



Coordinating the undergraduate medical (MBBS) basic sciences programme in a Nepalese medical school

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SOAP BOX

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Abstract

KIST Medical College follows the curriculum of the Institute of Medicine, Tribhuvan University. The programme aims to produce socially responsible and competent physicians who are willing and able to meet the existing and emerging challenges of the national and international healthcare system. The first cohort of undergraduate medical students (MBBS) students was admitted in November 2008 and three cohorts including the one admitted in 2008 have been admitted at the time of writing. The basic science subjects are taught in an integrated, organ-system-based manner with community medicine during the first two years. I was appointed as the MBBS Phase I programme coordinator in September 2008 and in this article I share my experiences of running the basic sciences programme and also offer suggestions for running an efficient academic programme. The manuscript will be of special interest to readers running undergraduate medical programmes. The reader can understand our experiences in running the programme in adverse circumstances, learning to achieve greater integration among basic science, community medicine and clinical

departments, obtain information about a community diagnosis programme and know about running special modules on the medical humanities and pharmaceutical promotion.

Key Words

Assessments, basic sciences, correlation seminars, Nepal, organ system, undergraduate medical.

Introduction

KIST Medical College (KISTMC) is a new medical school in the Lalitpur district of the Kathmandu Valley committed to excellence in holistic healthcare, education and research. The first batch of undergraduate medical (MBBS) students was admitted in November 2008 and three cohorts including the 2008 one have been admitted at the time of writing. The college follows the curriculum of the Institute of Medicine (IOM), Tribhuvan University.

The Institute of Medicine (IOM) curriculum

The curriculum is designed to integrate teaching learning experiences of basic medical sciences with clinical disciplines.¹ There is early clinical exposure where students attend clinics and learn the importance of concepts taught during basic sciences. There is a strong community orientation and emphasis on self-directed and problem-based learning. The programme aims to produce socially responsible and competent physicians willing and able to meet the existing and emerging challenges of national and international healthcare system. The MBBS graduate should be able to undertake curative, preventive, planning, management and educational roles. The curriculum is divided into three phases. The first phase is of two years duration and covers the six basic science subjects of anatomy, physiology, biochemistry,



pathology, pharmacology, microbiology along with community medicine in an integrated organ-system based manner. Basic concepts, neurosensory and musculoskeletal systems are taught during the first year and cardiovascular, gastrointestinal, renal and electrolyte, respiratory, endocrine and reproductive systems during the second year. University examinations are held at the end of the first and second year. At the end of the first year there is an integrated question paper in all basic science subjects and two papers in community medicine. At the end of the second year there are two integrated papers in basic science subjects and a practical examination in each basic science subject separately.

MBBS Phase I programme coordinator

I was given the responsibility of being the MBBS phase I programme coordinator in September 2008. My first task was to create a calendar of operations for the first year of the course. The course usually starts on the first working day of the Nepalese month of Mangsir (middle of November). The first year university examination is conducted a year later in November. There are two and half months of vacations during the course (with one month of winter, 15 days of summer and one month of Dashain (Dussehra) vacations).

The MBBS course starts with 'Basic Concepts' (14 weeks duration), followed by musculoskeletal system (six weeks duration) and neurosensory system (eight weeks duration). The major challenge is allotting theory and practical classes for different departments so that the system progresses in an integrated manner. We usually ask each department to give us the number of theory and practical classes they need for a particular system so that the required number of classes can be allotted each week. At the end of each system, one week used to be allotted for correlation seminar on a particular topic from the organ system and assessment.

Exam and correlation seminar week:

In Nepal Saturday is the weekly day off and Sunday is a working day. Each organ system usually finishes on a Friday and we arrange the exams on Tuesday to provide students with enough study time. In a correlation seminar, usually held

on a Friday, one or more diseases or conditions from a particular system are chosen and the topic is divided among different basic science departments, the department of community medicine and a relevant clinical department. The disease or condition is used to facilitate recapitulation and learning of relevant areas of the basic sciences. For example in the respiratory system possible topics could be tuberculosis and bronchial asthma. Students are divided into groups for the seminar. Each group is assigned a particular learning objective from the basic science subjects. These objectives are finalised by the teachers after consultation and deliberations. Each student group has to prepare a five minute presentation of their learning objective. Two students are given overall responsibility for conducting the seminar. The groups work on their learning objectives with the help of faculty of respective departments where required. The presenter from different groups is selected by drawing lots and considering how many times they have presented in previous seminars. An evaluation team of faculty is formed consisting of basic science, community medicine and relevant clinical faculty. The group evaluates each presenter using a structured checklist. Marks are given to various criteria and the mean scores of all the evaluators are considered for each individual presenter.

Student feedback suggests that the time available for exam preparation and for the correlation seminar may be limited. As a result, changes have been made to this academic year to extend the time period for exams and the correlation seminar to 10 days.

Internal assessments

The assessment follows the university pattern and there are integrated papers for the basic sciences. The total time allotted for the paper is three hours and the maximum number of marks obtainable is 160. The subjects of anatomy, physiology, pathology and pharmacology account for 27 marks each while biochemistry and microbiology each account for 26 marks.



Each department is requested to submit their question papers about two weeks before the date of the exam, keeping in mind the university pattern of questions. Then a moderation committee goes through the exam paper and deletes repeated questions and asks departments to rephrase questions that are unclear or ambiguous. The committee consists of one faculty from each department along with the principal, the director academics and the programme coordinator. The questions are not actually tested on students and the validation process mainly considers face validity. The process has to be improved.

