

Comments on a presentation to a South African Medical Association Conference on The Future Of Medicine in March 2001 by Max Price, Dean, Faculty of Health Sciences, the University of the Witwatersrand, Johannesburg, entitled:

## WHAT IS THE FUTURE ROLE OF DOCTORS AND HOW SHOULD WE TRAIN THEM?

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### *Introduction*

These comments, as did Max Price's presentation, deal only with "the future of medicine and particularly the future of the medical profession rather than [with] the more general topic ... [of] the future of health care".

The comments proceed from the following premises:

1. Doctors are dissatisfied with their status, work-load and remuneration.
2. Many doctors are emigrating; some doctors are even leaving the profession.
3. There is a shortage of doctors at all levels of care in under-served areas.
4. The public is not satisfied with the quality and the accessibility of medical services, especially in rural areas.
5. The emerging acute and chronic disease pandemics will further strain limited human resources in medical service provision.
6. Something has to be done to alleviate the position in the short-term and to remedy it in the long-term.

Medical services can be structured hierarchically with services at the base of the pyramid being provided by family, friends, and colleagues/co-workers, by community health workers, and by first-aid and paramedical personnel. The next three levels, comprising primary, secondary and tertiary personal medical care, concern us here. Doctors are the pivotal service providers. Nurses, therapists, pharmacists, radiographers and their various assistants, and health promoters, counsellors, educators, etc. provide support services. Scientists in medicine and

related fields while important as knowledge catalysts and communicators are not service providers.

### *A common global objective not "two diverging worlds"*

The objective of medical education is to train doctors who will be able to provide appropriate, safe and cost-effective personal medical care to individuals, wherever they may be living and working. This care should be provided at the level to which the doctors have been trained and certified as competent.

All doctors should be able to provide when needed some or all of the following components of personal care to their individual patients:

- health promotion and protection
- disease, distress and disability prevention, cure and control
- alleviation and palliation of distress and pain
- rehabilitation

In these roles doctors at all levels of care are assisted by other professionals and support personnel. Doctors should and hopefully usually do attend to the medical needs of their patients in a real world context. They consider their patients as members of a family, a household, a street, a community, and a society. Doctors as a profession do not, however, work in the community. They are not community health promoters or social workers. From this perspective the training and deployment of an Alma Ata 1978 type Primary Health Care (PHC) doctor - or nurse for that matter - was impractical and bound to fail, as it did.

Max Price sees "globally ... two radically divergent trends" in the type of doctors needed in future. He wrote:

"The one is a vision which sees all doctors trained so that they can work in primary care, that they can work in a rural environment, that they have a comprehensive range of skills such that they would function in the absence of specialists. It is a kind of doctor who would be both the frontline provider of primary care and also be able to provide a comprehensive hospital service.

But there is a second trend that I would suggest is the more dominant vision in the world generally. It anticipates all doctors being specialists, including doctors who practise primary care or family medicine".

My position is different and is based on the following concepts.

#### Primary medical care

This can be defined as first-contact ambulatory care as in the USA and not some amalgam of medical care, social work and community activism. It is not dependent on location, whether rural or urban, household/family or occupational. Primary medical care is preferably area-based and family oriented. Almost inevitably such a service would practice continuity of care. A doctor working in primary care would work with other service providers (medical specialists, therapists, health educators, midwives, pharmacists, medical technologists, environmental health officers, and diverse others) in a team if/when appropriate and/or would refer patients to these service providers wherever they may be, as and when necessary.

If and when such primary care doctors wish to specialise in any field of medical practice to either a secondary or tertiary care level, the entry qualifications should include their grades and their experience. HPCSA, MDPB and SAQA should provide the regulatory framework. If, on the other hand they want to hone in on their skills, they could do so either by participating in diploma courses or in selective CPD programmes.

