UNIVERSITY OF PORT HARCOURT

OUR CHILDREN SUFFER AND DIE FOR NOTHING

An Inaugural Lecture

By

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DEDICATION

This lecture is dedicated to all teachers and particularly primary school teachers, who through the School Health Programme contribute towards keeping Nigerian children alive and well.

ACKNOWLEDGEMENTS

I thank the Almighty God who over the years has guarded and guided me throughout all my endeavours.

I express sincere gratitude to all my teachers from the primary through the secondary to university levels, who positively influenced my attitude to life.

I will forever remain grateful to my wife –Rosaline I. Oruamabo who has been on call with me for well over thirty years now.

To our children – Boma, Amakiri, Lolia, Tonye and 'Balafamam – I say *thank you very much* for the joy you have given us and for continuing to inspire us.

I am grateful to my colleagues in the Department of Paediatrics for maintaining the driving force in the department of ONE FOR ALL AND ALL FOR ONE.

The Vice-Chancellor

The Deputy Vice-Chancellor (Administration)

The Deputy Vice-Chancellor (Academic)

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The Provost, College of Health Sciences

The Dean of the School of Graduate Studies

Deans of Faculties

Directors and Heads of Departments

Professors and Scholars

Distinguished guests

Great students of the Unique University of Port Harcourt

Ladies and Gentlemen of the press

Ladies and Gentlemen

Preamble

I am grateful to the Vice-Chancellor for the opportunity to deliver this inaugural lecture today and thus joining the distinguished league of past lecturers. There have been several memorable inaugural lectures in the past. One easily remembers the lecture on cancer by the immediate past Vice-Chancellor of our university. The scintillating lecture by Professor Mark Anikpo delivered under a very heavy downpour will forever remain fresh in our minds. How can one

ever forget the beautiful rendition by Professor Chidi Maduka, which some of you will remember was interspersed with beautiful singing? The first lecture from paediatrics was from a brilliant scholar – Professor K. E. O. Nkanginieme and today I shall continue with the talk about children.

Introduction

I wonder how many of us still remember that the University of Port Harcourt Teaching Hospital actually commenced operations at Emohua in April 1980. Emohua is located approximately 15 kilometres west from the University of Port Harcourt on the east-west road. The entire bed capacity of the teaching hospital was at that time no more than fifty, but the bed capacity in the temporary site of the hospital is well over 600 today. Some of the pioneer staff included the late Professor T. I. Francis, the first Provost of the College of Health Sciences, Dr. E. D. O. Mangete, the late Dr. E. O. Uche and later Professor K. A. Harrison and Professor N. D. Briggs. The earliest members of the nursing staff included Matron Aroh, Natron Alanso, Matron Gbobbo, Matron Emenogu to mention a few. The Department of Paefiatrics at that time occupied two rooms, there were two lecturer/consultants – Dr.

L. T. Mbuagbaw and the day's lecturer and initially no residents and of course no House Officers. The hospital moved to its present site in the heart of Port Harcourt on 1st September 1983. Professor Felicia Eke joined the staff at the present site of the hospital today, by the Special Grace of God, the department has grown tremendously and is still growing. It now occupies several sites in the hospital – two main wards, an Emergency ward, a Special Care Baby Unit, a Diarrhoea Training Unit and two Outpatient sections. The department also runs sessions at the permanent site of the hospital. There are currently eleven lecturer/consultants – three professors, one reader, three senior lecturers and four lecturers I. There are seventeen senior residents [senior registrars] and fourteen junior residents [registrars]. At any given time there are up to sixteen House officers. We have encouraged and continue to encourage the growth of subspecialties. Currently, there are such subspecialties as cardiology, nephrology, neonatal medicine, haematology, oncology, gastroenterology and nutrition, social paediatrics and primary care. There are 127 bed spaces with a patient turnover of over 2500 in the wards and 4000 in the outpatients annually. The patient population derives from Rivers, Bayelsa, Imo, Abia and Akwa Ibom States. Children aged less than five years constitute between

70% and 80% of admissions. The top five causes of admissions in the department are: malaria, bronchopneumonia, sickle cell anaemia, gastroenteritis and Vaccine Preventable diseases such as tetanus, particularly neonatal tetanus. Outside providing service, the department has very active teaching/training programmers, having produced several sets of medical graduates and over twenty paediatric specialists so far. The fields of research include nephrology, neonatal medicine, social paediatrics, primary care, etc.