Community diagnosis

During the first year, usually at the end of August, students spend a month in semi-rural areas in Lalitpur district studying community health problems and involving the community in solving problems they have observed. Students observe various determinants of health, prepare a written report and present the same to the community for discussion and action. The determinants could be social, economic and health service-related among others. Social could be community beliefs about diarrhoea like restricting fluid intake during the illness, economic could be poverty and difficulty in purchasing medicines while health-service related could be problems in accessing health facilities. Our students stay in the field for two weeks and spend two weeks writing and preparing the report in the college. They then go back to the field to present their report and initiate community action. Students are examined in their community diagnosis project during the community medicine practical. At present we have not been able to follow up the communities to understand the actions they had initiated as a result of the students' reports. The final report was presented at a large gathering of the community and plans for implementation chalked out. There was not much resistance to the changes suggested by the students and the institution. Students may go back to the communities during their third and fourth year (about a year from the time of writing) and follow up on the changes suggested.

Second year organ systems

The major organ systems covered in the second year are respiratory system (five weeks duration), cardiovascular system (five weeks duration), gastrointestinal system (six weeks duration), renal and metabolic system (four weeks duration) and endocrine and reproductive system (eight weeks duration). At the end of the second year students undertake a practical examination in all six basic science subjects. To prepare students for this we conduct formative practical exams during the middle of the year just before the summer vacation and after completing the second year course just before the university examination. The marks obtained during these formative exams account for 20% of marks during the university summative practical exam.

Early clinical exposure

We provide early clinical exposure sessions every Monday, for second year students, and every Thursday, for first year students. During the Thursday sessions we conduct a medical humanities module.² The module is conducted in small groups and uses case scenarios, role-plays, paintings, debates and other activities to explore different aspects of medical humanities. I work in close cooperation with the clinical coordinator to conduct the early clinical exposure and medical humanities sessions.

During the first year, early clinical exposure concentrates mainly on history-taking skills, while during the second year the emphasis is on physical examination. The major clinical departments of medicine, surgery, paediatrics, and obstetrics & gynaecology are involved in first year teaching-learning while the departments of ophthalmology, family medicine, orthopaedics and otorhinolaryngology are also involved in second year teaching-learning. Students rotate in four batches during the first year and eight batches (including two batches for medicine) during the second year.



Teacher training programmes

We have conducted four teacher training programmes for faculty members. This is held for three hours every afternoon for six days so that regular academic and clinical activities are not hampered.³ The workshop concentrates on the roles and responsibilities of a medical teacher, principles of learning, educational objectives, teaching-learning aids, microteaching, facilitating small groups and microteaching.

Conducting a regular academic schedule

We have been able to conduct theory and practical sessions in a professional manner missing very few sessions due to adverse circumstances. Due to various reasons, the political situation in Nepal is very unstable. Blockades and 'shut-downs' frequently occur. Most of our students and faculty members live outside the campus, thus we are not able to conduct sessions on days affected by political instability. Thus we have to ensure sufficient flexibility in the academic programme to ensure that days which are lost do not adversely affect the academic calendar. Our students perform well in university examinations and have performed creditably in the recently concluded practical exam. The exams are conducted by the Institute of Medicine, Tribhuvan University, the oldest university in the country. The theory exams are based on a common paper and exams are held at different colleges simultaneously with external observers from the university. The practical exams are conducted in different affiliated colleges with an external examiner appointed by the university and two internal examiners.

I conclude by sharing a few suggestions which may be useful for other academic programme coordinators in the region.

What may be unique about our experiences?

We have a very close interaction between faculty of basic science departments, community medicine and clinical departments. There are regular meetings and the academic schedule, plan of conducting learning in different organ systems in an integrated manner and early clinical learning,

correlation seminars and problem-based learning sessions are discussed and strategies for implementation finalised. The challenge we face in running the programme in the face of political instability may be of interest. Most students and faculty stay outside the campus and we usually do not conduct classes on these days. We have a flexible schedule and try to adjust sessions wherever possible. The same situation is also faced by other medical schools and the course and exams sometimes get delayed. The residential community diagnosis programme may not be usually conducted by private medical schools and our commitment to the programme may also be unique. We post students in semi-rural localities at the outskirts of the Kathmandu Valley. Also early clinical learning sessions are conducted every week and minor clinical departments like ophthalmology, otorhinolaryngology, and family medicine and orthopaedics are also included. We conduct a medical humanities session for first year students and have recently started a module on understanding and responding to pharmaceutical promotion for second year students. Also we use small group activity-based sessions especially in the department of pharmacology.⁴

Suggestions for ensuring an efficient academic programme

- *Be familiar with the curriculum of the university to which your college is affiliated.* As a programme coordinator it will be your primary responsibility to implement the curriculum into practice.
- *Conduct periodic training for faculty members to update and upgrade their skills.* At KISTMC we have conducted four training programmes for different faculty members.
- *Create an academic core group.* We have created an academic core group of interested faculty members who are involved in conducting the teacher training programme and other academic activities.



The group has also been involved in organising workshops within the institution.

- *Get a notice board and a white board in your office.* Display all academic calendars, time tables, student roll numbers and batch distribution all in one location. Students are divided into small batches for the practical and the batch distribution mentions the names and roll numbers of students in each practical batch. Note down important activities, classes and meetings on a white board so that you do not miss anything.
- *Create templates for timetables, exam questions and notices.* This will save you time and effort and the consistency in presentation will look professional. These templates can be quickly modified to meet specific requirements.
- *Purchase a portable hard drive to back up your data.* Data loss due to computer system crashes can be disastrous. Portable hard drives with immense storage capacity and a regular schedule for backing-up data can prevent data loss in the event of technical failure.
- *Be flexible.* Department requirements for classes and class timings often change. Wherever possible be flexible and try to accommodate requirements and requests.
- *Communicate and disseminate decisions.* A major function of a coordinator is to communicate with other individuals and stakeholders and ensure decisions are widely disseminated.

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PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests

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