BULLETIN OF THE NETHERLANDS SOCIETY FOR TROPICAL MEDICINE AND INTERNATIONAL HEALTH

volume 48 | 3
September 2010

Social service for recently qualified doctors?

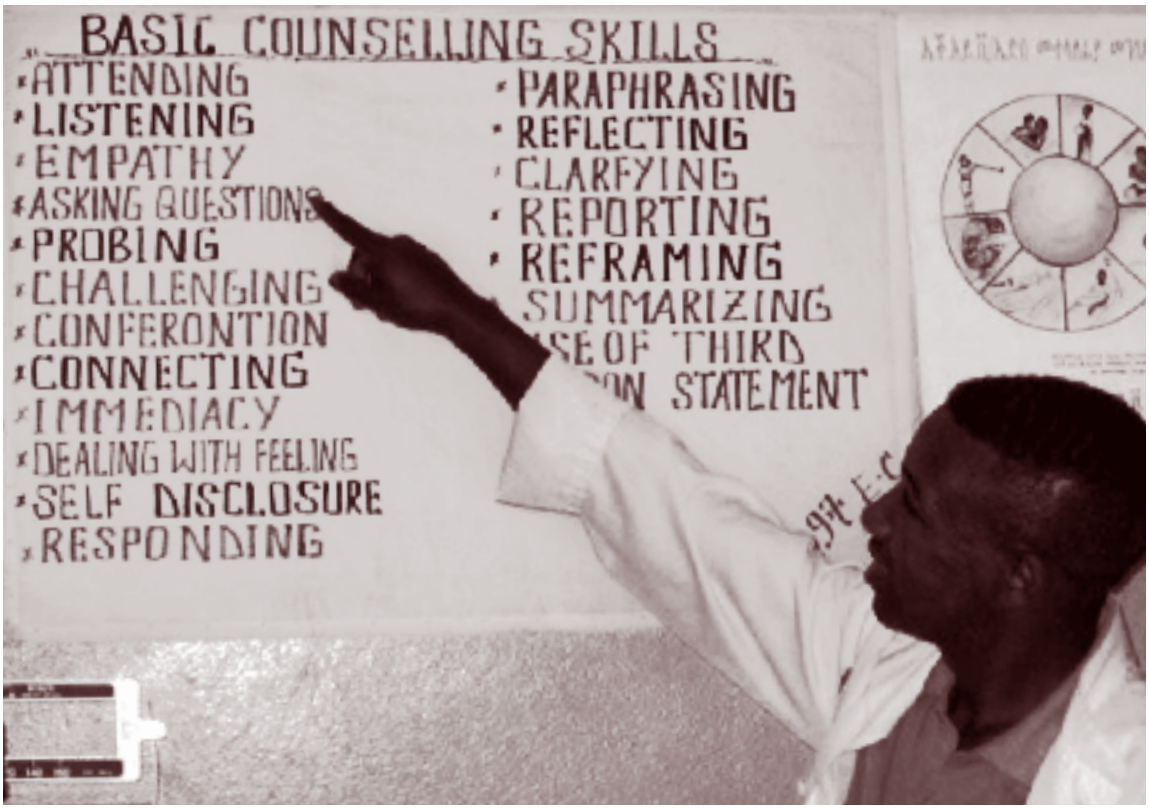

photo: E. Jurgens

The health personnel problems currently faced by many of the Africans countries are of course nothing new, and have existed and have been extensively explored in Latin America for decades, generally without the help of international funding agencies.

Curiously, little attention is paid by the large international organisations intent on interfering with the health services infrastructure in other countries, to the multiple experiments tried out in Latin American countries over the past five decades or so. From increased funding and better services to obligatory social service in rural areas.
The bottom line is that doctors generally do not like to work in distant rural communities, preferring city life with its inherent comforts and financial possibilities.

Only in the old communist countries was it possible to achieve some sort of even distribution, but this has proved impossible in any of the democratic or quasi-democratic regions. In the end, all these countries have resorted to what amounts to a mild (and to my mind entirely justified) extortion of social service: unless every doctor works for one or two years in a rural area selected by the health ministries, they will simply not receive their certificates, and will not be able to practice medicine or specialise. Likewise, specialists must contribute 6 months to a year of community service, in a smaller hospital before being free to practise elsewhere.

Curiously, in many parts of Africa there is no such obligation to the community that has paid for the very expensive medical training, leaving the graduates free to pursue more lucrative careers and go in for specialist training immediately, while also setting that example for the next generation.

MT Bulletin of the Netherlands Society for Tropical Medicine and International Health
ISSN 0166-9303

photo: I. Gerhardt-Kruip

The much publicised Zambian experiments of inflating the income of doctors in rural areas have not been very successful; those winning the lottery were rewarded with better incomes for a few years and consequently spent most of those years trying to obtain further highly paid employment and arranging postgraduate training once the windfall expired; few were persuaded to remain in the rural areas once the funding ended, unless they were able to hitch their star to the wagons of a highly paid NGO project. Many complained that increasingly the promised funding failed to reach them at all. The rest of the generation was of course dissatisfied because they did not receive the extra salary.

Similarly, the ministries in many of the 'economically challenged' countries in Africa are constantly faced with serious inflational problems, of medical graduates being overpaid by wealthy NGOs. These well-meaning charities literally bribe away the most promising medical graduates and make them virtually unemployable later, when the project may have ended, but they have become used to a salary no low income government can possibly afford to pay them. The way is then open for High Income Countries (HIC) to recruit them for their own health services... perhaps that was the intention all along.

However, part of the blame must lie with the medical education systems; transposed almost literally from wealthy HIC countries with very different structures, needs and requirements to be plonked down in a region of very different priorities and often little in the way of health infrastructure. Pieter van den Hombergh provides a thoughtful article on stimulating family medicine in remote areas from within the university curriculum. To the proposed courses I would add an obligatory course in practical anthropology. Many of the medical graduates faced with social service and community practice end up in communities far removed from their own experiences, where their patients may speak an entirely different language; the Congo (democratic republic of), has 216 listed languages, while Mexico still has, apart from Spanish, around 290 spoken languages. They not only have to cope with a type of medical practice they have not been trained for, but are immersed in a community whose culture they may not even remotely understand. It is easy to develop a defensive attitude of complacency and superiority under those circumstances, but that is generally not conductive to good medical care, and has at times led to the young doctors being ostracized or worse. Some training in basic anthropological techniques would go a long way towards developing a genuine interest in the culture of the community, and making an effort to learn the language is essential for good medical practice.

