Postgraduate medical education in Community Medicine: The AIIMS model

SANJEEV KUMAR GUPTA, BARIDALYNE NONGKYNRIH, CHANDRAKANT S. PANDAV

INTRODUCTION

Community Medicine as a discipline in India is variously known as Community Medicine, Social and Preventive Medicine, and Preventive and Social Medicine. In India, 218 medical colleges offer a 3-year MD course in Community Medicine, with a total of 742 seats annually. Admission to this course at the All India Institute of Medical Sciences (AIIMS), New Delhi is through a competitive entrance examination held twice a year. The total number of seats for the course at a given time is 23.

CENTRE FOR COMMUNITY MEDICINE

At AIIMS, the Centre for Community Medicine (CCM) imparts training in the subject, and for this purpose, it has rural and urban field practice areas. The rural field practice area is at the Comprehensive Rural Health Services Project (CRHSP), Ballabgarh, Haryana, a collaborative project of AIIMS and the Government of Haryana, since the past 50 years. It is 37 km from AIIMS in Faridabad district of Haryana. The project consists of a 50-bedded hospital at Ballabgarh, and an intensive field practice area. In this area, comprehensive healthcare services are provided to a population of about 92,000, spread across 28 villages, through a network of two primary health centres (PHCs) and 12 subcentres. Postgraduate students of Community Medicine are posted here for a continuous period of 16 months with residential facilities. For teaching, supervision and administrative functions, three faculty members of the CCM are posted to CRHSP, Ballabgarh.

The urban field practice area is located in a resettlement colony at Dr Ambedkar Nagar, Dakshinpur Extension, New Delhi, 9 km from AIIMS. Primary healthcare services are provided through an Urban Health Centre, in the forenoon. While medical services are available to all who visit the Urban Health Centre, the field staff also visits the homes of the community of about 30,000 persons to provide health education and advice. Undergraduate students are posted here for a period of 50 consecutive days, in the forenoons, during their third year of study.

AIMS AND LEARNING OBJECTIVES

According to the AIIMS curriculum, the aim of postgraduate training in community medicine is to prepare students to become teachers, researchers, epidemiologists, health planners, organizers and administrators. On completion of their training, the students should be:

- Aware of physical, social, psychological, economic and environmental aspects of health and disease at the individual, family and community levels;
- Able to apply clinical skills to recognize and manage common health problems, including their physical, emotional, social, cultural and economic aspects at the individual and family levels;
- Able to manage medical emergencies at the community level;
- Able to identify, plan and manage the health problems of the community they serve. To achieve this, they should be able to conduct epidemiological research studies, organize healthcare services, conduct an investigation of an outbreak, maintain liaison with other agencies, plan and implement health education activities, promote community participation, work as an effective member and leader of a health team, and be an effective teacher and trainer of community medicine. They should develop the ability to organize programmes for the prevention and control of communicable and non-communicable diseases. They should be able to organize healthcare services to meet the needs of special groups, viz. mothers, infants, under-5 children, etc.

During the course of their training, the students imbibe skills pertaining to management, teaching, communication, research and writing. The 3-year course is divided into six semesters.

COURSE CONTENT

The broad areas in the course content are taken up in the teaching sessions by faculty members of the department (Table I). As the students are engaged in patient care services or training of MBBS students in the forenoons, their own teaching sessions are held in the afternoons.

In addition to this, the discipline of Biostatistics is taught to the students for about 40 hours, from September to mid-November. The students attend these sessions in the first or second semester.

### Table I. Course content of postgraduation in Community Medicine

<table>
<thead>
<tr>
<th>Topics covered at CCM in second and third semester (120 hours)</th>
<th>Topics covered at CRHSP, Ballabgarh in fourth and fifth semester (60 hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concepts in health</td>
<td>Epidemiology of specific diseases, both communicable and non-communicable</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>Nutrition</td>
</tr>
<tr>
<td>National health programmes</td>
<td>Public health policies</td>
</tr>
<tr>
<td>Environmental sanitation</td>
<td>Occupational health</td>
</tr>
<tr>
<td>Reproductive and child health</td>
<td>Family health</td>
</tr>
<tr>
<td>Demography and family planning</td>
<td>Primary healthcare</td>
</tr>
<tr>
<td>Health planning and management</td>
<td>Health promotion</td>
</tr>
<tr>
<td>Sociology</td>
<td></td>
</tr>
<tr>
<td>Health education</td>
<td></td>
</tr>
<tr>
<td>Urban health</td>
<td></td>
</tr>
<tr>
<td>Teaching and training</td>
<td></td>
</tr>
</tbody>
</table>

