the most dissatisfied with the current process?
- Solicit feedback
 - How does the customer view the process?
 - What does the customer value from the process?
 - What does the customer expect from the process?

What does the customer want most of the time?

What is the limit the customer is willing to tolerate?



Voice of the Customer

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Stakeholder Analysis form?

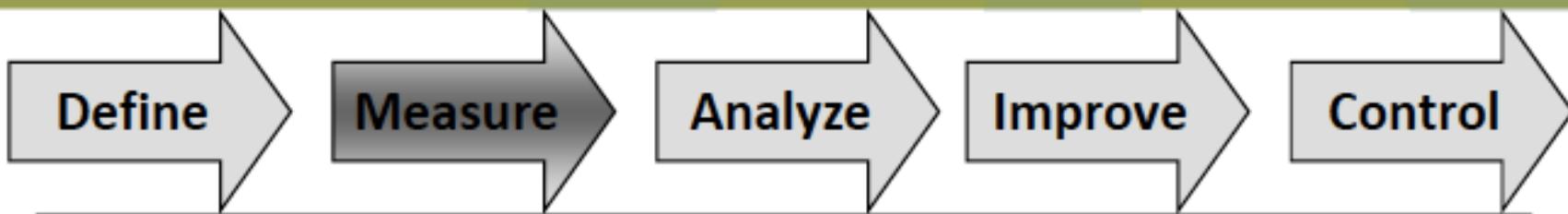
Stakeholder Analysis

- Who will be affected by any changes from this project?
- Begin addressing issues early!
- Not everyone needs to be strongly supportive!

Names	Strongly Against	Moderately Against	Neutral (0)	Moderately Supportive	Strongly Supportive



Six Sigma Model -DMAIC



- Select CTQ characteristics
- Define Performance Standards
- Data Collection
- Measurement System Analysis

Process X's (Variables)

X1

X2

X3

X4

Outputs or Y's

Y1

Y2

Y3

Y4

The Process





CTQ characteristics

- Select the main characteristic that the customer uses to judge your performance
 - Six Sigma lingo: The big “Y”
 - How will I know if I have made an improvement?
- How will the “Y” be defined and/or measured?

VOC	CTQ	Y
Expect to be seen within 15 min of appt.	Wait Time	Pt. check-in at front desk to first contact with staff physician.





Define Performance Targets

- Translate the Customer expectations into Metrics
 - Target:
 - What does the customer want most of the time?
 - Specification Limits:
 - What are the limits the patient is willing to tolerate?

VOC	CTQ	Y	Target	Upper Limit
<ul style="list-style-type: none">• Expect to be seen within 15 min of appt.• Unhappy if > 30 min	Wait Time	Pt. check-in at front desk to first contact with staff physician.	15 min	30 min

Data Collection/Sampling

- Key considerations
 - Data must be representative of the process
 - Data must be reliable
 - Must capture measurements of importance

OBS #	Role(s)	ENTRY			EXIT		
		Hand Hygiene	Notes		Hand Hygiene	Notes	
1 <input type="checkbox"/> Group		<input type="checkbox"/> Sink <input type="checkbox"/> Hand Rub <input type="checkbox"/> None <input type="checkbox"/> Did Not Observe <input type="checkbox"/> Direct Exit to Enter?	Y / N	Gloves On Urgent Full Hands? Blocked Access	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Y / N Y / N Y / N Y / N	Gloves On Removed gloves Full Hands? Blocked Access
2 <input type="checkbox"/> Group		<input type="checkbox"/> Sink <input type="checkbox"/> Hand Rub <input type="checkbox"/> None <input type="checkbox"/> Did Not Observe <input type="checkbox"/> Direct Exit to Enter?	Y / N	Gloves On Urgent Full Hands? Blocked Access	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Y / N Y / N Y / N Y / N	Gloves On Removed gloves Full Hands? Blocked Access



Six Sigma Model -DMAIC



- Establish current capability
- Identify key sources of variability
- Define performance objectives

How is the process performing today?

Do we need to “shift the mean” or “reduce variation”?

What are the key X’s that are driving the Y?

How do you know?



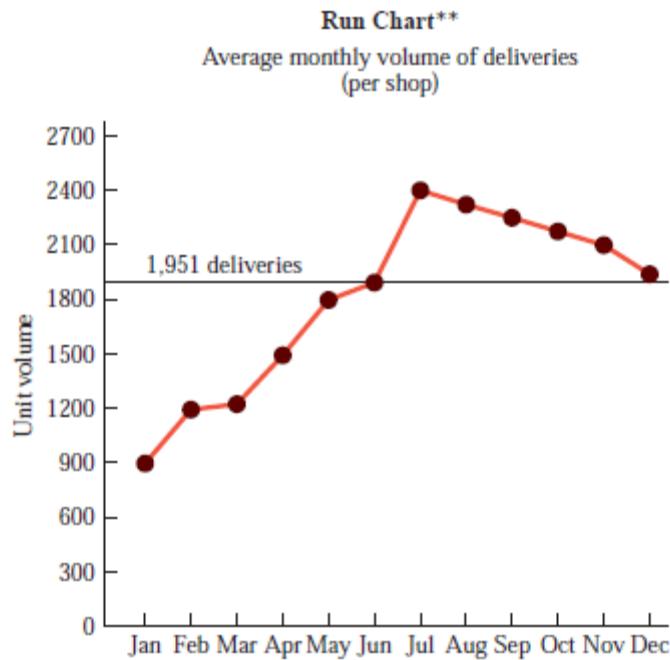
Analyze

- **Graphical Tools**
 - Flow diagrams, frequency plots, Pareto charts, etc.
- **Statistical Testing-**
 - Descriptive Statistics, Process Capability Hypothesis testing, Regression Analysis, etc.
- **Designed Experiments**

Analytical Tools for Six Sigma

- **Run charts.** They depict trends in data over time, and thereby help to understand the magnitude of a problem at the define stage. Typically, they plot the median of a process.

Run charts



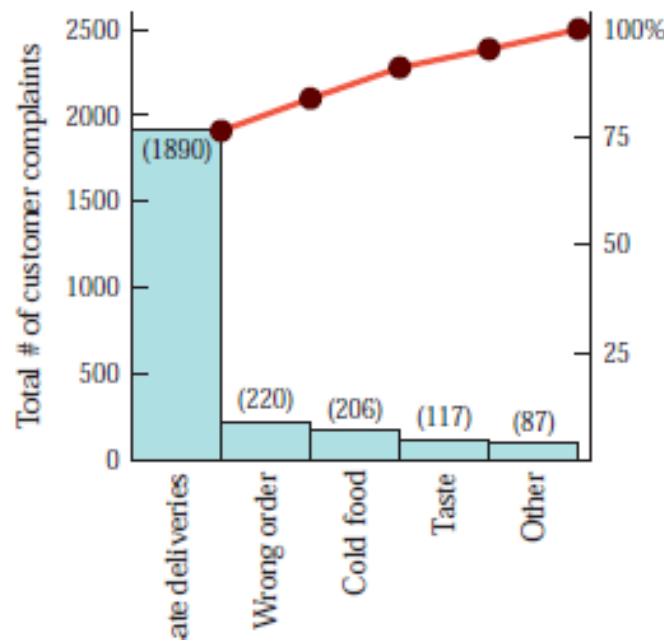
Analytical Tools for Six Sigma

- **Pareto charts.** These charts help to break down a problem into the relative contributions of its components.
- They are based on the common empirical finding that a large percentage of problems are due to a small percentage of causes.

Pareto Chart

Measure

Pareto Chart**
Types of customer complaints
Total = 2520 October–December
(across 6 shops)



Analytical Tools for Six Sigma

- **Check sheets.** These are basic forms that help standardize data collection. They are used to create histograms such as shown on the Pareto chart.

Check sheets

Defines what data → **Machine Downtime**
are being collected (Line 13)

Operator: <u>Wendy</u>		Date: <u>May 19</u>
Reason	Frequency	Comments
Carton Transport		
Metal Check		
No Product		←
Sealing Unit		
Barcodeing		
Conveyor Belt		
Bad Product		Burned flakes Low weight
Other		

Lists the characteristics or conditions of interest

Includes place to put the data

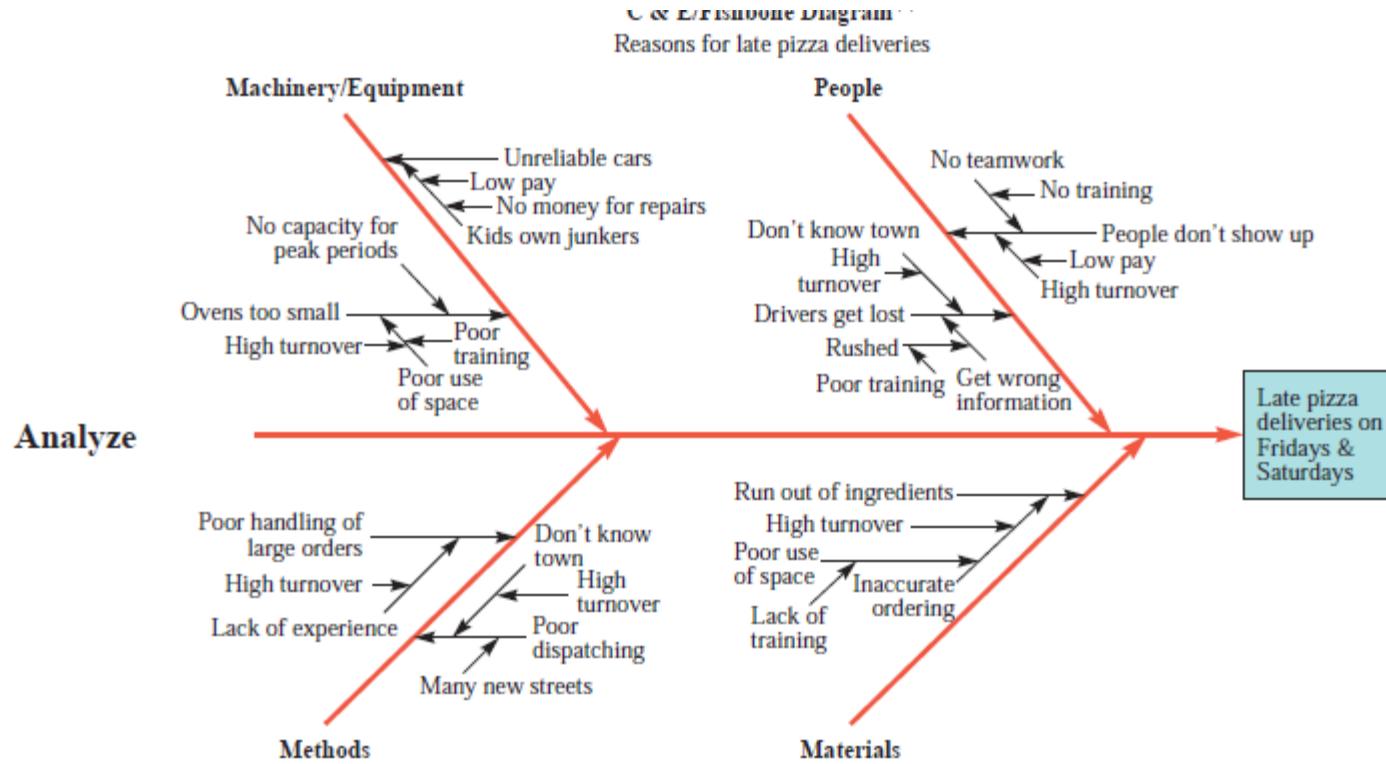
May want to add space for tracking stratification factors

Has room for comments

Analytical Tools for Six Sigma

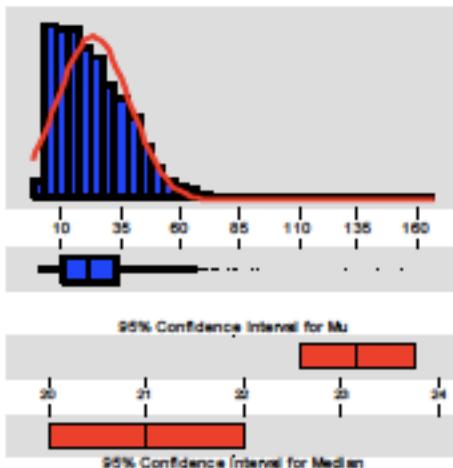
- **Cause-and-effect diagrams.** Also called *fishbone diagrams*, they show hypothesized relationships between potential causes and the problem under study.
- Once the C&E diagram is constructed, the analysis would proceed to find out which of the potential causes were in fact contributing to the problem.