SOME TERMINOLOGIES IN MEDICAL STATISTICS AND THEIR SIGNIFICANCE

Generally in medical practice one tends to hear a lot about mortality indices as part of health statistics and less of their survival equivalents. For instance, one is more likely to hear about under-five mortality rates in a particular country than say under-five survival rates. I will illustrate with two statements of about the same meaning:

(1) *"In Nigeria, the overall under-five (one to fifty-nine months) mortality rate (U5MR) in 1999 was 190 per 1000 live births."*

(2) *"In Nigeria, the overall under-five survival rate in 1999 was 810 per 1000 live births."*

Common sense dictates that the latter statement gives a better impression than the former, but the former is the one that is in common usage. The reason is not for creating sensation, but rather to emphasize that there is no reason whatsoever, apart from inevitable circumstance why any child should not survive to his/her fifth birthday. Other reasons include comparisons of national and international data particularly over a given time frame. In this lecture I will concentrate on under-five mortality indices, ***(ie the probability of dying between birth and just under five years of age expressed per 1000 live births).***

Fig. Worldwide distribution of child deaths. Each red dot represents 500 deaths. The Lancet 2003; 361: 2226-43

According to data from the 2005 edition of *The State of the World's Children,* an annual UNICEF publication, the under-five mortality rate in Nigeria stood at 198 per 1000 live births by the end of 2003. This means that out of every ten newborn babies, nearly two will probably not survive long enough to celebrate their fifth birthday. This index is generally accepted as an indicator of the level of development of health care and other social services in a given country Fig. 1. The next set of slides shows the causes of illness/suffering and death in Nigerian children in the first twenty-eight days of life (the neonatal period) and up to the fifth year (under-five).

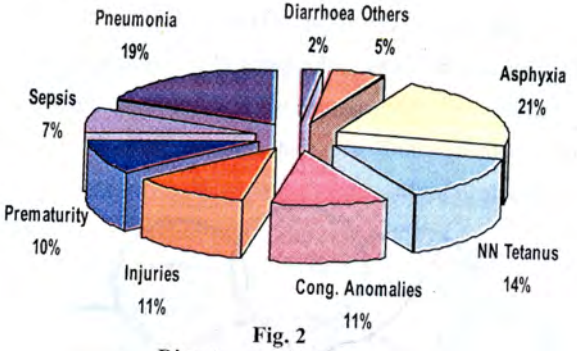

Fig. 2
Direct causes of neonatal deaths, WHO

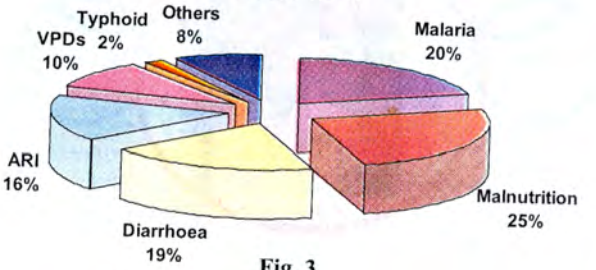

Fig. 3
Direct causes of under-five mortality in Nigeria, 1999

My contention is that there is no reason other than purely unforeseen circumstances for any child, including the Nigerian child to die before his/her fifth birthday. In other words, these deaths are largely preventable.

MAJOR CONTRIBUTORS TO HEALTH

For the sake of brevity, the focus of this lecture has been directed on Nigerian children who die before getting to their fifth birthday and I will first examine those factors that contribute to health.

