

# Healthcare Quality Refresher Guide

## Abbreviations and Acronyms

TQM – Total Quality Management

STEEEP – Safe, timely, effective, efficient, equitable, and Patient-centered.

CAS – Complex adaptive system (many interconnected elements). Independent agents, distributed control. Perpetual innovation. Greater than the sum of its parts.

BSC – Balanced Score Card – Financial, customer, processes, learning/ growth (include strategic goals and objectives).

Value – Quality of care or service + outcome / cost

COQ – Cost of quality. Actual costs – costs without defects

FOCUS – PDCA (Process already in place)

F – Find a process to improve

O – Organize a team

C – Clarify current knowledge

U – Understand variables & variation

S – Select improvement

FADE – Focus on the problem, analyze, develop plan, execute.

CRAFE – Conclusions, recommendations, actions, follow up, evaluate.

PDSA – Plan, Do, Study (sometimes Check), and Act.

APIE – Assess, Plan, Implement, Evaluate.

RCA – Root Cause Analysis

FMEA – Failure Modes Effects Analysis

## People

Wolmack – Lean – value-creating work. Eliminate waste.

Shewhart – PDCA. 1920's – TQM – fix problems at process. Statistical process control (SPC). Control charts.

Juran – Trilogy – Plan – Control (Measure) – Improve. Pareto principle. Vital few. Freedom from deficiencies.

Crosby – Cost of poor quality. Zero defects.

Ishikawa – Cause and effect. Fishbone diagram. TQM 5 Ms – Manpower, Methods, Machines, Management, Materials. 5Ps – People, Provisions, Places, Procedures, Policy. 5 whys. Histogram, scatter plots, check sheet, quality circles, Just-in-time.

Donabedian – Structure (facility, measure) leads to process (activity) which leads to outcome (result). Causally related. Founder of QA.

Hoshin – Vision – objective (action) – long-term goals. Mission – vision – values.

Codman – 1917 – Systematic evaluation process to improve care.

Kirkpatrick – Four levels of evaluation. Reaction, learning, behavior, results.

Lewin – Driving forces and restraining forces. (Force Field). Unfreezing - move from comfort zone (intervene) and refreeze. Reduce restraining forces.

Palmer – 7 steps - Lead change, create shared need, shape vision, mobilize commitment, monitor progress, finish, anchor to systems and structure. First, assess readiness.

Demming – Front line knowledge, theory, variation, human behavior.

## Charts

Control chart – Time ordered data, statistically determined, control limits, uses MEAN (average). Detects PROCESS VARIATION, T-test, Bounds of common cause variation, Shewhart – 20-30 data points.

T-test – Parametric with 2 variables, MEAN (average), continuous numbers.

Continuous numbers – Measures, times, length, weight, speed, QUANTATIVE, money, variable, and fractions.

Mean – Average. Sensitive to extremes (measure of central tendency – mode, median, mean).

Run chart – Chi square, MEDIAN, detect trends, shifts, patterns.

Chi square – Discreet values (population or process), nonparametric

Discreet numbers – Whole numbers, attribute, counts, ordinal, (yes or no, male or female), percentage, nominal, categorical, QUALITATIVE, rank.

Median – The number in the middle of the range.

Pareto charts – Relative frequency or impact of data that can be categories – track biggest contributor to the problem. Bar graph. Histogram.

Run Chart – Series of point on one side of the median.

Trend – Five or six points all going up or down. Centerline does not matter. Count equal values once. A like value does not make or break a trend. Need 21 or more data points.

Shift - Eight (some say six or more) consecutive points all above or below the median (do not count any on the median).

p Value – Probability of obtaining observed difference if real difference is zero. P of .05 or less is significant. Not due to chance.

Probability – On a zero to 1 scale. 1 is VERY likely to occur.

Confidence Interval (CI) – with T-test and Chi-square – reflects the population. 95%

Standard deviation (SD) - Plus or minus 1 SD = 68.3%. Plus or minus 2 SD = 95.4%. Plus or minus 3 SD = 99.8% (Six Sigma).

### Quality-related Terms and Concepts:

Flow – Look at Patients, information, and materials.

Focus on opportunities – not problems!

