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Preparing the Medical Practitioners of the Nineties: Obstacles and Opportunities — An Outline for Indonesia[1)]

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INTISARI

R. Soeprono — *Mempersiapkan dokter untuk tahun 1990-an: Hambatan dan kemungkinan*

Menghadapi saingan instrumentasi medikoteknis, superspesialisasi dan arus materialisme yang semakin deras mempesona, dedikasi kepada prinsip-prinsip etik dan pengabdian khususnya untuk mampu mengembangkan ruralisasi upaya kesehatan, menjadi terasa lebih lagi diperlukan bila suatu negara dunia ketiga yang sedang membangun menginginkan dapat menyelesaikan masalah kesehatan masyarakatnya secara lebih tuntas dalam kurun waktu dua dasa warsa mendatang ini. Di antara sekian banyak masalah pokok yang perlu ditangani adalah edukasi angkatan pelayan kesehatan penerus. Pendidikan ini perlu memperhatikan sasaran kesejahteraan masyarakat berpenghasilan rendah yang masih saja merupakan bagian terbesar penduduk, dan ditujukan pertama-tama kepada kepentingan negara dan bangsa itu sendiri untuk keperluannya yang mendesak sekarang maupun yang vital untuk hari depannya.

Key Words: medical education — national health policy — public health service — rural health — health tradition and innovation

We medical practitioners in Indonesia together with our paramedical and allied non-medical people are at present still facing a staggering array of problems, the solutions of which are simultaneously a privilege and a challenge worthy of our best efforts in skill and dedication. We can be convinced that the like situation will persist to exist in the nineties, albeit perhaps with unlike obstacles and opportunities, and with different fields of priority and emphasis.

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That will be all the more true if we during this present decade fail to lay the *right basis of action* and set the *right direction of our mission,* if we fail to forethink and foresee the upcoming needs and priorities, or for that matter are not able to create opportunities and implement innovative approaches to overcome the multitude of constraints.

Surely one basic among many other basics deserving our unremitting attention is the *education of the coming generation of medical practitioners,* and obviously also to some extent re-education of a sizable segment among present-day doctors and wisely of ourselves too to begin with. It should be set up in the lofty tradition of unselfish service to the needy. It should also be based upon norms and directed to objectives relevant to the pressing needs and the vital future of *the own country in the first place.*

The locality and natural conditions might be different among developing countries in the third world, but generally the problems or issues are more or less similar, differing perhaps only in time and gradation.

SOME EXISTANT PROBLEMS

Traditional problems of ignorance and poverty, low income and underemployment, malnourishment and overpopulation, lack of sanitation, clean water supply and adequate housing, environmental pollution and rampant communicable infectious diseases, high degrees of maternal —, perinatal — and overall mortality rates, will hopefully be reduced in size and impact in the nineties. But *lingering doubts* are there, when we take into account the country's geographic, demographic, socio-cultural, economic and educational conditions, since we know that the solution of health problems does not only depend on medical measures alone, but in this complex world of today depends also on many other and sometimes even on unseemingly related non-medical factors.

As the fifth most populous nation in the world with 147.5 millions, a high birth rate of 38 promille and a net increase of 2.34% (National Population Sensus 1980), a projection of population size approaching 200 millions in the mid-nineties seems to be on the conservative side.

Per capita income is US$430 and life expectancy at birth 53 years (World Bank Report, 1982). Although economic growth is on average 6—7% in the last couple of years, uneven distribution of income, employment and development centers remain undersolved problems, resulting in 40% or more of the population living below poverty line. The prevailing worldwide recession is affecting the economic and overall productivity prospect for many years to come. There will exist for sure a longstanding and uneasy imbalance between rate of production and population increase, despite the widely acclaimed accomplishment of the twelve-year old national family planning program.

The immense expanse of the country (1 919 443 sqkm) comprising 13 600 islands, 27 provinces, 300 regencies, 3383 subdistricts and 63 635 villages is a valuable asset, but is posing also immense problems of administration and physical communication. More than 80% of the population is rural with agriculture and small craftmanship as main modes of living. Urbanization, environmental denudation and population are creating pressing and long-range problems.

Average family size is 4.9; in the rural areas however parity of 7 plus is still prevalent, due to lack of an active and easily available rural surgical contraception program. The country's is a young population with 39.6% in the unproductive age below 15, and 49.2% in the fertile age between 15—49 years.

There is an uneven distribution of people and recources. The islands of Java—Madura with only 6.9% of area have 61.9% (91.3 millions) of the population with the highest population density of 690 per sqkm. Kalimantan, however, one of the biggest island with 28.11% of area has only 12 per sqkm, while Irian—Maluku with 25.89% of area have a still lower 5 per sqkm.

