A PAEDIATRICIAN'S EXPERIENCE-THE SAFARI SO FAR

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A PAEDIATRICIAN'S EXPERIENCE – THE SAFARI SO FAR

I must first of all thank the University of Lagos for affording me this unique opportunity to give my inaugural lecture, I nearly said a valedictory address.

The title of this lecture – *A Paediatrician's Experience – The Safari So Far* suggests an adventure into an interesting world where only very few have trodden before me and with so much to do when you arrive there. I am talking about the world of Paediatrics and Child Health, the area of Medicine which caters for the sick and the maintenance of good health of children.

Indeed when I embarked on this journey 27 years ago – only two Nigerians have been fully trained and only about half a dozen of us were at various stages of training.

Before Nigerian independence, there was no children's hospital, but at the University College Hospital in Ibadan, the children's specialty existed as a unit under the department of Medicine.

In the Government General Hospitals the specialist adult Physicians looked after sick children to the best of their ability as they were not as inclined towards sick children as they were towards adult patients.

At this juncture, I would like to pay special tribute to the late Professor Robert Collis, First Director Institute of Child Health, Ibadan and Lagos, and Foundation Professor of Paediatrics at the University of Lagos, who many would regard as the Father of Paediatrics in Nigeria. His leadership role, organisational ability and his great fame and international influence were tremendous, and helped those of us he took under his wings to complete their studies.

May his soul rest in peace.

It was Robert Collis who set me up for the adventure I am about to describe to you.

In this lecture, I will limit my domains of paediatrics to:

a.. Nutrition Problems
b. Newborn Problems
c. Congenital Malformations
d. Sickle Cell Disease.

I intend to conclude the lecture by a discourse on the prospects of Nigerian children by the year 2000 and beyond.

a. Nutrition Problems

The problems of nutrition especially under-nutrition has always been a focus of attention in most developing countries, especially amongst children between three years and five years of age. It has been closely associated with poverty and infections such as measles, gastroenteritis and tuberculosis. Poor education is another important factor. A vicious cycle indeed exists between these factors.

In 1961 under the directorship of Prof. Robert Collis, the Institute of Child Health, University of Ibadan, embarked upon the study of nutrition as estimated by growth in children in various Nigerian communities, comparing the rural peasants and the urban well-do-do. The survey areas were the University of Ibadan where staff children were the subjects, a village near Ibadan (Akufo) and two villages near Ilesha (now Oyo State). Later the study extended to the North of Nigeria in Pankshin (Plateau State) and Oji River (Anambra State)

In the studies, apart from measuring the growth pattern in children, we examined and measured the dietary intake of each family, enquired about their agricultural practices and we conducted clinical examination on the children. The study was transverse survey of the communities selected.

The result obtained from this survey method in the then Western Nigeria was of considerable importance, the most startling observation being that the children of the well-to-do Nigerians in Ibadan apart from being healthier, were some 6 inches taller and 10 lbs heavier from 3½ years, than the children of farmers in Ilesha and in Akufo. The children of the Plateau were better off than the Yoruba rural children, possibly due to better agricultural practices and food intake, Collis, WRF, Dema, IS and Omololu A. O. (1962) and Collis WRF, Dema IS and Lesi FEA (1962).

Prior to these studies, reports on growth pattern in the West African populations were scanty on reviewing literature. Our study was therefore of great significance and became a reference point for similar subsequent surveys.

A follow-up of the Ilesha survey was the establishment of two rural health centres in the villages studied (Abebeyun and Igun). The centres were designed as model clinics to carry out the components of what is now known as Primary Health Care.

I believe the clinics still exist today, and run with the full participation of the villagers as was designed.

The late Professor Collis used to implore in 1961 that you should not do research for research sake. Do it for the purpose to serve the people.

