المملكة العربية السعودية

وزارة التعليم

جامعة نجران
NAJRAN UNIVERSITY

KPIs Guide

College of Applied Medical Sciences
Clinical laboratory Sciences Program

The Clinical laboratory Sciences Department board approved the key performance indicators guide (no 23/44)

Quality Unit

جامعة نجران
NAJRAN UNIVERSITY

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Introduction

This booklet contains the policies of prepare KPIs, including KPI description, the mechanism of measuring the KPIs, time of measurement and the responsibility of assessment in the clinical laboratory Sciences Program (RSP) in Applied Medical Sciences College (AMSC). In addition, the policy in this booklet ensures that the program management approves key performance indicators that accurately measure the program performance and coordinates to provide regular data on them. Furthermore, the booklet show how the programs analyze the evaluation data annually (selecting performance indicators and benchmarking data, student progress, program completion rates, student evaluations of the program, courses and services, views of graduates and employers); and results are used in planning, development, and decision-making processes.

Figure 1 illustrates the AMSC Quality System framework that manages quality assurance activities. It is clear from the figure that the inputs, processes, outputs and outcomes are assessed and evaluated regularly in order to improve the quality of the programs. For more information please visit https://amsc.nu.edu.sa/357

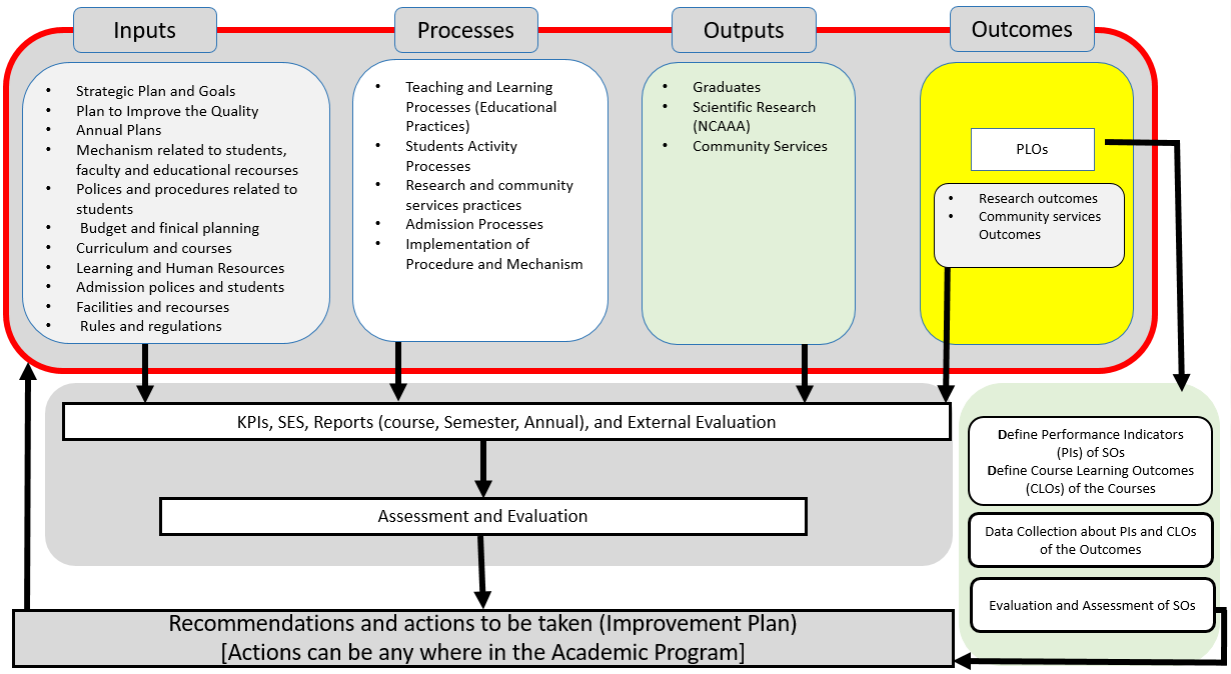


Fig. 1. Quality System Framework

Key Performance Indicators (KPIs):

KPIs Description

Performance indicators are just tools or measurements that the program uses to measure its performance towards achieving its goals and reaching the expected or desired results.

