

Elective report – SSC 5c
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MEDICINA

USP

Learning objectives

1. Acquire an understanding of the Brazilian medical system and patterns of disease in Brazil
2. Practice my Portuguese and gain confidence in using it in a medical setting
3. Demonstrate similar levels of knowledge and competencies to Brazilian students at my level of training
4. Participate in the surgical skills course

1. Comparison of the UK and Brazil

In this section I consider both healthcare systems and patterns of disease, with extensive use of the Lancet Health in Brazil Series¹. Other demographic data are from the CIA world factbook².

Demographics and patterns of disease

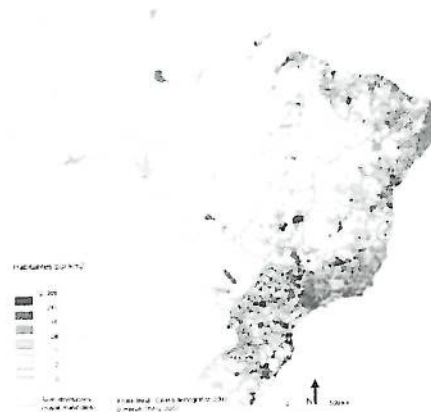
Brazil is a country of 192 million people spread over 8.5 million km² of territory. This means that while Brazil is 35 times larger than the UK (0.24m km²) it has only 3 times our population. In reality, there are two Brazils: a densely populated coastline and a vast, empty interior. Brazil has completed its demographic transition, so it now has low fertility and low mortality from most causes, and an aging population. I immediately noticed the low proportion of elderly people in my patient population compared to the UK: over-70s only represent 5% of all Brazilians. Given present demographic trends, however, it is likely Brazil will come to resemble the UK's age demographics in future.

The population is ethnically diverse: 48% self-define as white, 44%* as *pardo* (meaning brown, or mixed) and the rest as black, oriental, or indigenous. London has a similar ethnic diversity to Sao Paulo (70% white versus 60%), but people of South Asian, rather than mixed-race origin, are the largest non-white group in London, and there are fewer recent immigrants. There is a high rate of poverty, but most households have access to basic amenities such as running water, electricity and the internet. Compared to the UK, income inequality in Brazil is high but it has been rapidly falling, as measured by Gini coefficient, over the past decade under the Workers' Party government. A number of social issues linked to poverty, such as a high illiteracy rate, low levels of formal education, and corruption in public spending contribute to disparities in health.

With its continued economic development, Brazilian patterns of disease are increasingly likely to resemble Western ones. Non-communicable disease such as diabetes, obesity, hypertension, cardiovascular disease and cancer are not yet as much of a burden on the Brazilian population as in the UK, but these are expected to rise. Two main differences are striking to a UK-trained doctor:

- Relatively high rates of tropical infectious diseases. Dengue epidemics are common even in urban settings. Leprosy and schistosomiasis are endemic, as is malaria in the Amazon region. Chagas disease, although prevalent, is essentially no longer transmitted, with a negligible incidence in children, suggesting it may eventually be eliminated through vector elimination alone.
- The rate of road traffic accidents (RTAs) related deaths is quite high, but it is nonetheless smaller than the rate of homicides, most of which affect poor, young black males. Together these are leading causes of preventable death in young people.

Densidade de povoamento



Source: Wikimedia commons

Health system

Like the UK, Brazil spends about 8% of its GDP on healthcare. Brazil has just overtaken the UK as the world's 6th-largest economy, so with 3 times the population this means that it spends approximately one-third of what the UK spends per person.