This uneven distribution applies also to the skilled people in nearly all fields of professional life, in particular to medical and allied personnel. Although there are now 4750 doctor-staffed health centers in subdistricts through the country, there persists an undesirable accumulation of doctors in the cities. The more so is this the case with specialists and with the big metropolitan cities and sites of medical schools, at present numbering 14 state and 7 private ones with a combined yearly output of 1400 graduates. It is only in the last 4 to 5 years that outlying regency hospitals and then only in a very small percentage can count on specialist staffing in the four basic fields as medicine, surgery, obstetrics—gynecology and pediatrics.

Facilities for radiography, transfusion, ambulance, consultation and emergency services remain deficient or non-existent below regency level. For the rural people who are the biggest part of the population and who are in fact the major source of the many medical and health problems, the organized provision of comprehensively expanded and improved health services deserves the utmost concern of the government, the profession and the community itself.

Indeed it is believed that the *solution of this rural problem* would mean the biggest advance in solving the country's health problems. And this *concern for the rural community* is really one of the most important aspects of the health delivery system for several decades to come in any developing country in the third world.

Even as the traditional ailments besetting a developing country have not been conquered, Indonesia too has to cope in an ever increasing measure with the so-called diseases of developed communities, such as hypertension, heart disease, cancer, diabetes and accidents. Already the death toll from traffic accidents in road-discipline-poor Indonesia is alarmingly surpassing many other causes of death.

NOTES ON MEDICAL EDUCATION IN INDONESIA

It would take too long a story to review in detail the 130 years of historical development concerning medical education in Indonesia. A few data may suffice to give a brief outline of the three periods it has gone through: the Dutch colonial years (1851—1942), the Japanese occupation (1943—1945) and the era of independence (1945—today) (TABLE 1).

Started with the inception of the *Dokter Djawa School* (DDS) in Jakarta in 1851 with a course of two years (extended to 3, 7 and later on to 8 years), it was further upgraded to become the *School tot Opleiding van Indische Artsen*

TABLE 1. — Medical education in Indonesia — A historical outline

Period	School' Name	Existence	Location	Course (years)	Preschooling (years)	Ruling
Dutch	Dokter Djawa	1851—1898	Jakarta	2—1851	5	SC
				3—1864		
				7—1875	7	
				8—1881	7	
	STOVIA	1898—1927	Jakarta	9	7	SC → 1924
	NIAS	1913—1942	Surabaya	10	7	SC → 1924
	GHS	1927—1942	Jakarta	7	13	
Japanese	Ika Dai Gaku	1943—1945	Jakarta	5	12	
Indonesia	PTK	1946—1948	Klaten—Solo	6	12	
	FK UGM	1949—now	Yogyakarta	7 → 6	13	
	FK UI	1950—now	Jakarta	7 → 6	13	

FK UNAIR Surabaya 1954, FK USU Medan 1957, FK UNAND Padang 1956, FK UNPAD Bandung 1957, FK UNDIP Semarang 1960, FK UNSRI Palembang 1960, FK UNHAS Ujungpandang 1961, FK UNIBRAW Malang 1961, FK UNSRAT Manado 1961, FK UNUD Denpasar 1962, FK UNS Solo 1976, FK UNSYIAH Banda Aceh 1981

Total 14 public medical schools — 6 — years course — 13 years preschooling

7 private medical schools

SC = Service Contract Since 1972 CS = Compulsory Service for graduates

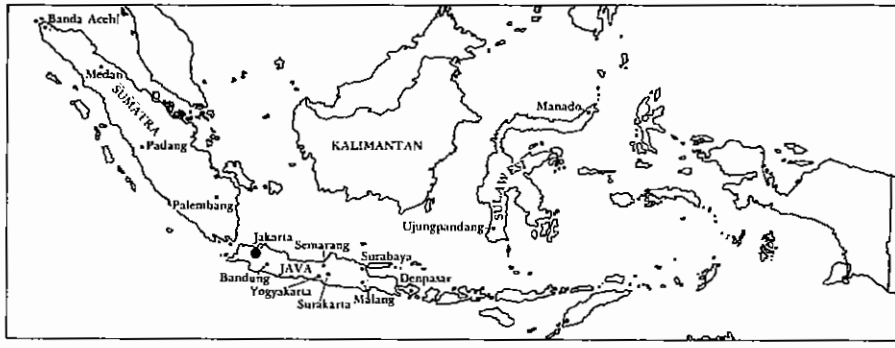


DIAGRAM 1. — Map of Indonesia — Sites of medical schools.

(STOVIA) in 1898 with a course of 9 years. In 1913 a second medical school on the same footing was established in Surabaya named *Nederlandsch-Indische Artsen School* (NIAS). The school in Jakarta became a medical faculty, the *Geneeskundige Hooge School* (GHS), in 1927 with a 7-year course. Together with the faculties for engineering, law, and letters they were the only schools for higher learning during that period.

During the Japanese years of occupation the two medical schools were combine to become the *Ika Dai-Gaku* in Jakarta. Born on the wings of rising nationalism and staffed by Indonesian professors and doctors, it was at this time that medical education started to be taught in the Indonesian national language *(Bahasa Indonesia)*, a memorable fact which endures until this very day. As a matter of fact it was also used in all schools of every level. The Dutch language

was discarded while the Japanese one did not become established in the very short period of occupation. The course was then shortened to five years to fill the urgent need for more doctors.