Performance measurement ethics: precision, honesty, confidentiality and transparency.

Table 1. List of the 17 KPIs provided by NCAAA.

KPI code	Key Performance Indicators
KPI-P-01	Percentage of achieved indicators of the program operational plan objectives
KPI-P-02	Evaluation of quality of learning experience in the program
KPI-P-03	Students' evaluation of the quality of the courses
KPI-P-04	Completion rate
KPI-P-05	First-year students retention rate
KPI-P-06	Students' performance in the professional and/or national examinations
KPI-P-07	Graduates' employability and enrolment in postgraduate programs
KPI-P-08	Average number of students in the class
KPI-P-09	Employers' evaluation of the program graduates proficiency
KPI-P-10	Students' satisfaction with the offered services
KPI-P-11	Ratio of students to teaching staff
KPI-P-12	Percentage of teaching staff distribution
KPI-P-13	Proportion of teaching staff leaving the program
KPI-P-14	Percentage of publications of faculty members
KPI-P-15	Rate of published research per faculty member
KPI-P-16	Citations rate in refereed journals per faculty member
KPI-P-17	Satisfaction of beneficiaries with the learning resources

Performance indicators are important tools for assessing the quality of Academic Programs and monitoring their performance. They contribute to continuous development processes and decision-making support. Annually, the RSP complete the Annual report of the performance indicators and close the quality circle. The program required to use the 17 KPIs announced by National Center for Academic Accreditation and Evaluation (NCAAA). Besides these KPIs, the RSP defined its own KPIs that approved by the department and college console. The 17 indicators are the minimum

to be periodically measured.

RSP measure the KPIs with benchmarking using the appropriate tools, such as (Surveys, Statistical data) according to the nature and objective of each indicator, as well as determining the following levels for each indicator:

- Actual performance
- Targeted performance level
- Internal reference (Internal benchmark)
- External reference (External benchmark)
- New target performance level

A list of the 17 KPIs is shown in Table 1, whereas, Table 2 descried each of these KPIs. Furthermore, additional two KPIs were selected and approved and added to the Table 2 (see Table 3). These KPIs includes: (1) Percentage of faculty member's participation in community service and (2) Percentage of faculty members participating in professional development activities.
The management of these indicators depends on sharing the KPIs data using Google Sheets with the Quality and Development Unit in the College or with any other suitable method provided by the program. The college/program can review the results of KPs directly and discuss these indicators. As a result of discussions, sometimes these indicators show a lot of errors, and the values of these indicators are corrected accordingly. The final report of the indicators and the closing of the quality cycle includes an explanation of the indicators that have been closed and that have not been closed, in addition to the indicators whose circuit is closing. Where the process of closing the quality cycle depends on ensuring the stability of the performance indicator and achieving the target value.

Fig. 2. SMART components of KPIs.

Methodology for selecting performance indicators

To ensure the effectiveness of performance indicators, it is required that they coincide with the goals of the executive plan, whether they are strategic goals or an operational plan for the program. As well as related procedures, processes and initiatives to ensure the effectiveness of these indicators. In addition, to ensure that all KPIs include the SMART components as shown in