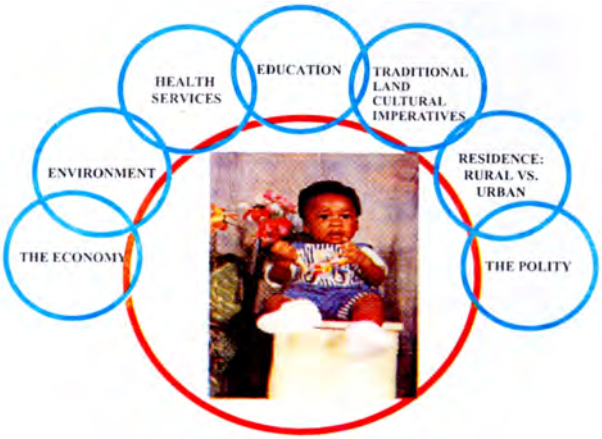

Fig. 4: Determinant of health: the concept of interlocking rings Health is more than lack of illness

Fig. 4 shows a healthy six-month old Nigerian child, who appears to be surrounded by several health promoting factors. As you can see the health services sector contributes only a fraction to the health of an individual.

The rings are shown to interlock, depicting linkages between the various sectors. Not only are they linked, but also

they are actually in equilibrium. In other words if one sector fails, the other sectors could be adversely affected. In relation to these rings, let us also look at the child survival strategies, which were defined over twenty years ago by the United Nations Children's Fund (UNICEF).

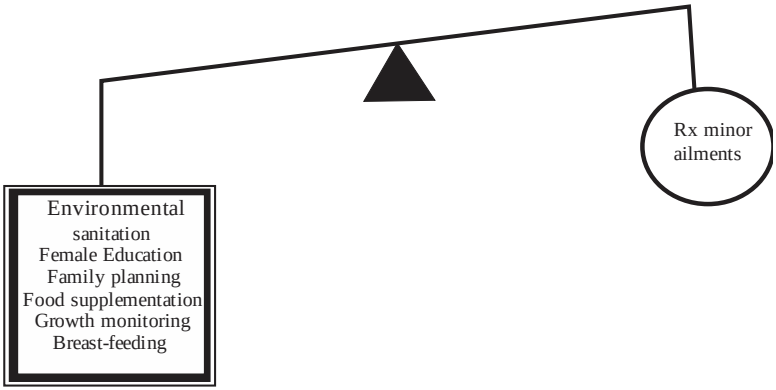

Fig. 5: Weighting the Child Survival Strategies

They are well-tested, affordable and achievable intervention strategies. Since then there have been several target goals set by various bodies and agencies in the world – mid decade goals, decade goals, millennium development goals (MDGS). Abjua Declaration, etc. These goals and Declarations had the principal objective of improving the lot of children, but than

health of children in several countries of sub-Saharan Africa, including Nigeria continues to be sub optimal.

So, what has gone wrong?

THE UNER-FIVE MORTALITY RATE (U5MR)

As mentioned earlier, this index is a good reflection of the functional state of various services in any given country or society. It is also a good measure of the level of intersectoral collaboration between these services – social, economic, educational, environmental sanitation, health and others. This means that if the values are high, the functional state is either poor and or there is little or no cooperation between the services and vice versa. As we gathered from the first series of slides, the dominant causes of under-five mortality in developing countries are by and large preventable. In this lecture I will focus on any changes that have occurred on the magnitude of under-five mortality rates in different countries over a given time frame and attempt to relate these to social and environmental events. I have selected countries with different socio-economic backgrounds and the data are from *The State of the World's Children* of 2005. The first set of figures outside the parentheses represent the 2003 rates, figures

in the first set of parentheses represent the 1960 rates while figures in the second set of parentheses are magnitudes of decline over the 43-year interval in each selected country.

