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ABDOMINAL INCISIONS IN GENERAL SURGERY: A REVIEW

KEY WORDS: Incisions, Abdomen, General Surgery

ABSTRACT
There is this wrong notion that the only standard abdominal incision is the midline incision. Cases have been seen in which an abdominal incision extends from the xyphoid process to the symphysis pubis just to remove a perforated appendix! It is also not unusual to see a groin incision together with a lower abdominal incision for an obstructed inguinal hernia repair that “slipped” back into the abdominal cavity during preparation for surgery. Even though the trend nowadays in surgery is to opt for laparoscopic and mini-incision surgery, the basic rule in surgery is to have an incision that will be comfortable for the surgeon and provide adequate access to the area of pathology.

Introduction
What prompted this review article is because of the wrong notion that the only standard abdominal incision is the midline incision. Cases have been seen in which an abdominal incision extends from the xyphoid process to the symphysis pubis just to remove a perforated appendix! The reason proffer for this was “…we thought the patient had a perforated duodenal ulcer, so we made an upper midline incision. On exploring the abdomen we found out that it was a perforated pelvic appendix, so we extended our upper midline incision downwards to have adequate access to remove the appendix”!

It is also not unusual to see a groin incision together with a lower abdominal incision for an obstructed inguinal hernia that “slipped” into the abdominal cavity during preparation for repair. One of the most underrated aspects of surgical procedure is the placement of skin incisions. The purpose of this paper is to identify various types of abdominal incisions that make certain surgical procedure a bit easier, and to avoid unnecessary long abdominal incisions.

Materials and methods
A literature search was performed using PubMed, MEDLINE/Index Medicus, and the internet. Also, Atlas of Surgical Procedures, and some described procedures in some surgical textbook of surgery were consulted. Personal notes on operative surgery were also used. Only studies in English language were considered and used for this review article.

1. Equivocal Incision
When confronted with an undiagnosed non-traumatic “acute abdomen”, sometimes it is usually very difficult to know where to place the incision since the cause of the “acute abdomen” may not be known preoperatively. Sometimes the surgeon enters the abdomen by making an upper midline incision, only to find out on entering the abdomen that the cause of the acute abdomen is in the pelvis! He will therefore have no choice but to extend the upper midline incision down to the pelvic area! This will then produce a situation in which an appendix or a twisted ovarian cyst or ileal typhoid perforation are surgically treated with an incision from the xyphoid process to the symphysis pubis!

The equivocal incision (fig 1) is designed to avoid this embarrassment. This incision is made initially about 2ins above and 2ins below the level of the umbilicus in the right paramedian area (fig 1). The right paramedian area is selected and not the left because conditions that can cause acute abdomen, and that may be difficult to diagnose preoperatively are on the right side of the abdomen. Examples are liver abscess, inflammatory biliary tract disease, perforated duodenal ulcer, Meckel’s diverticulitis, ileal typhoid perforation, mesenteric lymphadenitis, and appendicitis. Inflamed organs on the left side of the abdomen tend not to cause much diagnostic problems preoperatively, and therefore initial adequate surgical incision can therefore be planned accordingly.

This equivocal incision can be either muscle-splitting or muscle retracting. Once the abdomen has been entered through this 4-inch equivocal incision, an assessment can be made as to the area where the pathology is. The incision is then extended downwards (fig 1a), or upwards (fig 1b) for adequate exposure to deal with the pathology depending on where it is. This equivocal incision if placed lower can also be regarded as a right paramedian incision (1)
2. Inguinal Incision
This is the standard incision for inguinal herniorrhaphy. However, in obstructed inguinal hernia, during an attempt to operate on the patient, after anaesthesia and during skin preparation for surgery, the obstructed loop may slip back inside the abdomen because of the relaxation of the muscle. It is not necessary to make another lower abdominal incision (fig 2) in an effort to retrieve the loop of bowel for inspection to see if it is gangrenous or not. What needs to be done is to widen the ring at the groin, where the loop was initially trapped and then grab with a Babcock forceps the loop of bowel from the inside of the abdominal cavity and with a gentle traction pull out the loop from the widened internal ring for inspection.

Not Recommended

Fig. 2

If there is a gangrenous segment, resection and anastomosis can be performed through this area, and then the loop returned back into the abdominal cavity. Herniorrhaphy can then be performed to close the defect. Any structure that cannot be pulled out from this widened internal ring while applying gentle traction on the loop with a Babcock forceps did not come out initially, and therefore was not trapped in the inguinal ring, and therefore inspection is not necessary. For cosmetic reasons, skin incision nowadays for herniorrhaphy is usually a curvilinear incision along the skin crease. The skin can then be reflected as necessary to expose the internal and the external rings. (The fig 2 above is not recommended)

3. Bucket Handle Incision (fig 3)
In the early years of kidney transplantation surgery, this incision was very popular in preparing a kidney recipient for transplantation. Preparation of a potential recipient in those days included (i) vagotomy and pyloroplasty. This is to prevent ulcer diathesis that may occur as a result of steroid therapy following transplantation; (ii) splenectomy, to reduce immune cells that may enhance rejection; (iii) appendectomy, because the donor kidney is usually placed in the right lower quadrant of the recipient, it is therefore essential not to confuse an attack of appendicitis with the pain of early kidney rejection, since the appendix has been removed; (iv) bilateral nephrectomy (although this is no more considered necessary); and (v) oophorepexy in females. This is to hide the ovaries under the pubic bone to avoid the effect of radiation on the ovaries when the transplanted donor kidney is irradiated immediately after transplantation to destroy initial immune cells that might attack the donor kidney. This bucket-handle incision which is essentially a joined bilateral subcostal incision allows easy access to all these areas, and allows all these surgical procedures to be performed at the same time through this single incision. The healing of this incision is very good even though many of the patients are anaemic and have some degree of uremia.
4. Left Subcostal Incision
This is ideal for an elective splenectomy especially if the spleen is very enlarged as in cases of tropical splenomegaly syndrome \(^{(3,4)}\) and in Hassab’s operation \(^{(5,6,7)}\) for oesophageal varices. It also provides easy access to the upper part of the stomach and intraabdominal oesophagus. This incision is also ideal for devascularisation of the upper part of oesophagus as in Hassab’s and Sugita operations for oesophageal varices \(^{(3,6)}\).

5. Marwedel Incision (fig 4) \(^{(1)}\)
This incision gives good access to the liver especially the left lobe, stomach, spleen, hepatic flexure, splenic flexure and transverse colon. The only problem is that the “T” junction may not heal properly initially.

6. Bevan Incision (fig 5) \(^{(1)}\)
This incision serves a similar purpose as Marwedel incision. The advantage here is that there is no “T” junction to worry about in the healing process.

7. Right Subcostal Incision (Kocher’s) incision \(^{(1,8)}\)
This is a very popular incision for biliary tract surgery especially for cholecystectomy. However when biliary exploration or biliary anastomosis with a segment of bowel is needed, it may not be very suitable.

8. Kehr Incision (fig 6) \(^{(1,8)}\)
This incision is more suitable than Kocher’s incision when biliary tract anastomosis is desired. It is therefore ideal for
choledoco-duodenostomy, choledocho-jejunostomy, and cholecysto-jejunostomy.

9. Mayo-Robson Incision (fig 7) \(^{(1)}\)
This is also regarded as a “hockey stick” incision. It is essentially a reverse of the Kehr incision. But also serves the same purpose in terms of exposure for a surgical procedure.

10. Masson Incision (fig 8) \(^{(1)}\)
This incision serves the same purpose as Mayo-Robson and Kehr incisions. In this case the rectus abdominal muscle may have to be cut in a diagonal manner.

11. McBurney Incision (fig 9) \(^{(1,8,9,10)}\)
This is one of the earliest incisions for appendicitis.

It is also referred to as “Grid iron” incision. It is a popular incision for appendicitis.
12. Transverse or Davis-Rockey Incision
(fig 10) [10]
This transverse incision is preferred by many for the removal of appendix because it gives a better cosmetic scar on healing and the incision can easily be extended medially during surgery if needed.

Fig 10

This is usually referred to as Battle incision for short. It is a lower right paramedian incision but placed more laterally than the standard paramedian incision. It is suitable for dealing with acute appendicitis and pathologies in the right lower quadrant of the abdomen.

Fig 11

14. Pfannenstiel Incision (fig 12) [1,8]
This is a popular incision in gynaecological pelvic surgery. It has good cosmetic effect. It is also suitable for prostatic surgery in men.

Fig 12

15. Thoraco-abdominal Incision
Any of the appropriate upper abdominal incision can be combined with a thoracotomy incision to form a thoraco-abdominal incision. This is ideal for surgery of the lower oesophagus, surgery of the cardiac portion of the stomach and resection of lower oesophagus.

Discussion
The basic rule in surgery is to make an incision big enough and adequately placed to allow a comfortable access to the area of operation. Now with minimal invasive surgical procedures and laparoscopic surgery, pendulum seems to be shifting from “big to small”. However the important thing is that the incision should be such that the operating surgeon is comfortable with the exposure and access.

Generally, upper abdominal incision can be midline through the linea alba or paramedian. The paramedian incision can be muscle-retracting or muscle-splitting [1,8]. If necessary, the midline incision may be extended through the umbilicus or by the side of the umbilicus. Incision through the umbilicus has no negative effect on wound healing. The upper abdominal incision gives good access to the viscera in the upper abdomen and this incision can be combined with a thoracotomy for oesophageal surgery.

Lower abdominal incisions can also be midline, paramedian or pfannenstiel incisions. The pfannenstiel incision produces a good cosmetic effect, and when possible should be routinely used in women with pelvic gynaecological pathologies.

There is a general belief that subcuticular closure of skin incision is not suitable for a potentially infected wound. This is not always the case. An unpublished data has shown that using subcuticular closure for skin incision does not have much adverse effect on the wound, even if the wound is potentially infected. Using an absorbable suture material like chromic catgut for subcuticular closure allows early discharge since there is no need to remove the suture. Non-absorbable suture materials like prolene or nylon sutures are also ideal for subcuticular skin closure. But these have to be removed later after the healing process has been completed. An alternative to subcuticular closure is to close the skin incision using vertical-mattress-alternating-with-simple suture method. The vertical mattress suture evert the cut edges and the simple suture invert the skin edges, thus giving rise to good skin approximation.

Nowadays, the groin incisions for herniorrhaphy is placed along the skin crease in the groin to form a curvilinear incision. With this, adequate hernia repair can be performed, and it also gives a good cosmetic result.

Conclusion
Even though the trend in surgery nowadays is to opt for laparoscopic and mini-incisions, it is essential to be familiar with the location of various skin incisions that will provide easy and adequate access to the area of pathology.

Acknowledgement
I thank my daughter, Miss Olubunmi Olukemi Ajao for producing the illustrations in this paper.
REFERENCES


BEGINNINGS OF NEUROSURGERY AT THE UNIVERSITY OF IBADAN, NIGERIA

BY

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Neurosurgery Unit, University of Ibadan, Nigeria

Introduction

Available data concerning various neurologic disease entities occurring in West African are still appalling scanty, such that a vigorous effort seems urgently essential in the next few years to rectify this lag. In various parts of Nigeria, like much elsewhere in Africa, much neurologic problems presently remain inadvertently neglected for the more pressing consideration of the common tropical diseases and general surgical emergencies. It can be safely presumed that every day there are innumerable illnesses of the nervous system, unrecognized and untreated, that go down in these parts with many a patient, hidden in the remote villages or lost forever irretrievably into the many unmarked graves.

The work of Monekosso on the endemic tropic myelopathies in Nigeria is familiar to West African medical readers. The transactions of Collomb et al. in Dakar on entities such as intracranial tumours, vascular malformations and abscesses in Africans are well commendable. In a recent brief study of “The Pattern of Neurological Disease in Ibadan” published by KAUSHIK (1961), another noteworthy beginning has been made in a useful direction. It is hoped that these landmark efforts will, by the paucity made apparent thereby, serve to provoke more clinicians in these areas into a determined effort of bringing verified nerulogic diseases of all types into light.

The purpose of this communication is to introduce the presence of Neurological Surgery as a defined discipline to Nigeria and to the West African Medical scene.

Prelude to Neurosurgery

Progress in development at the University of Ibadan on a new subspeciality in October, 1962 when the Rockefeller Foundation of New York sponsored an academic facility for a neurosurgeon in the Faculty of Medicine. This possibility stemmed from the dynamic programmed of the Vice-Chancellor, Dr. Kenneth Dike and from the vigilant outlook of the new Dean of the Medical School, Professor J. C. Edozien. An interview with Dr. John M. Weir of Rockefeller Foundation in New York City in August, 1962 lent a good deal of impetus to the author’s keen intent on a Neurosurgical Unit in Nigeria. By the end of October 1962 this new unit made a start at the University College Hospital, Ibadan with 8 kids.

Neurosurgical Activities, University of Ibadan – Before October, 1962.

It is a foregone assumption that for a newcomer the task of seeking foundation in the past for some local guidance would arise immediately. Unfortunately, records of activities during the early 1950's at Adeoyo Hospital, Ibadan could not be gathered reliably. The Operating Theatre List and Surgical Files available at University College Hospital, Ibadan alone therefore provided this needed outlet. A detailed search of the records showed a total of 25,167 surgical procedures of all categories and magnitudes from July 30, 1956 to October 24, 1962. They represent obstetrics and gynaecology, general surgery (including urologic, thoracic, plastic and neurosurgical items) and also ophthalmic and ototorhinolaryngologic cases which were already set aside as sub-departments of general surgery. Of this grand total of over 25,000 operations 421 or 1.67 per cent fall in the broad general realm of neurosurgery, yielding an average of about 67 per annum in the 6 year 3 month period under consideration. Forty-eight of these procedures are relegated to the category of what might be termed “surface neurosurgery” or minor surgery of scalp lesions. They consist of traumatic scalp lacerations, cysts and other extracranial lesions (cutaneous aneurismal formation, neurofibroma, lipomas, abscesses etc.). The remaining 373 cases (see Appendix 1) average 60 per year and constitute 1.48 per cent of the grand total of the surgery performed. Of special interest is the tuberculous spine with varying degrees of neurologic defects, from subjective pain to obvious weakness of the extremeties. These have been quite ably handled by KONSTAM (1962). He has dealt exhaustively with the problem in a mixed conservative ambulant and surgical decompression (usually costotransversectomy or occasional anterolateral decompression) in the period now being examined. Presently these patients are the responsibility of the Orthopaedics division and are, for departmental convenience, still being cared for in the Spinal Tuberculosis Clinic. The bulk of the neurosurgical work consisted of the treatment of tuberculous spine with deficient spinal cord function, traumatic head injuries and repair of congenital myelomeningoceles. Relatively few essential diagnostic steps (carotid arteriography, air studies) were taken.

Myelography was employed more freely. From Appendix I it can be seen that there is a place for neurosurgical specialists in Nigeria and that this specialty like a number of others cannot be considered a luxury. This preliminary report now proposes to examine the accomplishments of the new Neurosurgical Unit at Ibadan from October 1962 to October 1963, its failure and its possibilities, its contributions and its needs, its trials, its inevitable presence, its hopes, its ideals and its needed place in the daily lives of Nigerians today and tomorrow.

Neurosurgery, University of Ibadan – from October 1962 to October 1963

The first month, October 1962, was spent in making preliminary arrangements. Only 3 patients were seen in consultation, and only 2 operations performed, the first being on October 25, 1962. In November and
December 1962 the average weekly clinic attendance was 4 to 5; by March 1963 it was 10, and by June 1963 an average of 18 to 22 (including 4 to 6 or more new patients) had been reached. In October 1963, 28 patients were seen in one clinic session the attendance being checked by the fact that the clinic day is held down to once a week for a 4-5 hour period. This limitation prevents the situation from becoming chaotic and unmanageable since a major share of the consultations received come from the patient load already admitted to the hospital in the various other services. The weekly Neurosurgery clinic attendance accounts for 30 per cent, if all consultations received. An average in-patient number of 18 – 20 is kept on the neurosurgery service, the highest thus far being 29. Neurodiagnostic studies range from 5 –10 per week, with many neurologic patients requiring both arteriography and pneumoencephalography for clearance since useful baseline adjuncts, such as EEG, are not yet available. The need for an EMG equipment is also acute due to a high number of spinal cord deficient patients encountered from auto-accidents, from domestic injuries and the professional palm-wine tapper's paraplegia.

A. ACCOMPLISHMENTS AND CONTRIBUTIONS

During 11\(\frac{1}{2}\) months 206 diagnostic procedures were carried out (Table 1) and 134 operations were performed (Appendix 3). A total of 361 new consultants requests were received and answered (Appendix 2). It shows the range of problems presented in the first year of the unit’s existence

(i) Neurodiagnostic Studies

In occupation with the Radiology Department (under Professor Cockshott) very adequate diagnostic studies were readily obtained whenever needed. In addition to the table contents below, numerous ventricular subarachnoid space taps and Blackfan dye tests were performed in infants with various congenital malformations as a part of pre- and post-operative evaluation.

In the above series of studies the ventriculograms and myelograms in particular yielded a high proportion of useful positive findings. Only 2 significant complications occurred. During a cisternal puncture for myelography a 45 year old man with paraplegia suddenly lapsed into apnea, hypotension and coma. He was revived within a few minutes with vigorous supportive measures. Subsequently the study was successfully repeated. A second complication resulted in left hemiplegia, central facial paralysis and dysphasia in the process of bilateral cerebral arteriography in a 31 year old man with headaches and papilloedema following a head injury. Two months later the facial paralysis and dysphasia had completely resolved and

<table>
<thead>
<tr>
<th>Study</th>
<th>Route employed</th>
<th>No. performed</th>
<th>Total No. of studies</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myelography</td>
<td>(a) Lumbar puncture</td>
<td>33</td>
<td>40</td>
<td>1</td>
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<td></td>
<td>(b) Cisternal Puncture</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) Combination (LP &amp; CP)</td>
<td>2</td>
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<tr>
<td>Intracranial Arteriography</td>
<td>(a) Unilateral carotid</td>
<td>35</td>
<td>84</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(b) Bilateral carotid</td>
<td>44</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) Vertebral (Seldinger Femoral Catheterisation)</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumoencephalography</td>
<td>(a) Lumbar Puncture</td>
<td>34</td>
<td>38</td>
<td>None</td>
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<tr>
<td></td>
<td>(b) Cisternal Puncture</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vetriculography</td>
<td>(a) Percutaneous (Anterior Fontanel)</td>
<td>32</td>
<td>44</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>(b) Trephination</td>
<td>11</td>
<td>(including 1 myodil vetirc. Study)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) Twist drill</td>
<td>1</td>
<td></td>
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</tr>
</tbody>
</table>
The operations performed can be subdivided as follows:

(ii) The operations performed can be subdivided as follows:

<table>
<thead>
<tr>
<th>Operations</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>68</td>
</tr>
<tr>
<td>Medium</td>
<td>25</td>
</tr>
<tr>
<td>Minor</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>134</td>
</tr>
</tbody>
</table>

There were the inevitable difficulties in setting up a new unit, but much encouragement came from the high-quality neuroradiographs in view, the anaesthetist's patience, and adequate supply of blood from the blood bank. The theatre nurse coped adequately and contributed greatly to successes achieved. The author also pays tribute, with the utmost regard, to the sick African who comes from the various parts of Nigeria, Ghana, the Cameroons and from the indispensable cooperation of the departments of Paediatrics, Medicine and General Surgery of the University College Hospital, Ibadan.

Cordotomy for pain, aneurismal intracranial surgery and herniated disk problems are conspicuously absent. Except for 6 minor cases by the junior house officer and 2 trauma laminectomies jointly with Mr. Richard (Orthopaedics), all of these procedures were performed by one neurosurgeon.

(iii) Perhaps the singular contribution of the Neurosurgery unit in these early months centers in broadening the horizons of the medical students and the training of the recent graduate doctors. It brings the surgical house officer into a more organized approach to the management of the common encounters such as head injuries or the paralyzed patients. By its presence, it alerts everyone into being more immediately aware of the acute meaning of key neurologic deficits, and to indicate gradually that lesions of the nervous system per se, contrary to uniformed opinions and beliefs, are not always synonymous with utter hopelessness.

B. FAILURE

A deeper look into this report leads inevitably into an enquiry of the shortcomings of the achievements tabulated below, for a more comprehensive appraisal. The process of triage, with all its inherent undesirable implications, compromises the surgeon's attention and care of some complicated but deserving patients in preference to the more salvageable, though not necessarily easier to deal with. Not altogether satisfactory, these compromises are too often imperative and all-out-effort is, by sheer circumstance, frequently made impossible. The greatest factor ion "failures" is the acute shortage of hospital beds which is a universal cry throughout the various divisions. Relatively simple neurologic diseases seen early in the outpatients lapse into the inoperable by the time admission or operating time could be secured. This is in the peculiar nature of neurologic problems: the once readily accessible brain tumour forcibly "neglected" by having to wait, turns up at last on the ward corridors, breathlessly beyond the realm of useful surgery. More glaring among the failures are the postoperative complications (7% infection) and the mortality of 10.4% incurred. There is also the high rate of decubitus ulceration as shown hereunder in paraplegics, a reflection of still inadequate indoctrination of the burdened nursing staff.

C. OUTLOOK FOR NEUROSURGERY IN NIGERIA

The needs of Neurosurgery here at Ibadan are manifold and countrywide in effect. Most of these are intimately connected with its present growing pains. Briefly, among these are

1) expedition of hospital patient turnover by establishment of convalescent homes are rehabilitation centers, and an improved communication system with the patient's relations.

2) Adequate follow-up facilities for continued patient care through more medical social (Almoner) services and effective direct responsibility of the local physician in a joint welfare programme of management for the neurologically incapacitated patient.

3) The organization of an integrated Neurosurgery Residency training Curriculum in a postgraduate School of Medicine at the University of Ibadan. This training team will serve to implement the objective of defining surgical neurologic problems as they arise locally in Nigeria, which should premise a programme of research on these problems. The primary aim of research is to enable us to know more, but in this context to know more in a useful way. This is essential in a situation where the acquisition of knowledge solely for its own sake is already overshadowed by enormous task of the care of prevalent common tropical diseases.

4) Building up liaison service schemes for neurosurgical emergencies and the care of the acute patient at strategically located hospitals throughout Nigeria.

5) Emphasis on Paediatric Neurosurgery through a National Foundation, wholeheartedly devoted to diseases of the nervous system in children, congenital and acquired.

6) Evolvement of a Neurologic Institute co-ordinated by various university and other medical centres in Nigeria. This composite centre will embrace within its walls, (all in one great correlation of practical knowledge and approach), the structural basis of neuroanatomy, the functional understanding of neurophysiology and neurochemistry, the clarifying depths of neuropathology and all essences of neurology and psychiatry, the appliances of physical medicine and dynamic tools of neurosurgery.
Summary and Conclusions

1. The fact is presented that a Neurosurgical Unit exists at the University of Ibadan and the University College Hospital, Ibadan, Nigeria, West Africa.

2. A board analysis of its first year of operation has been made, showing its efforts and its failures; its trials, its tribulations its intellectual danger of a one-man show; its lesions and its hopes. Whatever faults and failings this year old unit may have project beyond this simple analysis for a better background of local experience, hopefully against tomorrow and for many other Nigerian workers who, into this field, will come.

3. The existence of this Neurosurgery unit shows, once again, that while great expense and resources may be essential for an established medical facility a humble but reasonable beginning can be made in any needed sphere of Medicine. Given the arid conditions of necessity and some opportunity, much can be readily accomplished with much less by a stretch of determined effort and a sense of purpose.

4. It is here suggested that the idea, that medical subspecialties in the technically under-developed independent African countries are a luxury only of the future, denies the essence of progress in a broad perspective. The need, the great need for specialized medical attention, is already there. The presence of the specialist only serves to make it glaringly obvious.

5. Various difficulties of the Neurosurgery Unit at Ibadan are by no means confined to its beginning and will undoubtedly continue and grow into the years ahead. Perhaps therein lies the saving grace, in the vivid knowledge that "the price of progress is trouble." The statement is credited to Foster Kennedy that "He who care patients suffering from brain tumour must ring to his problem much thought and stout action. There is need also of a formidable optimism for the dice of the gods are loaded." In this twilight of new nationhood and pressing readjustments of social environment, for brain tumours as well as many a neurosurgical entity (which could nowadays be handled routinely elsewhere) the dice of the gods here in West Africa are doubly loaded.