Table 2. Description of the 17 KPIs provided by NCAAA

KPI code	Description	Frequency
KPI-P-01	Percentage of performance indicators of the operational plan objectives of the program that achieved the targeted annual level to the total number of indicators targeted for these objectives in the same year	Annually
KPI-P-02	Average of the overall rating of final year students for the quality of learning experience in the program on a five-point scale in an annual survey	Semester
KPI-P-03	Average students overall rating for the quality of courses on a five-point scale in an annual survey	Semester
KPI-P-04	The proportion of undergraduate students who completed the program in minimum time in each cohort	Semester
KPI-P-05	Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year	Semester
KPI-P-06	Percentage of students or graduates who were successful in the professional and/or national examinations, or their score average and median (if any)	Semester
KPI-P-07-a.	Percentage of graduates from the program who within a year of graduation were: a. employed b. enrolled in postgraduate programs during the first year of their graduation to the total number of graduates in the same year	Annually
KPI-P-07-b.		
KPI-P-08	The average number of students per class (in each teaching session/activity: lecture, small group, tutorial, laboratory or clinical session)	Semester
KPI-P-09	Average of the overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey	Annually
KPI-P-10	Average of students' satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, academic advising, ...) on a five-point scale in an annual survey	Annually
KPI-P-11	The ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program	Semester
KPI-P-12-a.	Percentage of teaching staff distribution based on: a. Gender b. Branches c. Academic Ranking	Annually
KPI-P-12-b.		
KPI-P-12-c.		
KPI-P-13	The proportion of teaching staff leaving the program annually for reasons other than age retirement to the total number of teaching staff.	Annually
KPI-P-14	Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program	Annually
KPI-P-15	The average number of refereed and/or published research per each faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year)	Annually
KPI-P-16	The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published)	Annually
KPI-P-17	Average of beneficiaries' satisfaction rate with the adequacy and diversity of learning resources (references, journals, databases… etc.) on a five-point scale in an annual survey.	Annually

Fig. 2. If the KPIs include the SMART components, this means it will be:

- Specific
- Measurable
- Achievable
- Realistic
- Timely

Table 3. Description of the additional 2 KPIs approved by RSP board

KPI code	Key Performance Indicators	Description	Frequency
KPI-RAD-1	Percentage of faculty members participation in community service.	Percentage of full-time faculty members who participation in community service during the year to total faculty members in the program	Annually
KPI-RAD-2	Percentage of faculty members participating in professional development activities.	Percentage of full-time faculty members who participating in professional development activities during the year to total faculty members in the program	Annually

The RSP (represented by the quality and development coordinator) adopted a scientific methodology in selecting performance indicators based on the orientations of the college and the university and their strategic or operational goals to ensure the presence of harmony, compatibility between the college's orientations and strategic goals and with the indicators established by the program.

KPIs measurement mechanism (see Fig. 3)

1. *Identification and determination*: identifying and determining the performance to be measure.
2. *Measure*: Measure the performance using a measurement tool, and then obtain data.
3. Analysis: Analyze the data collected from the measuring tool application that relates to the indicator.
4. Improvement: In light of the statistical analysis of the data, a report is written that includes strengths to enhance it, and weaknesses, to develop plans for improvement or correction to improve it and address this weakness.

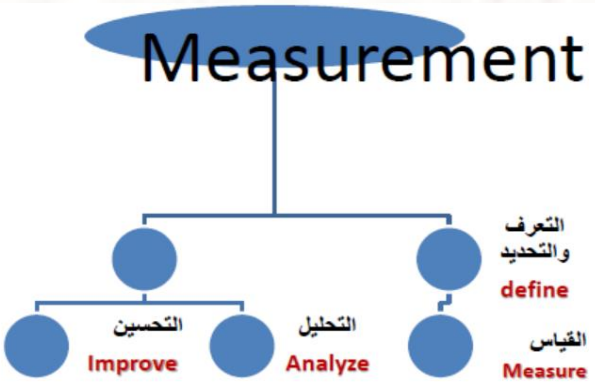


Fig. 3. Measurement process steps.

Reports on performance indicators should not contain numbers **only**, but also an explanation, and identification of strengths to enhance, and weaknesses points for improvement, in addition to the recommendations.

