

The development of clinical pharmacy in Indonesia

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This article describes the pioneering work of two British pharmacists in developing clinical pharmacy teaching and a drug information centre in Indonesia. Future plans include the establishment of a centre for pharmacy postgraduate education and a revamping of the undergraduate curriculum to promote clinical skills while maintaining a healthy emphasis on pharmaceutical science

See also [An Indonesian Experience](#)

With a population of well over 202 million people, Indonesia is the fourth most populous country in the world. Three fifths of the people live on the main island of Java, which is roughly the size of England, making Java one of the most densely populated regions in the world. There are about 350 different ethnic groups and 600 different local languages and dialects. However, the majority speak the national language, Bahasa Indonesia. The whole country is the size of Europe, and comprises over 13,600 islands, which stretch for 3,200 miles, like pearls, along the equator between Malaysia and Australia. There are more than 150 active volcanoes, and earthquakes also occur. The average temperature is 23–30C and varies little from month to month. Humidity is high, averaging 80 per cent throughout the year, which makes the heat intense.

In recent years, Indonesia has been in the news for all the wrong reasons: political violence, human rights abuses, the forced resignation of President Suharto after 32 years' rule, economic meltdown, inter-ethnic violence, anti-Chinese riots, political and social instability, separatist insurrections, huge forest fires, and, of course, East Timor. At the same time a new development has largely passed unnoticed - the development of clinical pharmacy.

Pharmacy education

The pharmacy undergraduate course has recently been reduced from five to four years' duration. The course is followed by a year's preregistration training. The pharmacy curriculum is heavily biased towards pharmaceuticals, pharmacognosy and laboratory work. In the final year, every pharmacy undergraduate has to submit a research paper called a skripsi, which is generally at a higher level than that of the average British final year project.

In contrast to the British system, every preregistration trainee has to spend his or her year attending lectures as well as gaining experience in hospitals, community pharmacies, industry, and in the ministry of health offices. This gives the average Indonesian pharmacist a wider knowledge of all areas of pharmacy practice but does not give him or her sufficient experience in any branch of practice. Preregistration trainees must then submit themselves to written and oral examinations.

There are 16 faculties of pharmacy in Indonesia, eight of which are part of private universities. The ministry of education regulates pharmacy education. Practising pharmacists are registered with the Ikatan Sarjana Farmasi Indonesia (ISFI), which roughly translated is the Pharmaceutical Society of Indonesia. The ISFI does not possess the legal powers that are invested in the Royal Pharmaceutical Society of Great Britain. Its disciplinary powers are also limited and it is very much a loose federation of provincial branches.

The University of Surabaya



The faculty of "farmasi" at the University of Surabaya, Indonesia

The University of Surabaya, in its current form, was set up in 1968. Known locally as Ubaya, it is a private university with seven faculties (pharmacy, law, economy, psychology, engineering, business and management, postgraduate studies). Half of Indonesia's universities are privately run but continue to be regulated by the ministry of education. The total number of full-time and part-time students is 14,000.

In a recent evaluation by the national accreditation body, the faculty of pharmacy was ranked among the top five in the country. The faculty of pharmacy has an internal teaching staff of 30, supplemented by an external staff complement of 29 lecturers, who are drawn from other universities and pharmacy practitioners. The total number of students in the four-year undergraduate course is 900. Apart from the preregistration training of pharmacy graduates, there is no other postgraduate training. However, moves are afoot to set up an MSc in clinical pharmacy.



A laboratory session in progress

Pharmacy practice

In 1995, out of the 7,802 registered pharmacists in Indonesia, 43 per cent (3,327) worked in community pharmacy, 10 per cent (781) in hospitals and 11 per cent (876) in industry. The remainder were employed in academia and in the food and drugs administration (ministry of health). This means a ratio of only one pharmacist per 25,634 people (compared with one pharmacist per 1,730 people in Britain in 1995). The situation is further compounded by the overwhelming concentration of pharmacies and pharmacists in the cities.

The current situation in pharmacy education and practice is akin to that in Britain in the 1960s when traditional compounding roles were being superseded by industry. There is still a lot of extemporaneous dispensing. Many community pharmacists, because of their very poor salaries, have to take on two jobs or more. This means that it is unusual to find a pharmacist in the pharmacy shop. And, apart from in some hospitals (which provide a very basic ward pharmacy service), clinical pharmacy as we know it in Britain does not yet exist. The

majority of hospitals employ only one pharmacist who largely deals with procurement, supply and distribution.

British Council

One of us (CKT) went to Indonesia as a Christian volunteer worker with Overseas Missionary Fellowship (OMF) International in early 1996. After some time studying the language and culture, CKT was attached to the faculty of pharmacy at the University of Surabaya, where the dean of the faculty asked for help in developing clinical pharmacy in Indonesia.

We therefore helped to set up the British Council three-year higher education link between Nottingham university and the University of Surabaya. (The British Council is part of Britain's Department for International Development. It provides funds for training and exchange visits.)

