

TRAINING 21st CENTURY SURGEONS IN WEST AFRICA*

by

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INTRODUCTION

I wish to express my sincere gratitude to the International Development Committee of the Association of Surgeons of Great Britain and Ireland for the invitation and honour to participate at this symposium. This is coming three decades after I declined an opportunity to spend one year in the UK as part of my surgical training in Nigeria. The first time I travelled out of my country was to the UK in 1995 at the invitation of the British Council in Nigeria. That was 20 years of being a medical officer and 12 years of practice as a rural surgeon. I bring you good tidings from the rural folks of Ibarapa district in south west Nigeria.

IN THE BEGINNING

Formal surgical training in West Africa started in 1970 with the establishment of the National Postgraduate Medical College of Nigeria, NPMCN, and in 1973, the West African College of Surgeons, WACS, which grew from the Association of Surgeons of West Africa.¹ However, at the University College Hospital, UCH, Ibadan, the training of the surgeon started at the undergraduate level because every medical student took part in the operation on his/her patient even in extensive procedures as abdomino-perineal resection of the rectum for carcinoma or colon replacement of the oesophagus for severe stricture. During his posting to the casualty department, he learnt to suture lacerations, incise and drain superficial abscesses and apply the plaster of Paris after manipulating closed fractures and reducing dislocations.

The acquisition of this hands-on experience continued during internship and residency training. In the first three years of the five-year residency training, he rotated through all the surgical specialties before gravitating into his specialty of choice. He also had three-month rotations in pathology (morbid anatomy) and anaesthesia in preparation for practice in resource-poor settings. During the rotation in pathology, the resident revised gross anatomy, performed various gastrointestinal anastomoses and inguinal herniorrhaphy before embalment in requested cases. In addition, he undertook an in-depth study of surgical pathology.

The apparently comprehensive curriculum and the stiff examination processes resulted from the recognition that the poorer the available facilities, the greater the skills required in the practice of surgery. The surgeon working in isolation in a rural hospital with limited ancillary service triumphed only by a higher degree of technical competence, judgment and experience. He was well grounded and secure, more pliable, adaptable and improvising, that he might practise well not by surgery alone but also by active common sense.²⁻⁴

The other functions of the academic surgeon were not left out in the training programme. The resident regularly taught the medical students and junior colleagues attached to his unit and would present a dissertation of an original clinical work for the final fellowship examinations that conferred a consultant status on him. Some of these dissertations were published in journals and text books.⁵⁻⁷

The comprehensive education also explained the relative ease with which Nigerian-trained surgeons fitted into a more sophisticated practice after becoming familiar with new technology.⁴ The battle cry was TRAIN THEM HARD!!²

It was common for many residents who came to the UK for the optional one year abroad to write and pass the fellowship examinations of the Royal Colleges of Surgeons of Edinburgh or Ireland.

Grand rounds were held from 8.00am to 9.00am on Saturdays before everybody dispersed for social events. The proceedings were regularly published in the IBADAN SURGEON, an in-house journal, which was a veritable resource material for medical students who could not attend because of other postings outside Ibadan and also for incoming clinical students. The grand rounds were clearing houses for papers to be published in international journals and discussion forums for ongoing researches. They were antidotes against plagiarism.

The surgical textbook, COMPANION TO SURGERY IN AFRICA edited by Professor W W Davey,⁸ a former head of the department, was truly a companion to the medical student and later the surgical resident in West Africa. The second edition, published in 1987, had senior registrars as authors of chapters.⁹⁻¹²

The standard of surgical practice, teaching and research at the UCH, Ibadan was comparable to the rest of the world culminating in open-heart surgery by an all-Nigerian team becoming a routine in the early eighties.¹³ We were on the threshold of renal transplantation before the decline made it a mirage.

That was the UCH where I had all my professional training from 1972 to 1983 declining the optional training for one year in the UK three decades ago. I was the only resident that did not avail himself of that opportunity while it lasted.

This was a deliberate decision on my part because 26 of my 30 teachers (from senior registrars to professors) trained in the UK while the rest trained in the United States of America. They were all world renowned and I had implicit confidence that they could train their kind solely in Nigeria.