Fishbone diagram



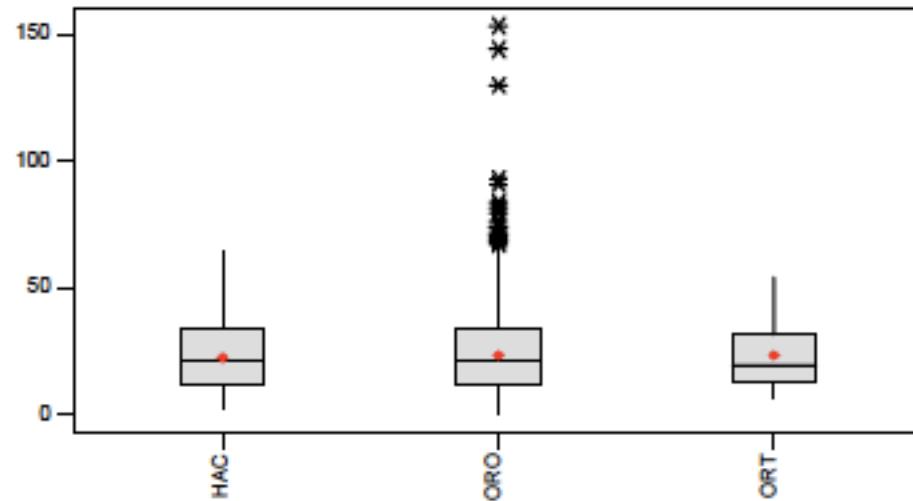
Displaying the Data

Descriptive Statistics

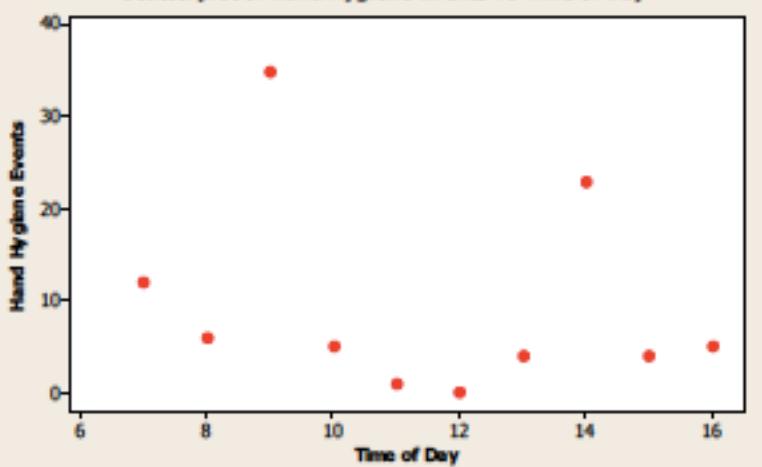


Boxplots of Pt Wait Time by CLINIC

(means are indicated by solid circles)



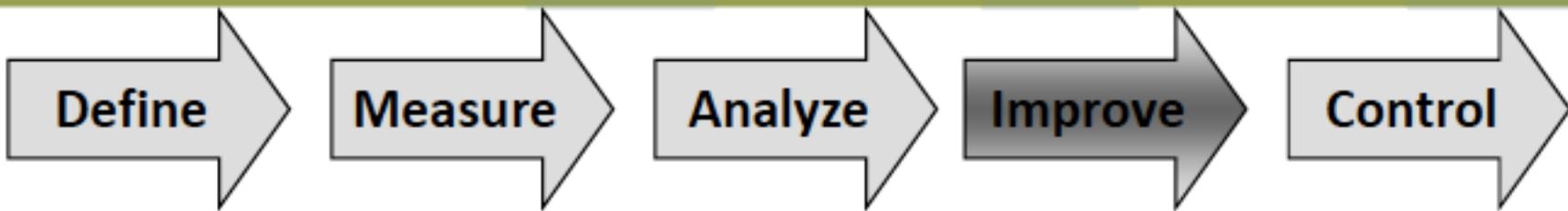
Scatterplot of Hand Hygiene Events vs Time of Day



Overall Statistics By Patient:

Metric	Wait Time	Exam Time	Total Time
Mean	23.16	18.94	42.10
Median	21	16	40
Std Deviation	15.33	11.54	19.76
Sample Size	2559	2559	2559
Min	0	0	3
Max	153	99	183

Six Sigma Model -DMAIC



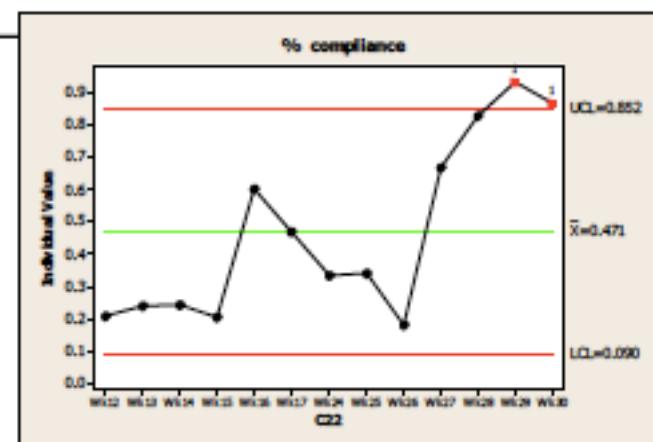
- Optimization of Y (Cycle time, Variability, Cost/LOS)
- Validation of Improvements
- Implementation
- Control Plan

Generate alternatives

Assess the risks

Test the alternative

Select the best alternative



Evaluating solutions

Generate multiple options!

Evaluate how each option meets CTQs



Health Care Performance
Improvement Education Series

Pugh Matrix

Key Criteria	Importance Rating	Alternatives			
		Telie tech on floor w/S continuous central monitoring	Telie tech on floor and deletion of central monitoring	Shift coordinator w/ restructured position - no patients	Rawline call light system installed in sea room
RN accountable for patient	↔	↑	↑	↔	↔
Efficient trouble shooting	↑	↑	↑	↔	↔
Utilizes RN critical Thinking	↔	↑	↑	↔	↔
FTE neutral	↓	↓	↓	↔	↔
Good judgement regarding whether to take patient off tele when off unit	↑	↑	↑	↔	↔
RN knowledge of when patient leaves unit	↔	↔	↑	↔	↔
RN knowledge of when patient returns	↔	↔	↑	↔	↔
Assurance that patient placed back on tele when returned to floor	↑	↑	↑	↔	↔
30 Second response to sustained lethal rhythms or rate alarms	↑	↑	↑	↔	↔
Documentation of rate/rhythm changes	↑	↑	↑	↔	↔
Consistent/accurate interpretation of rate/rhythm	↔	↔	↑	↔	↔
Timely recognition of rate/rhythm changes	↑	↑	↑	↑	↑
Overall high standard of care maintained	↔	↔	↑	↔	↔
Continuous observation	↔	↓	↓	↔	↔
Misc. benefits					
enhance current shift coor. Responsibilities	↔	↔	↑	↔	↔
increased awareness of unit "big" picture	↔	↔	↑	↔	↔
increase resources avail. to unit RNs	↔	↔	↑	↔	↔
increase unit teamwork	↑	↑	↑	↔	↔
increase staff satisfaction	↑	↑	↑	↔	↔
increase coordination of care	↔	↔	↑	↔	↔
Sum of Positives		8	10	18	1
Sum of Negatives		1	2	2	0
Sum of Sames		11	8	0	19