With the return of the Dutch at the end of the war the medical school in Jakarta was evacuated to Central Java, its preclinical unit to Klaten and its clinical unit to Surakarta, becoming respectively the *Perguruan Tinggi Kedokteran Klaten dan Surakarta* (1946).

Many times schooling was interrupted due to the fighting against the Dutch. After sovereignity was regained in 1949, the school in Klaten became the *Fakultas Kedokteran Universitas Gadjah Mada* (December 1949), together with elements from the school in Surakarta. The rest returned to Jakarta to become the *Fakultas Kedokteran Universitas Indonesia* (February 1950).

Between 1950—1965 came the medical faculties in Surabaya, Medan, Ujungpandang, Malang, Padang, Bandung, Manado, Semarang, Palembang, and Denpasar, to be followed in recent years by those in Surakarta and Banda Aceh, bringing the total number of these state medical faculties to 14. There are now 7 private medical schools in various stages of development, most of them located in the capital city of Jakarta.

Gadjah Mada University in Yogyakarta was born in the early days of the Republic of Indonesia amidst the struggle for independence. Founded and staffed by people aglow with nationalist and community spirit, it has the distinction to be the first truly national university, the oldest and the largest, and since its early history sited on one campus. True to its proud tradition its graduates are well known for their willingness and aptitude for community service.

It is a well-founded understatement that the history of higher education in the country in particular of its medical schools, has always been closely interwoven with the national political and physical struggle for independence during the Dutch colonial years, during the Japanese occupation, during the physical revolution against the allied and Dutch forces in the forties, when many of the students and faculty were actively involved and had to pay dearly with their lives. As a matter of fact the first nationalist movement named Boedi Oetomo became a reality in 1908 in the anatomy lecture room of the medical school. There is always also the tradition of public service when from 1851 to 1923 graduates were directly inducted into government service as part of the signed agreement at admission. Although this regulation was abolished in 1924 most of the doctors entered and remained in public service until their retirement. Humanism and public service were two characteristics of a great number of doctors of those early eras, although many others have achieved also scientific prominence in their chosen fields. A great number of hospitals and institutions have now been named after those pioneers and fighters, to name a few: Cipto Mangunkusumo, Sutomo, Sardjito, Karyadi, Muwardi. Several have even achieved international acclaim for their humanitarian service, among others Kodiat and Warsito who have been honored with the highly coveted Magsaysay Award.

As elsewhere there are of course not a few among the medical practitioners who prefer to work for their own sake, even forgetting their oath and deviating from ethical standards. A great many too want only to be posted in the cities, not willing to serve in the small regency outposts. Many big cities have to be declared

closed for new private practice. Nonetheless accumulation and concentration of doctors in the big cities could not be prevented or averted, especially in the case of specialists and in cities with medical schools with their need for adequately big staffing for education, research and services. However, it can be stated that the biggest part of the corps of doctors are employed by the government, either in the public health service working in administration or in hospitals, in education with the medical schools or in the military units. The young doctor in purely private practice working for his or her own sake is very few in number.

The problem concerning drain of doctors to other countries is non-existant in Indonesia. There are indeed several who have left the country for a better salaried or a scientifically more rewarding job abroad, but their number is very small and they are mostly non-native.

FROM RANDOM GROWTH TOWARDS A NATIONAL SYSTEM

In the early fifties, higher education in the country essentially consisted of the two universities in Yogyakarta (Universitas Gadjah Mada) and in Jakarta (Universitas Indonesia). In the relatively short period of twenty five years that followed, there was to be seen a very impressive growth of higher learning: the total number of students has grown to more than twenty five times (250 000), public institutions to more than 200 when none existed before, and accompanied by a very wide diversification.

To quote further from the Report on Higher Education in Indonesia (Ministry of Education, 1980):

> This impressive growth which is expected as a consequence of the big size of population and the zeal of independence and the development towards nationhood, was not matched by a simultaneous proportional expansion of the infrastructure to provide the needed support for a viable educational system. This period of the first twenty five years could well be described as a period of random growth until a certain limit of magnitudes of constraints was reached in which the necessity was felt for a coordinated and planned development.

After experimenting with different study patterns, *i. e.* Dutch, American, and continental European in an uncoordinated fashion, a national system is finally being developed through convergence towards a common platform on which the system is built upon. This convergence is obtained through painstaking approaches and deliberations until consensus was reached, by a desire of all concerned, *i. e.* the university community as well as the administrators, to do better in the service of society.