Secondly, I volunteered to be the unsolicited control in a new training scheme that would provide a basis for future assessment. One of my teachers put it like this in one of his lectures: 'NO CONTROL, NO CONCLUSION in any scientific experiment.'¹⁴

Also, I wanted to actualize the philosophy of Niccolo Machiavelli (1469 – 1527) which I had imbibed in my secondary school days:

“It must be considered that there is nothing more difficult to carry out, nor more doubtful of success, than to initiate a new order of things. For the reformer has enemies in all those who profit by the old order, and only lukewarm defenders in all those who would profit by the new order, this lukewarmness arising partly from fear of their adversaries, who have the laws in their favour and partly from the incredulity of mankind, who do not truly believe in anything new until they have had actual experience of it. Thus it arises that on every opportunity for attacking the reformer, his opponents do so with the zeal of partisans, the others only defend him halfheartedly, so that between them he runs great danger.” – in ‘The Prince’.

THE RESULTS

At the end of my training, I had 21 publications in national and international journals^{5,11,12,15-32} including the subject of my dissertation which was published in *Diseases of Colon and Rectum*⁵ I contributed two chapters in the second edition of COMPANION TO SURGERY IN AFRICA^{11,12} Except for one paper which was resuscitated by me while in the urology unit,¹⁹ I was either the first or sole author. Although, I trained as a general surgeon, majority of the papers were on urologic problems.

I assisted the pump technologist in one of the open-heart surgeries. I was competent in performing most general surgical operations. This was exemplified 26 years later when I was assisted by Dr A C Sagua, a junior colleague who also trained in Ibadan, in successfully performing two abdomino-perineal resections of the rectum in April 2009 and October 2010 in our rural hospital, Awojobi Clinic Eruwa, ACE, Eruwa in south west Nigeria. Table 1.

AT THE FRONTLINE

As far back as 1974, my teachers in UCH had recognized the need to extend surgical services to the secondary level of health care delivery.³³ Senior registrars

who were fellows of the royal colleges or diplomates of the American board were posted to mission hospitals in the big cities of Ibadan, Ilesa and Ogbomoso in south west Nigeria, while registrars spent one month at the District Hospital, Eruwa. I was there in April 1980. The senior registrars performed thryoidectomies and laparotomies under local anaesthesia and wrote papers that enhanced their appointment as consultants/lecturers.³⁴⁻³⁶

So, in my early years at Eruwa and while my teachers were still in charge in UCH, medical students and surgical residents were posted to me on three months rotations. I was appointed an associate lecturer in the college of medicine and visiting honorary consultant to the UCH.

To the medical students, the crucial role of the surgeon at the primary and secondary levels of health care delivery, especially in the rural area became clear. The residents acquired hands-on experience quickly and together we published papers on the common problems faced by the rural surgeon like inguinal hernia and frequency of twinning which was highest in Ibarapa district among other papers.³⁷⁻⁴⁸

But, with the exit of my teachers as a result of retirement, the postings ceased. In its place, I was requested to give lectures on primary care surgery which I declined for reasons that would be evident soon.

At ACE, we have firmly established the specialty of primary care surgery (which I prefer to call rural surgery) in Nigeria and in the process brought appropriate technology in health care delivery to the fore such that Bells University of Technology, Ota, Nigeria, a private university, has set the pace in offering courses in biomedical engineering. I am an associate senior lecturer in that university. In this respect, we have fabricated the operating table that uses the mechanical jack for elevation and depression,⁴⁹ the manual haematocrit centrifuge from the bicycle wheel,⁵⁰ the hospital still using copper tubing⁵¹, the modified trocar and cannula,⁵² the intraosseus needle,⁵³ the atraumatic suture from nylon and hypodermic needle⁵⁴ and autoclave powered by maize cob furnace and the pedal suction pump using the bicycle valve.^{55,56}

Another problem associated with the decline in the teaching hospitals was the gross delay in obtaining histopathology reports on operative specimens. By August 2003, we had 49 outstanding reports at the UCH, Ibadan dating back to 2001. We had paid one thousand five hundred naira (£6.00) for each specimen.