References


APPENDIX 1. Categories of Operations Performed

<table>
<thead>
<tr>
<th>Procedure performed</th>
<th>Diagnosis</th>
<th>No. of cases</th>
<th>No. of Operating Surgeons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debridement, Trehphination, Subtemporal Decompression</td>
<td>Subdural Haematoma (Depressed skull fracture)</td>
<td>77</td>
<td>22</td>
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<tr>
<td>Trehphination</td>
<td>Epidural Haematoma</td>
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<td></td>
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<tr>
<td></td>
<td>Leptomeningitis and Cerebral Abscess (Drainage)</td>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Subdural Abscess Hydrocephalic Sindrome</td>
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<td></td>
</tr>
<tr>
<td>Craniotomy (Orbital Decompression)</td>
<td>Encephalomalacia</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Retro-orbital Tumour [(No histology available]</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic Subdural Haematoma</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Encephalomalacia</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frontal Tuberousitis</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Pseudopontinecephaly</td>
<td>1</td>
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</tr>
<tr>
<td></td>
<td>Cerebellar Astrocytoma</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sarcoma (? Meningeal)</td>
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<tr>
<td></td>
<td>Osteomyelitis and Epidural Abscess</td>
<td>12</td>
<td></td>
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<tr>
<td>Excision and Repair</td>
<td>Frontal Meningocele</td>
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<td>Occipital Meningocele</td>
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<td></td>
<td>Frontal Encephalocele</td>
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<tr>
<td>Facial Nerve Decompression</td>
<td>Facial Nerve Palsy ( Ramsay-Hunt Syndrome</td>
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<td></td>
<td>Hydrocephalic Sindrome</td>
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<td>5</td>
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<tr>
<td>Excision and Repair</td>
<td>Meningocele and Meningocele</td>
<td>33</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Saccroccygeal cyst (teratomas, dermoids)</td>
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<table>
<thead>
<tr>
<th>Procedure performed</th>
<th>Diagnosis</th>
<th>No. of cases</th>
<th>No. of Operating Surgeon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laminectomy</td>
<td>Lumber Facture dislocation</td>
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<tr>
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<td>Segmental Arachnoiditis</td>
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<td>Herniated IV disk</td>
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<td>Staphylococcal Spondylitis (biopsy)</td>
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<td>“Cervical Neoplasm”</td>
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<td></td>
<td>(type undetermined)</td>
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<td>Costotranversectomy</td>
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<td>Anterolateral Decompression</td>
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<td>Supradiaphgramatic</td>
<td>Essential Hypertension</td>
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<td>Sympathectomy</td>
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<tr>
<td>Miscellaneous</td>
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<td>Skull biopsy</td>
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<td>Fibrous Dysplasia</td>
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<td>Excision</td>
<td>Plexiform Neurofibroma</td>
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<td>Removal of Holter Valve</td>
<td>Malfunctioning V.J.C. Shunt (Hydrocephalus)</td>
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<td>Carpal Tunnel release</td>
<td>Median Nerve Compression Neuropathy</td>
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</table>
Appendix 1 – cont’d

<table>
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<th>Procedure performed</th>
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<th>No. of Operating Surgeon</th>
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</thead>
<tbody>
<tr>
<td>Neurolysis</td>
<td>Radial Nerve Palsy</td>
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<tr>
<td>Transposition of Ulna Nerve</td>
<td>Tardy Ulnar Neuritis</td>
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<td>Neurorrhaphy</td>
<td>Neurotmesis (Ulnar, Median Nerves)</td>
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<td>Nerve Biopsy</td>
<td>Tuberculoid Leprosy (Radial Nerve)</td>
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</tr>
<tr>
<td>Excision</td>
<td>Glomus Caroticum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutdown exposure of carotid artery</td>
<td>“Inconclusive” Cerebral Arteriography</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Appendix 2. Categories of Clinical Entities Encountered

(a) **Congenital**

Infantile hydrocephalic syndrome (including a Dandy-Walker syndrome and one associated with osteogenesis imperfects)

- meningoencephalocele (occipital 8)
- meningoencephalocele (nasofrontal 3)

- spinal dysraphism (myelomeningocele 3)
- spinal dysraphism (meningomyelocele 8)

- craniosynostosis 2

- micrencephaly 1

(b) **Traumatic**

- Craniocerebral trauma (all types) 62

- Chronic subdural haematoma 1

- Spinal trauma (fracture-dislocation (cervical 8)
  - (dorsal 4)
  - (dorsolumbar 1)
  - (lumbar 7)
  - (sacral 1)

  (including central spinal cord syndrome, transverse myelopathy, conus-epiconus medullaris syndrome, cauda equina syndrome)

- Erb-Duchenne palsy (birth) 2

- “Charcot’s Joint” (brachial plexus trauma) 1

- ulnar, median or radial palsy (Neurotmesis) 4

- femoral nerve “injection” neuropathy 1
### Infectious

- Cerebral abscess (pyogenic) 8
- Cerebral tuberculoma 1
- Cerebral tuberculoma (suspect) 5
- Intracranial phycomycosis 1

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>Complicated leptomeningitis</td>
<td>(pyogenic 5)</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>(tuberculous 1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(subdural effusion 4)</td>
<td></td>
</tr>
<tr>
<td>postmeningitic hydrocephalus</td>
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<td>5</td>
</tr>
<tr>
<td>frontal osteomyelitis (pyogenic)</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>basilar osteomyelitis (tuberculous)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>spinal epidural abscess (pyogenic)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>tuberculous spondylitis (transverse myelopathy)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>spina bifida occulta with epispinal abscess (pyogenic)</td>
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<td>1</td>
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<tr>
<td>tuberculous spondylitis</td>
<td></td>
<td>2</td>
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<tr>
<td>modified tetanus</td>
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<td>tabes dorsalis</td>
<td></td>
<td>3</td>
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<tr>
<td>secondary syringomyelia (arachnoiditis)</td>
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</table>

### Neoplastic (and non-plastic tumours)

- * cerebral glioblastoma mutiforme 2
- 4th ventricle ependymoblastoma 1
- pontine glioma 1
- vermis medulloblastoma 1
- cerebellar astrocytoma 2
- suprasellar retinoblastoma 1
- intracranial teratoma 1
- orbitotemporal meningosarcome (with metastases) 1
- bifrontal convexity meningioma 1
- coexisting meningiomata – neurilemmomata 1
- fibrous dysplasia (non-neoplastic) (orbitofrontal 2) (parietal 1) 3
- occipital aneurismal bone cyst (non-neoplastic) 1
Appendix 2. cont’d

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Count</th>
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<tr>
<td>intracranial</td>
<td>Burkitt’s neoplasm</td>
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<td>frontal</td>
<td>mucocoele</td>
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<tr>
<td>sphenoidal ridge</td>
<td>meningioma (suspect)</td>
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<tr>
<td>coexisting</td>
<td>glomus jugulate and carotieum</td>
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<td>intramedullary</td>
<td>“cyst” (aetiology unknown)</td>
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<tr>
<td>intradural extramedullary</td>
<td>neurofibroma</td>
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<tr>
<td>von Recklinghausen’s disease</td>
<td>(peripheral)</td>
<td>3</td>
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<tr>
<td>lumbosacral plexiform</td>
<td>neurofibroma</td>
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<tr>
<td>(* 1 in a 60 year old man of non-African origin)</td>
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<tr>
<td>Intraspinal giant schwannoma</td>
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<td>(Burkitt’s neoplasm</td>
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<td>4</td>
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<tr>
<td>(reticulum cell sarcoma</td>
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<td>1</td>
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<tr>
<td>Spinal epidural</td>
<td>(lymphosarcoma)</td>
<td>2</td>
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<tr>
<td>(neuroblastoma</td>
<td></td>
<td>1</td>
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<tr>
<td>(metastatic breast carcinoma</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>(fibrolipoma</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>epispimal cervical lipoma</td>
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<tr>
<td>(c) Vascular</td>
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<td>intracranial aneurysm</td>
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<td>“vertebral artery compression tetraplegia” (cervical spondylosis)</td>
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<tr>
<td>cavernous sinus thrombosis</td>
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<tr>
<td>retinal venous thrombosis</td>
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<td>1</td>
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<tr>
<td>unexplained “subarachnoid haemorrhage”</td>
<td></td>
<td>6</td>
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<td>Cerebrovascular accidents</td>
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<td>(cerebral thrombosis</td>
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<td>5</td>
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<td>(cerebral haemorrhage</td>
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<td>2</td>
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<tr>
<td>(intermittent cerebral ischaemia</td>
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<td>3</td>
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<td>(juvenile hypertensive encephalopathy</td>
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<td>Cerebral thrombophlebitis (suspect)</td>
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<td>(f) Degenerative</td>
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<td>fronto-ponto-cerebellar atrophy (suspect)</td>
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<td>unexplained spinal ataxia</td>
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### Appendix 2, cont’d

#### (g) Problem Pain

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<td>Unexplained cephalalgia</td>
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<td>Occipital neuralgia</td>
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<tr>
<td>Tic dououreux</td>
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<tr>
<td>Carpal tunnel compression (median nerve) neuropathy</td>
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<td>&quot;Low back pain syndrome&quot;</td>
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<td>(Hyperthrophic spondylitis</td>
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<tr>
<td>(Spondyloysis)</td>
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<tr>
<td>(Spondylolisthesis)</td>
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<td>(Myofascial pain syndrome)</td>
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#### (h) Miscellaneous

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<td>(Post-traumatic</td>
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<tr>
<td>(Unexplained</td>
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<tr>
<td>Parkinsonism</td>
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<tr>
<td>Post infectious encephalitis</td>
<td>4</td>
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<tr>
<td>&quot;Pseudoporencephaly&quot;</td>
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<tr>
<td>&quot;Encephalopathy&quot;</td>
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<tr>
<td>(Toxic</td>
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<td>(Post cardiac arrest</td>
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<td>(Hepatic</td>
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<td>Acute cerebellar ataxia (childhood)</td>
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<td>Hand-Schuller-Christian syndrome</td>
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<td>Libman-Sacks syndrome (lupus erythromatosis)</td>
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<td>&quot;Postpartum monoparesis&quot;</td>
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<td>Unexplained cauda-equina syndrome</td>
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<tr>
<td>Unexplained Brown-Sequeard syndrome</td>
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<tr>
<td>Unexplained transverse myelopathy</td>
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<td>Miscellaneous non-neurologic lesions (scalp lesions, etc.)</td>
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<tr>
<td>Functional “Supratentorial” disorder</td>
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## Appendix 3. General Categories of Operations Performed

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<tr>
<td>6 craniectomies and craniotomies</td>
<td>major craniocerebral trauma</td>
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<tr>
<td>3 osteoplastic craniotomies and craniectomy</td>
<td>cerebral abscess</td>
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<tr>
<td>1 osteoplastic craniotomy (Hyphophysectomy)</td>
<td>metastatic breast carcinoma</td>
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<tr>
<td>1 osteoplastic craniotomy</td>
<td>cerebral tuberculoma</td>
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<tr>
<td>2 craniectomy and osteoplastic craniotomy</td>
<td>fibrous dysplasia (orbito-frontal)</td>
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<tr>
<td>11 osteoplastic craniotomies</td>
<td>neoplasm (cerebellar astrocytoma, vermis medulloblastoma, teratoma, aneurismal bone cyst, retinoblastoma, meningioma, Burkitt’s tumour)</td>
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<tr>
<td>2 craniectomies</td>
<td>craniosynostosis</td>
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<tr>
<td>5 laminectomies</td>
<td>spinal trauma (partial transverse myelopathy, cauda equine and conus-epiconus medullaris syndromes, etc.)</td>
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<tr>
<td>1 laminectomy</td>
<td>epidural abscess (staphylococcus pyogenes)</td>
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<tr>
<td>8 laminectomies</td>
<td>neoplasm (reticulum cell sarcoma, Burkitt’s tumour, neuroblastoma, giant schwannoma, neurofibroma, fibrolipoma)</td>
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<tr>
<td>9 laminectomies</td>
<td>miscellaneous (intramedullary cysts, chronic lateral sclerosis syndrome, adhesive arachnoiditis – syringomyelia, etc.)</td>
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<tr>
<td>7 plastic repairs of meningoencephaloceles</td>
<td>(1 lumbar) (5 lumbosacral) (1 sacral)</td>
</tr>
<tr>
<td>8 plastic repairs of meningoencephaloceles</td>
<td>(6 occipital) (2 nasofrontal)</td>
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<tr>
<td>10 ventriculo-caval Holter valve shunts</td>
<td>(for infantile hydrocephalus (congenital and post meningitic))</td>
</tr>
<tr>
<td>10 ventriculo-peritoneal Holter valve shunts</td>
<td>tic douloureux</td>
</tr>
<tr>
<td>2 retrogasserian rhizotomies</td>
<td>cervical epispinal lipoma, excision of post-traumatic cortical scar etc.</td>
</tr>
<tr>
<td>7 miscellaneous medium procedures</td>
<td>trephinations for ventriculography, tapping of cerebral abscess, neoplastic cysts, etc., carpal tunnel release, occipital neurectomy, piano-wire Hoen skull traction, Crutchfield tongs application, bone-button skull biopsies, Holter-valve shunt revisions, etc.</td>
</tr>
<tr>
<td>41 miscellaneous minor procedures</td>
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</tbody>
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CEREBROVASCULAR ACCIDENTS IN NIGERIANS: A STUDY OF 348 PATIENTS

By

DR. B. O. OSUNTOKUN, M.B., B.S., M.R.C.P. (LOND.), Consultant Physician and Senior Lecturer in Neurology, Department of Psychiatry and Neurology

PROFESSOR E. L. ODEKU, F.R.C.S., M.D. (HOWARD), D.A.R.N.S., Consultant Neurosurgeon and Professor of Surgery, Department of Surgery

DR. R.B.A. ADELOYE, M.B., B.S. (LOND), M.R.C.P. (EDIN.), Consultant Neurosurgeon and Lecturer, Department of Surgery

Cerebrovascular accident (CVA) is one of the major causes of sudden death. In addition it has a high morbidity being responsible for many patients with incapacitating neurological deficit. Until recently there was scanty information on CVA in Africans, and some held that cerebrovascular disease (CVD) like coronary artery disease is rare in the African. Humphries (1957) for instance states that in 14 years work among natives of South, Central and West Africa, he saw few instances of CVD either due to hemorrhage or infarction. It has since been shown that CVD is not uncommon in the Bantus in South and East Africa (LAURE and WOODS, 1958, STRONG et al., 1959, WALKER, 1963), and in the Senegalese in West Africa (COLLOMB et al., 1966). It is important to establish the pattern of CVD in the various African races and the difference, if any, from that described in the more developed countries. This paper describes our experience and findings in Nigerian patients seen at the University College Hospital, (UCH) Ibadan, between 1957 and 1968. The UCH is a 500-bed hospital of the University of Ibadan. It is situated in Ibadan, which has a population of 750,000 – the largest Negro city in the world. The majority of the inhabitants of Ibadan is formed by the Yorubas, who also constitute about 90 per cent of the patients seen in the hospital. The rest of the patients come from all parts of Nigeria.

Material and methods

In this paper, cerebrovascular accidents (CVA) refer to cerebral thrombosis, intracerebral hemorrhage and embolism as defined by the National Institute of Neurological Diseases and Blindness (1958).

Three hundred and forty-eight patients who suffered from CVA and were seen at the UCH, Ibadan from 1957 to 1968 form the basis of the study. Eighty per cent of the patients have been seen in the last 6 years (1962-1968). (In 1962, a Neurosurgical Unit was established at UCH, Ibadan followed by a Neurology Unit in 1964).

Investigations of the patients included: determination of haematological indices including haemoglobin electrophoretic fractionation; cerebrospinal fluid (CSF) examination; serum urea and electrolyte; serum protein and electrophoretic fractionation; serum cholesterol (by the method of SEARCY and BERGQUIST, 1960); plain radiographs of chest, cervical spine and skull; and electrocardiographic (ECG) examination. In the last three years, we have carried out glucose tolerance tests without and with steroid priming (as described by JACKSON 1961) on patients with thrombotic CVA and primary intracerebral haemorrhage a week after admission into hospital. In appropriate cases carotid angiography and arch aorto-graphy were done, and so was lumbar pneumo-encephalography in a few patients especially where angiographic examination was normal.

Hypertension was diagnosed when a diastolic blood pressure of 100 mm Hg. or more was sustained for more than a week after admission, or if death occurred within one week of admission, if there was clinical and ECG evidence of hypertensive disease.

Diagnosis

It is not always possible, on clinical findings alone to distinguish confidently between intracerebral haemorrhage and cerebral infarction despite the application of the criteria painstakingly enumerated by ARING and MERRITT (1935) on the basis of their clinicopathological study. For example DALSgaard-NIELSEN (1956) found that the clinical diagnosis of cerebral haemorrhage in 239 cases was confirmed at autopsy in only 155 (65 per cent) and that the clinical diagnosis of cerebral arterial thromboembolic occlusion in 139 cases was confirmed in only 81 (58 per cent), HEASMAN and LIPWORTH (1966) reporting on 10,000 death certificates confirmed by autopsy found that clinical diagnosis of cerebral haemorrhage was confirmed in only 57 per cent of the cases. What is more every series of unselected strokes includes about 5 per cent of cases which ultimately proved to be due to a cerebral tumour and this at times may be a meningeal one (MARSHALL, 1967). Subdural haematoma may present as a stroke (BULL, 1958). Hence ancillary methods are of great importance in achieving the correct pathological diagnosis. Angiography is the most important in this respect, for not only will it localize the lesion and delineate the pathology, but may reveal a lesion sometimes previously unsuspected clinically and sometimes amenable to surgery (BULL et al. 1960). The basis of our diagnosis was the criteria given by the National Institute of Neurological Disease and Blindness (1958), and by OSUNTOKUN et al. (1969) for the diagnosis of non-embolic ischaemic cerebrovascular disease, and on further investigations.

Results

Incidence

Table 1 shows the types of CVA seen. Non-embolic ischaemic cerebrovascular disease (NEICVD) is by far
the commonest and constitute 67.5 per cent of CVA and 49.8 per cent of all cerebrovascular diseases as seen in Nigerians in UCH, Ibadan (Table II). In the eleven-year period under consideration, in the U.C.H., Ibadan, 560 patients with epilepsy, 324 patients with nutritional neuropathies, 74 patients with Parkinsonism, 60 patients with motor neurone disease and 827 patients with diabetes mellitus were seen. At least 200,000 patients were seen in the various departments and wards of the hospital.

Table I. Cerebrovascular accident in Nigerians, University College Hospital, Ibadan, 1957-1968

<table>
<thead>
<tr>
<th>Type of Cerebrovascular Disease</th>
<th>No. of Patients</th>
<th>% of Total</th>
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<tbody>
<tr>
<td>Non-embolic ischaemic disease</td>
<td>235</td>
<td>49.8</td>
</tr>
<tr>
<td>Cerebral haemorrhage</td>
<td>92</td>
<td>19.5</td>
</tr>
<tr>
<td>Embolic ischaemic disease</td>
<td>21</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Non-embolic cerebrovascular disease (NEICVD)

Sex and age distribution

Table III shows the sex and age distribution in patients with NEICVD. The peak incidence is in the age group 50-59. Sixty and 81 per cent of the patients are over 50 and 40 years respectively. The male to female ratio is 9 to 5.

Table IV shows the socio-economic status of patients with the various types of CVA compared with other common diseases seen in UCH, Ibadan. Middle and upper class as defined in the series comprise skilled professional men such as doctors, engineers, lawyers, architects etc; first class chiefs or natural rulers, ministers of state, members of parliament, high-ranking civil servants, principals and graduate-teachers in educational institutions, clergymen, wealthy private traders, business executives of industrial organizations; and their wives especially if husbands are monogamous. Patients in the middle and upper social classes constitute a higher percentage of the total number of patients suffering from non-embolic cerebrovascular disease, primary intracerebral haemorrhage, diabetes mellitus and hypertension than in embolic infarction, epilepsy and amoebiasis.

Predisposing conditions

Table V shows the predisposing conditions. Hypertensions and diabetes mellitus are by far the most important predisposing conditions. In 60 per cent of patients,

Table IV. Socio-economic classes in non-embolic cerebral ischaemic disease compared with other diseases seen in U.C.H, Ibadan.

<table>
<thead>
<tr>
<th></th>
<th>Total No</th>
<th>% constituted by middle &amp; upper classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-embolic ischaemic cerebral disease</td>
<td>235</td>
<td>37</td>
</tr>
<tr>
<td>Primary intracerebral haemorrhage</td>
<td>92</td>
<td>30</td>
</tr>
<tr>
<td>Embolic infarction</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>827</td>
<td>30</td>
</tr>
<tr>
<td>Hypertension</td>
<td>240</td>
<td>16</td>
</tr>
<tr>
<td>Amoebiasis</td>
<td>308</td>
<td>9</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>560</td>
<td>2</td>
</tr>
</tbody>
</table>

Table V. Non-embolic ischaemic cerebrovascular diseases in Nigerians, predisposing conditions

<table>
<thead>
<tr>
<th>Predisposing conditions</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>126*</td>
<td>53.6</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>20</td>
<td>8.5</td>
</tr>
<tr>
<td>Hypertension and diabetes mellitus (incl. 2 “chemical diabetes”)</td>
<td>23</td>
<td>9.8</td>
</tr>
<tr>
<td>“Chemical diabetes”</td>
<td>5</td>
<td>2.1</td>
</tr>
<tr>
<td>Others (include Obesity, anaemia, dehydration, haemoglobinopathy, chronic myeloid leukemia, syphilis, congestive heart failure, nephritic syndrome, pregnancy).</td>
<td>20</td>
<td>8.5</td>
</tr>
<tr>
<td>No predisposing conditions</td>
<td>41</td>
<td>17.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>235</td>
<td>100</td>
</tr>
</tbody>
</table>

*3 of these patients have Hb. >18G, and PCV > 55 but with normal WBC.

Hypertension was previously undiagnosed. Table VI shows the severity of diastolic hypertension. Diabetes mellitus had been recognized before the occurrence of CVA in 32 of the 48 patients with diabetes mellitus or diabetes diathesis. Sixteen patients can be said to have “chemical diabetes”. The latter group includes 9 patients in whom the standard GTT was diabetic and 7 other patients in whom the steroid-stressed GTT was abnormal. Four patients suffered from cerebrovascular syphilis. In one patient each, a stroke was precipitated by anaemia (Hb. < 20 per cent) and dehydration following severe gastroenteritis. In one patient each, CVA was associated with chronic myeloid leukaemia and nephrotic syndrome; the latter patient had a serum cholesterol level of 540 mg/100 ml. In 4 children under 5 years old, haemoglobin sickle cell crisis was associated with hemiplegia. Hypercholesterolaemia in association with gross obesity was present in 3 patients. Three patients were in congestive heart failure, but without any evidence of cardiac valvular disease or of myocardial infarction.

**Transient ischaemic attacks**
The table VII shows the salient features in 23 patients who presented with transient ischaemic attacks (TIAs). The patients were mostly elderly. Fifty per cent were above the age of 60. Intermittently ischaemia in the internal carotid territory was commoner than in the vertebrobasilar territory. The clinical features were as described by Williams (1961, 1964), Williams and Wilson (1962), Bradshaw and McQuaid (1963), Marshall (1964) and in the Nigerian patients in this series are given in details elsewhere (Oshuntokun et al., 1969a).

These patients have been followed up for a period of 6 months to 10 years. Eleven of the 15 patients with intermittent ischaemia of the internal carotid territory had progressed to completed strokes. One of the 8 patients with intermittent ischaemia of the vertebrobasilar territory so far followed up for 6 months to 4 years had developed a major stroke 6 months after the first transient ischaemic attack. Six of the younger and moderately hypertensive patients were investigated by angiography, and abnormalities were demonstrable in 5. In four of the 23 patients severe radiological osteodegenerative changes of cervical spondylosis were demonstrable.

Table VI. Severity of hypertension in 149 hypertensive patients with non-embolic ischaemic disease

<table>
<thead>
<tr>
<th>Diastolic BP. in mm. Hg</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 120</td>
<td>96</td>
</tr>
<tr>
<td>&gt; 130</td>
<td>55</td>
</tr>
<tr>
<td>&gt; 140</td>
<td>28</td>
</tr>
<tr>
<td>&gt; 150</td>
<td>14</td>
</tr>
<tr>
<td>&gt; 160</td>
<td>10</td>
</tr>
<tr>
<td>&gt; 170</td>
<td>4</td>
</tr>
<tr>
<td>&gt; 180</td>
<td>3</td>
</tr>
<tr>
<td>&gt; 190</td>
<td>1</td>
</tr>
</tbody>
</table>
Completed strokes

Table VIII shows that headache is a common prodromal symptom in NEICVD and was present in 15.7 per cent of patients: it was characterized by features of vascular headache. In 13 patients symptoms of left ventricular failure in association with severe hypertension presaged a completed stroke by interval of 1 to 2 weeks: there was no evidence of cardiac valvular lesion, arrhythmia of myocardial infarction. The mode of onset was gradual, step-like or dispersed in temporal pattern in 88 patients. In 6 of these patients it took 4-6 days before the weakness became maximal and complete. In 104 patients, hemiparesis or hemiplegia was first noted on waking up from sleep. Twelve patients developed major strokes following a period of T.I.A.s. In 27 other patients, onset of weakness was sudden but without loss of consciousness-arterial occlusion was confirmed by angiography or cerebral infarction was found at autopsy.

Twenty five patients developed convulsions at the time of the stroke. Only 9 patients were in coma or semicomatose admission, and 7 other patients were severely confused.

The details of the clinical features of thrombotic infarction and laboratory findings in this series have been given elsewhere (OSUNTOKUN et al., 1969a). Tables IX,X,XI and XII show other relevant physical findings, apart from weakness, sensory loss and hemianopic defects.

Investigations

Haemoglobin electrophoretic fractionation
Results of haemoglobin electrophoretic fractionation in 105 patients are as follows: AA 77, AS 19, SS 4 and AC 6. The frequency of the sickle cell gene in this series is 21 per cent.

Urine examination
Glycosuria was present in 39 patients, 7 of whom were subsequently found not to suffer from diabetes mellitus. Ketonuria without glycosuria was observed in 3 patients who were not diabetic. In 64 patients albuminuria was present. In 2 patients bacterium was confirmed by culture.

Serum cholesterol
Table XIII shows the level of serum cholesterol in NEICVD in Nigerians compared with serum levels in other groups. There is no difference in the levels of serum cholesterol in normal Nigerians from upper and middle socio-economic groups, patients with diabetic retinopathy and patients with NEICVD. The levels of serum cholesterol in Nigerians from poor socio-economic groups represented by normals from a village survey, and patients with diabetes mellitus without retinopathy are statistically significantly lower (P < 0.05).

<table>
<thead>
<tr>
<th>Transient ischaemic attacks</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>23</td>
</tr>
<tr>
<td>Male : Female ratio</td>
<td>2.8:1</td>
</tr>
<tr>
<td>Mean age in years</td>
<td>56.7 (±10.7)</td>
</tr>
<tr>
<td>Middle and upper socio-economic classes</td>
<td>70%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>17</td>
</tr>
<tr>
<td>Diabetes mellitus and hypertension</td>
<td>4</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1</td>
</tr>
<tr>
<td>Arterial syndromes:</td>
<td></td>
</tr>
<tr>
<td>internal carotid</td>
<td>15</td>
</tr>
<tr>
<td>Vertebro-basilar</td>
<td>8</td>
</tr>
<tr>
<td>* T.I.A. 11 Major strokes in one month to 10 years</td>
<td>12</td>
</tr>
<tr>
<td>Mean serum cholesterol (in mg./100 ml)</td>
<td>208 ± 57.0</td>
</tr>
<tr>
<td>Angiography</td>
<td></td>
</tr>
<tr>
<td>Internal carotid stenosis</td>
<td>2</td>
</tr>
<tr>
<td>Abnormal arch aortograms</td>
<td>3</td>
</tr>
<tr>
<td>Normal carotid angiogram</td>
<td>1</td>
</tr>
</tbody>
</table>

* Transient ischaemic attacks
Table IX. Non-embolic ischaemic cerebrovascular disease in Nigerians, 1957 – 1968

<table>
<thead>
<tr>
<th>Other physical findings</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dementia</td>
<td>20</td>
</tr>
<tr>
<td>Organic psychosis</td>
<td>3</td>
</tr>
<tr>
<td>Euphoria</td>
<td>3</td>
</tr>
<tr>
<td>Severe perseveration</td>
<td>3</td>
</tr>
<tr>
<td>Parietal lobe syndrome</td>
<td>10</td>
</tr>
<tr>
<td>Extra pyramidal disease</td>
<td>10</td>
</tr>
<tr>
<td>Parkinsonism</td>
<td></td>
</tr>
<tr>
<td>Choreo-athetosis</td>
<td>1</td>
</tr>
<tr>
<td>Torsion dystonia</td>
<td>1</td>
</tr>
<tr>
<td>Pseudobulbar palsy</td>
<td>2</td>
</tr>
<tr>
<td>Cerebellar ataxia associated with</td>
<td></td>
</tr>
<tr>
<td>i. Supratentorial lesion</td>
<td>5</td>
</tr>
<tr>
<td>ii. Brain stem lesion</td>
<td>4</td>
</tr>
<tr>
<td>Optic atrophy</td>
<td>3</td>
</tr>
<tr>
<td>Multiple</td>
<td>3</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th></th>
<th>Total No.</th>
<th>No. with Dysphasia</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Right hemiplegia 128*</td>
<td>82</td>
<td>64.1</td>
</tr>
<tr>
<td></td>
<td>Left hemiparesis 89</td>
<td>12</td>
<td>13.5</td>
</tr>
<tr>
<td>Sinistrals</td>
<td>Left hemiparesis 1</td>
<td>1</td>
<td>100</td>
</tr>
</tbody>
</table>

* In 24, clinical evidence of Subcortical infarct.