CCM Centre for Community Medicine Services Project

CRHSP Comprehensive Rural Health Services Project

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depending on their month of joining. The students take a written
assessment at the end of this training. After every 4 hours of
teaching by the faculty, a tutorial is taken by the senior residents
on the topics covered during the previous 4 hours (2 sessions) by
the faculty. This includes practical exercises, which the students
solve, and then discuss. The tutorials help in the reinforcement of
teaching, as well as in clarification of doubts.

TRAINING METHODS
The training methods used to achieve these learning objectives
include seminars, lectures, family presentations, clinical case
presentations, field exercises, journal clubs, thesis, tutorials,
group discussions, subcentre evaluation, hospital-based exercise,
and exercise related to management information system (MIS). Students are encouraged to publish articles in scientific journals,
and present papers in conferences.

PROCESS
The training of students during the 3 years is in the following
sequence:

- Orientation and submission of thesis protocol: 4 months
- Urban posting-1: 12 months
- Rural posting: 16 months
- Urban posting-2: 4 months

The urban posting is split into two: 12 months before and 4
months after the rural posting. Due to this split, the postgraduate
students return to Delhi from the rural posting 2–3 months before
their exit examination.

Orientation and submission of thesis protocol (4 months)
The students are given an overview of the Centre, and an opportunity
to familiarize themselves with other departments of AIIMS.

Within 6 weeks of their joining, the students attend sessions on
‘An introduction to research methodology’, which is taught by the
faculty and senior residents. These sessions help the fresh
postgraduate students in the development of thesis protocols.
These include a session on the importance of medical ethics in the
conduct of research studies.

To refresh important topics from the MBBS course of
Community Medicine, tutorials are taken for the students, by the
senior residents, under the guidance of the faculty, for about 30
hours, spread over 4–6 weeks. The students are required to take a
written test of 2–3 hours at the end of these tutorials.

During the posting to the Department of Emergency Medicine,
the students hone their clinical skills and are exposed to medico-
legal issues in the management of emergencies and accidents (Table II).

Urban posting (16 months)
The postgraduate students are posted to the urban area for 16
months. During this period, the faculty covers the course content
in the afternoon academic sessions. The training methods include
seminars, lectures and group discussions. In the urban area, the
students are engaged in the following activities.

Urban field practice area. The students attend the outpatient
department (OPD) in the Urban Health Centre. Besides providing
medical care to patients, they are required to learn about the
process of indenting vaccines, drugs and consumables. They
supervise records maintained by the public health nurse,
pharmacist, laboratory technician and health assistants.

Preceptorship of MBBS students in the urban area. The
students are required to guide MBBS students in two learning
activities, namely, those who are posted to the urban field practice
area in the forenoons, everyday; and function as their preceptors
in the Family Health Advisory Services in the afternoons on
Mondays. In the Family Health Advisory Services, the MBBS
students follow-up families allotted to them in the community, for
a period of 9 months.

During their posting to the urban health centre, the MBBS
students are briefed by the students, on topics of primary healthcare,
reproductive and child health, and identification and management
of common conditions in the community. During these briefings,
emphasis is on practical aspects, and community-based issues. By
rotation, the students also function as preceptors for the clinico-
psycho-social case review and field exercise conducted by the
MBBS students, under the overall supervision of the senior
resident.

Field assignment. Each student is allotted 10 families in the
urban field practice area to follow-up for 6–8 months. The
objectives of this field assignment are to:

- learn to communicate effectively with families in the
  community;
- study the family structure and health status of individual
  members over a period of time, with specific reference to acute
  and chronic morbidity;
- determine factors responsible for health problems of the
  families, and learning their coping mechanisms; and
- advise families appropriately on the identified health problems.

Family presentation. Every student presents families from the
urban field practice area to the faculty and other students. For this
purpose, the student elicits the clinico-social history, examines
the patients in the family, identifies the medical and social issues,
draws a web of causation, formulates a family diagnosis, and
plans an appropriate intervention. This activity is scheduled as per
available time slots.

Rural posting (16 months)
The students are posted to the rural area for 16 months. Of this
period, they spend one-third at Ballabgarh, and one-third each at
each PHC.

