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A MATTER OF LIFE AND SKIN COVER

BY

G. O. A. SOWEMIMO



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A MATTER OF LIFE AND SKIN COVER

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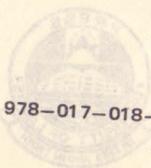
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A MATTER OF LIFE AND SKIN COVER

Introduction

THE University of Lagos by tradition demands that a newly appointed professor delivers a public lecture soon after his accession to his chair. As I stand before you to discharge my obligation to the University four years after my appointment to a Chair in the Department of Surgery, I am deeply conscious of the honour and privilege afforded me to address this august audience of eminent persons from the town and gown.

I have chosen to speak on my specialty, plastic surgery, relating it to health care delivery and medical education in Nigeria and society at large. I will of course mention some of our own efforts to expand the frontiers of knowledge in this area where we modestly claim to profess.

Surgery is defined in *Webster's New Twentieth Century Dictionary* as the treatment of disease, injury, or deformity by manual or instrumental operations, as the removal of diseased parts of tissue by cutting. The same dictionary goes on to define the adjective plastic as moulding or shaping matter; and plastic surgery as surgery dealing with the repair or restoration of injured, deformed, or destroyed parts of the body, especially by transferring tissue, as skin or bone, from other parts or from another individual. This definition explains why the discipline is more fully described as plastic and reconstructive surgery. Let me hasten to add that cosmetic surgery is only an aspect of plastic surgery, although in popular perception it seems to be the main or most important part.

Historical Aspects

Circumcision which is the only operation mentioned in the Holy Bible¹ may be regarded as a form of plastic surgery because of its cosmetic effect, but I know that the urologist at least would dispute that. However, there can be no dispute that otoplasty and rhinoplasty which were per-

formed by Susruta, the famous Hindu Indian Surgeon who probably lived before the 4th century A.D. were plastic surgical operations. This is how he described rhinoplasty².

"Now I shall deal with the process of affixing an artificial nose. First the leaf of a creeper, long and broad enough to fully cover the whole of the severed or clipped part, should be gathered; and a patch of living flesh, equal in dimension to the preceding leaf should be sliced off (from down upward) from the region of the cheek and, after scarifying it with a knife, swiftly adhered to the severed nose". The description remains up to date in its use of a pattern and a pedicled flap. Note that in ancient India, the penalty for adultery was slicing off of the nose of the offender.

Later comes Gaspare Tagliacozzi (1547 – 1599), Professor of Surgery at Bologna, Italy, who is regarded as the founder of modern plastic surgery.³ However, it is only in this twentieth century that plastic surgery has taken a giant leap forward in the era following the discovery of anaesthesia, antisepsis and asepsis, blood transfusion, Xrays and antibiotics. Plastic surgery techniques, certainly received a filip during the second world war, with the extensive burn injuries suffered by air force pilots and the need for extensive reconstructive surgery to ameliorate the severe deformities of survivors.

Principles of Plastic Surgery

Many of the operations of plastic surgery seek to restore normal appearance or at least to improve it when this has been distorted by injury or disease. The entire body surface is covered by the skin. The operations are, therefore, largely confined to skin and subcutaneous tissues and the structures that give the body form and contour such as muscle, cartilage and bone.

The plastic surgeon aims at achieving the best possible cosmetic results and, therefore, plans his operations meticulously. Incisions are planned such as to leave inconspicuous scars and are often placed in natural skin creases such as the horizontal creases on the frontal scalp and the nasolabial fold which runs obliquely downward and laterally from the side of the nose. Where possible they are placed mostly within the nostrils, mouth, or under the female breast. The

instruments and ligatures used are fine, and sharp dissection is preferred to blunt, so as to minimise trauma to tissues and thereby the amount of fibrous tissue deposition during healing. For the same reason, haematoma and infection are scrupulously avoided, and to this end haemostasis is meticulously with only the bleeding points being accurately held in haemostats for either diathermy congluation or fine ligature application.

The reconstructive techniques for loss of skin through disease or after excisional surgery are mainly by split skin or Thiersh grafts, full thickness skin or Wolfe grafts, and the use of skin flaps.