- Sweden 3 [20] [6.7]
- United States of America 8 [30] [3.75]
- Cuba 8 [54] [6.75]
- China 37 [225] [6.01]
- Sri Lanka 15 [133] [8.87]
- Saudi Arabia 26 [250] [9.26]
- Ghana 95 [215] [2.26]
- Nigeria 198 [207] [1.05]
- Niger 262 [354] [1.35]
- Sierra Leone 284 [390] [1.37]
- Papua New Guinea 93 [204] [2.19]

One can easily see the difference in under-five mortality rates between the technologically more advanced countries on the one hand and the less advanced countries on the other. But perhaps even of more interest is the variance in the magnitude of decline of the U5MR in the selected countries from **1960 to 2003 – ranging from 1.05 to 9.26.** Overall, one can see that the rate of decline is lowest in African countries, compared to the others. In 1960, the year of Nigeria's independence, the Nigerian child had a ten-fold chance of dying before his/her 5th birthday compared to a child in Sweden, but in 2003, the same child was 66 times more likely to die before his/her 5th birthday, Saudi Arabia has the highest factor of 9.26. The reasons for these differences are multifactorial and the most striking changes are noted in Saudi Arabia, Sri Lanka, Sweden and Cuba. In these countries, most of the factors that determine health of the individual are brought into play synergistically. Paramount among these are immunization, education, particularly female education, and control of the environment. There are two principal sets of problems in the Nigerian context. One is inadequate contribution from the non-health sectors and the other is the very-poorly developed linkage between the sectors. A few examples will suffice.

As shown in the next set of slides, Nigeria appears to lag behind other developing countries. (environmental sanitation, education, etc) The figures for Sweden on provision of improved drinking water and use of adequate sanitation facilities are added for comparison.

Table 11a: Some aspects of health/social services indicators in selected countries source: UNICEF- State of the World's Children 2005

% of population using improved drinking water sources – 2000

Country	Total	Urban	Rural
Nigeria	60	72	49
Kingdom of Saudi Arabia (KSA)	95	100	64
Cuba	91	95	78
Sweden	100	100	100

Table 11b: Some aspects of health/social services indicators in selected countries source: UNICEF- State of the World's Children 2005

% of population using adequate sanitation facilities – 2000

Country	Total	Urban	Rural
Nigeria	38	48	30
KSA	100	100	100
Cuba	98	99	95
Sweden	100	100	100

Table 11c: Some aspects of health/social services indicators in selected countries source: UNICEF- State of the World's Children 2004

Adult literacy rate – 1990 & 2000

	1990		2000	
Country	Males	Females	Males	Females
Nigeria	59	38	72	56
KSA	76	50	83	67
Cuba	95	95	97	97

Table 11d: Some aspects of health/social services indicators in selected countries source: UNICEF- State of the World's Children 2005

	Gross* (net) Primary School enrollment ratio 1998 – 2002		Gross Sec. Schl. enrl, ratio 1998 - 2002	
Country	M	F	M	F
Nigeria	107 {38)	86 (33)	33	28
KSA	68 (66)	61 (57)	73	66
Cuba	102 (96)	98 (95)	90	89

**Gross = The number of children enrolled in a level (primary or secondary) regardless of age, divided by the population of the age group that officially corresponds to the same level *Net = The number of children enrolled in a level (primary or secondary) who belong to the age group that officially corresponds to primary schooling divided by the total population of the same age group.*

What I have just shown you are sometimes referred to as the distal contributors to child death. The proximal contributors to child death or what we more often refer to as direct causes are the infections, under-nutrition, injuries, etc