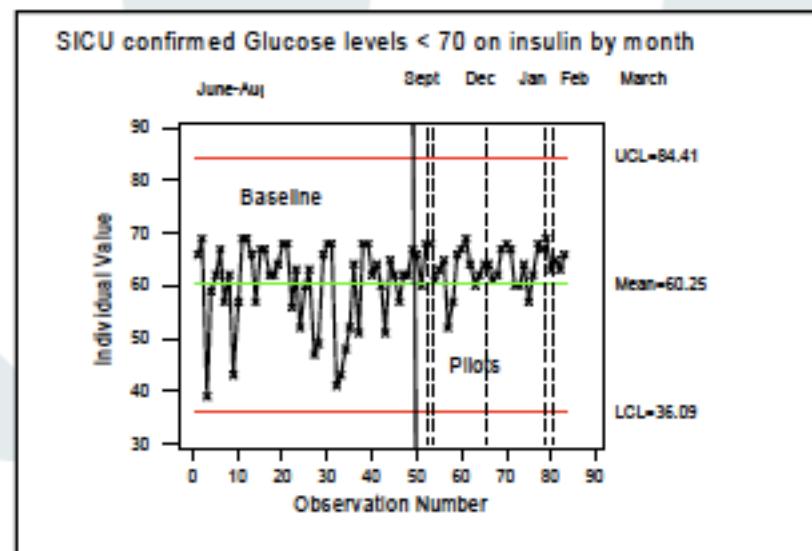
Key
Better ↑
Same ↔
Worse ↓

↑ = 10
↑↔ = 8
↔ = 5
↔↓ = 3
↓ = 1

Pilot/Validate Results

Pilot Planning

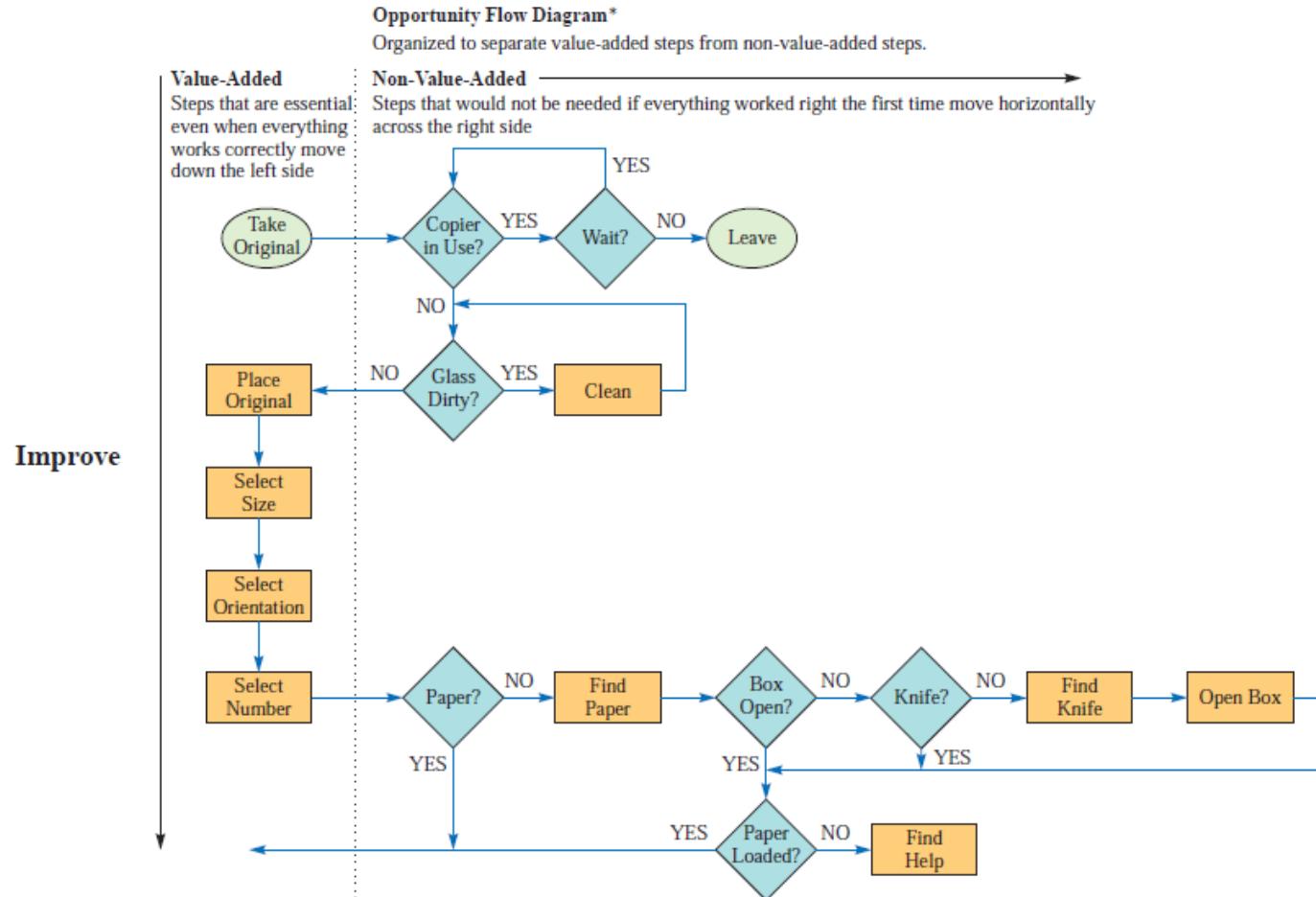
- Failure Mode and Effects Analysis
- Assure adequate sample size
- Validate improvements through data and statistical analysis



Opportunity Flow Diagram

- **Opportunity flow diagram.** This is used to separate value-added from non-value added steps in a process.

Opportunity Flow Diagram



Failure mode and effect analysis.

- This is a structured approach to identify, estimate, prioritize, and evaluate risk of possible failures at each stage of a process.
 - identifying each element,
 - assembly, or part of the process and listing the potential failure modes,
 - potential causes,
 - and effects of each failure.
- A risk priority number (RPN) is calculated for each failure mode.
- It is an index used to measure the rank importance of the items listed in the FMEA chart.
- These conditions include the probability that the failure takes place (occurrence), the damage resulting from the failure (severity), and the probability of detecting the failure in-house (detection).
- High RPN items should be targeted for improvement first.

FMEA Analysis

Project: _____

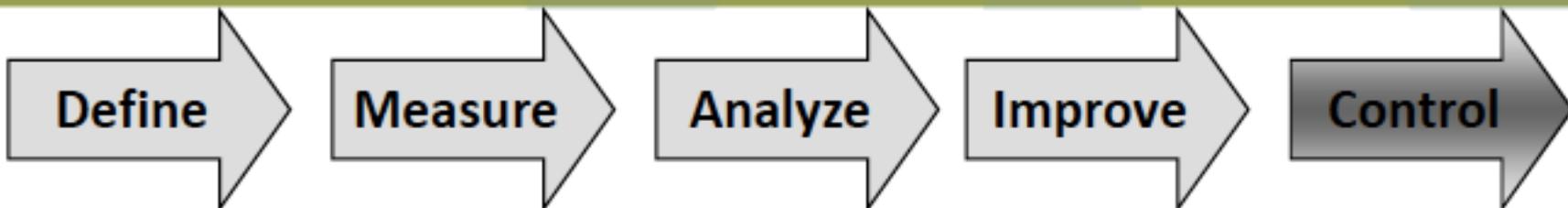
Date: _____ (original)

Team: _____

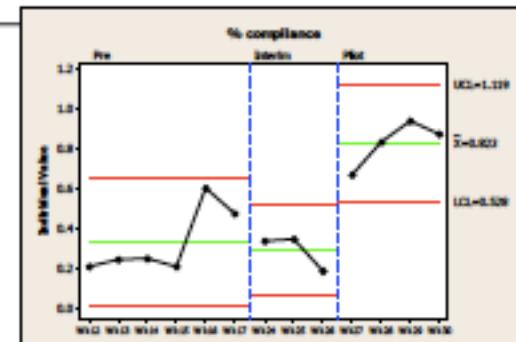
_____ (revised)

Item or Process Step	Potential Failure Mode	Potential Effects of Failure	Severity	Potential Cause(s)	Occurrence	Current Controls	Detection	RPN	Recommended Action	Responsibility and Target Date	"After" →	Severity	Occurrence	Detection	RPN
Total Risk Priority Number:								"After" Risk Priority Number:							

Six Sigma Model -DMAIC



- Determine capability of new process
- Implement process controls
- Ensure Gains are Sustained
- Close the project



Is the new measurement system measure what it is suppose to measure?

Does the new process meet the goal?

How can you sustain the gains?

Mistake proofing, Robust design, Process Monitoring

Celebrate successes!

Control

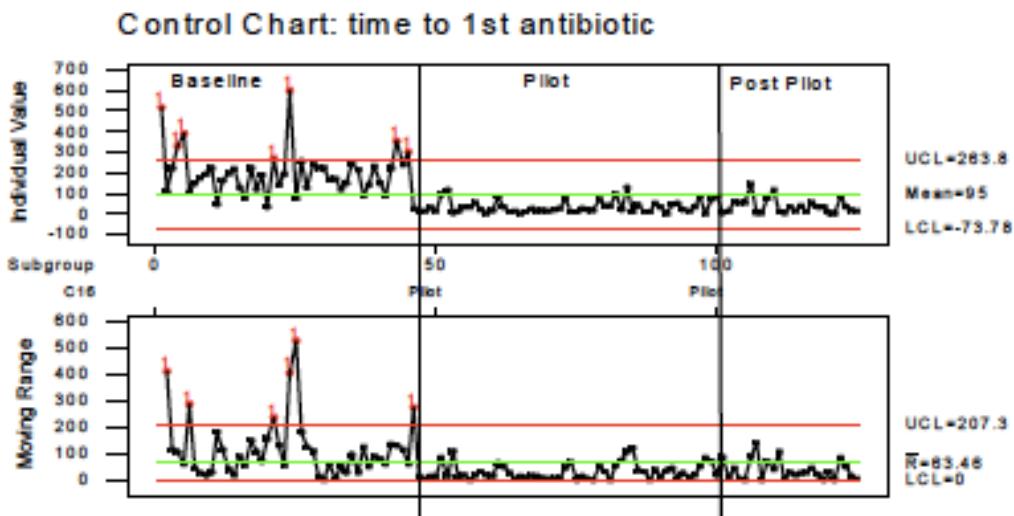
Determine new process capability

Develop control plan

- Monitor Inputs and Outputs (Y's and Xs)
- Ensure that Gains are Sustained

Share Best Practices

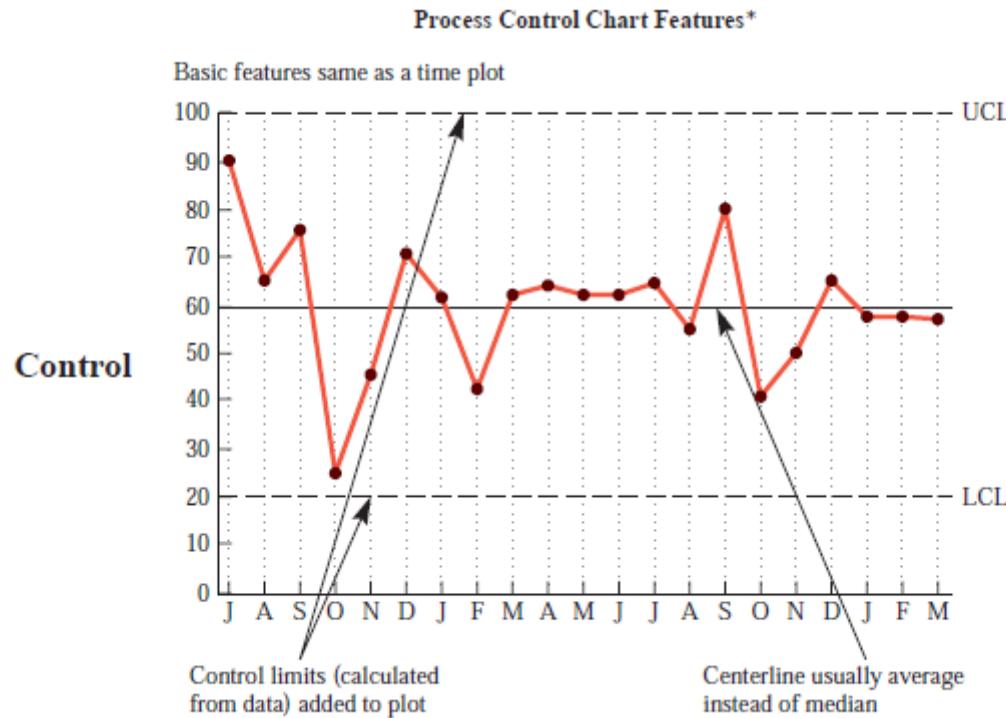
Maintain the gains!



