

KFHU

مستشفى الملك فهد الجامعي
King Fahd Hospital of the University

جامعة الدمام
UNIVERSITY OF DAMMAM

Performance Measurement Unit



هيئة تقويم التعليم
Education Evaluation Commission



Directorate of Quality and Safety

If you can't
MEASURE it
you can't **MANAGE** it.



Introduction

Performance Measurement Unit

- The Performance Measurement Unit is one of Directorate of Quality and Safety.
- Collaborating together in Implementing quality improvement and patient safety activities to support and forward the accomplishment of hospital-wide strategic goals and objectives through:
 - ▶ Measuring the Hospital-wide and Departmental Key Performance Indicators.
 - ▶ Coordinating and facilitate Performance Improvement Projects with departments that identify opportunity for improvement in their area.
 - ▶ Education on Performance Improvement methodologies to hospital educating hospital staff on.
 - ▶ Implementing actions necessary for improving performance.
- Monitoring close records setting a corrective action.

GLOSSARY

Quality

- Proper performance (according to standards) of interventions that are known to be safe, affordable to the society in question, and have the ability to produce an impact on mortality, morbidity, disability, and malnutrition"-- WHO 1988
- Quality is about meeting the needs and expectations of customers
- DOING THE RIGHT THING, RIGHT, THE FIRST TIME, "DOING IT BETTER THE NEXT TIME

Quality Improvement

A systematic process for closing the gap between actual performance and the desirable outcome. [Drs. Ruelas and Frenk](#)

Key Performance Indicators (KPI)

A set of quantifiable measures that the organization uses to measure the organization's performance over time. It is also called Performance Measures.

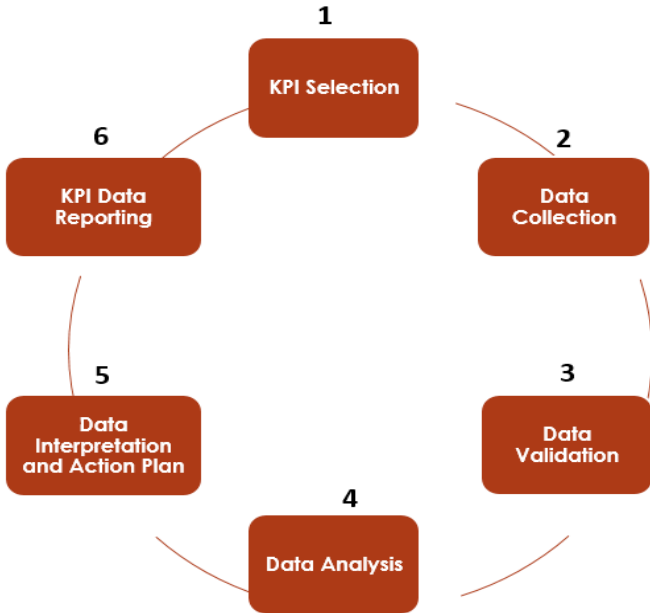
Benchmarking

Learning about the best practices in other hospitals for the purpose of using them in your own organization.

Performance Improvement Project:

It is a concentrated effort on a particular problem in one area of the facility. It will be initiated when measurement data reveal a gap between expected and actual performance.

KEY PERFORMANCE INDICATORS ROAD MAP



1. KPI Selection

A.Criteria for KPI Selection:

1. High risk to staff or patients
2. High Volume
3. Problem prone
4. High cost
5. Related to International Patient Safety Goals
6. Relevant with KFHU mission, vision and strategic goals
7. Covers one or more of quality dimensions including:
 - a. Appropriateness
 - b. Availability
 - c. Continuity
 - d. Availability
 - e. Effectiveness
 - f. Efficiency
 - g. Safety
 - h. Timeliness.
8. Meeting patient or staff needs and expectations
9. Covers structure, process and outcome
10. Easy to Measure

B. Defining the KPI

For KPIs to be effective, it needs to have clear definition to ensure that the data collected is of high quality that is, consistent, and reliable.