How do we get to “WE” – not us, not me. (Tribal Leadership)

Value created vs. value consumed

Stability without stagnation.

Communication, Comprehension, and Competency

Performance X Importance = Impact

Motivation + Readiness = Acceptance

Process variation – Random = common cause, intrinsic.  
Special = Extrinsic, outliers. Do an RCA!

Quantification – Assigning numbers to objects.

Culture – The glue that holds people together – larger than themselves.

Within a Root Cause Analysis (RCA) – consider structure, environment, equipment, technology, process, people, leadership, and culture.

Patient Safety – Structure, environment, equipment / technology, process, people, leadership / culture:

Structure = facilities, supplies, policy.

Environment = Light, temperature, noise, storage.

Equipment / technology = Labels, instructions.

Process = Complexity, time, humans.

People = Competency, attitude, training.

Systems thinking – Interrelationships and problem solving tool, macro systems, shared vision, team learning.

Healthcare Systems – Horizontal – “all hospitals” --- across  
Vertical – SNF, Ambulatory care, Hospital, Rehabilitation

### Other Measurement Tools:

Scatter chart – Possible cause and effect.

Six sigma – Zero defects – business strategy. Define, measure, analyze, improve, control (DMAIC)

Range – This is an unstable measure.

ANOVA - Comparing 2 or more groups of averages or variances.

Flow diagram – Mapping a process.

Valid – Measures what it should – face construct.

Reliable – Consistently measures what it should. Repeat tests yield same result.  $\text{Step 1 \%} \times \text{Step 2 \%} \times \text{Step 3 \%}$  determines overall reliability rate.

Gage R&R - Precise, accurate, repeatable, reproducible, stable.

Type 1 (one) error – Deciding the groups are different when they really are not.

Type 11 (two) error – Not detecting a difference when there really is one.

Type of models – Organizational – Functions report to the same director.

Functional Coordinated – Specialty areas separate but get together frequently.

Functional Integrated – Staff is cross-trained.

Information - Check the reliability, validity, and accuracy.

Analysis – Systems, knowledge, behavior (Peer Review).

Standard – System to deliver value.

Peer Review – Should be consistent, defensible, balanced.

Lotus diagram – Expand thinking around a single topic.

Incidence – New cases within defined populations over established period of time.

Prevalence – Number of those with the disease at any one time (how many now)

Prevalence rate -  $\text{Number of people with the disease} / \text{population at risk}$ .

Sampling –

Probability sampling

- Random sample – Pull a name from a hat. All with an equal chance of being selected.
- Systematic sample – Every Nth case
- Stratified random – Break into sub populations first.
- Cluster – Divide into groups or clusters first.

Non-probability Sampling

- Convenience – Survey sent to members of an organization
- Snowball – Subjects suggest other subjects

Rate - Computed by dividing the number of cases or events in a given category by the total number of observations.  $\text{Falls this month} / \text{total patient days this month}$

Ratio – Similar measures in different populations but a like group. One number is divided by the other. Nurses : Patients = 1:6

Proportion – Part divided by whole.  $\text{Number of infections by this surgeon in December this year} / \text{Total number of surgeries by this surgeon in December this year}$ .

Morbidity – Rate or proportion of disease.  
 Number of MVA deaths this year / # of MVA this year

### Risk Management:

FMEA - Consider severity, occurrence, and detection

Risk management – is the cost of poor quality. Good care, avoidance of risk and harm control liability, prevent loss, protect assets. Protect against potentially compensable events.

Risk management – financing, control, avoidance, shift, prevention.

Prevention is proactive. Reduction is reactive.

Retention = funded internally

Transfer = funded externally

Control =    Avoid (don't offer the service)  
                   Shift (move the liability elsewhere)  
                   Prevent (eliminate or minimize to chance to mess up)

Utilization Management - Balance of cost, quality, and risk – appropriate, available, continuity, efficiency, and timely care.

Cost containment – at what point is quality compromised?

Case Management – Coordinated to provide appropriate and timely care in a vertical fashion (Advocacy, communication, resource management)

Resource Management – Analyze resource use in patient care processes. Reduce process variation to improve patient, information, and material flow.

Managed healthcare – Concerned about cost, quality, and access to care.

