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ANAESTHETICS: FRUSTRATIONS, HOPES AND REWARDS

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I WILL START my lecture tonight by giving you a summary of its conclusions. This is to avoid the possibility that some members of this audience may be overcome by its sterility and thus fall asleep before I finish. The message I wish to get across would therefore be lost, or received in a distorted fashion, depending on the level of cortical depression those individuals will have reached.

I am going to recommend the following: Firstly, that a post-graduate training programme in anaesthetics should be established here in Zimbabwe without delay. Secondly, that the course and examinations should be local; both should draw from experience gained in Africa and abroad. Thirdly, that every effort should be made to inform and encourage both medical students and graduates of the Medical School to join the local training programme since this is the only logical way that improvement in anaesthetic coverage can be achieved in a reasonable time. Fourthly, that we should be prepared to spend money on this project since the strength of the discipline of surgery depends on strong anaesthetic services.

The speciality of anaesthetics goes back to antiquity, the time when a 'deep sleep' was 'made to fall upon him'. The 'him' was an innocent and well-meaning young man named Adam. During the 'deep sleep' Adam's twelfth rib was resected for cloning Eve. Following this major operation and its outcome, there was never a dull moment in the Garden of Eden.

The other major recorded milestones in the development of anaesthesia are: Firstly, on 30 March 1842, in Boston Massachusetts, Crawford Long administered ether to James Venable for the removal of a lump in his neck. Then, on 18 October 1846, at Massachusetts General Hospital, Dentist William T. Morton removed a lump from the jaw of a man who was under the effects of ether. In recognition of this contribution to anaesthetics, the inscription on Morton's tomb reads:

> Inventor and revealor of anaesthetic inhalation.
> By whom *Pain in Surgery was Averted* and annulled.

* An inaugural lecture delivered as Professor of Anaesthetics before the University of Zimbabwe on 9 October 1986.

> Before who in all times, surgery was agony.
> Since whom science has control of pain.

Acceptance and status came to the speciality in 1883. Chloroform was administered to Queen Victoria of England for the delivery of Prince Leopold. John Snow was the anaesthetist.

Ether, being safer and easier to use than chloroform, became the agent of choice in the USA while chloroform was used more in the UK and its colonies. This resulted in the situation in which the administration of 50 per cent of the anaesthetics in the USA is carried out by non-physician anaesthetists, while only physicians administer all anaesthetics in the UK and Canada. In this country we have both physician and non-physician anaesthetists. The decision for this was based on more complex arguments than the comparative ease of administering the two anaesthetics. Chloroform because of its toxicity is now used only in animals.

The principal tasks of the anaesthetist are to provide relief from pain to the patient and optimal operative conditions for the surgeon. Both should be done in the safest possible manner. I am aware that my surgical colleagues will deny that 'optimal operative conditions' are ever achieved! Be that as it may, these conditions can be achieved by either general or regional anaesthetic techniques or a combination of the two. It should be the aim of every anaesthetist to be a competent physician and a clinical pharmacologist, with a broad knowledge of surgery, and he/she should be able to utilize and interpret correctly a variety of monitoring devices.

The anaesthetist combines a knowledge of the patients' diseases, the drugs taken, the demands of the operation, and the patients' concern, in order to arrive at the proper choice of anaesthetic agents and techniques.

The monitoring devices he or she uses in the operating theatre have been modified and extended for use in the care of the critically ill patients in intensive care units. Here he remains a leading member of a highly specialized team of medical experts practising emergency medicine.

The responsibilities and scope of anaesthetics continue to expand as more advances are made in the understanding of disease and of its management. These are: surgery — including neurosurgery, cardiothoracic, obstetrics, paediatrics, transplant, ambulatory, cranio-facial and plastic, and hypothermia and hypotensive techniques — pain clinics, cardiopulmonary resuscitation, and intensive-care medicine.

Some months before I came to Zimbabwe I wrote to the then Chairman of the Department of Anaesthetics asking him how many qualified anaesthetists there were in Harare and the country as a whole. Following enquiries from the medical registration authorities the answers were that in Harare there were between 20

and 24, and in Zimbabwe, 28 to 30. There were eight full-time university and government anaesthetists.

Until January 1986 the only existing local training programme in anaesthetics mounted in the environment of the University was the one-year diploma course for nurse anaesthetists which was started in 1978 when the problem of recruitment became evident. The total number of graduates from this diploma course is twenty-four. Thirteen are still practising anaesthetics while eleven are doing something else or have left the country. The reasons for the high drop-out rate are: there is no significant increase in remuneration in recognition of the graduate's special skills; there is no promotion scale; and the public image of these specialists is confused. In the United States of America fifty per cent of the twenty million anaesthetics given annually are administered by non-physician anaesthetists. There is a close nurse–physician relationship. In this country the nurse anaesthetist programme continues to be a subject of debate and review, yet the contribution made by the graduates is unquestionable, in spite of their poor morale.

Until the beginning of this year the Department of Anaesthetics had had no local post-graduate training programme in anaesthetics. The Department has assisted those who showed interest in anaesthetics by mounting a course of seminars in anaesthetics. The course prepared the candidates to sit for the British Fellowship Part I examinations in anaesthetics, after which they carried on their training abroad. During all that time the local services lost their ever-growing skills. Also, for reasons difficult to understand, Black Zimbabwean physicians did not feature prominently, if at all, in this project. Worse still is the fact that none of the graduates of the preparatory course has yet applied to the Ministry of Health offering his services upon successful completion of their training. This trend must change.

The responsibilities of the Division of Anaesthetics are incredible. At Harare Hospital there are over 20,000 deliveries a year, close to 300 Caesarean sections a month, and over 10,000 local blocks, 2,000 emergencies and 250 ICU admissions per year. All this is supervised by only eight specialists!