When I worked in Mexico I often advised the students to look at their social obligations as simple arithmetic: the community has funded 6 years of medical studies, and those should be repaid. If we accept the internship as part of this payment and remove another year for the social service which is obligatory in Mexico, it leaves 4 years full-time or perhaps 8 or 10 years of part-time contribution to the community; working for a low salary in a government clinic, teaching for a pittance in the universities, providing free community specialist visits ... the possibilities are legion for a creative graduate, and would make all the difference to the health services.

The currently dominant consumerism/management culture (it has become virtually a religion) has misinterpreted Darwin as survival of the fittest individual, thereby justifying all manner of aggressive behaviour and accumulation of personal wealth, with a cavalier disregard for the rest. This individual interpretation however is incorrect, and we forget that successful evolution is about survival of the species and that generally, cooperation may be seen as the key to survival.

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Antimicrobial resistance in Indonesia

Prevalence, Determinants and Genetic Basis

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Background

Antibiotic resistance among bacterial pathogens constitutes an increasingly important human health hazard worldwide, both in hospitals and the community. Infections with resistant bacteria adversely affect treatment outcome, treatment costs, disease spread, and duration of illness. The problem is particularly pressing in developing countries, where the infectious disease burden is high and cost constraints restrict the application of newer, often more expensive and more toxic agents.

Surveillance of resistant microorganisms and knowledge of their molecular epidemiology and resistance mechanisms are essential for understanding how best to treat patients suffering from an infection by these bacteria, and how to develop effective resistance management strategies.

Although Indonesia is the world's fourth most populous country, with a population of over 230 million inhabitants, very few data on antimicrobial resistance are available from that country. The general aim of the studies presented in our thesis was to explore the prevalence, risk factors, molecular epidemiology, and mechanisms of antimicrobial resistance among commensal but potentially pathogenic bacteria from almost 4,000 patients and healthy persons in two urban regions on the island of Java, Indonesia. All studies were performed as part of the Antimicrobial Resistance in Indonesia: Prevalence and Prevention (AMRIN) Study.

Methods

A total of 3,995 individuals were screened for nasal carriage of Staphylococcus aureus and rectal colonization with Escherichia coli. These individuals were patients on the day of admission to the hospital (Dr. Kariadi Hospital in Semarang and Dr. Soetomo Hospital in Surabaya), patients on the day of discharge after at least five days of hospitalization, patients visiting a primary health center (puskesmas), and healthy persons. Antimicrobial susceptibility testing of the isolates was performed by the disk diffusion method. Demographic and socioeconomic data and, for non-hospitalized persons, data on health complaints and consumption of antibiotics in the month preceding the study were collected by semi-structured interviews, performed by pairs of trained Indonesian and Dutch data collectors (researchers, residents, and medical students). For the discharge group patients, data on antibiotic consumption during hospitalization were collected from medical records. The medical ethics committees of the hospitals approved the study protocol. Selections of strains were further analyzed by a variety of molecular techniques.

Main findings

The rate of S. aureus nasal carriage was 9%, which is much lower than generally found among populations in other countries. Two methicillin-resistant S. aureus (MRSA) were found, both from patients cultured at the time of discharge from the hospital in Surabaya. Twenty-five percent of S. aureus isolates were resistant to tetracycline, but this was not associated with hospital stay. Resistance rates towards other antibiotics were much lower: gentamicin 1%, erythromycin 3%, chloramphenicol 9% and trimethoprim-sulfamethoxazole 7%. An analysis to identify determinants of resistance revealed that there was no association between antibiotic use and resistance in the community. In hospitalized patients, however, the use of aminopenicillins was associated with carriage of a strain resistant to any of the tested antibiotics. In the community, crowding and low income were associated with multidrug-resistant S. aureus.

Although the prevalence of MRSA was low, we found a high prevalence of Panton-Valentine leukocidin (PVL) among the methicillin-sensitive S. aureus (11%), both in the hospital and community. This is of concern, since PVL is an exotoxin that is associated with severe infections. As determined by high-throughput amplified fragment length polymorphism (AFLP), these PVL-positive S. aureus strains clustered within

Infections with resistant bacteria adversely affect treatment outcome

Antibiotic use was the most prominent determinant of carriage of a resistant microorganism

photo: E. Reuling

the previously defined major staphylococcal genome AFLP clusters (I to IV), indicating that PVL has been introduced in distinct phylogenetic subpopulations of S. aureus in Indonesia.

E. coli as dominant intestinal flora was cultured from 3,284 individuals. Resistance rates towards gentamicin, cefotaxime, and ciprofloxacin were low among E. coli cultured from patients at the time of admission (4%, 2%, and 6%, respectively), but high at the time of discharge from the hospital (18%, 13%, and 22%, respectively). Resistance rates towards ampicillin, trimethoprim-sulfamethoxazole, and chloramphenicol were substantial in all groups (43%, 35%, and 21% overall, respectively).
Antibiotic use was the most important independent determinant of carriage of (multidrug-) resistant E. coli. In the non-hospitalized population, direct associations were observed between the use of _-lactam antibiotics and ampicillin resistance and between sulfonamide use and resistance to trimethoprim-sulfamethoxazole. Furthermore, hospital admission, diarrhoeal symptoms, and age under 16 were associated with carriage of E. coli resistant to any of the tested antibiotics. For hospitalized patients, having no health insurance was associated with less resistance. Although the highest levels of resistance among E. coli were found against ampicillin, trimethoprim-sulfamethoxazole, and chloramphenicol, the resistance rates to the fluoroquinolones and third-generation cephalosporins were of most concern, especially in the hospital, because these limit the options for empirical therapy when such strains cause nosocomial infections. Therefore, strains with resistance to these antibiotics were analyzed in more detail.
The high level of quinolone resistance among E. coli in the Indonesian hospitals was shown to be the result of limited clonal spread, spontaneously occurring point mutations leading to amino acid changes in gyrA, and the presence of plasmid-mediated resistance mechanisms qnrA en aac(6')-Ib-cr. The emergence of quinolone resistance among commensal E. coli predominantly regarded the less virulent but highly adaptable strains within this species.
Commensal E. coli and other Enterobacteriaceae with a reduced susceptibility to cefotaxime were analyzed for the presence of an extended-spectrum _-lactamase (ESBL). At the time of discharge almost 10% of the patients carried confirmed ESBL-positive Enterobacteriaceae as dominant fecal flora. On admission, only 1% of the patients was colonized. Fecal carriage of confirmed ESBL-producing Enterobacteriaceae among healthy persons or persons visiting a primary health center was not detected. The ESBL-positive strains were identified as E. coli (n=68), K. pneumoniae (n=35), Enterobacter cloacae (n=3), and Citrobacter freundii (n=1). blaCTX-M-15 was the most prevalent ESBL in both E. coli (47%) and K. pneumoniae (46%). Subsequently, clinical ESBL-producing Enterobacteriaceae were prospectively collected in the Dr. Soetomo Hospital in Surabaya during a 4-month period in 2005. Among the 73 ESBL-positive E. coli, the gene encoding CTX-M-15 was highly prevalent (95%). Among the 72 ESBL-producing K. pneumoniae, blaCTX-M-15 was found in 56% of isolates. We found some clonality among ESBL-positive strains, indicating patient-to-patient transmission, but this could not fully elucidate the epidemiology of ESBLs in the hospital.