#### Secondary medical care

This aspect of medical care comprises Max Price's "comprehensive hospital service" as well as home deliveries, ambulatory and home-based care at a level mid-way between primary and tertiary medical care. Examples of ambulatory care would be the care of people suffering from multiple severe and/or chronic complicated conditions. Doctors working in secondary care should therefore be competent to work in rural hospitals where they may also be called upon to administer anaesthetics and perform Caesarian sections as well as selected emergency surgical procedures. They should also be able to act in the absence of medical specialists as a referral resource for primary care doctors.

Secondary medical care providers could formally extend their medical qualifications both laterally with the acquisition of diplomas or certificates and vertically to become specialists by further training and study in a recognised institution. Their status should be registrable.

I do not agree with Max Price that secondary medical care providers who opt to work in rural hospitals should be:

"rural medicine specialists ... [who will need] obligatory formal training in surgery, anaesthetics, O&G, paediatrics, psychiatry, trauma, orthopaedics, a range of emergency medicine procedures as well as skills in management of hospitals, [and] districts, epidemiology, infection and outbreak control".

If and when these secondary care doctors with intermediate skills are confronted with problems beyond their expertise, it is already possible (and will be increasingly so) to summon specialist help and guidance via modern methods of communication (electronic, telephonic and vehicular) when working in rural areas. This is more cost-effective than Max Price's recommended intensive training. It is also unlikely that this training would be supported in adequate numbers and that the people who are so trained would remain in rural hospitals for the rest of their professional lives.

#### Tertiary medical care

Tertiary care is provided by medical specialists. These doctors practice high-tech medicine usually restricted both legislatively and theoretically to very discrete parts of the human anatomy, physiology and pathology. They deal only peripherally with the whole body or the whole patient. They certainly do not treat the patient in the context of a family, a community or society, nor are they expected to. They would maintain continuity of care through the referring doctor and it is only through such referral that they should attend to patients. This is the official current South African paradigm and it needs to be reinforced. I do not therefore agree with Max Price when he wrote, even for 2030:

"A doctor can no longer be good at everything and the public recognises this and chooses to go to orthopaedic surgeons who specialise in knees or shoulders not just orthopaedic surgeons and certainly not to general surgeons for those sorts of problems. They choose to go gynaecologists who specialise in cancers not just to general gynaecologists. I believe that you and I would make that choice too. [As doctors, Max Price and his SAMA audience are better placed to make such choices than members of the lay public.] An increasingly literate and Web-wise public are now making these choices too. They can find information very easily on the Web, and when they go to their doctors, they know more than their

doctors, and may lose confidence in them, unless their doctors are highly specialised at the cutting edge in a fairly narrow field".

Referring doctors assist patients in deciding when to go to specialists and which discipline and individual to choose. They interpret the opinions and co-ordinate the recommendations of the specialist/s. Remember there may be more than one specialist attending to one or more members of a family at any one time.

A patient-doctor relationship should be participatory and not adversarial in which points are scored for knowledge. Confidence is based on more than a data-base; besides data from a web-site is often suspect and likely to remain so even in 2030 when most people may (not necessarily will) have access to the internet.

Tertiary care covers ambulatory, home-based and hospital care. Like the other two levels of care, it is not bound to any specific geographic area although specialists tend to live and work in densely populated metropolitan areas close to facilities and patients. They can and do, however, participate in out-sourced services to other areas. Specialists also provide a valuable in-service, informal training resource for primary and secondary care doctors.

Doctors who want to specialise have to participate in a recognised and regulated training and study programme such as the current registrar programme and pass prescribed tests before being eligible for registration as specialists.

This hierarchical training and service structure allows for career flexibility while having the potential to meet the future needs of the people in this country as its pattern of morbidity and demographic and socio-economic composition changes.

### *Family medicine*

Max Price wrote:

"[F]amily medicine will be a specialty. There will be little place for the general practitioners who try to practice after one year of internship following a general medical education.

The family physician does not, of course, have to master the wide scope and depth of all of the specialties with their expanded knowledge and evidence base. But the standard family physician will also not be allowed to do

particular procedures without additional professional training and may not be allowed to prescribe a whole range of drugs without proper training in those drugs because he/she is not equipped to do that.

