

# Evaluation of the MBBS Program at a Medical College Using the Logic Model

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## ABSTRACT

In our practical duties as medical and dental teachers, we often come across challenging scenarios where we are asked to evaluate our undergraduate medical (MBBS) or dental (BDS) program according to the standards provided by the Pakistan Medical and Dental Council (PM&DC).<sup>1</sup> The current review article has been written to comprehensively address all important aspects of such tasks, using the most appropriate Logic model of program evaluation in medical education.<sup>2-6</sup> The key terms used in this model are shown in Figure 1. This model is preferred because it provides a systematic and visual depiction of the intricate relationships that exist among the resources that will be used to operate the program, the activities that will be planned, and the outcomes or results that will be hoped to be achieved by the program. This article provides a step-by-step guide on how to use the Logic model for program evaluation of an MBBS program. In the context of clearly stated objectives of the program, the evaluators have to identify the inputs, available resources, activities, outputs and outcomes. All these components are represented visually to construct the Logic model (Figure 2) for the planned evaluation. At each level of the model, the indicators help to determine if the program has successfully achieved its objectives or not. A variety of data collection methods should be employed. Analysis of the collected data helps to come up with formal results of the evaluation. This in turn helps to determine the overall effectiveness of the program and to formulate any suggestions for effecting further improvements in any identified deficient areas. The findings are shared with the stakeholders of the program. A robust logic model for program evaluation thus helps to ascertain whether or not a given educational program is achieving its outlined outcomes and making a positive impact. <sup>7,8</sup>

Key words: Program evaluation; Logic model; Data collection methods.

## 1 Introduction to the key terms employed in the Logic model: (Figure 1)

Following is the brief description of the key terms used in the Logic model:<sup>9-12</sup>

**Inputs:** The resources employed to accomplish the activities.

**Activities:** These involve use of the resources by the program and its staff.

**Outputs:** These are the tangible yields of the activities in the form of products, deliverables, or capacity building resulting from the program.

**Outcomes:** These are the transformations brought about in people or their conditions as a result of the activities and outputs.

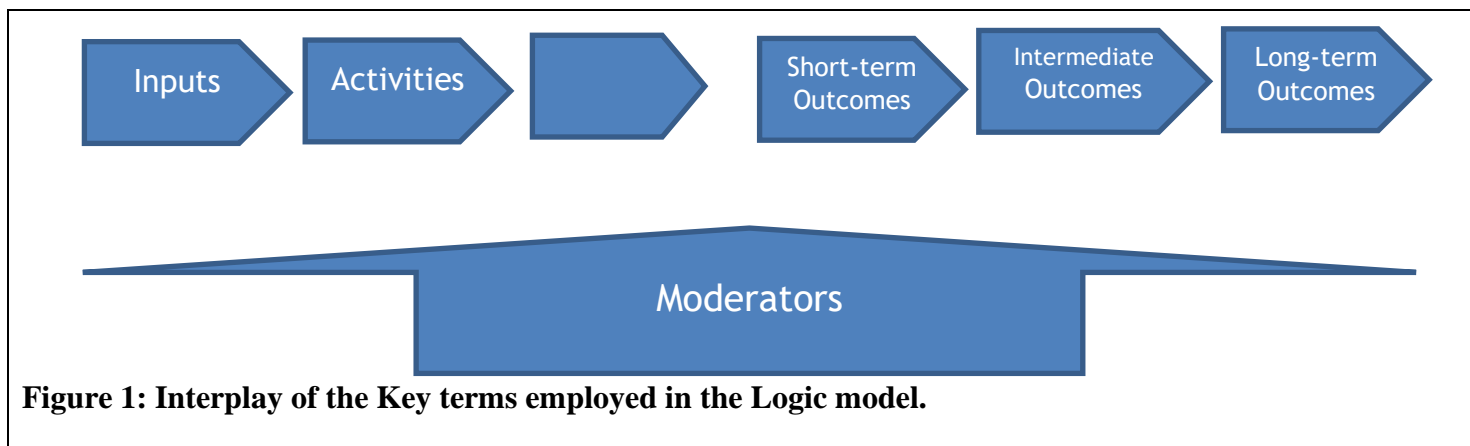
**Impacts:** The term impact is sometimes employed to represent the most distal or long-term outcome of the program.

**Moderators:** These are contextual factors which are not in the program's control, however, these may promote or inhibit the accomplishment of the outcomes.

## 2 Determine the Aims/ goals of the Evaluation

At the very outset, the evaluators have to identify the specific goals and objectives of the evaluation. For instance:

- To evaluate the MBBS program of the medical college according to the PM&DC (Pakistan Medical & Dental College) accreditation standards, using the Logic Model framework.