Again, we have overcome that bottleneck by procuring the microtome and other accessories to produce the slides which are read by a pathologist in UCH. Results are available within 10 days of obtaining the specimen by the routine we have established.⁵⁷

In recognition of the role of medical officers in providing primary care surgery in rural and urban slums in Nigeria, the Association of Rural Surgical Practitioners of Nigeria, ARSPON, was formed in 2008 and I was the first national secretary. ACE will host the fourth joint conference of ARSPON and the International Federation of Rural Surgery in November 2011. You are all cordially invited to the conference, the details of which could be found on www.ifrs-rural.com

I have been privileged to be the third editor, the author of thirteen chapters and the publisher of the third edition of the COMPANION TO SURGERY IN AFRICA⁵⁸ and a book, PRIMARY CARE SURGERY IN WESTERN NIGERIA 1977 – 2007, commemorating the 21st anniversary of ACE.⁵⁹

THE PHENOMENON OF ALTERNATIVE TO PRACTICAL

The gross decline in the value system, especially the get-rich-quick syndrome and the disappearance of the dignity of labour, occasioned by the long military rule in Nigeria, has severely affected the psyche of the populace and the education and health sectors.

At the primary school level, the electronic calculator replaced the learning and recitation of the multiplication table and the early morning mental arithmetic exercises as taught by our colonial masters. These exercises excited the brain to work like a computer even before its advent.

“Alternative to practical” in science subjects came into being at the secondary school level and the universities where experiments were no longer performed.

Several teaching hospitals in the West African sub region have resorted to the concept of ‘from the body to the bench’ - a variant of “alternative to practical” - in teaching basic surgical skills.⁶⁰⁻⁶² During one of such workshops in Enugu, south east Nigeria,⁶¹ many of the trainees indicated that the addition of other procedures such as skin grafting, nerve repair, suprapubic cystostomy, cardiopulmonary resuscitation, basic intubation techniques, minimal access surgery, endoscopy, herniorrhaphy, appendicectomy, venous cut down, ear nose and throat and maxillofacial procedures would enrich the programme. It was a common view that the programme should be made mandatory for all new surgical residents especially within the first three months of their training and that it should be organized more frequently with follow-up courses⁶¹.

All these procedures were daily routine in the UCH I trained and in many private and mission hospitals in Nigeria today.⁶³⁻⁷¹ This situation represents inappropriate utilization of available human, material and institutional resources in the face of a high demand for surgical services and it, therefore, calls for a reappraisal.

Two months ago, Operation Hernia, a UK-based NGO headed by Prof Andrew Kingsnorth of this Association, conducted a five-day mission in Owerri 150km from Enugu where the ‘alternative to practical’ surgical workshop took place. One hundred and twenty inguinal hernias were repaired and over 300 patients were still waiting.⁷² Several members of ARSPON were taught the Lichenstein tension-free repair using the affordable Indian mosquito net.⁷³ There are five teaching/tertiary hospitals in that region and this showed their low level of impact on health care delivery and surgical training in the region.

THE CHALLENGES

The gains of the early years brought about by the will of the founding teachers have been greatly eroded by the flight of these capable surgeons to the developed world in search of greener pastures and the degradation of the quality of care in the teaching hospitals occasioned by poor work ethics, inappropriate funding and

inadequate maintenance of facilities. Diminishing access to surgical care through prohibitive user fees have already altered the bed occupancy of teaching hospitals and changed the frequency ratios of diseases for the balanced experience of surgical trainees.⁴ The introduction of a salary structure in the public service that is not in tune with the true resources of the nation has not helped matters.

In the first Faculty of Surgery Lecture of the NPMCN in 1988, Prof E A Elebute identified these problems and preferred pragmatic solutions to them.⁷⁴ Successive lecturers in the series have been of the same opinion.⁷⁵⁻⁷⁹ However, little or nothing has been done to rectify them such that it has become the tales of yesteryears that Nigerian surgeons had successfully performed open-heart surgeries at Ibadan¹³ and have separated Siamese twins and transplanted kidneys at Ile-Ife.⁸⁰ These latter feats were by surgeons trained in Nigeria. Recent efforts to resuscitate open-heart surgery and start renal transplantation in UCH have not been sustained.

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In structure, there are three recognized basic types of surgical residency programmes:²

1. The Independent: in which all training is accomplished in one hospital
2. The affiliated: with complemented training in two or more hospitals, last year being spent in the parent hospital and
3. The Integrated: with the parent hospital closely relating with one or more other hospitals.

Although, the third option was identified as the ideal, the situation in Nigeria at that time made the first type the most practical.² It was this structure that produced the many capable surgeons that branched out to man the several medical schools and the many private and public specialist hospitals in our nation. There are now 12 medical schools in Nigeria from the original five.