Conclusions

The results of the studies presented in our thesis show that resistant pathogenic bacteria are prevalent in Java, Indonesia, especially in hospitals. Antibiotic use was the most prominent determinant of carriage of a resistant microorganism.

Control of resistance

From February 2003 to May 2005, intervention studies were performed by the AMRIN study group focused on the prudent use of antibiotics (thesis Dr. U. Hadi, LUMC) and infection control (thesis Dr. D.O. Duerink, LUMC). The results of all AMRIN studies contributed to the formulation of a self-assessment program that can be used for the assessment of antimicrobial resistance, antibiotic use and infection control measures for Indonesian hospitals. The self-assessment program was published under the auspices of the Directorate General of Medical Care of the Ministry of Health, Republic of Indonesia, and presented during a conference in Bandung in 2005. Since then, several hospitals have applied parts of this self-assessment program. In this way AMRIN became a national program to control antimicrobial resistance in Indonesia.

For a printed version of the thesis, which includes the self-assessment program, please contact Juliëtte Severin

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The 'community strategy' in Kenya

Experiences in implementation of health policy

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Like several other countries struggling to strengthen their health systems and improve health care delivery, Kenya has recently introduced a policy guideline named 'community strategy' into its second National Health Sector Strategic Plan (NHSSP) (MOH, 2005)[1]. While working at the Great Lakes University of Kisumu, in Kenya, I had the privilege of participating in the pilot research that led to the development of this strategy. Thereafter I was involved in its implementation in various rural districts in the country. This strategy emphasizes more involvement of the end users of the formal health care system so that they can participate in decisions about their health. The rationale behind it is based on the assumption that the attitude of dominance among health providers and silence among households and communities makes it difficult for communities to access health services. Health providers are often not rooted in the contexts in which people live, but they like to believe that they know what people need. They often instruct the people on what to do without taking time to listen to their side of the story. These people on the other hand are often emotional and anxious. They too have their health interests at heart and always try to handle their health issues the best way they can even when this appears unreasonable (to the health providers). When they and their emotions are ignored, they lose trust in the health system and seek alternatives elsewhere in the community. Indeed, from my interactions with community members in the rural districts where I worked, I learnt that in most cases, people prefer to seek health care from people outside the 'formal' health system, in particular traditional healers and only resort to 'western' health care as a last option. For example, many rural women prefer (with good reason) to seek the services of traditional midwives (TBAs) during childbirth, and only go to a health facility when complications arise, by which time it may be too late. This scenario effectively reduces coverage by the health system by widening the gap between individuals in the community and the formal health system. Health providers often realize only later that health indicators do not improve. Therefore the community strategy is about establishing the community as a formal level of health care delivery within the health system. The overall goal is to enhance community access to health care, by bridging the gap between them and health providers. By focusing on the community, it should also become possible to increase contacts between traditional sources of health care and the 'formal' health systems. If this could increase mutual trust between various providers it may well increase the trust of patients in the system. Ultimately this will be beneficial to their health status.

How the community strategy works

The community strategy is based on the idea that improvement of the health status of Kenyan communities needs to take into account their needs and priorities. This it aims to do by training TBAs and other Community Health Workers (CHWs) to provide health services in the community as the first level of health care delivery in the health system. It is hoped that linkages between health facilities and the community will be strengthened with this decentralization. That, in turn should help members of the community gradually to enforce their right to accessible health care of reasonable quality.

In community villages where they work, TBAs and other CHWs, refer patients to a dispensary within their communities and report on health data collected from the villages. In each community, a committee known as Community Unit (CU) is established that should act as a linkage between the community and the health facility. Its membership is made up of people with different roles such as CWHs, chiefs, TBAs, health extension workers and village elders. They are supposed to discuss health issues arising from the community, and represent them at the health facilities for action.
Community Health Workers receive periodic training on data collection, analysis and interpretation. Each village has a village register where CHWs periodically record data on health indicators from households, like the number of children fully immunized, the number of households with a pit latrine and the number of women delivering at the health facility. Ideally they make a preliminary analysis on such data.
Villagers (including health care providers, agriculturalists, mothers, youth) are then periodically invited by the CUs to a feedback and dialogue day, where results from data are displayed for them to see and reflect upon. The results usually trigger a dialogue/discussion among them. During the discussion they are able to identify their strengths, opportunities and areas that

Health providers are often not rooted in the contexts in which people live

People prefer to seek health care from traditional healers

need improvement. They then come up with a consensus and actions towards their weak points are agreed upon and a plan developed with targets to be achieved before the next dialogue session. Such discussions are led by one of the members of the CUs. This process is repeated at least twice a year, and the community members can see for themselves whether or not their health conditions are improving.

Implementation of the community strategy

Gradual implementation of the community strategy began in 2006 (MOH, 2006)[2]. Some implementation goals have been achieved so far, but in the process we also faced some significant challenges. Policy implementation of health systems is never easy and the Kenya health sector situation is no exception (Glenngard & Maina, 2007)[3]. Often there is a gap between policy making and the actual implementation. A number of researchers have rightfully pointed out that many times seemingly good policies do not achieve what was intended because not enough attention was paid to the implementation process. However, it is hardly ever possible to know what might come up during implementation and in my view, engaging in collaborative research of the implementation process of any given health policy can go a long way in closing the gap between policymaking and policy implementation. The experiences can be used in a learning process to improve implementation and thereby the policy itself. Thus, policy makers would be well advised to be flexible and open by attending to and solving problems as they arise along the implementation process.

