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A Guide for Medical Students Considering an Elective Visit to KEM Hospital, Parel, Mumbai.
By Roy R Gurprashad, King's College London.
(Elective period 2/8/00-27/9/00)
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My trip to India has proved to be one of the most enriching experiences I have had to date. Any travel book will outline the wonders and frustrations of this culturally diverse sub-continent and it is not the aim of this brief review to discuss that. Instead, I hope to furnish medical students with what I think is valuable information on how to have a successful, enjoyable and medically rewarding elective.

Application

Your trip to KEM will start with completing an application form available on the website. Numerous copies are required in order for permission to be requested from varies government agencies. I strongly advise not to use to much postal registration on what will be a bulky package, just post it normally as the Indian post office often choose to return packages that appear to be of value. I resorted to having it delivered by a Doctor visiting KEM after my application was returned twice. You should also email the Hospital and inform them you are sending the application.

Arrival and Accommodation

Maps of KEM's location are available on the website. It is about one hours drive by Taxi from the International Airport. Arrival is usually in the early hours of the morning and this proves to be quite an intimidating start. However there is a prepaid taxi service available with fixed prices (100-200 rupees to KEM) and I strongly advise to use this service. Don't mess about with buses or trains at this time. Importantly, arrange a hotel before you leave. Fax your reservation and they usually get someone to meet you. One hotel I would strongly recommend is the Shanti Doot Hotel. This Hotel is a perfect stopgap whilst you get your bearings. And a big plus is that it is only a 5-10 minute walk to KEM. Prices are really reasonable. Depending on the standard of room you want you can spend from 5-30 pounds per night. AC rooms are available. It is a clean, safe and very helpful place. Time here gives you an opportunity to try and get accommodation on campus should you want to.

Registration

This is without a doubt the most frustrating aspect of the elective. You need to arrive at the Hospital Medical School office sometime after 11am. There is a clerk who is in charge of elective students. They are very helpful but they tend to forget that you are new to the country and the system. Your application will be sought, and then you will have to write letters to the Dean notifying him of your arrival and what you plan to do. I found this rather odd bearing in mind that this was already completed on the application. You then have to pay the fees. Once this is completed they will put you in touch with the Head of department you wish to join. Any request for accommodation here is refused. Don't listen to them. Speak to your firm chief. They are all so helpful and will sort this out. There are 'guestrooms' available in the students hostel and in the residents quarters. I stayed in the

residents quarters in a 'guestroom'. Let me be honest though, the room is very basic, no windows and only a sink. There are two beds in there. The bath and toilet are really shabby, but it gives you an opportunity to get into the spirit of things. I was on the 11th floor with a wonderful view of Bombay. This was the only other plus (in addition to the convenience of being on campus). Check it out before you commit yourself!

Departments

I spent the majority of my elective in the department of medicine. This experience has changed my life. That may sound profound but is true. I have experienced so much here. Dr.Bichele originally supervised me. She is the head of the department, and a truly lovely lady. Her team was most helpful. However I hope I will be forgiven for giving Dr Karnad and his team a special mention. I joined them during my first week as suggested by Dr Bichele. They cover the medical ICU as well as the male and female medical wards. I learnt practically all the medicine possible from his team. His lectures teach and test you and the junior staff is only too happy for you to get your hands dirty on their 24hour emergency day. Lumbar punctures, pleural taps and ascitic taps are skills you can acquire here. It was really fantastic. The Dr Karnad ward rounds are truly informative. He makes sure that you see all the signs possible and he always takes time to explain cases. I strongly recommend you join him if you are interested in medicine. Time with Dr Karnad's firm will change your perspective on medicine. You can also move around various departments once you have gained permission from the various firm chiefs. They are all so happy for you to attend ward rounds and the out patient clinics. I split my time up in Medicine, Haematology, Neurology and Paediatrics. I can assure you that it will keep you occupied and it's a great way to meet a lot of the staff. I should add all the Doctors speak English so there's no problem there. Bring some books as the library is quite challenging! They have books there but none I was used to. You can also buy most books here and they are a lot cheaper. I would strongly suggest you bring a camera, a digital one if possible, or at the very least a camera with a powerful zoom. All the firm chiefs I worked with were happy for me to take pictures with my digital camera (email me if you wish to have copies to get an idea) once you get permission from the patients! You can really build up an atlas of conditions this way.