Cerebrospinal fluid examination
In 207 patients, the cerebrospinal fluid was examined and only twenty-four showed abnormalities with regard both to protein content and white cell count. In 7 of these, the protein content in mg per 100 ml were 60, 75, 90, 110, 120, 130 and 1,000, with corresponding white cell count per cemm. of 110, 1,000, 90, 45, nil, and 950. Four of these 24 patients had positive serological test for syphilis in blood and CSF. Seventeen patients showed raised protein concentration only. This was usually moderate; only 4 had values exceeding 70 mg per 100 ml. (85, 90, 150 and 500 mg/100 ml). In 22 other patients with CSF the red blood cell count exceeded 550/c.mm. in 13; the protein content, white cell count, and sugar concentration were normal.


<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>Pure motor hemiplegia</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertensive</td>
<td>145</td>
<td>75</td>
<td>51.7</td>
</tr>
<tr>
<td>Non-hypertensive</td>
<td>79</td>
<td>21</td>
<td>26.6</td>
</tr>
</tbody>
</table>

Table XII. Babinski reflex in non-embolic ischaemic cerebrovascular disease in Nigerians

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>Present (+ve)</th>
<th>Flexor</th>
<th>Equivocal</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right hemiparesis</td>
<td>128</td>
<td>42</td>
<td>54</td>
<td>32</td>
<td>328</td>
</tr>
<tr>
<td>Left hemiparesis</td>
<td>90</td>
<td>37</td>
<td>40</td>
<td>13</td>
<td>41.1</td>
</tr>
<tr>
<td>Quadri-paresis</td>
<td>12</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>500</td>
</tr>
</tbody>
</table>

Electrocardiographic abnormalities
Transient ECG abnormalities were found in 12 patients – usually as flattening or depression of ST segment and T waves in left ventricular leads reverting to normal in most cases within one to two weeks. Left ventricular hypertrophy usually with evidence of myocardial strain was found in 39 patients. Other abnormalities include left atrial hypertrophy in one patient, left bundle branch block in 3 patients and diffuse myocardial damage in 4 patients who had severe hypertension and were in incipient cardiac failure.

Contrast neuroradiological investigation
Table XIV shows the abnormalities found. Preangiographic prediction of the site was correct in only 60 per cent. Representative findings are shown in Figs. 1-6.

Fig. 1. Shows complete occlusion of left Internal Carotid artery in the characteristic site just beyond the bifurcation of the common carotid, in a normotensive, non-diabetic man aged 45, with transient ischaemic attacks.
Table XIII. Serum cholesterol in non-embolic ischaemic Nigerians

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean serum cholesterol (mg/100 ml) (including S.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Non-embolic cerebro-vascular disease:</td>
<td></td>
</tr>
<tr>
<td>a. Total</td>
<td>196±85</td>
</tr>
<tr>
<td>b. Male</td>
<td>191±72</td>
</tr>
<tr>
<td>c. Female</td>
<td>213±88</td>
</tr>
<tr>
<td>d. Transient ischaemic attacks</td>
<td>208±570</td>
</tr>
<tr>
<td>2. Edozien’s reference group (1965)</td>
<td>285±200</td>
</tr>
<tr>
<td>3. Normals from village surveys (Epe Ejinrin)</td>
<td>31±120</td>
</tr>
<tr>
<td>4. Diabetes mellitus without</td>
<td>528±141</td>
</tr>
<tr>
<td>5. Diabetes mellitus with retinopathy</td>
<td>32±190±60</td>
</tr>
</tbody>
</table>

Table XIV. Non-embolic ischaemic cerebrovascular disease in Nigerians, University College Hospital, Ibadan, 1957-1968.

### Contrast neuroradiological investigation

<table>
<thead>
<tr>
<th>Investigation</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal carotid angiography</td>
<td>74</td>
</tr>
<tr>
<td>Arch Aortography</td>
<td>3</td>
</tr>
<tr>
<td>Pneumoencephalography &amp; angiography</td>
<td>10</td>
</tr>
<tr>
<td>Abnormal findings</td>
<td>42</td>
</tr>
<tr>
<td>Narrowed or occluded internal carotid</td>
<td>11</td>
</tr>
<tr>
<td>Internal carotid siphon to basilar artery</td>
<td>2</td>
</tr>
<tr>
<td>Stenosed external carotid in association</td>
<td></td>
</tr>
<tr>
<td>with middle cerebral artery occlusion</td>
<td>1</td>
</tr>
<tr>
<td>Occlusion of middle cerebral artery</td>
<td>16</td>
</tr>
<tr>
<td>Occlusion of anterior cerebral artery</td>
<td>2</td>
</tr>
<tr>
<td>Both anterior cerebral arteries fill from one side</td>
<td>3</td>
</tr>
<tr>
<td>Abnormal arch aortogram</td>
<td>3</td>
</tr>
<tr>
<td>Pneumoencephalogram-unilateral dilation of ventricle (normal angiograms)</td>
<td>4</td>
</tr>
<tr>
<td>Normal internal carotid angiography</td>
<td>49</td>
</tr>
</tbody>
</table>

Fig. 2. Shows stenosis of left external carotid near its origin and complete occlusion of middle cerebral artery in a 55 year old normotensive man, with a right hemiplegia and aphasia.

Fig. 3. Shows complete occlusion of the middle cerebral artery in a 50 year old hypertensive and diabetic woman.

Table XV shows that extracranial occlusion of stenosis was commoner in non-hypertensive patients although the difference is not statistically significant. Demonstrable angiographic occlusion of intracranial cerebral vessels was commoner in non-hypertensive patients than in hypertensive patients. The difference is statistically significant. (P > 0.02).

Table XV. Arteriography in non-embolic cerebral infarction in Nigerians

<table>
<thead>
<tr>
<th>Type of Arteriography</th>
<th>Normotensive</th>
<th>Hypertensive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extracranial vessels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occlusion</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Stenosis</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Intracranial Arterial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occlusion</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>36</td>
</tr>
</tbody>
</table>

### Mortality

Thirty seven patients died giving a mortality rate of 15.7 per cent. Autopsy was done in 25 patients. The findings are shown in Table XVI. The patients with infarcts and no atheroma are under 40.

Table XVI. Non-embolic ischaemic cerebrovascular disease.

<table>
<thead>
<tr>
<th>Post-mortem findings in 25 patients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Infarcts/atheroma of cerebral vessels, aorta, etc.</td>
<td>17*</td>
</tr>
<tr>
<td>Middle cerebral artery occlusion</td>
<td>4</td>
</tr>
<tr>
<td>Internal carotid artery occlusion</td>
<td>1</td>
</tr>
<tr>
<td>Spongiform encephalopathy</td>
<td>1</td>
</tr>
<tr>
<td>Infarct/no atheroma</td>
<td>2</td>
</tr>
<tr>
<td>Others:</td>
<td></td>
</tr>
<tr>
<td>Schistomiasis of bladder</td>
<td>1</td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>1</td>
</tr>
</tbody>
</table>

* Occlusion of anterior descending branch of left coronary artery in a 61 year old male diabetic: no symptom of life.

### Sequelae to thrombotic infarction

Nine patients developed epilepsy after an interval of 3 months to 3 years (with a mean of eight months) after cerebral infarction. In 4 patients, the thalamic syndrome of Dejerine – Roussy occurred; and one of them responded dramatically to anticonvulsant therapy using diphenylhydantoin (Epanutin). Twenty three patients were severely incapacitated. One patient a minister of state aged 53 developed myocardial infarction presumably from concomitant coronary artery disease, 4 months after a stroke. Another patient, aged 68, a wealthy businessman subsequently suffered from angina pectoris and intermittent claudication.

Fig. 4. Shows occlusion of some branches of the middle cerebral artery in a 45 year old man who presents with right hemiplegia and aphasia.

Fig. 5. Arch aortography in a 58 year old patient with severe hypertension: blood pressure on admission was 180/140 mm. of Hg. Shown arrowed is an aneurismal.
dilatation of the right innominate artery. The patient presented with T.I.A.s.

Cerebral infarction in non-diabetic non-hypertensive patients with no predisposing factors.

We have encountered a group of relatively young normotensive non-diabetic patients with cerebral infarction (Table XVIII). Hypercholesterolaemia was absent; angiographic studies demonstrated occlusion or stenosis in less than half of the patients.

Table XVII. sequelae to non-embolic ischaemic cerebrovascular disease.

<table>
<thead>
<tr>
<th>No.</th>
<th>Epilepsy</th>
<th>Parkinsonism</th>
<th>Thalamic syndrome</th>
<th>Cardiac infarct</th>
<th>Angina pectoris</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Fig. 6. Arch aortography in a 44 year old severely hypertensive (blood pressure 200/150 mm. Hg.) man, who presents with T.I.A.s. in the territory of the vertebrobasilar artery. Note irregularity of lumina of vertebral arteries.

Sex and age distribution

The male to female ratio in primary cerebral haemorrhage is 1.7 to 1. The peak incidence is in the age group 40-59 (Table XIX). Patients from upper and middle socio-economic groups constitute 30 per cent of the total number (Table IV).

Predisposing conditions

Table XX shows that hypertension is present in 75 (81.5 per cent) of the patients. In 65 per cent of the patients hypertension has not been diagnosed prior to the ictus. The severity of the diastolic hypertension is shown in Table XXI. Cerebral haemorrhage occurred in association with leukaemia and Hodgkin’s disease in 4 patients: thrombocytopenia was present. In two young female patients, cerebral haemorrhage was associated with chorioncarcinoma. Both patients gave a history of vaginal bleeding, recent abortion and were severely anaemic.

Prodromal symptoms

A history of vascular headache, the duration of which varied from hours to weeks, prior to the ictus was obtained in 28 patients (30 per cent). Seven other patients had symptoms of left ventricular failure 1 to 4 weeks before the stroke. Other symptoms were confusion (1) dizziness (1) hemi-hypaesthesia (1) vomiting, associated with ataxia and diplopia (1), and convulsion (1).

Table XVIII. Non-embolic ischaemic cerebrovascular disease

<table>
<thead>
<tr>
<th>No predisposing condition</th>
<th>No of patients</th>
<th>M:F ratio</th>
<th>Middle &amp; Upper socio-economic classes</th>
<th>Age (mean range and S.D.) in years</th>
<th>Serum cholesterol (mean, and S.D.)</th>
<th>Mortality</th>
<th>Contrast neuroradiological investigations</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>No predisposing condition</td>
<td>41</td>
<td>5.8:1</td>
<td>31.7%</td>
<td>46.5 (13-7) ± 16</td>
<td>140.0 mg/100 ml ± 43</td>
<td>19.5%</td>
<td>26</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>

Mode of onset

It was sudden in 89 patients and was precipitated by excitement in a few patients. One man aged 35 years, on being told his wife had just delivered their first baby boy, after four girls, jumped up in ecstasy and collapsed. On admission, he was in coma and had right hemiplegia: his blood pressure was 260/180, and he died within 24 hours of admission. One patient developed a CVA whilst watching a football match: in another patient CVA occurred during a religious ecstasy in the Church of Cherubim and Seraphim. Only in one patient did the stroke occur during sleep. In 2 other patients, the onset was gradual taking 30 minutes and 2 hours respectively for the hemiplegia to be completed.

Physical signs on admission

Table XXII shows that coma or semi coma was present in 71 (77 per cent) of the patients. On clinical grounds, the haemorrhage was supratentorial in 79 patients and was in the brain stem in 13 patients.

Investigations

Haematology

Of the 5 patients in whom the haemoglobin level was less than 5.5/100 ml, chorioncarcinoma was present in 2 and leukaemia in 3. Haemoglobin electrophoretic fractionation in 25 patients gave the following results: AA 18, AS 5, AC 2, giving a frequency of 20 per cent for the sickle cell gene in patients with primary intracerebral haemorrhage.

Cerebrospinal fluid examination

Cerebrospinal fluid examination was done in 54 patients. In 31, it was uniformly bloody, in 18 it was xanthochromic. In 5 patients it was clear microscopically but red blood cells count exceeded 1,000/c.mm. Three of the patients subsequently died and autopsy showed intracerebral haemorrhage.
Table XIX. Age distribution in 92 patients with primary intracerebral haemorrhage

<table>
<thead>
<tr>
<th>Age groups</th>
<th>10-19</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3</td>
<td>4</td>
<td>9</td>
<td>13</td>
<td>14</td>
<td>9</td>
<td>6</td>
<td>58</td>
</tr>
<tr>
<td>M</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>-</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>6</td>
<td>14</td>
<td>22</td>
<td>22</td>
<td>17</td>
<td>6</td>
<td>-</td>
</tr>
</tbody>
</table>

Table XX. Cerebral haemorrhage in Nigerians

<table>
<thead>
<tr>
<th>Predisposing conditions</th>
<th>No.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Diabetes mellitus and hypertension</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Leukaemia</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Trophoblastic tumours</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Hodgkin’s diseases</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Nil</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td></td>
</tr>
</tbody>
</table>

Table XXI. Cerebral haemorrhage in Nigerians

<table>
<thead>
<tr>
<th>Severity of diastolic hypertension</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 120 mm. Hg.</td>
<td>52</td>
</tr>
<tr>
<td>&gt; 130 mm. Hg.</td>
<td>37</td>
</tr>
<tr>
<td>&gt; 140 mm. Hg.</td>
<td>27</td>
</tr>
<tr>
<td>&gt; 150 mm. Hg.</td>
<td>16</td>
</tr>
<tr>
<td>&gt; 160 mm. Hg.</td>
<td>13</td>
</tr>
<tr>
<td>&gt; 170 mm. Hg.</td>
<td>8</td>
</tr>
<tr>
<td>&gt; 180 mm. Hg.</td>
<td>6</td>
</tr>
</tbody>
</table>

Urine examination
Albuminuria was present in 35 of the 63 patients in whom the urine was examined. Transient ketonuria without glycosuria was present in 3 patients.

Serum cholesterol
The mean in 20 patients was 202 ± 40 mg/100 ml.

Electrocardiography
EGG evidence of severe left ventricular hypertrophy or strain was present in 48 hypertensive patients.

Carotid angiography
Angiography study was done in 6 patients. In one patient it showed an avascular frontal lobe mass which at craniotomy turned out to be an intracerebral haematoma. Angiography was not frequently done as the majority of the patients were in coma on admission.

Mortality
Seventy one (77 per cent) of the patients died. Two-thirds of deaths occurred within 24 hours of admission, and 85 per cent of deaths within 3 days of admission. Permission for autopsy examination was obtained for 41 patients. The findings are shown in Table XXIII. In 25 patients intracerebral haemorrhage and macroscopically recognizable atheroma of the cerebral vessels were present. Fourteen patients under 40 years of age showed intracerebral haemorrhage but without any macroscopic atheroma of cerebral vessels. In one patient the arteries of cerebral vessels, pancreas, spleen, and kidneys showed histological changes typical of polyarteritis nodosa (Fig. 7). This is the nearest to the establishment of a diagnosis of polyarteritis in U.C.H., Ibadan, in eleven years.

Table XXII. Cerebral haemorrhage in Nigerians

<table>
<thead>
<tr>
<th>No. of patients</th>
<th>Coma</th>
<th>Semicoma</th>
<th>Confusion</th>
<th>Neck stiffness</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68</td>
<td>3</td>
<td>5</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Table XXIII. Cerebral haemorrhage in Nigerians

<table>
<thead>
<tr>
<th>Severity of diastolic hypertension</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemorrhage/atheroma</td>
<td>25</td>
</tr>
<tr>
<td>Haemorrhage/no atheroma</td>
<td>14</td>
</tr>
<tr>
<td>Chorioncarcinoma/haemorrhage</td>
<td>1</td>
</tr>
<tr>
<td>Leukaemia/haemorrhage</td>
<td>1</td>
</tr>
</tbody>
</table>

Urine examination
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the 21 patients came from the upper and middle socio-economic groups.

Predisposing conditions
In 12 patients, embolic infarction was secondary to rheumatic mitral valve disease; in 3 of the patients, arterial fibrillation was present. Subacute bacterial endocarditis was present in 6 other patients with vulvar disease who subsequently developed embolic infarctions, in association with evidence of embolic infarction in the kidneys. In 2 patients with endomyocardial fibrosis and in another patient with heart muscle disease, embolic cerebral infarction occurred as a complication.

Clinical features
Onset was sudden in all the patients. At the onset of ictus, only three patients were in coma and one was confused. Left hemiparesis was present in 13 patients who were all right-handed; and eight other right-handed patients had right hemiparesis. Hemianopia was present in 2 patients. Aphasia was present in 7 of 8 right-handed patients with right hemiparesis. None of the patients with left hemiparesis showed any disorder of speech.

Cerebrospinal fluid examination
In 14 patients the CSF was examined and was normal in all except 2 patients whose CSF showed protein concentrations of 70 mg. and 110 mg. per 100 ml: there was no increase in the cellular content of the CSF.

Mortality
Nine (including the 6 patients with bacterial endocarditis) of the 21 patients died, giving a mortality rate of 42.9 per cent.

Sequelae
Two patients developed epilepsy 4 and 6 months after embolic cerebral infarction. One of them died 2 years after the onset of epilepsy, from cow’s urine poisoning administered as a native anticonvulsant. Eight patients achieved satisfactory functional recovery. Two patients were severely incapacitated largely as a result of cardiac valvular lesion.

Discussion
Non-embolic ischaemic cerebrovascular disease is the commonest form of CVA in Nigerians. Our finding is similar to that of the National Institute of Neurological Diseases and Blindness U.S.A. (1958), PRINEAS and MARSHALL, (1966), YATES (1964), COLLOMB et al. (1966) and DALAL et al. (1968). In the more developed countries there is evidence that 3 or 4 decades ago, cerebral haemorrhage caused death in three times the number of cases as did cerebral infarction. The reversal in recent times has been attributed to various possibilities including the use of hypotensive therapy (LEISHMAN 1963), which reduces the mortality from an early stroke due to cerebral haemorrhage but has little influence upon the long-term risk of dying from a stroke associated with the progressive development of cerebral atherosclerosis. It is interesting to note that in Nigerians this factor of early use of hypotensive therapy does not apply; for hypertension was previously undiagnosed before the occurrence of CVA, in 60 per cent of our patients with either NEICVD or cerebral haemorrhage, and who were subsequently found to be hypertensive. Hence although a clinical diagnosis of cerebral arterial thrombosis is more frequently made at Ibadan, cerebral haemorrhage, with or without atheroma of cerebral vessels, is more frequently found at autopsy. In this series for example, 41 patients with cerebral haemorrhage were found at autopsy compared with 25 non-embolic infarctions. Besides cerebral haemorrhage accounted for nearly twice as many deaths as thrombotic cerebral infarction, although the latter is more than twice as common.

The peak incidence of non-embolic cerebral infarction as well as that of cerebral haemorrhage is in the age group 50-59; and this is a decade ahead of the peak incidence of hypertension in Nigerians, (AKINKUGBE, 1968). In both groups, hypertension is the commonest predisposing factor.

The sex incidence for all types of CVA in Nigerian is similar. In most African countries, the males come more readily to the hospital, and hence the sex incidence in this series may not reflect the true sex incidence.

Non-embolic cerebral infarction and cerebral haemorrhage are commoner among the middle and upper socio-economic groups compared for example with a disease such as epilepsy or with embolic cerebral infarction. Most of the patients in the higher and middle socio-economic groups live in the big cities such as Ibadan. It has been established elsewhere that

<table>
<thead>
<tr>
<th>Age group in years</th>
<th>0-9</th>
<th>10-19</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70 +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
mortality from vascular disease is greater in urban than in rural areas. For example, BERKSON et al. (1960) have shown that mortality from cardiovascular and renal disease is twice as high in Chicago as it is in rural Illinois and similar findings have been reported for coronary artery disease and for CVD by JERVELL et al. (1965).

Hypertension and diabetes mellitus constitute the most important predisposing conditions for non-embolic cerebral infarction and cerebral haemorrhage in Nigerians. Prospective studies of small towns in Britain and United States of America (HALL, 1965, MIKKEILSON et al., 1965) have shown that hypertension, diabetes, obesity, high serum lipids and smoking predispose. COLE and MCDOWELL. (1968) concludes from their epidemiological studies of CVD that hypertension has emerged as the single factor most closely associated with the later development of a stroke although a striking preponderance of diabetes mellitus and hypercholesterolaemia is also evident among those who later develop a stroke. Hypertension is more readily accepted as being of aetiological importance in cerebral haemorrhage; however there is also an abundance of data showing that hypertension is common in cerebral infarction (HUTCHINSON and YATES, 1957, STAHLER, 1958, LOWREER and PHEAR, 1961). In our series however, hypertension is more common in cerebral haemorrhage than in cerebral infarction.

It is worth emphasizing the role of diabetes mellitus in the pathogenesis of CVD in Nigerians, and that there may be no overt symptom of diabetes mellitus. In 16 of our patients with non-embolic ischaemic disease and who on admission were known not to suffer from overt diabetes mellitus, impaired glucose tolerance was found with the standard and the sterbid-stressed GTT. Diabetes mellitus is not uncommon in Nigerian; the incidence in the hospital population in U.C.H., Ibadan is 0.43 per cent. (OSUNTOKUN et al., 1969b). The role of diabetes mellitus or of diabetic diathesis in the aetio-pathogenesis of CVD has been discussed in detail elsewhere. (OSUNTOKUN et al., 1969a). Haemoglobinopathy is not a predisposing factor to CVA in adult Nigerians but should be borne in mind in children who presents with a CVA. Sickle cell disease may be a cause of monocural blindness in the African (KONOTAY-AHULU, 1968) and this may stimulate transient ischaemic CVD. The frequency of the sickle cell gene in NEICVD and in cerebral haemorrhage is 21 and 20 per cent respectively and is not higher than in the general population where the frequency is 24 per cent (WATSON-WILLIAMS, 1965).

Transient ischamic attacks (TIAs) appear to carry a bad prognosis in Nigerian patients, compared with the Caucasians. In MARSHALL’s (1964) series of 61 patients with TIAs followed for a period of two months to 7 years, only one patient subsequently developed a major episode. In our series, of the 15 patients who suffered from intermittent ischaemia of the internal carotid territory, and who were followed up 6 months to 10 years, 11 developed major strokes and one of them died. One of the 8 patients with intermittent vertebrobasilar ischaemia had a completed stroke and died from it – this group has been followed up for 6 months to 4 years. However, our finding in one respect is similar to that of MARSHALL (1964) who found that TIAs in the vertebrobasilar territory carry a better prognosis than those in the internal carotid territory with regard to completed stroke.

The clinical features of non-embolic infarction, cerebral haemorrhage and embolic infarction were frequently characteristic to make accurate clinical diagnosis possible in a large number of patients. As has been noted by several authors, this is not always possible however without ancillary investigations. For example although non-embolic infarction was gradual in onset, or followed sleep, in 192 patients; however in 27 patients it was sudden, and angiography or autopsy examination was necessary to establish the diagnosis of non-embolic infarction in these 27 patients. In 2 patients with cerebral haemorrhage, the onset was gradual. Coma was frequently present in cerebral haemorrhage, less so in embolic infarctions and least common in cerebral haemorrhage (30 per cent) and less common in non-embolic and embolic infarctions (15 and 14 per cent respectively). The CSF was frequently bloody or xanthochromic in cerebral haemorrhage and rarely so in embolic and thrombotic infarction. The mortality was highest in cerebral haemorrhage. Epilepsy as a sequel was more frequent in thrombotic and embolic infarctions than in cerebral haemorrhage. There is a group of relatively young normotensive non-diabetic Nigerian patients with non-embolic cerebral infarction in whom hypercholesterolaemia is usually absent and angiographic examination reveals stenosis or occlusion in less than half of the patients. This group deserves further intensive study including measurement of fibrinolytic activity, platelet adhesiveness, parasitisation rate, and arterial biopsy for evidence of arteritis. It is interesting to note that a similar group has been described among Indians in Bombay (DALAL et al.,) ABRAHAMS and COCKSHOT (1962) reported a peculiar arteritis which present with multiple aneurysms. We have not found such an entity as a cause of stroke in young Nigerians.

In Nigerians with NEICVD, the higher incidence of pure motor hemiplegia in hypertensive patients than in normotensive patients is similar to the findings of PRINEAS and MARSHALL (1966). Pure motor hemiplegia is usually due to thrombosis of small vessels causing a deeply situated lesion in the internal capsule or pars basilaris pontis (FISHER and CURRY, 1965).
The high socio-economic status of many of our patients with non-embolic CVA and cerebral haemorrhage is also reflected in the serum cholesterol values. The values in the two groups are comparable to those found in healthy Nigerians from the upper socio-economic strata. Serum cholesterol appears to reflect the socio-economic status in Nigerians. Serum cholesterol levels are higher in Nigerians in upper and middle socio-economic groups than in the low-income groups. The serum cholesterol in patients with cerebral infarction is of the same level in Nigerians with diabetic retinopathy (OSUNTOKUN, 1969c). In both groups there is a preponderance of patients from the middle and upper socio-economic groups. Nigerians in the higher strata of the society eat partly European type of diet. Bantus who eat European type of diet with high fat intake have higher serum cholesterol than Bantus who live on native diet with low fat intake (WALKER and ARVIDSSON, 1954). The diet of an average Nigerian from the low-income group includes a large amount of unsaturated vegetable fats in addition to lots of carbohydrate, vegetables and pulses, but little protein derived from animal sources; in addition physical exertion is often excessive, as they walk long distances daily: these may account for the low serum cholesterol in such patients. Serum cholesterol is low in the Bushmen of the Kalahari Desert, probably due to low calorie intake and excessive physical work (TRUSWELL and HANSEN, 1968). There is evidence that although there may be no significant difference in the level of serum cholesterol in patients with strokes and in normals, the phospholipids and triglyceride levels may be significantly higher than normal in cerebral thrombosis (Technical Group of the Committee on Lipoprotein and Atherosclerosis, 1956; STAMBLER, 1960; KOGAN et al., 1962, BERKOWITZ, 1964, KATSUKI and OMAE, 1966). However, CUMINGS et al., (1967) found no difference in the serum triglycerides, total and free cholesterol, phospholipids, free fatty acids and skin fold thickness in patients with cerebral infarction whether hypertensive or not, and in controls. The role of serum lipids in the aetio-pathogenesis of cerebral atherosclerosis remains therefore controversial.