In addition to the topics mentioned in the above course content,
the students learn practical aspects of delivering primary healthcare
and medical care at primary and secondary levels. The training
methods for these are:

- Seminars: The students are allotted topics on which they
  present seminars to the faculty and other students. The schedule
  is prepared at least one month in advance of the beginning of
each semester.
- Clinical case presentation: The students present cases from
  among the patients admitted to the ward at Ballabgarh, or from
  the OPD. The discussion focuses on clinical features, natural
  history of the condition, and comprehensive management.

<table>
<thead>
<tr>
<th>Place of posting</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban field practice area</td>
<td>1.5 months</td>
</tr>
<tr>
<td>Department of Emergency Medicine</td>
<td>1 month</td>
</tr>
<tr>
<td>Employees’ health scheme</td>
<td>1 month</td>
</tr>
<tr>
<td>Rural field practice area</td>
<td>1 week</td>
</tr>
</tbody>
</table>
| Physical Medicine and
  Rehabilitation               | 3 days      |
| Entomology                    | 3 days      |

| Table II. Posting of postgraduate students during the first 4 months |
• **Family presentation:** Similar to that in the posting to the urban field practice area.
• **Subcentre evaluation:** During the posting to the PHC, each student is allotted one subcentre for evaluation.
• **MIS exercise:** Each resident is required to undertake one exercise related to MIS.
• **Hospital-based exercise:** During the posting to Ballabgarh, each student is required to do one activity related to administration, management, audit or evaluation of services at the hospital.

The students present these exercises to the faculty in the academic sessions.

**Posting to the PHCs.** There are two PHCs situated at 10 km and 20 km from Ballabgarh. Each of them is managed by a senior resident. During these postings, the students learn on their own, supported by the senior residents. The learning includes functioning of the centre and subcentres, stores management, implementation of various national health programmes, training and supervision of health workers, reporting system, etc. The students run the outpatients at the centres, conduct deliveries, participate in school health services, and examine beneficiaries of the Integrated Child Development Services scheme. They make weekly visits to the subcentres for verification of births and deaths, and checking of records.

**Preceptorship of MBBS students in the rural area.** Fourth-year MBBS students are posted to CRHSP, Ballabgarh for 5–6 weeks, in four batches of about 20 students, during July to December. A student is attached to each batch as their preceptor. The role of the preceptor is to guide that batch of students through their posting. The activities include health systems visit, domiciliary visit, epidemiological exercise, orienting undergraduates to community health (OUCH) exercise, and training in IMNCI. The postgraduate student accompanies the MBBS students on various visits. S/he attends all discussions in the planning of exercises, accompanies students for fieldwork, and is actively involved in data entry, analysis and presentation.

**Clinical posting.** The postgraduate students attend to both outpatients as well as inpatients at the hospital in Ballabgarh. Senior residents of the concerned discipline are available to them for guidance and consultation.

**JOURNAL CLUB**
The Journal Club is a weekly academic activity at the CCM. All faculty members, senior residents, postgraduate students and scholars from the rural and urban areas are required to attend it. The schedule is circulated 6–8 weeks in advance. The presentations by students include articles from peer-reviewed journals. Each student is required to present a journal article in the second to fifth semester. A faculty preceptor from the CCM, and a faculty/scientist from the Department of Biostatistics, are assigned to each student, for guidance. The presentation includes details of the research study and its critical appraisal. The students are also required to make their thesis-related presentations in the Journal Club.

**THESIS**
The postgraduate students of AIIMS are required to submit their thesis protocol within 4 months from their date of joining, and are required to submit their thesis to the Examination Section, not later than 5 months before the MD examination. It is sent to external reviewers for evaluation.

Within a fortnight of joining the CCM, a guide is identified for each student for his/her thesis. All faculty members function as guides for students on a rotating basis. Each student is also allocated a ‘mentor’ from among the senior residents, who helps him/her during the preparation of the thesis protocol. The student is required to present 2–3 thesis topics within a month of allocation of a guide, and one of these is finalized. The student is required to present the thesis protocol within 4–6 weeks of approval of the thesis topic. An approval is necessary before submission of the protocol. The guide identifies co-guide(s) for the thesis. The student is required to submit the thesis protocol to the Ethics Committee and the Academic Section, and is encouraged to do so within 2 weeks of it being approved. Data collection starts only after approval is obtained from the Ethics Committee.