In support of this statement, our research publications were lodged with the Federal and Regional Governments for necessary action. Consequently, the Western Nigerian Government set up an inter-sectoral committee for the purpose of improving the health of the community. The practical expression of this effort was the encouragement given by the Ministry of Agriculture for individuals to start backyard gardens and poultry farming as hobbies. This brought the prices of eggs and vegetables down to affordable cost within a short time.

The Ministry of Health, through Dr. M. P. Otolorin, then Chief Health Officer and a member of the intersectoral committee posted resident community health nurses to our rural health centres at Igun and Abebegun villages earlier mentioned.

b. Newborn Problems

By 1966, my research activities had shifted to Lagos. The venues being Lagos Island Maternity Hospital, Apapa Health Centre and later at the Lagos University Teaching Hospital. The studies this time were carried out again under the aegis of the Institute of Child Health with Prof. W. R. F.

Collis as Director. The focus then was the newborn problems. For this purpose a grant was obtained from the *Save the Children Fund.*

In this adventure I also pay special tribute to Dr. A. Animashaun, Mrs. A. O. Lesi, Mrs. O. Ogundipe, then of Institute of Child Health and Prof. Ransome-Kuti of the Department of Paediatrics. Without their support and participation, the project would not have succeeded.

We were able to establish the prematurity rate in Lagos (as judged by the weight of the babies i.e. (2500 gm and below) to be 13.1% as against 6.7% in the U.K. at the time. We discovered that even though our prematurity rate was nearly double that of the caucasian, our Nigerian children survived better except those who were grossly immature i.e. born before normal gestation time of 37–40 weeks. It is note-worthy that the majority of Nigerian low-birth-weight babies were infact "small for date" i.e. born between 37–40 weeks gestation often survived. Their high survival rate was due to the maturity of their lungs as clearly shown by Prof. Olowe in a later study in 1983.

It is also of interest to note that the factors associated with the high incidence of prematurity in Lagos included, height of the mother, her poor educational attainment and her poor nutritional status as judged by haemoglobin level and blood protein.

The study showed that 60% of the mothers measured 62" and under and had only primary education and often no formal education.

On the study of perinatal problems, it was discovered that the perinatal mortality rate was about 60/1000 deliveries A comparative figure for Europe at the time stood between 20–30/1000.

The environmental factors which accounted for this high mortality rate was again adduced to poor socio-economic circumstances, poor antenatal care, infections, congenital malformations, birth asphyxia, frequent pregnanccies, high parity, high density accommodation and lack of basic health facilities such as potable water.

It was clear from the above studies that prematurity rate, perinatal mortality rate and other vital statistics in the newborn period are reliable indices of the effectiveness of

obstetric practice in the community. They also reflect the health, nutrition and the educational level of the women in particular.

Again we have to put research into practice. Before 1966 there was no newborn clinic in Lagos. There were a number of welfare clinics. In fact those welfare clinics had been well-established institutions, created in the 1930s by the late Dr. I. L. Oluwole, the renowned Medical Officer of Health of the Lagos City Council, to reduce infant mortality. But babies were not seen in the clinics until they are about to commence their immunisations at about three months of age. That time was too late for the neonatalogist. The first month is crucial for the baby.

We showed leadership in this direction when the Lagos University Teaching Hospital opened its Obstetrics facilities in 1966. The Institute of Child Health started the newborn clinic at Randle Avenue for babies born in LUTH. That was the First Neonatal Clinic in Lagos.

The clinic has since been taken over by the Lagos University Teaching Hospital and it is justifying its purpose. It is cheering to note that even some private hospitals now have neonatal clinics.

c. Congenital Malformations

This is defined as a structural or metabolic anomaly which occurred during intra-uterine period, especially in the first three months.

Along with the study of newborn problems in Lagos was the survey of the epidemiology of congenital malformations at birth. It was to be my *opus magnum*. Very little attention had been directed to this study in Africa at the time. Understandably, communicable diseases and malnutrition have great health priorities. Birth defects even though have always existed, their occurrence have always been shrouded in ignorance, and mystery.

