Guest Editorials

Medical education in the Pacific: where have we been and where are we heading?

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The Fiji School of Medicine (FSM) has come a long way indeed since the graduation of its very first three Native Medical Practitioners (NMPs), way back in 1888. Known then as the Suva Medical School, and running a three year practically oriented, hands-on, apprenticeship type medical training programme for a few young Fijians of chiefly ranks, its founding heralded the formal introduction of medical education to the small island communities of the Pacific. Educationally significant and also unique to that event was the fact that it was a sort of last ditch solution to try and address the serious problem of an acute shortage of human resources in health at the time; a problem which, for a number of reasons and circumstances associated with subsequent academic development of the institution, has essentially remained incompletely resolved even today.

From such a humble beginning where a handful of Fijians trainees were actually given instruction in the Fijian vocabulary, this institution has now produced well over 1000 graduates in either Certificate, Diploma or Batchelor degree award levels for undergraduate and postgraduate courses in Medicine. It has also produced close to 1500 graduates in undergraduate programmes for Dentistry or Oral Health, Environmental Health, Medical Laboratory Technology, Nutrition and Dietetics, Pharmacy, Physiotherapy and Radiography. The very first regional graduates from outside of Fiji were two Tokelauan Native Medical Practitioners (NMPs) who came out in 1916 and since then, more than one third of all graduates have actually come from nineteen other nations of the Pacific basin region, with a few coming from seven countries outside the Pacific, including those from as far away as the former British Honduras, Nigeria and Nepal.

When Dr. William MacGregor (later to become Sir William) successfully trained and deployed his Fijian "Vaccinators" against Smallpox in 1879, despite protestations by white Colonial settlers that those indigenous savages could not be trained to perform such skilled tasks. It was his first training and educational experience with the "Do It Yourself" approach if no other alternative is available. As Fiji's first Chief Medical officer who had been trying repeatedly but unsuccessfully to convince his bosses in London to increase his grossly inadequate Medical Workforce, it also became obvious to him that, like his "Vaccinators", if he was to have more doctors in his medical workforce, then he must train and produce them himself; a proposition he successfully lobbied for with his fellow Legislators who provided the funds which formally introduced medical education to the Pacific, through the founding and establishment of the Suva Medical School in 1885, later to become the Central Medical School (CMS) in 1928, and then eventually the Fiji School of Medicine (FSM) in 1961.

The original three year programme was progressively upgraded and extended to the four year Certificate award in 1934; then again to the five year diploma qualification in 1952, and finally to the seven year MBBS degree award in 1982. The rationale behind those upgradings was undoubtedly the assumption that, given the high level of practical expertise and clinical competencies exhibited by the graduates from the institution, it is very likely that if their comprehension of concepts and principles involved in the basic sciences of human structure and function could be further upgraded and extended, they would be just as good as expatriate doctors who were educated and trained elsewhere.

These progressive upgrading and extensions however changed the focus and emphasis of medical education and training to a more theoretical and book learning perspective rather than the active, practically oriented, hands-on, learning-by-doing approach it began with, and the consequence of such changes was the mounting numbers of students who could not successfully complete their training; hence the escalating rates of student attrition which became excessively high from the late sixties and through to the eighties.

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The first students from Papuaniugini (PNG) were enrolled in 1948, and the U.S. Trust Territories of the Pacific Islands (USTTPI) shut down its post-war medical training scheme that was established in Guam, by transferring enrolled

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students to CMS in 1949. A total of over fifty PNG medical and paramedical health workers were graduated from the CMS before PNG decided to establish its own Medical School in the mid nineteen sixties. Given its population size and the distance between PNG and Fiji, the move was not altogether unexpected, although the high failure rates of PNG students enrolled at CMS undoubtedly precipitated an early implementation of the project. Once established however, the PNG Medical School embarked on an accelerated developmental process of academic upgrading which saw the awarding of its MBBS degree by the mid seventies and introduction of postgraduate education and training shortly thereafter.

For the USTTPI, student failure rates was a much more serious problem and in the case of the Federated States of Micronesia (the other FSM), there were only two medical graduates from the FSM out of a total of over forty student trainees enrolled in the late sixties to the eighties. From the University of Hawaii, the outcome was not much better, because out of the more than fifty Micronesian students sent to medical school, ten managed to graduate, with only three returning to work and serve in Micronesia. Not surprisingly therefore, Micronesia came to a similar conclusion as MacGregor did more than a hundred years ago, that is, if others cannot train their doctors, then they would have to do it themselves. Hence the establishment of that ten year sunset program known as the Pacific Basin Medical Officer Training Programme or PBMOTP at Pohnpei; a programme which in fact reverted essentially to the original integrated approach of learning by doing through hands-on, practically oriented medical education and training. Even more innovative however was its commitment to the use a problem based learning curriculum with the help of the University of Newcastle, as well as a multi-entry, multi-exit, level-appropriate and competency-based program structure which also incorporated previous experiences and knowledge in training mid-level health care providers such as Medical Assistants and Medexes.