Students are usually given 50 working days for data collection during May–June or November–December when formal teaching sessions are not held due to examinations and vacation time. This also facilitates building a better rapport with the community and faster data collection. Students are encouraged to enter data into the computer in the evenings, and are required to present the results within 3 months of completing data collection. This ensures that data are entered and analysed, while they are still fresh. Another 3 months later, they present their complete thesis. Once approved, the thesis can be written and submitted.

**SUPPORT FROM THE DEPARTMENT OF BIOSTATISTICS**
The faculty and scientists from the Department of Biostatistics play a vital role in the training of students of the CCM. Every year, teaching sessions on Biostatistics are taken by the department for about 40 hours. The faculty/scientists help the students understand the articles to be presented in the Journal Club. The faculty/scientists support the students for their theses. Periodically, the department runs short training courses on useful statistical packages, for the students.

**ASSESSMENT**
A combination of both formative and summative assessment is vital for successful completion of the programme.

**Formative assessment (internal assessment)**
This assessment is done by faculty members of the CCM (Table III). This includes on-going components, and an assessment at the end of each of the first five semesters. No internal assessment is done in the last semester, as the student is more focused on the final examination.

**Summative assessment (final examination)**
This is held at the end of the third academic year. The Board of Examiners includes two external and two internal examiners. The examination consists of four theory papers and a practical examination.

The practical examination spans 2 days, one day each at CRHSP, Ballabgarh, and at CCM. It consists of:
1. Clinical cases (two) presentation from the ward at CRHSP, Ballabgarh
2. Family presentation from the urban field practice area at Delhi
3. Epidemiological exercises: 2
4. Viva-voce

**CONCLUSIONS**
According to the Medical Council of India, the major components
of postgraduate curriculum include theoretical knowledge, practical and clinical skills, thesis skills, attitudes including communication skills, and training in research methodology. With its mix of training methods, the model of postgraduate training in Community Medicine at AIIMS addresses all of these. The well-nurtured rural and urban field practice areas provide an excellent exposure of the needs of the community to the students.

It is believed that the learning in postgraduate programmes is essentially autonomous and self-directed. However, some structure to the training is required to give direction to the students. Measures such as advance preparation of schedules, conduct of sessions as per schedule, learning from peer groups, presence of faculty members in these sessions, reasonable accessibility of faculty members to the students for providing consultations, monitoring, and soliciting informal feedback from the students, have contributed to an effective training programme in community medicine.

REFERENCES
2 Guidelines for Academic Courses, Awards and Orations at AIIMS. Fourth Edition. All India Institute of Medical Sciences, New Delhi; 2010.
3 Syllabus of MD/MS/MDS/MHA/MSc/MBiotech at the AIIMS. All India Institute of Medical Sciences, New Delhi; 2003.

### Table III. Guidelines for internal assessment

<table>
<thead>
<tr>
<th>Semester I</th>
<th>Component</th>
<th>Details</th>
<th>Assessed by</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory</td>
<td>Written end-semester examination (3 hours)</td>
<td>January batch: MBBS course of Community Medicine; July batch: Biostatistics</td>
<td>Faculty Coordinator/ Faculty of Biostatistics</td>
<td>100</td>
</tr>
<tr>
<td>Practical</td>
<td>Development of thesis protocol</td>
<td>Based on effort and adherence to timeline</td>
<td>Guide</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Presentation of thesis protocol</td>
<td>Based on presentation in Journal club</td>
<td>All faculty</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semesters II to V</th>
<th>Component</th>
<th>Details</th>
<th>Assessed by</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory</td>
<td>Written end-semester examination (3 hours)</td>
<td>Based on topics covered during semester</td>
<td>Faculty Coordinator/ Faculty of Biostatistics</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Seminars/theory classes</td>
<td>Based on topics covered in seminars/theory classes</td>
<td>Concerned faculty</td>
<td>25</td>
</tr>
<tr>
<td>Practical</td>
<td>Journal club</td>
<td>Based on article presentation</td>
<td>Faculty preceptor</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Family/clinical case presentation</td>
<td>Based on presentation to faculty</td>
<td>Concerned faculty</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Thesis progress</td>
<td>Based on work done and adherence to timeline</td>
<td>Guide</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Service provision</td>
<td>Initiative, sincerity and hard work</td>
<td>Concerned faculty</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>

Faculty coordinator is identified for internal assessment. Senior Resident collects marks from the concerned faculty members, and gives them to the Faculty Coordinator.