To date, two of our Indonesian colleagues have been on a study visit to the UK and two British pharmacists have been to Indonesia to train Indonesian pharmacists in the skills of drug information and clinical pharmacy. In early February this year, four British pharmacists went to teach on two further courses in clinical pharmacy and drug information in Surabaya [[see p819](#)], and it is expected that 70 pharmacists from throughout Indonesia will attend these courses. The visiting pharmacists also conducted seminars in two of the major cities, Jakarta and Yogyakarta.

The centre for drug information and pharmaceutical care (CDIPC) was set up as a result of the higher education link. Its mission statement is "to promote the effective, safe, rational and cost-effective use of medicines". The centre will be linked up with the Centre for Pharmacy Postgraduate Education (CPPE) and the Pharmacy Practice Research Resource Centre in Manchester, the National Prescribing Centre in Liverpool and other equivalent organisations in the UK. We have already established links with the school of pharmacy at the University of Nottingham, the institute of pharmacy and chemistry at the University of Sunderland, Chemist & Druggist, Barnsley District General Hospital trust, the Northern General hospital in Sheffield, the North Staffordshire hospital and the Royal Pharmaceutical Society. One of us (MA) acts as the CDIPC's visiting professor and external examiner. The other (CKT) is the centre's visiting lecturer and consultant. Eventually, several British pharmacists will be appointed as specialist consultants to the various departments of the CDIPC. Because the CDIPC is university based, it has had to establish a hospital base where clinical pharmacy can be pioneered, developed and taught.

The St Vincentius a Paulo catholic hospital is one of the top hospitals in Surabaya. Founded in 1925, it is a 395-bed private general hospital, which currently employs only one pharmacist and a team of pharmacy technicians. Clinical pharmacy services do not yet exist. However, co-operation between the hospital and the CDIPC has seen the start of a basic clinical pharmacy service provided by the two drug information pharmacists based at the University of Surabaya. It is a forward looking hospital, whose executive director and board are keen to implement new pharmacy services, with the stated aim of improving patient care and reducing costs. This is important in a country where 40 per cent of the population live below the poverty line.

Training

Training is a planned activity to transfer or modify knowledge, skills and attitudes through learning experiences. Pharmacists in Indonesia need continued professional training because, without it, work performance will decline and a number of competencies will be forgotten. Changing circumstances in the field of pharmacy and new approaches and technologies demand new skills and attitudes. However, training on its own cannot solve the structural, organisational or policy problems within the pharmacy set-up in Indonesia. Training programmes are being designed to improve the performance of particular pharmacy tasks, taking into account the educational levels of the personnel and the time and resources available for training. The activities at present range from short courses run by trainers from the UK to long-term placements of pharmacists in different departments under the supervision of the local trainers.

The major objectives in the planned training programmes are to:

- Increase knowledge about the special needs of pharmaceutical systems
- Change attitudes about the importance of drug management, thus improving the environment for change
- Improve the skills in specific tasks to be completed for efficient functioning of the drug supply system in the hospital
- Improve work behaviour, so that people function better at assigned activities and fulfil their potential

Future developments

The drug information unit, modelled on the UK regional drug information centre, was set up in February, 1999. We plan to set up the centre for continuing education in 2001, followed soon after by the pharmacy practice research centre. We are in the process of working

with the British Council and our Indonesian colleagues in organising a national conference on the pharmacy curriculum, with a view to revamping the course so enabling the development of clinical pharmacy while maintaining the strength of the course in the pharmaceutical sciences. This is important as industry employs a large number of Indonesian pharmacists, who play a key role in the pharmaceutical, food and cosmetic industry.

Also, herbal medicine is widely and extensively practised in Indonesia and the pharmacist's knowledge of pharmacognosy must be maintained.

We are also looking for sponsorships from multinational pharmaceutical firms to build the centre, which will house the six departments and lectureships in clinical pharmacy. At the same time we are seeking help from the World Health Organisation to fund a new MSc course in clinical pharmacy.

The future development strategy will focus on the major problems in the drug management process. The academic and practice-oriented developments will form the base from which to establish clinical pharmacy practice in Indonesia.

We are very much in pioneer territory. There is a lot of resistance to change both from inside and outside the pharmaceutical profession. Much credit for the hard won achievements goes to the rector and head of international affairs of the University of Surabaya, along with the present and past dean of the faculty of pharmacy and the first two clinical pharmacists employed at the CDIPC. The British Council has provided invaluable support and advice.

The contributions made by so many British pharmacists make us feel proud to be members of a profession that has shared so freely with Indonesian colleagues who are trying to develop the profession under very difficult conditions. It is interesting that many of our Indonesian colleagues are enthusiastic about developing their profession along British lines, with obvious modifications to suit local needs. It is our hope that the pharmaceutical profession here will continue to help Indonesian pharmacy to bridge the gap with the West, while maintaining its strength in pharmacognosy and pharmaceuticals.

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