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Meanwhile, the FSM was going from bad to worse following the milltary coups of 1987 which all but forced the closure of an institution about to celebrate the centennial year of its first ever graduation ceremony. With the election of Dr. Sang Tae Han, the new W.H.O. Regional Director for the Western Pacific, whose campaign platform included the revitalisation of the FSM, the Pacific basin's first medical school was able to emulate the fate of the mythical Phoenix, in resurrecting itself to greater heights and glory from the verge of death and destruction.

The revival that was instigated and supported by WHO included curricular and administrative reforms as well as the upgrading and restructuring of physical facilities, and it took almost exactly ten years to effectively accomplish most of the necessary changes, when autonomy became a reality last year, to add to the introduction of its problem based learning curriculum which was introduced in 1991, as well as the renovations and refurbishments which took place in 1995-96. The construction of a new physical plant for the institution is expected to start soon, and should therefore fully implement the revitalisation changes envisaged by WHO way back in 1989.

The ten years from 1988 to 1997 represented virtual closure and shutdown of the institution at one end and full administrative autonomy at the other. Not surprisingly therefore, it also represents the most dynamic phase of developmental changes and progress in terms of curricular and management structures and processes, as well as physical redevelopment. Ironically but also gratifying to some extent is the fact that the structure and format of the curriculum and training programme introduced in 1991 relied heavily on the academic and institutional experiences of the PBMOTP. In similar vein, the introduction of Postgraduate education and training at FSM during these past three years also took into account PNG's experience in this area. And whilst the sun has already set on the PBMOTP, graduates from that programme are now undergoing postgraduate as well as continuing education at FSM; which has also developed a much closer and stronger working link with PNG, evidence of interactive and ongoing cooperation for medical education in the region.

From an FSM which accepted and took in trainees from its neighbouring small Pacific island communities, the institution is now extending its educational and training activities to these same communities, especially with its postgraduate programmes where trainees can undertake much of their hands-on, practical requirements within their own health care facilities. In other words, the FSM can more or less function also as an institution without national boundaries, given the capabilities and advantages of electronic information technology, for which the widespread and scattered small island communities of the Pacific basin present as an ideal niche market and environment. Fortuitously perhaps, but none the less significantly encouraging is the fact that the newly elected Regional Director of WHO's Regional Office for the Western Pacific, Dr. Shigeru Omi, considers and believes that telemedicine and telehealth for the small island member countries of the Pacific, as an area worthy of their full support and promotional efforts. □

Are cervical cancer screening programmes feasible in the Pacific?

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One of the advantages of living in the Pacific is that our isolation also provides us with an opportunity to observe new developments and trends in the health sector of our larger and richer neighbours from afar. In theory this should also allows us sufficient lead time to assess their impact and relevance to our own health services before we transplant them wholesale or transformed. In our daily lives it is difficult to avoid noticing new and innovative discoveries which are publicised in the international media even before the journals which report them reach our shores.

So much of modern medical practice can potentially be driven by external forces such as pharmaceutical companies and other vested interests. Fortunately the Pacific is such a small market that most large pharmaceutical and medical technology companies do not bother subjecting our health personnel to the type of "hard sell" to which our overseas colleagues are exposed. In the absence of such influences and against a background of much lower per capita spending on health and the disease profiles in our countries we have the option of careful consideration before introducing any new therapies or processes into our health services.

The current status of cervical cancer in our part of the world mirrors the situation in more developed countries two to three generations ago.

Cervical cancer is arguably the leading cause of cancer deaths in women in the Pacific. The more populous countries in the south-western part of the region regularly rate it as amongst the top three reproductive health problems they have to cope with. Up to 80% of cases present in advanced stages of the disease when even under optimal conditions management options are limited. In the Pacific there are virtually no options unless the woman can afford the cost of referral to more developed countries such as Australia, New Zealand or the USA for radiotherapy.