At a symposium marking three decades of UCH, Ibadan in 1987 it was established that UCH did not have to be the centre of excellence at all three levels of health care, PRIMARY, SECONDARY and TERTIARY. There must be a division of

labour with a well-coordinated health care system for a community as large as Ibadan, which is one of the largest in Africa. The services of University College Hospital, Ibadan might have to be restricted to tertiary care.⁸¹

The third option identified as the ideal is viable in West Africa today. Recent reviews of rural surgical practices that have been in existence for over twenty years in Nigeria have shown that close to ninety per cent of surgical patients could be taken care of by a general surgeon working in a secondary level institution, using appropriate and scientifically sound technology and assisted by few nurses, several auxiliary nurses and professionals allied to medicine. (Table 1) There are several of such hospitals – mainly non-governmental - in Nigeria today,⁶⁴⁻⁷¹ which was not the case two decades ago.

It is proposed that the structure of training in the WACS and the NPMCN be in stages and decentralized with accreditation of more nongovernmental health institutions for the training of general surgeons as it is done with family physicians. Certificates should be awarded for successful completion of each stage: diploma, membership and fellowship.

The major advantages of this scheme include:

1. Residents do not stay for five to six years in tertiary institutions during which they behave like career officers who specialize in labour union matters. Many tertiary and public hospitals are closed for most of the year due to the demand of doctors for increased salaries.
2. More opportunities are created for training middle level man power for services in rural and remote areas.
3. Non-governmental hospitals with underutilized surgeons and family physicians (who practise primary care surgery) will become training grounds for service and research.
4. The products will be fully prepared to work at all levels of the health care pyramid.
5. The critical mass to achieve the MDG's will be attained sooner than later.

The revitalization of the teaching hospitals is crucial at this moment so that the prohibitive user fee does not turn away patients that should be managed at this level.

CONCLUSION

The surgical training programme in Nigeria “must be relevant, flexible, and adaptable to reflect our needs at all the three tiers of the health care system and we cannot lose touch with new developments and technologies that can be used to manage the changing patterns of disease or the emergence of a new pandemic of diseases common in industrialized countries. The ability to make virtue out of necessity is the greatest and immediate challenge of all”.⁴

I thank you all for your kind attention.

TABLE 1
SURGICAL OPERATIONS IN ERUWA 1983 – 2010.

OPERATION	NUMBER	PER CENT
External hernia repair	6355	39.4%
Excision of lumps	2144	13.3%
Hydrocelectomy	960	5.9%
Laparotomy	940	5.8%
infection	850	5.3%
gynaecologic	345	2.1%
intestinal obstruction	50	0.3%
trauma		
Caesarean section	920	5.7%
Prostatectomy	852	5.3%
Thyroidectomy	352	2.2%
Sequestrectomy	202	1.2%
Orchidopexy	180	1.1%
Vagotomy and drainage	165	1.0%
Mastectomy	133	0.8%
Major open fracture	120	0.7%
Chest tube insertion	100	0.6%
Vesico vaginal fistula repair	100	0.6%
Vaginal hysterectomy	74	0.5%
Splenectomy	38	0.2%
Major amputations	30	0.2%
Nephrectomy	30	0.2%
Mandibulectomy/maxillectomy	25	0.1%
A-P Resection of rectum	2	
Others	1200	7.4%
TOTAL	16167	