What Would I change?

I would not change anything about my time at the hospital. All the staff were welcoming and helpful. I hope that following this report the registration procedure will be a little easier. I will work on that before I leave.
I would not recommend travelling alone. I am of Indian descent and found it quite easy to fit in and get on. I honestly feel that for non-Asian travelers they may find the inquisitive nature of the locals a bit intimidating, They are very warm and welcoming but intrigued by new faces. Try and travel in a pair so you can share the experiences and enjoy Mumbai. It is a truly vibrant city!

In closing I would truly recommend KEM. It has everything you can hope to have on an elective. You can do as much or as little, its upto you. But whatever you choose to do you can guarantee that you will have an experience of a lifetime. Good Luck!

Please feel free to email me for more information such as addresses etc.

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Strong points
Cases and pathology seen was very diverse and interesting. I would have never seen such a wide

variety of surgical cases on a general surgery team in my medical school. The cases that stand out are radical mastectomy, thyroidectomy, and pyelolithotomy. Another important strong point was the doctors that I worked with. I felt comfortable immediately and had a great rapport with the entire unit, esp with Dr. Jignesh Gandhi, lecturer.

Weak points

:Due to multiple holidays on Monday, it was a slow two weeks since our OPD and emergency was on those days. Other than that small problem, no major weak points.

I enjoyed the surgery rotation much more than my medicine rotation the month prior. The cases were interesting and the schedule was full, so there was no down time. The patients were very appreciative and the surgeons/doctors were very caring toward their patients.

I had some problems in getting the paperwork done from the college office both on the first and last days of my elective rotation.

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Background: Health-care system in India

Over the last forty years, India has made significant progress in improving the health and well-being of its people. Life expectancy has risen from 44 to 61 years, and infant mortality has fallen by more than two-thirds to 74 deaths per 1,000 live births (1). Despite these significant strides, the country continues to bear a heavy burden of both communicable and non-communicable diseases. Furthermore, India is experiencing a slow epidemiological evolution from infectious and parasitic diseases to non-communicable diseases. Also, the emergence of AIDS has begun to affect national and regional epidemiological profiles and priorities (2).

Both the private sector and government play major roles in the provision of health care in India. In rural areas, the private sector consists largely of unregulated primary care clinics and small hospitals. In the cities, a burgeoning middle class has led to the emergence of a number of profit oriented hospitals with state-of-the-art equipment. Primary Health Centers (PHCs) are the cornerstone of the government sponsored rural health system. These centers rely on trained paramedics to provide routine medical care to the vast majority in the countryside. These PHCs are part of a tiered health care system that funnels more difficult cases into urban hospitals. Referrals are made initially to the taluka hospitals (serving 90-100 contiguous villages) and then to outlying district hospitals (an amalgam of 8-10 talukas). The final step in this referral chain are the urban medical college/ superspecialty hospitals.

King Edward Memorial (KEM) Hospital/Seth Gordhandas Sunderdas Medical College is one of the three superspecialty hospitals in Mumbai. Funded almost entirely by the Mumbai municipal government, this hospital treats over 1.5 million outpatients and 78,000 inpatients annually. Half these patients are from outside Mumbai and the majority are either indigent or live on incomes that are barely adequate to meet their daily necessities. I spent 4 weeks in May 2005 doing an elective in the department of internal medicine at KEM hospital. My goals at the start of this rotation were threefold:

(1) To attain perspective into government sponsored tertiary health-care in India

(2) To gain exposure to the diagnosis and management of conditions common in India that are uncommon in the United States.

(3) To compare and contrast India's system of medical and residency training to the United States.

