

Anaesthetic manpower development in West Africa

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Summary

Advances in surgery have been possible worldwide largely due to specialized manpower, innovations in modern anaesthetic techniques and drugs. Shortage of specialist manpower in anaesthesia has continued in West Africa despite various available local postgraduate training programmes. This paper examines the impact of the West African Postgraduate Medical College (WAPMC) training programme on anaesthetic manpower development in the West Africa subregion. Data collected from the records of the WAPMC revealed that from April 1992 to October 1996 a total number of 2,963 candidates attempted the primary examination of the various surgical faculties compared to 93 candidates for anaesthesia – a ratio of 32 prospective surgeons to one anaesthetist. The end point of the training produced 292 Fellows in the five-year period with only six in anaesthesia, i.e., 1 anaesthetist to 49 surgeons. Although the diploma programme of the same College produced 56 graduates in the study period, 53.6% of them were pursuing the Fellowship programme in tertiary institutions. Suggestions are proposed to redress the ever-widening gap between the number of specialist surgeons and anaesthetists in the West Africa subregion.

Keywords: Manpower development, anaesthesia

Résumé

Les progrès en chirurgie ont été possible dans le monde en majorité grâce aux pouvoirs humains, des innovations des techniques anesthésiques modernes et des médicaments. Le manque en main d'œuvre de spécialiste en anesthésie (anaesthésiste) a continué en Afrique de l'ouest malgré la présence de divers programmes de formations d'enseignement supérieur ou de spécialisation dans la région. Ce document examine l'impact dans le Collège Ouest Africain d'enseignement supérieur médical (CWAESM) sur les programmes de formation et de développement dans cette sous-région. Les données relevées des archives du CWAESM montrent que à partir d'avril 1992 à octobre 1996 un nombre total de 2,963 candidats ont subi diverses facultés de chirurgie comparé 93 candidats pour l'anesthésie. Soit un ratio de 32 chirurgiens pour un anesthésiste. En fin, la formation a produit 292 candidats en une période de 5 ans avec seulement 6 en anesthésie, c'est à dire un anesthésiste sur 49 chirurgiens. Quoique le programme du Collège a produit 56 diplômes pendant la période d'étude, 53.6% de ses diplômés ont continué le programme de dans les Universités. Les suggestions ont été faites pour diminuer la grande marge entre le nombre de chirurgiens et d'anesthésistes dans la sous-région Ouest Africaine.

Introduction

Since the introduction of ether in 1846, the development of anaesthesia has witnessed many innovations in terms of drugs, agents, equipment, and techniques. From the Schimmelbusch mask, EMO, and standard Boyle's machine, computerized anaesthetic, and monitoring equipment are now available for safe delivery of anaesthesia. The wider spectrum of drugs available

also ensures flexibility of techniques suitable for various surgical procedures in patients with diverse age and clinical conditions. Thus, advancements in surgery have been possible largely due to modern anaesthesia.

Anaesthesia in the developed countries has advanced very rapidly since the first examination for the Diploma in Anaesthesia was held in 1935. In the same year, a chair in anaesthesia was created at Oxford. The recognition of anaesthesia as a specialty with full equality with other surgical and medical specialties was however secured only in 1947 with the establishment of the Faculty of Anaesthetists by the Council of the Royal College of Surgeons [1]. In West Africa, training of anaesthetists locally commenced in 1967 at diploma level with the creation of the first autonomous Department of Anaesthesia at the University of Lagos [2] and a year later at the University of Ibadan. Training at Fellowship level started in 1970 with the establishment of the National Postgraduate Medical College mainly for the training of Nigerian specialists.

The West African Postgraduate Medical College (WAPMC) came into formal existence in 1978 to promote postgraduate medical education within the five participating anglophone countries – Nigeria, Ghana, Liberia, Sierra-Leone and Gambia [3]. The professional training is based in accredited institutions mostly in Nigeria with two in Ghana and one each in the other three countries. Candidates on the programme are employed as resident doctors, attend Revision and Update courses specially organized by the two postgraduate colleges before the examinations (Primary, Part I and Part II) scheduled annually for April/May and October/November. The training institutions also support the residents on approved clinical attachment in other overseas or regional institutions when feasible after the Part I examination. The two Fellowship programmes in the subregion enjoy reciprocity at the Primary examination level. By 1991, both colleges had produced 75 Fellows mostly in Medicine and Surgery with only one in anaesthesia [3]. The aim of this paper is to examine the impact of the West African Postgraduate Medical College training on anaesthetic manpower development in the subregion. Suggestions are also proposed on how to redress the ever-widening gap between the number of specialist surgeons and anaesthetists.