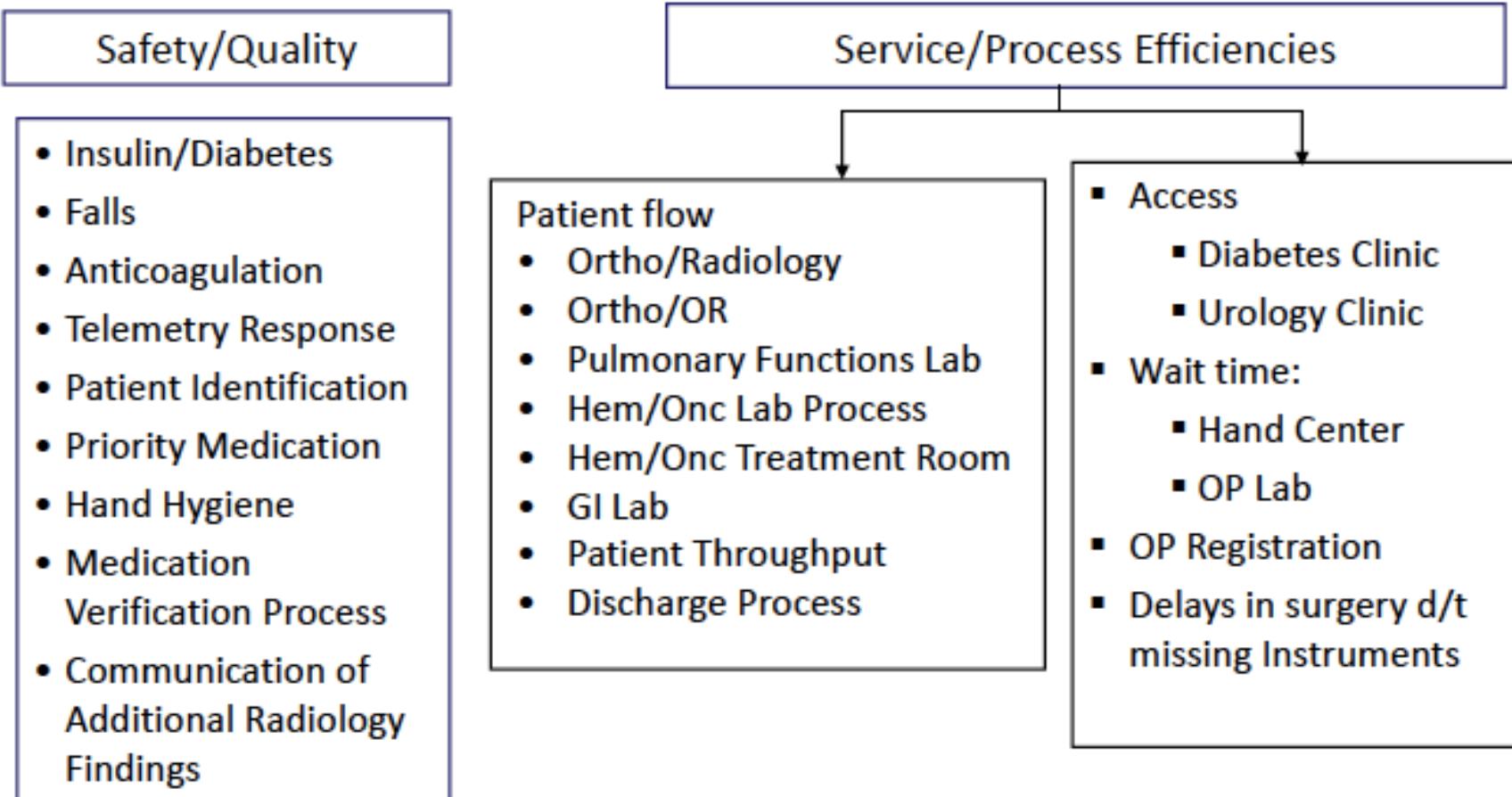
Analytical Tools for Six Sigma

- **Process control charts.** These are time-sequenced charts showing plotted values of a statistic including a centerline average and one or more control limits.
- It is used to assure that processes are in statistical control

Process Control Charts



Example Six Sigma Projects



Lean Thinking

- ✓ Developed in the 1950s by Toyota (Toyota Production System or TPS) based on the work of W. Edwards Deming and commonly referred to as “lean thinking” or just simply “lean”.
- ✓ Aims to:
 - Streamline organizational processes to improve quality and patient safety through waste reduction and increased efficiency.
 - To provide internal/external customers/clients with “value” through minimizing wasted time, effort and cost
 - Identify and modify/eliminate “non-value add” activities and actions to reduce “waste” and provide improved organizational capacity and performance

(Institute for Healthcare Improvement, 2005; Lord & Smith, 2014; Powell, Rushmer & Davies, 2009; Spath, 2013).

Lean Thinking

- **Lean production** is an integrated set of activities designed to achieve production using minimal inventories of raw materials, work-in-process, and finished goods.
- “just in time” and are completed and move through the process quickly.
- Lean is also based on the logic that nothing will be produced until it is needed.

Lean thinking

- Lean is driven by the identification of customer needs and aims to improve processes by removing activities that are non-value-added (a.k.a. waste).

Lean Thinking

Redefining “lean”

Definition:

“Becoming ‘lean’ is a process of eliminating waste with the goal of creating value.”

Note: This stands in contrast to definitions of lean that only focus on eliminating waste, which is too often interpreted as cost cutting – independent of its impact on value delivery

Two mindsets

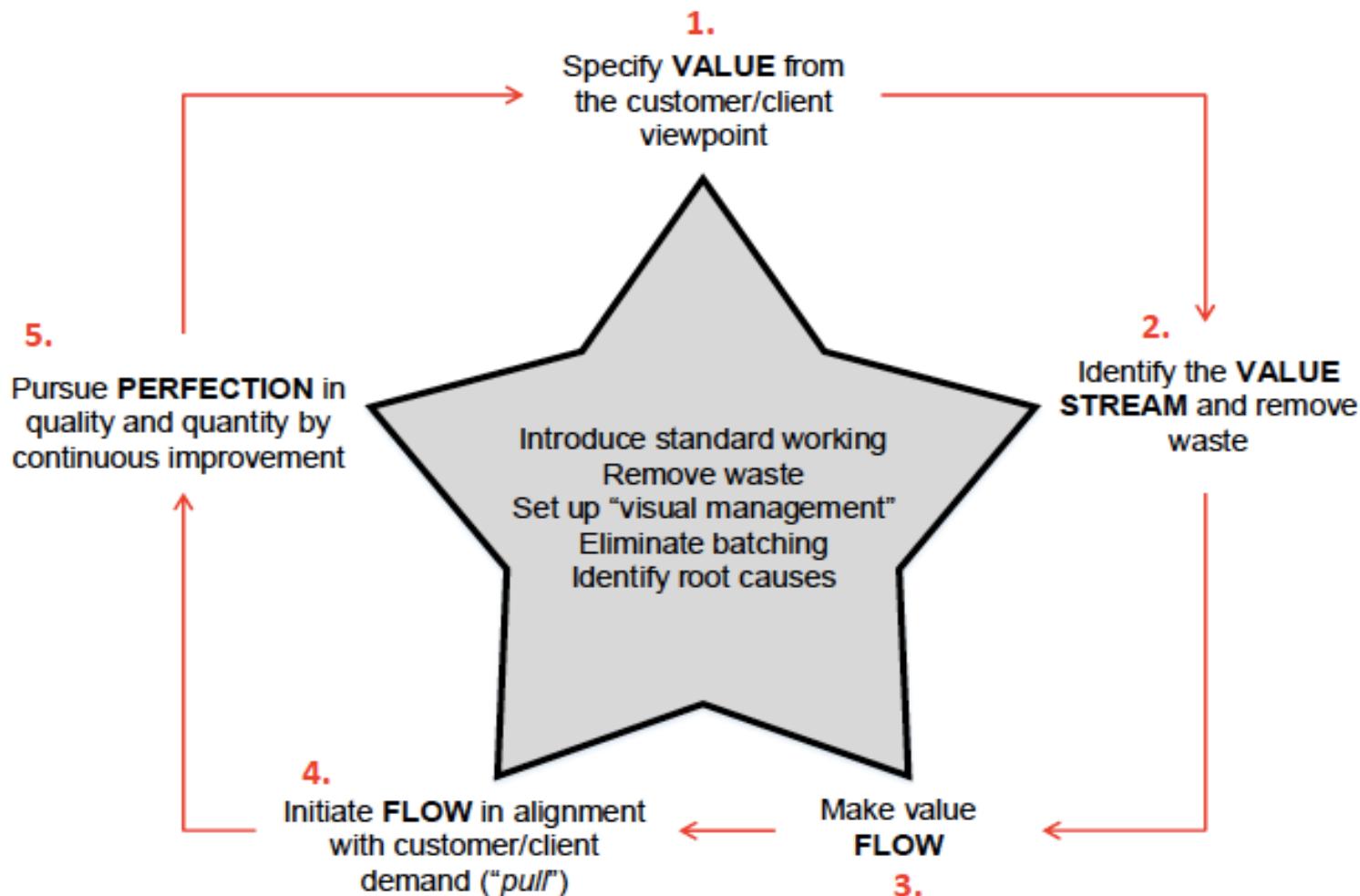
“Mass Production” Mindset

- Producer “push”
- Movement of materials
- High volume
- Inspection
- Expert-driven
- Decomposition
- Periodic adjustment

“Lean Enterprise” Mindset

- Customer “pull”
- Flow of value
- Flexible response
- Prevention
- Knowledge-driven
- Integration
- Continuous improvement

Principles of Lean



(Adapted from Institute for Healthcare Improvement, 2005; Lord & Smith, 2014)

Before starting a lean project or activity it is vital to establish organizational understanding of what the aim of the project or activity is and what the measures to prove success or failure are.

Examples can include:

- # patients on waiting lists
- Length of stay
- Admissions/readmissions
- Patient experience
- Waiting days
- Staff morale
- Turnaround times
- # incidents/defects
- # complaints
- Cost
- Quality

Answers key measurement questions :

- *How will you achieve an understanding of a current state?*
- *How will you know where to focus your change/improvement efforts?*
- *How will you know if your lean project/activity has made a difference?*

Don't forget to baseline!!

Identify value

- Voice of the customer
- Gemba Walks

Definition Gemba Walks

Go to the source to find the facts to make better decisions, build consensus and achieve goals

- Gemba means “the real place”
- Go “see” first hand, with own eyes what is really happening vs. what you assume is happening
- The “Check and Adjust” part of PDCA



Prepare for the Walk

- Define 'purpose' for walk – why doing it?
- Define a scope for the walk – where headed?
- Coach appropriate behaviors to participants:
 - One conversation at a time
 - Show respect, listen more than you talk
 - Make no on the spot judgments, seek to understand



12

Prepare



Go See



- Test your assumptions and learn
- Do people in the organization:
 - Understand purpose of their work?
 - Follow standard work practices?
 - Understand performance expectations and why?
 - Use a scientific thought process for problem resolution?
- Are people inhibited from doing their jobs by organizational support systems?



Go See #2



- Observe the 5Ms (Man, Machine, Methods, Materials, Measurement)
- Observe the 3Ms (Muda, Mura and Muri) - they all deal with capacity utilization
 - Muda (8 Wastes) Inefficient/ineffective use of capacity
 - Mura (uneven) Inefficient flows and capacity utilization...sometimes too little, sometimes too much
 - Muri (overburden) Work exceeds the capacity - *in an office administrative this looks like multi-tasking as people try to do several things at the same time*
- Develop a deeper understanding of value added, vs. waste, vs. non-value added but necessary to do - in the current environment



Ask What, then Why



- Anyone can look around, good observations require skill
- What is the work people are trying to accomplish?
- What are the targets? Why is that important?
- Why is performance less than desired?
- Why is there backtracking, rework....?



Ask the right questions



Coach employees on more critical thinking skills

- What type of a problem were you trying to solve?
- How did you become aware of the problem?
- What did you (the team) change?
- How did this improvement affect business results?
- What is your next improvement?