The further development of medical education in the country is to be seen in this aforementioned context. It should also be seen in the frame of the coordinated planning of overall national development, specifically in regard of a national health system. As part of this system health services programmes have been expanded and extended into the subdistricts and villages in the ruralities, through the creation of public health centers that now are numbering around 5000 located troughout the whole of the country. To staff these health centers or *Pusat Kesehatan Masyarakat* (PUSKESMAS) are the newly graduated doctors. It was by presidential decree in the early seventies that *every medical graduate has to serve first in the health centers for a period of three* (in most of the other islands) to *five years* (in Java—Madura), before he or she is allowed to enter into residency training to become a specialist in the clinical disciplines, or to go into

purely private practice. This regulation is consequently projecting the medical graduate in a position of leadership in the rural community development beyond the medical and health sectors.

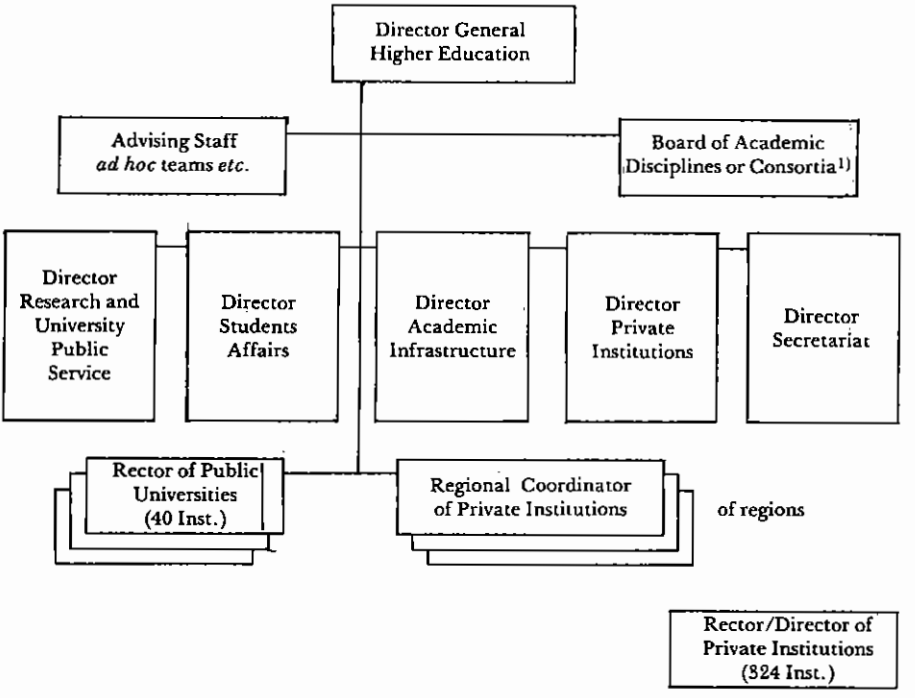
Accepted not without reservation in the first years of the program, this regulation has now become popular with the graduates, because the job provides security of position, allows additional income through the many service—directed paramedical programs (family planning, nutrition, school health etc.), provides training and experience in administration and management, and allows private practice in off-duty hours. It is also the surest route to go into specialist training, although after certification they have to remain in the public health service to staff the regency hospital specialist program. It may sound strange but only 30—40% choose specialization, while a great many others prefer to remain in the health centers, creating new problems for the department of health to find openings for the new crop of doctors. It is clear that within several years this program will reach saturation, but the fact is that as now it is very difficult for the medical schools, public or private, to get additional educational staff, in particular in the clinical disciplines, and nearly impossible for the four basic special fields as internal medicine, surgery, obstetrics—gynecology and pediatrics.

Medical education as all other forms of education (primary, secondary, tertiary) is not free. Students in public faculties have to pay yearly tuition fee of Rp. 36—60 thousands rupiahs (equivalent to 400—600 pisos), depending on geographical area. Students in private institutions pay 10—20 times or more. This mandatory service after graduation and certification applies to all medical graduates, from public and private schools alike.

There is no association of medical schools like that exists in the Philippines. There is however a *Consortium of Medical Sciences*, an advisory body to the Director General of Higher Education within the Department of Education and Culture, and a coordinating body for undergraduate and postgraduate medical education (see DIAGRAM 2). Through this CMS the deans of the public medical and dental schools meet periodically to deliberate on common objectives, issues, norms, curriculum, accredition standards for training centers etc. The accepted standards are also binding for the private schools who are also being coordinated through the CMS, *e. g.* regarding national board examinations for their students.

Further outline on the basic philosophy of roles and challenges to be met by the Indonesian university is given in APPENDIX 1. It is clear from this outline that medical education and medical schools have definite roles to play within the overall national health development system.

This applies also now for the *postgraduate specialist training*. Formerly based on the apprenticeship system under recognized individual preceptors, certification given by the respective professional associations, residency training is now a regular university curricular program, jointly coordinated by the Department of Education and Department of Health, and takes place only in medical schools appointed by the Department of Education and in provincial hospitals (capacity 600—1000 beds) run by the Department of Health. The whole process of education, including examination and certification, is on the whole domestic and directed to serve the country's needs and priorities.



1) 11 Consortia: for Education, Social Sciences and Humanities, Medical Sciences, Engineering, Mathematics and Natural Sciences, Law, Economics, Agricultural Sciences, Literature, Psychology, Interdisciplinary.