The KPI definition form should include:

KPI name - Performance Measure Description - Data source - Type of measure (structure/ process/ outcome) - Dimension of Performance – Data collection method - Frequency of data collection – Rationale - Operational definition (numerator and denominator/ number/ average/ ratio.....) - Benchmarking type (internal/external).

2. KPI Data Collection

Process of gathering and measuring information on variables of interest.

After selecting and approving the KPI, the Performance Measurement Unit of DQS will meet with the concerned department to develop methods and tools for data collection. Data collection plan includes the following elements:

- Person responsible
- Source of data collection (Automated/ Manual)
- Tools for data collection (e.g. checklist, survey or questionnaires, OVRs, patient records, log book, Statistics report, computer reports ,tracer activity reports, and Infection control reports)
 - Data collection method (retrospective /concurrent)
 - Frequency of data collection (Weekly, Monthly, Quarterly, Annually)
 - Data sampling if required: this include sample size calculation;
 - For a population of fewer than 30 cases → 100% of available cases
 - For a population of 30 to 100 cases → 30 cases
 - For a population of 101 to 500 cases → 50 cases
 - For a population greater than 500 cases → 70 cases

3. KPI Data Validation

The data validation process will be done according to defined criteria to determine whether the information gathered during the process of data collection is valid, reliable, and accurate. Data validation is an important tool for understanding the quality of the data and for establishing the level of confidence that decision makers can have in the data. Please refer to Data Validation Policy (ADM-GEN 01-100).

Data validation is most important when:

- a. A new measure is implemented;
- b. Data will be made public on the hospital's website or in other ways;
- c. A change has been made to an existing measure;
- d. The data resulting from an existing measure have changed in an unexplainable way;
- e. The data source has changed;
- f. The subject of the data collection has changed.

Procedure of data validation:

1. A second person will re-abstract data.
2. Determine a statistically valid sample size of data.
3. Compare the original data with re-abstracted data
4. Calculating accuracy:

$$\text{Accuracy Rate} = \frac{\text{Percentage of Re-abstracted}}{\text{Percentage of original}} \times 100$$

5. A **90%** accuracy level is a good benchmark.

4. KPI data analysis

Collected data is reported monthly and analyzed quarterly. Data analysis frequency is identified and decided based on nature of the process being measured

The process of data analysis is as follows:

- a. Identify the Data analysis strategy that includes;
 - Comparing the performance against a pre-planned target.
 - Studying data over time to identify trends as well as special cause variations
 - Benchmarking data with best practice or with similar organizations either national or international, or from the stability analysis for previous performance results.
- b. Identify data analysis methodologies These include but not limited to:
 - Descriptive analysis
 - Frequency
 - Central tendency (Mean/Median/Mode)
 - Distribution (e.g. Standard deviation SD)
 - Statistical process control(control and run charts)
 - Regression
 - Correlations
- c. Performance Improvement Tools and graphs These include but not limited to
 - Tables
 - Pie chart/Bar chart
 - Histogram
 - Control chart/run chart
 - Pareto diagram
 - Flow chart
 - Fish bone diagram
 - Scatter diagram
 - Box plot

5. KPI Data Interpretation and action plan

- KPI performance is compared with a benchmark or pre-defined target for any trends or deviations.
- Analyzed results and interpretation are communicated through Performance Measure Quarterly reports prepared by Performance Measure Unit with the KPI Data owners, and Quality and Patient Safety Committee through regular committee meetings.
- Comments, conclusions and recommendations are sent to the Hospital Executive Committee for action plan, and to improve and sustain performance.

6.KPI Data Reporting

Frequency of reporting and reporting time frame for Performance Measurement Unit reports are summarized in the following table.