The incidence of extracranial obstructive arterial lesions in our patients with NEICVD is low at 19.6 per cent of the 87 patients in whom angiographic examination was carried out. The incidence is most series is 40 to 50 per cent (BAUER et al., 1962; BLAIDSDELL et al., 1962; NEWTON et al., 1964; DALAL et al., 1968). Four vessel angiography was infrequently employed in our patients and this may have accounted for the marked difference in the incidence of extracranial arterial obstructive lesion. DALAL et al. (1968) has shown that there is no significant difference in the frequency if these lesions in the malnourished and well-nourished subjects; that there is no correlation found with the level of serum cholesterol; and that in the low-income Indians from low-socio-economic groups the angiographic incidence of extracranial lesions associated with ischaemic stroke showed no significant difference from that seen in the Caucasian. There may however be subtle racial differences, for in a comparative study, KIEFFER et al. (1967) show that the incidence of extracranial lesions demonstrable by 4-vessel angiography in the American patients is higher than in the Japanese.

Angiographically verified extracranial and intracranial arterial stenosis or occlusion is more common in the non-hypertensive than in the hypertensive Nigerian patients with thrombotic cerebral infarction. This is similar to the finding of PRINEAS and MARSHALL (1966). Non-haemorrhage stroke in the hypertensive patient may be due to occlusion in small vessels which may not be demonstrable by angiography. ROSS RUSSELL, (1963) has demonstrated a higher incidence of miliary aneurysms on the cerebral arteries of hypertensive patients than in normotensive subjects. These aneurysms were found most commonly upon the small perforating arteries. They showed a tendency of thrombosis, a process which sometimes extend to affect the parent vessel with the production of small areas of ischaemic softening in the distribution of the vessels. There was often no evidence of present or past haemorrhage in the area of the aneurysm. Such occlusive disease may not be demonstrable by angiography.

Angiography showed evidence of atherosclerotic occlusion in less than half of the patients in our series in whom this examination was done. A negative angiography however does not rule out occlusive disease of the small perforating arteries at the base of the brain. The incidence of normal angiograms in occlusive cerebrovascular disease ranges from 19 per cent to 51 per cent (NEWTON et al., 1964; SILVERSTEIN, 1965, DALAL et al., 1968). In some patients immediate recanalisation from lysis of a thrombotic plug is a possibility but is unlikely. DALAL et al. (1968) has reported the finding of ischaemic infarctions with thrombotic occlusion of the smaller perforating arteries in patients who have normal multiple angiograms. We also encountered 2 such patients in our series. A negative or normal angiogram in the ictal territory in non-embolic infarction is suggestive of an occlusive disease in the blood vessels too small to be visualized by angiography. It should be borne in mind however that temporary or transient cerebral arterial spasm may cause infarction of the brain as has been reported in migraine (GUEST and WOOLF, 1964). Angiographic investigation is of value in the investigation of a stroke but it is not without risk in patients who are hypertensive and in elderly patients. Our criteria for deciding on angiographic examination have been set out elsewhere (OSUNTOKUN et al., 1969a). Judiciously employed angiography is a relatively safe procedure. In this series, 5.8 per cent of patients with NEICVD who had angiographic examination developed complications. The incidence of complications of angiographic examinations in occlusive vascular disease has ranged from 2.2 to 20 per cent per patient or 2 to 13 per cent procedure (SILVERSTEIN, 1966).
This series show that cerebrovascular accident is not uncommon in the Nigerians. In U.C.H., Ibadan, the incidence of cerebrovascular accident is 60 per cent of that of epilepsy and 40 per cent of that of diabetes mellitus. It is more common than nutritional neuropathies, cerebral tumours, motor neurone disease, and Parkinson’s disease. Its incidence in the hospital population is 1 in 560. In a previous study in the U.C.H., Ibadan, KAUSHIK (1963) found that cerebrovascular accidents constitute 16.3 per cent of all neurological admissions, 0.35 per cent of the total admissions, and 44 per cent of the patients who had CVA suffered from non-embolic infarction. At autopsy cerebrovascular atheroma and cerebral arterial occlusion are not infrequently encountered especially in patients with diabetes mellitus and hypertension. Cerebrovascular atheroma in the non-diabetic non-hypertensive Nigerians is less common at autopsy compared with American Negroes (WILLIAMS and RESCH, 1969). However it is now being recognized that a high incidence of cerebrovascular disease may occur even when there is a low incidence of advanced atherosclerotic process in the cerebral vessels. This has been demonstrated in the Japanese population where it has been shown that cerebral thrombosis is quite common although cerebrovascular atherosclerosis is less common than in the white American (KATSUKI and HIROTA, 1966). Besides although atherosclerosis is less common in the South African Bantus, cerebrovascular disease is as common as in the whites. (WALKER, 1963).

The relatively rarity of embolic infarction in Nigerians is probably due to the low incidence of rheumatic heart disease and ischaemic heart disease. Endomyocardial fibrosis and heart muscle disease are the commonest heart diseases seen at Ibadan. In these diseases the incidence of embolic infarction seems to be low.

Summary

In the 11 year period, 1957 to 1968, 348 patients with cerebrovascular accidents (thrombosis, haemorrhage and embolism) have been seen in the University College Hospital, Ibadan. In the same period, at least 200,000 patients have been treated in the various departments and wards of the hospital.

Non-embolic ischaemic cerebrovascular disease constitutes 67.5 per cent of all CVA, cerebral haemorrhage 26.4 per cent and embolic infarction 6.1 per cent.

There is a male preponderance in all the three categories. The peak incidence of non-embolic ischaemic disease and cerebral haemorrhage is in the age group 50-59.

The most important predisposing factors to non-embolic infarction and cerebral haemorrhage are hypertension and diabetes mellitus. The former is commoner in non-embolic cerebral haemorrhage; diabetes mellitus is commoner in non-embolic cerebral infarction than in cerebral haemorrhage. Rheumatic heart disease and subacute bacterial endocarditis are the major predisposing conditions to embolic infarction.

The mortality of cerebral haemorrhage is highest. Cerebral haemorrhage is more commonly seen at autopsy than cerebral infarction. Epilepsy is a more frequent sequel of cerebral infarction whether non-embolic or embolic than of cerebral haemorrhage.

A brief description of the clinical features of the presentation of CVAs in Nigerians is given, and the various findings are discussed. Cerebrovascular accident is not uncommon in Nigerians.

References


AKINKUGBE, O. O. (1968) Personal communication


The above two papers were originally published in the West African Medical Journal (WAMJ) as cited below:

1. Odeku, E. L., Beginnings of Neurosurgery at the University of Ibadan. WAMJ (1965) 14; 85-89

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Annals of Ibadan Postgraduate Medicine is introducing a new segment that will focus on the historical aspects of medicine in Africa. This premier edition is starting from home, Nigeria. The History of modern medicine in Nigeria started with the University College Hospital, Ibadan. From ancient times to the present, man has been interested in trying to control disease. The medicine man, the priest, the herbalist and the magician, all are major players in the ongoing battle between disease and man.

A history of medicine thus contributes a review of accomplishments and efforts, false theories and misinformation and mistaken interpretation. It is a study of the evolution of man and human knowledge; of the biographies of eminent individuals who developed medicine. Medicine is built on the best of the past achievements.

The Board of the Annals of Ibadan Postgraduate Medicine wishes to recognize the intellectual contributions of three Giants of Medicine who made indelible impact and left a legacy of excellence for which the University College Hospital, Ibadan is known. Today, we honor these men.

Prof. B. O. Osuntokun, Consultant Neurologist, Department of Psychiatric and Neurology and Professor of Medicine

Prof. E. L. Odeku, Consultant Neurosurgeon and Professor of Surgery, Department of Surgery

Prof. R. B. A. Adeloye, Consultant Neurosurgeon and Professor of Surgery, Department of Surgery

The two articles that come after these biographies were reproduce from West African Journal of Medicine of 1965 and 1969 where they were originally published.


Born in January 1935, Osuntokun started his elementary school education in 1940 at the Holy Trinity School, Ilawe Ekiti, where he was born, and finished it in 1945 at Emmanuel School, Ado Ekiti. He entered Christ’s School Ado Ekiti in 1946, the famous and prestigious secondary school which moulded many Nigerians who later won prominence in various walks of life; thereafter, he studied medicine at the University College, Ibadan, then a College of London University. His academic career was a remarkable string of distinctions and honours: he was top of his class at Emmanuel School at Ado Ekiti; in 1951 at Christ’s School he passed the London Matriculation Examination and then the Cambridge School Leaving Certificate Examination with several distinctions and in 1961, he graduated in medicine with the MBBS degrees of London with honours in Pathology and in Obstetrics and Gynaecology.

After house jobs at the University College Hospital, Ibadan, and the mandatory stint as Medical Officer in the then Western Nigerian Ministry of Health, Osuntokun went to the Professional Unit of Harold Scarborough in the Welsh National School of Medicine in Cardiff in 1963 as Senior House Officer to study for the MRCP which he passed in London at his first attempt in 1964.

He came under the tutelage of two giants of Neurology: the legendary and avuncular Henry Miller, a raconteur who laced his neurology with wit and wisdom and John Walton, now Lord Walton of Detchant, a man with a penchant for details and depth in neurological knowledge bordering on the encyclopedic.

Osuntokun spent a short spell at the National Hospital for Nervous Diseases, Queens Square, London before he returned to Nigeria at the end of 1965 and was appointed Lecturer in the University of Ibadan.

He started a career in neurology that was to spawn a cornucopia of scientific and scholarly publications, solely and jointly of epilepsy, nutritional and toxic neuropathies, cerebrovascular diseases, headaches and pain problems, neoplasms of the nervous system, the neurology of diabetes mellitus and of the haemoglobinopathies of Africa. The coda of his neuroscientific research was neuro-epidemiology which engaged his attention in his last days with the same success that attended his foray into neurology in his prime. Preeminent of his work in neuroepidemiology was that study of community dementia among the Yorubas of Nigeria in comparison with the blacks of United States. In the interest and service of neurology, he visited diverse places in every part of the world and held many appointments. Foundation Member, Nigeria Society of Neurological Sciences and was Secretary from its inception 1966 to 1970 and later President from 1983 until his death in 1995. He was also a Foundation Fellow of the Pan African...
Association of Neurological Sciences (PAANS) which was founded in Nairobi in 1972.

In his postgraduate and more mature career, Osuntokun gained a string of postgraduate degrees and professional qualifications: PhD (Ibadan) 1969; MD (London), 1971; FRCP (London) 1974; FMCP (Nigeria) and FWACP, 1976 and DSc (London) 1977. In Nigeria, he was made an Officer of the Federal Republic (OFR) of Nigeria in 1978 and in 1984 he received the highest award of his country, the Nigerian National Merit Award (NNMA) for distinguished contribution at national and international level in the Sciences, Medicine, Literature, Arts and Culture. In addition, in the same year, the University of Maiduguri awarded him DSc (Honoris Causa) and in 1985, shortly after his 50th birthday, two chieftaincy titles were conferred on him in Ekiti, the district of his origin.

Professor Benjamin Oluwakayode Osuntokun died in Cambridge, England on September 22 1975 after a protracted illness and was buried in his native Okemesi, Ekiti, Nigeria on October 7, 1995. His death robbed Nigeria of its leading neurologists and one of its icons of modern medicine; Africa of one of the Foundation members of the Pan African Association of Neurological Sciences (PAANS) and the World Federation of Neurology of one of its most prolific writers and productive researchers on tropical neurology.


Latunde Odeku was born at Awe in Oyo province of Western Nigeria on June 29th, 1927, the son of a Baptist deacon. After his preliminary education in Lagos, he entered Howard University, Washington D.C., in 1947. He gained the first class honours degree of Bachelor of Science in Zoology in 1950 and graduated M.D. in June 1954. A year later, he passed the Licentiate of the Medical Council of Canada. After completing his three years of training in clinical neurosurgery at the University of Michigan, Ann Arbor, Mich., under Edgar Kahn, he went to the Armed Forces Institute of Pathology in Washington D.C. as a postgraduate fellow in neuropathology in 1960, and in the following he was the chief resident in paediatriac neurosurgery at the Children's Hospital, Philadelphia, under Dr. Eugene Spitz. He was appointed Instrutor in Neuroanatomy and Neurosurgery at the College of Medicine, Howard University, 1961/62. He was awarded a certificate by the American Board of Neurological Surgery in 1961, and became Fellow of the American College of Surgeons in 1963.

Professor Odeku will be best remembered for his pioneering work in neurological surgery in Nigeria. He came to the University of Ibadan in 1962 as a lecturer in Neurosurgery, bringing with him many neurosurgical instruments which he had purchased at great personal expense. He soon placed at the disposal of the University and its teaching hospital his highly developed and discipline surgical conscience and skill and a round-the-clock devotion to patient-care which soon became legendary. He became a senior lecturer in 1963 and a full professor in 1965. He was Head of the Department of Surgery and Dean of the Medical School, University of Ibadan, between 1968 and 1971. In this position he brought to bear on his administration the sound judgment, rich imagination and creative thinking which he had demonstrated in his daily practice of surgery.

As a teacher his presentations were didactic, highly organized and convincingly clear. As a children, he had the uncanny ability of getting quickly to essentials in diagnosis, whether at the busy outpatient clinics or at the formal medical conferences. A prolific writer, he published at least a hundred scientific papers, mostly on neurological subjects. He published his earlier papers in local journals so as to make West Africans aware of the emergence of the novel discipline of neurosurgery at Ibadan. Later, he published extensively in overseas journals.

An extremely humble man and humane doctor, Professor Odeku carried himself with a quite unhurried grace and confidence.

One of his hobbies was poetry. It is impossible to understand the complexity of his nature and his recipe for the solution of problems without reading his two beautiful books on poetry, Twilight and Whispers from the Night.

During his terminal illness, he showed great fortitude and never lost his gift of lively conversation and good humour.

Dr. E. Latunde Odeku, Professor of the Neurosurgery Unit at the University of Ibadan, died on Tuesday, 20th August at the Hammersmith Hospital, Duncane Road, London. He was 47.

He was buried in the churchyard of St. Peter's Church, Burnham Bucks, England on 27th August, in a simple Christian ceremony, just as he had requested, and in which he lived. His early death leaves unfulfilled many
of his ideas, and Africa, and tropical neurology in particular, will be poorer for his passing. He is survived by his wife, Katherine Jill, a medical doctor, and two daughters and two sons.

**PROFESSOR ADELOLA ADELOYE**
(FICS, FMCS, FACS, FWACS, FAS, FCA, East Afr.)

Professor Adelola Adeloye, a native of Ikole Ekiti, Nigeria, was born on July 18, 1935 at Ilesha. He has become internationally renowned for raising many protégés in the teaching, service and research in Surgery, especially in his rare and demanding specialty of Neurological Surgery. Throughout his illustrious career, he had demonstrated excellence. He exhibited brilliance at St. Paul’s CMS School at Ikole (1941 to 1946), at the now famous Christ’s School, Ado-Ekiti where he was a School Prefect, Captain of the First Eleven Football Team of the School, a government scholar, and winner of several school-prizes and left school with a Grade one Cambridge School Certificate in 1952. He later enrolled for MBBS (London) degree at the University College Hospital between 1953 and 1960. There again, for meritorious scholarship he was a college scholar (1956 to 1960) and won the University Prize in Chemical Pathology in 1958. His postgraduate awards included a Rockefeller Research Fellowship at the University of Cincinnati, USA (1972 to 1973) and the Ratanji Dalal Scholarship of the Royal College of Physicians, London and Royal College of Surgeons, England (1973-1974). These two awards promoted the researches of Professor Adeloye in the realms of congenital malformations of the nervous system of which he is an international authority.

He trained at the Radcliffe Infirmary Oxford (1965-1966). Queen Square, London and Hammersmith Hospital, London. He returned to Nigeria in 1967 as Senior Registrar under that Nigerian Pioneer Neurosurgeon the late Professor E. Latunde Odeku, both of who later described what became known as *Adeloye-Odeku Disease*, the congenital subgaleal dermoid cyst of the anterior fontanelle. Adeloye’s training in neurotrauma was put to great use during the Nigerian civil war, 1967-1970. The first 500 cases in that conflict provided the materials for many papers on missile head injuries, a book titled *Missile Head Injuries in Nigerian Soldiers*, and a thesis on Tangential wound of the Head for the Master of Surgery (MS) of London University.

His experience in civilian neurotrauma was featured in numerous works and seminars and a textbook published under the aegis of the West African College of Surgeons. In 1988-1990 he was in Kuwait where he set up a neurotrauma unit for that emirate just before the invasion by Iraq. He was incarcerated for several weeks in Kuwait. Afterwards, he became the Foundation Professor and Head of Surgery at the new medical school of the University of Malawi in Blantyre where he served for a decade (1991 to 2001) to establish the new school and develop a new curriculum of basic science and clinical integration and medical education.

His other interest is medical history of which he has become a world authority on the history of medicine in West Africa. His book on *African Pioneers of Modern Medicine; Nigerian Doctors of the 19th century* won the Concord Press Award for Academic publishing in 1985.

Professor Adeloye has several fellowships to his credit (FICS, FMCS, FACS, FWACS, FAS, FCA, East Afr.) and is a member of over twenty professional societies.

He was external examiner in postgraduate surgery in Nigeria, Tanzania, Uganda, Scotland, Australia and South Africa. He was visiting Professor of Neurosurgery to many Universities in Nigeria, Liberia and the London Hospital. He was the founding Editor, *The Ibadan Surgeon* and Editor, *Nigerian Medical Journal* (1980 – 1990). He also served on the Editorial Board of many journals including *paraplegia, Child’s Nervous System, African Journal of Medicine and Medical Sciences, Neurosurgery* (Official journal of Congress of Neurological Surgeons) and other. Professor Adeloye has published many book and monographs including biographies, history of medicine in West Africa, books on General Surgery, Neurosurgery and over 270 articles in national and international journals on various aspects of neurosciences. Professor Adeloye has attended several national and international conferences on Africa, North America, Europe and the Middle East. He is honorary president of Pan African Association of Neurological Sciences (PAANS). In September 2001, he was elected honorary president of the World Federation of Neurosurgical Societies (WFNS), the apogee of life achievement for a Neurosurgeon. He made history as the first black African to be so recognized and remowarded by the World Federation. In 2003, Professor set another record when he became the First Recipient of the *African Journal of Trauma* Honours award for Excellence and Mentorship (*African Journal of Trauma, Volume 1, No.1 Sept. 2003, page 55*). His Trauma Care will be a source of pleasure and inspiration for his colleagues and students within and outside Africa.
His wife was the late Dr. (Mrs.) Kamala Adeloye, a medical graduate of Madras University, a Pediatrician and Foundation Fellow of the West African College of General Practitioners. She worked at the Ibadan University Health Service and was Director from 1986 to 1988. They are blessed with children.

CONCLUSION
The Objective of these chronicles is to ensure that these indelible contributions to medicine are never forgotten, and that our Heroes shall continually receive the Honour they deserve. We shall from time to time remind ourselves of where we are coming from so that we can see clearly where we ought to be going to. Nigeria has many heroes of medicine and as these these chronicles will show in later editions of the Journal, we have been blessed with great scholars who achieved excellence Nationally and Internationally. It is not enough to read about them and to celebrate them; we must rise up and continue in their legacy. We must replicate their achievements and rise to higher heights. Their expectations of what we ought to achieve is more never less.

ACKNOWLEDGMENT
The materials used in the chronicles were graciously obtained from the archives of Prof. A. Adeloye with his kind permission.

Dr. Michael S. O.
for Editorial Board.
Leadership

sound financial awareness and orientation.

good team-leading and motivational skills;
effective delegation of tasks;
- Committed, effective, articulate and

Vision

Team Work

Culture - Well articulated goals and values

a good strategic view of the business;
Culture

influencing health care is science and technology, the

gap between what can be provided and what is

available continues to widen and the inescapable result

is that choice will have to be made because collective

wealth grows considerably more slowly than medical

possibilities. It, therefore, goes without saying that no

country however rich, is going to be able to pay for all

the health care that could benefit its citizens. In order
to be in a position to be able to make correct choices,
efficiency and good management practices in
administration of health care services must be pursued
relentlessly. It is, therefore, imperative that the objective
must be to improve the management of the services
continuously to maximize the use of resources
allocated to institutions like University College Hospital.

This then brings us to good management practices
that must be adopted by all health care managers in
the next millennium and the bedrock of these are:

(a) Managing change and innovation
(b) Evaluation of Management Team by Results
(c) Introducing business approaches to public sector

agencies.

The qualities expected from the leader of the team include:

(i) Leadership - Committed, effective, articulate and
decisive;
(ii) Culture - Well articulated goals and values
underpinned by planning management processes
which translate vision into reality;
(iii) Communication - the ability to communicate
effectively within the organization, with customers
and others.
(iv) Organization - clear accountability without too
many tiers or too much complexity; coupled with
flexibility and willingness to adapt;
(v) Profit through - an understanding of the value
of people, the importance of and people
managing motivation (companies which were
innovative in managing people outperformed
competitors);
(vi) Management - giving sufficient time and attention
to resources, innovation and change itself and
managing all resources effectively.

Evaluation criteria which are normally applied to the
Chief Executive and his management team include
their past performance in managing the business and
the Chief Executive himself must have:

- a good strategic view of the business;
- an ability to stand back from the details of the
business when necessary;
- effective delegation of tasks;
- good team-leading and motivational skills;
- strong, positive image both inside and outside the
organization;
- sound financial awareness and orientation.

The general leadership qualities and management skills
are set out below. It must be appreciated that these
factors are closely interrelated and will be of different
importance depending on the size and complexity of
the facility and the management agenda it faces.

(a) Leadership Qualities
- Vision
- Culture
- Team Work
LEADERSHIP VISION

Health facilities like the UCH, will succeed in a competitive market if they can offer a better level and higher quality of service, more cost effectively than other hospitals. This demands a clear vision of the service and how it will benefit patients. A well articulated vision will be important in winning the commitment of medical and other staff, purchasers of the services and the patients themselves. This vision must be practical if it is to be believed, but must also offer new and innovative approaches to meeting health care needs. The vision must not restrict the flexibility of the hospital to be creative and take opportunities which arise.

Some of the key assessment questions are:
- Is the Chief Executive clearly identified as the source of leadership and providing the vision of the hospital's future?
- Is there a clearly defined and articulated mission statement of the vision for the board, its objectives and distinctive character?
- Is the vision directed clearly at bringing benefits to patients?
- Is the vision widely communicated and understood? Is it supported by the staff (particularly clinicians) and by each individual member of the management team?
- Does it allow for innovative and distinctive approaches to meeting health care needs?
- Have core values for the hospital been defined and articulated to staff?
- Is there a plan of action for translating the vision into reality and ensuring that the hospital’s values do affect the attitude and behavior of employees?
- Are there management processes in place (planning and performance review) to ensure that this happens i.e. to ensure and promote the achievement of the objectives and distinctive character of the unit and its services to patients?

LEADERSHIP CULTURE

Within units, culture change will be essential to success. Clinicians and other staff value highly their technical input to patient care and this must not change. However, often insufficient attention is paid to the patient as a customer requiring individual attention and respect, information and consideration for his convenience and comfort as well as maintaining dignity. While the impetus for innovation in treatment and care may come from the management team, this must be reinforced by a culture which encourages innovation at ward level and amongst service staff with the aim of providing better and more cost effective services to patients. To this extent entrepreneurial spirit is very relevant and important for survival. Some of the key questions to be posed are:
- Is there an innovative and entrepreneurial climate and approach within the organization?
- Is there an expectation that managers will manage (particularly amongst clinicians)?
- Is there a bias towards informal rules rather than rigid rules?
- Do staff feel involved and committed to the organization, its goal and objectives?
- Do staff and management actively pursue the core values of the organization and do they feel they are part of it?
- Is there a commitment to not only satisfying but exceeding the clients’ expectations and that the hospital needs to have a high quality image?
- Is there an ability to make things happen in the organization and do managers “volunteer”?
- Are staffs valued and do they believe that this is the case?
- Is there trust between managers in relation to both professional/functional ability and management ability?

LEADERSHIP TEAM WORK

The agenda for change facing units is such that it is inconceivable that change can be managed by one person. Effective teamwork is therefore essential. One particular aspect of teamwork which will be vital is the binding together of clinician, nursing and management teams. Such teams provide the means to achieve an innovative and responsive service. Indeed it could be said that contracts for the delivery of service must be backed by such teams willing and able to take responsibility for the delivery of services to fulfill those contracts. The key questions to be considered are:
- Is the unit management team as an entity clearly identified and its role defined and does it have clear authority within the unit?
- Is the team committed to the goals and objectives of the organization?
- Is the team balanced with respect to the qualities, skills, expertise and personal characteristics of the individual team members?
- Are the corporate responsibilities of each management team member and the individual functional or professional responsibilities of each management team member defined explicitly and appropriately?
- Are flexible, collaborative, task-oriented or problem-solving working arrangements in place or proposed i.e. working arrangement with cross-functional and professional boundaries and as required to meet the unit's business plan?
Having the training needs of each team member been identified (with respect to their present capability and the future capability required of each under self-governing entity arrangement) as a member of the unit's management team?

Is there a sense of unity and discipline in the team or are divisions and dissension evident?

How are conflicts of view – professional v. management handled? e.g. a financial problem?