This advice was taken seriously by the initiators of the community strategy. In anticipation of the challenges of policy implementation, they have begun a collaborative research of the strategy, by involving the users of this strategy. These include policymakers, policy implementers and the end users in the community, who form part of the research team and are involved in the identification of implementation problems and other weaknesses. They then take part in efforts to improve these problems and weaknesses and make sure that the results are discussed and implemented.

For example one of the challenges during implementation was that the community strategy was first tested and found to be successful in rural areas, but then was expected to be implemented in different areas, not all necessarily rural. It was soon realized that implementation became difficult due to very different circumstances. To be useful in urban slums for example, the strategy must be adjusted in order for it to accommodate the contextual differences. A collaborative research is currently underway to come up with a feasible solution.

Implementation of the community strategy has been riddled with other challenges as well. Top on the list has been attrition of CHWs and the CUs. Because they are expected to work as volunteers, there are no reward mechanisms for their efforts. In several areas they have either moved to work for NGOs where they are paid, or stopped working altogether having lost enthusiasm due to a lack of motivation. In addition, coordination of the many Non Governmental Organizations (NGOs) trying to implement the strategy has been a challenge, especially given their attraction to vertical programs. In most cases this has led to duplication of efforts. Often the government is caught in a 'catch 22' situation having to decide whether to let the NGOs do as they wish or regulate them and risk losing the much needed financial support.

Closing the gap between policymaking and policy implementation

How can the community strategy better reach the communities?

An important point when dealing with communities and in particular when the aim is to involve the members, is to start with hearing what they at present do when they have health problems. What do they think about their present situation? Where do they seek health care? As already indicated above it is clear that the traditional sector is still widely used, both before and during contacts with the formal sector. As that is an important part of a common cultural tradition it seems appropriate to review the role of traditional healers in the whole process. With the exception of TBAs these are almost completely excluded from the community strategy development and implementation as described above. Given their importance to the community members this is regrettable. Nonetheless, the Kenyan government has recently acknowledged the need to integrate traditional medicine into the health system. This is undoubtedly a complex issue which has received international attention (WHO Beijing Declaration, 2008)[4] but in my perspective any approach different from the total denial by the formal health sector, would be beneficial to the community. I believe that engaging in a constructive dialogue with the various groups of traditional healers makes for a good starting point towards the right direction.

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Providing proper generalist care during compulsory service as Medical Officer*

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Training, coaching and teaching Family Medicine to starting Medical Officers

Compulsory service programmes have been used worldwide as a way to deploy and retain a professional health workforce within countries.[1] After finishing their medical training Medical Officers in many countries around the world have to do at least two years of hardship or public duty. The setting is usually in less attractive areas or health facilities. Yet they usually offer generalist medical care to their patients in difficult circumstances and have to learn relevant and responsible medical caring the hard way. Cut off from their university, with no supplementary training and with no other role model than specialists they may develop a cynical and detached attitude towards patients and simply wait out this period.
A report by the WHO (2009) on "Increasing access to health workers in remote and rural areas through improved retention" highlights these problems[2] and their recommendations are also relevant for Medical Officers and Family Practitioners. (Box 1)

The rural hospitals that need Family Practitioners were formerly served by tropical doctors from abroad, who for years helped to relieve the more or less permanent medical disaster in many rural areas in Africa. The choice of the Dutch government to stop Technical Assistance and only give aid in case of disaster is an absurdity. There will be a lack of competent doctors for many more years to come.
What can Family Medicine contribute to the retaining and motivating of doctors in remote areas?

Retention of doctors in remote areas seems nearly hopeless in Low Income Countries. Developed countries had Family Practitioners (FP) years before they had specialists. In Low Income Countries, Family Medicine competencies need to be learned without that tradition of Family Medicine. These competencies are about contextual integral compassionate care, requiring communication skills, a community approach, managerial skills, knowledge of simple every day diseases and their treatment, teamwork & delegation, leadership and organization, addressing mental problems with somatic presentation, etc.
To provide these competencies Family Medicine training departments are starting in many sub-Saharan countries. The former tropical doctor - a generalist in a hospital and predecessor of the Family Practitioner - still is a much needed specialty in Africa.
African doctors cannot enter training for the specialty of generalist or Family Medicine. Up to now they have often chosen to leave their country, because their perspective was to stay Medical Officer (access to specialty training is limited).
The Family Medicine training at Moi University in

Box 1. How to increase health workers' retention in rural and remote areas

- Locate health professional schools, campuses and family medicine residency programmes outside of capitals and other major cities.
- Expose undergraduate students to rural community experiences.
- Revise curricula to include rural health topics.
- Design continuing education and professional development programmes that meet the needs of rural health workers and are accessible locally.
- Introduce and regulate enhanced scopes of practice in rural areas.
- Ensure that compulsory service requirements in rural and remote areas are accompanied with appropriate support and incentives.
- Provide scholarships, bursaries or other education subsidies.
- Use a combination of fiscally sustainable financial incentives, such as hardship allowances, grants for housing, free transportation, paid vacations, etc.
- Improve living conditions for health workers and their families.
- Provide a good and safe working environment.
- Use telehealth.
- Develop career development programmes and provide senior posts in rural areas so that health workers can move up the career path.
- Support the development of professional networks, rural health journals, etc.

Family Medicine is quickly becoming an accepted specialty

Eldoret, Kenya[3] is a training for all-round doctors in sub-district hospitals and health centres. (Box 2)

The Family Medicine Programmes are to prepare competent, caring, compassionate Family Physicians committed to serving their community by providing leadership in their communities, to addressing the broad range of health needs, rendering comprehensive clinical services (including acute surgery & Gyn/obstetrics).
It takes many years for a developing country to reach a sufficient body of knowledge and culture of Family Health. Yet, Family Medicine is quickly becoming an accepted specialty. The necessity of an adequately trained generalist doctor is becoming more established.[4]
In an African context, the Family Practitioner is a clinical leader and consultant in the primary health care team, ensuring continuing, comprehensive, holistic and personalized care of high quality to individuals, families and communities.[5] He serves as a role model, teaching the skills that could make regular or general care more rewarding.