The current status of cervical cancer in our part of the world mirrors the situation in more developed countries two to three generations ago. The response in those countries to the high rates of invasive cancer came about with the use of the Pap smear to detect abnormal exfoliated cells from the cervix. The Pap smear was used as the cornerstone of cervical cancer screening programmes. This screening was introduced before the natural history of the precursor to invasive cancer was established. In fact, today it is still not clearly understood how many women with cervical intraepithelial neoplasm (CIN) go on to develop carcinoma of the cervix. However, despite not fulfilling all the criteria for a screening programme as set out by Wilson and Jungner for WHO cervical screening has lead to a significant reduction in the incidence of invasive cancer of the cervix. It seems attractive therefore to conclude that the high rates of cervical carcinoma in our part of the world would be reduced by instituting cervical screening based on Pap smears. This is not an uncommon response.

In Fiji, the Cancer Society with funding from AusAID, ran a pilot project earlier this decade to encourage as many women as possible to have a Pap smear by training nurses to perform the screening. This led to an increase in the number of cases of CIN for which treatment was given locally. In the context of major transport difficulties faced by some of the women who tested positive there was a decision made for deliberate over treatment in some cases. (An interesting finding from the pilot project was that the nurses who performed the screening produced persistently better quality Pap smears then their doctor colleagues). Opportunistic cervical screening continues to take place in the main hospitals and health centres in Fiji as well as in the private sector by general practitioners.

The current approach to screening in Fiji subjects far too many low risk women to unnecessarily repeated cervical smears while high risk women do not get access to this service at all. As yet there has been no attempt by the Fiji Ministry of Health to implement a national cervical cancer screening programme. The 'delay' gives us an opportunity to examine whether or not it is feasible to transplant a cervical screening programme which ensures equity, uniformity and clear guidelines for those who test positive, such as in New Zealand, to the Pacific.

The challenges that need to be addressed before doing so seem quite daunting. Apart from the need to systematically review the evidence before starting a new screening programme its resource implications and cost-effectiveness needs to be considered. Cervical screening programmes are expensive and require good cytological diagnostic facilities with in-built quality control. There have been lawsuits in Australia and New Zealand against institutions and individuals who reported false negative tests. While the Pacific may not have the same medico-legal climate at this

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time the issue may arise in future. The management of those who test positive also requires specialised training and equipment with appropriate clinical guidelines. The taking of Pap smears without the necessary back up to manage positive cases, as has occurred in several countries in the Pacific, must be condemned for being negligent if not immoral. Ideally there should be feedback between clinicians and cytopathologists to ensure that only true positive cases are being treated. A system of regular follow up and review also needs to be built into the programme to ensure its ongoing effectiveness. Most Pacific countries do not have the infrastructure for setting up or maintaining patient records to allow systematic recall. Whether these requirements have deterred the Fiji Government from setting up a national cervical screening is unknown. What is obvious though is that Fiji would not be able to afford such a service without cutting back on other areas of health delivery. The same reasoning would apply to most other Pacific countries.

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What then are the alternatives? In the March 13, 1999 issue of The Lancet a team from the University of Zimbabwe and the JHPIEGO Cervical Cancer Project published the results of a study in which six trained nurse-midwives used naked-eye visual inspection of the cervix with acetic-acid wash (VIA) to screen for cervical cancer in poorly resourced locations. The resources required for this test included a speculum, a light, acetic acid and education on visual classification categories. Acetic acid is routinely used for the colposcopic evaluation of vascular changes on the cervix of women with positive pap smears. The degree of recognisable vascular abnormality is a measure of the deviation of the tissue from the normal to the preinvasive. To validate the VIA process a subset of the screened population also had Pap smears taken. In this Zimbabwe study of over 10,000 women about 20% had abnormal VIA findings. The test had a similar detection rate for CIN as the Pap smears that were taken. VIA was found to be more sensitive but less specific than cervical cytology in identifying precancerous lesions. The success of this initiative depended very much on the amount of training that the observers were given. The nurse midwives carried out their observations in women's clinics in rural areas, hence reaching a section of the population who normally did not access any form of screening for cervical cancer. The VIA test needs to undergo further evaluation before it becomes accepted as a low cost alternative to the Pap smear. Specifically the issue of its lower specificity will have to be addressed.

To meet the challenge of high rates of cervical cancer therefore a novel low cost option for screeing has been described in Zimbabwe and the results of similar studies to validate this one in other parts of the developing world are awaited. Whereas once the only options were to do nothing or to transplant expensive Pap smear based screening programmes to the Pacific there is now the promise of appropriate technology for our setting. However, there still remains the issue of appropriate services for the management of positive cases. □

While there are several chronic diseases more destructive to life than cancer, none is more feared.

Charles H. Mayo 1865 - 1939