Split Skin Graft

The split skin graft remains the most widespread and versatile means of restoring lost skin. Using a dermatome which is a more elegant refinement of the cut-throat razor or razor blade, the required size of skin consisting of the epidermis, and a variable depth of the subjacent dermis is cut horizontally and transferred to a suitable healthy non-infected raw wound where it takes by acquiring a capillary blood supply, usually within 3 to 5 days. The epithelial remnants in the remaining depth of dermis at the donor site such as hair follicles, sebaceous glands, sweat glands and ducts proliferate and provide a fresh epithelial surface and restoration of healed skin usually within 7 to 28 days depending on the depth of the skin graft removed.

Split skin grafts take readily on healthy well vascularised tissues such as sites of excisional surgery or pink granulating tissue. They will not take on poorly vascularised surfaces such as bare bone, tendon or cartilage, or in the presence of local infection or haematoma, pus or serum separating the graft from the recipient site. Split skin grafts tend to contract and be hyperpigmented.

Full Thickness Skin Graft

The full thickness skin graft has limited but very useful application in defects of the face where it does provide a better colour match and texture. Shrinkage of the graft does not occur. The common source is the postero-medial

surface of the ear where the scar of the direct closure of the margins of the residual defect is hidden from view.

Skin Flaps

In situations where much tissue has been lost which requires to be replaced in addition to skin, the use of a flap becomes mandatory. A flap consists of skin and at least subcutaneous tissue and its viability, must be assured by the presence of a good blood supply which is usually provided for by a pedicle.

A flap may be local or distant. A local flap is raised near the defect and after being moved and sutured into place, any secondary defect left at the site from which it was moved is closed by a split skin graft. A distant flap requires to be moved in several stages at intervals sufficient to guarantee its acquisition of adequate blood supply and, therefore, viability after each stage through its pedicles. The intervals between stages are usually two to eight weeks and serve to enable the newly attached end of the flap to heal and develop new blood vessels of supply to the flap. The use of a distant flap means a long hospital stay and high cost of treatment. It is important to note that axial flaps such as the deltopectoral which are based on anatomically identifiable arterial blood supply are more viable than random flaps which are vascularised by small unnamed arteries.

Myocutaneous Flaps

Before we end the discussion of flaps, let us take a brief look at two exciting new developments. The first is the myocutaneous flap in which the required skin flap is raised with an underlying muscle with its identifiable blood supply and used as a local flap. Two prime examples of its use are the latissimus dorsi myocutaneous flap for the immediate or delayed reconstruction of a female breast following excision for carcinoma; and the soleus myocutaneous flap for leg ulcers or adjacent skin defects.

Free Vascularised Flaps

The other recent development is the use of free flaps which are transferred in one stage and guaranteed an immediate blood supply and venous drainage through the vascular anastomosis of a suitable artery and vein in the flap and the recipient defect, usually by microvascular techniques employing an operating microscope or loupe. This technique is also employed in the reimplantation of accidentally severed fingers or limbs.

Next I wish to discuss a few practical areas in which principles earlier discussed are applied.

BURNS

History of Burn Treatment

Burn injuries must have occurred from the earliest times as soon as man learnt to make fires. By the same token, writings on the treatment of burns date back many centuries, preserved for posterity in Latin, Greek and Arabic.⁴

Hippocrates (460–377 B.C.), father of medicine, probably encouraged iatrogenic burns by his aphorism that "diseases that are not cured by medicine are cured by iron, and those that are not cured by iron are cured by fire, and those not cured by fire are incurable". No wonder then that Galen (129–199 A.D.) described a remedy which was a mixture of lime, sulphur and oil and which later became known as the "Greek fire".

Other ancient writers on burns included Albucasis (1013–1106) of Moslem Spain who wrote in Arabic; Petrus Hispanus (1220–1277) a Portuguese doctor who later became Pope John XXI; John Arderne (1306–1390), English surgeon who practised in Nottingham, London and finally Sweden, and Guy de Chauliac. The list also includes Paracelsus (1493–1541), Ambrose Pare (1510–1590) who recommended a combination of salt and onions, Wilhelm Fabry (1560–1624) who first classified burns, Scultetus (1595–1645), Percival Pott (1714–1789), John Hunter (1728–1793), Guillaume Dupuytren (1777–1835) who described six depths of burns and also gave a detailed account

of fifty cases of extensive burns treated by him within one year. Others are Benjamin Bell (1749–1806), Charles Bell (1763–1820), Edward Kentish and James Earle.

