



From bench to bedside: the future of academic medicine

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ACADEMIC MEDICINE has traditionally been regarded as bridging the gap between research in the basic sciences and clinical medicine. Teaching at undergraduate and postgraduate level constitutes an essential function of all academic institutions but has to be complemented by research into the physiology and pathophysiology of disease. This enables the development of diagnostic and management strategies to cure acute illness, ensure disease control and a good quality of life in chronic disease. Disease prevention remains however, the ultimate goal.

The research methodologies employed in the pursuit of these goals vary in the breadth and complexity of the technological advances applied to study disease processes. The utilization of *in vitro* models using cell or organ culture, or *in vivo* studies using animal models enable the elucidation of cellular physiology and pathophysiology. Molecular biology has pushed our knowledge of intracellular regulation and dysregulation to previously unimagined frontiers. Mapping of the human genome was a landmark for medical science but signalled the beginning of a new era in research into the genetic basis of disease. The extrapolation of information acquired in this manner to the prevention, identification and treatment of different diseases in itself needs to be carefully analysed and therefore generates the need for further study, given both the complexity of the human body and the well documented interspecies variation. For example, the development and eventual release of a therapeutic agent for clinical use may span a time period ranging from ten to twenty years. Continued surveillance of the marketed products is then still essential to monitor effects and adverse events which may emerge with increasing use of those agents.

Interindividual variability in susceptibility to disease and in response to management have also been repeatedly documented. Gender and age differences play a definite role as do genetic factors. Recognition of this has led institutions such as the *National Institute of Health*, the *Food and Drugs Administration* in the United States and various prominent European research funding bodies to insist that studies include individuals from different ethnic minorities and races where genetic, cultural and environmental differences can further modify disease processes, their management and the response to treatment. One outstanding example is the study of diabetes mellitus in the Pima Indians where environmental and genetic factors have resulted in a high incidence and prevalence of obesity and diabetes with distinct characteristics from an epidemiological point of view. Malta ranks third amongst European countries regarding the prevalence of diabetes, dyslipidaemia, obesity and the resulting morbidity and mortality associated with these conditions is the subject of ongoing research. The metabolic and endocrine aspects of cardiovascular disease are one aspect of that research.

Basic scientists and clinicians working within the Faculty of Medicine and Surgery of the University of Malta have traditionally been limited by the constraints plaguing academic medical institutions worldwide. However, they have persevered in spite of the odds. The results of such research endeavours can be seen at both national and international conferences and in papers in peer-reviewed international and national publications. A significant number of the presentations at the *5th Maltese Medical School Conference* held early in December 2003 bore testimony to the span of scientific work of members of

the Faculty. The conference faculty included prominent local and foreign chairmen and speakers. Junior members of staff had the opportunity to present the results of their research, an essential part of their postgraduate training, to conference delegates. The interaction between local and foreign scientists and clinicians proved a stimulating and fruitful experience. The conference proceedings and abstracts were published in a special conference issue of the *Malta Medical Journal*. Whilst one could argue that Malta is too small to embark on such endeavours, the educational value of such conferences is not to be underestimated. Furthermore the presentation of data of relevance to the practice of medicine in the Maltese islands is essential to the continuing development of healthcare locally. Not only do population differences have to be identified and defined but the economic, environmental and genetic backgrounds of our patient population necessitates careful analysis and auditing of new methodologies and treatments. Continuing cost-benefit analysis is also necessary to ensure the appropriate allocation of funds in a health service that is constantly expanding its service provision to a population experiencing increasing longevity as a result of advances in medical science. Within this context, patient oriented quality healthcare needs to be safeguarded and in recognition of this, consultation with stakeholders is mandatory.

Members of the Faculty are invited to form part of various consultative committees at the University of Malta, St Luke's and Mater Dei Hospitals, the Department of Health and various associations which have a regulatory or educational remit. These range from advisory committees dealing with the planning and development of educational programs to continuing medical education and research. The introduction of new services and the development of management guidelines to optimise patient care is another facet of the ongoing commitment to the professional and lay community. Since 2001 for example, a multidisciplinary team has been established and is responsible for the peri-operative management of patients undergoing transsphenoidal surgery for pituitary gland tumours. A recent audit carried out in 2003 and presented at the *Malta Medical School Conference* revealed results that are at least as good as those obtained in centres of excellence abroad with the added advantage that patients and their relatives are no longer subjected to prolonged stays and recurrent visits to overseas centres. Non-governmental patient organisations such as the *Malta Diabetes Association* which do sterling work in patient education and care, with a focus on the provision of patient oriented quality healthcare and patient empowerment similarly draw on the expertise and voluntary services of various members of the healthcare professions.



The Malta Medical Journal, the official publication of the Faculty of Medicine and Surgery, serves as a forum where studies of local relevance to the Maltese scientific, medical and patient communities are published. Data presented pertain to the epidemiology, diagnosis and management of local health problems including the implications of politically based and financially determined decisions. These data form the basis of informed decisions regarding policy and management

issues. The Journal similarly provides a source of reliable information and data for the media in the preparation of informative articles for the general public. A recent issue of the journal contributed significantly to the local anti-smoking debate by highlighting the harmful effects of smoking. The introduction of a ban on smoking in public places was already the subject of debate over 30 years ago in what is probably the first ever treatise to be published in Malta dealing with this problem. A recent

study by researchers at the Faculty highlighted the increasing prevalence of smoking in different generations of the Maltese public and the associated lung diseases and co-morbid conditions. Peer review ensures that publications are rigorously scrutinised regarding originality, scientific content and relevance to the readership which constitutes doctors, dentists, pharmacists and other members of the paramedical professions. The chairman and members of the editorial board dedicate their time and energy to promoting academic medicine and maintaining standards through the production of this non-profit publication which reflects the research activities of the Faculty.

Whilst the value of research targeting local issues is well recognized, the forging of links with institutions and organisations abroad both within the European Union and with other countries is to be lauded. The benefit gained from collaborating with colleagues in established centres abroad and participation in networks of excellence is essential for continuing professional development and staff training at under- and postgraduate levels. Links with various European and other Universities have been established with a number of visiting professors lecturing and co-supervising research degrees at the University of Malta. Graduates are encouraged to proceed abroad for further specialization and training and traditionally return to Malta on completion of their training to the benefit of the local population. Malta's accession to the European Union will serve to facilitate this process. The only serious cloud to this silver lining is that if the infrastructure, career progression and financial remuneration of health care professionals both as academics and as providers of medical services (at the University and at the hospital) fail to improve, then Malta could be facing a serious brain drain as has been experienced by other countries in the past. The responsible governmental and organizational bodies would do well to be proactive in developing strategies to preempt such a blow to academic and clinical medicine. With this in mind The *Malta Medical Journal* has committed itself to an international campaign in partnership with the *British Medical Journal* to promote debate regarding the future of academic medicine and to revitalise academic medicine. A country's development and progress depend on the optimal utilization of its resources and cultivation of its human resources is crucial to tackle challenges in a variety of sectors on a national and international basis.

The end of our exploring will be to arrive where we started and to know where we are.

TS Eliot 1942

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