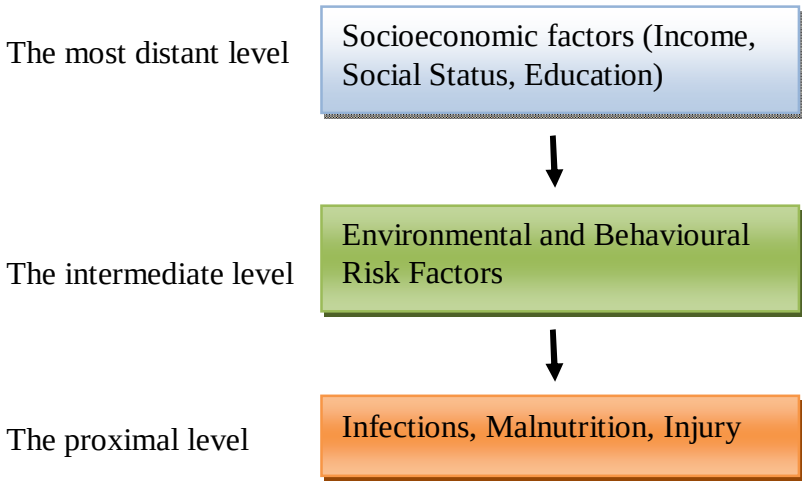

Fig. 6

Levels of Interaction of Determinants of Child Mortality

Usually the distal factors exert very strong influence o the proximal factors through those influences at the intermediate level. In order to better understand the interactions among the various groups of factors I have chosen two disease entities as study models – one vaccine preventable and the other not. Before choosing these two models, I examined two databases – the WHO database and the cause –of-death model. In both cases the top three commonest causes of child death were in descending order of magnitude; neonatal, diarrhea and respiratory infections.

Neonatal tetanus model

One of the simplest and cheapest means of keeping our children healthy is immunizing them. Today in Nigeria, the National Programme on Immunization (NPI) guarantees that every infant receives the appropriate number of antigens form birth to the age of nine months.

The National Coverage status

This component of the child survival strategy has not been very successful in Nigeria. In 2003, the percentages of one-year old children who were fully immunized against tuberculosis, DPT [diphtheria, pertussis, tetanus], poliomyelitis and measles were 48, 25, 39, and 35 respectively, in the same year, the proportion of pregnant women who had received two doses of tetanus toxoid was 51%. Corresponding figures for Cuba in the same year were; 99%, 71%, 98%, 99% and 99%. In order to provide some insight into possible reasons for these differences in coverage rates between the two countries, I examined some studies that were carried out in Rivers State on neonatal tetanus (NNT) – a vaccine preventable disease. NNT, which is readily preventable, has remained a major cause of morbidity and mortality among babies in Nigeria. Nigeria is one of 27 countries that account for 90 percent of the global

burden of NNT and the incidence range from 14.6 to 20 per 1000 live births. The incidence of this disease in Rivers State lies between 15 and 18 per 1000 live births. This estimate was obtained from community-based surveys carried out in the state in 1993 and 1995 by a combined team from the University of Port Harcourt Teaching Hospital [Paediatrics and Community Medicine] and Rivers State Ministry of Health. An earlier community-based survey conducted in Illorin gave a figure of 14.9 per 1000 live births. The term neonatal tetanus is used to describe the disease occurring in babies during the first 28 days of life-the neonatal period. The peak of occurrence is in the first 8 to 10 days of life. It is caused by the toxin of a bacterium called clostridium tetani and babies get infected after birth through an unclean umbilicus, infected scarification marks and circumcision wounds or following uvulectomy. NNT is easy to recongnize. The affected baby usually establishes sucking after birth, but stops sucking two days later and about the same time develops a fixed expression on the face resembling a smile and sometimes referred to as the smile of the wicked (risus sardonicus).

Fig. 7: A newborn baby with tetanus showing some of the classical signs of the disease

This is late followed by stiffness and or spasms. Usually death occurs by the end of the first week, NNT has been reported extensively in several hospitals in the country and at the University of Port Harcourt Teaching Hospital about 40 new cases are seen annually. The average case-fatality rate in the country currently is about 50 per cent. The disease is virtually completely preventable and this could be achieved by ensuring that the future mother is appropriately immunized during

pregnancy with two does of potent tetanus toxoid vaccine or 5 doses of tetanus toxoid over a period of about 3 years and by observing strict aseptic conditions at childbirth.

So, what is the problem?