It was only at the beginning of the 20th Century that attention turned to the pathophysiology of burns with an article in the *Journal of the American Medical Association* in 1904 by Haldor Sneve. Therapy thereafter became more scientific and rational.

Pathophysiology of Burns

Undamaged skin is important for the regulation of body temperature, water and electrolyte balanced as well as acting as a barrier against bacterial invasion and infection. When damaged as in burns, not only are these functions disturbed, but additional derangements occur which threaten survival.

Some of the more important pathophysiological changes after burns include the following:

- (a) Loss of large amounts of plasma-like fluid due to vasodilation of capillaries in the heat damaged tissues which is maximal during the first 36–48 hours.
- (b) Severe catabolism with negative nitrogen balance, and hypermetabolism. It has been shown that the negative nitrogen balance is of greater degree in a cold environment than in a warm environment. Our own studies in the hot humid environment of Lagos on burn patients showed negative nitrogen balance, which was greater than that observed in Caucasians in Europe with comparable severity of burns whether in a cold or warm environment.
- (c) Hyperglycaemia associated with decreased glucose tolerance and some increased insulin resistance.
- (d) Weight loss due to inadequate calorie intake and increased catabolism. Loss of more than 10% of the preburn weight may be associated with delayed wound healing, impaired immune response and sepsis.

- (e) Anaemia due to erythrocyte damage, blood loss from the wound, and decreased red blood cell survival.

All these deleterious effects of burns as well as mortality rates are directly related to the extent of the burn expressed as a percentage of the total body surface area.

Burns Therapy

Rational therapy of burns aims at combating all these problems, and is likewise related to the extent of the burn injury. Thus, all the formulae used in determining the amount and rate of fluid administration to prevent or treat shock in the early post burn period vary directly with weight of the patient and percentage body surface area burned.

Similarly, daily calorie requirements in adults with burns greater than 20% of body surface area may be calculated by the formula $25 \text{ kcal/kg. body weight} + 40 \text{ kcal/\% burn}$. For children under 8 years the formula is $60 \text{ kcal/kg. body weight} + 35 \text{ kcal/\% burn}$.⁵

It is often difficult to administer these large amounts of calories by normal oral route. Shock, with vomiting of ingested food in the immediate post burn period, and later, anorexia due to sepsis interfere with oral intake.

Enteral feeding by nasogastric tube or fluoroscopically placed jejunal tube may be necessary, and is to be preferred. Elemental diet may be used initially, but should be changed as soon as possible to homogenised complete liquid diet. The feeds should be high calorie and high protein in content and balanced nutritionally.

When more than 3000 kcal per day is required, enteral feeding becomes inadequate, and parenteral feeding by intravenous hyperalimentation with the administration of essential amino acids and lipid solution through peripheral or central veins becomes mandatory.

When nutritional requirements are satisfied, wound healing improves, immune competence is enhanced and sepsis reduces, weight gain ensues and the patient is well on the way to recovery.

One of the most important aids to recovery from the burn illness is the early provision of skin cover. The best form of skin cover is skin grafting using autografts. Split skin grafts taken from unburnt skin are applied to clean granulating wounds or on wounds resulting from excision of burn eschar. Meshing of the skin graft increases the extent of open wound that may be covered at each grafting session.

Cadaver homografts which are rejected a few weeks after initial take and porcine xenografts which function as biological dressings, because they merely adhere to the wound but are not vascularised, are important methods of providing temporary skin cover until adequate skin cover can be provided by autografts.

A recent exciting development which is of importance to patients with overwhelming burns of 80% and above with little available unburnt skin for autografting is the development of cultured epidermis by tissue culture from a tiny piece of autograft skin, and the laying of the epidermis on a backing of artificial dermis⁶ which is then applied to the excised or clean burn wound.

Amniotic membrane,⁷ a biological dressing, and synthetic non-biological dressings have also been used to achieve temporary skin cover. They diminish fluid losses, reduce infection and help to prepare the burn wound for subsequent skin grafting.