For this study, the Lagos Island Maternity Hospital was selected because of its large turnover of babies born. It was reckoned to be 20,000 deliveries annually. During the period of study 1966–67, 16,720 babies were examined and documented by the author usually within 12 hours of delivery.

Out of this number, 247 babies were discovered to have minor and major congenital defects – an incidence of 14,8/1000.

Because of the large population studied and the prospective nature of the survey the results of the investigation represented an authoritative African statement on the subject. It is noteworthy that our overall incidence of 14.8/1000 is similar to the incidence found by most workers in other parts of the world, but the incidence of certain specific defects vary from country to country.

For example, in this study bony defects were the commonest anomalies found especially in ulna polydactyly (extradigit). And in Europe at the time of study central nervous system abnormalities were the commonest.

Vice-Chancellor, distinguished audience allow me to comment briefly on the following aspects of congenital abnormalities:

1. Historical aspects and beliefs
2. Aetiology, and
3. Foetal outcome of human pregnancy.

Historical Consideration and Beliefs

Congenital malformations have been recognised right through the ages. Because of the impact of these forms of human beings, primitive man had made records of these freaks of nature. Before man learned to write, these human experiences were carved on stone or wood and there were rock drawings which showed a child with one eye (cyclopia) or twins joined together in various positions of the body (siamese). These impressions were found near Australia as handiwork of a primitive people that lived in a stone age civilization. Similar tablets were discovered near Tigris river engraved by the ancient Babylonian scribes about 4000 years ago.

Needless to say that the cause of these abnormal forms was entirely unknown, their interpretation however abound. These interpetations change with folklores as they pass from generation to generation. It was probable that many mythological figures originated from these abnormal humans. For example, the Creek God *Centaur* could well be an infant with two pairs of legs; *Atlas* would be visualized as a child with an occipital encephalocele (a protrusion of the brain from the back of the skull) while the Egyptian God Ptah was reminiscent of achondroplasia (dwarf). Although to the Greeks these were gods, the Babylonians interpreted the birth of a deformed baby as a fore-runner of terrestial events. For example the birth of an hermaphrodite predicted calamity to the nation while a baby born with an imperforate anus (blocked stool passage) signified impending famine, and a baby born with three legs meant national prosperity!

The Romans had similar belief as illustrated in the word *monster* derived from the Latin word monstrare (to show). This belief had spread to Europe and other continents and was strongest during the Middle Ages. Then it was also believed and accepted that there was a possibility of a cross between a woman and terrestial demon being, sorcerers and witches who plagued human beings day and night.

These beliefs and others are still held even in some parts of the world. I will give you examples from rural tribes in Nigeria.

Amongst the Yorubas, because of these beliefs, expectant mothers are not allowed to go near certain streams, pawpaw or orange trees at midday when it is hot or at midnight. It is believed that demons and other evil spirits visit these places at these times. An expectant mother is usually instructed to carry a stone or sharp instrument on her person throughout pregnancy, as it drives away evil spirits. It is however, believed that a child born with polydactyly (extra digit) is likely to succeed in business ventures.

The Hausas accepted the birth of a deformed child as God's work and treated it normally. However, if a mother with such a previous history was pregnant again she was given washings from Islamic writings to drink frequently to avoid a recurrence.

The Ibos hold the view that congenital deformity was a repercussion as a result of unfaithfulness of the wife or an offence to certain gods or some other supernatural powers.

The Binis share this view too and entertain a superstition which states that if a woman experienced sexual inter-

course in the afternoon she produced a blind and deaf baby.

In Nigeria as in great many developed countries of the world abnormal infants are destroyed by various forms of infanticide. At times one wonders whether we are not still in the Middle Ages.

Aetiology: As mentioned earlier on, the cause of congenital defects was unknown for many centuries. It was Aristotle (384–322 BC) who propounded a reasonable theory as it would seem today that the cause of malformations could equally be found in both father and mother. Artistotle, the father of teratology further suggested thus a definition of an abnormal child as one born "contrary to nature – not contrary to nature absolutely but contrary to the usual course of nature".