Box 2. The FM-training programme at Moi University, Eldoret, Kenya

The first FM-training programme in Kenya at Moi University School of Medicine is a cooperation between a public university (Moi), a local faith-based organization (INFAMED) and the General Practitioner-division of the Dutch Society of Tropical medicine and International Health (WHIG) jointly with Maastricht University (MUNDO). The principal founding father is Prof. Khwa-Otsyula, the former dean. Eight Family Practitioners have finished the training and five will follow this year. The rural Webuye District Hospital is the main training center for FM. The FM-training has greatly improved the quality of care and attracts many patients from a large area. This success is critical for the reputation of Family Medicine as a discipline that can make a difference in the care provided to patients.

MOs, clinical officers and nurses also offer generalist care, but do not get training in the basic skills. It would be in the interest of patients and MOs to offer these doctors a follow-up programme in their starting years in order to give them some feeling of belonging, to teach the relevant skills and knowledge as well as to keep them motivated.
The benefits of such training are potentially enormous. Strategies and programmes to serve rural doctors to be adequate and motivated are used in Australia[6], New Zealand, Canada, Zambia, South Africa, Norway and a number of other countries. WONCA** even has a working party for rural FPs and developed teaching materials. Such programmes are rare in sub-Saharan Africa, probably because of lack of faculty, lack of FM departments that could host a training program, lack of means but primarily because there is no clear owner of this problem.

Teaching and coaching should be done by local staff of various departments

Yet, a study in Mali of such training for postgraduate students was highly successful. Out of the 65 trained doctors between 2003 and 2007, 55 were still engaged in rural practice at the end of 2007, suggesting high retention for the Malian context.[7] The Malian participants viewed the training as crucial to face technical and social problems related to rural practice. The conclusion was that training, increasing self-confidence and self esteem of rural practitioners may contribute to retention of skilled professionals in rural areas. Other types of professional support are also needed (follow-up visits, continuing training, mentoring). This experience suggests that professional associations can contribute significantly to rural practitioners' morale.
Such a success was also reported by Koot et al. in Zambia, in addition using financial and other benefits as an incentive for working in a rural area.[8]
The WHIG[9] (Working party for FM and International Health) proposes a pilot for a simple and low-budget training programme for starting MOs that could give an answer to the cost-effectiveness of such programmes and could result in more MOs entering FM-training.

What programme could be offered to MOs in their compulsory service period?

Our suggestion is to make a programme consisting of
1 An introduction course of 2 weeks to create a group (groups) of MOs. The course will focus on basic FM-principles, communication and management skills etc. In the introduction course MOs will also be introduced to distance learning.
2 A one - two year curriculum after the introduction course + (5-7) follow-up training courses (approx. 1 week) and a fixed set of modules to be done by distance learning. A Personal Digital Assistant should support them in problem-based learning and on the spot assistance.

It is essential that the trainee should not be hindered in getting permission to attend the training. The students should be stimulated to contribute to the lecturing themselves in collaboration with the assigned teachers and staff.
Teaching and coaching should be done by local staff of various departments supplemented with expertise from experienced FM-trainers/ consultants.

Conclusion

The WHIG wants to support both the development of FM training centers in LIC as well as contribute with ideas and manpower to motivate and train doctors in acquiring the competencies of FM. This article is a call to experiment with training MOs in their compulsory service years. Many stakeholders should be involved (Ministry of Health (MoH), Moi University, Infamed, Primafamed, WONCA). WHIG has made a project plan to be proposed to the Kenyan MoH Family Medicine Coordinating Committee.

Knowledge of FM and the competencies needed in an early phase may stimulate MOs to work with more pleasure in rural and remote areas and pursue a career as a Family Practitioner.

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Children, sex and HIV in Africa

photo: J. Borgstein

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In search of an ABC Plus approach

Reading the very interesting article of Miranda van Reeuwijk (MT 48/2 June 2010) my reaction varied from grim "satisfaction", to immense frustration! Grim satisfaction, because here a scientific research approach of youths and sexuality in North West Tanzania appeared to confirm my personal experiences over the last ten years! Frustration because, 25 years after the start of the AIDS epidemic, we continue to be so immensely inept in dealing with such important issues for youngsters in Africa. In her article she mentioned my report on a meeting with traditional healers (Smits MT 48/1). It confirmed her experiences, that it is not a lack of knowledge, but of emotional understanding that prevents them from using the knowledge they have for changing their sexual behaviour.

Love and sexuality are "problem issues" in all societies, but few are as bombarded with conflicting influences on the subject, mostly of foreign origin, as those in Africa. Unfortunately most of these influences, whatever their activities, have always been united in one thing: disregard for what was there... in poor "backward" Africa. Their approach of AIDS has been no exception, as amply demonstrated by Helen Epstein in her widely acclaimed book: "Aids, the invisible cure", in which she observes the lack of donor attention for existing approaches in African societies. Anti HIV/AIDS initiatives, large and small scale and including local ones, suffer from the conflicting opinions and attitudes with regards to youth and sex.

The most widely adopted approach: "Abstinence, Be faithful, use Condoms (ABC)", does little to deal with the most important obstacles to progress. It reduces discussions on sex to: "do not do it (until you are married)" adopted by church initiatives, and "do it with a condom" adopted by most governments and donor agencies. That does nothing to help African youngsters in dealing with the powerful emotions of love and sex. It also almost completely ignores the position of women and girls. As there is almost total dominance of males in sexual relationships, it is no exaggera-

Talk about sex before doing it... it may save your life

photo: I. Gerhardt-Kruip

The role of money in relationships between youngsters

tion to say that not addressing this very sensitive issue makes other activities rather useless.
But how then...?

Mostly by chance I came into the unique position of being able to develop a presentation on sexual education in the environment of an African NGO office (the Fobang Foundation) in Cameroon with young and older people with whom I could always test it out. We called it ABC Plus as it pays far more attention to sexuality and gender equality. Its main message is: "Talk about sex before doing it... it may save your life". It is liked a lot in Cameroon; even university students from Youndé told me they did not have anything like it there. Later, through various small scale initiatives, I have been able to address many different audiences on these topics in Tanzania, Kenya, Cameroon, Nigeria and Namibia. Here too, this ABC plus approach was invariably received very positively. Audiences included secondary school classes, teachers, doctors, student nurses, tea farmers, peer educators, hotel and airport staff and groups of Masai women and men, in October 2009 traditional healers and last March highly educated African research biologists. Very different audiences but surprisingly similar experiences and one conclusion. Discussion, far more than teaching, is what is needed most in dealing with the emotions around these subjects.