As soon as skin cover is achieved, either by skin grafting or by grafting combined with spontaneous epithelialisation, the risk of sepsis reduces dramatically, nitrogen balance becomes positive, weight gain ensues and the patient recovers.

The major threat to the life of the burn injured patient in the early phase is shock from excessive fluid losses and can be combated by adequate intravenous fluid resuscitation. The threat in the later phase is sepsis from large wounds, and for therapy, skin cover through split skin grafts is life saving.

Causation of Burns

The common causes of burns in Nigeria from our own studies here in Lagos^{8, 9, 10} and from those of our colleagues

in Benin,¹¹ Enugu, Zaria,¹² Port Harcourt¹³ and Ibadan¹⁴ include the following:

- (a) Hot liquids such as hot water, oil, stew and soup. This commonly occurs in children under five, and women while cooking.
- (b) Flame burns from explosions due to cooking gas or kerosine, burning homes, petrol electricity generators catching fire, petrol catching fire during welding of cars and so on. This may be at work in men, or at home in both sexes.
- (c) Electrical burns
- (d) Chemical burns usually through criminal assault.

Prevention of Burns

Obviously, the best remedy against most of these causes of burns is prevention. Approximately half of all burns are in children, mostly toddlers under the age of five years. These children are adventurous but unaware of the dangers of burning. To prevent burn accidents to those children and other authors have advocated:

- (i) cooking at a height of about one metre which would be out of the reach of toddlers unlike in traditional cooking at floor level; and
- (ii) closer supervision of children by adults.

Fires and flame burns from gas explosions in the kitchen can be minimised by the simple precaution of having the match or light source ready before turning on the gas supply to the cooker. Otherwise, much gas is released free into the entire kitchen which then catches fire once the match is belatedly struck.

Generator fires and burns would be less frequent if public electricity supply in the country becomes regular and steady. Also diesel generators are much safer than the petrol variety. Furthermore, those who use petrol electricity generators

rators should under no circumstances inspect the generators with a naked light. By the same token, automobile mechanics and welders should not take naked lights close to the petrol tanks of motor vehicles.

Late Complications of Burns

All burns leave scars. Some of the late complications of burns include:

(a) *Hypertrophic scars*

Hypertrophic scars are raised scars which are itchy and unsightly, but may partially regress spontaneously within 6 to 24 months. This regression which consists of progressive flattening and softening of the scars may be greatly accelerated by the wearing of custom made pressure garments which are worn on the affected parts twenty-four hours a day except when removed to allow for daily bathing. However, if not too extensive, the hypertrophic scars may be treated by excision and split skin grafting.

(b) *Contractures*

Contractures are contracted scars usually across joints which thereby limit mobility of the affected joints or parts and cause ugly deformity.

These may be prevented at the time of initial treatment by full range of movement during physiotherapy, splinting in extension or other appropriate position, or by early skin grafting of priority wound areas such as flexor surfaces across joints. Once established, the optimum treatment is release of the contracture and split skin grafting of the ensuing wound.

(c) *Dyschromia*

Dyschromia or pigmentation abnormalities of the burn scars such as hyperpigmentation, hypopigmentation and depigmentation are pigmentation anomalies preventable by the early skin grafting of healing burn wounds of full thickness or inter-

mediate depth. For small areas of dyschromia which are cosmetically unacceptable, excision and split skin grafting is again the treatment of choice.

In our study of the repigmentation of healing partial and full thickness burn wounds in the guineapig,¹⁶ we found that melanocytes which are the melanin pigment forming dendritic cells at the dermo-epidermal junction of the skin multiply pari passu with the regenerating overlying epithelial cells to which they donate their melanin pigment. Indeed, their numbers and the pigment they donate to the healing skin in the small experimental wounds were significantly greater than normal. Thus small burn wound when freshly healed tend to be hyperpigmented. The results were similar during the early phase of healing of the peripheral parts of human burn wounds. However, clinical experience shows that hypopigmentation and depigmentation are commoner in the central parts of large burn scars which heal last, particularly in deep dermal and full thickness burns.

I now wish to discuss briefly other clinical conditions where provision of skin cover is an important modality of treatment.