From the time of Aristotle and throughout the Middle Ages knowledge of congenital malformations gathered slowly An outstanding contribution was made by William Harvey (the discoverer of the circulation of blood) in 1651, when he related birth defects such as harelip to an arrest of growth during embryonic development.

The 19th century was a momentous period in the study of malformations. The study of human embryology was well established and the foundation of the science of genetics was laid with the work of Meckel (1781–1835), and Gregor Mendel (1822–1884). Gregor Mendel, an Abbot in Brurn is known as the father of Genetics.

In the 20th century, heredity and arrest of growth of the foetus were widely accepted as the cause of human malformations. They are still accepted.

Fresh thought on human teratology was further stimulated in 1941 when an Australian Ophthalmologist Norman Gregg related the high incidence of congenital cataract to an epidemic of rubella (German Measles) which had occurred prior to his observation in Australia. This has since been verified at different centres in the world.

The horizon of the causes of malformations became wider still when in 1961 reports came from Germany that a drug called. Thalidomide gave rise to limb and ear defects. The rest of the story of thalidomide is now history.

The experience of rubella virus and thalidomide drug have opened up a wide range of definite, probable and possible causes of congenital malformations. Research still

continues. The lesson to learn is extreme caution about self medication on the part of the pregnant mother especially in the first three months. On the part of the physician, illnesses should be promptly diagnosed and discretion exercised in prescribing for pregnant mothers.

At the time of the Lagos study, there was no rubella epidemic and no known teratogenic drug in circulation. We therefore examined genetic and certain non-specific environmental aetiological factors which could account for birth defects e.g. maternal age, maternal nutrition, birth rank and social class.

Of statistical relevance was the previous history of defect in the family especially in the case of polydactyly. Also statistically significant was finding of anaemia in mothers of deformed patients in general.

On the Foetal Outcome

I would like to end this section by quoting what Sir Lionel Penrose said in 1958 on Natural selection in man.

> "Some 15% zygote and possibly more aborted, some 3% of the remainder were still-born; some 5% of the remainder died in infancy and childhood; some 20% of the remainder remained unmated and 10% of the remainder were sterile".

This statement aptly summarises all our knowledge of the outcome of the foetus.

I am indebted again to the late Prof. W.R.F Collis. My profound gratitude goes to the late Prof. W. J. E. Jessop, former Dean Trinity College Dublin. He was my teacher and mentor who supervised my study. My thanks also go to Dr. Victoria Coffey, also formerly of TCD University of Dublin.

And lastly, but no means the least, I am grateful to Dr. M. P. Otolorin, formerly Chief Medical Adviser, Federal Ministry of Health, Lagos, who gave me permission to use the Lagos Island Maternity Hospital at the time.

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(D). Sickle Cell Disease

Following the survey in the domain of congenital anomalies at birth, I advanced to study sickle cell disease, the commonest hereditary disease in Africa, at the large sickle cell clinic of the Lagos University Teaching Hospital. The clinic is now 25 years old. I have also made close study of the disease amongst the people of African origin in the United Kingdom, the United States, and in the East and Southern African sub-continent.

The disease is peculiar to the African race wherever they may be by chance or choice. By chance through the notorious slave trade which flourished for over 300 years and took Africans especially from the West African sub-continent to the Americas and the West Indies, and by choice through educational pursuits, business prospects and pilgrimages to the rest of the world especially Europe, Middle East, North Africa and India. In Africa itself the disease is concentrated in the area South of the Sahara and north of the Zambesi River. The region represents the Middle of Africa – and is the heartland of the African peoples.

Interestingly, this geographical area coincides with malaria belt of tropical Africa.