Materials and methods

The numbers of candidates who registered for examination of the West African College of Surgeons Fellowship in Anaesthesia and all other surgical programmes from April 1992 to October 1996 were collected from the West African Postgraduate Medical College. The records were reviewed to retrieve the number of candidates that actually attempted and those who passed per year in the April and October examinations of the College. The ratio of Anaesthetists trained through the diploma programme over the same period was also obtained and those that proceeded to the fellowship programme were determined.

Results

Faculty of Obstetrics and Gynaecology attracted the highest number of postgraduate trainees at the Primary examination with a steady increase from 275 to 312 candidates per year and a mean

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of 299 per year over the five years. Fig. 1 shows the number of candidates per specialty for Primary examination between 1992 and 1996.

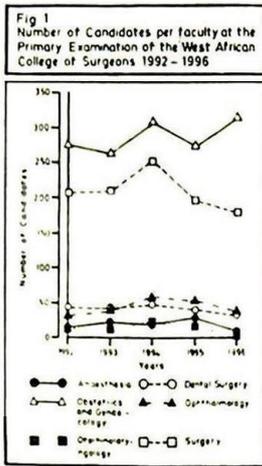


Fig. 1

While a total of 2,963 candidates sat for the Primary examination of the various surgical specialties viz. Obstetrics and Gynaecology, Surgery, Dental Surgery, Ophthalmology and Otorhinolaryngology (ORL), only 93 candidates sat for anaesthesia, thus producing a ratio of 32 prospective surgeons to 1 anaesthetist (Table 1). There were 91 to 101 candidates per year (mean 96) at Part I, Obstetrics and Gynaecology examinations, 22 to 58 per year (mean 40) at

Table 1: Total number of surgical versus anaesthesia candidates per examination (1992-1996)

Examination	Number of candidates		Ratio Surgical:Anaesthesia
	Surgical	Anaesthesia	
Primary	2963	93	32:1
Part I	1379	105	13:1
Part II	597	16	37:3

Part II and 16 to 40 Fellows (mean 27) produced per year. This trend is closely followed by the Faculty of Surgery producing 16 to 39 Fellows per year. Anaesthesia had only a range of 9 to 27 candidates per year at Primary (mean 19), 17 to 26 candidates per year at Part I (mean 21) and zero to 2 Fellows per year (Tables II and III). 94.6% of the anaesthesia candidates were from Nigeria while the remaining 5.4% were from Ghana. The end point of the training produced 292 surgical Fellows in 5 years with only 6 Fellows (all Nigerians) in anaesthesia, i.e., a ratio of 49 surgeons to 1 anaesthetist.

The number of training institutions for surgery and obstetrics and gynaecology has increased beyond the older University Teaching Hospitals to include some private hospitals.

Table 2: Number of candidate per faculty at the Part I examination of the West African College of Surgeons (1992-1996)

Faculty	Number of candidates/year					Total	%
	1992	1993	1994	1995	1996		
Anaesthesia	20	17	22	20	26	105	7.2
Dental	24	14	31	34	24	127	8.7
Obstet. & Gynaec.	91	92	95	101	101	480	32.9
Ophthalmology	6	14	31	22	29	120	7.0
Otorhinolaryngology	7	9	7	6	3	32	2.2
Surgery	116	122	138	122	115	613	42.0

Total no. of candidates = 1,458

Table 3: Number of candidates per faculty at the Part II examination of the West African College of Surgeons 1992-1996.

Faculty	Number of candidates/year					Total	%
	1992	1993	1994	1995	1996		
Anaesthesia	3	2	3	3	5	16	2.7
Dental	10	9	8	9	14	50	8.4
Obstet. & Gynaec.	22	23	39	56	58	198	33.2
Ophthalmology	9	12	12	4	15	52	8.7
Otorhinolaryngology	-	3	2	2	3	10	1.7
Surgery	43	56	58	49	63	271	45.3

Total No. of candidates = 597

Thus, about 20 fully or partially accredited training centres are available for training in Nigeria and 2 in Ghana. But for anaesthesia, training of Fellows is carried out in 6 centres in Nigeria and 1 centre in Ghana.