Cleft Lip

The cleft lip is a congenital anomaly in which during foetal development, when the fronto nasal process and the maxillary process are fusing between the 6th and 9th weeks, inadequate amount of mesoderm deposition leads to failure of the fusion. The defect may be unilateral or bilateral and may be combined with a cleft of the palate, the roof of the mouth. Here again, in the various methods designed for the reconstruction of the defect, flaps of various description are mobilised to achieve a cosmetic result. The method I have preferred in my personal series of over one hundred lip repairs is the Le Mesurier repair which uses meticulous preoperative measurements to design an appropriate laterally based quadrilateral flap.

Cancrum Oris

Cancrum oris is an infective gangrene around the mouth which is common in malnourished, debilitated children suffering from other severe diseases such as malaria, measles,

and who have poor oral hygiene. After sloughing off of the gangrenous tissue, the wound heals with sometimes ghastly defects, and mucosal scarring often results in trismus with severe limitation of the ability to open the mouth. Skin flaps of local or distant design are usually required to reconstruct the defects and achieve an improved quality of life and social acceptability for the unfortunate patient.

Keloids

Keloids are abnormal raised scars which result from comparatively minor wounds in susceptible individuals. It is much commoner in black peoples than in caucasians. It is prone to worse recurrence after excision only.

In our own hands, triple therapy consisting of excisional surgery, superficial radiotherapy and a 10 to 12 week course of triamcinolone acetonide injections has given consistently satisfactory results in about 95% of cases. Here again, appropriate excisional surgery and reconstruction including split skin graft where necessary to achieve an aesthetic result is the first and main modality of our treatment. The radiotherapy and steroids, constitute the adjuvant treatment to prevent recurrence of the keloid.

Malignant Tumours of Skin

Malignant tumours of the skin such as basal cell carcinoma, squamous cell carcinoma and malignant melanoma occur less frequently in blacks than in caucasians. This is because the fully melanised stages III and IV melanosomes which are present in the black man's epidermis afford greater protection against the carcinogenic effects of ultraviolet radiation from the sun than the earlier stages I and II melanosomes of the caucasian skin which are rendered even less protective by their degradation by lysosomes into melanin dust particles. Albinos of all races including Nigerians have a normal population of melanocytes, but due to various enzymatic defects, they produce minimal amounts of melanin, and thus are very susceptible to skin malignancies. Albinos should, therefore, prevent the development of skin malignancies by wearing hats when outdoors to shade the face and neck, and by wearing long sleeved shirts

and trousers thereby exposing as little as possible of their skin. Any abnormal thickening of the skin or chronic ulcer should be reported to a surgeon as soon as possible. One interesting but as yet unexplained finding in our study of melanoma in Nigerians was that melanoma did not occur in any albino.

Treatment of skin malignancies especially in the early stages is usually by excision with a wide margin of skin, and reconstruction usually by skin grafting to achieve skin cover. Because of its low grade malignancy and local invasiveness, local excision with a narrow skin margin and direct suture is often adequate when treating basal cell carcinoma otherwise called rodent ulcer.

Cosmetic Surgery

"A thing of beauty is a joy forever. Its loveliness increases; it shall never pass into nothingness."

— John Keats

Cosmetic or aesthetic surgery is the aspect of plastic surgery which seeks to improve the appearance of various parts of the body. The range of services on offer includes:

- (a) face lift and reduction of bags around the eyes for the ageing middleaged patient, especially ladies;
- (b) reduction mammoplasty for excessively large breasts which may impede social and sporting activities, and cause symptoms such as backache, or cause embarrassment or difficulty because of gross inequality;
- (c) augmentation mammoplasty for excessively small breasts, often by the insertion of a prosthesis;
- (d) mastopexy in which a pendulous breast is remoulded into a more pleasing shape by reduction of the skin envelope of the breast; and

(e) rhinoplasty to alter the shape of the nose.

In all instances, skin cover is being manipulated to achieve for the patient a better quality of life through an improved body image.

The operation scars are usually hidden or inconspicuous. In this field in particular the surgeon has to be mindful of the Yoruba saying which goes:

*"Orisa, bi oo le gbe mi,
Se mi bi o se ba mi"*

*"Ye gods, if you cannot improve my lot,
Leave me as you found me."*

This accords with the Hippocratic dictum, "Primum non nocere" – 'First, do no harm'.