Types of performance indicators

All types of performance indicators shown in Fig. 4 either are quantitative (various statistics and numerical data such as student-faculty ratio) or qualitative indicators. The qualitative indicators are related to answering the questions of how and why, such as measuring the satisfaction of the beneficiaries, what is the degree of satisfaction? and why is it low? In addition, the qualitative indicators are related to efficiency, effectiveness and what is related to what is called leading-lagging.

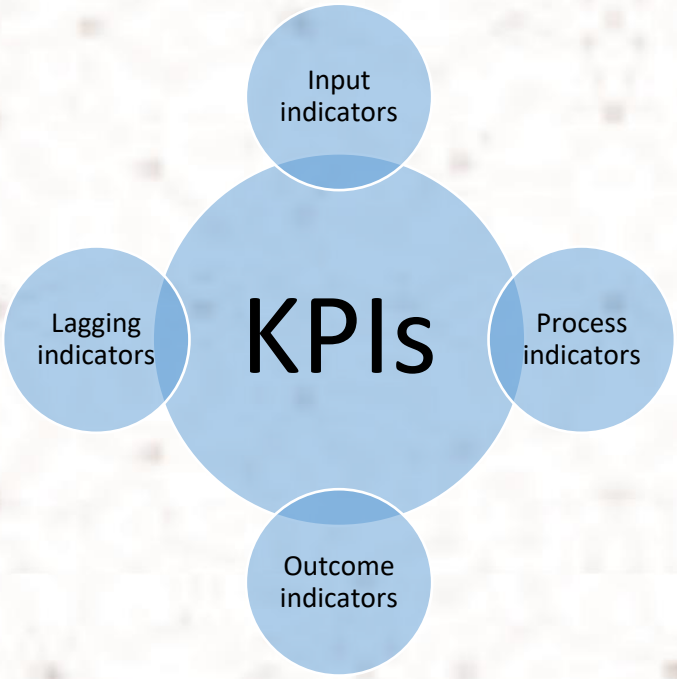


Fig. 4. Types of performance indicators.

The importance of performance indicators

At the national level

- Keeping up with global developments and leading experiences
- Ensure transparency and accountability
- Monitoring the quality of educational programs
- Stirring up local competition between educational programs
- Stirring up regional and international rivalries
- Planning, monitoring and correcting the course of action

At the RSP level

- Assists in the process of evaluating program performance in the sense of measuring what has been achieved in terms of results during a certain period compared to what has been planned in terms of strategic or operational - implementation goals.
- It helps to monitor and follow up performance, and monitor the change in performance, by identifying performance deviations, which enables decision-makers, head of department and deans of faculties, to develop corrective or improvement plans to address these deviations and deal with them.
- Performance indicators provide us with information obtained either through a data form or through a questionnaire of what is applied, interviews or field visits about the performance of the program.
- Facilitating the programmatic evaluation processes and levels of improvement.
- Assist in ensuring program quality and academic accreditation for academic programs.

- Assist in providing information related to academic programs to accrediting bodies.
- Stirring up competition between programs in the event of an exchange of the results of indicators measurements, which helps in creating a competitive environment conducive to effective performance.
- Ensuring transparency, accountability and issue in light of the achievements monitored or measured and activities and projects.
- Provide information to the state (Ministry of Education) for transparency and accountability.

At the individual level

- Focusing on the professional level of individuals (faculty or administrators and students).
- Determine the roles of individuals in the operational plan in the program.
- Promote successful practices and treatment failures.
- Motivating individuals and working to satisfy them, which will positively affect the overall performance.
- Determining the necessary procedures for development and change, and assigning tasks.
- Encouraging innovation, innovation and performance excellence for individuals.
- Measuring and diagnosing the activation of modern educational and technical aids in a manner that benefits students.
- Diagnosis of the student behaviour (academic advising)
- Measuring the level of achievement of learning outcomes.
- Measuring the effectiveness of educational activities.
- Notify individuals of the accurate development of the tasks assigned to them.