REFERENCES

1. Ajayi O O, Quartey J K M and Adebajo S A. (editors) *Knife in Hand. The History of the West African College of Surgeons (1960 – 2010)*. BookBuilders. Editions Africa, Ibadan, Nigeria 2010.
2. Odeku E 'L Training of the surgeon in the American school. Its application to West Africa *Dokita* 1967; 9: 15– 17
3. Solanke T F Training of medical practitioners in Nigeria (West Africa) for surgery in the rural areas. *S Afr J Surg.* 1997; 35: 139 – 141.
4. Ajayi O O and Adebamowo C A Surgery in Nigeria. *Arch Surg* 1999; 134: 206 – 211.
5. Awojobi OA. Modified pile suture in the outpatient treatment of hemorrhoids: A preliminary report. *Dis Colon Rect* 1983; 26: 95- 97.
6. Funmilayo J A Salivary gland tumours In Davey`s Companion to Surgery in Africa. Adeloye A. (editor) 2nd edition. Churchill Livingstone, London. 1987. 209 – 214.
7. Alade R B, Itayemi S O and Alufohai E Hernias *ibid* 387 – 405.
8. Davey W W Companion to Surgery in Africa. Davey W W (editor). Churchill Livingstone, Edinburgh and London. 1968
9. Alufohai E. Amoebiasis. In Davey`s Companion to Surgery in Africa. Adeloye A. (editor) 2nd edition. Churchill Livingstone, London. 1987. 349 – 358.
10. Alufohai E Abdominal injuries. *Ibid* 406 – 411.
11. Awojobi O A. Intussusception. In Davey`s Companion to Surgery in Africa. Adeloye A. (editor) 2nd edition. Churchill Livingstone, London. 1987 324-334.
12. Awojobi O A and Adeloye A. Gastrointestinal tuberculosis, lymph glands and lymphatics. *ibid* 379-386.
13. Adebajo S A, Grillo I A, Osinowo O, Adebo O A et al Initial experience with open- heart surgery at the University College Hospital, Ibadan, Nigeria. *Tropical Cardiology* 1981; 7: 49 – 54.
14. Ajayi O O Personal communication 1972.
15. Awojobi O A The differential diagnoses of anemia. A review of two cases. *Dokita* 1974; 6:169-172
16. Awojobi O A, Okubanjo AO and Akingbehin NA. Gastric antral membrane in childhood. A case report. *Nig. J. Paed.* 1982; 9: 115-118.
17. Awojobi O A. Outpatient practice: Management of hemorrhoids. *Nig. Med. Pract.* 1982; 4: 153-154.
18. Awojobi O A Intestinal resection in Ibadan. *Nig. Med. J.* 1982; 12: 281-286.
19. Nkposong E O Lawani J Osanyintuyi S O and Awojobi O A Semen analysis in infertility in Ibadan. *Nig Med J* 1982; 12: 181 – 186.
20. Awojobi O A and Ayoola E A. Hepatic resection in primary liver carcinoma:Prolonged survival in two Nigerian patients. *J Natl Med Assoc* 1982; 74: 535 – 538.
21. Awojobi O A, Nkposong, E O and Lawani J. Aetiologic factors of male infertility in Ibadan, Nigeria. *Afr J Med med Sci* 1983; 12: 91 – 94.
22. Awojobi O A, Ogunbiyi O A Nkposong E O. Unusual relationship of multiple renal arteries. *Urology* 1983; 21: 205-206.
23. Awojobi O A Junaid T A and Nkposong E O. Transrectal biopsy of the prostate: A review of 186 biopsies. *Afr. J. Med med Sci* 1983 12: 117-119.
24. Awojobi O A , Akinsola A, Ogunbiyi C O and Nkposong E O Recovery of renal function after 33 days of complete bilateral ureteric obstruction. *Afr. J. Med med Sci* 1983; 12: 121-12.
25. Awojobi O A, Lawani J, and Nkposong E O. Single dose gentamicin and metronidazole in the prevention of wound sepsis in urological surgery. *W Afr J Med* 1983; 2: 97 - 100.
26. Awojobi O A and Itayemi S O. Abdominal incisional hernia in Ibadan. *Trop Doct* 1983; 13: 112 – 114.
27. Awojobi O A and Ayoola E A. Management of primary liver cancer: A review of current approach with particular reference to the tropics. *Nig. Med. Pract.* 1983; 6: 135-139.
28. Awojobi O A Abdominal tuberculosis in the African *W. Afr. J. Med.* 1983; 2: 159-163.
29. Awojobi O A Use of Foley catheter in suprapubic punch cystostomy: An adaptation. *Trop Doct* 1983; 13: 189.
30. Awojobi O A and Lawani J. Suprapubic cystostomy: indications and complications. *Trop. Doct.* 1984; 14: 162-163.
31. Awojobi O A, Akingbehin N A and Okubanjo A O. Vesical calculi in childhood: An unusual presentation. *Nig Med Pract* 1984; 7; 52 – 53.
32. Awojobi O A and Nkposong E O. Seminal fluid changes after testicular torsion. *Urology* 1986; 27: 109 – 111
33. Adeloye A The place of surgery in the Ibarapa project. Report of my visit on November 20, 1974. In: *Primary Care Surgery in Western Nigeria 1977 – 2007*. pp 9-12. Acecool Medical Publishers, Eruwa, Nigeria 2007. O A Awojobi (editor)
34. Ajao O G and Ladipo O A Local anaesthetics for emergency abdominal surgery. *Trop Doct* 1978; 8: 73 – 75.
35. Ajao O G Thyroidectomy under local anaesthesia. *Trop Doct* 1979; 9: 73 – 75.
36. Ajao O G The importance of spinal anaesthesia in surgical practice in tropical Africa. *J Trop Med & Hyg.* 1977; 80: 126 – 128.
37. Awojobi O A, Sagua C A and Ladipo J K. Outpatient management of external hernia. A district hospital experience. *W Afr. J. Med* 1987; 6: 201-204.
38. Awojobi O A, Ladipo J K and Sagua C A. Paediatric inguinoscrotal surgery in a district hospital. *Trop Doct* 1988; 18: 23-24.
39. Awojobi O A and Ogunsina, S Ectopic pregnancy in a rural practice. *Nig J Med* 2001; 10: 139 - 40.