LEADERSHIP – STAFF RELATIONS

It will be essential to build staff understanding and commitment to change. This requires leadership and good communication and not simply a ballot box approach. In this respect it will be important not simply to communicate with all staff but also to listen and respond to their concerns and suggestion. The key questions to be considered are:

- Are arrangements made or in hand for effective formal communication (up/down) within the organisation?
- Are relationships between clinicians and nurses and other professional and management staff good, is there mutual respect?
- Are informal communication encouraged (open door policies, availability of management to staff?)
- Is there evidence that communication informs and leads to management decision making?
- Have channels for staff consultation and negotiation (as appropriate) been reconsidered in the light of the changed circumstances?
- Is there a commitment articulated to the development and training of all staff?
- Is that commitment articulated also in the business plan.
- Do staff trust and respect management and are they prepared to follow them?

LEADERSHIP – PERSONAL ATTRIBUTES

- Ability to command respect and trust to gain personal commitment from staff as well as motivating them effectively.
- Empathy with and understanding of the health sector, understanding the politics of health and the professions within it.

LEADERSHIP – DECISIVENESS

Delegation of responsibility to units is intended to ensure that they can take decisions more effectively by removing a layer of administration. If this freedom is to be used effectively, the Chief Executive and Management Team will need to be able to act decisively. The shift in orientation required of managers within units will also require more delegation of authority particularly towards those most closely concerned with patient treatment and care. More and more clinicians will have to become involved in the management of units and be prepared to take appropriate management decisions. The key questions to be considered are:

- Does the Chief Executive have a good track record with regard to tackling difficult or contentious issues, taking positive decisions and ensuring that these are carried through?
- Have difficult issues faced by the unit been identified and dealt with or is there a backlog of issues to be faced?
- Does allocation of actual authority match allocation of accountability and responsibility?
- Does the allocation of responsibilities and accountability proposed avoid role overlap, conflict or ambiguity? Is it likely to facilitate or inhibit individual decision making?
- Is authority and responsibility delegated, and delegated appropriately, effectively and clearly?
- Are decisions within the organization made before crisis levels are reached?
- Are arrangements for corporate decision making clear (e.g. the terms of reference for the Board?)
- Is management information available and provided to individuals to support and inform them when taking decisions?

LEADERSHIP – CUSTOMER RELATIONS

As patients and GPs are going to have more choices available to them in future as the new competitive market environment expands, it will be vital that hospitals develop an attitude which is conducive to ensuring that the customers’ expectations are not only met but exceeded. This covers not only the quality of care provided but also the quality of the process of dealing with the patient during the whole period of the relationship and the follow up of information to the GP. In order to achieve this, units will need to manage customer relations, by not only listening to complaints and suggestions but also taking positive steps to influence customer choice and ensure that services are continually adapted to meet customer needs and preferences. The key questions to be posed are:

- Are the hospital’s customers clearly and appropriately identified?
- Have they been consulted or subjected to survey and are there plans to consult customers and to respond to their views?
- Has the Chief Executive identified appropriate working relationships with respect to each of:  
  - Non-executive board members
  - Procuring districts
  - GP referrers
  - Other health facilities
  - Community health councils
  - Individual patients?
- Has a management team member been identified to take lead responsibility for customer relations? Is there a customer relations strategy?
- Has a marketing strategy been developed appropriate to the overall aims and objectives of the unit and geared to its business plan?
- Is there evidence of innovative in service delivery which anticipates customers’ needs and expectations?
- Does the management team possess proven marketing expertise or, if not, has it identified the need and the mechanisms with which to obtain such expertise?
• Sound intellectual level (may be evidenced by sound education or professional training base) but also having common sense.
• Have courage of convictions, be willing to take risks and have the ability to make things while remaining pragmatic and resilient.
• Comfortable with the role of leader and being accountable, able to achieve high visibility in the unit and comfortable with power.
• Good communicator with good inter-personal skills who is approachable and listens well and is able to relate to professional specialists.
• Flexibility and adaptability, knows own weaknesses and compensates for them but is ambitious and achievement-oriented.
• Negotiating and persuasive skills, personable and able to develop relationships.
• Capacity to handle many issues at the same time and is temperamentally stable.

There is no doubt that hospitals require an enormous amount of organization so it is hardly surprising that administration is a major cost item, yet the general belief is that administration does not directly benefit the patient so that the more cost can be kept down, the more money that is ultimately available for direct patient care.

It is, however important that the money is well spent, hence the need for a good manager and good management practices. The hospitals desire for improved efficiency is no different from many other enterprises’ desire to improve performance and profitability.

It should also be realized that broad changes are occurring in health care management and the changes are greater accountability and greater responsibility, much greater pressure for managers to perform more effectively, less emphasis on professional/specialists breakthroughs and more emphasis on people and financial management.

Advances in Medical Sciences will make it possible to treat difficult cases as even now, transplants and implantation of artificial joints and organs and further development in medical technology are major factors leading to increased health care costs because many of these new procedures complement available services. Hence, the efforts to control health care costs will be focused mainly on hospitals, because hospitals account for about 65 per cent of total health care costs. Only the managers possessing the necessary skill will be expected to lead the University College Hospital if it is to continue to make headway as a leader in the health care industry.

The manager must possess ability to motivate, communicate, co-operate and be innovative in human relations.
In view of the dwindling resources, only managers who can address the issue of costs efficiently and manage the human and material resources can adequately lead this Hospital in the next millennium.

culled from the symposium titled “UCH in the New Millenium”, Part of activities celebrating the 8th UCH day and the 40th Anniversary of the Hospital.

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Feature Article

Professor Abiodun Ilesanmi’s Stewardship

When Prof. Abiodun Ilesanmi was appointed the new CMD of the hospital on 01 March 2003, he immediately swung into action by reorganizing the hospitals entire administrative structure and initiating major reforms, in line with the Federal Government’s Health Sector Reform Programme.

By the time of Prof. Ilesanmi’s appointment, the hospital had been in steady decline, due to poor funding from the federal Government, the hospital’s major source of subventions. Standards had also been compromised due to staff indiscipline, scarcity or non-availability of essential medical facilities and equipment. Moreover, many of the equipment still functioning were obsolete, some of them as old as the hospital itself! Staff morale was at its lowest ebb; patients had become disenchanted and had generally lost confidence in the services being provided at UCH.

Major Achievements

Revenue Collection

Prof. Abiodun Ilesanmi launched his reform agenda in the Accounts Department by introducing revenue collection by commercial banks, thereby replacing the former system of using hospital staff as revenue collectors. Fountain Trust Bank was subsequently appointed in 2004, to collect all the hospital’s revenue. The new system had an immediate impact: the hospital’s revenue increased phenomenally from less than N20 million/month to an average of N35.40 million/month and incidents of fraud took a downward spiral. The Board of Management has since approved additional banks to collect the hospital’s revenue. It is remarkable that this bold and imaginative initiative has been copied by many hospitals and at least two state governments in the country.

Payments Unit

The establishment of this unit in the Accounts Department is in line with management’s decision to ensure the prompt and stress-free payment of the hospital’s indebtedness to creditors. Before the establishment of the unit, there had been numerous and persistent complaints from creditors of long delays in the settlement of their claims, even when funds were available. The staffs of the unit are drawn from the Accounts and Audit Departments to ensure that all accounting procedures would be complied with. In addition, payment points are now available in out-patients departments, wards and the casualty area, thereby minimizing stress on patients and their relatives when settling hospital bills.

Pharmacy Department

Before Professor Ilesanmi’s tenure, there had been an embarrassing ‘drugs-out-of-stock’ syndrome in the hospital’s Pharmacy Department. Prof. Ilesanmi addressed this challenge by contracting the procurement of drugs to private enterprise in order to ensure the availability of drugs at all times in the hospital. The ‘due process’ procedure was followed in the selective tendering of prospective suppliers before Dewot Nigeria Ltd and Areyetele Pharmacy & Supermarket were chosen to procure essential drugs for the hospital’s Pharmacy Department. In addition, pharmacy outlets have been set up on all floors of the hospital to alleviate the drug procurement burden experienced by patients and their relations.

The advantages being derived from these bold initiatives cannot be quantified as essential drugs are now readily available, thereby considerably improving the hospital’s image. Moreover, the hospital’s management continues to take full responsibility for all policy matters regarding the purchase and distribution of drugs in the hospital.

Electrification of UCH Premises

Hospital residents’ often expressed insecurity of life and property had much to do with poorly lit residential and other staff facilities in the hospital premises. Management took on the task of giving light to carefully identified areas in three phases using the due process procedure for bids. The project has been completed to the relief and satisfaction of all hospital residents.

Nuclear Medicine

A brand new Nuclear Medicine Department has been created out of the Radiotherapy Unit and duly commissioned on 28th April 2006 by the Honourable Minister of Health, Prof. Eyitayo Lambo. A dedicated department and major equipment and facilities, such as a Gamma camera and a hot laboratory for radio-isotopes are being assembled. The total sum of US$600,000.00 has so far, been spent on the project which is expected to cost US$1.8million on completion.

New Cardithoracic Unit

Similarly, work is nearing completion on a new Cardithoracic Unit that would enable the hospital perform regular open-heart surgery. In the execution of this project, management has collaborated with the Save a Child’s Heart Foundation of Nigeria which recently invited a heart specialist from Medical Care International USA to carry out open-heart surgery in the hospital. Furthermore, the hospital has already sent a medical team to Ghana for further training in open-heart surgery, other teams will soon undergo similar specialist training in India, South Africa and elsewhere. As a result of all this, open-heart surgery was successfully carried out on three children, aged 2, 3 and 9 years respectively, between 5th and 13th May, 2006.

of the equipment supplied to all the revamped laboratories. In addition, the School of Nursing’s hostel and auditorium have been refurbished and renovated.

The MRI Building
Management has also constructed a Magnetic Resonance Imaging (MRI) building in the Department of Radiology. Among the equipment already being used in the building are the proteux machine for outpatient x-rays and a mobile x-ray machine.

Information Technology Department
The last two decades have witnessed rapid advances in the application of Information Technology (IT) to health care delivery. Discernible IT-based functions being carried out in various sections of UCH have now been brought together and strengthened, under the umbrella of an IT Department, with the following highlights:

- Establishment and furnishing of a Computer Training School for hospital staff to acquire both computer literacy and advanced computing knowledge;
- Installation of an extensive castling network spanning through various outpatients clinics - Eye, MOP, SOP, CHOP and Staff Clinic, as well as the Health Information Management Units, Information Technology, Accounts, Pharmacy, Chemical Pathology, and Medical Microbiology Departments. Several of the hospital’s theatres are also covered;
- Sponsorship of staff to the National Information Technology Development Agency (NITDA) in Abuja to attend a Trainer’s Course on a Microsoft Suite;
- Employment of additional technical members of staff to boost performance;
- Purchase of computers for all Revolving Funds in the hospital;
- The setting up of a Computer Training Office for students of the School of Nursing, in compliance with the demand of the Nursing and Midwifery Council of Nigeria;
- Purchase of a comprehensive health management information system software (Poda software) for the computerization of the hospital’s operations; and
- The training of two technical staff in Canada to handle the Poda software package.

However, much remains to be done to make Information and Communications Technology (ICT) the pivot of truly interactive health care delivery services, both with the hospital and collaboratively with other hospitals within and outside Nigeria.

Major Projects in Progress
a. A 50-bed guest house,
b. Supply of a 16-body mortuary chamber, and
c. Conversion of the old garages attached to hospital houses to one-bedroom apartments.

culled from the 50th anniversary publication titled: Nurturing UCH to Robust Health: A Management Challenge.
“All of us are fascinated by the future, because that is where we will live the rest of our lives.”
- Criswell

The occasion of one’s birthday is always one for sober reflection and stocktaking. This is so in the life of us humans and should be no less so in life of an institution, especially one as venerable and as important as the University College Hospital, Ibadan, the “father” of all medical institutions and the progenitor of the most significant medical services and research centers in Nigeria. To many people outside Nigeria, there is only one medical institution in Nigeria and that is the University College Hospital, Ibadan. While this is no doubt partly due to its pioneering role in medical education in Nigeria, the outstanding clinical and investigative work of its staff is of no less importance. It is, therefore, quite appropriate that as it graduates into middle age, a period that also coincides with the expectation of a new millennium, it should pause and reflect.

The question on whether the University College Hospital, Ibadan has fulfilled the expectations of its founders is one that should exercise all our minds. However, as we ponder it, we must not forget the equally important one of what the future holds. Illustrious as our past is, and difficult as our present circumstances are, we can and must build our future. Defining an agenda for that task is the objectives of my paper today.

The millennial addendum to the title is fortuitous. As the year 2000 approaches, prophecies and dire warnings are inundating us. However, most of the purveyors of these warnings forget that Pope Gregory VIII (Pope from 1572-1585) decreed the Gregorian calendar that is in use today into existence. This he did for two reasons neither of them celestial in origin. The Julian calendar, its immediate predecessor was 11 minutes, 14 seconds longer than the solar year with the result that church holidays were not occurring in right season. For example, the vernal equinox of 1582 occurred 10 days early. Secondly, the mode of counting the days was rather complicated hence; it was left in the hands of special officers. These officers sometimes abused their authority by altering the times in order to hasten or delay elections as it suited their purposes. A trick that many of today’s despots would have found quite useful! I might as well add that Britain, from whom we inherited the calendar, did not adopt it until as recently as 1752.

We shall therefore, turn our attention determinedly to the future and examine the issues of technology, medical training, research and clinical service in the next century. As we do, we keep in mind the famous slip of Neils Bohr (the great Physicist and contemporary of Einstein) that “prediction is very difficult especially about the future”.

**FUNDING**

Ask anybody today what he intends to do in future and he will tell you it depends on the amount of money he has. It is therefore most appropriate to start by examining the funding options for medical training, service and research in the new millennium especially for a tertiary health centre in a developing country. This triple mandate imposes cost implications that render simplistic solutions impossible. Even if one were to pass the cost of services directly to the sick, it is unjust to do the same for the cost of training and research. The cost of the latter should be shared as equitably as possible among all members of the society. The debate about healthcare financing in Nigeria is largely between those advocating continued direct government funding (so-called free health advocates) and advocates of the introduction of user-fees (the champions of market forces, privatization, etc.).

The reality is that the government has vacillated between these two options without a firm resolve in the last one and a half decades. As its income fell due to a collapse in world oil prices, persistent political instability rendered policy formulation difficult. This lack of policy is responsible for the quagmire of healthcare financing in Nigeria today.

Let us examine each of the options critically. The main premises of the advocates of the introduction of market forces, user-fees, or privatization are:

1. Government is a poor manager
2. The markets are a more efficient means of allocating resources
3. Making people pay for services will ensure efficiency
4. There is no money anyway, so managements have no other choice
5. It allows more choice for consumers and providers

The main criticisms of privatization are:

1. It often fails to achieve greater choice for consumers and providers
2. It fails to increase the efficiency of resource utilization as expected
3. It fails to ensure a higher quality of service
4. It is destructive of the physician-patient relationship
5. It shifts the burden of healthcare to the poor and the sick, and the poor people tend to be sicker and more sensitive to prices than the better off.

The current rising cost of healthcare in the United States of America tends to support these criticisms.

A policy option that the management of many tertiary institutions has resorted to is the generation of income from user-fees. However, income from user-fees...
constitutes less than 5 percent of healthcare cost in most African countries\(^1\) and user-fees are difficult to implement. They lead to major shifts in the use of health services, increased material mortality and increased incidence of communicable diseases as vulnerable segments of the society are deprived of access to health services\(^2\). In contrast, the advocates of a tax-funded system (whether out of aggregate tax receipts or specially designated taxes like a National Health Insurance Scheme) claim the following advantages:

1. Healthcare is “free” at the point of use.
2. Patients are not discouraged from attending hospitals.
3. There is even distribution of the cost health services.
4. The bias of provision is towards need rather than affordability.

It is however criticized as being:

1. Inefficient.
2. Restrictive of choice.
3. Discouraging innovation.
4. Incorporating a moral hazard (that is an attitude of “I am paying for it so I might as well make the most of it”).

If government funds health services from the proceeds of tax receipts, sale of natural resources (oil, for example) or health insurance (which is a health tax going by another name), the true cost is the opportunity cost of such funds. In reality, therefore, the service is not free.

Before we recommend one system or the other, we should consider what constitutes a just and equitable healthcare system. This is a system that:

1. Guarantees universal access to health services.
2. Provides access to an adequate level of care. This is usually lower than the best level of care technically available in the society as the latter’s ability is limited by scarce resources and competing needs. Justice requires that we permit those who so desire, to be able to purchase services beyond what is provided.
3. Provides access without excessive burden. This will depend on the socio-economic profile of the particular society. The system will be unjust if it imposes unnecessary high burden on some or arbitrarily concentrates the burden on some individuals or group.
4. Ensures a fair distribution of the financial cost ensuring universal access to an adequate level of healthcare, as there are moral limits to what we owe our fellow human beings.
5. Ensures a fair distribution of the burden of rationing care.
6. Has the capacity for improvement towards a more just system. Whatever system adopted will not be perfectly just, but it must not degenerate towards being more unjust over time.
7. Ensures the education and training of appropriate numbers and types of healthcare providers.

8. Permits effective pursuit of high quality biomedical research.
9. Allows the cost-effective use of the results of biomedical research.

I will like to submit therefore that a tax-funded system is the best option for Nigeria in the new millennium. In this situation, the State stands as the coordinator and guarantor of equitable access to care, and a fair distribution of cost. Community involvement in the management of health institutions will enhance efficiency, and making patients pay a certain amount before “cover” is triggered will reduce the problem of moral hazard. This “induction” fee can be waived for certain categories of patients (for example, children, pregnant women, patients with communicable diseases etc.) as necessary.

The other functions of health institutions such as public health and health education are also less likely to suffer under this kind of regime. It is difficult to see how “market forces” will fund preventive and social medicine adequately, yet this must remain a priority area of both service and research in the new millennium\(^4\). A tax-funded system will also distribute the cost of producing health manpower and conducting research evenly. It is naïve to expect that there will be no gaps under such a system, but such gaps can be filled by Charities and private health services providers etc.

The bugbear of tax-funded systems is their propensity to be inefficient. This realization has spurred health economists to consider ways of introducing competition into the system, or at least separate the provision of health services from its purchase. Such competition will encourage efficiency without loss of the commitment to equity and provide ample room for private non-Charity providers to flourish. Increasingly healthcare must be seen as a service industry and less often as a social service, with consumers rather than mere beneficiaries; providers rather than overlords.

I will recommend the establishment of a National Teaching and Specialists Hospitals Commission akin to the National Universities Commission to coordinate the management of all the Teaching Hospitals, the propensity for political meddling notwithstanding. This board will be responsible for the planning, supervision, monitoring and maintenance of all the tertiary health services in the country. It will adopt and ensure a minimum standard of staff and infrastructure, promote competition, and oversee the development and management of the tertiary health requirement of the country. The UCH and other similar hospitals have suffered from the failure of government to realize that each arm of their triple mandate requires funding. Undue emphasis has been placed on the provision of clinical services. In view of the primacy of training to the existence of UCH, the time has come when the budgetary allocation should reflect this. It is indeed
necessary for the Ministry of Education to be called upon to take a more direct role in this regard.

At the local level, there will be the need to continue, and fine-tune the process of devolution of management to Departments and Units. The “command structure” management technique that has been used so far is inadequate for the needs of a dynamic and responsive society. It stifles initiative, and ultimately is more expensive for the society. Departments must encourage specialization in order to focus on the few things that they do well. This “focused-factory concept”, exemplified by the Shoulder hospital in Toronto where only one type of surgery is performed (herniorrhaphy; cheaply and better than most other places) can be copied into mainstream health services. This will make hospitals more responsive to the needs of their clients; promote efficiency, and free management to focus on the “big picture”, integrating and co-coordinating the activities of the various Departments and Units.

Health institution must mobilize, and be involved in the community they serve for input into their development. As the role of government reduces, public health facilities in the new millennium will come to depend more on the goodwill of its “friends”. These will include alumni and those clients who have been touched by their spirit of service. For example, a significant number of Nigerian Physicians abroad are either UCH – trained or have worked here at some point in their career. They are a potential source of support for the clinical and research functions of this hospital in future.

Merchandising is another area that should become important in future. It will not only be for raising funds but also to encourage bonding to the institutions by the people who have benefited in one way or another from its existence. On a day like this, for example, one would have liked to see UCH ties adorn the necks of the men and UCH scarves on the women.

TECHNOLOGY

Once the problem of funds is resolved, the next question is the means of achieving our objectives. This is where technology comes in. Technology is the application of scientific methods and material to solve human problems. History teaches us that technology has always led science. For example, the steam engine was already in general use before the science of thermodynamics evolved. Historians insist that technology is an essential condition for humanity, without tools it is not likely that civilization would have evolved. However, technological change has since acquired a life of its own and it is now growing in geometric proportions. Geographical factors and political systems may hold it back, but only for a while. New technology always inspires fear and awe. Witness the recent outcry over the development of cloning; I will like to recall some of the comments when in 1825 George Stephenson proposed a Liverpool to Manchester railway service. A prominent Churchman of the day said “it is direct of society”. Sir Ashley Cooper, eminent surgeon of the day weighed in rather heavily with “You are entering upon an enormous understanding of which you know nothing. Then look at the recklessness of your proceedings”. Lastly, Martin Van Buren, Governor of New York, in a letter to the then President of United States of America said, “railroad carriages are pulled at the enormous speed of 15 mph… the Almighty certainly never intended that people should travel at such breakneck speed”. We must be thankful that these opinions did not carry the day. For those wont to dismiss the possibility of using women technology here, let them remember that Nigerian Railway travels faster than 15 mph.

The age of the industrial revolution, which Nigeria missed (the epitaph to our efforts is located at Ajaokuta) has been succeeded by that of information technology (IT) with its twin components of computerization and telecommunications. Computerization arose out of the research of the Second World War while the communication revolution is the product of the Cold War. These two are now intertwined in a way that exploits and enhances their individual strengths. One exciting result of this marriage is the Internet. This “new kid on the block” has caused what Cairnercross described as “the death of distance”.

The great fall in the price of each has helped the spread of these two tools as figures 1 and 2 below (from the World Bank and the IMF) show. Figure 2 shows that the cost of a transatlantic call has fallen from $300 in 1930 to about $1 today (in 1996 dollars) and this is expected to fall further with increasing use of fibre optic cable. Such cables can carry 1.5 million conversations carried by the cabling technology of the 1960s.

Increased competition among telecom firms will force profit margin down; it is currently over 500% in some instances. The rate of fall in the prices of computers is even more remarkable. To illustrate, if the prices and the improvement in the technology of cars had matched that of computers, the average car today will cost less than $25 and be able to travel 250,000 miles on one gallon. The price of processing power has been falling by an average of 30% in real terms over the past 4-5 decades. Today’s $1,500 laptop is many times more powerful than a $10 million IBM mainframe computer of the mid-seventies.

Allied to this is the constant flood of breakthroughs in computer technology. This paper for example is being prepared on an AMD K6 Processor PC- the cutting edge of processing power today. Yet, Intel has already announced the introduction of a new chip called Merced by 1999. Using an EPIC (explicitly parallel instruction computing) based technology, these chips may see off the current generation of chips which are based on CISC (complex instruction set computing) with the familiar x86 acronyms. According
to Moore’s Law (named after George Moore – the co-founder of Intel) computing power doubles every eighteen months.

What effects will these developments have on the way we live and work? The immediate effect is that of enhancement of efficiency. We will be able to do much more than we are doing now, and in less time too. The savings that will result far outweigh the initial cost. Other predicted effects are:

Minimally invasive surgery will continue to spread along with robotics-surgery. As at now, most of the morbidity and the consumables associated with surgery relate to the creation of access. With minimal access techniques, this will be reduced and surgery will become safer and cheaper.

The influence of the IT revolution on the administration of healthcare services will also be dramatic. The quality of any management depends, among other things on the amount and quality of information it has, and its ability to use it. Current technology has simplified the acquisition and utilization of data in ways hitherto unimagined. Ten gigabytes of hard disk costing about N150,000 (1997 price), weighing about as much as a N50 Naira load of bread but smaller in size, can contain the records of all the patients that have ever been seen in this hospital.

Daily hospital attendance, utilization of the services, inventory control, income and expenditure analyses, audit of staff, finance and resources, projection of future requirements, ordering of goods and services can all be done electronically. Character and voice recognition technologies will lead to the replacement of telephone operators and receptionists, and enhancement of security by granting access only to those it recognizes. For example the new UCH I.D. Card is computer-coded and can be used as a key to a variety of services and facilities in the hospital. In engineering, diagnostic software will enhance the repair of equipment, while routine maintenance and jobs will be automated.

There is no doubt that there will be alterations in the job market. Low-skilled work will become rarer and will earn less relative to others, while the new technologies will expose more workers to international competition. Retraining will become necessary in order to ease the transition. As the economy becomes more knowledge-based, the well educated will be at an advantage. Harvesting knowledge will always pay more than harvesting yams. For those worried about potential mass unemployment, another bit of statistics may be consolatory. In 1820, 75% of Americans were farmers and it was feared that the introduction of tractors would create massive unemployment. Today, only 3% of Americans are farmers and they certainly feed more than Americans. Yes, certain jobs will be lost but a lot more will be created. Only those who fail to adopt will lose.

Clearly, we are standing on the threshold of momentous change and there is need to evaluate these advances before adopting them. Technology must remain a means to an end. The allure of glistening hardware must not blind us to careful consideration of cost, benefit analysis. Telemedicine opens new
medicolegal, ethical, and moral issues. For starters, who will license cyberspace physicians? What effect will Telemedicine have on local physicians? Might it lead to a disincentive to develop their skills? How is electronic information related to the patients’ record? What effect will the interposition of a computer have on the patient-doctor relationship? What effect does asynchronous one-way communication have on patient care and what are its medicolegal implications? What about the jobs that will be lost? What is explanation for the slowing in the rate of productivity gain in the developed countries after computers were widely introduced compared to before their advent? We must grapple with these issues in future. Mistakes will be made but as Lewis Thomas said “Human knowledge advances by a process of trial and error, or as is more usually the sequence, error, then trial” 11-14.

1. The pattern of diseases now prevalent in western societies. Most of these are chronic diseases that can only be controlled rather than cured.
2. The introduction of new technology that has made the acquisition of data and information relatively easy.
3. The need to ensure the optimal utilization of expensive and new diagnostic and therapeutic equipment.
4. Rising patients’ expectations fuelled by news of recent advances published in the mass media.
5. Rising professional expectation.

Yet, there must be some reservations as to ability of the profession to subject everything to the crucible of scientific inquiry. As all researchers know, the absence of evidence is not evidence of absence. Many factors influence the outcome of research. These include:

1. The bias of the researcher.
2. The choice of experimental mode
3. The method of analysis
4. The interpretation of the result.