Benchmarking

It is one of the tools for continuous improvement and development, and it includes making comparisons between our programs and those in other similar universities, to answer several questions:

- Where are we in relation to other program universities?
- What are the areas of improvement desired and required for making comparisons between us and the other?
- In what field can we achieve distinction compared to other programs? Or, more precisely, in any field, we are already outperforming compared to other programs, and we need strengthening that area and maintaining the continuity of its improvement?
- In what fields do other programs excel us?

Types of Benchmarking

1. Internal Benchmarking

Based on NCAAA definition, internal benchmark refer to benchmarks that are based on information from inside the program or institution. Internal benchmarks include target or finding benchmark data results from previous years. For example, a previous year's benchmark for "student to teacher ratio" could have been 15 students to 1 teacher and the finding benchmark for that year might have been 28 students per 1 teacher.

Or internal benchmarking is a process in which an educational program makes a comparison with a similar academic program within the university in light of certain criteria in an attempt to identify best practices. The required information is collected by measuring tools specified by the program (quantitative, qualitative) under the guidelines previously mentioned in this booklet.

2. External Benchmarking

It is a process in which the program compares its performance with a similar program in another university in light of certain criteria, and the required information is collected with specific measuring tools (quantitative, qualitative).

Criteria for choosing Internal & external Benchmark

- Similarities in the educational system (teaching and learning, scientific research, and community service)
- The similarity in mission and goals.
- The quality of indicators and the method of their measurement.
- The ability to provide data.
- Cultural, social and economic conditions
- Geographical dimension and community culture
- Ranking of the university to which the program belongs according to local and Arab classifications.

Methodology of setting the KPI Targets

Without targets, the KPIs are worthless. To set the right targets for KPIs the program implements the following steps:

1. The Measurement and Evaluation Unit monitors the indicators through three consecutive measurements.
2. Collecting information on the performance indicator from peer programs at the internal and regional level (internal and external benchmarks).
3. In-depth analysis of the performance indicator for the past two years (see form below), in addition to the previous year's plan for improvement or development and the extent to which they were completed.

KPI #	KPI	KPI Target Benchmark	KPI Actual Benchmark	KPI Internal Benchmarks[1]	KPI Internal Benchmarks[2]	KPI External Benchmarks[3]	Monitoring for the past two years		KPI New Target Benchmark

4. Review the formulation of the proposed improvement or development plans for the current year and the expected performance indicator.

Targets should be realistic and achievable; accordingly, the program should consider the following recommendations that help to set the right targets:

- Detect trends and patterns: A look at the existing data you have that gives you performance history is a good place to spot trends and patterns that can be extrapolated and used to define a target.
- Account for seasonal variations: In some cases, seasons will impact performance. If you create a target that's only ever possible for three months of the year, your team will not take it seriously.
- Take national targets, best practice benchmarks into account: National targets or the best practices of other programs in and outside your university can help you determine a stretch target that is achievable but that pushes your team.
- Take time lags into account: It will sometimes take time for leading indicators to translate into lagging indicators.

Follow these six steps to ensure the program KPIs will actually drive real results.

- Review program objectives
- Analyze current performance
- Identify the strengths and weaknesses of the program
- Set short and long term KPI targets
- Review targets with your team
- Review progress and readjust