40. Awojobi O A, Ogunsina, S and Adekola, F Ectopic pregnancy in a rural population with a high twinning rate. *Trop Doct* 2002; 32: 37 -8.
41. Awojobi O A and Muyibi SA Letter. When there is no plasticine *Trop Doct* 2002; 32: 250.
42. Awojobi O A and Olaleye O A Causes and trend of mortality in Ibarapa. *Dokita* 2003; 29: 53 - 56.
43. Awojobi O A and Ayantunde A A Inguinal hernia in Nigeria. *Trop Doct* 2004; 34: 180 – 181.
44. Tokode O M and Awojobi O A Spontaneous appendicocutaneous fistula – A case report. *Ann Ibadan Post Grad Med* 2004; 2: 48 – 50.
45. Awojobi O.A and Ayantunde A A Outpatient simultaneous bilateral inguinal herniorrhaphy in a rural practice. *Niger J Clin Pract* 2004; 7: 28 - 30.
46. Awojobi O A, Jeje O M, Oti O O, Dania S, Dada O, Gbadamosi O A, Ajayi N O, Madu B E, Akanji T O and Adewumi B A The frequency of twinning in a rural community in Western Nigeria – an update. *Niger Postgrad Med J* 2006; 13: 73 – 74.
47. Awojobi O A, Sagua A C and Ogidiagba E L. Inflated inner tube in the prevention of pressure ulcer. *Rural Surgery* 2008; 4: 17 – 18.
48. Awojobi O A and Ogunsina G S. Chronic lymphoedema. In: Davey`s Companion to Surgery in Africa. Adeloje A, Adekunle O O and Awojobi O A. (editors) 3rd edition. Acecool Medical Publishers, Eruwa, Nigeria 2009, 92 – 106.
49. Awojobi O A Appropriate technology for operating tables. *Afr Health* 1994; 16: 17-19.
50. Awojobi O A The manual haematocrit centrifuge. *Trop Doct* 2002; 32: 168
51. Awojobi O A The hospital still. *Trop Doct*. 1993; 23: 173-174.
52. Awojobi O A Letter. Suprapubic cystostomy- Another adaptation. *Trop Doct* 1986; 16: 180.
53. Awojobi O A Letter. Epidural needle and intraosseous access. *Trop Doct* 2003; 33: 59.
54. Awojobi O.A Letter. Atraumatic sutures can be made locally. *Trop Doct* 2005; 35: 124.
55. Awojobi O A Appropriate technology and management practice in Nigerian rural health care delivery- the Eruwa experience. *Polytech J Sci Tech* 1990; 1: 1-6.
56. Awojobi O A Engineering fabrication in Nigerian rural medical practice – The Eruwa experience. *LAUTECH J Eng Tech* 2007; 4: 58 – 62.
57. Awojobi O A The travails of rural surgery in Nigeria and the triumph of pragmatism. Part III *Rural Surgery* 2006; vol 2 no 4: 10 – 13.
58. Adeloje A, Adekunle O O and Awojobi O A. (editors) Davey`s Companion to Surgery in Africa. 3rd edition. Acecool Medical Publishers, Eruwa, Nigeria 2009, 92 – 106.
59. Awojobi O A (editor) Primary Care Surgery in Western Nigeria 1977 – 2007. Acecool Medical Publishers, Eruwa, Nigeria 2007.
60. Hamdorf J M, Hall J C. Acquiring surgical skill. *Br J Surg* 2000; 87: 28 – 37. Kneebone R, Simon D. Surgical skills training: simulation and multimedia combined. *Med Educ* 2001; 35: 909 – 915.
61. Ezeome, E R, Ekenze S O , Ugwumba, F, Nwajobi, C E and Coker O. Surgical training in resource-limited countries: moving from the body to the bench- experiences from the basic surgical skills workshop in Enugu, Nigeria. *Trop Doct* 2009; 39: 93 – 97.
62. Bode C O, Nwawolo C C, Giwa-Osagie O F. Surgical education at the West African College of Surgeons. *World J Surg* 2008; 32(10): 2162-6.