**Figure 1: Interplay of the Key terms employed in the Logic model.**

- To employ this evaluation as an institutional self-review, thus helping the stakeholders to arrive at better informed judgments and decisions.
- To effect program improvement. Resultantly the impact of the program will improve to obtain higher PM&DC grading.

### 3 Determine the outcomes of Evaluation:

The evaluators should identify the outcomes in terms of short-term, intermediate term and long terms. Following is a brief elaboration of such outcomes.

- Short-term outcomes:** (i.e., Change in knowledge, policy, environment and status).
  - Production of better quality doctors.
- Intermediate-term outcomes:** (i.e., Change in system and behaviors).
  - Better satisfied patients.
- Long-term outcomes:** (i.e., Improvement in healthcare indicators).
  - Reduced morbidity and mortality.
  - Better PMDC satisfaction and grading.

### 4 Identification of the stakeholders in the evaluation Program:

The evaluators should identify the various stakeholders that are related to the program and from whom data will be collected. These may include:

- Faculty of the medical college.
- MBBS program students.
- Administration and Management staff.
- Academic support staff.
- Department of medical education (DME).
- Quality assurance department.
- PM&DC and other regulators such as the Higher education commission (HEC) and

World federation of medical education (WFME).

- Patients and the Society as consumers of the healthcare services.

### 5 Determine the uses or purposes of the evaluation:

At the beginning of the process, the evaluators should identify the purposes or potential uses of their evaluation:

- Knowledge construction: To promote understanding of the program and help the key stakeholders think through the process, make informed judgments and decisions. They will come to know what leads to success or failure.
  - To identify key elements and expectations of the program.
  - To link various elements of the program.
  - To guide the progress and stay on track.
  - To indicate the available resources and how to best avail them.
  - To provide a framework to plan, implement monitor and evaluate the program.

### 6 Select the resources required for the execution of the evaluation:

The human resources needed for the process of the evaluation would include a team. It will include a chief evaluator (preferably a medical educator), two or more academic support personnel, a personal secretary, and one representative each from the DME, Quality assurance department, and administration. Other members would be co-opted when required.