On the other hand the family physician will be trained to cope with 80-90% of all medical problems and reasons for encounter, without onward referral. The Family Physician will know all there is to know about those conditions of the patients he/she is seeing. The Family Physician will also have to have the special talents and training to support the unique relationship which only family physicians have with their patients and with their community. Unlike specialists, it is the Family Physicians who are there on a long term basis, and have long term continuous relationships with individual families and communities."

In my scheme primary care doctors will be the mainstay of family medicine. Secondary care doctors could also, if personally so inclined, practice as family physicians especially in rural areas where their practice could be in big demand also for in-patient and home-based care of severely ill patients.

### *Primary Health Care Nurses (PHCNs)*

Max Price wrote

"Even if we could persuade doctors to work in rural areas and primary care facilities, we could never afford to put a doctor in every clinic. And it would not be efficient to do so when there are others, like primary health care nurses, who can be developed to offer good quality primary health care services".

This raises the question, if primary health care nurses are going to provide primary care in rural areas, why should they not also do so in urban areas? Is there any need for medical primary health practitioners in urban areas?

I certainly do not rule that out, but I think there are certain realities with respect to patients' preferences in both public and private sectors. Patients now, and I think even more so in the future, express distinct preference for being seen and treated by doctors. Doctors have much more substantial training and cope better with the range of problems that come through the door in a primary care environment".

Patients prefer to go to doctors because they do not trust the Primary Health Care Nurses and the other nurses who act as doctors in rural and under-served communities. These "mini-doctors" are often not only incompetent, but often also not patient-centred either. I suppose they could be better trained. There are however other constraints on the use of these nurses as well as other options.

We also need to consider whether South Africa can afford not to put a doctor in every clinic or in areas with a low population in a series of small community-based clinics.

### *Justice and equity*

Max Price wrote:

“[T]here is another set of arguments, about justice and equity, that have [sic] also driven the shift to primary health care and to a particular kind of doctor.

[T]he primary health care approach is [about] how the health system should work, ... how health care should be funded and what should be prioritised. It is about shifting the emphasis for certain aspects of health care delivery out of the realm of doctors to nurses, rehabilitation assistants, pharmacists, rural and community health workers.

It is about equity and it is about understanding the multi-factoral, non-medical determinants of ill health and about intervening in many sectors outside of medicine, including the general political sphere, in order to impact on those determinants”.

I agree with most of the above but Primary Health Care is not about "shifting the emphasis ... out of the realm of doctors". Primary Health Care needs the services of a doctor, not any kind of doctor but "a particular kind of doctor". The primary care doctor working in a team as I recommend could fill this role. A mini doctor-nurse cannot.

## *Maldistribution - more doctors in urban areas than in rural areas*

Max Price wrote:

“The first element of the argument for equity and access was that we just don’t have enough doctors and this deprives people of equity of access and of a just health system. But the more important feature of access is the maldistribution of doctors between urban and rural areas and again this is often attributed to medical education. There are many proposed solutions to this maldistribution which I shall not address, but a key element in the solution of this maldistribution is claimed to be an emphasis on the role of doctor as a generalist, strong on primary health care, disinterested in specialising. The implications for undergraduate training are that all doctors must be competent in a wide range of skills needed in rural areas”.

Maldistribution can be defined as not enough competent and appropriately trained doctors at one or more levels of care with more doctors than are needed in other areas. If there are not enough doctors to meet real needs, then at least what there is should be distributed proportionately according to relative need.

In the real South Africa there are too few doctors providing care at all three levels in the rural and other under-served areas. The type of education they receive and the practical experiences they are exposed to during training influences their choice of where to work. Changes in curriculum in the direction of my recommendations could alter placement choice at least in the early years after graduation. It will also be useful to encourage or direct but not force doctors to work in under-served areas through preferential student selection, financial assistance while studying and contracts between students and training institutions. Good working and living conditions are however pre-requisites in public sector rural and other under-served areas.