63. Awojobi O A A review of surgical cases and procedures in rural Nigeria. *Arch Ibadan Med*. 2002; 3: 65 - 68.
64. Awojobi O A Twenty years of primary care surgery in Ibarapa *Nig J Ophthalmol* 2003; 11: 49 – 53.
65. Alufohai E Coping with rural surgery: A decade of private rural surgical practice in Southern Nigeria. 2000 Sam Bookman Publishers, Ibadan, Nigeria.
66. OlaOlorun D A, Meier D E and Tarpley J L. Operative management of thyroid abnormalities in a general medical practice hospital in sub-Saharan African. *Trop Doct* 2000; 30: 221 – 223.
67. Umunna J I Thyroidectomy in a rural private practice. *Nig Med Pract* 1988; 16: 121 – 124.
68. Umunna J I Proctidientia of the rectum: Recurrence rate after surgical treatment. Experience from a rural hospital practice. *Nig J Surg Sci* 2009;19: 77-81.
69. Umunna J I Prostatic fossa gauze-packing in the prevention of blood clot obstruction of the bladder after transvesical prostatectomy. *W Afr J Med* 2010; 29: 184-186.
70. OlaOlorun D A Abdominal fasciocutaneous flap for upper extremity wound coverage in the developing world: indications and complications. *Trop Doct* 2001; 31: 45 – 46.
71. Oladiran I O, OlaOlorun D A and Adeniran A. Severe chemical proctitis following application of caustic native suppository. *Trop Doct* 2002; 32: 112 – 114.
72. Awojobi O A Operation Hernia South East Nigeria. A Report. <http://www.operationhernia.org.uk/page12.htm>
73. Tongaonkar, R R, Reddy B V, Mehta V K, Singh N S and Shivade S Preliminary multicentric trial of cheap indigenous mosquito-net cloth for tension free hernia repair *Indian Journal of Surgery* 2003; 65: 89 - 95.
74. Elebute E A Surgery in Nigeria: The Will and the Way. First Faculty of Surgery Lecture. National Postgraduate Medical College of Nigeria. 16th September 1988.
75. Wilkey A O Ascent to excellence (in the reverse gear) Fourth Faculty of Surgery Lecture. National Postgraduate Medical College of Nigeria. 20th January 1995
76. Adesola A O The doctor and the people's health. Fifth Faculty of Surgery Lecture. National Postgraduate Medical College of Nigeria. 19th January 1996
77. Nwako F A The travails of the trainer, the trainee and the two. Sixth Faculty of Surgery Lecture. National Postgraduate Medical College of Nigeria. 21st February 1997.

78. Ogunbiyi T A J Surgical training for the 21st century. Eighth Faculty of Surgery Lecture. National Postgraduate Medical College of Nigeria. 17th February 2000.
79. Ajayi O O Surgery in poverty: Pragmatic options for training and accreditation in Nigeria. Ninth Faculty of Surgery Lecture. National Postgraduate Medical College of Nigeria. 27th February 2003.
80. Adejuyigbe O, Sowande O A , Olabanji J K et al. Successful separation of two pairs of conjoined twins in Ile-Ife, Nigeria. *East Afr Med J* 2005; 82: 50 – 53.
81. Ogunlesi T O Medical practice in UCH. In: University College Hospital, Ibadan: Yesterday, Today and Tomorrow. T F Solanke (editor). 18th November 1987. pp 13 – 18. Ibadan University Press Nigeria.