Reinforce lean concepts

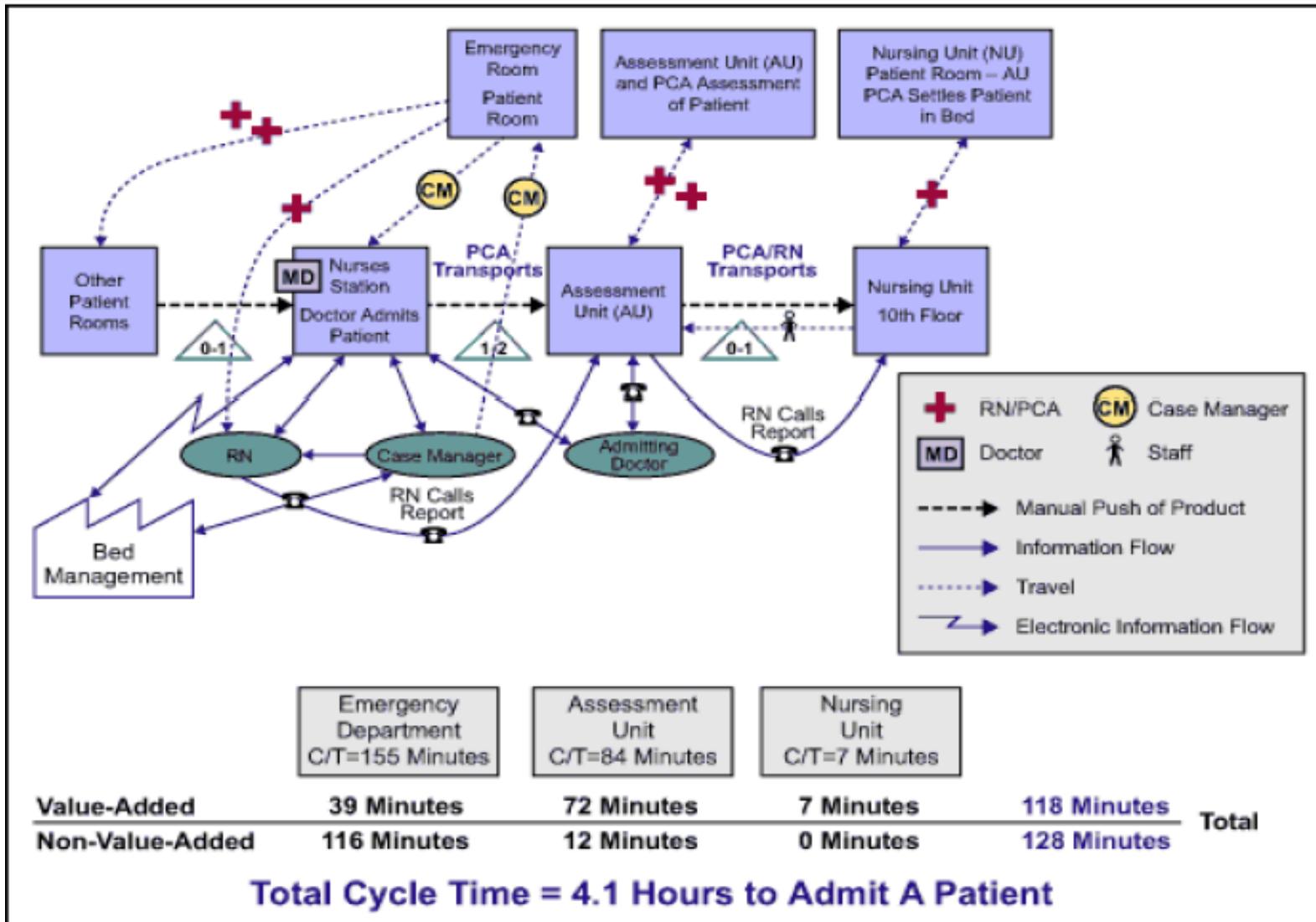
- How do visual management tools help you?
- How do you know when there is a problem?



Identify Value Streams

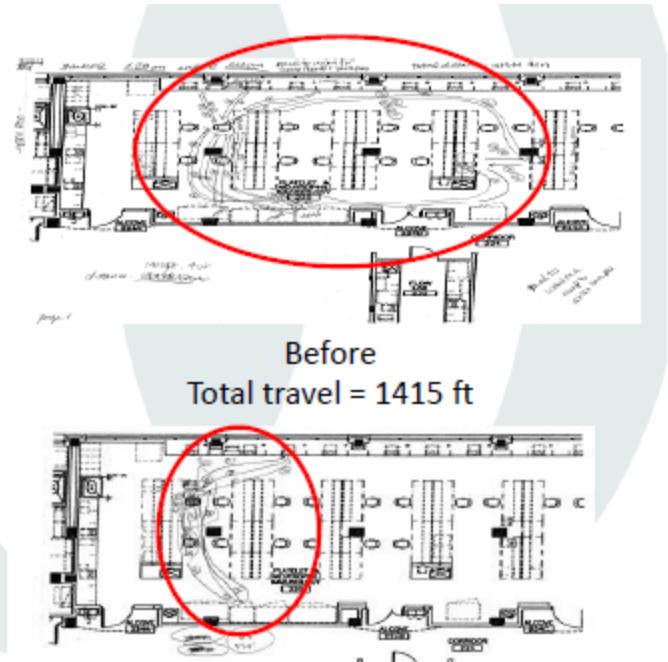
- All of the actions, both value-creating and non value-creating, required to bring a product from concept to launch and from order to delivery.
- These include actions to process information from the customer and actions to transform the product on its way to the customer

Value Stream Map



Spaghetti map

- A graphic showing the movements of the patients and caregivers.



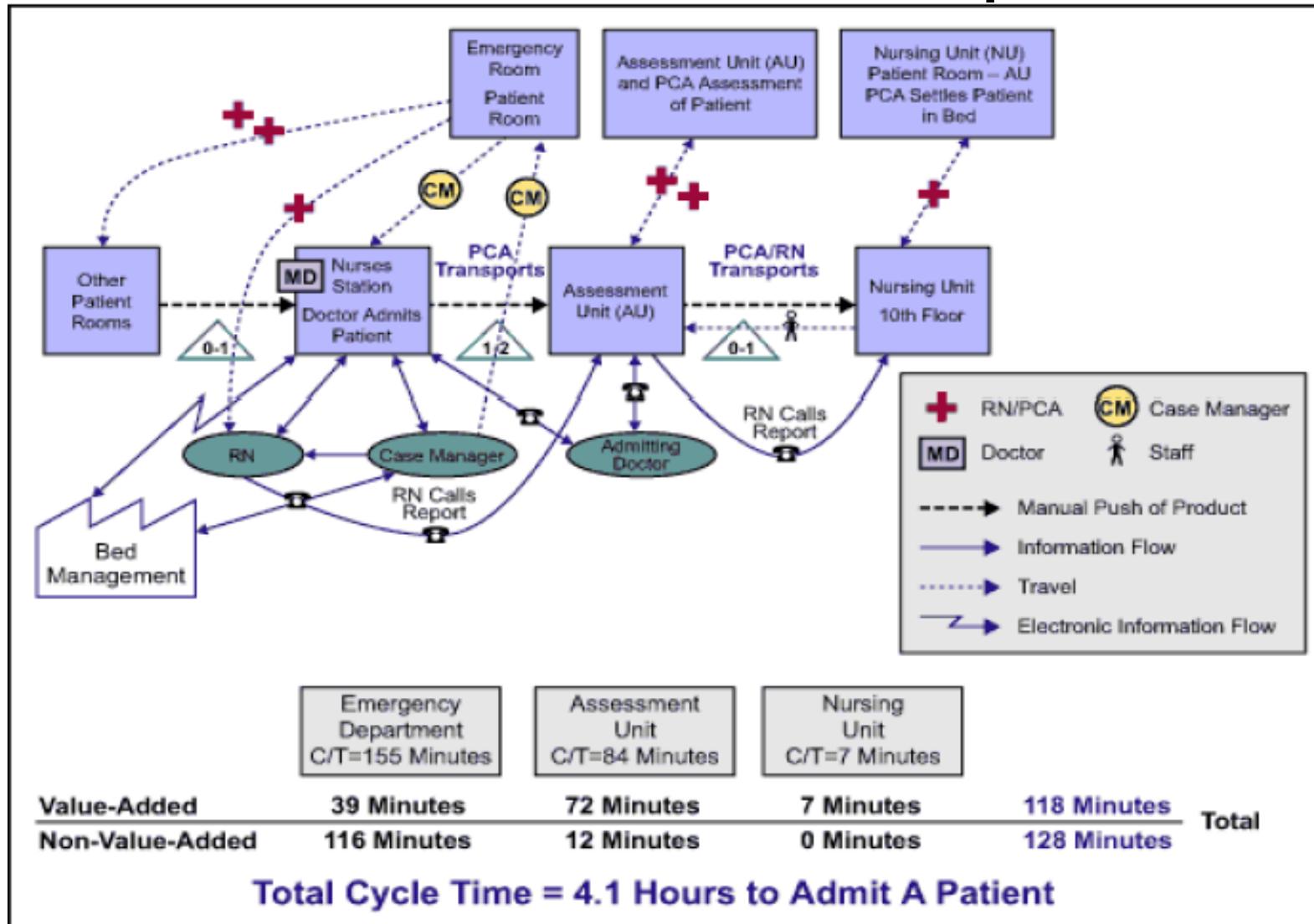
Sources of Waste

- Transportation
- Inventory (Unnecessary)
- Motion (Unnecessary)
- Waiting
- Overproduction
- Over processing
- Defects

Examples of waste in healthcare

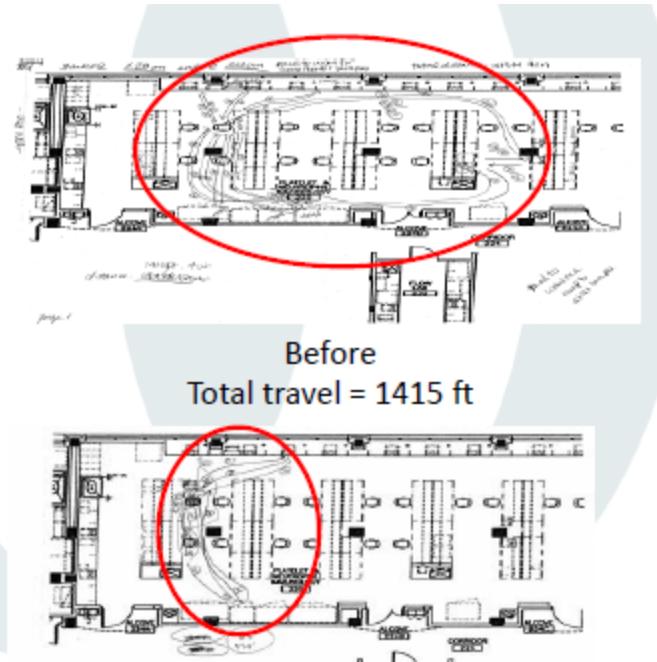
Type	Laboratory Example	Patient Care Example (Oncology)
Defects	Mislabeled patient specimens	Wrong medication delivered to patient
Overproduction	"Just in case" blood tubes drawn from patients, but not used	Patients seen by MD faster than can be treated with chemotherapy, causing delays
Transportation	Moving specimens long distances from receiving to testing	Long walks from MD clinic to chemotherapy
Waiting	Specimens waiting in batches for testing	Patients waiting due to physician lateness or schedule exceeding capacity
Inventory	Expired test reagents	Expired chemotherapy drugs
Motion	Technologist walking due to poor layout	Nurses searching for missing or poorly located supplies
Over Processing	Time/date stamps on labels that are not used	Time spent creating a schedule that is not followed
Human Potential		Employee ideas not listened to

Value Stream Map



Spaghetti map

- A graphic showing the movements of the patients and caregivers.