There are other difficulties associated with the transfer of laboratory results to actual clinical situation. All clinicians are familiar with the situation where your patient is pronounced “virtually dead” by the laboratory test, weeks after he has joyfully returned home. Other non-verbal, psychological factors affect outcome of management and this varies with patients and time.

Nevertheless, there now exist the infrastructure to support evidence-based practice. These include the Cochrane Collaboration, Medline, Oncolink®, etc. These provide the information needed to make decisions based on the best evidence available. It has recently been argued that the traditional practice of depending on the memory of the specialist should be reviewed in favour of more ready recourse to archival information. It is further argued that there is a “voltage drop” between the time of storage of information in the brain and the time of recall. Other factors such as the clinicians’ mood, recent experience etc. may influence his ability to apply information.

Allied to this is the development of patient management protocols. These are “best practice guidelines based on the best available data and are aimed at delivering high quality of care in a cost-effective manner”. They have however been criticized as being too regimented and inflexible. Clinicians have argued that no two patients are exactly alike. Questions have also been raised about the medicolegal implications of these protocols. What happens when a doctor based on his knowledge deviates from a protocol only to find out he was wrong? Might he not be found guilty of malpractice?

What about the hospital itself? What will the focus of its clinical activities be in the new millennium? I submit that it shall be on these lines:

1. A re-energization of preventive and social medical practice. This will be multi-departmental and will focus on disease prevention, increasing the community’s awareness of common diseases, health education and screening.
2. Development of facilities for the care of patients with chronic disabling diseases is set to rise and this will generate demand for hospices and palliative care.
3. Development of domiciliary healthcare services. This is allied to the above reason.
4. A rediscovery of its goal of being a centre for training and research. Clinical services important as it is must become secondary to these primary functions.

RESEARCH
There is a tendency to treat research as an esoteric activity that has no place in the health services of a developing country. Nothing can be farther from the truth. The reasons for ardent pursuit of research include:

1. Ninety percent of the world’s potential life lost is in the developing world, yet they account for only 5% of global health research funds.
2. The pattern of diseases, their mode of presentation and outcome often differ from region to region, and between races.
3. The health profile of countries differs from one another. In most of the Western countries today, top research dollars is going into the investigation of diseases of aging and such like, issues that are not yet important to us.
4. In view of the poverty of many developing countries, pharmaceutical companies are not investing in new drug development for the treatment of diseases endemic in these areas, as they fear that it will not be profitable.

The case for research is therefore quite strong. In the new millennium, research must be an important part of the agenda of this hospital and modality for funding
it must be clearly worked out. Such research must concentrate on:

1. Appraising local health needs and priorities
2. Evaluating the strength and generalisability of the evidences on which treatments are based.
3. Cost-benefit analyses of health intervention measures.
5. Socio-cultural influences on health interventions.
6. Clinical and administrative audit.

While on the one hand research will be easier to conduct because of development in information management tools, the need to recruit a large sample will make collaborative work necessary. Rigorous review of the various aspects of the research process will become the norm. For example, many leading journals have adopted the CONSORT statement on research methodology. This requires authors to provide enough information for readers to know how the research was conducted. With electronic publishing, researchers may soon be required to submit all their raw data in future so that others can evaluate them and reach their own conclusions from the same data. There will be more research into alternative medical practices in order to identify what is useful. Qualitative research will also increase as the importance of the socio-cultural milieu as a determinant of outcome in health interventions becomes more apparent. Already it is obvious that the epidemiological profiles of many diseases are changing. There will therefore be a continuing need to define these as they relate to the diseases that are already prevalent in our environment, while we continue to characterize newly emerging ones. Basic science research will also be necessary though these will continue to suffer a lack of funding support. The anxiety to continue them must be tempered with careful monitoring and supervision of all its aspects. Recent revelations about AIDS research in East Africa and revelations concerning the Tuskegee project in a monitoring-conscious America should alert us to the need to supervise and regulate research.

TRAINING

Training was the raison d’être of this hospital and several others like it in the country today. Yet, in the tough economic climate in which the country has found itself, this aspect has suffered the most. The new millennium ought to see a conscious and decisive effort to regain this lost ground. It will not be easy. The point needs to be made and reiterated that there is a need for adequate budgetary provision for this primary role of our teaching hospitals. Without the overhead imposed by the training requirement, the hospital will be able to do more with its meager allocation.

This activity itself is in crises now. There are clinical features of systems failure such as overcrowded lecture halls, cult activities, poor performance of the products of the system, incessant industrial unrest and closures. Attempts to individualize and treat these symptoms are akin, to the proverbial preference for the treatment of tinea versicolor in a patient with Hansen’s disease. It is bound to have similar impact on the prognosis. Studies have shown that many a student enters the medical school full of enthusiasm and energy but exit it drained of most of their motivation. They are overloaded with much information and are tested by techniques that often rewards the possessor of information about rare conditions or useless but impressive-sounding verbiage. Ward rounds, that quintessential teaching method much favoured by the profession often lasts longer than the attention span of the average student can cope with, and is disruptive of other ward activities. The problems of the postgraduate student are similar, if not worse, with many complaining of not receiving any teaching at all.

Certainly, these factors along with the deprecating infrastructure and inadequate funding are contributing to the falling standard of medical education in Nigeria today. This is one area where antiquity may be a disadvantage. Having used a particular model for so long, one may be reluctant to accept the need for change. Yet, all around us, change is occurring. What changes are envisioned for training in the next millennium?

1. Medical training must focus on cultivating a lifetime habit of learning in the student rather than the passive acquisition of information that soon becomes outdated. Dr. Samuel Johnson, that great Cham of English Literature put it quite well when he said, “Knowledge is of two kinds. We know a subject ourselves or we know where we can find information about it”.
2. The current heavy curriculum needs to be reduced. There should be more short sessions of problem-based learning, group discussions and student led seminars.
3. Mentoring must become a part of the training program for students. Such mentors should help both the professional and personal lives of the mentee. The mentors must be trained on mentoring otherwise; there will be no benefit to either party.
4. Medical educators will need to be trained in teaching methodology. It is incredible that people who train others in such a vital field do not have any formal training in education. Though Lecturer Consultants tend to be the crime de la crème, yet their native ability and skill can be improved by further education.
5. Methods of assessment should be such as reward desirable behavior rather than otherwise. It should incorporate positive feedback mechanism so that the student does not have to wait until a ‘final examination’, with all the physical and emotional stress for both candidates and examiners, before learning about his weakness. The role of terminal examinations needs to be downplayed in favour of continuous assessment with feedback.
6. The doctor of the next millennium must have more training in the social and communication sciences, law, ethics, human rights and responsibilities,
business and personnel management. These will enable him to be more socially active in the knowledge that social factors often influence the outcome of health interventions and healthcare workers can be effective social advocates. It will also help him to make a success of his life, as the skills learnt will be useful to him in all spheres of his life apart from the professional one.

7. He must be taught how to cope with stress and avoid the use of unwholeness methods. Doctors, because of the stress associated with their work, easy accessibility, and the financial means are prone to abuse of drugs.

The duty of a seer is never an easy one. If he is proven right, then he has been prophetic, if wrong, at least he would have provided some comic relief. Whatever the next millennium turns out to be some things will never change. As Sir William Osler said “Medicine arose out of the primal sympathy of man with man and out of the desire to help those in sorrow, need and sickness” 19, therefore, “most patients when they are ill are more interested in kindliness than creatinine clearance, in understanding rather than iron binding capacity” 20. I cannot put it better!

In conclusion, it has been said that, “when one reaches middle age, inertia sets in”. As the University College Hospital, Ibadan, reaches middle age, I am reminded of the prayerful words of a favourite song that says, “May you stay forever young”. So happy birthday and may you indeed stay forever young.

culled from the symposium titled “UCH in the New Millenium”. Part of activities celebrating the 8th UCH day and the 40th Anniversary of the Hospital.

References
3. The Economist 1997;345(8040):94
The train journey from Lagos ended opposite the central post office in Dugbe, Ibadan. In the skyline, as you faced east on the way to join Oyo Road for the university campus, was a massive building under construction. It was Nigeria’s premier university teaching hospital: The University College Hospital (UCH). It was magnificent as it stood propped up by an extensive network of scaffolding. It was an inspiring sight which had a multiplier effect on my ambition to be a doctor. I dreamt of the day that I would become one and work in that hospital when completed.

The dream became a reality twelve years later. The reality lasted thirty-two years and ended with my headship of the institution as the chief medical director, for eight years. Today, almost ten years after retiring, I stand before you in celebration of the Golden Jubilee Anniversary of the University College Hospital. To God be the glory. I must thank the current hospital leadership for counting me worthy on the occasion to be the ‘special guest lecturer’, an opportunity which, for me, in a moment of deep reflection, is not only an emotional experience but also a reason for personal thanksgiving.

This lecture is not just to serve as a selected moment to beat the chest in celebration of the achievements of the University College Hospital since its establishment fifty years ago. It is also to take stock and project a little, in the light of shared experience, what the future foreshadows in the next fifty years. In many situations, our past experiences are not always totally relevant. They could even be unpleasant, given new realities, new opportunities and new dispensations. Yet we must, following the admonitions of Maya Angelou, continue to face the wrenching pains of the past if only to avoid re-living them. The rags of today once occupied our wardrobes in pristine splendor. The need to appraise and reappraise human endeavour is unending. The responsibility to change direction, if necessary, is a bounden duty.

Given than the University Colleges, Ibadan had a Faculty of Medicine as a foundation discipline in 1948, it was most appropriate to plan for the growth and development of clinical medicine and in the process recognize the holistic dimension of human health manpower needs. The founding fathers and the only woman, the mother among them, Professor Beatrice Joly, knew this. Adeoyo Hospital and the Jericho Nursing Home served as temporary bases for clinical practice, as well as transit camps for staff recruitment. It was patently clear that the emergence of a purpose-built teaching hospital in Ibadan was only a matter of time. When it came, it was appropriately named the University College Hospital (UCH). It was to assume a needful part, collaborating with other institutions which relate to the health sciences all over the world, in the purposeful function of human health resource development in Nigeria.

As I collate these epic events fifty years on, this lecture will, in reminiscence, invite us to judge if we have fought a good fight, finished the race and kept the faith. What we are in the position to ascertain, is whether the crown of righteousness will remain reserved for us without our continually appraising and assessing the relevance of our purpose and the quality and impact of our performance. If we adhere to St. Paul’s valedictory trinity to Timothy and honestly account the available and credible evidence, we shall see that the finishing-line for us in UCH is still far off. We have not finished the race. Indeed, some will say that the race has hardly begun.

The decision to purposely build a teaching hospital had the fundamental objective of providing Nigeria with a steady supply of highly qualified Nigerian doctors (Philipson, 1952). This was the testimony as broadcast by Sir Sidney Philipson, chairman of the Provisional Council of the University College, Ibadan, over the radio on the 31st of July 1952 to the people of Nigeria to solicit their support for the decision. Even as a colony and protectorate in the British West Africa, it was still considered important to democratically involve the people of Nigeria in the project, that is, in a commitment that all must share.

It is reasonable to surmise that Sir Sidney used the word ‘doctor’ because he was addressing the Nigerian people who had been critical of the production of ‘assistant medical officers’ by the Yaba Medical School. In addition, nearly all hospital employees at that time were referred to by the public as ‘doctors’.  

In time, UCH was enacted by an ordinance which took effect on the 6th of October 1952 as a hospital which shall be capable of providing such facilities as are usually provided in medical schools forming part of a University in the United Kingdom for the instruction of medical students in such subjects as are usually taught in such medical schools (Adeloye, 1998).

The initial composition of the Board of Management had interesting features:
a. The chairman, Sir Sidney Philipson, was also the chairman of the Provisional Council of the University College.

b. The deputy chairman, Sir Kofo A. Abayomi, was also a member of the Provisional Council of the University College.

c. The Academic Board of the University College was represented by the principal of the college, Dr. J. T. Saunders, Professors Alexander Brown, Beatrice Joly, Oladele Ajose and Dr. John Lawson, a senior lecturer in the Department of Obstetrics and Gynaecology.

d. Community interest was represented by Dr. A. S. Agbaje on the nomination of the Ibadan Native Authority.

e. The financial secretary and the inspector of medical services as ex-officio members.

The future of health manpower development and the establishment of a hospital primarily designed for training informed the decision to establish a ‘school of nursing’ at the old university site at Eleyele. It opened with twelve students in two batches of six on 1 July 1952. By 1954, before the laying of the foundation stone of the hospital on 30 November by Sir John McPherson, the governor-general of the Federation of Nigeria – the number of nurses in training had risen to ninety-nine, the deliberate policy to exclude boys as prospective candidates notwithstanding.

It is important to make the point in commendation, that assembling a composite take-off ‘board of management’ in conjunction with establishing a school of nursing two years before laying the foundation of the hospital, is an indication of the great foresight and a demonstration of a clear focus and intent by the Nigerian House of Representatives and its leadership.

The planners put a great deal of stock in carrying the people along – initially by a nation-wide radio broadcast by Sir Sidney Philipson, then by the inclusion on the board of a nominated representative of the people of Ibadan.

The hospital, close to completion, was visited by Queen Elizabeth II, and her husband, Prince Phillip, on the 14th of February, 1956. They were on a royal visit to Nigeria and specifically came to Ibadan to open the Western Region Parliament on the 15th of February. It was in 1957 that the University College started fulfilling the reason for its creation. Medicine (1948), surgery (1948), Obstetrics and Gynaecology (1948) and Community Medicine (1948) were the foundation departments in the University College, Ibadan. Starting as ‘units’ and then as ‘sub-departments’. Paediatrics grew out of medicine to become a full-fledged department in 1962. In the same fashion, radiology followed in 1963. Five autonomous departments grew out if the Department of Surgery, namely Ophthalmology (1962), Anaesthesia (1966), Otorhinolaryngology (1969), Dentistry (1981), and Physiotherapy (1982).

It is of historical interest to note that the first outpatient consultative clinic in UCH was run by Dr. (later Professor) Frank D. Martinson in ear, nose and throat surgery (Adeloye, 1998). Psychiatry, neurology and neurosurgery functioned as a neurosciences group in 1963, until neurology and neurosurgery found their natural habitats in medicine and surgery, leaving psychiatry to further expand its frontage into the behavioral sciences.

The Department of Pathology commenced in UCH in 1961, with Dr. B.G.T. Elmes as its foundation head, assisted by Dr. G.M. Edington and Dr. A. Olufemi Williams.

Although clinical laboratory services had been available at Adeoyo Hospital since 1956, the Department of Chemical Pathology did not assume an identity until 1961, when Dr. J. Òdozien (now his Royal Highness, the Asagba of Asaba) was appointed professor and head of the new department. Like the clinical departments of medicine, surgery and obstetrics and gynaecology, the Department of Pharmacy had its beginnings in 1953, in the ‘transit camp’ of Adeoyo Hospital.

With effect from 1957, clinical students no longer had to go to teaching hospitals in the United Kingdom to complete the curriculum for a London University degree.

Staff recruitment from overseas institutions became easier. International organizations scrambled over one another to fund research, establish research foundations and sponsor exchange programmes. The University College Hospital functioned as a true centre of excellence. It was rated in the unit position among the best teaching hospitals in the British Commonwealth in the early 1960s, even above some older teaching hospitals in London that had given it breath and life.

Initial demonstrations of community concerns were taken care of, and the University College Hospital functioned firmly, secured behind a chain-link fence as a well-illuminated set-up with its own uniformed guards. There were social and recreational facilities for the exclusive use of its senior staff and invited guests. Patients attending the hospital were either referred from other hospitals, nursing homes or private clinics or through its ‘outpatient clinic’ where patients are ‘sorted out’ according to the needs of the various clinics for teaching purposes.

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1. Fifty years on, believe it or not, in embarrassing continuity, a theatre orderly or a security man working in UCH can still do brisk business as a ‘doctor’ away from the work place in their home or rural environment.

2. The hospital was officially commissioned on the 20 November 1957, by Mary, the Princess Royal (see frontispiece, page ii).

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The journey so far constituted a take-off platform for human resource development in health. The ingredients of a solid beginning for such development ordinarily consist of facilities to provide excellent clinical services, in total creating the enabling environment for academic activity and research. The University College Hospital was appropriately built and equipped for this purpose. A well-motivated work-force capable of giving leadership in the various units and departments and willing to work in concert for effective outcome was in place. There was adequate inducement for competent trainers attracted not necessarily by the size of pay, but by the excellent up-to-date facilities which uplifted morale and promoted intellectual growth. Opportunities for professional recognition abounded locally and internationally. Research outputs flourished and scientific publications, by the measure of their quality, appeared in international scholarly journals with comparative ease and frequency.

The first products of UCH as a human health resource development centre were nurses. Miss I.M. Bell was the first principal of the School of Nursing. She had four other expatriate tutors as assistants. The first senior indigenous member of staff of the school was Mrs. Florence Ogundibi who joined in April 1952 as ‘home sister’. She was followed by Mrs. O.R. Solanke, in an equivalent capacity.

When the day of reckoning came, Miss Bell was so confident of the standard of nursing education in UCH that, by-passing the all powerful regional matron at the Health Department in Lagos and the registrar of the Nursing Council and secretary to the Midwives Board of Nigeria, she invited the General Secretary of the Nursing Council and secretary to the Midwives Board of England and Wales to examine her students. Miss Bell, former principal senior tutor at St. Thomas Hospital, London knew the nursing requirements of a teaching hospital and had three strategic objectives ab initio:

1. Although informal male-dominated nursing education commenced as apprenticeships in mission and some government hospitals in Nigeria following the enactment of the Midwives’ Ordinance in 1930 (Adelowo, 1989), Miss Bell recognized that the level of basic education needed upliftment for teaching hospital purposes. Like Florence Nightingale, she believed that the intellectual component of nursing was the essence of intelligent care that could contribute to the quality of health manpower development through clinical services, research and training. Hence, only girls with form VI school leaving certificate were admitted for nursing education in the UCH.

2. She wanted an accreditation of the UCH School of Nursing by the General Nursing Council of England and Wales in order to secure reciprocal recognition of the certificates issued. By so doing she would also ensure parity in the remuneration of UCH-trained and overseas-trained nurses. Hitherto, like Yaba-trained assistant doctors, Nigerian nurses could never rise higher than being assistant nursing officers.

3. The pioneer students could go to train as midwives in the United Kingdom without taking a qualifying examination. In addition, the reciprocity allowed Nigerian nurses trained in the United Kingdom to be employable in their country without having to take the qualifying examination of the Nursing Council of Nigeria.

Through UCH, a revolution in nursing manpower development in Nigeria commenced. Among the foundation students was Miss Stella Teteku (later Mrs. Bankole) who retired here as assistant matron. Matron was the highest post in the nursing services at that time. I remember Miss Theresa Thresize, because she was my late wife’s schoolmate at the Holy Child College, Lagos and married my teacher (alias Ki La Gba) at the CMS Grammar School Lagos to become Mrs. Phillips. The standard of UCH nursing was replicated in various parts of Nigeria, across West Africa and beyond. Subsequent sets included many nursing icons, the details of which cannot be given within the time at our disposal. But we must mention that bubbling bundle of agility with a ready smile and disarming intelligence, Mrs. Remi Ogunlana (nee Johnson) who, to the best of my knowledge, was the first nurse to head the nursing services in two teaching hospitals in Nigeria. Or shall we forget that nurse-educator, Mrs. Omobola Alada (nee Thomas) who touched the lives of many through love, devotion to duty, and the keeping of family values to the envy of many. Miss Bisi Soretire (later Mrs. Chinda) became a theatre superintendent in LUTH. Miss Ogbitese Sagay (later Mrs. Ossai) was last traced to the Department of Public Health in the Faculty of Social Sciences in the University of Benin. Pretty Miss Sophia Mohammed (later to become Mrs. Usman) was principal, School of Nursing, Zaria. Miss Beatrice Alonge (later Mrs. Egbon) moved to the School of Nursing, Benin. Miss Rose Fawep (later Mrs. Adamu) was in public health and now runs a primary/secondary school in Jos.

This list is nowhere near exhaustive. The intention is to show how UCH positively influenced health manpower development in Nigeria, so much so that, today, nursing is an academic programme in the associate University of Ibadan as in universities elsewhere.

In addition, there has since been established a School of Midwifery (1952), a School of Medical Laboratory Technology (1973), a School of Medical Records and Biostatistics (1976), A School of Health Teachers, offering courses and/or programmes for environmental health officers (1976), nurse/midwife/public health nurses (1978), community health officers (1979) and primary health care tutors (1984).

Fourteen medical students commenced their clinical postings in UCH in 1957 and successfully completed their training programmes to graduate as doctors with University of London degrees in 1960. They were the first set of medical students who started their training in Ibadan and finished it there. They not only had the good fortune to make history, but they also proved to be worthy of the honour by the brilliance of their
performance then and thereafter. Thirteen of them became recipients of postgraduate diplomas in surgery, medicine, paediatrics, otorhinolaryngology, obstetrics and gynaecology and pathology. The fourteenth died before he was able to sit for the final part of the examination for the fellowship of one of the royal colleges of surgeons in the United Kingdom. Five became heads and/or deans in faculties of medicine outside UCH. Six rose to the rank of professor in the Nigerian university system. Two held high positions in the civil service that gave them the direct opportunities to influence the health policies of government. One served as a state commissioner of health, another as a state governor and yet another as consultant physician to three Nigerian heads of state (Adeloye, 1998). This lecture will be tediously long if I continue to catalogue the achievements and the contributions of individuals who benefited from or owe their careers to the establishment of the University College Hospital, as about one hundred sets of students have graduated as doctors. It would take some years to collate and organize the kind of information provided by Adelola Adeloye about his thirteen classmates who passed out in 1960. Even the alumni associations are yet to tune into the need to create information reservoirs on their members.

We must not forget that University College Hospital, Ibadan was the first of the few purpose-built teaching hospitals in Nigeria. The University of Maiduguri and Aminu Kano University Teaching Hospital later qualified to be so classified. Institutions like the Lagos University Teaching Hospital were after thoughts. LUTH arose from the desire to build another hospital on the Lagos Mainland. The same could be said of the University of Benin Teaching Hospital (UBTH) under the dynamic leadership of the then military governor of Bendel State, Brigadier Samuel Ogbemudia, at the end of the Nigeria Civil War. Even then, it was the establishments and training officer of UCH who was deployed to UBTH from 1972-1975 to be the foundation house governor.

It is gratifying to note that some of the older teaching hospital, such as Zaria, Enugu, Jos, Port Harcourt and Calabar are in various states of completing their 'purpose-built' teaching hospitals on new sites. It is worthwhile to recount some of these developments in order to properly appreciate some of the contributions of UCH to the genesis and survival of these institutions.

Akinkugbe (1997), in his 40th UCH Anniversary Lecture, estimated that one in four doctors in Nigeria was trained at the University College Hospital, Ibadan. This proportion would have been higher, if he had extended it to include those who worked and taught initially in UCH before undertaking pioneering responsibilities elsewhere. They too, should be considered as part of the contribution of UCH to human health manpower resource development nationwide. Examples are Ishaya Audu (professor of paediatrics and vice chancellor of Ahmadu Bello University, Zaria), Oladele Ajose (professor of community medicine and later vice chancellor of University of Ife), Kesley Harrison (professor of obstetrics and gynaecology, later vice chancellor, University of Port Harcourt), Festus Nwako (later professor of paediatric surgery, chief medical director of University of Nigeria Teaching Hospital, Enugu and vice chancellor of Nnamdi Azikiwe, Awka).

When LUTH took off in 1962, an impressive number of the initial staff came from UCH. A few examples which come to mind are Horatio Oritsejolomi-Thomas (who later returned to Ibadan as vice chancellor of the university); Akin Adesola (who was vice chancellor of the University of Ilorin and vice chancellor of the University of Lagos); Ade Elebute (former President of the National Postgraduate Medical College of Nigeria, Provost of the College of Medicine of the University of Lagos, and most recently the chairman of the UCH Board of Management); and the late Paul Omo-Dare (the first professor of paediatric surgery in the University of Lagos and in Nigeria). I have mentioned just a few.

It is worth noting that all those named constituted the exodus from the UCH Department of Surgery alone. Notable among the others was the late Professor Olikoye Ransome-Kuti from the Department of Paediatrics who, as the Federal Minister of Health for eight years, gave Nigeria its first national policy on health with primary health care as its epicenter. Many may not be aware that the earliest formal training of health professionals in Nigeria commenced with chemists and druggists following the Pharmacy Ordinance of 1928. The training of assistant medical officers at Yaba commenced in 1932. The contributions of UCH to national manpower development in pharmacy are significant. The Pharmacy Department commenced in Adeoyo Hospital in 1953. By 1956, Mr. F. A. Callisto had become 'senior pharmacist' and, as expected, was the first chief pharmacist of UCH. In 1962, he was seconded to LUTH for a period of six months to set up the Department of Pharmacy there. His pioneering work in Lagos was continued by Mr. J. C. Molokwu, his deputy here in UCH. Mr. Molokwu later became the substantive head of pharmacy at LUTH. Mr. Gabriel Osuide, an employee of UCH, similarly went to Ahmadu Bello University Teaching Hospital and later to Benin to establish the pharmacy wing of the University of Benin Teaching Hospital. Osuide, in addition, later climbed the academic ladder to professorship in pharmacy at Ahmadu Bello University, Zaria to become the first director of the National Agency for Food and Drug Administration and Control (NAFDAC).

I remember Mr. N.C. Ifedirah, Dr. Phillip Emafo, and Mr. E.K. Osuzoka (father of a former principal of the School of Nursing, Mrs. S.O. Ekpendu) who were not only outstanding professionals, but also great guides and counselors to young specialists like me. Mrs. Okusanya became head of the Federal Government...
Manufacturing Laboratory at Yaba and was, the registrar of the Pharmacy Council of Nigeria in 1998. If I am indicted for undue affinity for the Pharmacy Department, I plead for your understanding and forgiveness. This anniversary lecturer is the eldest child of one of the pioneer students of the School of Pharmacy, Yaba in 1926. The father who begat him topped the list of passes in the Chemist and Druggist Diploma in 1932 and taught pharmacy and its allied subjects – chemistry, physics and botany – until 1936. We should not forget the role of UCH in the development of human resources in other health-related disciplines, such as physiotherapy. Although manpower development in physiotherapy had its genesis at the Army Base Hospital, in Igbobi in 1943, the Department of Physiotherapy in UCH did not start until 1952. It was based in Adeoyo Hospital with the first generation of fully professionally trained Nigerian physiotherapists such as Mr. (now Dr.) T.A. Oshin (1954), Dr. I.O. Ayodeji, Dr. J.W. Cookey-Gam (a Yaba-trained doctor who, as his sight faded, chose physiotherapy as a career), Mr. Chris A. Ajao (1957) and the first female Nigerian physiotherapist, Mrs. S.A. Ajao (nee Ajala) in 1958. I might add that handsome Dr. T.A. Oshin had an early privilege, if not the good fortune – in all its connotations – of being the single male in the group of four physiotherapists who started the department in UCH.