DIAGRAM 2. — Higher education in Indonesia — A national system

Medical curriculum

Medical undergraduate course in the country's schools is now generally six years, with 220—240 semester credits. As the national core curriculum comprises 180 credits, each school has the opportunity to organize its own elective courses, thereby creating or stressing its own identity. The six years comprehensively include premedical, preclinical and clinical instruction with fully rotating internships in all clinical fields during the last two of the six years. Students are admitted from the senior high schools with mathematics and physics as basis (6 + 3 + 3 years schooling), who pass the admission examinations that are centrally conducted. Competition is tough, for each admission there are usually 15—20 applications. Intake varies from school to school, 80—150 yearly (See TABLES 2—7).

The first woman doctor was graduated in 1922. Since then the number of women graduates has been increasing steadily. In Yogyakarta the yearly intake is 30—33% of admission. With the dental faculty this percentage has become even higher, more than 50%.

Since the early sixties *community-oriented medical education* (COME) has become established in a number of medical faculties, notably in Yogyakarta,

TABLE 2.— Medical education in Indonesia — Relation with National Health Planning

Evidences of relationship:

1. Service Contract after graduate for Dokter Djawa, STOVIA and NIAS graduates (1851—1924) to serve in the Public Health Service
2. National Development Plan —April 1960— instruction to increase intake and output
3. National Five-Year Development Plan —April 1972— compulsory service for medical graduates staffing of 5000 Health Centers
4. National Five-Year Development Plan —April 1976— national system for residency training-staffing of regency hospitals with 4 basic specialists
5. Departmental interrelation —at various levels— joint ministerial decrees on training, teaching facilities, field area laboratory etc., joint research program, joint task forces, consultation on National Health System 1982, implementation of residency program, collaboration between Provincial Health Services and Medical Faculties on health programs, Ethical Committees etc.

TABLE 3.— Medical education in Indonesia — Undergraduate program FKUGM (Revision 1983)

Prerequisite for entrance

- Diploma from recognized Senior High School B (Math/Physics) — 6 + 3 + 3 years. Pass state examination
- Pass entrance examination Mathematics, Physics, Biology, Chemistry, English. Examinations conducted centrally
- Indonesian nationality, certificate of good health & conduct
- Ranked academic score for final selection; sometimes personal interview

Objectives of education

- To produce community oriented doctors
  With appropriate levels of attitude, knowledge and skill
- Ready for Health Center and regency level health service
- Ability to contribute to regional development in leadership role
- Ability to advance

Curriculum

- Course of 6 years = 12 semesters
- Since 1976 on credit system (first in the country)
  Totalling 211 semester credits = 203 compulsory + 8 electives
- Comprises 3 stages of program:

Program *Sarjana Muda*	Semesters	I—VI	116 =	100 comp. + 6 elect.
Program *Sarjana*	Semesters	VII—VIII	40 =	38 comp. + 2 elect.
Internships	Semesters	IX—XII	55 =	55 comp.
	Semesters	I—XII	211 =	203 comp. + 8 elect.

- Methods of instruction: lectures, lab. practicals, tutorials, assigments, small group discussions; OPD, IPD/Ward, bedside teachings, seminars, symposia, referata etc. field/community work programmes
- Evaluation: tests, tentamina, mid-term and semester exams, final exams (written, oral, patient)
- Emphasis given on: community orientation, humanities and medical ethics

TABLE 3. — Continued

— Participation in faculty and university intra — and extracurricular activities

— *Kuliah KerjaNyata* (KKN) = curricular university community program, multisectoral

Problems and issues

— Too many students

— Too many interns

— Shortage of textbooks in Indonesian language

— Insufficient English language proficiency with students/part of staff

— Overburdened staff, difficulties in recruiting staff *e.g.* in basic sciences

— No real teaching hospital — General hospital under Health Ministry

— Curriculum too tight — insufficient time for extracurricular work

— Shortage of funding/budget

— Staff — shortage, away from work for many reasons, to be allowed private practice to add to insufficient salary

— Insufficient funding for research

— Too much administrative paper work, lack of modern office automation

— Too many regulations from above

— Deficient coordination between Ministries of Education & Health

TABLE 4. — Curriculum — Compulsory courses per semester and credits (Revision 1983)

Courses	Program *Sarjana Muda*						Program *Sarjana*		Total of
Sem.	I	II	III	IV	V	VI	VII	VIII	Credits
01 Religion	2						2		4
02 *Pancasila*				2				2	4
03 *Kewiraan*			2						2
04 Medical ethics				1			1		2
05 English	2	2							4
06 Medical physics	3								3
07 Medical chemistry	3								3
08 Biology	3								3
09 Genetics	2								2
10 Community medicine (CM)	1	1	1	2	2	2	2	2	13
11 Anatomy	2	5	5						12
12 Anthropology			1						1
13 Histology		2	2						4
14 Physiology		3	3						6
15 Biochemistry		3	3						6
16 Biostatistics		1							1
17 Pathology				3	3				6
18 Microbiology				3	3				6
19 Parasitology				2	2				4
20 Pharmacology				3	3				6
21 Clinical pathology				3	2				5
22 Public health & Preventive medicine					1	1	1		3
23 Forensic medicine						1	1	1	3
24 Internal medicine					1	4	2	2	9
25 Child health						2	2	2	6
26 Obstetrics—Gynecology						3	2	2	7
27 Surgery						4	2	2	8