### Leadership:

Leaders – Develop the vision and align the subsystems

Managers – Perform the functions and keep on path

Leadership styles –

Autocratic (Bureaucratic) – Direct, controlling (Good in a crisis)

Participative – Seeks input from employees

Empowering – Share power

Diplomatic/consultative – “Sells”

Democratic – Asks for Group Decisions

Strategic Management – Framework, fit, copying, process, anticipate, facilitate, decision making, focus, what do you want to accomplish? what should we do, what can we do?

Strategic Plan – Organization / system wide look into the future. External, internal, issue analysis, SWOT, mission (purpose), vision (strives), values (how).

Strategic Initiative – improvement statement, objectives, measures

Vision and strategic goals –

Goals - Where are we going?

Strategy – How are we going to get there?

Balanced Scorecard – Are we there yet?

Governing Board – Mission, vision, values

We are here to do – mission

With the goal to become – vision

This is how we will do it – values

Ethics – Ethics is more than just obeying the law. A study of moral behaviors.

Functions – Looks at functions (such as patient flow) rather than departments

Culture – Leadership owns culture.

### Finance:

Clinical integration of patient services – produces the most cost savings, improvement in quality and patient satisfaction!

Finance management – measure efficiency.

Budget - Planning and controlling tool, evaluates performance, creates awareness. Bridges resources with strategic operations.

Operating budget – Day to day needs.

Zero budget – Starts at zero each year.

Capital budget – Major purchases – cost/benefit analysis

Analysis / Variance Report – compare predicted vs. actual revenues and expenditures.

### Analysis –

- Horizontal – like figures of same expense overtime.
- Trend – longer time to determine direction, size, speed.
- Vertical – Different items, same period of time.

Cost allocation – Per unit of service

Cost benefit analysis (CBA) – is it worthwhile – Quantitative

Cost effectiveness analysis (CEA) - Qualitative – other than money benefit.

Activity based costing (ABC) – Actual cost of resources used for the process or service.

### Information Management:

Quality Management Information – Carefully Defined, Collected, and Analyzed.

- Lots of data
- Patterns of care
- Indicators of problems
- Integrate multiple measures
- Monitor the progress
- Cost and quality

Decision Support – Compare competitors

- Levels of quality - defines it
- Allows rapid change
- Justifies Pay for Performance
- Develops outcome info for management plans
- Facilitates cross functional analysis
- Analysis and interpretation of data
- Improve quality, increase profit, and reduce cost, resource use

Information Systems – Clinical, Administrative, and Decision Support Information:

- Clinical – ABX, chronic illness, preventative care
- Administrative – Payroll, finance, budget, HR, email, schedules
- Decision Support – Strategic planning, resource allocation, Performance Improvement, Evidence based Practice

Data = Information, knowledge, decisions

- Indexes – Master Patient Index (MPI) – Permanent, topical
- Physician Index – 10 years
- Disease Index – 10 years
- Surgery Index



Registers – Permanent, chronological. Patient deaths, births, surgery log, ED, cancer, device implants

Goals of Health Information Technology (HIT) – Inform clinical practice, interconnect clinicians, personalize care, improve population health.

EMR – Electronic Medical Record - Can be read at one site.

EHR – Electronic Health Record – Can be read nationally.

Personal Health Record – Opened from multiple sites and controlled by on person.

### Promoting Change:

Quality Improvement begins with communication of information – human factors, statistical factors, organizational factors.

Teams – form, storm, norm, perform

Motivation – direction, effort, persistence, need, expectancy, equity, procedural

Change – urgency, vision/ strategy, communicate the change, empowering action, short term wins, consolidating gains, anchoring.

Dimensions of care – Appropriate, available, competent, continuity, effectiveness, efficacy (potential and capacity), efficiency, prevention, respect, safe, timely.

Emphasis on how and result – (Process and outcome) = System, process, policy, relationship, communication

Change – Four steps – Strategic, political, operational, cultural.

Motivation and readiness must come before change is accepted. Driving forces must be stronger than restraining forces. More impact is to be achieved by removing restraining forces rather than adding driving forces.

Establish a sense of urgency, create a coalition, vision, and strategy, communicate vision, generate immediate gains, consolidate gains, and anchor to culture.