More students could be enrolled into the existing medical training institutions if the academic entry criteria were relaxed and the course was shortened. Fewer graduates would leave the country because of the changes in the curriculum, which as discussed below might no longer make the graduates, eligible for easy acceptance in medical practice in other countries. There could thus be more doctors in South Africa and more doctors working in rural and other under-served areas. This could even promote a self-perpetuating cycle - the more there are, the more there will be!



Primary care doctors do not have to be competent in a wide range of skills. They will be supported in my scheme by the two other tiers of medical care providers to whom they will refer their patients when necessary, and by other members of the health worker community.

### *Market forces*

Max Price wrote:

“In South Africa it is the market that is driving our doctors and our health profession toward specialisation”.

and

“[M]arket trends ... will increase the demand for specialists. But whether driven by the market or ... by the logic of urban and rural care in South Africa, most doctors will specialise”.

I do not agree that the market demands specialisation. The market can support and may even prefer primary care doctors but they must be competent and have the time to be patient-centred.

A quote from the BMJ (Editor's Choice BMJ 20 October 2001) is relevant:

“A group from Southampton has analysed almost a thousand meetings between doctors and patients (and concluded) that if doctors don't provide a positive, patient-centred approach, then patients are less satisfied, feel worse, and are more likely to be referred to other doctors.

What then is patient centredness? The first component is that the doctor is sympathetic, interested in the patient's worries and expectations, and discusses and agrees the problem and treatment. Next, the doctor knows the patient and his or her emotional needs and is definite about the problem and when it will settle. The doctor also practices health promotion and takes an interest in the patient's life. This sounds somewhat like "good old fashioned general practice [or primary medical care] ...

There may not be time for patient centredness, which may explain part of the strain being felt by both the NHS in Britain and the Canadian health service”.

Primary care doctors play an important role in all people's lives and are needed in all areas, whether urban or rural. Their role and the opportunities they have to empathise with the whole patient and her/his family can never be replaced by tertiary care specialists here in South Africa or anywhere else in the world.

### *Unhappy doctors and emigration*

Max Price wrote:

“The education we give our doctors not only affords them the opportunity to move but, perhaps more critically, it creates the desire to move. It creates that desire because of the inevitable frustration that doctors experience working in poorly resourced public health care systems where they lack job satisfaction, where doctors know that they are delivering second rate care to patients, where they feel isolated from the global medical community and where they feel that they are lagging twenty years behind the interventions and management protocols available in other countries, which they read about in journals and encounter at international congresses”.

Doctors, especially those working in primary care, all over the world are "strained", frustrated and unhappy and usually as in South Africa because of work overload, poor working conditions, diminishing status and beaurocracy. But only some South African super-specialists might feel that they are lagging behind their colleagues in the "developed" world. Even if and where this applies it can not be due to the education they received many years previously.

Max Price also wrote:

“Something like 40% [of doctors] emigrate. They are trained at the expense of the State. How should we keep them in South Africa? One argument recognises that their mobility is a product of the type of education we give them, which arguably is better suited to first world environments than to developing countries' health service environments”.

The "desire" of doctors to leave South Africa has to do with working conditions and with socio-economic and political factors in the country. Emigration is not, however, a product of their education but is facilitated by it because it enables South Africa doctors to practice in most "developed" countries with minimal

additional qualifications, or none. If, however, my recommended 3-tiered training programme was implemented, then only specialists could be easily incorporated into the medical work-force in the "developed" world.

## *Technology*

Max Price wrote:

"There has been a concern or scepticism or anxiety about technology and its advance. Technology is generally regarded as the most important cost driver in the inflation of medical expenses. The costs are increasingly unaffordable and health care needs to move back to a practice of medicine that is less dependant on technology. Technology in turn is very closely associated with specialisation and specialists".