The Diploma in Anaesthesia programme of the West African College of Surgeons, a constituent College of the West African Postgraduate Medical College (WAPMC) was commenced in 1990. This programme yielded 71 diplomates within the 5 years study period; 37 (52%) from Nigeria and 34 (48%) from Ghana. However, 30 (42.3%) of these diplomates, mostly Nigerians, were also pursuing Fellowship programmes in the subregion

Discussion

Postgraduate medical education based in the West African subregion has been pursued with great vigour since the early 60s by experts in various specialties. These teachers who had their postgraduate training in overseas institutions were determined to train experts locally at reduced cost while providing much needed manpower. The dearth of anaesthetists has however continued, with a Anaesthetist population ratio of 1:295,000 [2] or less compared to less than 1:10,000 in developed countries. Although the WAPMC Diploma and Fellowship training programmes have produced more specialists in Anaesthesia over the five year study period, this number is not commensurate with the growth of specialists in surgical areas. In a recent survey of 52 hospitals in 15 states of Nigeria, nurse anaesthetists provided service with physician anaesthetists in 50% of hospitals and alone in 19.2% of the hospitals including some teaching hospitals [4]. Although nurses in anaesthesia provide useful assistance to physician anaesthetists, in many parts of the world, strictly enforced guidelines are essential to ensure safety of patients. In the Gambia [5,6] problems of peri-operative fluid and electrolyte imbalance, septicaemic shock, difficult airway, and intercurrent medical diseases occurred in 65.5% of surgical patients and required the expertise of physician anaesthetists for better outcome.

This study has further confirmed that despite the relatively large number of doctors seeking postgraduate training in surgical specialties in this subregion, only a few are interested in Anaesthesia. It was thought that training of Diplomates over a year might bridge the gap but since the training is based at tertiary institutions, most of the trainees develop interest in the Fellowship programme. This scenario results in the depletion of a number of clinical anaesthetists that could have been released to secondary level of health care. The data from the Nigerian Postgraduate Medical College Fellowship programme although not included in this study, is not likely to be different since over 90% of the candidates are Nigerians who also attempt the WAPMC examinations simultaneously. The relative slight increase in the number of candidates that sat the Part I Fellowship examination is due to the reciprocity enjoyed by those candidates who are successful at the Primary examination of the National Postgraduate Medical College.

The specialty of Anaesthesia is unattractive to both graduating medical students and interns because of the "behind the scene" nature of the specialty and lack of adequate exposure to the specialty within the training curriculum [7,8,9]. Unfortunately, the areas where anaesthetists are primary care providers such as Intensive Care, Resuscitation, Casualty and Pain Therapy Clinics are poorly developed or non-existent in most West African hospitals. Thus, the few doctors that join the specialty find the work tedious, especially with poorly prepared patients, restricted anaesthetic agents, poor monitoring and resuscitative facilities. It is therefore not surprising that despite the efforts for training within the subregion, the specialty remains unattractive. The few trained ones, quickly migrate from the subregion to ready and more attractive markets all over the world where shortage of anaesthetists also abound. Even our locally trained Diplomates have found favour with the Nigerian Government technical assistance scheme and they are sent to other countries to provide service.

Which then is the way forward especially now that anaesthetists are under increased pressure to cover an ever-widening spectrum of patients and surgical procedures? Our suggestions include a combination of strategies to redress the ever-widening gap between the number of trained anaesthetists and surgeons in the subregion. Since medical education should be made to respond to the health needs of the community, the time allocated to anaesthesia alone in the medical school undergraduate curriculum should not be less than the eight weeks usually stipulated. The specialty should also form one of the optional departments through which an intern can rotate before full registration. There should be opportunity for locum appointments in Anaesthesia for young graduates who may then find the specialty interesting and fulfilling as a career.

The Diploma in Anaesthesia programme should be structured as a programme supported by Governments. Thus, medical officers already in service will be sponsored for the training and will be made to return to serve for a specified period in government hospitals before they can be eligible for sponsorship for the Fellowship programme if they so wish. Such a move, which is also currently being applied to training of Diplomates in Ophthalmology [10], will not only provide the required manpower at secondary level of health care delivery, it will reduce the drift of trained anaesthetists to urban private hospitals and away from practising their vocation. At tertiary level, accreditation criteria for surgical departments should include adequacy anaesthetic and resuscitative facilities in the hospital. West African countries with compulsory National

compulsory National Service Schemes like Nigeria and Ghana should allow the year to be spent in Anaesthesia, and other specialties with chronic manpower shortage, as an incentive to trainees. Also, efforts must be made to provide commensurate remuneration and essential facilities for the safe practice of Anaesthesia at all levels of health care. These measures will not only promote the growth of Anaesthesia in the subregion but also those of surgery and critical care medicine.

Acknowledgments

We wish to thank Prof. Kayode Odusote, Secretary, West African Postgraduate Medical College for his invaluable assistance in data collection. We also appreciate the secretarial assistance of Mrs. J. A. Akinleye.

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