Managing performance indicators

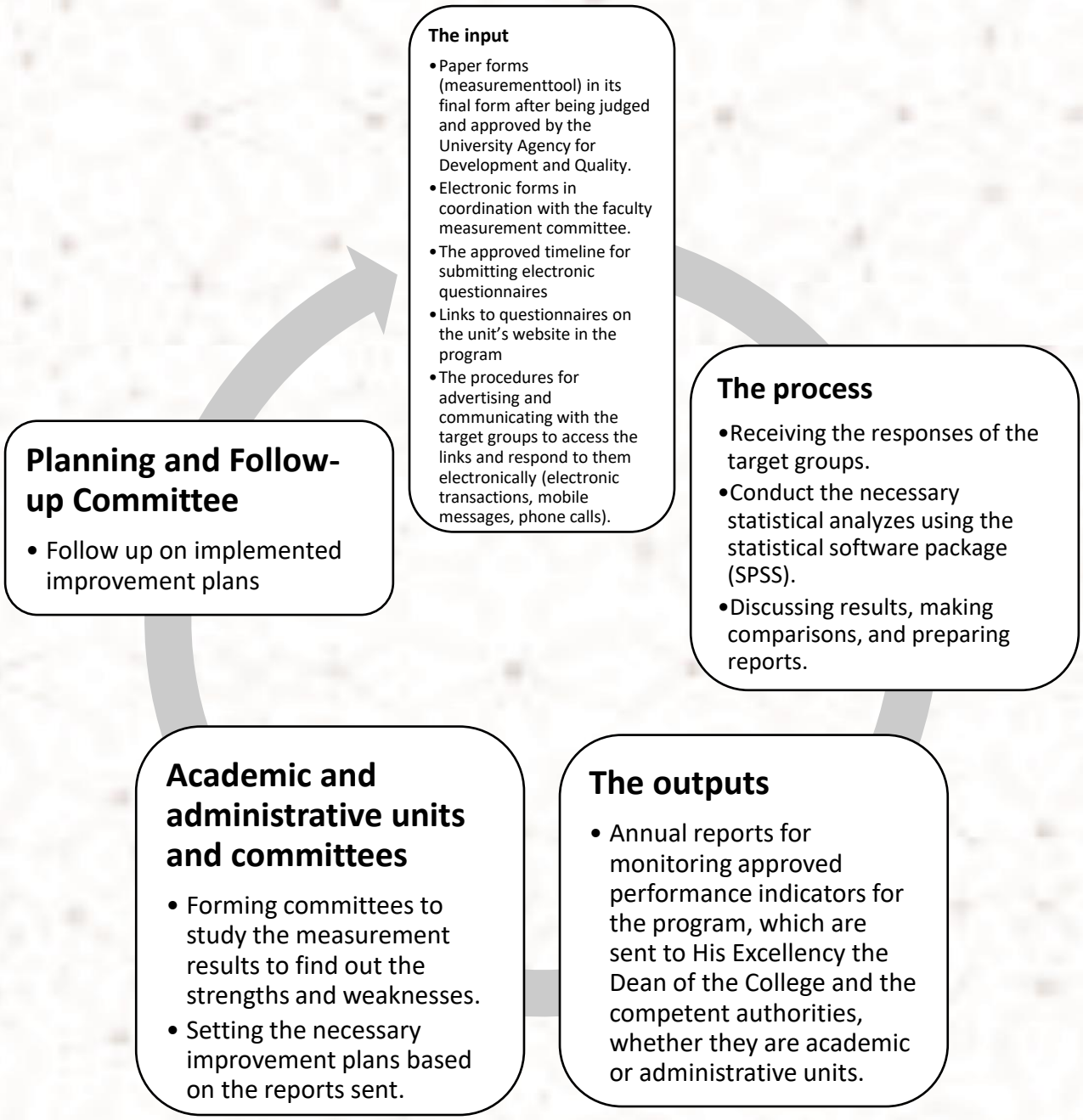
Indicators documentation requirements

- Determining the identity of the indicator (to which criteria the indicator belongs and what goals does it achieve?)
- Name of the indicator
- Target value
- Measurement tool
- Measurement equation
- level of measurement
- Data source
- The measuring body
- Measurement cycle (measurement period)

Performance indicators and data collection mechanisms

1. Defining and formulating performance indicators.
2. Description of the performance indicator
3. Define the target group
4. Determine the source of the necessary data
5. Determine the target value
6. Determine the measurement method
7. Applied the indicator measurement tool
8. Analyze the benchmark results
9. Writing the report
10. Submit monitoring reports to the concerned authorities to the faculty development and quality unit for study
11. Submit monitoring reports to the department council to study them and build appropriate improvement plans.
12. Keep reports in paper and electronic form and archive them for easy access to information.