Technology can be and has been liberating and it is not invariably very expensive and unaffordable. Consider, for example, the much vaunted TALC (Technical Aids at Low Cost) of the 1980s. Advances in technology have given us automated and hence observer error-free and mercury-free sphygmo-manometers and thermometers. Point of care biochemical and haematological tests, even a futuristic state of the art scanning machine linked electronically to a distant radiologist are relatively cheap and cost-effective especially when collateral expenses are put into the cost equation.

There is, however, a very real danger today of falling into the opposite trap, epitomised by the WHO/UNICEF Integrated Management of Childhood Illness (IMCI) programme where not even stethoscopes and auroscopes are recommended. At issue is how well and appropriately technical aids are used. For example: wasteful and counter-productive technological aids like an infant scale and a very accurate adult medical scale do not need to be used when a simple bathroom scale and a very cheap tape-measure are cost-effective tools in child growth monitoring and chronic disease care (instead of expensive lipid profiles).

## *New specialities*

Max Price suggests that specialists in rural medicine, family medicine, primary care (listed separately from family medicine) and emergency medicine should be

trained, recognised, and registered. I doubt the usefulness of the first three and support the fourth.

*Physician scientists - inductive and deductive research*

Max Price wrote:

"[I]f you were to ask me which of our graduates are going to have the biggest impact on the future health of the South African population, I have to confess that in my view, it will not be the person who goes to practice rural medicine nor the person who becomes a neurosurgeon. It will be the "physician-scientist" who discovers a vaccine for AIDS or who designs a new drug for arthritis. If South Africa wants to take its place in contributing to the health of people locally and globally in the most significant way possible, then we have to take responsibility for training what I call "physician-scientists". These are people who have a clinical degree and a PhD and who are deeply embedded in research. ... But that there is a need to have career paths and training programmes that enable people to qualify with MBChB and PhD, and for the medical schools to take on-board that that is also one of the future roles of the doctor and to take responsibility for training them. That has implications for things like recruiting graduates into medicine and constructing curricula to facilitate the simultaneous completion of the MBChB and a research degree".

There are two kinds of medical researchers or as Max Price calls them, physician-scientists. There are practising doctors who monitor and evaluate their experience and deduce and test hypotheses for inclusion in a body of medical knowledge. Medicine is dependent on them for our new so-called evidence-based approach.

Then there are the fundamental scientists. While they may study, work and teach in a Faculty of Health Sciences, they do not have to be graduates of medicine. It might even be better if they were not. Some of South Africa's most illustrious medical scientists (eg. Sidney Brenner and Philip Tobias) wasted valuable time obtaining a MB BCh degree which they never used.

## *Under-graduate medical education*

Max Price wrote:

"Once we accept that no graduate will be expected to practice without further specialist training, then we can look at the under graduate curriculum with new eyes and do new things. We should look at what skills and competencies we want as output of the MBChB degree. ...

We should strengthen the knowledge and skills that will be common to all career paths that a graduate might choose for example, medical informatics, ethics, the assessment of evidence, communication skills, the applied basic sciences, diagnostic reasoning, generic clinical skills. These are the things that all doctors will need regardless of their career path and that should be the job of under-graduate education. We should also give wide exposure to all specialties and to rural medicine so that our graduates are in a position to make informed choices about which career path to follow.

We should eliminate those aspects of the curriculum that are there "just in case" we need them when one day we specialise, e.g. detailed anatomy just in case you become a surgeon or a radiologist.

We do not need people to assist in operations as part of their under-graduate training - that is not going to give them a generic skill that they need in order to become the doctor of the future.

Moreover the shift to specialisation and the acceptance that all graduates will receive further formal training, permits a shortening of the under graduate curriculum. That is very important and we are seeing that at the moment in the redesign of curricula but it goes along with a lengthening of the postgraduate programme".

I have quoted extensively because I agree with most that he wrote although we approach the curriculum from different perspectives. I would add to the curriculum some social science subjects such as local literature and history, social anthropology, demography, sociology, business management and organisation, ... If by the term "applied basic sciences" physiology, pathology, and pharmacology are meant I agree. I do not see the need, however, for physics, botany, chemistry, zoology and mathematics which I hope are not the "applied basic sciences" which he includes.