The threat of AIDS cries for a more open attitude towards sexuality and gender equality! Knowledge and experiences from our part of the world can help to achieve that openness, but only if we try to find out, together with the people we assist, how these can be made effective in their circumstances. What "their circumstances" mean is illustrated by Miranda's description of the role of money in relationships between youngsters in Tanzania. It was new to me, but not really surprising. It merely illustrated the enormous role of money in societies with that level of poverty, something which is very difficult for us to really understand.

photo: H. de Vries

My presentation worked because, while making it, I asked my African surroundings all the time whether it reflected their emotions and realities, sexual and otherwise! Also its main message of talk about sex before doing it, can hardly be interpreted as an encouragement to start with sex, an objection often raised by parents all over the world.

In search of possibilities to spread such a new ABC Plus like approach I would like to use shared experiences of Miranda van Reeuwijk and myself. If we are to make more progress, discussions on an equal basis are needed with youngsters, their parents and all others who can and should assist youths. Such a new approach therefore has to emphasize a change from teaching to discussing, when dealing with these sensitive issues.
This may sound easy to us, but anyone with experience of teaching practices in Africa knows how difficult it is to promote interactive teaching there. Teachers are often very reluctant to face the uncertainties it brings. During discussions with peer educators and when seeing them in action, I noticed how difficult most of them find it. They and their (African) organizations again and again ask for support, not because they lack the knowledge but because of "social fear" when dealing with all the emotionally charged controversies of youths and sex. Subjects like masturbation, the question about the real risk of infection of a sexual contact (always severely overestimated!), the suspicions of "tampering" with condoms to reduce male potency, the number of condoms needed during a sexual encounter ("how often do they "do it"!), the risks of male dominance in sex are all very difficult to discuss, but it is absolutely essential that it is done.

The origin of AIDS is another sensitive issue that has to be discussed. Many are convinced -without telling us- that the Americans brought it to Africa to keep it small, others believe it is a punishment of God.
If these are discussed it is much easier to provide a proper explanation of the origin of AIDS and the role of monkeys in its origin in West and Central Africa. A very charged discussion around 1990, when Africans perceived they were suspected of sleeping with monkeys, still lingers on! In reality it is the hunting and slaughtering of monkeys for consumption that probably over many years made it possible for the virus to enter humans, a perfectly reasonable and acceptable explanation.

There is much more...we still have a long way to go! I am convinced that neutral and independent support, in particular from outside, can be a big help, provided it manages to gain trust by demonstrating an understanding of African sensitivities and emotions. Could there be more joining of forces on this crucial issue for health in Africa?

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A neonate with congenital malformations

A newborn child

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The staff in the labour ward asked the medical officer and his intern to review a newborn child with multiple congenital malformations. The mother, now para 3, said her pregnancy had been uneventful, apart from a somewhat early start of labour at "eight months" gestation (exact dates not known). The breech delivery was uncomplicated. The newborn was a girl of 1.9 kg, and she had an Apgar score of 6/10 and 7/10 at one and five minutes. Upon examining the child, we noted several abnormalities (figures 1 and 2):

- The head was relatively large, the fontanels were wide, and there were multiple small, mobile cranial bones. There was proptosis, and the ears were low-set. Otherwise no clear abnormalities of the face were observed.
- The chest seemed to be relatively small. No cardiac murmurs were noted, and the abdomen was normal, without signs of organomegaly. The spinal column was normal, the anus was open and the genitalia were normal.
- The extremities were short in length, and all long bones were abnormal and curved in shape. There was a four-finger line of both hands.

The family history revealed no congenital abnormalities or dwarfism. The two previous children did not have congenital abnormalities. However, one child died at the age of two but due to an unrelated condition.

After birth the baby had difficulties in breathing, with chest retractions and cyanosis. She was started on oxygen therapy, and during the first hours of life the child needed regular stimulation for apnoeas. She was transferred to the neonatal nursery, where she was given supportive management (oxygen, cup feeding), and the mother was advised to put the baby in 'kangaroo mother care' position.

At that time a differential diagnosis of achondroplasia and thanatophoric dysplasia had been made, but there remained some uncertainty about the diagnosis, and the parents would need counselling about the prognosis of the child, so consult online* was approached for advice.

Several paediatricians responded. The differential diagnosis included
1. osteogenesis imperfecta
2. achondroplasia (dwarfism due to abnormality in cartilage formation)
3. campomelic dysplasia (congenital bowing and angulation of long bones)
4. Apert syndrome (congenital disorder characterized by malformations of the skull, face, hands and feet)

In turn, the paediatricians had consulted a clinical genetics specialist who confirmed that the most likely diagnosis was osteogenesis imperfecta type II.

Meanwhile, the X-rays (figures 3 to 6) showed features compatible with osteogenesis imperfecta: the skull was made up of several small bones or accessory skull bones completely surrounded by a suture line ('Wormian bones')[3], the long bones were malformed and showed signs of (intrauterine) fractures (figure 5 shows the femur), the ribs showed a beaded pattern, again compatible with healed fractures. Also, with the diagnosis of osteogenesis imperfecta in mind, the sclera were noted to be slightly bluish in colour.

Introduction

Osteogenesis imperfecta (OI) is characterized by, as the name implies, bones that are of insufficient quality and is an inherited connective tissue disorder. It is often called "brittle bone disease". Severely affected patients, and infants with the worst form of OI die in

photos: K. Koop

Figure I and II: newborn girl, physical abnormalities on head, chest and extremities

* www.tropenopleiding.nl (consult online)

Figure III-VI: "Wormian bones" of the skull, fracture of the femur bone, and beaded pattern of the ribs due to healed fractures.

the perinatal period. There is a marked heterogeneity in disease manifestations, with severity ranging from asymptomatic to multiple fractures with minimal or no trauma or even perinatal lethality[1,6]. Based on clinical and radiological features, eight different types of OI are distinguished (although other classifications have been suggested)[1,2]. The different forms of OI all share a defect in formation of collagen I, either through a mutation in one of the genes that code for the collagen I chains, or through a genetic defect in collagen I modifying enzymes. These defects are readily recognized in the malformation of bones, but also cause other problems in other tissues where collagen I is an important component of the extracellular matrix, as in skin, tendons, sclera and ligaments[2].

Epidemiology

Published estimates of the incidence of OI vary. Osteogenesis imperfecta (all types together) has a prevalence of about 6 per 100,000 people. Types II and III are more rare, with a prevalence of 1 to 2 per 100,000[6,8].