TABLE 4. — Continued

Courses	Sem.	Program *Sarjana Muda* I	II	III	IV	V	VI	Program *Sarjana* VII	VIII	Total of Credits
28 Anesthesiology & Intensive care							1			1
29 Radiology								2		2
30 Psychiatry							1	1	1	3
31 Neurology								2		2
32 Ophthalmology									2	2
33 Dermato-Venerology									2	2
34 E. N. T.									2	2
35 Medical pharmacy						1				1
Total credits		18	17	17	19	19	20	19	19	148

1 semester credits comprises 3 exercises per week: 50 minutes lecture, 60 minutes home work/exercise, 60 minutes reading assignment

TABLE 5. — Curriculum — Compulsory internship during semesters IX — XII (Revision 1983)

Internships	Weeks
01 Internal medicine	12
02 Surgery	12
03 Obstetrics — Gynecology	12
04 Child health	12
05 Psychiatry	6
06 Neurology	6
07 Ophthalmology	6
08 Dermato-Venerology	6
09 E. N. T.	4
10 Radiology	4
11 Forensic medicine	4
12 Anesthesiology & Intensive care	2
13 Medical pharmacy	2
14 PH & PM and CM	6
15 *Kuliah Kerja Nyata* = KKN	6
Total	100

All internships to be taken fully rotating
KKN is a university field program to be taken at the end of undergraduate course, 6 — 8 weeks
1 semester credit = 5 days a 16 hours = 80 hours
1 semester credit + 1 week ward duty/on call = 80 hours
1week internship in OPD = 40 hours = ½ semester credit

TABLE 6. — Medical education in Indonesia — Requirements for teaching hospitals

Undergraduate training

The hospitals used are public general hospitals under Ministry of Health, located in provincial capital. Usually type B hospital (capacity 600 — 800 beds). In Jakarta and Surabaya type A hospitals (capacity 1000 — 1200 beds). Function also as top referral hospitals. Private medical schools have own hospitals.

Most medical schools are also affiliated with regency hospitals (type C or D) for additional facilities. Also with health centers for provision of rural/subrural experience.

Several schools have field areas comprising 1 — 3 regencies for community medicine programs. Usually in collaboration with provincial health services and local authorities/village heads.

TABLE 6. — Continued

Postgraduate training — residency program

By regulation of Ministry of Education and Culture, postgraduate training is only conducted in State Medical Schools.

Hospitals used are of type B or A general hospitals with respective specialty units/departments. There is detailed regulation for each specialty training program concerning minimum number of beds, ward intake, OPD visits, number and variety of cases, etc.

Also regulation concerning number and qualification of staff, ratio of resident to staff, library, laboratoria, equipment etc. There is periodic assessment of the training centers. Approval of center to train is by ministerial decree.

Use of public hospitals for medical education and differentiation of responsibilities between collaborating medical school and hospital are regulated by joint ministerial decree (Health, Education, Interior).

TABLE 7. — Curriculum — Elective courses during semesters I — VIII (Revision 1983)

Courses Offered	Program *Sarjana Muda* I	II	III	IV	V	VI	Program *Sarjana* VII	VIII	Coordination
01 *Penalaran* — Logic	1								Associate Dean
02 Introduction to sociology	1								CM
03 Ecology	1								PH & PM
04 Socio-culturals		1							CM
05 Group dynamics		1							CM
06 Communication methodology		1							CM
07 Medical philosophy		1							Associate Dean
08 Educational methodology			1						CM
09 Research methodology			1						PH & PM
10 Medical psychology			1						Psychiatry
11 Family planning & Population dynamics			1						CM
12 Health service management				1					CM
13 Sexuology				1					Obstet. — Gynecol.
14 Nutrition					1				Child health
15 Sports medicine					1				Internal medicine
16 Emergency medicine							1		Surgery
17 Transfusion, Resuscitation, Disaster medicine							1		Anesthesiology & IC
18 Geriatrics							1		Internal medicine
19 Industrial medicine								1	PH & PM
20 Immunology								1	Internal medicine
	3	4	4	2	2		3	2	20 credits

Students in Program *Sarjana Muda* —Semesters I—VI— have to take 6 semester credits out of the 15 offered

Students in Program *Sarjana* —Semesters VII—VIII— have to take 2 semester credits out of the 5 offered

No electives for the semesters IX—XII

No withdrawal from chosen electives. Number of credits not to exceed the stipulated 6 or 2

where it now provides community medicine programs troughout the six years of curriculum. The aim is to instill into staff and students willingness and skill to serve the community, to produce community-oriented medical practitioners. It is an interdepartmental and interinstitutional program, drawing staff from 18 of the 23 departments within their own faculty and from other faculties and public health services. Preparations have been completed to also include residency training in this program starting early 1983. The objective is clear: to produce

community-oriented doctors and specialists. This is in line with the national program to provide all regency hospitals with the four basic specialists, where they are expected to develop outreach programs to reach the community.