Furthermore, the surgeon has to ensure that the patient demanding cosmetic surgery is psychologically stable. The assistance of a psychiatrist may be required. Otherwise, the patient may transfer the complaints of a psychological problem to the surgical outcome.

I have tried to show in this discourse that the provision of skin cover may be crucial to the preservation of life in the management of burns, and that appropriate skin cover contributes significantly also to the enhancement of the quality of life in many other conditions which call for the skills of the plastic surgeon. This then, explains the title of this lecture.

Teaching

The teaching of surgery in university departments is now an established fact.¹⁸ It has been argued, and I am in agreement that it is preferable that the subspecialties should be taught by those in the particular discipline¹⁹ for two main reasons:

(1) The teaching will be better as the subspecialty is likely to be practised better.

(2) The students and doctors will thereby be encouraged to specialise in such subspecialties subsequently.

The latter assertion has been borne out by the fact that at least one medical graduate of College of Medicine, University of Lagos and four doctors who graduated elsewhere who worked in the subspecialty unit in Lagos University Teaching Hospital have subsequently completed training in the subspecialty as of today, I being the first of the number.

Observations on Health Care Delivery and Medical Education

Mr. Vice-Chancellor, Sir, as regards the mission of a university, there is broad agreement on two basic functions: to transmit the accumulated body of knowledge, and through continuing enquiry, to refine and extend it.²⁰ These functions are also stated as the search for transmission of the truth. Since all meaningful human progress depends on knowledge, the university is thus an important catalyst for society's continuing evolutionary achievements and attainments. It is also generally agreed that academic freedom is essential to enable universities fulfill their nature and function.²¹

I believe that the inaugural lecture is one of the ways by which the university fulfills its obligations to society. I, therefore, claim academic freedom while I seize this opportunity to make some observations on medical education and health care delivery in Nigeria. I will also proffer some suggestions as to possible solutions of some identified problems.

Medical Education

The innovative medical and dental curricula adopted for the training of doctors and dentists by the University of Lagos in 1979 have received world-wide acclaim for the emphasis they lay on primary health care including health management. These curricula have served as models for other medical schools in Nigeria and indeed in Africa and other parts of the world.

At the postgraduate level the nation's teaching and specialist hospitals are training specialist doctors and dentists in various disciplines by preparing them through residency training for the postgraduate Fellowship diplomas of the National Postgraduate Medical College of Nigeria and the West African Postgraduate Medical College.

Unfortunately, the recent and continuing exodus of medical teachers and specialists is threatening to seriously undermine and disrupt the nation's medical education at both undergraduate and postgraduate levels. We shall return to this issue of medical brain drain presently.

Health Care Delivery

Due to vigorous efforts of the Federal and State ministries of health and the local governments, primary health care services have improved tremendously across the length and breadth of Nigeria in the past few years. Through preventive and promotive health care, morbidity and mortality from many infectious and other diseases are being drastically reduced.

Although some improvements have also taken place in the availability and quality of curative health care services at the secondary and tertiary levels in our general, specialist and teaching hospitals, much more requires to be done to ensure adequate facilities and care.

It must be borne in mind that an ill patient wants a cure to his ailment by all means and in the shortest possible time. It is no consolation to him that good primary health care saved him from premature death in childhood. Indeed, successful primary health care contributes to a larger population who will require curative services for trauma, degenerative, neoplastic and other diseases of adulthood and old age.

Secondary and tertiary health care services should not be neglected, therefore, but must be provided at optimal levels. Of course, curative care services are expensive, and government cannot shoulder the burden alone. In recent times, private general and specialist medical practitioners have supplemented government efforts to a significant degree, particularly in urban areas. Nonetheless, government has a primary responsibility in the matter which cannot be shirked.

Again, the exodus of experienced specialists from the country is hampering health care delivery particularly in the teaching and specialist hospitals.

Causes of Medical Brain Drain

The causes of the exodus of experienced medical teachers and specialists from the country can be summarised as being due to low morale due to inadequate equipment, financial difficulties, and beckoning opportunities elsewhere which promise much better financial rewards for their skills in addition to excellent infrastructural and medical facilities.