Genetic

The mode inheritance of osteogenesis imperfecta is mostly autosomal dominant. Patients with a severe form of the disease, like types II/III, can have a de novo mutation or a mutation in a collagen I modifying gene with a recessive inheritance pattern[9].

Clinic

Disease manifestations may include fractures, short stature, bone deformity, the femurs of the neonates are usually asymmetric in size and shape as the result of asymmetric fractures, there may be hearing loss, discoloration and poor quality of teeth (dentinogenesis imperfecta), and blue sclera[4]. Neurological problems may arise from compression of the spinal cord due to fractures. There is no intellectual impairment.

Osteogenesis imperfecta type II and III are severe forms of the disease, with markedly deformed bones that easily fracture. Usually OI type II results in foetal fractures and indeed, as in the patient described in this case report, fractures can already occur in utero. It thus might be possible to identify these fractures sonographically before birth[4,6]. Due to the malformations of the thorax that arise from broken ribs, many patients do not survive the early postnatal period due to respiratory insufficiency. If the children survive, they often suffer from multiple fractures and have a very short and malformed stature that often makes them wheelchair-dependent. Hearing loss is a frequent problem. Sclera are blue-grey at birth, but may be whiter later in life[7].

Treatment

There is no cure for osteogenesis imperfecta. The management is supportive, and depends on severity of expression of the disease. In severe cases, fixation of the long bones with placements of intramedullary rods may be necessary to give strength and support to bones. The management of fractures in patients with OI is similar to the management of fractures in patients without OI. Early mobilization is particularly important to prevent bone loss secondary to inactivity. Physical therapists can be instrumental in designing a physical activity program that minimizes fracture risk while ensuring mobilization to prevent contractures and bone loss from immobility[5]. Counselling of the parents about the disease and estimating the chance of another child with OI in a new pregnancy, is an important issue.

The parents of this patient were counselled about the condition of their child, who unfortunately died a few days later.

August 2010

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Magnesium sulphate for eclampsia and severe preeclampsia

Tips and tricks

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Magnesium sulphate by intravenous or intramuscular injection is the first choice in the treatment and prevention of eclampsia. It is now widely used in countries in Africa. Doctors trained in the Netherlands will soon realise, however, that magnesium regimens from their home country need to be adapted to the circumstances of African hospitals. Very few if any African hospitals will have electronic infusion pumps for accurate intravenous administration of drugs. Furthermore, monitoring for the signs of magnesium overdose is often a problem when there is a shortage of trained staff. The guideline from WHO[1] which differs from that of the Dutch Society for Obstetrics and Gynaecology[2], is helpful in these situations. Here I will explain the WHO guideline and add a few comments of my own.

For the treatment of women who have already convulsed and for the prevention of convulsions in patients with severe preeclampsia a loading dose of magnesium is given, followed by smaller 4 hourly doses. The loading dose of the WHO schedule has two components: an intravenous injection of 4 grams and an intramuscular injection of 10 grams. This large loading dose has been extensively used in the USA and was found to be safe[3]. Note that the Dutch schedule does not have the intramuscular injection, in fact, the total loading dose is quite low. However, in the Dutch situation where electronically controlled intravenous pumps are routine, the dose of magnesium can easily be increased after the initial treatment, should this be necessary.

A few practical points are important in Africa. Magnesium sulphate is available in solutions of 50%, 20% and 10%. The 10% and 20% solutions can be used intravenously but only the 50% solution can be used for the intramuscular injections. It may be best for the pharmacy to just stock the 50% solution which then can be diluted down for the intravenous injections. WHO recommends giving the 4 grams intravenous dose as 20 ml of a 20% solution but if, say, 100 ml bags of intravenous fluid are available, the magnesium sulphate can be put in these instead. Much larger volumes are not suitable as they take too long to run in and at the same time may contribute to fluid overload. The 10 grams of magnesium sulphate for the intramuscular injection translate into 20 ml of the 50% solution. This is too much for one injection site and needs to be divided into two injections of 10 ml. Because the injection is painful, 1 ml of 1% lignocaine or a similar local anaesthetic needs to be added to each injection. For the combination to fit into a 10 ml syringe (often the largest size syringe available), it may be necessary to reduce the dose of magnesium sulphate slightly to 4.5 grams.
For emergency use magnesium sulphate should be stocked in the labourward at all times, together with the written instructions for how to prepare magnesium sulphate for intravenous and intramuscular injection. Ideally, the labourward staff should practise making up the solutions from time to time.

The WHO schedule recommends continuing the administration of magnesium sulphate 4.5 grams intramuscularly every 4 hours for 24 hours. These follow-up doses serve to compensate for the excretion of magnesium sulphate by the kidneys. However, when the kidneys malfunction, the blood level of magnesium sulphate may build up causing dangerous respiratory depression. Therefore the urine output needs to be checked. It should be at least 100 ml in the 4 hours before the next injection. Also signs of magnesium toxicity, such as absent tendon reflexes and a respiratory rate of less than 16 per minute, have to be looked for. If monitoring cannot be reliably done, it is better not to prescribe the follow-up doses. In that case the patient only receives the loading doses. This is sometimes called the Sokoto[4] schedule and has been shown to be effective for most patients.
In theory, the management of severe preeclampsia and eclampsia with magnesium sulphate is quite simple. However, in practice there will be many minor problems. In a large teaching hospital in Tanzania, it took over a year to sort out these practical issues.

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photo: T. Bousema

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Interview with Elly Engelkes

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Years in the tropics count double

Working and living in Nigeria

"Infant mortality is not only reflected in the bare figure, but also in the cries from mothers which I could hear from my window in Afiko", as Elly Engelkes writes in her book *Years in the tropics count double*[1]. Elly's book is a personal account of how her career as a 'tropical doctor' took off in a mission hospital in Afiko, in the South-eastern part of Nigeria where she worked from 1976 to 1980. Twenty-five years later Elly returns to Nigeria, and finds a changed country. Together with the author I wonder if there are lessons to be learned from this experience and discuss the obvious and the less visible changes in the work of tropical doctors in an African setting.

photo: E. Engelkes

Gender balances

Alma Ata and what is left of community involvement

Perhaps in sharp contrast to the perspectives of a 'tropical doctor'[2] nowadays wanting to work in developing countries, there were plenty of opportunities to work in Africa for those with the same ambitions in the 1970s and 1980s. Elly Engelkes felt a strong ambition to look beyond the Dutch borders and dedicate her medical skills and practice to the people in dire need of good health care. Since Aletta Jacobs in 1878 became the first female doctor in the Netherlands many more women have followed suit, progressively leading to the actual situation where female students outnumber their male counterparts[3]. This situation was quite different in the 1960s at the time when Elly started her studies. Then, the field of medicine was predominantly male dominated; and her ambition to specialise in gynaecology stranded there. This, however, did not stand in the way of pursuing her interest in the field of maternal health in various settings across the world.