It is indeed our conviction that only through *ruralization of* medical services staffed by community-oriented medical practitioners, the rampant health problems of the country can be solved, of course in conjunction with definite improvements of rural living standards generally.

Need for education

Citing the following passages from a paper the author presented at an international symposium under the auspices of Mahidol University and the Rockefeller Foundation under the theme "Southeast Asia addresses its health problems: Current research and educational activities", Bangkok, October 28 — November 1, 1974, this need for education and appropriate education policies is emphasized.

> It is clear that to accomplish these things the right basic attitude must be created. Education is needed.
>
> The people themselves must be educated to understand why and what for they need improvement in their living conditions. They must be educated to want these improvements and shown the ways and means to achieve them. The responsible medical, paramedical and non-medical persons involved should receive the necessary training, and this applies by all means to the doctors and specialists too.
>
> This education should not mean only the training in established and newly developed medico-technical knowledge and skill, but in a basically more important measure also education in such more imponderable things as:
>
> - behaviourial sciences, cultural anthropology and demography
> - communication methodology to reach the individual or the community
> - ability to collaborate with others — as a member or as a leader in a team — with medical and non-medical colleagues, with subordinates and with the official and non-official leaders of the community
> - ability to understand the wants and needs of the community and the reasons and priorities of need
> - ability to serve and dedicate oneself to the welfare of the family and in so doing serving the welfare of the coming generation and the future of the country
> - ability to look beyond the individual patient and the confinement of office and hospital in a broader and more far-sighted fashion into the society and into the future
> - ability to recognize that in this complex world of today, medicine has to depend often on non-medical and sometimes on seemingly unrelated disciplines for solutions of its problems
> - and maybe most important of all at this stage of community medicine also the ability to follow a dream against odds and frustrations.

FURTHER THOUGHTS FOR THE FUTURE

The years to come will prove whether the above system of education will properly prepare the medical practitioners of the nineties. As stated before the present rampant problems will still be there, albeit reduced in nine and of different pressure. On top on those will emerge other problems and disease entities peculiar to more developed communities. Hypertension, heart disease, cancer, diabetes, traffic and occupational accident will prevail, but surely also other

problems originating from mental and moral stress, from old age and genetic aberrations, from overpopulation and malnourishment, from unrestrained sexual mores and loosening family ties. Several communicable infectious diseases will recur with new difficult to explain intensity, possibly through man-induced irreparable ecologic damages, *e. g.* malaria.

On the other hand there will be many advances in diagnostic, curative and operative techniques and instrumentation, many of which undreamed before. Organ transplantation and substitution, immunogenetic discoveries and many manipulation are expected to advance, hopefully for the lasting benefit of mankind. All of these will lead to super– and subspecialized knowledge and skill, posing increasingly difficult burden of study for the medical student, teacher and practitioner to keep up and to master. The possibility is there that many medical practitioners will forget the sick patient, the family and community and become misled in their basic attitude towards services. The possibility is there that medical care will become more and more expensive beyond the social and economic reach of the common many.

Dedication to ethical standards and community orientation will have to compete harder against these more alluring medicotechnical instrumentation and subspecialization, while even now it has become clearly evident that the solution of a developing country's health problems depends undoubtedly on the solution of its rural problems.

Priorities and national standards for medical education

A country's medical system must be able to select and adopt from the overflow of an over-expanding body of new medical knowledge and practice *what is essential, applicable and appropriate for the current and pressing needs of its community*. For many developing countries there is no need in certain period of their development for special and sophisticated techniques or procedures aimed principally to benefit specific individual cases, although they have become topical in developed countries, such as transplantation or genetic engineering etc.

What is understandably important to the individual patient's management, may not yet be needed widely in the community, where the stress is still on saving the masses from disease and death.

Priorities therefore should be made relevant to the pressing needs or the vital future of the country. This should also be made clear to the leaders in government, politics and religion who have the responsibility or opportunity to shape national policy.

It is only appropriate that *medical educational standards should be set nationally* with *relevance to the conditions and needs of their own country in the first place*.

Norms should be set not to the needs or requirements of other or developed countries. While complying to other country's or international standard is often a necessary requirement for the individual doctor to qualify for active participation in clinical procedures during training in the country concerned, organized on a large scale it would tend to encourage doctors to leave their own country for a better salaried job abroad.

Far from being chauvinistic, *a national policy of evaluation and adaption* should be set up for foreign trained doctors wishing to practice medicine in the native country, for the simple reason that there are geographical and anthropological differences in disease pattern, or differences in ethical standard governing medical practice.