National Objectives in Health and Medical Education

Given the generous endowment of the country with abundant material resources and highly skilled medical manpower, it is my considered view that the national objectives of the nation in health care and medical education should amongst others be:

- (1) The prevention and eradication, or the reduction to the barest minimum of infectious and communicable diseases.
- (2) The provision of the best possible medical care for all whether resident in rural or urban areas.
- (3) The provision of such excellent medical care as to make it unnecessary for anyone in government or the private sector to travel out of the country for medical care.

Suggested Solutions

We may now offer some possible solutions to the various problems identified, although these are by no means exhaustive. These suggestions are offered in the context of the rapidly advancing world on the threshold of the 21st century and the third millenium, where the winds of democracy and monetarism are blowing unremittingly

everywhere, and no country can stand isolated, lest it be left behind.

- (a) There should be increased funding for health. The Federal, State and local governments should all devote at least 5% of their respective budgets to health as recommended by the World Health Organisation. By the same token all industries and corporate bodies should likewise devote 5% of their profits to health care of the personnel. Individuals too should devote 5% of their income to health care and health promoting activities for their families. This sum can be devoted, for example, to health insurance. If all this is implemented, there will be adequate funds for health care at every level.
- (b) The industrialists and entrepreneurs as well as doctors themselves, should invest in the massive local production of drugs, medicaments, medical supplies, dressing materials and instruments so as to bring down costs. Even in the richest industrialised nations, cost containment is a major item in their health care management strategies nowadays.
- (c) The insurance industry should get together with the medical profession and evolve a workable voluntary health insurance scheme. It makes sense to insure against the heavy expenses of unexpected illness. Various packages with different grades of benefit in case of illness can be planned. There should also be safeguards against waste and abuse.
- (d) Private practice should be allowed to all consultants in the general, specialist and teaching hospitals. It is because this is normal practice in other countries that our elites find experts to attend to them when they travel abroad for medical care.

(e) The medical profession should take its fate in its own hands by acquiring financial muscle for the benefit of its members. It should actively enter the financial market place and arrange insurance, car loans and home mortgages at favourable special rates for members so that in the future, it should become impossible for a hardworking doctor to be indigent or without an own home.

(f) Merit awards for excellence, and adequate remuneration and allowances should be paid to medical personnel.

(g) Superlative achievements in medical service to the nation should be acknowledged by appropriate national honours awards. In other lands, awards of knighthood and peerages are the norm for excellent service at leadership levels in medical education, clinical service, and the professional undergraduate and postgraduate colleges. By the same token, distinguished service in leadership of the Medical and Dental Council and the National Postgraduate Medical College, for example, and professional and academical excellence should attract national honours.

(h) Superlative national hospitals should be sited in the seat of government at Lagos and Abuja which will ensure excellence in medical care of our leaders in all aspects of national life such that medical care abroad will become unnecessary. Most advanced nations have such national hospitals.

Mr. Vice-Chancellor, Sir, in this brief discourse, I have tried to share with my audience the mystique of plastic surgery and its contribution to health care and society as well as the plastic surgeon's place in academia. I have shared with you some of my thoughts on how our nation can attain excellence in medical education and health care as we approach the threshold of another century and another millenium.

Acknowledgements

I wish to start my acknowledgements by stating with reverence that this is the Lord's doing, and it is marvellous in our eyes. I am greatly indebted to the late Professor Horatio Orishejolomi-Thomas, first professor of Surgery, first Dean and Provost of the Medical School and later College of Medicine of the University and an excellent plastic surgeon who inspired me to take up plastic surgery. It is this great mind who gave the motto "In deed and in truth" to the University of Lagos which adopted it from the College of Medicine for whom he had initially composed it. I am deeply grateful to Professor E. Ade Elebute my mentor and friend, as well as Professors Akin Adesola and Erete Amaku who played significant roles in my surgical and academic development. I also thank all my other professional and health care colleagues, particularly the nurses, who understandably are closest to my patients.

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I would now like to end by encouraging our great nation to aspire to and achieve excellence in medical education and health care using the words of the second stanza of the school song of my alma mater, King's College, Lagos.

"If you fail, look closely, seek the reason why,
You have power to conquer, if you only try,
Others went before you, and attained the light,
Where they wait to cheer you, victors in the fight."

I thank you all.

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