Female doctors were no novelty in the Southern part of Nigeria during the time Elly worked there, though it was not until 1970 that the first female doctor graduated in the Islamic North of the country[4]. Gradually apparent gender imbalances in occupying medical professions seem to disappear: whereas in 1981 the percentage of female dental and medical practitioners in Nigeria was some 15%, in 2000 this figure had increased to 35% among dental and 19% among medical practitioners, and it is projected to reach a gender balance in 2015[5].

Elly started working in Nigeria just before the Alma Ata Conference on Primary Health Care in 1978. An approach which apparently did not affect the modus operandi to a large extent in the mission hospital in Afiko. This mission hospital focused on intramural care only and by exception mobile clinics were held. In those years the concept of community health was still in its early stages, though according to Elly, the benefits were obvious. Allowing the community to participate in defining their health care system greatly enhances their ability to take care of health problems in their direct environment, alter unhealthy behaviours, and possibly prevent (more costly) interventions at hospital level. Without giving attention to this, the health care system has to deal with serious health problems worsened by delayed diagnosis and late referral. Alma Ata, however, did increase consciousness on the need for primary health care, and similar to many developing countries in Nigeria the concept was included in national policies. Even in the 1970s and 1980s many community based projects existed, though mainly run by NGOs. Elly visited and studied a number of these PHC projects, later used them for her MPH thesis, and described them in the book.

It was Ransome Kuti[6] – a famous paediatrician – who strongly propagated the approach, and who during his years as Minister of Health installed quite a number of PHC programmes throughout the country. Unfortunately after the government was overthrown by military rule he was imprisoned. Nowadays, much of his pioneer work appears forgotten: medical students rarely have to do an internship in community health and the Basic Health Services as designed in those days were replaced by private clinics scattered around the country. Nigeria now counts with some 20 academic hospitals – four times the amount in 1970 – and despite the fact that medical schools in the country produce many doctors, a vast majority of them leaves to work abroad.

The role of the government in facilitating linkages between the community and the formal health system remains a crucial, though often controversial, one. In many instances support to community health workers given by the health system is missing, because of limited financial resources, or worse because of ignorance or disdain from the side of government or health professionals themselves. Coverage and use of hospital care in the rural areas appear to be declining, as Elly noticed by witnessing almost empty rural hospitals during her recent visit. Most likely because of cultural, financial or geographical hurdles – or a combination – which continue to prevent Nigeria

from tackling pressing health issues, such as the high maternal mortality (1,100 per 100,000 live births[7]). This remains a challenge in a country where accessing skilled attendance at birth is not a given (less than 40%), and where many women in turn have to rely on traditional birth attendants.

Before Western medicine reached Nigeria there was a traditional health system which was closely tied to the local cultures and religions. In spite of the influx of 'foreign' practices, in contemporary Nigeria there is still a vibrant system of traditional medicine and healing – parallel to the Western-based medicine. The nuns in the mission hospital where Elly worked classified traditional practices as pagan and health professionals educated in Western-based medicine generally looked down upon such practices. It was like that in those days, and it probably has not changed much since then. Without a doubt, many of the traditional practices are counterproductive to good health and well-being such as female circumcision, or the belief of associating twins or triplets with the animal world, resulting in their neglect, stigmatisation or even death. In spite of these examples, according to Elly Western medicine would greatly benefit from recognition and acknowledgement of the existence of and respect for the traditional health system and their promoters. In contrast, in Colombia where she worked afterwards, TBAs and traditional healers were recognised as useful intermediates between the community and the formal health care system, resulting in them being trained and informed adequately to act upon this role.

Twenty-five years down the line Elly witnessed a different Nigeria. Whether development cooperation positively has influenced the health care system is a difficult question to answer, and probably not fair to ask. Obviously, it would be difficult to attribute improvements to aid interventions because of the interplay between national and international politics, economic development and (foreign) investments. The level of violence in the country has increased, as witnessed in the number of ethnic and religious conflicts, and an increased number of criminal offences. The political climate is still turbulent with military and civil rule alternating. Real democracy is absent and an atmosphere of fear was mounted by some dictators taking political prisoners, torturing and killing them. Corruption is prevalent. The poor are still poor, maybe even poorer than in the 1970 and 1980s, and an upper-class has become richer. Education opportunities have increased tremendously, and definitely the infrastructure (roads and transport) have improved significantly. At first glance the health care situation seems to have improved, particularly regarding infant and child health, though maternal mortality ratio is still alarmingly high. Many of the friends Elly made some 40 years ago, have died: a painful illustration of the extreme low life expectancy of 48 years[8]. Though AIDS is not as rampant in Nigeria as in other parts of Africa, its manifestation is still surrounded with stigma, discrimination and fear.

Elly's account of her work and life in Nigeria provides an interesting insight into the work of an expat (tropical) doctor in a remote mission hospital in Africa back then. In response to the question on the usefulness of this experience for her work in the Dutch health care system, Elly notes that ex-tropical doctors usually have more understanding of beliefs and (health) practices of migrants, and of import diseases. A notion which substantiates the current efforts to gain accreditation for the 'Education in Tropical Medicine' Programme in the Netherlands. Given her experiences throughout her career it is also satisfying to see the changes in this education which nowadays places an increased focus on community medicine, district and primary health care, and on public health.

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On the integration of traditional health

Health and development

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2 | A Tropical doctor is a medical doctor who has finished the Tropical Medicine Training. The set up of this training differs from country to country. Most countries design their own training. The Netherlands' system consists of two clinical years (Obstetrics & Gynaecology, Paediatrics or General Surgery) and a three months' course at the Royal Tropical Institute – see MT 4 (2009) for an article about pre-service education of tropical doctors in Europe (Zeldenrust/Jurgens).

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photo: T. Bousema

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Closing date for MT4 2010: November 5th 2010.

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