### 7 Design the evaluation questions:

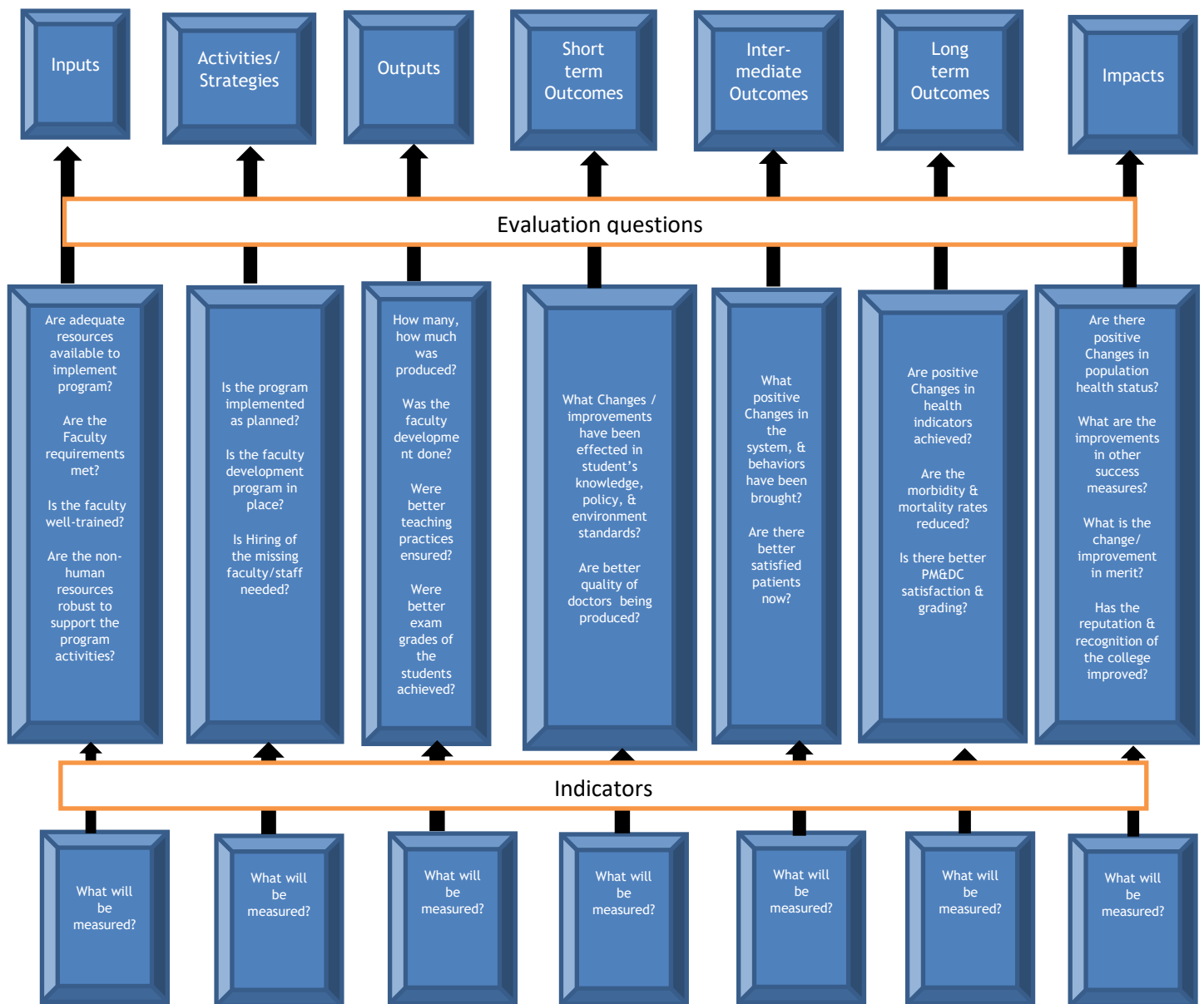


Figure 2: Mapping of the Logic model, incorporating the evaluation questions, outcomes and impacts of the program.

The PM&DC's accreditation standards for basic medical education (i.e., MBBS/ BDS) consist of twelve generic areas of standards. Each standard is further stratified into essential standards and quality standards. Each of these in turn has several criteria to judge the curriculum's quality. The evaluation questions should be phrased (based on the given PM&DC criteria) to probe and document the extent to which the required PM&DC criteria are full filled in the program of the given medical college.

**8 Develop some new tool or use some pre-defined tools for the purpose of the evaluation:**<sup>5,13</sup>

Mixed methods approach (both quantitative and qualitative) will usually be employed for such evaluation projects. The PM&DC standards are taken as evaluable items. Each standard will be judged as to whether it constitutes the program inputs, processes, outputs and/or outcomes and categorized accordingly to fit into the Logic model framework. Definitions may be adopted from established authorities or published literature. The standards will be considered as the program objectives.

- Inputs will refer to the material or human resources employed in the educational program.
- Processes will refer to the activities of the educational program, such as the students' induction in MBBS, their teaching and evaluation through the program as well as administrative processes.

- Outputs refer to the direct result of processes.
- Outcomes will refer to the final student "product" that the program produces.
- For scoring each of the essential and quality standards in the aforementioned twelve areas of PMDC, a 5-point Likert scale would be employed. This will ensure generalizability of the standards to fit into the logic model framework. The scoring will range from 01 to 05, depending on the extent of fulfillment of the outlined standards or criteria.

### 9-The ethical concerns related to the evaluation and how should they be addressed:

The following ethical concerns may arise during the evaluation process:

- a) Information about particular faculty members or other staff may be perceived as adverse feedback or threatening because of poor ratings.
- b) Presenting the results in unbalanced or biased manner.
- c) Un-intended wide circulation of the report through media.

In order to address the ethical concerns, reporting standards should be strictly followed and the report should be kept balanced and unbiased. It should be confidentially submitted to the Dean. It will neither be widely disseminated nor published.<sup>12,14</sup>

### 10 The data collection and analyzing strategies:

Data should be collected through questionnaires (based on the given PM&DC criteria), observation of the facilities/ infrastructure, scrutiny of relevant the documentations and focused interviews of students and staff.

For quantitative data, a 5-point Likert scale should be used to record answers to questions. Results for each of the standard of all the included responses should be added up, and then an average should be calculated and scaled to a score out of 100. In this way the extent of fulfillment of the standards should be measured across a scale of 0%-100%. The Statistical Package for Social Sciences (SPSS) for Windows may be used for data analysis.

For the quantitative data, the transcripts, notes and documents would be organized and codes generated. Themes and subthemes would be extracted and presented coherently.

### 11-Dissemination of Results of the evaluation:

Reporting should be done in written form with the aim of internal consumption. The results should be officially disseminated by the Dean with the following purposes:

To create awareness about performance.

To motivate performance and accountability.

To improve the quality of the program.<sup>15</sup>

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