Sickle cell is a disease of the blood characterised by varying degree of anemia, jaundice, chronic ill health and failure to thrive (grow). It is interrupted by recurrent acute ill health known as crisis. These crises are of various types – thrombotic, usually painful, crisis, haemolytic (sudden anaemia) crisis, aplastic (bone marrow failure) crisis and sequestration (pooling of blood) crisis. The sequestration crisis is the most dangerous and could be fatal.

Mr. Vice-Chancellor Sir, distinguished audience, I shall devote the next 15 minutes to expatiate on the historical, epidemiological, medico-social and cultural aspects of the disease. I will touch on the problems and prospects of sickle cell disease in Nigeria.

Historically, it was James Africanus Horton, in 1894 who first described what later became known as sickle cell disease in his monograph – *The Disease of the Tropical Climate and their Treatment:* It may interest you to know that Africanus Horton was born in Sierra Leone of a Sierra Leonian father and a Nigerian (Igbo) mother in 1839. He

obtained the Membership of the Royal College of Surgeons and Licentiate of the Royal College of Physicians and Licentiate in Midwifery London in 1858. In 1859 he graduated M. D. of Edinburgh University.

Horton's observations got lost in history until 1910 when James Herrick an American Physician described the same condition in a West Indian student in Chicago. Thus Herrick focused this disease peculiar to the Africans and the peoples of African descent into world attention. Since the original description scientific knowledge has advanced to appreciate that sickle cell disease was correctly described by James Neel in 1949 (another James) as a hereditary disease. In the same year, Linus Pauling a twice Nobel Laureate described the disease as a molecular disease of the haemoglobin.

Later in 1956, Vernom Ingram by a method of "finger printing" analysed the haemoglobin chemistry and located the abnormality at the number 6 position of the beta chain of the haemoglobin. In this position glutamic acid (an amino acid) is replaced by valine, (another amino acid) in haemoglobin S disease and by lysine (another amino acid) in haemoglobin C diseas. Certain letters of the alphabet are used to distinguish other haemoglobin abberations. For the purpose of this lecture I will limit myself to Hb S and Hb C genes, the two commonest haemoglobinopathies found in Africa. **Epidemiologically,** these haemoglobinopathies occur either as a homozygous form, haemoglobin SS or CC or as a heterozygous combination, Hb SC disease in West Africa.

In the sickle cell belt as described earlier the frequency of Hb S gene varies between 20–40%. And the occurrence of the Hb C gene to be between less than 1% and 20%. It is noteworthy that Hb C is mainly confined to West Africa with the highest frequency in northern Ghana 20% and in southern Ghana (10%), with lesser occurrences west and east of the neighbouring countries outside Ghana. The reason for this geographical distribution of the Hb C is not clear.

Outside Africa, the prevalence of the sickle cell gene thins out presumably with intermarriage and good health standard. Thus in the West Indies, the gene frequency is only about 10% and in the USA it is leess than 10%. Similarly haemoglobin C frequency is appreciably low in these countries, 3% and less than 3% respectively.

In Nigeria, the most populous African country, the haemoglobin S gene is found in about 25% of the population and Hb C is about 5% especially in the western part of the country. It is therefore estimated that sickle cell anaemia occurs in 2–3% of Nigerians. The high haemoglobin frequency has probably been maintained by malaria infestation in a process of balanced polymorphism, a process whereby the effects of malaria takes a high toll of lives of children with haemoglobin AA and has a less severe effect on children with haemoglobin AS.

At this juncture you may wish to know that haemoglobin AA is present in a normal individual. A person with Hb AS is said to be a trait carrier. He is often well and symptom free.

When 2 persons with haemoglobin AS decide to have a child, the chance occurrence of the offspring is 25% of being Hb AA. 50% chance of being Hb AS and 25% chance of being SS (a sickler). Please note that this chance occurrence takes place with each pregnancy. It is therefore possible for any number of children to be sicklers or none to be a sickler in a family.