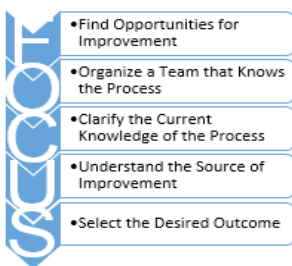
Report	Frequency	Time
PM Unit Q1 Report	Quarterly	April 25
PM Unit Q2 Report	Quarterly	July 25
PM Unit Q3 Report	Quarterly	October 25
PM Unit Q4 Report	Quarterly	January 25

IDENTIFICATION OF IMPROVEMENT OPPORTUNITIES:

When opportunities for improving performance are identified, a systematic approach is used to redesign the process involved, or to design a new process. This process should be based on data.

The Performance Measurement Unit of Directorate of Quality and Safety will collaborate with the department or service to conduct a Performance Improvement Project (PIP) using FOCUS PDCA quality improvement Methodology, which is approved by Hospital Leaders.

1. FOCUS PDCA Quality Improvement Methodology:



F = Find a process to improve

- Define the process, identify the process
- Who will benefit from the improvement

O = Organize a team that knows the process

- Organize a team who understands the process
- The team should consist of people directly involved in the process being improved.
- The size of the team is usually 5 to 9

C = Clarify current knowledge of the process

- Clarify the current process related to the problem, collect data regarding the process using a flowchart and brainstorm and determine where the defects are.
- Analyze to distinguish between expected and actual performance

U = Understand variable and causes of variation

- Identify all possible causes and variation, and developing solutions to achieve desired outcomes
- Use a cause and effect diagram (Fish bone Diagram) to know why the process is not working effectively.

S= Select the process improvement

- Select the most appropriate goal
- It should meet the department/KFHU vision, mission
- The goal should be SMART;
 - » Specific
 - » Measurable
 - » Attainable
 - » Realistic

P= Plan for the improvement

- Refer to the Cause and Effect Diagram to determine problems that need to be addressed
- Develop an action plan
 - » Make everyone responsible
 - » Make the project timely
 - » Meet the goals of the project
- Organize a method of data collection

D = Do the Improvement

- Implement the plan

C = Check the improvement

- Gather data and compare before and after improvement date.

A = Act on the results

- Do whatever is necessary to maintain the improvement
- Not successful, abandon the plan and rework the cycle

PERFORMANCE

EXCELLENT

GOOD

AVERAGE

POOR



2. Six Sigma:

It is a systematic, data-driven improvement approach whose goal is the near-elimination of defects from every product, process, and transaction.

Six Sigma originated in the manufacturing sector at Motorola and was refined by General Electric, which has a healthcare consulting division.

Six Sigma is founded on Shewhart's statistical process control philosophy and a field of statistics known as process capability studies.

Sigma (α) is a letter in the Greek alphabet used denote variability.

Reducing performance variability is the essence of Six Sigma. The goal of a Six Sigma project is to create processes that operate within Six Sigma quality, meaning the defect rate is less than 3.4 per 1 million opportunities. This rate translates into a process that is 99.99966 percent defect free.

Six Sigma projects follow the five steps of DMAIC methodology:

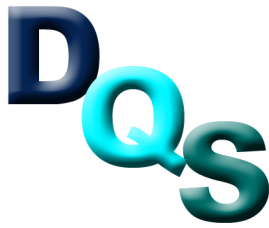
- Define the problem
- Measure key aspects of the process
- Analyze the data
- Improve the system
- Control and sustain the improvement

Six Sigma Performance Improvement Methodology is newly implemented in King Fahd Hospital of the University.

STOP MONITORING OF KPI:

Hospital leaders represented by Quality and Patient Safety Committee members will decide to stop monitoring the hospital KPIs based on:

- a. Change in the strategic direction or in the scope of service to the extent that this KPI is no longer adding value
- b. Sustained improvement and target achievement proofed statistically to be a common cause variation at the new performance level rather than being a transient improvement (special cause variation)



Performance Measurement Unit