5S + 1

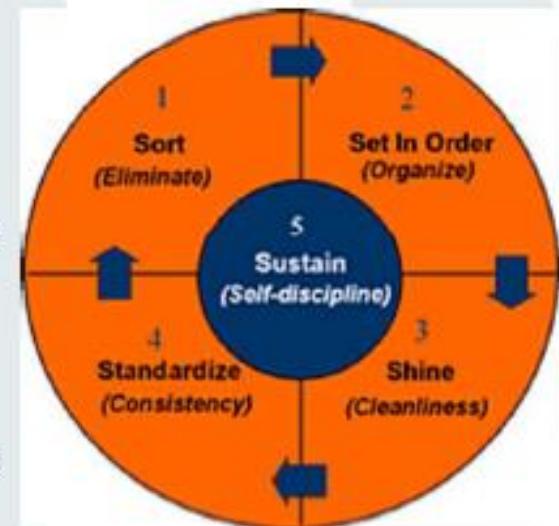
Sort - All unneeded tools, parts and supplies are removed from the area

Set in Order - A place for everything and everything is in its place

Shine - The area is cleaned as the work is performed

Standardize - Cleaning and identification methods are consistently applied

Sustain - 5S is a habit and is continually improved



+ 1 Safety
Work areas are safe and free of hazardous or dangerous conditions

Kaizen

- Kaizen methodology includes making changes and monitoring results, then adjusting.
- Large-scale pre-planning and extensive project scheduling are replaced by smaller experiments, which can be rapidly adapted as new improvements are suggested
- Preparing for a kaizen event
 - Select process (define the business issue)
 - Scope the process to be improved
 - Establish goals
 - Assemble the team

“Kaizen”, a Japanese word for continuous improvement (*literal translation “to become good through change”*) is a method for **accelerating the pace of process improvement** - of restructuring and reorganizing all aspects of an organizational system to ensure that it operates at its optimum efficiency

Characteristics:

- ✓ Teams work for 3-5 days exclusively.
- ✓ Dedicated resources including 100% dedicated/protected staff time.
- ✓ Scope and purpose critically defined and cannot be altered.
- ✓ Basic baseline data collected prior to start.
- ✓ Implementation is immediate and completed within the event timescale.
- ✓ Actions not completed with the timescale, completed within 20 days.
- ✓ Senior management ensures support in place.

A3 problem solving

Define problem or opportunity:

(*What is the problem/opportunity for improvement to be solved?*)

Project management details:

(*Project team member; approvals, dates, etc.*)

Current state:

(*What is happening now? Use value stream maps, measurements, data graphs, etc.*)

Desired future state:

(*What does the desired future state look like? A value stream map is recommended.*)

Problem/opportunity for improvement objective(s):

(*Stated in SMART format - specific, measurable, achievable, relevant/results oriented, time-based/bound.*)

Action plan:

(*The what, why, whom, when and how, based on the PDSA cycle - plus progress update entries.*)

Waste identified:

(*Correction (defects), waiting, transportation, over-processing, inventory, motion, overproduction.*)

Outputs (results) and measures:

(*What was the PDSA cycle? Timeline? Before-after data collection comparison and analysis using diagrams, charts, graphs, etc. – plus return on investment analysis.*)

Root Cause Analysis (RCA):

(*What is the root cause of the problem/opportunity for improvement? Use "5-whys", fishbone/cause-effect diagram, etc.*)

Post-project next steps:

(*What are the next steps? Are there any issues still remaining? Is follow-up required?*)

Example 1: Problem Solving A3 Report

Theme: Reducing Scrap in the Machine Shop

Background

1. Corporate Goals 2014

- Increase global market share
- Improve quality and service
- Increase corporate profit.

2. Manufacturing Goals 2014

- Reduce cost by 5%
- Reduce scrap by 15%
- Improve productivity by 7%
- Improve HSE index by 10%

Year	Overall Scrap %
2012	3.2
2013	2.7
2014 (YTD)	2.8

Not meeting goal for 2014!

Current Condition

Scrap by Department

Department	Scrap \$
Machine shop	\$70K
Welding shop	\$200K
Assembly shop	\$8K

Breakdown of Machine Shop Scrap Rates

Process	Milling	Turning	Drilling	Rough Grinding	Final Grinding
Scrap %	1.5	0.9	0.7	3.7	0.7
Scrap \$	40K	27K	23K	150K	480K
Scrap +	▲	●	●	✗	✗

*Legend: ● 0-1% ▲ 1-2% ✗ >2%

Goal Statement

By December 2014:

- Reduce scrap in rough grinding from 3.7% to less than 2%
- Reduce scrap in final grinding from 0.7% to less than 2%

Root Cause Analysis

Defect Type	Percentage
Unfinished part	72%
Spindle run	20%
Surface finish	8%
Material	2%

```

graph LR
    UD[Underlined Spindle defect] --> M[Man]
    UD --> M1[Machine]
    UD --> M2[Method]
    UD --> M3[Material]
    UD --> M4[Material]

    M --> C1[Conservatism]
    M --> C2[Grinding wheel setup]
    M --> C3[Manual offsets]
    M1 --> S[Spindle]
    M1 --> CL[Clamp & locator]
    M1 --> GW[Grinding wheel]
    M1 --> CS[Coolant system]
    M2 --> GC[Grinding conditions]
    M2 --> CC[Current concentration]
    M2 --> WD[Wheel dressing]
    M3 --> DF[Dustless finish]
    M3 --> H[Hardness]
    M3 --> SF[Surface finish]
    M4 --> M1[Material]
  
```

Countermeasures

Suspected Cause	Action Item	Responsible	Due	Finding
1. Oil and contamination	Daily 5S & PM tasks	Tony (TL)	11/2	Conducting daily, No issues
2. Grinding wheel setup check	Grinding wheel setup check	Tony (TL)	11/4	Checked out okay
3. Manual offset fixture	Check offset fixture	Tony (TL)	11/8	Checked out okay
4. Spindle bearing loose	Spindle bearing check	Ed (Mach)	11/5	Loose bearing esp. tightened
5. Clamp & locator damage	Clamp & locator check	Ed (Mach)	11/5	Nothing anomalous
6. Grinding wheel balance	Grinding wheel check	Tony (TL)	11/5	Nothing anomalous
7. Inspecting part dimensions	Measure part dimensions	Jane (QC)	11/9	Within specs
8. Poor material hardness	Measure hardness	Jane (QC)	11/9	Within specs
9. Abnormal surface finish check	Surface finish check	Jane (QC)	11/9	Within specs
10. Abnormal grinding conditions	Grinding condition's check	Mary (Eng)	11/13	Nothing anomalous
11. Coolant concentration	Measures concentration	John (Mach)	11/13	Contaminated tank. Replaced
12. Wheel dressing check	Check conditions	Mari (Eng)	11/13	Nothing anomalous

Effect Confirmation

Date	Finish grinder (%)	Rough grinder (%)	Target Level (%)
2-Nov	8.0	4.0	2.0
3-Nov	7.5	3.5	2.0
4-Nov	7.0	3.0	2.0
5-Nov	6.5	2.5	2.0
6-Nov	6.0	2.0	2.0
7-Nov	5.5	1.8	2.0
8-Nov	5.0	1.5	2.0
9-Nov	4.5	1.5	2.0
10-Nov	4.0	1.5	2.0
11-Nov	3.5	1.5	2.0
12-Nov	3.0	1.5	2.0
13-Nov	2.5	1.5	2.0

Legend: ○ Finish grinder, □ Rough grinder, - - - Target

Target level

Dates of action items and results confirmation

Follow Up Actions

Investigation Item	Responsibility	Due	Status
1. Establish coolant check PM	Ope & Maintenance	11/15	Complete
2. Establish bearing check PM	Ope & Maintenance	11/15	Complete
3. Communicate findings to similar plants	Tom Eng Mgr	11/22	In process
4. Discuss bearing issue with OEM	Tom Eng Mgr	11/29	Pending

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UKZN INSPIRING GREATNESS

Lean Sigma

- The term combines two quality improvement approaches: Lean and Six Sigma.
- Lean methodologies focus on eliminating waste and streamlining processes.
- Six Sigma projects involve increasing quality and yield while reducing defects and variation

Quality Improvement Tools

	<i>Qualitative Tools</i>	<i>Quantitative Tools</i>	IA	QA
Step 1: Define the improvement goal	Affinity diagram Brainstorming Decision matrix Force field analysis Multi-voting Nominal group technique Survey	Bar graph Check sheet Control chart Histogram Line graph Pareto chart Scatter diagram Survey	Gu	Im
Step 2: Analyze current practices	Brainstorming Cause and effect diagram Five Whys Flowchart Survey Workflow diagram	Bar graph Check sheet Control chart Histogram Line graph Pareto chart Scatter diagram Survey	Gu	Im
Step 3: Design and implement improvements	Affinity diagram Brainstorming Decision matrix Flowchart Force field analysis Nominal group technique Planning matrix Stakeholder analysis Workflow diagram	Bar graph Check sheet Control chart Histogram Line graph Pareto chart Scatter diagram Survey	Gu	Im
Step 4: Measure success	Storyboard Survey	Bar graph Check sheet Control chart Histogram Line graph Pareto chart Scatter diagram Survey	Gu	Im

Quality Assurance

- Quality assurance is a process to ensure that the quality of a product or a service meets a predetermined standard.
- The process of quality assurance compares the quality of a product or service with a minimum standard, often set by some external authority.
- The aim in quality assurance is to ensure that a product or service is fit for purpose

Accreditation

- **Accreditation** is a process of review that **healthcare** organizations participate in to demonstrate the ability to meet predetermined criteria and standards of **accreditation** established by a professional **accrediting** agency.

Accreditation

- A self-assessment and external peer assessment process used by health care organizations to accurately assess their level of performance in relation to established standards and to implement ways to continuously improve.”

What does accreditation mean?

- **Accreditation** is an external, independent review of a **health care** delivery organization against nationally-accepted standards and its own policies, procedures, processes and outcomes.

Accreditation

- Many countries have adopted external accreditation of health services as a vehicle for disseminating national standards and for public accountability
- In Australia, Canada and the United States these programmes were begun by voluntary collaboration of clinical associations (especially medical) and hospital administrators as a means of organizational development.
- driven by reimbursement schemes, central control, and an emphasis on primary care, health networks and community-based services.