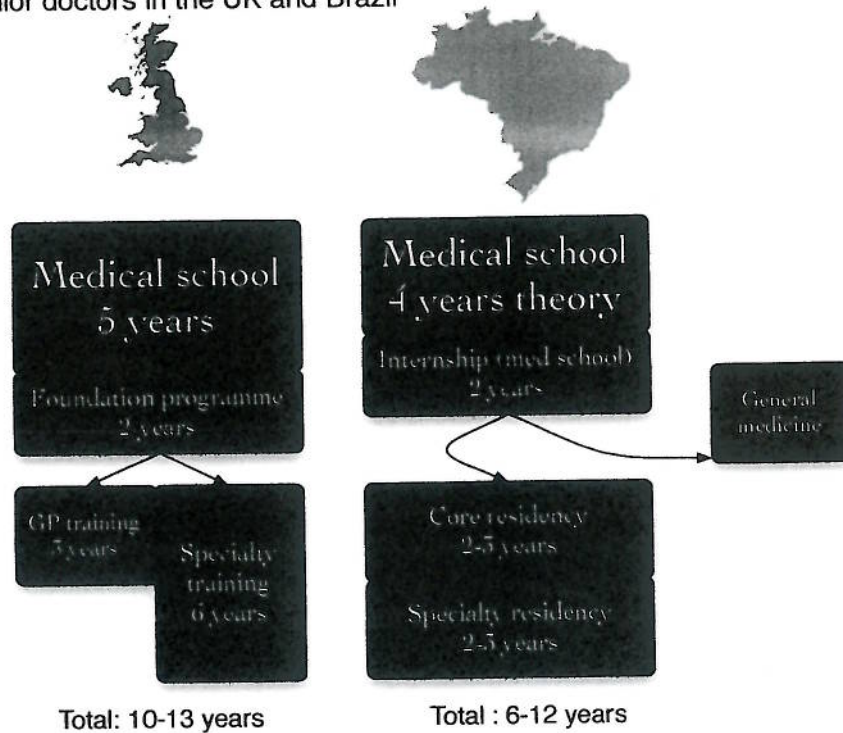
Both the UK and Brazil have national health systems funded by taxation and employer contributions. In the UK, about 80% of all healthcare is delivered by the National Health Service (NHS), which was recently split into four parts - England, Scotland, Wales and Northern Ireland, each run by their own parliament. The NHS in England is being reformed under a new law passed this year, and private sector involvement is expected to increase, but people in the UK still have access to completely free healthcare (depending on immigration status), and many do not have to pay for medicines. In the UK, just like in Brazil, wealthier patients often choose to pay for additional health coverage to have faster access to elective surgery, a more personalised service, and use of private hospitals and clinics. The Brazilian health system, in contrast to the UK, is a mixture of 57% private and 43% public health expenditure. The public system operates at three levels: municipal, state and federal. While all Brazilians have a constitutional right to health and access to coverage by the public SUS health system, people with more means can combine private and public treatments.

Primary health care is being expanded in Brazil, with a system of free clinics know as Basic Health Units (UBS) offering primary and preventative services. The majority of healthcare spending is on hospital care, however, and the system still has a long way to go before it resembles the UK where all secondary referrals are initiated by GPs and hospital admissions are avoided or kept short with the help of extensive community services. Large, high quality specialised hospitals like the Hospital das Clínicas are confined to the wealthier South and Southeast regions, while the interior has many small hospitals.

Overall, most people in Brazil are able to access healthcare services, but the speed and quality of the treatment varies greatly depending on the region of the country and access to private healthcare. These disparities are similar to the UK's but much greater.

Medical education

Training of junior doctors in the UK and Brazil



After 6 years of medical school, doctors are considered ready to work independently in general medicine. Specialties require passing through a residency program, and in some cases a further specialty residency, especially for surgical specialties. In general, more is expected of trainees at an earlier stage.

2. Portuguese learning

I taught myself the basics of Brazilian Portuguese, and spent the past year taking intermediate level courses in London. This was a pleasant break from my finals revision and proved to be good preparation.

When I first arrived in Brazil, I used Portuguese at every opportunity, spending the two weeks of the Easter holidays travelling to popular tourist spots with my fiancée. However, it was when I waved goodbye to her and found myself alone in São Paulo that my Portuguese really took off. I avoided the company of other English speakers and insisted on speaking Portuguese.