Sociologically, Nigeria has a population of about 100 million living in diverse geographical locations and socio-cultural practices. The country has many tribes and each tribe has its language and each language has numerous dialects spoken by each sub-tribe. As one might expect, attitude towards health, disease and death are closely interwoven with beliefs and customary practices in the different areas of the country. It is reckoned that 84% of Nigerians live in the rural areas. Although Nigeria now has 21 states, a welcome situation which has led to increased urbanisation, the majority of Nigerians in the urban areas reflect their rural background in their socio-cultural activities in their lifestyles in towns and cities. These are reflected *medically* in the present high perinatal, neonatal and infant mortality rates. Malnutrition underlines most diseases, the greatest killers being infections which are easily preventable such as measles, tuberculosis, malaria, pneumonia, meningitis and gastroenteritis.

Furthermore the majority of Nigerians at present have not had the benefit of formal education. It is against this

background that sickle cell disease should be considered in tropical Africa today.

Malnutrition, preventable diseases and ignorance compromise the life of a sickler. They are the causes of death in sickle cell disease.

In support of this statement a small study was conducted amongst sicklers who were brought in as emergencies to LUTH Children Emergency Department between September 1987 and March 1988. Out of a total of 613 emergencies, only 10 died, i.e. 1.6% The primary causes of death included malaria and infections which poison the blood. These conditions often result to more profound anaemia, shock and death. The most vulnerable group are children under the age of 5 years.

You may wish to know however that mortality from sickle cell disease is far lower than mortality from measles, gastroenteritis and febrile convulsion. It is envisaged that when preventable diseases are eliminated in the environment, the survival of the sickle cell patient will dramatically improve.

Time will not permit me to elaborate on some of the health problems sicklers face. These include failure to thrive, severe brain damage, bedwetting and crippling deformity of the hips and infections. However, these occur severely in only some sicklers. The majority have mild to moderate manifestations of the complications. And some show only mild signs of the disease.

Be that as it may, there is no reason why a patient with sickle cell disease cannot live a reasonably normal life. In fact, increasing number are now studying in the universities, and many are now playing responsible roles in various professions.

What are the Solutions for sicklers in Nigeria?

1. *Prevention of deaths:* In preventing deaths in sicklers, the mainstay of management include combating the trigger factors urgently, such as malaria, infections and ensuring good nutrition including adequate fluid intake and availability of blood for transfussion when needed urgently.

2. In prolonging the life of the sickler, it is felt that with improved awareness and constant health education, patients respond better to management in a comprehensive medical centre. Also certain communicable diseases should be prevented by vaccination and health advice.

3. *Counselling:* Awareness can be enhanced by mounting a campaign to educate the public (American style). This may involve imposing sanctions on marriage, between the partners at risk. This is prospective counselling. It has the disadvantage of possible misconception by some segments of the public. Prospective counselling is also very expensive. It could however be modified and used in target areas such as in primary and secondary school children and in marriage counselling.

   Retrospective counselling on the other hand offers a personalised service to the entire family of an affected individual. It is our experience in Lagos that the effectiveness of this counselling varies from family to family. The effort in retrospective counselling can be enhanced by the establishment of sickle cell clinics. However, sickle cell clinics are available only in six centres in Nigeria. It is obvious that the available facilities are inadequate in a country where 2% of the population are affected by the disease.

   In order to make retrospective counselling succeed, the author has written a booklet for sicklers and their parents, councellors and primary health care practitioners. This booklet offers information and practical hints for affected individuals in managing their lives.

4. *Sickle cell clinics:* I strongly recommend the establishment of sickle cell clinics in every state, mission and other voluntary agency organisation. The scheme should be intimately tied to the primary health care and ensure a close linkage between it and the secondary medical care programme.

5. *Research:* A great deal of research has been done and are on-going in respect of the haemoglobin biochemistry and the effect of various drugs in sicklers, especially in the United States. Drug trials have also been conducted in Teaching Hospitals, in Nigeria, but this trials have their limitations.