Armed with this knowledge it is easier to understand the suggestions which have been put forward in the last year. This follows a visit by a two-member British team of anaesthetists invited to Harare in an attempt to help find solutions to the anaesthetist manpower crisis. This visit was sponsored by the British Council.

My British colleagues made the following observations. The scope and volume of surgery at the two teaching hospitals would make it attractive as an excellent teaching and research centre for anaesthetists at various levels of training. The problem of staffing the Department is mainly due to the absence of a local complete post-graduate training programme and examination. (The junior

staff stay for six months to one year only.) The lack of experienced middle-level staff puts a heavy clinical and teaching load on the consultants. The medical students have insufficient exposure to the speciality of anaesthesia to stimulate and hold their interest enough to make them take up anaesthesia as their own speciality. Finally, they observed that a policy needs to be formulated on anaesthetic equipment and drug supply.

The following proposals were put forward for consideration: that an equipment committee be set up to formulate a policy on the ordering of equipment and the development of a reliable 'on site' maintenance service; that qualified staff be recruited to assist in the development of the anaesthetic training programme in Zimbabwe; and that suitable training positions should be identified in the UK for suitable junior staff to attain higher qualifications and experience before returning to Zimbabwe. It was further proposed that the teaching of anaesthesia be expanded to medical students in the earlier years of their training, and that a six-month or one-year exchange programme be developed with suitable hospitals in the UK. The long-term goal should be to establish at the University of Zimbabwe a higher qualification in anaesthesia which will have international standing.

It is clear that a post-graduate training programme should be started in Zimbabwe as soon as possible, as this is the only way of ensuring the development of a consistent supply of intermediate-level expertise and experience in the Division of Anaesthesia for teaching and clinical purposes. The development of the local post-graduate training and examinations will follow similar lines to that of the local ongoing M.Med. training in Surgery and in Obstetrics and Gynaecology. Experience will be drawn from similar projects in Lagos and Ibadan in Nigeria, in Nairobi, Kenya and in Khartoum, Sudan. The steps to be followed in setting up such a programme will not be new, but the British staff involved should be carefully selected so as to ensure their suitability to such a role and their adaptability to the Southern African environment. The main aim and primary objective of the project is to make Zimbabwe, particularly the government services and outposts (growth points), become self-sufficient in well-trained anaesthetists. The result of such a project should become self-evident in a reasonable space of time.

The establishment of a training programme locally has become more urgent as training centres abroad are only producing a trickle of experts at a time. Also, serious cutbacks have taken place, or are about to, in overseas training posts in the UK and North America. Graduates trained abroad tend to have difficulty settling back in their own countries and, therefore, tend to be lost to institutions abroad. It is better for the trainees to do their basic training in Zimbabwe. After that they should be sent to carefully selected centres abroad for special experience in important aspects of the speciality.

It is hoped that the climate is right for links to be developed between the Department of Anaesthetics of the University of Zimbabwe Medical School and selected universities and training hospitals in the UK. The main aim of the links will be the establishment, at the University of Zimbabwe, of a higher qualification in anaesthetics as soon as possible. The qualification will be in line with similar established specialist qualifications which have international recognition. The Diploma in Anaesthetics (Zimbabwe) started this year should be seen not as an end in itself but the beginning of such a course.

It is hoped that the majority of the graduates from that programme will be citizens of Zimbabwe and that their presence will raise the quality and safety of the delivery of anaesthetics in Government Hospitals and services in general in Zimbabwe. They will provide better supervision and training to the existing non-physician anaesthetic staff who are, and for a long time to come will be, responsible for the delivery of a large percentage of anaesthetics in this country.

The programme of events for the future reads as follows: firstly, the evaluation and upgrading of teaching facilities in the Department of Anaesthetics and in the teaching hospitals; secondly, the formalization of the necessary documents to recognize the University Medical School Teaching Hospitals for post-graduate training in anaesthetics. Thirdly, the decision on the date the programme will formally start, with the education syllabus in place and a timetable for examination certification; and, finally, a review process to ensure that the original spirit of the project is maintained during the formative years and thereafter.

The opportunities for research in anaesthetics are unlimited. As yet, the mechanism by which anaesthetics act is still unknown 130 years after their discovery, ignoring the case of young Adam mentioned earlier. Curare was a laboratory curiosity for nearly ninety years until anaesthetists put it to use in anaesthesia. Every patient to whom an anaesthetic is administered presents the opportunity for recording clinical observations and accumulating data, providing that the ethics of research are observed.

Research has moved further from the traditional areas of cardio-respiratory systems to include biochemical, metabolic, pharmacokinetic, cellular and immunological effects. Anaesthesia bridges the gap between basic science and clinical practice. It is the discipline most suited to reinforce information learnt in biochemistry, physiology and pharmacology in the context of patient's disease and care.

In the intensive care unit an ideal setting is available to teach ventilatory control, adequacy of respiratory gas exchange, circulatory monitoring, care of the comatose, assesment of levels of consciousness and fluid balance. A high level of manual dexterity and calm rational action in the face of crisis should be the hallmarks of successful members of this speciality. All university departments of anaesthetics should seek highly-qualified anaesthetists interested in teaching, in

research, as well as in clinical practice geared towards imparting knowledge and skill to the trainee.

Surgeons and anaesthetists constitute a team of physicians dedicated to the welfare of the surgical patient whose interest is best served if each member of the team recognizes his or her responsibilities yet remains aware of problems faced by colleagues. Recruitment into anaesthesia has been a chronic problem because the speciality lacks glamour to the student unfamiliar with its scope. It is a challenging, interesting speciality compatible with a pleasant family life. I am sure my wife is saying, 'Really?'