Exposure to family medical practice is not mentioned. I trust this is an oversight. It is essential that students are for the largest portion of their practical clinical training exposed to area-based family practices and ones that practice continuity of care. They should NOT be exposed to the inefficiency, incompetence, insensitivity, paternalism and arrogance that passes for primary medical care in most super-market style public-sector polyclinics today.

### *Internship*

Max Price wrote:

“[Internship] is currently designed around the need for all doctors to be equipped to do rural community service. All doctors must soon do a two year internship and become competent at doing caesarean sections, appendectomies, orthopaedic procedures, anaesthetics, etc. They must be able to resuscitate newborns and have a very wide range of skills as they will be expected to have in a rural hospital. They will spend at least a year of their internship if not more, acquiring those specific skills ...”

In contrast I propose that interns should during their internship year/s learn a wide range of skills that would enable them to work safely in primary medical care/family medicine. They should rotate through all those specialist - but not super-specialist - hospital-based clinical disciplines that they would encounter in primary medical care, acquiring primarily diagnostic skills. Comprehensive patient management and therapeutics would be learnt in their rotation through primary medical care facilities and practices. There is no need for them to assist in any surgical or technical procedure that they are unlikely to have to perform in primary care.

### *Community service*

Max Price wrote:

“Accepting the vision of the future of medicine as having more specialists, including rural specialists, does not entail abandoning community service or rural medicine. Far from it. I would propose that those who wish to specialise should be encouraged to defer their community service until near the end of

their specialist training, say the third or fourth year of their specialist training. Then they would do their community service as near qualified specialists.

They would then go to under-served areas with significant skills in the particular speciality that they are qualifying in and as such would be much more useful to rural hospitals and rural communities than the people we currently send who have just completed their internship. They could also provide much wider supervision for interns, thus allowing accreditation of more remote sites for internship. Those who choose to specialise in rural medicine would complete their specialisation in rural medicine and then of course they would be spending much of their lives working in rural environments. They should not have to do community service on top of that. Those choosing not to specialise could still do the two-year internship and then their community service”.

## I MAKE THE FOLLOWING SUGGESTIONS

*doctors, medical practitioners, medical care providers, ...*

1. Medical school graduates should spend 1 year working only in primary care units in accredited public-sector institutions in areas of need whether rural, peri-urban, or urban.
2. In order to register as secondary care practitioners applicants should spend some time (about 3-4 months) in rural hospitals
3. As part of their registrar's programme doctors who are training to become specialists should spend a specified number of hours/year working in rural hospitals. There is however seldom enough full-time work for a trainee specialist in any single rural hospital. If community service is organised on a commuting basis the needs of the hospital and the doctors' commitment to their new young families (often present at this stage of their careers) could both be met.

*health educators, health promoters, community health workers, counsellors, care givers, whatever ...*

This cadre of health worker is already playing important roles in the delivery of comprehensive medical care. When part of a medical service team, they extend the role of doctors at all three levels of care, particularly in patient support and education and in health promotion. Their roles, scope of practice, competencies,

and training must be regularised and standardised. They must be recognised and registered within a statutory controlling body within the HPCSA.

### *short-term solutions*

shortage of primary care doctors

It is recommended that a new cadre of medical care provider be trained and deployed. This person who can be called a Primary Care Clinician would provide medical care in an ambulatory primary care setting only.

When a new revised medical curriculum has been implemented, the Primary Care Clinician's course should be discontinued and all trained Primary Care Clinicians encouraged to up-grade to primary care doctor status within the SAQA framework and HPCSA/MDPB structures.

Other short-term solutions include:

- voluntarily relocated and/or conscripted doctors and PHCNs
- retired, retrenched and mothering/parenting doctors and PHCNs
- doctors recruited from other countries
- pharmacists and environmental health officers in extended roles