International healthcare accreditation organisations

- ISQua is the umbrella organization responsible for accrediting the Joint Commission International accreditation scheme in the USA and Accreditation Canada International, as well as accreditation organizations in the United Kingdom and Australia.^[5]
- Australia: Australian Council on Healthcare Standards International (ACHSI)^[1]
- Canada: Accreditation Canada International (ACI)^[2]
- France: HAS (Haute Autorité de Santé)^[3]
- India: National Accreditation Board for Hospitals & Healthcare Providers (NABH)^[4]
- New Zealand: Quality Health New Zealand (QHNZ); QHNZ quality standards are based on those used in Australia and Canada. QHNZ is accredited by the international umbrella organization, the International Society for Quality in Healthcare (ISQua).
- United Kingdom: QHA Trent Accreditation
- UKAF United Kingdom Accreditation Forum) is responsible for accrediting accreditation schemes in the United Kingdom.
- United States: Joint Commission International (JCI)

Joint Commission International Accreditation

- **Joint Commission International (JCI) is a division of the Joint Commission in Oak Brook, Illinois**
- **Created in 1998 (2541)**

Philosophy of Accreditation

- ✿ Evaluates the entire health care organization as a complex interaction of many clinical and management processes
- ✿ Uses published consensus standard in conducting an evaluation

-
- **Formal on-site evaluation every 3 years to assess compliance with the standards**
 - **Surveyors include a team of health care professionals such as physicians, nurses, pharmacists, and health care executives**

JCI Reputation

- Accredits over 17,000 organizations worldwide
- About 130 of those are acute care hospitals in 23 countries



Joint Commission International Standards

- **Focus on the patient**
- **Designed to be interpreted/surveyed within the local culture and legal framework**

Joint Commission International Accreditation Standards for Hospitals

- 360 Standards
- 1240 Measurable Elements

**Section I : Patient Centered
Standards**

**Section II : Health Care
Organization Management
Standards**

Standards Content

Each JCI Standards contains 3 components :

- The ***Standard***
- Description of the ***intent*** of the standard
- ***Measurable element(s)*** to be scored

Measurable Elements

- Each standard has one or more *measurable elements* that incorporate the major principles addressed in the intent statement
- Each applicable measurable elements is scored
 - Met (10)
 - Partially Met (5)
 - Not Met (0)

CoHSASA

- In 1994, the Pilot Accreditation Programme for South African Health Services was launched as a research and development programme in the Faculty of Medicine at the University of Stellenbosch under the directorship of Professor Stuart Whittaker.
- The programme grew rapidly and evaluation research showed that it was well received and perceived to be of considerable value to participating facilities.
- COHSASA as an independent, non-partisan unit was a logical development In 1995,
- Over the past 18 years, COHSASA has developed healthcare accreditation programmes for hospitals, sub-acute care, psychiatric facilities and programmes, primary health care clinics, ambulance services and medical emergency centres and general practitioners.

Policy on Quality in Healthcare in South Africa (1997)

- **The National Policy on Quality in Health Care provides a way to improve the quality of care in both the public and private sectors**
- There are four main targets of intervention, namely:
 - Health professionals;
 - Patients;
 - The community; and
 - The health service delivery system

Health Professionals

- Continuous Professional Education
- Outreach educational programmes
- Structured encounter forms
- Feedback

Patients

- Understanding patients perceptions and concerns is key to improving quality

Communities

- Partnerships with community structures such as non-governmental organisations (NGOs) and community-based organisations (CBOs) are important for mobilising community action and advocacy around health issues.
- Representative structures like clinic committees and hospital boards help to facilitate community participation in local decision-making on health issues of concern to the local community.

Health System

- District Quality Assurance Managers
- Quality monitoring procedures
 - Complaints Mechanism
 - Patient satisfaction surveys
 - Office of standards compliance
 - Provincial Health Establishments Inspection teams
 - Clinical audits
 - Facility quality teams
 - Supervisory visits

Office of Health Standards Compliance

- National Health Amendment Act- Chapter 10 establishes Office of Health standards compliance
- The objects of the Office are to protect and promote the health and safety of users of health services by—
 - (a) monitoring and enforcing compliance by health establishments with norms and standards prescribed by the Minister in relation to the national health system; and
 - (b) ensuring consideration, investigation and disposal of complaints relating to non-compliance with prescribed norms and standards in a procedurally fair, economical and expeditious manner.

79. (1) The Office must—

- (a) advise the Minister on matters relating to the determination of norms and standards to be prescribed for the national health system and the review of such norms and standards;
- (b) inspect and certify health establishments as compliant or non-compliant with prescribed norms and standards or, where appropriate and necessary, withdraw such certification;
- (c) investigate complaints relating to breaches of prescribed norms and standards;
- (d) monitor indicators of risk as an early warning system relating to serious breaches of norms and standards and report any breaches to the Minister without delay;
- (e) identify areas and make recommendations for intervention by a national or provincial department of health, a health department of a municipality or health establishment, where it is necessary, to ensure compliance with prescribed norms and standards;
- (f) publish information relating to prescribed norms and standards through the media and, where appropriate, to specific communities;
- (g) recommend quality assurance and management systems for the national health system to the Minister for approval;
- (h) keep records of all its activities; and
- (i) advise the Minister on any matter referred to it by the Minister.

(2) The Office may—

- (a) issue guidelines for the benefit of health establishments on the implementation of prescribed norms and standards;
- (b) collect or request any information relating to prescribed norms and standards from health establishments and users;
- (c) liaise with any other regulatory authority and may, without limiting the generality of this power, require the necessary information from, exchange information with and receive information from any such authority in respect of—
 - (i) matters of common interest; or
 - (ii) a specific complaint or investigation; and
- (d) negotiate cooperative agreements with any regulatory authority in order to—
 - (i) coordinate and harmonise the exercise of jurisdiction over health norms and standards; and
 - (ii) ensure the consistent application of the principles of this Act.

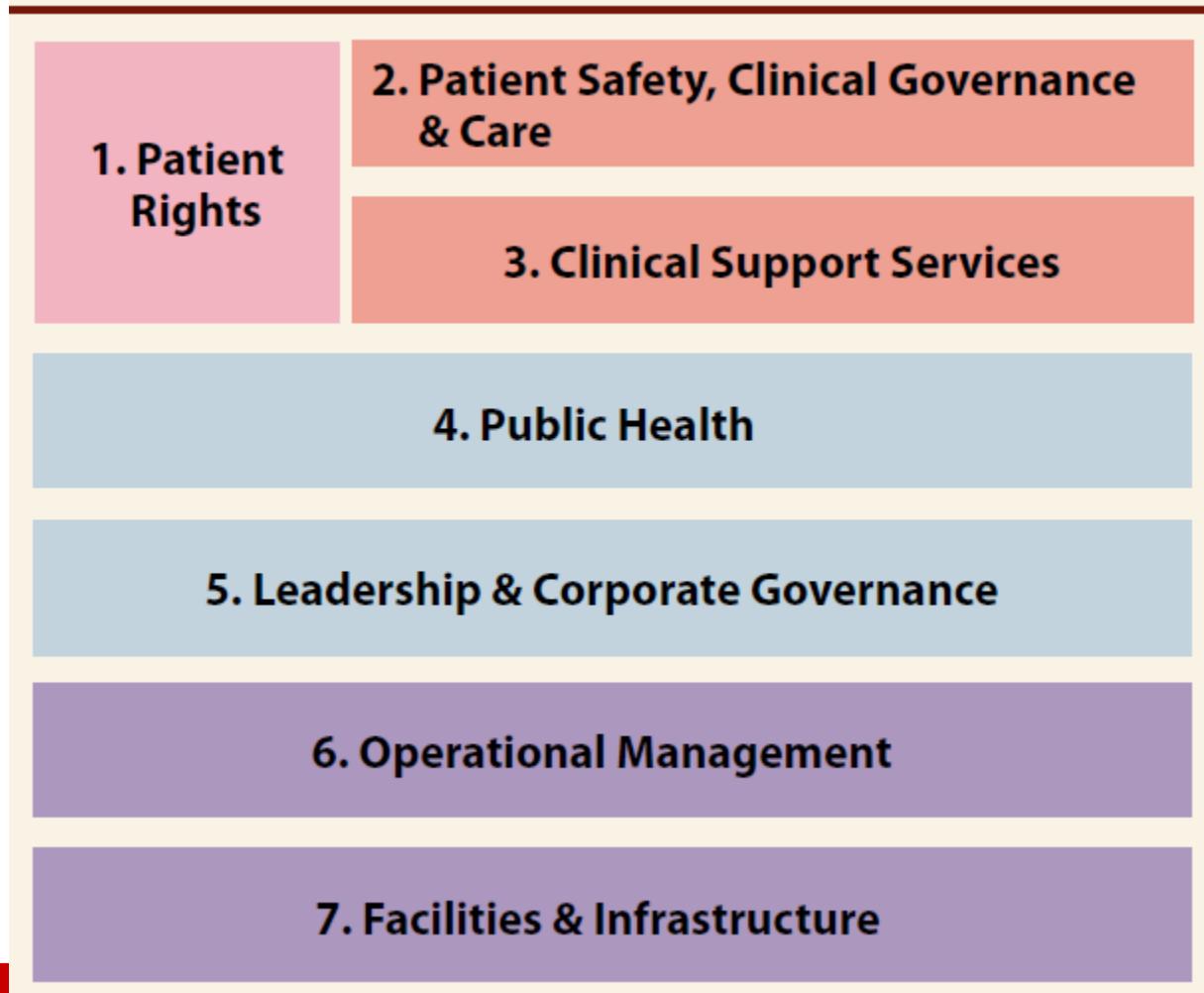
National Core Standards

- The Office of Standards Compliance developed the National Core Standards for Health Establishments in South Africa, which will assist in setting the benchmark of quality care against which delivery of services can be monitored.

National Core Standards

- The main purpose of the National Core Standards is to:
- Develop a common definition of quality care which should be found in all health establishments in South Africa,
- as a guide to the public and to managers and staff at all levels;
 - Establish a benchmark against which health establishments can be assessed, gaps identified and strengths appraised; and
 - Provide for the national certification of compliance of health establishments with mandatory standards.