Setting up the elective

My desire to undertake this elective began with a chance conversation with a public health student at UNC who had completed her medical degree at KEM. Her recommendation coupled with my interest in internal medicine prompted me to contact Dr. Dilip Karnad, a professor of medicine at KEM who agreed to serve as my preceptor for the elective. The hospital has had several medical students from other countries rotate there in the past. An application to do an elective there can be obtained from their website http://www.kem.edu/college.htm. It is important to apply well in advance, because the medical college has to obtain approval from the government of India, a process that can (and did, in my case) take 4-6 months. This approval is required in order to obtain a student visa for any medical training in the country. There is an application fee of about $20, payable to the central and municipal government. In addition, KEM charges approximately $250 as tuition on arrival there.

The Indian system of medical training

In India, students begin medical school straight out of high school. Admission, at least at government institutions like KEM are based on the results of a highly competitive Common Entrance Test (CET). The first two and a half years are devoted primarily to the acquisition of basic science knowledge in the classroom, although some clinical experiences begin in the second year. The third and fourth years are the clinical years. Successful graduates are awarded the MBBS degree (medical bachelor and bachelor of surgery), and are required to complete a year of internship service in various disciplines.

Following internship, those who wish to pursue further training must take another common entrance exam. Since post-graduate positions are available for less than 5 percent of the MBBS graduates, this test is highly competitive. Residents reported spending two or even three years attempting to gain entrance into a post-graduate program. Those completing medical residencies are awarded the MD (medical doctorate) degree, and graduates of surgical residencies are granted MS degrees (medical surgeon). All residencies are three years, including general surgery and neurosurgery. Junior residents are referred to as "housestaff" and senior residents are called "registrars".

Besides the MS and MD routes, shorter diploma courses in various specialties are also offered. These courses require only a year and a half of training following internship. Completion of a diploma course gives the graduate practicing privileges in that specialty only within the state the course was completed.

My experience at KEM

Intensive Care Unit:

I spent my first week and a half in the medicine/neurology/neurosurgery intensive care unit under the supervision of Dr. Kothari. The first thing that struck me was that the average age of patients in the "unit" was much younger that that of a typical MICU in the United States. This may have been partly due to the fact that the inciting etiologies of multi-organ failure in the ICU were often infections uncommon in the United States such as hepatitis E, plasmodium falciparum malaria, TB meningitis, leptospirosis, and Guillian-Barre Syndrome (a post-infectious immune acquired condition). I also observed that a number of patients were admitted for "organophosphate poisoning" (a constituent of pesticides). I learned that this was a common method of attempting suicide in this patient population since pesticides are cheap and readily available.

Only one junior resident was posted in the ICU at the time, and this was his first week as a resident. Other housestaff had not been posted yet because of a delay by the government in matching students to their respective residency programs. The shortage in housestaff that first week meant that the registrars were willing to give me more responsibilities than is typical for medical students there. Assisting with routine "scut work" such as suctioning clogged tubes, monitoring blood pressure, placing peripheral IVs, drawing blood, and ABGs was "rewarded" with a couple of lumbar punctures and an intubation. In addition, I observed the placement of central lines and chest tubes, and administration of plasmapheresis to a patient with myasthenia gravis.

That week, I also participated in a number of resuscitation efforts. The experience greatly improved my understanding of multi-organ dysfunction and of the ACLS protocols. For those interested in this particular experience, I highly recommend bringing your own books. I found "The ICU Book" to be a great source for background reading. The "Tarascon internal medicine and critical care pocketbook" was a handy reference on the wards.

Medicine/neurology wards

My role over the remaining weeks with Dr. Karnad's firm more closely paralleled that of medical students at KEM. Dr. Karnad was the inpatient attending for the Medicine/neurology/neurosurgery ICU. A section of the medicine and neurology wards also fell under his supervision. His firm was responsible for all medicine admissions from the EMS (emergency medical services) on Friday, and so Saturday's rounds tended to be more detailed than other days. Oupatient referrals were seen by him on Tuesdays (referred to as "OPD day" or outpatient department day). Medical students assigned to his firm were expected to attend morning rounds as well as the OPD. In addition, they were expected to take a detailed history and physical examination of an interesting patient on the wards and present the patient during afternoon "clinic".