True to its vision in health manpower development, the UCH Board of Management awarded scholarships to three students to train as physiotherapists. One of them was Mr. J.O. Obiri, whose physical stature belied his strength. His powerful hands were matched by the precision of his palpating fingers. In many cases, he made the prolonged wearing of the cervical collar unnecessary, after a not to be forgotten neck manipulation. Beneficiaries like me remember him with great affection not only as an excellent professional, but also as a wise counselor and comforter in many personal matters.

Dr. Gabriel I. Ordia was another board of management-sponsored student who played his part in fulfilling the mission and vision of UCH by going to LUTH to start a department there. The physiotherapists were a very formidable collection of proactive professionals.

By 1959, they had formed a Nigerian Society of Physiotherapy, with the likes of the late Dr. (Chief) S.O. Awoliyi and the late Sir Mobolaji Bank-Anthony as honourary presidents from 1959-1969. They had strict rules for membership. Qualification for membership of the association was based on accredited professional standards. They developed a recognized training programme and persuaded the federal government to commence a School of Physiotherapy at UCH in 1962. However, the training programme was not to get the accreditation of the associate university for a Bachelor’s Degree until 1966. The first physiotherapy students emerged three years later. The production of the Journal of the Nigerian Society of Physiotherapy in 1969 added flavor to their professionalism and the stimulus to continuing physiotherapy education through the disclosure and sharing of experiences, practical and other.

There are two human dimensions to health care, the providers and the recipients. Our immediate concern relates to the amorphous group of professionals, semi-professionals and other members of the workforce with the appropriate skills and the will to work within unified system for the provision of health care. It is fashionable to refer to the amorphous group of providers as the ‘health team’ – a team that exists only in our dreams and perhaps finds an occasional expression in our supplications. In reality, it is nightmare of fragmented and divided professionals in search of a leader, deputy assistant leader, assistant leader, special assistants, principal assistants, special deputy principal assistant – in the fashion of Nigerian political office creation where ‘leaders’ may occasionally outnumber the fellowship. The juggle for who leads the team has become as laughable as the election of a ‘minority leader’ in one of Nigeria’s legislative chamber. There, the elected members in the opposition party totalled one.

No matter how well designed and well endowed a health system is, or how sophisticated the buildings and tools for performance are, the effective benefits depend absolutely on the quality of the human resources. That quality is the sum total of knowledge, skills, motivation, devotion, commitment, empathy and compassion that puts corporate interests above self. These are the essential elements in human health resource policy formulation and the guiding principles in their implementation.

In the past few years, we have thought of, dreamt of, and spoken of health system reforms. It is not easy for a ‘reformer’ to know where to start. An existing system, which grew out of chaos, cannot be reformed without going back to basics of personal human values and the fundamentals of social change and sustainable development as espoused by Kwapong (1990) and Mabogunje (2006).

I need not remind you that a population census goes far beyond the counting or the guessing of the number of heads in a state. Who they are, where they are, when they were born and when they die, how they live, and how they survive are the core ingredients of meaningful planning? How do we know that the reform we envisage will not further compound our problems? I was at the forefront of the executive heads of health institution that had the duty and the responsibility to implement enhanced user-fee charges in teaching hospitals. It worked only to the extent that some services were restored by a Bamako Initiative-type of revolving fund system. In the process, we almost forgot – if we have not now totally forgotten – the primary responsibility of human resource development. The admission policy, the scope and place of investigation and the dimension of treatment became factors in what
patients could afford to pay. It was the period in which we all celebrated the advent of a National Health Policy with PHC as its core.

In a study on the effect of user-fee charges on the nursing ethos and practice at the Aminu Kano Teaching Hospital, Kano, Marama (2002) found that 52% of patients had to dispose of family heirlooms and personal assets such as rings, bangles, necklaces, clothes, and shoes among other things, to make initial monetary deposits before hospital admission was possible. Over 20% had to wait for more than a month to raise the funds and another 10% had to wait for over one year for the same reason. To make matters worse, about 16% had to abandon treatment because of their inability to meet additional costs outside the original estimate. I had this to say about primary health care in another anniversary lecture a few weeks ago. I quote verbatim:

The expectations of the policy two decades later cannot now be described as successfully achieved. We hold that some fundamentals of the programme were not in place at the various levels of implementation. Primary Health Care was supposed to be inexpensive, affordable by the state and client, accessible to the rich and poor as an efficacious health system. Central to its organization was a referral system which was to guarantee care at higher levels depending on the complexity of the cause of ill-health. The common causes of ill-health within the capacity of the village or community health attendants formed the broad base of the pyramid while the apex was the University College Hospitals, euphemistically referred to as ‘centres of excellence’.

It did not take long to come to know that the system was not cheap. The referral centers had little more quality service to offer than those in the village health centres from which patients had been referred. The cost of health care had become less affordable due to the application of more sophisticated technologies for which running costs had to be recovered. The apical referral centres in time grew outside reach and became illusory tips of the pyramidal health structure. The most damaging result was the people’s partial loss of confidence in modern scientific medicine, which provoked a mass exodus to syncretism, suspect religious organizations, a return to divination, spiritualism, exorcism, and the bizarre health practices of the distant past. Failure to quickly respond to all kinds of emergency situations, such as domestic trauma and road-traffic and workplace accidents (especially when there have been mortalities) completed the erosion of confidence. The tertiary hospitals lost the service components of the creation and accepted all types of clinical problems provided the patients could pay the user-fee charges. The system failed because the cost implication was unknown. Osuntokun unrelentingly warned that the isolated costing of primary health care was unrealistic unless it took into consideration the financial implications of the entire pyramidal system of health care which included increased funding for secondary and tertiary health care centres. The manpower requirements had been underestimated. The managerial skills required were not even addressed. Much more significant, was the conceptual failure that marketed a national development programme, where health is constitutionally and rightly on the concurrent legislative list, as a federal ministry of health affair. (Ajayi, 2007)

Well-meaning critics would be expected to ask: ‘Faced with the enormity of the problems of reform, faced with a census that usually does not satisfactorily answer these essential questions, faced with a limited moral capacity to transparently account for services the nation renders to its peoples, should we then in frustration fold our hands and do nothing? Our inability to answer these persistent questions is probably the product of our many frustrations. We, therefore, resort to sermons at every conceivable opportunity and dodge the real but tough option.

Umaru Shehu (1996) after an agonizing but comprehensive analysis of the requirements of a credible health system reform, examined manpower resources from the standpoint of curriculum adjustment, team training and re-orientation of extant staff. Surveying the need for a prior reform of the managerial system, promotion of community involvement and participation, greater inter-sectorial collaboration and the review of financial allocations, he came down heavily in favour of a health information system, backed by a political will, as fundamental to the organization of a rational, responsive and result-oriented health system.

Must we continue to pretend that a health system is being reformed even when the essential ingredients of policy formulation are unknown? Can one answer questions which are not raised? Is it possible to find solutions to problems unknown?

The human capacity required for the establishment of a health information system is itself an issue germane to the topic of this lecture. Data collation is not a health science neither does it require a decade to be able to train anybody in demography and social statistics. For the formulation of successful strategies for human health resource development, we must have clear objectives with regards to coverage, quality of care envisaged, and the fixed minimal cost for a relative degree of effectiveness.

Coverage based on doctor or nurse-patient ratios has fallen into disrepute because we have no reliable information on the number of practicing doctors or registered nurses in the country. The number of beds in the private and public health sectors is unknown, thus making doctor-bed, nurse-bed ratios meaningless parameters of adequate health coverage. Untutored citizens practice medicine, nursing and pharmacy and brazenly dominate television screens under the umbrella of ‘traditional medicine’ or ‘alternate medicine’. The titles ‘Dr’, ‘Nurse’, ‘Pharmacist’ have been appropriated by quacks, impostors and peddlers of fake or substandard drugs.

Official government apologists soon switched gear to declare that the problem was neither in the number of health personnel nor in the number of beds but in the inequitable distribution of health care providers and facilities in favour of the urban setting over the rural. The result was that the majority of Nigerians
who needed health care the most were not getting it. Simultaneously, Nigeria was losing its health personnel to temporary or permanent external migration. Many doctors who remained in the country opted for more rewarding non-medical occupations or a more rewarding private sector medical practice.

A disputable fact was that developed countries overseas became the beneficiaries of our investments in human resource development. The 'pittance' which they threw at our highly trained and skilled indigenes was sufficient inducement, given the state of the Nigerian economy. On the other hand, we must admit that the consequent exodus of our health professionals overseas for comparatively higher wages enabled them to meet nuclear and extended family responsibilities, as well as provide some security for the future.

The quality of our services and training plummeted. Our standard of life fell in company. Some of our thinning personnel continued to accept to serve abroad even when the rewards offered no longer matched those of the pioneer migrants.

In 2003, I was the chairman of a Special Technical Committee on the Development of Health Human Resource Policy for Nigeria, jointly sponsored supposedly by the Federal Ministry of Health and WHO. I am not surprised that the recommendations of that committee are yet to see the light of day, neither do I expect they ever will. In our many deliberations, I was shocked by a proposal by some members to push for a legislative enactment that would restrict all specialized health workers intending to travel outside Nigeria for whatever reason, which was a panic reaction to mourning threats of international predators.

Let us consider the example of a legally non-binding agreement between Commonwealth Ministers of Health, titled Commonwealth Code of Practice for International Recruitment of Health Workers (2002). The agreement was intended to discourage the targeted recruitment of health workers from countries which are themselves experiencing shortages, but we were quickly reminded in the same document that this type of international recruitment provides many health workers with the opportunities to develop their careers, gain valuable experience and improve living conditions for themselves and their families.

While it pretended to be sympathetic to the plight of loser countries, the document, in a subtle manner, pleads that the Code should be sensitive to the needs of the recipient countries and the migratory rights of individual health professionals.

The insult to our intelligence was not done yet. This document concluded:

The Code does not propose that governments should limit or hinder the freedom of individuals to choose where they wish to live and work.

Who says that the slave trade is over or its camouflage has been discarded?

Guiffrida and Bourassa-Forcier (2002) estimated that foreign-trained health professionals constitute more than 25% of the medical and nursing workforces in Australia, Canada, the UK, and the USA. Schubert (2002) estimated that there would be 31,000 nursing vacancies in Australia by 2006. In 2001, it was estimated that 15,000 nurses were recruited to the UK and that 35,000 nurses will be required by 2008. In 2002, the US Department of Health and Human Services estimated that the shortage of human resources for health will hit 50,000 by 2015. Yet the pattern of disease continues to change all over the world, and more so in our part of it.

Akinkugbe’s team, the National Expert Committee on Non-Communicable Diseases in Nigeria (NCD), forthrightly warned us as far back as 1992 of a new Third World pandemic of hypertension, coronary heart disease, diabetes mellitus, sickle cell disorder and G6PD deficiency. To these we may safely add stroke and cancer, because the World Cancer Report of 2003 predicted a 50% increase in the incidence of new cancer cases worldwide by the year 2020. Infection and infestations would account for 23% of these cases in developing countries against 9% in the developed world.

Did we know that in the year 2000, cancer emerged as major public health problem in developing countries, matching the statistics in the industrialized countries? All these will change or substantially add to the burden of health care and disease prevention for which human health resources must be provided for effective action. I have not forgotten HIV/AIDS in its acute form and the cancer risks in long-term survivors. I have not gone this far to create fear or despondency, but to seriously invite all (UCH and all other institutions and bodies it has helped to foster over these past five decades) to appreciate the new challenge that will confront our country full face in the next 50 years.

In this exercise, we will have to work out the strategies necessary to combat the threats, develop and protect our human health manpower and defend our interests in a predatory world. To do that, we ourselves must sharpen our focus on the problems of manpower development, utilization and retention. We must tap on the experience and the competence of our citizens and seriously listen to their advice regarding the possible options for the solution of our problems. It is self-evident that the best custodian of our national interest must be ourselves. Our lives cannot be in their hands, that is, it must not be in hands other than our own.

I shall never tire of reminding anybody close enough to hear that the World Health Organization is not more than a World Help Organization. Let us examine how countries in similar circumstances have fared. Together, let us look at experiences and proffered remedies elsewhere, mostly in Asian countries. Indeed, some of them are not entirely new to Nigeria. We must repeatedly caution ourselves not to forget our...
past since otherwise, as the saying goes, we might be condemned to relive it.

Some suggestions have included an increase in the output of ‘medical, nursing and other professional health workers quickly, cheaply and superficially to handle life-saving expediency in the face of exploding populations and declining economic fortunes’; that to do so, would be a much more appropriate ethical response to an increasing population of the sick than professional Puritanism (Garrido, 1997). It has also been suggested that the number of specialists should be increased by lowering the end-point of training (Ikeme, 1996). The World Bank (1993) was most brazen in calling for...

...a reduction of government expenditure in tertiary facilities, specialist training and interventions that provide little gain for the money spent.

These are samples of the views with which developing countries have been inundated for many years. Is there much evidence that our government have in no uncertain terms rejected many of these suggestions? The usual channel of enforcing these insensitive foreign ‘solutions’ to our problem was the infamous so-called ‘conditionality’ of the International Monetary Fund, when nations begged for a rescheduling of their national debt. Though personally disinterested in partisan politics, I think one ought to commend the last government of Nigeria for paying off some of our dubious foreign debts. These debts, conflating with other corrupt inducements, make us susceptible to bad advice and render us vulnerable to international conspiracies and blackmail.

We have, at different times, proposed remedies which can only be given full expression when we accept the supreme importance of a health information system reform. Health informatics is so fundamental that by ignoring it, no meaningful solutions can be seriously tabled for consideration. Meantime, we must renew our resolve to give the same attention as we give to doctors to the education of nurses, pharmacists, laboratory scientists, physiotherapists, occupational therapists and other health workers quickly, cheaply and superficially to handle life-saving expediency in the face of exploding populations and declining economic fortunes;

The several professional health boards or councils that have been created to regulate the practices and other activities of the various professional groups are yet to effectively sustain standards and promote growth in the number of professionals, neither have these bodies come forward with innovations to meet the challenges to services in our many communities. The unending juggle for administrative power, professional superiority and exaggerated worth hug the newspaper headlines to the derision of persons of discernment. Titles and positions take precedence over the assessment of relevant skills and cognitive ability, while the quality and the length of training are subsumed in the crafting of a schedule of duty that seems to suggest that a good omelette is only produced if the cook is also the poultry farmer.

At our anniversary celebration ten years ago, the very distinguished guest lecturer admonished that it was time for UCH to commence an amendment of life. He knew from his vast experience and feared that negative forces will surely work hardship on a quick turnaround of the fortunes of the UCH, for the last to change is the human factor... The decision to focus this anniversary’s lecture on human resource issues in the past and the present underlines what Akinkugbe identified as the weakest link in the chain. While we must seize this opportunity to commend the attempt of the federal government in the last ten years to refurbish, renovate or upgrade teaching hospitals and the federal medical centres, we all must also know that our ultimate success will hinge on human resource capabilities, commitment and grit. We must admit that there is a cost to training. In 1992, the hospital administration created a Residency Training Fund. I cannot tell you if it is still in place. We insisted that fees accruing from respective hospital training programmes shall be devoted solely to the prosecution of the respective training programmes. We must not continue to have a Directorate for Clinical Services, Research and Training without an operational budget. We must give sincere and equal attention to the education of the health team in medicine, nursing, pharmacy, laboratory science and physiotherapy. We must fully resuscitate occupational therapy, restore the dignity of dietetics in health care and create departments of health information at local, state and national levels. There is no way we can solve our problems without an accurate determination of the nature and size of the problems. We must look again at who does what and who, really, should do what. We must maximize the potential of every health worker...
to function effectively. We must upgrade skills as has been done elsewhere. We must make the acquisition of management skills a mandatory requirement of health care training. In my address to the Chairmen and Chief Executives of Teaching Hospitals in November 2001, I had this to say then and I repeat it now to end this lecture:

It is my firm belief that effective health care delivery, even within the existing limitations, can be transformed if health care providers at all level recognize the importance of placing organizational needs above personal considerations, recognize the essence of contrasting points of view and recognize personal strengths and limitations. They must have the penchant for giving a helping hand, have skills in effective communication, have skills in counseling others, have skills in promoting and sustaining loyalty, skills in building trusts, confidence and teamwork; and have the ability to make others feel as important in a management structure as themselves. Health care providers must be more than just nice people. The principles of personnel management, the management of information, strategic planning, implementation and evaluation, organizational development, cost-effective concepts and analysis, drug management, the social marketing of health plans, programmes and products are crucial to the emergence of a good health manager and the effectiveness of any healthcare delivery, more so when resources are limited….

May God continue to keep and bless UCH.
Happy Anniversary!

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Pneumomediastinum and Subcutaneous Emphysema Complicating Acute Exacerbation of Bronchial Asthma

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Introduction

Pneumomediastinum otherwise known as mediastinal emphysema refers to the presence of air within the mediastinum while subcutaneous emphysema refers to the presence of air in the subcutaneous tissue and this may involve the face, neck or trunk [1]. The term, pneumomediastinum, was introduced into medical literature by Hamman in 1939[2]. Both conditions are relatively uncommon but important complications of bronchial asthma. The first definitive case of asthma complicated by subcutaneous emphysema was reported in a child in 1850 even though Laennec, as early as 1819, had recognized symptoms and signs of subcutaneous emphysema [3]. Extravasations of air in extra-pulmonary tissues may also manifest as pneumopericardium or pneumothorax and may as well complicate, apart from asthma, perforation or rupture of oesophagus (Boerhaaves syndrome), rupture of trachea or main bronchi, or conditions resulting in raised intrathoracic pressure [valsalva manouvre as in vaginal delivery, weight lifting, vomiting, strenuous exercise], following parquat intoxication, dental procedures, blunt or penetrating trauma or soft tissue infection. It may also complicate gastrointestinal instrumentation such as endoscopy, colonoscopy and laparoscopic surgery [4].

We present an index case of pneumomediastinum and subcutaneous emphysema complicating an acute exacerbation of asthma in a young male Nigerian in order to sensitize clinicians about the occurrence of this rare complication of bronchial asthma in our environment. The pathophysiologic mechanisms and treatment approach are also reviewed in the light of current literature.

Case Report

A 21 year old male Nigerian student and a known asthmatic presented to the Emergency Department of Federal Medical Centre, Abeokuta, southwestern Nigeria with a 10 hour history of cough productive of whitish sputum, increasing difficulty with breathing, wheezing and neck pain. He was diagnosed asthmatic at the age of eleven and had been admitted on a few occasions for acute exacerbations in the prior ten years. He had salbutamol tablets regularly.

At this index presentation, he was noted to have subcutaneous swelling and crepitus over the neck and upper anterior chest region, bilateral and polyphonic rhonchi with prolonged expiratory phase. He had a respiratory rate of 36 cycles per minute, pulse rate of 120 beats per minute and a blood pressure of 120/80mmHg. Other systems were essentially normal. The chest radiograph showed low set hemidiaphragms and bilateral basal emphysema in keeping with the known asthmatic state. In addition, there was a linear lucency in the region of the left border of the heart as well as areas of lucency in the subcutaneous tissue of the neck and region of the left side of the chest wall respectively (see figure 1A and 1B).

Laboratory findings including electrolyte levels were within normal limits.

On the basis of the history, examination and radiological findings, a diagnosis of acute exacerbation of bronchial asthma with pneumomediastinum and subcutaneous emphysema was made.

He was admitted into the male medical ward and treatment offered included administration of salbutamol inhaler, parenteral hydrocortisone, aminophylline and augmenting as well as humidified oxygen by nasal prongs. He made remarkable improvement with resolution of the initial symptoms about 48 hours after admission. He was discharged after 5 days of admission on seretide inhaler and remained in stable clinical state thereafter.

Discussion

Subcutaneous emphysema is a rare complication of acute severe asthma that may occur in association with spontaneous pneumomediastinum, pneumopericardium or pneumoperitoneum. Spontaneous pneumomediastinum arises as a result of sudden rise in intra-alveolar pressure (asthma, vasaiva manouvre, cough, emesis, barotraumas) resulting in the rupture of marginal alveoli and subsequent tracking of air along bronchi, interstitial and vascular support tissues into the mediastinum. The itinerant molecules of air may get to the pleural, pericardial, peritoneal space or the soft tissues of the face, neck or upper
trunk causing subcutaneous cervico-facial emphysema. This escape of air out of the alveolar spaces results in ventilation-perfusion mismatch and consequent abnormality of oxygenation of arterial blood. Other causes of extravasations of air into extra-pulmonary structures include rapid ascent to the water surface after diving, dental extraction, adenoid-tonsillectomies, trombone playing, bowel perforation, paraquat intoxication, arthroscopy and strangulation of the neck from hanging. Whereas subcutaneous emphysema causes crepitus on palpation of the affected body region, pneumomediastinum characteristically gives a positive Hamman sign (crunching or clicking noise heard synchronously with the heart beat on auscultation and best heard in the left lateral decubitus position) when it is clinically significant. In this index case, there were clinical and radiological evidence for the subcutaneous emphysema but only a radiological evidence for the pneumomediastinum. The symptom of neck pain in this patient is an unusual presentation. Newcomb and Clarke similarly reported neck pain in 2 of 18 patients with spontaneous pneumothorax. It may be due to similar presence of extra-vasated air in the epidural space.

Management of this condition is largely conservative. However, administration of high concentration of oxygen may enhance faster absorption of air from extra-pulmonary tissues while needle aspiration and/or surgical decompression may be useful if mediastinal structures are compressed.

Conclusion
Extra-pulmonary extravasations of air manifested as subcutaneous emphysema and pneumomediastinum in this index case constitute a rare but very important complication of acute exacerbation of bronchial asthma and which is amenable to conservative management. This case report raises awareness of its occurrence in Nigerian Africans in order to enhance a high index of suspicion and appropriate management in the emergency room.

References:
Introduction
Congenital anomalies of the lower urinary tract are a significant cause of morbidity in infancy. Radiologic investigation is an important source of clinical information in lower urinary tract disorders but should not inconvenience the patient, expose the patient to unnecessary radiation, or delay surgical correction. In pediatric patients with suspected underlying urologic structural anomalies, screening ultrasonography is commonly the initial diagnostic study. If dilatation of the urinary tract is confirmed, micturating cystourethrography (MCUG) is performed to determine the presence of vesicoureteric reflux (VUR) and other causes of upper tract dilatation.1

Posterior urethral valves (PUV) are by far the most common congenital obstructive lesion of the urethra, occurring mainly in phenotypic boys.2 Young et al initially classified posterior urethral valves into three types, but it is now clear that there is only one type (formerly called type I).2 MCUG is the best imaging technique for the diagnosis of posterior urethral valves.1 VUR is the abnormal flow of urine from the bladder into the upper urinary tract. In the majority of cases, it occurs as a result of a primary maturation abnormality of the vesicoureteral junction or a short distal ureteric submucosal tunnel in the bladder that alters the function of the valve mechanism.3 VUR may be associated with PUV.4 Unilateral reflux, may occur in up to 35% of boys with PUV, and has been linked with protected renal function.5

This is a case of PUV with a severe unilateral VUR. The severity and unilateralism of the VUR prompted this report.

Case Report
A 3-year-old male was referred to the University College Hospital (UCH) Ibadan where he presented with poor urinary stream since birth, urinary frequency and abdominal distension of 2 months duration. His parents first noticed his difficulty with micturition at 3 months of age; he usually strained at micturition with a poor urinary stream and terminal dribbling. These symptoms were associated with recurrent fever and failure to thrive.

Patient had groin surgery at 18months of age, presumably a hydrocelectomy at a private hospital on account of scrotal swelling with no significant improvement.

He was later transferred to a mission hospital where he had an ultrasound examination for the first time which showed bilateral hydronephrosis and distended urinary bladder; an impression of obstructive uropathy with urinary retention from a possible PUV was made. He was later catheterized to relieve obstruction and referred for definitive management.

Examination revealed a young child, chronically ill-looking, wasted, pale and mildly febrile, on continuous urinary catheter drainage, with no pedal oedema. There were crepitations in both lung bases. The pulse rate was 160 beats per minute, with a haemic murmur. Both kidneys were ballotable. Patient's packed cell volume (PCV) was 21%, White Blood Count was 23,300/mm³. Urine microscopy and culture yielded Pseudomonas which was sensitive to Ciprofloxacin but resistant to Ceftriazone.

Abdominal ultrasound showed both kidneys to be enlarged and containing multiple communicating cysts, the right (Fig.1) was greater than the left and showing significant cortical thinning of the renal parenchyma in keeping with bilateral asymmetric hydrocalycosis, the ureters were also differentially dilated in favour of...
the right. The urinary bladder showed a thickened and irregular wall and outline. 
 MCUG (Fig.2 and 3) revealed a dilated posterior urethra, irregular bladder outline with trabeculations, tortuous dilated right ureter and grade V vesicoureteral reflux.
 Electrolyte and urea examination showed mild hyponatriemia and acidosis. He was placed on Ceftriazone which was later changed to Ciprofloxacin based on culture results.

He improved significantly and had posterior urethral valve ablation with the Mohan's urethral valvotome under general anesthesia on the 12th day of admission. Post operative period was uneventful and patient was discharged home on urethral catheter to be followed up at the surgical out patient clinic.

He was later seen at the clinic with good urinary stream with no difficulty in micturition following removal of catheter 2 weeks post surgery. Follow-up abdominal ultrasound done 4 weeks afterwards showed a 1.3 cm reduction right renal length with persistent marked hydrocalycosis, the left however showed no significant change in renal size and with only minimal calyceal dilatation. Electrolytes, urea and creatinine values also obtained were within normal limits. An intravenous urogram (IVU) or a radionuclide renal imaging study was not requested to assess individual renal function.

The patient was subsequently lost to follow-up.

Fig.1 Ultrasound image showing the right kidney with markedly dilated calyces (c) and thinning of the renal parenchyma.

Fig.2 MCUG image (anterio-posterior view) showing a dilated posterior urethra (arrow), bladder trabeculations (*) and right vesicoureteric reflux. The dilated posterior urethra assumes a “spinning top”/ “electric bulb” appearance (arrow).