At first understanding lectures was difficult but over the weeks I grew more confident. I also befriended a number of Brazilian students which helped me achieve conversational fluency. I am pleased to say that by the end of my month at FMUSP I was, although far from perfect, able to converse freely with patients and colleagues – I was frequently asked “Why did you come to Brazil of all places?” and “Which football team do you support?”. I was also able to participate in lectures, tutorials and practical activities fully. My knowledge of Portuguese terminology related to the field of GI surgery is now good, although I had to use the occasional English medical term to discuss other systems of the

body. On one of my last days, a head and neck surgeon asked, surprised, "So wait...did you say you were foreign?" – I achieved the Holy Grail of language learning, being temporarily mistaken for a native.

3. "Brazil is not for beginners"

I undertook similar activities to other year 5 students at FMUSP, who are known here as interns, although I was not fitted into their rota. Medicine is a 6-year program here and years 5 & 6 are a combination of what UK students would recognise from medical school and the duties of a foundation doctor: they have an on-call rota which they work out between themselves, and they must follow up patients, update their electronic records and prescriptions, and discuss any concerns with the residents. Patient follow-up started at 7am to prepare for a ward rounds at 8am. We had lecture-style teaching in our group of 16 students for 2-6 hours a day from the preceptor (a senior resident with teaching responsibilities) and other lecturers. This could lead to a 7pm finish, and for students on call the day did not necessarily finish there. This gruelling schedule often left students tired, and I was surprised to find that lecturers appeared comfortable with students taking catnaps during lecture before waking and resuming their note-taking. I found all of this enjoyably challenging, but after four weeks felt comfortable taking the short answer question exam for the 5th year module with the other students.

4. Surgical skills



Because of the relative speed of Brazilian training, medical students are expected to acquire surprisingly advanced competencies in terms of surgical skills. They start in the 3rd year and have further training in the 5th year.

The first classes taught surgical knots by hand and with instruments, interrupted and continuous sutures. The method used was a combination of online videos, tutorials, and practice on pigskin. Thereafter, however, I was confronted with an ethical dilemma I had not in the least expected: the subsequent classes taught blood vessel ligation, dissection and removal of various organs, and gut anastomoses, through the use of live, anaesthetised pigs. Although I am not a vegetarian and normally have no problem eating a bacon sandwich, I found it

difficult to cut into a live animal solely for the purpose of acquiring basic practical skills.

I dealt with this issue in a number of ways: first, I familiarised myself with the anaesthetic arrangements for the pig, which were a basic respirator plugged into high-flow oxygen and an infusion of sodium thiopental and fentanyl. I would monitor the pig for distress using heart rate (felt at the apex beat) and respiratory rate. I could then request more anaesthetic or adjust the respirator. These measures, while not perfect, helped to reassure me that the pig was not suffering unduly.

I also discussed my issues with colleagues and explained that these practices would be illegal in my country – to which most Brazilian students replied “So you learn your surgical skills on your patients? How is that ethical?”. It was a fair comment, and follows the same logic as animal experimentation for medical purposes – better an animal than a human. I decided to participate fully in the classes, but I would not advocate the use of animals for this purpose in the UK.

I noticed a genuine improvement in my suturing and other skills over the weeks, and learnt to deal with important emergencies such as a surgical bleed and the placing of a tracheostomy, so I found the experience worthwhile and of genuine benefit to my future patients. I leave with a fresh enthusiasm to pass on basic surgical skills to junior medical students, as I found that possessing these skills added a layer of understanding and interest to observing and learning about surgery.

Log of surgeries attended

- Colorectal: rectosigmoidectomy
- HPB: DPPP with dual loop reconstruction, biliary-intestinal anastomosis
- Liver: right lobectomy of the liver
- Oesophagus: laparoscopic cardiomyotomy and fundoplication
- General: exploratory laparotomies
- Other specialties: thyroidectomy and lymph node dissection

References

1. Health in Brazil Series. The Lancet 2011.
<http://www.thelancet.com/series/health-in-brazil>
2. CIA world factbook
<https://www.cia.gov/library/publications/the-world-factbook>