I found that while medical students in India were not given the same amount of responsibility as in the United States, a greater emphasis was placed on accurate physical examination. Dr. Karnad and the other students helped me refine my examination skills considerably, from describing heart murmurs to demonstrating spasticity and palpating splenomegaly (common there because of the high incidence of malaria).

The wards at KEM were unlike those at UNC, where most patients have private rooms. Here, each ward has about 50 beds lined up in three or more rows. On Friday, if there were more admissions than available rows, extra beds were place in the middle of the walkway. While it was impossible to maintain perfect confidentiality in such a situation, I noticed that medical personnel made subtle attempts at maintaining confidentiality. For instance, HIV positive patients were referred to as "seropositive" or "retrovirus positive" and tuberculosis was called "Koch's" (a reference to the person who first described this acid fast bacillus) since these terms were unlikely to be understood by patients in neighboring beds. Also, rounds were conducted in English, a language that most patients there did not understand.

The cost of medical treatment at KEM was far lower than at similar private institutions. Patients were charged less than $2 for each day of hospitalization. An MRI scan cost about $30 (six times less than at private institutions), and for routine surgeries patients paid a little over $100. Yet many patients could not afford the treatment at KEM. For these patients, social workers attempted to accurately gauge patient's incomes, and obtain government assistance to pay for the cost of treatment.

Aside from a host of tropical infections, Dr. Karnad pointed out an intriguing feature unique to Indian patients. He had noticed (as did I during my time there) that deep venous thrombosis was not very common in Indian patients when compared to Americans and Europeans. Patients with hypercoagulable states instead tended to present with cerebral venous thromboses. I performed a medline search and found that this observation has been described in a number of prospective trials in India (4, 5). I find this interesting, since this finding has important implications for the management

of hypercoagulable states in patients of South Asian origin in the United States.

Emergency medical services (EMS)

Like emergency departments in the United States, the EMS at KEM hospital was open 24 hours a day throughout the year. The specialty of emergency medicine does not exist in India, so triage there is done somewhat differently. Patients are usually referred to the EMS by outpatient physicians in the city as well as through the chain of referral mentioned earlier. Patients are triaged at the casualty area based on whether their condition requires medical, surgical, orthopedic, or gynecologic evaluation. The medicine EMS is staffed by internal medicine and pediatric residents. All patients with medical complaints over the age of twelve years are evaluated by medicine residents. Interns assist nurses in accomplishing "scut work" at the EMS. A small air-conditioned area with about six beds and monitoring equipment is reserved for patients who present to the EMS with emergent situations such as a myocardial infarct or a stroke.

My role here was mostly as an observer, although I was able to interview and examine patients who were to be admitted to Dr. Karnad's ward. Residents did make efforts to explain management protocols in India during the few moments of spare time they could find. But the sheer volume of patients at the EMS at KEM made teaching difficult. Emergency departments are busy places in the United States, but what I observed there outweighed anything I had seen in America.

Dermatology

On Dr. Karnad’s recommendation, I spent a couple of days in the dermatology department. This proved to be a highly rewarding experience. Conditions common in the United States like acne vulgaris and vitiligo coexisted with diseases like leprosy (which like tuberculosis was referred to as Hansen's disease to maintain confidentiality). One particularly interesting patient presented with a partial clawhand and mild sensory deficit in the distribution of the ulnar nerve. No hypopigmentation or any other lesion was present on his body. A biopsy in the region of the ulnar nerve showed features consistent with leprosy.

Conclusions (for those interested in a similar experience)

This elective at KEM was very educational, and I recommend it to anyone wishing to gain exposure to tropical medicine or tertiary care of underserved populations. I feel that this experience will probably be more rewarding as a fourth year elective rather than in the summer between the first and second year. Exposure to clinical medicine in the United States allowed me focus on learning what I would not otherwise in America.

I found that language was more of a barrier than I had anticipated when trying to communicate with patients. Although urban patients could converse in Hindi, which I have a fairly decent grasp of, rural patients tended to exclusively speak Marathi. The languages do have similarities, and I could understand most of the conversations between the attendings and patients. Attendings, residents and students readily translate their conversations, so even students lacking experience in any North Indian language can learn a lot here.

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