Fig.3 MCUG image (antero-posterior view) showing massive reflux with tortuosity of entire dilated right ureter and ballooning of the calyceal system.
Discussion
Management of PUV remains a clinical challenge, requiring active management from infancy into adulthood to avoid progressive dysfunction and deterioration of both the upper and lower urinary tracts.6

PUV results from the formation of a thick, valve-like membrane from tissue of Wolffian duct origin that course obliquely from the verumontanum to the most distal portion of the prostatic urethra. In essence, the valve is a diaphragm, but because it is more rigid along its line of fusion, progressive distention during voiding causes it to become bilobed or sail-like 7

MCUG is the best imaging technique for the diagnosis of posterior urethral valves. Radiologic findings include dilatation and elongation of the posterior urethra and, occasionally, a linear radiolucent band corresponding to the valve.8 The bladder neck becomes hypertrophic and appears narrow in relation to the dilated posterior urethra. Any cause of bladder outlet obstruction such as PUV will cause bladder trabeculation or thickening of the wall (Fig 3). VUR with gross hydrenephrosis, dysplastic kidneys, and urine ascites are common findings.9 VUR occurs in nearly 50% of patients. Bladder trabeculation, hypertrophy, and diverticula are also demonstrated at MCUG.6,8

Prenatal ultrasound is actually the usual method of detecting posterior urethral valves.9 Abnormalities are most evident when the valves cause severe obstruction and these may include oligohydramnios, bladder distention, and, occasionally, fetal posterior urethral dilatation.

PUV represents a spectrum of obstruction severity. The degree of obstruction caused by this abnormality varies considerably depending on the configuration of the obstructive membrane within the urethra. The morbidity of PUV is not limited merely to transient urethral obstruction; however, the congenital obstruction of the urinary tract at a critical time in organogenesis can have a profound and lifelong effect on kidney, ureteral, and bladder function. Diagnosis usually is made before or at birth when a boy is evaluated for antenatal hydrenephrosis. Before the era of prenatal sonography, PUV was discovered during evaluation of urinary tract infection (UTI), voiding dysfunction, or renal failure. In the case presented even though symptoms were present since birth diagnosis was not made until much later after episodes of UTI, urinary retention, and hydrenephrosis.10 While rare, adult presentation of PUV has been described in case reports,10,11 with symptoms varying from obstructive voiding symptoms to post ejaculatory dysuria.

In the presonography era, late presentation of PUV was considered a good prognostic sign suggestive of a lesser degree of obstruction. Diurnal enuresis in boys older than 5 years, secondary diurnal enuresis, voiding pain or dysfunction, and decreased force of stream may indicate the presence of PUV. It is sometimes discovered during evaluation of abdominal mass or renal failure. Hydronephrosis or proteinuria found on examination for unrelated conditions may be the first sign of PUV.

VUR commonly is associated with PUV as demonstrated in this patient. In the majority of cases, it occurs as a result of a primary maturation abnormality of the vesicoureteral junction or a short distal ureteric submucosal tunnel in the bladder that alters the function of the valve mechanism.6 This patient had severe unilateral VUR, characterized by gross dilatation and tortuosity of the right ureter; gross dilatation of the renal pelvis and calyces; papillary impressions were no longer visible in the majority of the calyces, regarded as a Grade V, based on the International Reflux Committee Study.12

Its unilateral nature may be due to the preservation of the sphincteric tone and the function of the valve mechanism at the vesicoureteral junction on the left. Regardless of the age of the patient, the existence of bilateral reflux at the time of presentation implies a worse prognosis than does unilateral or no reflux.13

VUR associated with PUV, is generally secondary to elevated intravesical pressures. Recurrent UTIs are common in patients with PUV. Elevated intravesical pressures predispose patients to infection, possibly by altering urothelial blood flow.

Additionally, patients with PUV may have elevated post-voidal residual urine volumes, leading to stasis of urine. Dilated upper urinary tracts, with or without VUR, further elevate the risk of UTI. UTI management is usually directed at lowering bladder pressures (anticholinergic medication), lowering post-voidal residual urine volume (via clean intermittent catheterization), and, at times, administering prophylactic antibiotics.6 VUR predisposes to pyelonephritis because it carries bacteria from the bladder to the upper urinary tract.14 This was well demonstrated in this patient who had recurrent intermittent fevers and whose urine culture grew Pseudomonas. The majority of pediatric patients who develop renal scars after a urinary tract infection have VUR, and higher grades of reflux are associated with an increase in parenchymal scarring.15 Detection of VUR in neonates and infants is particularly important because these patients are more predisposed to the formation of renal scars than are older children.16

Reflux nephropathy is a common cause of renal failure; therefore, it is important that this condition be detected as early as possible to allow prompt prophylactic antibiotic treatment and hopefully reduce the risk of scarring and reflux nephropathy.17 Reflux is also the most common cause of antenatal hydronephrosis, being responsible for 40% of intrauterine cases.18

MCUG should be used as was done in this case to document the presence of VUR and to determine the
grade of reflux and whether reflux occurs during micturition or during bladder filling.\(^5\)

Eklof et al.,\(^1^9\) in a series of 65 male infants and children, all with the diagnosis of PUV, showed that preoperatively diagnosed impairment of kidney function and concomitant dilatation of the upper urinary tract, with some exceptions remained fairly unchanged at postoperative examinations. In the case of marked VUR, permanent kidney function annihilation was significantly commoner with slight or no reflux. Our patient’s post operative ultrasound assessment showed slight reduction in renal size and only minimal change in hydrocalycosis. The post operative clinical and biochemical follow-up status were however satisfactory in the short term, Shittu et al in the same setting had shown that following PUV ablation with Mohan’s valvotome, complications are not common but may occur in the long term.\(^2^0\) In the absence of renal radionuclide imaging studies, it is difficult to conclude that the refluxing kidney has retained renal function however this is most likely considering the study of Donnelly et al\(^5\) in which all eight patients with unilateral reflux studied had normal renal function on long-term follow-up. This also gives credence to the assertion that unilateral VUR in PUV is associated with protected renal function. Their study also showed that apart from significant renal function being present in the refluxing kidney, the function may even increase with time.\(^5\) These findings suggest that, contrary to previous reports,\(^2^1^,2^2\) the refluxing kidney in patients with PUV is not always dysplastic.

References


INTRODUCTION

In most societies a person suffering from physical discomfort or emotional distress has a number of ways of helping himself or seeking help from other people. In remote and impoverished areas, western health care is often part of a pluralistic medical system in which it coexists with traditional medicine that includes both self care with medicinal plants and consultation with specialized traditional healers.

Self medication can be defined as the use of drugs to treat self diagnosed disorders or symptoms or the intermittent or continued use of prescribed drug for chronic or recurrent disease or symptoms. In developing countries most illness are treated by self medication. A major shortfall of self medication is the lack of clinical evaluation of the condition by a trained medical professional which could result in missed diagnosis and delay in appropriate treatment. A major problem of self medication with antimicrobials is the emergence of resistance of human pathogens. Antimicrobial resistance is a current problem world-wide particularly in developing countries, where antibiotics are often available without prescription. Resistance to anti malarial drugs has also been reported in many third world countries.

Reasons for this resistance include the irrational use of anti malarials including indiscriminate non-prescription use. The adverse effects of self medication cannot be over-emphasized. However some people may engage in the practice of self medication due to ignorance, poverty and in availability of health facilities. It is widely believed that human malpractices such as inadequate dosing, incomplete courses and indiscriminate drug use have contributed to the emergence and spread of antimicrobial resistance. The consequence of this, is the loss of relatively cheap drugs that will require new drugs development which will be more expensive and will further disadvantage patients in developing countries.

The rational use of drugs like antibiotics is thus of utmost importance to limit the increase in bacteria resistance.

The underlying motivation for this study is the prevailing health issues associated with inappropriate use of drugs, which is increasingly becoming a challenge in our environment. This study was designed to determine the proportion of general outpatients who...
self medicate, types of drugs used and the reasons for resorting to self medication.

It is hoped that our findings will guide us in evolving strategies to reduce self medication to its barest minimum.

**METHODOLOGY**

This study was conducted between June and December, 2007 at the general outpatient department of Federal Medical Centre, Owo, Ondo State, Nigeria. Ethical clearance was obtained from the Ethical committee of the hospital prior to carrying out this study. Two hundred patients were selected by simple random sampling and interviewed. Informed consent was obtained from each of the two hundred respondents. Semi structured questionnaire were administered on the respondents by the authors with three trained assistants at the outpatient department. The information obtained included bio- data of the respondents, history of self medication, type of drugs employed and the reasons for resorting to self medication. The data obtained with the aid of the study instrument (questionnaire) was collated and analyzed using SPSS 12.0.1 statistical software package. Results were presented using frequency tables.

**RESULTS**

There were two hundred respondents, aged between 16-85 years. There were 81 males (40.5%) and 119 females (59.5%). One hundred and thirty (65%) were married while sixty (30%) were single and ten (5%) were widowed. One hundred and seventy (85%) were Christians and thirty (15%) were Muslims. Seventy eight (39%) of the respondents had tertiary education, fifty six (28%) had secondary education, thirty eight (19%) had primary education while twenty eight (14%) had no formal education. As shown in table 1, majority of the respondents; 75 (37.5%) were traders while few; 28 (14%) were farmers. Prevalence of self medication: Majority of the respondents; 170 (85%) admitted to self medication while the remaining proportion 30 (15%) did not practice self medication.

Types of drugs used: The respondents used an array of drugs either singly or in combination. As shown in table 2, of all the drugs used singly, the majority 26.5% (n=45) used analgesics followed by antimalarias 15.9% (n=27) and antibiotics 2.9% (n=5), while for drug combinations, 22.4% (n=38) used analgesics-antimalaria, 15.3% (n=26) used analgesic-antimalaria-antibiotic, and 10.0% (n=17) used analgesic-antibiotics combination without a doctor’s prescription.

Reason for self medication: Of the 170 respondents who gave response to this enquiry, 93 (54.7%) attributed the reason for self medication to their perception that their complaint is minor enough for self care. The other reasons cited as detailed in table 3 were financial constraint 22.4%, services not readily available 9.4%, certainty of efficacy of self medication 10%, lack of escort 2.9% and ignorance 0.6%.

**DISCUSSION**

Our respondents were predominantly Christians; this is in keeping with the predominant religion in the community. However, it is surprising that in spite of their high level of education, most of them still engaged in self medication.

The proportion of the respondents who had practiced self medication is very high. This is indeed alarming in view of the possible hazards associated with such practice. Our findings are consistent with the findings of two studies in Sudan, in which 81.8% and 73.9% of the respondents had practiced self medication in one study and 73.9% in another study had used antibiotics or anti malarial drugs without doctors prescription or medical advice. A study carried out in Kuwait established the prevalence of self medication amongst high school students as 92%. Another study carried out in Hong Kong established prevalence rate of self medication amongst secondary school pupils as 72.1%.

Onajole et al established in Lagos that 71% of the respondents admitted to drug misuse. Our finding is however at variance with that of an Ethiopian study in which 27.5% of the respondents admitted to self medication.

The types of drugs used varied depending on the respondents’ perception of efficacy of a drug for their medical condition. It is understandable that a significant proportion of the respondents used analgesics either alone or in combination with other drugs without prescription as common analgesics can be bought without prescription in the community. It is not surprising that others used antimalaria in combination with analgesics as this disease is endemic in the study community as indeed the tropics. Most respondents attributed the reason for self medication to the fact they felt that their complaints were minor enough for such self care. This is a dangerous assumption as minor ailments that could easily have been managed by a physician could easily be mismanaged through self medication. This unsavory practice could lead to development of antimicrobial resistance when antibiotics are the agents utilized. Only few of the respondents attributed the reason for self medication to financial constraint. This finding is at variance with that of Awad and co workers in Sudan where the main reason for self medication was financial constraint. It is surprising that few respondents attributed the reason for using orthodox drugs without prescription to the fact that orthodox care was not readily available as the community has a Federal Medical Centre, General hospital, Mission hospital and many private hospitals. The government will assist a lot in this regard by making the presence of health facilities felt so as to increase their patronage. It is expected that if patients enjoy qualitative health care, they are likely to come back for treatment and also encourage others to access the health facility.
CONCLUSION
Majority of the respondents practiced self medication using an array of drugs like analgesics, antimalarias and antibiotics used either alone or in combination. The main reasons identified for self medication were their assessment of their ailment as being minor and financial constraint. Adequate health education to stop this unsavory practice needs to be mounted while efforts should be made to make qualitative health care readily available.

RECOMMENDATIONS
1) Health care providers should educate patients on the dangers of self medication. Such messages should be extended to the community at large periodically by government health ministries.
2) Government should enforce relevant legislation which limits the sales of drugs without prescription to only few relatively harmless over the counter ones.
3) There is need to create awareness about existing health facilities so that patients will know where to go when the need arises thereby minimizing the potential resort to self medication.

ACKNOWLEDGEMENT
We glorify God for the successful completion of this work. Special thanks to the management of Federal Medical Centre, Owo for their support. We also acknowledge the contribution of Resident doctors in the Department of Ophthalmology and Dental Services F.M.C. Owo to this work. The respondents are also appreciated for graciously accepting to participate in this study.

REFERENCES
### Table 1: Occupation of the Respondents

<table>
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<th>Occupation</th>
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<th>Percentage (%)</th>
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<td>Trading</td>
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<td>Schooling</td>
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<tr>
<td>Clergy</td>
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### Table 2: Types of drugs used by respondents without prescription.

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<th>Type of drug</th>
<th>Frequency</th>
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<tr>
<td>Analgesic</td>
<td>45</td>
<td>26.5</td>
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<td>38</td>
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<td>Antimalaria</td>
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<tr>
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<tr>
<td>Hypoglycemic</td>
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<td>Total</td>
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### Table 3: Reasons for Self medication.

<table>
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<tr>
<th>Reason</th>
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<tr>
<td>Minor ailment</td>
<td>93</td>
<td>54.7</td>
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<td>Financial constraint</td>
<td>38</td>
<td>22.4</td>
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<tr>
<td>Know what to do</td>
<td>17</td>
<td>10.0</td>
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<tr>
<td>Services not available</td>
<td>16</td>
<td>9.4</td>
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<tr>
<td>Lack of escort</td>
<td>5</td>
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<tr>
<td>Ignorance</td>
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STEWARDSHIP: A Conceptual Imperative For Managerial Effectiveness
In The Nigerian Health System

KEY WORDS: Stewardship, Managerial Imperative, Nigeria

INTRODUCTION
From the first national development plan after Nigeria's independence till present, government has been making efforts to improve on the health status of Nigerians such as in health manpower development and building health infrastructural facilities. These efforts have not improved the health status of Nigerians to acceptable levels.

Infant and maternal mortality rates are unacceptable and preventable diseases continue to be major causes of morbidity and mortality. In line with World Health Organisation's initiative, this paper intends to espouse the concept of stewardship and implores all stakeholders in the health system to adopt it in order to attain the acceptable level of health status for Nigerian populations.

Stewardship is a concept in religious doctrine. Historically God mandated man to tend and keep 'the garden of Eden' which consists of God's creation (Genesis 2:15). The understanding here is that when entrusted with something of value such as population's health, there is an obligation not only to preserve but also to improve on it. The parable of the talents (Matthew 25:14-30); the state of Egypt entrusted to Joseph as steward and how he effectively managed the state to the satisfaction of all concerned in the holy scriptures were significations of stewardship. The value is given in trust to the 'agent' and the 'agent' preserves and builds trust by responsiveness to legitimate needs and expectations of the population that owns the value.

Accordingly in employee grievance settlement procedure the services of stewards were employed for National Federation of Federal Employees in United States of America. Identifiable characteristics of these stewards were that they:

- are trained for the job of stewardship
- address problems before they arise
- apply justice and equity in their operations
- determine legitimacy of demands and
- labour to satisfy the ones for whom the value is held in trust.

Thus stewardship bears strong relationship with governance and administration by which institutions operate, focusing on the 'common good' or public interest.

The notion of stewardship has progressed from this ideological discourse to a more empirical one in which public health policy and its implementation focus on the health status and satisfaction of populations to improve through stewardship function of a state.

Definition of Key Terms
A steward is a selfless servant who manages entrusted assets or values without owning them, anticipates future trends through informed predictions and devises overall plans.

The commitment principle in planning mandates the steward to make workable plans and be involved with monitoring and evaluating plan implementation to ensure the achievement of set goals. In this respect the following terms are hereunder defined:

Stewardship: This is a concept defined as an outcome oriented approach to governance by which entrusted national health is efficiently and ethically handled in the spirit of social justice and equity. The policy-making and regulation role of the federal ministry of health is crucial and transcends other levels of government especially in areas where constitutional autonomy could hinder effectiveness of plan implementation among the federating states (Stewardship in health). This is to ensure compliance to public health policy and regulation. Secondly effective management of the health system to improve populations health depends largely not only on workable public policies but also on attestable willingness to provide funds and other resources for the management of the health sector (Stewardship of health). Thirdly socio-political stability that favours stewardship is required to attract and coordinate the necessary inputs from other sectors for health systems development and function (Stewardship for health). Examples of other sectors are agriculture, water resources, transport and communications, non-governmental organizations and international donor agencies.
An enabling environment is required for stewardship. Political overlords at all levels of government and the ministries of health are expected to engineer not only managers in the health sector but society indoctrination for stewardship knowing that these categories of public functionaries often operate within the mind-set and traditions of society for which values are held in trust.

**Conceptual imperative:** This is a basic and required knowledge, mind-set or reasoning pattern.

**Common interest:** This is a selfless interest in service wherein the goal of attaining acceptable health status indicators is focused upon in national health policy.

**Governance:** In this paper means institutions and traditions by which authority and power in a country are exercised for public health.

**Decision making:** Means making policies, plans, objectives, rules and regulations, programme implementation strategies for public health.

**The health system:** The health system may be defined as the functionally interrelated and interacting sectors which affect individual and community health. The health system is not only the health sector but includes other sectors such as water resources, economic, agriculture and political sectors.

**Progress and Difficulties in Health Systems Development**

National development plans in health since post Nigerian independence had identified management problems as major contributions to unacceptable level of health sector development and performance. Examples of these management problems at the plan periods were insufficient health manpower (1962-1968), rural-urban and curative-preventive health resource mal-distribution, as well as 95% of ill-health and deaths in the country being caused by preventable health problems (1970-1974, 1975-1980, 1981-1985 and 1986-1991 plan periods). Managerial inefficiency such as fund misappropriation, poor personnel control and distribution, inadequate funding, unsuitable working conditions that result in brain drain were reported in subsequent development plans. Though these problems were identified as plaguing the health sector, the scarcity of health managers as well as the need for them to receive an appropriate training were for the first time stressed in the fifth national development plan (1986-1991).

As part of the measures to redress these problems, the ministry of health was restructured into at least eight departments headed by directors to reflect some key health service areas and to specially provide for the primary health care approach to health systems development. The chief executive position in health care institutions was made the exclusive preserve of medical doctors by decree 10 of 1985, an attempt to reduce medical brain drain and improve managerial quality. Private practice in the health sector was somewhat liberalized. Health care professionals were allowed to own health care institutions which was an attempt at health sector decentralization and improving population access to health services. Another cadre of health workers (the community health workers) was introduced into the health system from 1979 mainly to serve the rural population with qualified health workers.

Inspite of the foregoing measures, health sector problems such as poor funding, managerial inefficiency, high labour turnover among health care professionals and difficulty with considerably reducing preventable diseases and deaths have persisted. Therefore politicians and managers are being implored to imbibe the concept of stewardship and apply its approach to health systems development. The difficulties or dilemmas of stewardship can be surmounted but they must first be identified, such as:

- Disobedience of many public servants and politicians in Nigeria to agreed public service approaches have often influenced the discharge of responsibilities. Democracy is our approach to governance. Appreciation of the tenets of democracy such as populations right to health and safety is a fundamental requirement for effective stewardship in health. The role of the manager is crucial in the political decision-making process particularly in relating policy to implementation because ineffective implementation can water-down an intended health policy outcome or drastically change it. Political, religious and socio-economic realities could hinder the implementation of stewardship approach such as systems that permit self-serving groups to dominate the affairs of the state.

Regionalization such as autonomy of the federating states in Nigeria could potentially diminish the ability of federal government to design and implement the desired regulatory strategies in stewardship. This difficulty impinges on maldistribution of health resource in Nigeria.

Traditional theories, beliefs, values and norms in public organizations could create inherent limitations on government ability to respond effectively to legitimate public needs and demands for health. If economic efficiency and cutting costs are the main interests in the health sector where majority of the populations are poor and handicapped, stewardship approach would be difficult to employ.

For stewardship to succeed as a model of health policy making, a clear and consistent strategic direction is required. Meanwhile from one political leadership to another, consistent strategic policy direction has been difficult.

Real change agents or organization development consultants that would be acceptable to health care personnel would take time to become available as they are needed for restructuring health care organizations.
and reorienting health care personnel. This may include influencing the thought patterns of political overlords in the health sector and for intersectoral cooperation in health.

**Stewardship in health: The role of government**

Accountability means liability for the proper discharge of duties by subordinates. In democratic systems elected and appointed public officials are subordinate and accountable to the electorate for the proper discharge of their responsibilities. There is high demand for efficiency of service and responsiveness to populations health needs in Nigerian health system and in many other developing counties. Some may argue that the demand for economic efficiency in public service contravenes adequate health service to the poor and hence the larger proportion of the population receive either inadequate or no professional health care. The regulatory mechanisms in stewardship help to incorporate service efficiency and the advocacy approach to governance in which ethics, social equity and justice are important driving forces deriving from administrative and behavioural science schools of thought in management literature.

Ethics and social equity are basically matters of conscience. Political leaders and managers at all levels of government must attempt to shape the social conscience favourably, principally because they are accountable for the ethical ramifications of their action. Justice is based on laid down policies, standards, rules and regulations of supervisory organizations in health.

Government is responsible and accountable to society for public health. The structural arrangement for public health accountability can be visualized from elected political officials and appointed executives in federal, state and local governments to professional health care managers in ministries of health and other health care organizations as well as community leaders. The underlying principles are that first these stakeholders are bound by the law of the land and are obligated to use their power in good faith in public interest. Secondly no public official, high or low owns the government, his organization or his office. The government belongs to the public and the stakeholders role is that of a trustee not a proprietor in the use of his authority.

There is a general consensus that state behavioural change is required for applying state authority that ensures responsive policies, equity in health resource management and for responding to public health needs. Accordingly the World Health Organization defines stewardship as effective trusteeship of national health. This means that stewardship responsibility is laid on the state as the agent for effective health care system in a country.

Inter-country comparisons of health status indicators primarily show that in similar circumstances or improved socio-economic conditions, better population health status can be achieved especially if stewardship approach is applied to realign state authority in the health system in the interest of achieving the goal of public health policy. It can be observed that neighboring developing countries like Benin and Ghana as well as distant China, over time (1997-2001) allocated higher percentage of their GDP to the health sector when compared with Nigeria (Table 1).

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Expenditure on health as percent of GDP</th>
<th>Life Expectancy at Birth (Years) (Both Sexes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>2.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Ghana</td>
<td>4.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Benin</td>
<td>3.7</td>
<td>4.4</td>
</tr>
<tr>
<td>China</td>
<td>4.6</td>
<td>5.5</td>
</tr>
</tbody>
</table>


In the same vein, although preventable infectious diseases such as HIV/AIDS, tuberculosis and malaria ravage many developing countries, Nigeria unlike other countries on the Table has decreasing years of life expectancy at birth from 1993 to 2002. Life expectancy of 71.2 years for China in 2002 shows the possibility of governments in developing countries to improve the longevity of their populations.

Diseases such as trypanosomiasis and leishmaniasis termed 'poor peoples diseases,' identified in south-south Nigeria and some northern states indicate that the concept of stewardship in governance is needed to facilitate health awareness and access to health care facilities for ‘disadvantaged populations’ such as the young, aged, illiterate and the physically challenged. Stewardship is outcome oriented and governments would easily assess their performance with improved populations health status indicators.

Intersectoral cooperation and collaboration for public health is fostered by government through effective public policies and monitoring. For instance, insecurity of lives and property, poor coverage of populations with potable water and poor funding of the health sector would result in higher morbidity and mortality, increasing utilization of and cost to the health sector with the outcome of decreasing life expectancy at birth. In operational terms, stewardship function of government may be observed when:

- Fund allocation to the health sector is in accordance to WHO recommendation
- Populations are protected from unqualified health care practitioners
- Health care services are accessible to all
- There are effective national policies and programmes that considerably reduce or eradicate preventable infectious diseases already stated above

Labour turn-over in the health sector is considerably reduced.

There are effective public health care policies, monitoring and evaluation of policy implementation to ensure intended outcome.

Accurate statistics on health are available to the ministries of health yearly.

Infant and maternal mortality rates have been reduced to tolerable levels.

Life expectancy of Nigerians have considerably increased at least to that of China (Table1).

Conclusion

Stewardship is a concept of selfless and result-oriented governance which incorporates economic efficiency with ethics, equity and justice for public service. It has emerged as the best approach to unite multiethnic diversity within a democratic dispensation. Its tenets rest mainly on equitable resource distribution in the spirit of social justice and equity. Stewardship as a result-oriented approach to health systems development focuses and brings to acceptable levels the health status indicators of populations. Developing countries like Nigeria are especially implored to adopt this concept for health system development.

Recommendations

The following recommendations are hereunder proffered:

- The health sector should be reorganized to have considerable autonomy from political overlords so that funds could be allocated directly to the health sector and resource distribution will cut across political and regional barriers. Integrated zonal health care system is suggested, such as that in New Zealand. By this health service is depoliticized by establishing a non-political organisation empowered to acquire and distribute health care resources across political and geographical boundaries.

- For effective monitoring and evaluation of work in the health sector, supervisory facilities such as transport should be made available especially for the remote and rural areas.

- Ministry of health should make available yearly accurate health statistics for the country.

- Government should improve civil obedience to the state through responsible leadership. By this, management responsibilities in meeting stewardship goals become easier.

- Government should make and enforce laws on health considerations in the operations of other sectors in the health system such as in building construction, transport, environment and family size determination.

- Stewardship approach to health systems development should be adopted for public service because it suits multiethnic societies like Nigeria as it is rooted in democratic ideals of society as a whole which is based on consensus that permits acceptable interrelationships among the federating states.

- Government should indoctrinate society with stewardship concept to enable public health managers develop the sense of direction, to build and restore trust hitherto found wanting in public service employees in Nigeria.

- Government should considerably reduce fund and other resource diversion among health care managers.

- Intersectoral cooperation and coordination should be vigorously pursued for public health.

- Government should summon the cooperation of health workers in determining and creating suitable work conditions.

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