KPIs quality cycle



Writing the KPIs report

The report should not include only figures, statistics or tables that the others may not understand and not help them make decisions. However, it must include a presentation of the results, a discussion of data, a statement of points of strength and weakness, and a statement of the causes of weakness or defect, which helps in make decisions and develop improvement plans.
Presenting the report to the Development and Quality Unit, then the Department Scientific Board, then the College Board, and discussing the results contained it at the program level and the college level and comparing them with the target values in light of the previous results for the same indicator to determine the areas of distinction to support, and the weaknesses that require studying the root causes for them and what follows this in taking measures corrective or improvement plans.

Common mistakes when choosing indicators

Most of these errors result in the case of relying on two methods of selecting performance indicators, namely Off-The-Shelf or Brain Storming. These errors can be summarized in the following points:

- Coming up with indicators that are not commensurate with the operational goals and objectives of the program
- Coming up with indicators that are not related to the procedures, practices and projects of the college's executive plan.

What happens if these errors are not avoided?

- A temporary, misleading, false or no improvement in performance.
- A waste of resources and a waste of time and effort.

Common mistakes when using performance indicators

- Reliance on unevaluated questionnaires.
- Failure to standardize the source of the data.
- Relying on inappropriate mathematical formulas.
- A large number of indicators, and lack of focus on what is important indicators that have to do with the success factors of the program.
- Determine inflated target values.
- Writing reports that only include numbers and statistics without explaining these numbers, and without specifying the strengths that need strengthening, and the weaknesses that need improvement.

Factors ensuring the success of the performance indicators system in light of a clear methodology and an integrated operational framework including the following:

1) Having clear and specific goals, which is called SMART,
2) Linking objectives to procedures, practices and projects,

3) Presence of a trained team, aware of the strategic objectives and the procedures associated with achieving those goals, and based on the following tasks:

- works to define the important performance indicators through which we can monitor and follow up the achievement of goals and the associated operational procedures and initiatives related to the main factors for the success of the program.
- providing opportunities for program members to participate in all units, whether academic or administrative units, through achieving good communication with them.

4) Using indicators, applying them and analyzing them, and then obtaining reports that help in making decisions so that the report includes not only numbers and statistics but also results, discussion and coming up with recommendations on strengths and weaknesses,
5) Create improvement plans that address weaknesses and any deviations in performance or from the target,
6) Work as much as possible to automate all procedures for achieving goals and (7) documentation of all measures or procedures that have been taken.

Calculation and responsibility of assessment KPIs

The KPIs management carried out by Quality and Development Coordinator in the program (QDCP). The head of the Measurement and Evaluation Unit addresses all the bodies responsible for implementation, then collects the data and prepares a detailed report according to the approved models and submits it to the competent authorities (see Table 4). Evidences are mandatory to be provided for each KPI.

Table 4. Calculation and responsibility of the 19 KPIs

KPI code	Key Performance Indicators	Responsibility	Calculation method	Time of measurement
KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	Head of the RSP	No. of achieved indicators / total No. of indicators X 100	End of Gregorian year
KPI-P-02	Evaluation of quality of learning experience in the program	Member of the Program Measurement and Evaluation Committee	The overall mean of all respondents for evaluation of the satisfaction on the five unit-scale.	Last 4 weeks in the academic **semester**
KPI-P-03	Students' evaluation of the quality of the courses	Member of the Program Measurement and Evaluation Committee	The overall mean of all respondents for evaluation of the satisfaction on the five unit-scale.	Last 4 weeks in the academic **semester**