At this point, I would like to make a statement on the issue of *cure* and *management* of sickle cell disease. Often, spurious claims are made by certain medical practitioners that a cure has been found for SCD. These claims have not yet been substantiated. It is well known that certain drugs or herbs have beneficial effects on sicklers when in painful crisis and may also have anti-infective properties which may prolong the interval of crisis. The effect does not constitute a cure. Our traditional practitioners especially, either deliberately or in ignorance interprete effective management as cure. There is *no known cure yet* for sickle cell disease. It can however be effectively managed.

Clinically, I think for the moment emphasis should be directed to the environment of the sickler: his psyche, his food, his infections, his housing, his family, his schooling, his job and his children. These are the challenges which face black people the world over. And survival of the majority of sicklers hangs on them. These are the areas where research grants should be invested.

Along with me in exploring the terrain of sickle cell disease are numerous colleagues represented by Prof. Eric Stroud and Dr. L. Davis of Kings College Hospital London, Prof. R. Scott, Centre for Sickle Cell Disease. in Howard University, Washington USA, Dr. A. Ajasin and Dr. A.O. Adenuga (College of Medicine University of Lagos) and numerous Registrars, Residents, House Officers, Matrons and Nursing Staff of LUTH, (past and present) to whom I owe gratitude. I wish also to underline my thanks and appreciation to our numerous patients from whom I have learnt and benefited.

What are the prospects for the Future?

In the last 45 minutes or so, I have taken you through four areas of Paediatrics and Child Health, understandably in a sketchy form due to time constraint. In concluding this lecture I would like to share some thoughts with you on the prospects of Nigerian children by the year 2000 and beyond. By that year, with the staggering natural increase in population rate of 2–3% per annum, the population of Nigeria would be about 150 million, 67 million of whom will be youths under 15 years of age. They must be fed and kept reasonably healthy and happy. Whose responsibility? We all have our roles to play in this venture.

a. The Paediatrician

Earlier in this Lecture, I stated that only two Nigerian Paediatricians were in practice in 1960. Within five years of independence the number had increased to eight. They have the honour and distinction of being the Nigerian pioneers of paediatrics. We were attached to Universities and the only Children's Hospital in Lagos and were fully engaged in services, teaching and training, and research. We are now about 120 Nigerian Paediatricians in the country. We need more. Our children with their pressing problems cannot wait. In meeting their demands the medical profession has made allowance for "buffers" i.e. those trained to take the load off the experts. These include the admirable and dedicated professional nurses and health extension workers. In respect of training, we recognise the leadership role played by our respected Prof. Ransome-Kuti presently the Honourable Minister of Health and erstwhile Director of Basic Health Services Scheme. During his tenure, (1975–1978) a number of schools of Health Technology were established mainly to train essential extension workers. The deployment of the essential workers was quite a different story. Their postings by bureaucrats were irrelevant to their training.

I wish therefore to make the following recommendations:

(i) Paediatricians should always be involved with training of paediatric workers at all levels.

(ii) The Local Government should participate in selecting candidates for training in a realistic way. Up to now lip service has been paid to these recommendations. But hopefully, with the firm establishment of councils for Local Government Areas, considerable attention should be directed to the needs.

b. Institute of Child Health

This establishment has a vital role to play in child survival. This has been the case the world over, more especially in the area of policy, research, practice evaluation and implementation of strategies for child care. It also has a role in the training of medical personnel.

Some 10 years ago, the Institute of Child Health of this University changed its name to Institute of Child Health and Primary Care – in the spirit of the new curriculum, thus high-lighting the importance of PHC in the target population of children. More recently it was decided to extend this title to include Community Health (i.e. ICH, PHC & CH). Laudable as it may appear in terms of inter-disciplinary cooperation, it poses tremendous danger to the identity of the Institute of Child Health on which the focus will expectedly be less sharp, and especially if it is headed by a non-paediatrician. This is "the state of the art" at present in this University.