Domains for NCS



Domains and sub-domains

Domain 1. Patient Rights:

- 1.1 Respect and dignity
- 1.2 Information to patients
- 1.3 Physical access
- 1.4 Continuity of care
- 1.5 Reducing delays in care
- 1.6 Emergency care
- 1.7 Access to package of services
- 1.8 Complaints management

Domain 2. Patient Safety - Clinical governance & Clinical Care:

- | | |
|--|--------------------------------------|
| 2.1 Patient care | 2.4 Clinical risk |
| 2.2 Clinical management for improved health outcomes | 2.5 Adverse events |
| 2.3 Clinical leadership | 2.6 Infection prevention and control |

Domain 3. Clinical Support Services:

- | | |
|--------------------------------------|--------------------------------|
| 3.1 Pharmaceutical services | 3.4 Health technology services |
| 3.2 Diagnostic services | 3.5 Sterilisation services |
| 3.3 Therapeutic and support services | 3.6 Mortuary services |
| | 3.7 Efficiency management |

Domains and sub-domains

Domain 4. Public Health:

- 4.1 Population based service planning and delivery
- 4.2 Health promotion and disease prevention
- 4.3 Disaster preparedness
- 4.4 Environmental control

Domain 5. Leadership & Corporate Governance:

- 5.1 Oversight and accountability
- 5.2 Strategic management
- 5.3 Risk management
- 5.4 Quality improvement
- 5.5 Effective leadership
- 5.6 Communications and public relations

Domains and sub-domains

Domain 6. Operational Management:

- 6.1 Human resource management & development
- 6.2 Employee wellness
- 6.3 Financial resource management
- 6.4 Supply chain management
- 6.5 Transport and fleet management
- 6.6 Information management
- 6.7 Medical records

Domain 7. Facilities & Infrastructure:

- 7.1 Buildings and grounds
- 7.2 Machinery and utilities
- 7.3 Safety and security
- 7.4 Hygiene and cleanliness
- 7.5 Waste management
- 7.6 Linen and laundry
- 7.7 Food services

Core priority areas

Patient Rights:

1. Values and attitudes
2. Waiting times
3. Cleanliness

Patient Safety, Clinical Governance & Care:

4. Patient safety
5. Infection prevention and control

Clinical Support Services:

6. Availability of medicines and supplies

Regulation 67: Norms and Standards Regulations Applicable to Different Categories of Health Establishments

<p>Definitions, Purpose and Application</p> <ul style="list-style-type: none">1. Definitions2. Scope and application3. Purpose of regulations <p>User Rights</p> <ul style="list-style-type: none">4. User information5. Access to care <p>Clinical Governance and Clinical Care</p> <ul style="list-style-type: none">6. User Health records and management7. Clinical management8. Infection prevention and control programmes9. Waste management	<p>Clinical Support Services</p> <ul style="list-style-type: none">10. Judge and value11. Assess major decisions12. Provide info for planning <p>Facilities and Infrastructure</p> <ul style="list-style-type: none">13. Management of buildings and grounds14. Engineering services15. Transport management16. Security services <p>Governance and Human Resources</p> <ul style="list-style-type: none">18. Governance19. Human resources management20. Occupational health and safety <p>General provisions</p> <ul style="list-style-type: none">21. Adverse events22. Waiting time23. Short title and commencement
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What is an Ideal Hospital? (1)

An ‘Ideal Hospital’ is a hospital with:

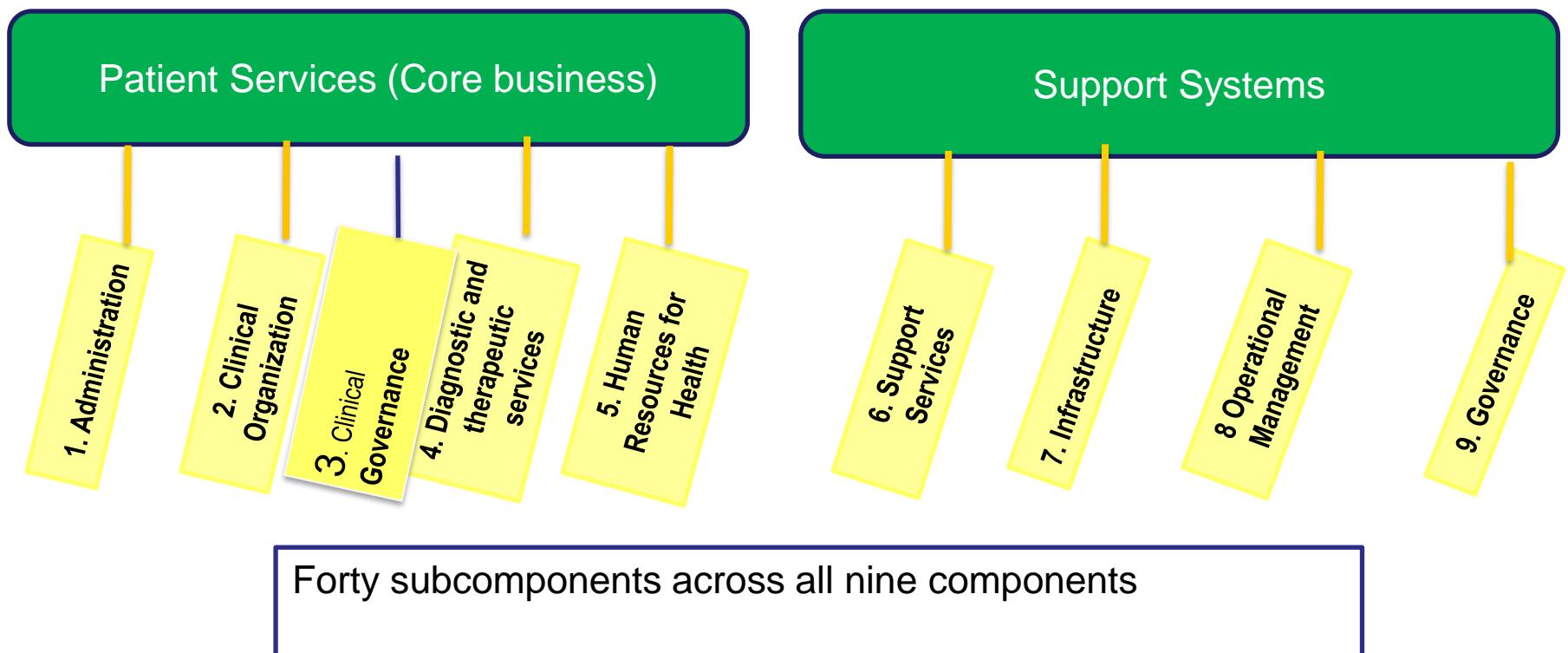
- Good infrastructure (i.e. physical condition and spaces, health technology, information and communication technology, adequate bulk supplies, and an appropriately managed and maintained motor vehicle fleet),
- Efficient patient administrative processes,
- Adequate and appropriately managed staff,

What is an Ideal Hospital? (2)

- Provides evidence based clinical, therapeutic and diagnostic services consistent with the defined Package of services
- Uses patient experiences, communication and information for continuously improving quality of clinical care, optimisation of hospital processes, finance, system and risks mitigation and management
- Complies with highest standards of corporate governance and is accountable to the community, internal and external stakeholders.

Ideal Hospital Realisation and Maintenance Framework (IHRM-F)

Eight components- addressing core business and support systems

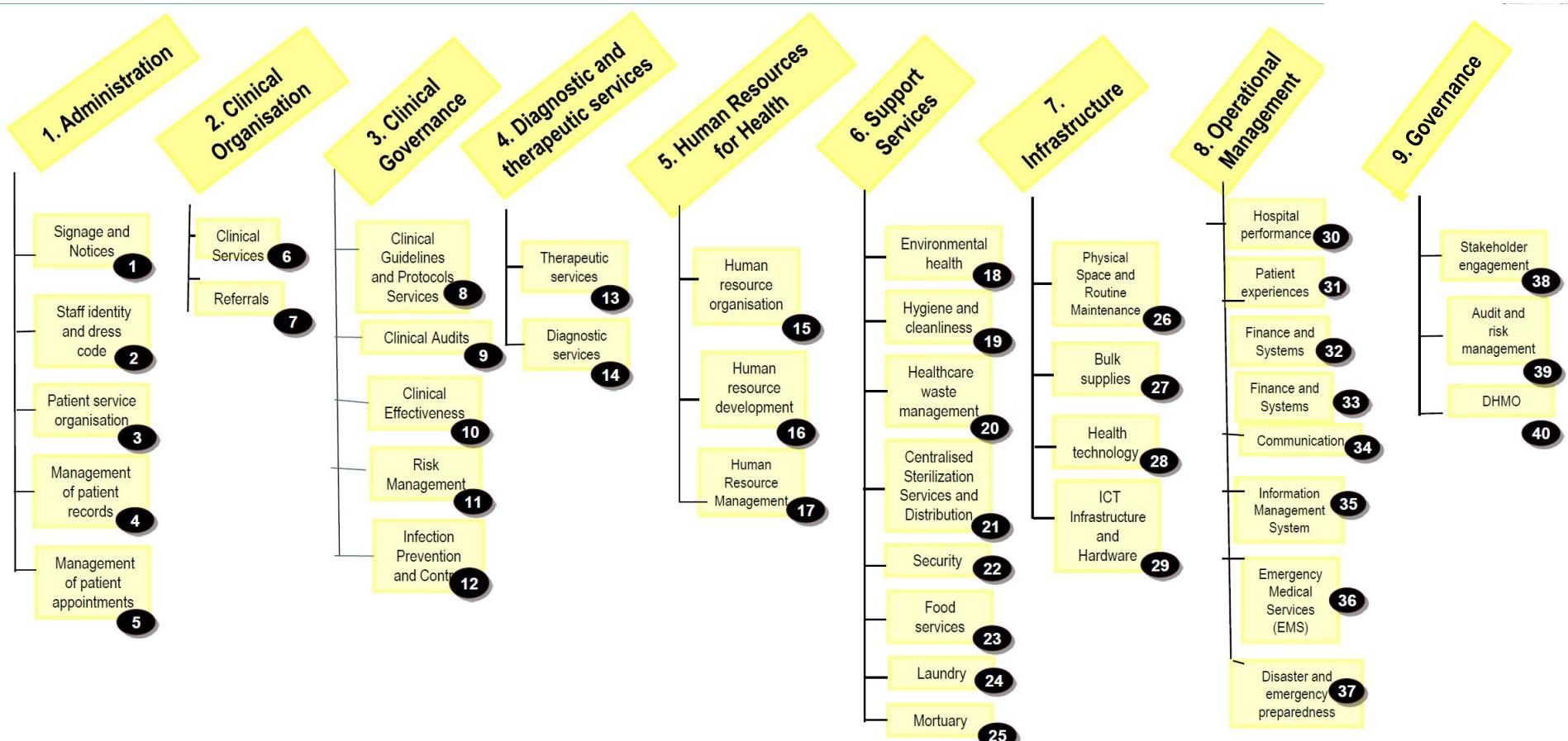


Ideal Hospital Components

Components and 40 Subcomponents and 305 Elements

- Administration
- Clinical Services
- Clinical Governance
- Diagnostic and therapeutic services
- Human Resources for Health
- Support Services
- Infrastructure
- Operational Management
- Governance

Hospital Framework- Components and



IHRM-F

Total of 305 Elements

Administration	33
Clinical Organisation	32
Clinical Governance	30
Diagnostic and therapeutic	31
Human Resources for Health	28
Support services	51
Infrastructure	30
Operational Management	52
Governance	15

Resources



Introduction to
understanding
“lean thinking” in
healthcare

Dr. Luke Feeney

Lean Thinking Module 1.1

Joel Cutcher-Gershenfeld

*Senior Research Scientist, MIT Sloan School of Management and
Executive Director, MIT Engineering Systems Learning Center*

Presentation for:

ESD.60 – Lean/Six Sigma Systems
MIT Leaders for Manufacturing Program (LFM)
Summer 2004



Six Sigma Process Improvement Methodology

Presented by Content Expert:
Beth Lanham, RN, BSN, MBA
Director, Six Sigma
Froedtert Hospital, Milwaukee, WI

This presentation is part of an on-line series, brought to you through a collaboration between the
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Resources

Easy Guide to Clinical Practice Improvement

GUIDE FOR HEALTHCARE PROFESSIONALS

QUALITY IMPROVEMENT

U. S. Department of Health and Human Services
Health Resources and Services Administration

Continuous Quality Improvement (CQI) Strategies to Optimize your Practice

Primer

Provided By:

The National Learning Consortium (NLC)

Resources

- Aqeel Ahmed Khan, TQM Coordinator / Specialist of Quality in Healthcare Management