KPI code	Key Performance Indicators	Responsibility	Calculation method	Time of measurement
KPI-P-04	Completion rate	Academic Registrar in the RSP	No. of students who complete the program in minimum time / Total no. of the students entering the program in the same cohort X 100.	Last 4 weeks in the academic **semester**
KPI-P-05	First-year students retention rate	Academic Registrar in the RSP	No. of students entering program who successfully complete first year / Total no. of the new students entering program X 100	Last 4 weeks in the academic **semester**
KPI-P-06	Students' performance in the professional and/or national examinations	Head of the RSP	No. of graduates who succeed in SCFHS exam / total No. of graduates who examined SCFHS exam X 100.	Last 4 weeks in the academic **semester**
KPI-P-07.a	Graduates' employability and enrolment in postgraduate programs. a. employed	Member of the Alumni Committee	No. of graduates who employed/ total No. of graduates' X 100	End of Gregorian **year**
KPI-P-07.b	Graduates' employability and enrolment in postgraduate programs. b. enrolled in postgraduate programs	Member of the Alumni Committee	No. of graduates who enrolled in postgraduate programs during the first year of their graduation / total No. of graduates' X 100	End of Gregorian **year**
KPI-P-08	Average number of students in the class	Academic Registrar in the RSP	Average No. of students in each lecture	Last 4 weeks in the academic **semester**
KPI-P-09	Employers' evaluation of the program graduates proficiency	Member of the Alumni Committee	The overall mean of all respondents for evaluation of the satisfaction on the five unit-scale.	End of Gregorian **year**
KPI-P-10	Students' satisfaction with the offered services	Member of the Program	The overall mean of all respondents	End of Gregorian **year**

KPI code	Key Performance Indicators	Responsibility	Calculation method	Time of measurement
		Measurement and Evaluation Committee	for evaluation of the satisfaction on the five unit-scale.	
KPI-P-11	Ratio of students to teaching staff	RSP coordinator	The number of students as numerator and the number of faculty members as denominator	Last 4 weeks in the academic **semester**
KPI-P-12.a	Percentage of teaching staff distribution, Gender	RSP coordinator	No. of teaching staff per gender in each section / total No. of teaching staff per same gender.	End of Gregorian **year**
KPI-P-12.b	Percentage of teaching staff distribution, Branches	N/A	N/A	N/A
KPI-P-12.c	Percentage of teaching staff distribution, Academic Ranking	RSP coordinator	No. of teaching staff holding PhD / total No. of teaching staff	End of Gregorian **year**
KPI-P-13	Proportion of teaching staff leaving the program	RSP coordinator	No. of teaching staff leaving the program in certain year (Those who submitted their resignation only, and it does not include the retired or those who terminated their contracts) / Total No. of teaching staff in the same year X100	End of Gregorian **year**
KPI-P-14	Percentage of publications of faculty members	Member of the scientific research committee of RSP	No. of publications in certain year / total No. of faculty members in the same year X 100	End of Gregorian **year**

KPI code	Key Performance Indicators	Responsibility	Calculation method	Time of measurement
KPI-P-15	Rate of published research per faculty member	Member of the scientific research committee of RSP	The number of published research as numerator and the number of faculty members as denominator	End of the Gregorian **year**
KPI-P-16	Citations rate in refereed journals per faculty member	Member of the scientific research committee of RSP	Number of citations for papers of faculty members in refereed journals at the end of the Gregorian year / Total number of faculty members in the same year.	End of the Gregorian **year**
KPI-P-17	Satisfaction of beneficiaries with the learning resources	Member of the Program Measurement and Evaluation Committee	The overall mean of all respondents for evaluation of satisfaction on the five unit-scale.	End of the Gregorian **year**
KPI-CLS-18	Percentage of faculty members participate in community service.	Member of the program's community service committee	The number of faculty members participating in community service as numerator / total number of faculty members as denominator X 100	End of the Gregorian **year**
KPI-CLS-19	Percentage of faculty members participating in professional development activities.	Member of the professional development committee	The number of faculty members participating in professional development activities as numerator / total number of faculty members as denominator X 100	End of the Gregorian **year**

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