Clearly there is need for a *national political will* to initiate and maintain this policy.

On traditional or oriental systems of medicine

Fully aware that it will provoke debates and controversies, it is nonetheless clearly appropriate to mention at this point that more serious thoughts, attention and planned action should be devoted to endeavors leading to re-discovery and re-development of the own traditional and other oriental systems of medicine, that have proved their value and in several instances even have shown superior characteristics. While it is true that of many of these their physical, biochemical or cellular basis is not yet understood, definitely there is room for their practical use and considered inclusion in research, education and service programs. Unknown to and even scorned by many of the own native doctors and scientists in their overt attachment to the more materialistic line of thinking, many of those very systems of medicine have won recognition and appreciation in occidental centers of medical science, *e. g.* acupuncture, herbal medicine, *shiatsu* therapy, psychic healing etc. A critical but balanced assessment of the many potentials and the many more limitations, coupled with adoption of other sound scientific principles, will certainly enhanced development and utilization, in particular for the benefit of the many poor. This is because delivery of most of these systems of medicine is more natural and thus more inexpensive, or in the case of true psychic healing would be given only on the basis of compassion devoid of materialistic consideration.

ETHICS AND COMMUNITY ORIENTATION

These two principles will be the more needed to be instilled and upheld for the coming nineties for all medical practitioners, to be able to serve the community through the application of appropriate advances in medical knowledge, skill and technology.

Concerning educational methods to be employed, it is believed that the best results would be achieved not by pressure or by tight regulations, but more by persuasion, exposure to the own community to gain experience and most important by personal example.

There is always felt the need to expose the student as early as possible to the clinic and to the individual patient. In a more basic way there is need to *expose them as early and as widely as possible to the community and its people*.

That way only will they learn from first-hand contact about the problems and needs of the people, knowing the reasons and the background of the steps they may have to organize in their future work. Such a problem-solving approach will become the pattern of their practical thinking and doing. One should not underestimate the capacity or the maturity of the students to gain insight in community affairs by themselves.

From insight might some understanding, compassion and possibly even love for the community. It is a statement of confidence that given the provision to do his work properly ensuring him of professional satisfaction, the average graduate will not fail to accept serving the community in a rural setting. The history of every country can point to its score of medical men and women, who in their unselfish service to the community have found their dream and fulfillment.

SUMMARY

Competing against the ever-widening reach of alluring medicotechnical instrumentation, superspecialization and material drift, dedication to ethical standards and community orientation stressing ruralization of health delivery measures, will be the more needed if a developing third world country would aim to have its health problems solved in a meaningful way within the next two decades. Basic among many other basics in the education of the coming generation of medical practitioners, set up in the lofty tradition of service to the needy, and based upon norms and directed to objectives relevant to the pressing needs and the vital future of their own country in the first place.

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APPENDIX 1. — On role and challenges of higher education in Indonesia

The following passages are qouted from Tisna Amidjaja and Sapi'ie (1980). They are presented *in extenso* to better illustrate the basic philosophy upon which higher education in Indonesia is expected to fulfill its role and to meet its challenges in regard to national development. This surely applies also to medical education as an important part of this system:

> Within the Indonesian context the university as institution of higher learning, has a profound role within the development of the nation. Its role is significantly pronounced within the stream of modernization which each developing nation is confronted at present.
>
> It is within this process that the university in Indonesia is expected to identify itself as an agent for development, to facilitate this modernization process for the good of the nation.
>
> However, the core of the objectives of higher learning in Indonesia, is the individual development of the young students towards an ideally "perfect" human and Indonesian *i. e.* a balanced academician with a convincing belief in the philosophy of "Pancasila". The pursue of this objective is reflected in the content of the curriculum.

On the Public Service Function of the universities the following excerpts give an outline worthy of note:

> Aside from teaching and research, a commonly accepted classical concept of university functions, the Indonesian universities also considered direct involvement with affairs of society as one of its fundamental tasks. This is probably true in some other countries as well. This function is what is known as the "*Public Service Function of the universities*".

Through this the universities are expected to be more aware of the needs of society and to align their programs more in tune with the needs for development. Innovative programs with participation of society have been launched, some of them forming a total educational package for the students. The rural areas and their problems of development are of prime interest for the universities to formulate their public service programs.

The Indonesian society responds very favourably to this outlook, and considers the university as part of its consultative and service institutions where it can turn for its problems. The character of the service provided could be of many kinds, containing aspects of research or of professional nature.

This service function of the universities is the more pronounced, and gains importance in the planning, execution and administration of development programs. In many cases the universities are still the institutions where the brainpower in the region is concentrated.

In 1975 the basic underlying policy was formulated as a decree by the Minister of Education and Culture. This decree lays down the basic concepts on which the Indonesian Higher Education should be directed in the future, public as well as private. Operational policies were formulated at the beginning of 1977 after a comprehensive evaluation of the higher education in 1976.