It will be appreciated that Primary Health Care cuts across all medical disciplines i.e. just as PHC is relevant to Paediatrics so it is applicable to obsterics and gynaecology, surgery, anaesthesia, medicine etc. It is only an interim strategy to enable us achieve health for all by the year 2000. The objective also varies from country to country. In order not to lose our objective in paediatrics and child health, I wish to make the following recommendations:

(i) The Institute of Child Health should be an entity on its own, established outside or with loose attachment to the university system and should be headed by a Paediatrician. Any other arrangement is counter productive.

(ii) It should be run by a board comprising representatives of the university, Federal and State Government, Local Government Area Council and the appropriate Teaching Hospital. This was the arrangement in Lagos before 1978. It worked well.

(iii) The Institute of Child Health should work closely with the Local Government Area in prosecuting, primary health programme and any community mobilisation programmes.

(iv) The Institute of Child health should embark on the training programme for Diploma in Child Health (DCH) for medical graduates. This level of personnel will provide a relevant medical supporting staff for the specialist paediatrician in the Primary and Secondary Health Care. A holder of this Diploma could be given appropriate relief or credit when he embarks on full specialisation. The training programme would be in collaboration with the teaching hospital or recognised State Hospital for that subject.

(c) International Agencies

The great role played by the international agencies in child survival in Nigeria is immense. Since the Alma Ata Declaration in 1978, the WHO and UNICEF have embarked on various modalities to ensure the success of HFA/2000. So much has been written and said about Expanded Programme on Immunisation (EPI) by WHO and Oral Dehydration Therapy (ORT) by UNICEF. A recent publication by WHO (1988) has done justice to the role of WHO in Nigeria since Alma Ata. I wish to add that Dr. Adenike Grange of Department of Paediatrics in collaboration with UNICEF is doing a wonderful work in child survival from Diarrhoeal Diseases nationally and internationally.

d. Federal Government of Nigeria

In collaboration with International Agencies and other non-governmental organisations, the Federal Government has advanced the frontiers of child health in its various health programmes. Prior to Alma Ata convention, the FMG had similar programme – Basic Health Scheme earlier referred to. Even though the philosophy of the scheme was good, it appeared that the implementation met with difficulties. It could well be that the masses were not sufficiently involved and may be we had too much money at the time! The present PHC programme affords us another chance.

Fortunately, the philosophy of Primary Health Care is unique in the sense that it hinges on grass root participation, affordable cost and self-reliance in the prevention and treatment of common diseases, health education, nutrition and population control.

Since 1985, the Federal Government has committed itself to this programme totally; no stone has been left unturned to achieve the objective of health for all. For example the Government has:

(a) recognised the importance of inter-sectoral collaboration and establishing the managerial process of monitoring activities of the programme.

(b) launched mass mobilisation for economic recovery, social justice and self-reliance – MAMSER.

(c) encouraged non-governmental organisation (NGOs) of international Rotary, Soroptimist, Lions Club etc to contribute and participate in the HFA movement. In fact, the Minister of Health has opened an office in the Ministry for NGOs for this purpose.

(d) created National Immunisation Days (NIDs) to buttress the EPI programme in order to achieve 80% coverage of the population against the 6 deadly diseases (Tuberculosis, Tetanus, Whooping Cough, Diphtheria, Poliomyelitis and Measles) by the year 1990.

(e) involved the rural women in their campaigns.

It is hoped that with these planned programmes and proper implementation, the future of Nigerian children is bright by the year 2000 and beyond. They would not have had it so good.

I would end this lecture with a quotation by a Jewish Philosopher – Moshe Prywes. I quote:

"All who serve TEACH
All who teach SERVE
In all cases LEARN

Mr. Vice-Chancellor, Provost, Deputy Provost, Deans, Distinguished Ladies and Gentlemen this has been my guiding principle in my *Safari – so far.*

I thank you for listening.

A PAEDIATRICIAN'S EXPERIENCE-THE SAFARI SO FAR

BY F. E. A. LESI

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