From studies carried out so far, several factor have been identified as probably being responsible for the persistently high incidence of the disease in the state. Some of these are low level of acceptance of the tetanus toxoid (TT) vaccine among pregnant women in the state. The reasons for the generally low level of TT coverage of pregnant women in the State are not immediately apparent, but from the survey that was carried out in the state in 1993, reasons given by parturient women for either not receiving any dose of the TT Vaccine or receiving only one dose, included **lack of information** *[unaware of need for immunization, unaware of need to return for 2nd and 3rd doses, place and or time of immunization unknown, fear of side reactions, wrong ideas about contraindications],* **lack of motivation** [*postponed until another time, no faith in immunization, rumours] and* **presence of obstacles** *[place of immunization too far, time of immunization inconvenient, vaccinator absent, vaccine not*

available, mother too busy, family problem including illness of mother, mother's children's ill-health, mother came but not given immunization, long waiting time, lack of transport]. More detailed analysis of the responses revealed the following: out of 2201 responses, 366 (16.6%) gave as their reason "*no faith in immunization"*, 339 [11.5%] gave as their reason "*fear of side reactions"* and 173 [7.9%] gave as their reason "*place and/or time of immunization unknown"*. Interestingly, on further analysis of data from the same survey we found that highest tetanus toxoid vaccine coverage rate appeared to be among women with tertiary education.

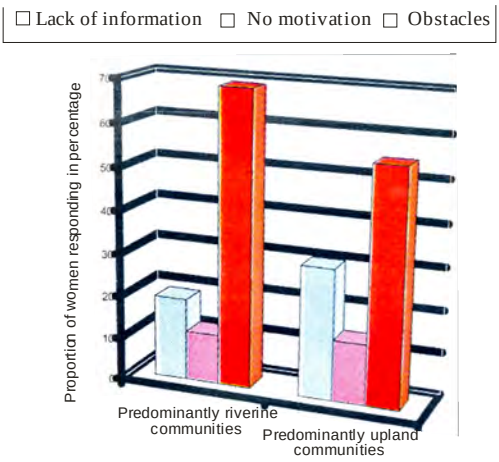

Fig. 8: Distribution of reasons given by parturient women with partial and no TT Coverage. Rivers State, 1997

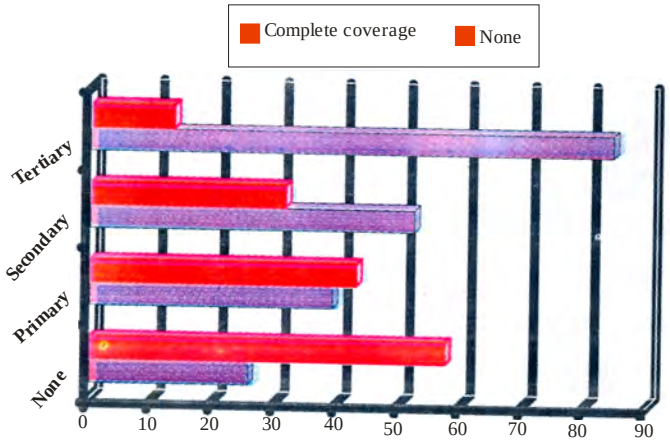

Fig. 9: Tetanus toxoid vaccine coverage status by level of education of parturient women. Rivers State Nigeria, 1997.

Lessons learned from using the neonatal tetanus model as a study of vaccine coverage situation in the country could be conveniently placed in four categories.

- Communication failure
- Distrust of immunization
- Presence of obstacles
- Lack of health seeking behavior

Diarrhoeal Disease as model for studying adverse environmental influences on children's Health

Diarrhoeal disease remains a leading cause of morbidity and mortality among children, particularly in some developing countries. Globally, over 4 billion cases occur annually resulting in 1. 8. Million deaths and the vast majority of these deaths occur in developing countries, principally Asia and Africa. In Nigeria, currently, the incidence of acute watery diarrhea among under-fives is around 4.8 episodes per child per year. The question I will address today is the reason for the persistently high incidence of acute watery diarrhea in the country despite the massive intervention strategy from about the mid 1980s. In the early 1970s several children were usually admitted into Children's Emergency Units on account of gastroenteritis with severe dehydration. Almost every patient that got admitted was placed on intravenous fluids. It got so bad that the Children's Emergency Room in the University College Hospital Ibadan, got named by the parents and caregivers, *THE HOUSE OF WATER*. Today, thanks to the CDD (Control of Diarrhoea Disease) intervention strategy, the proportion of children suffering from gastroenteritis with severe dehydration has dropped significantly throughout the country. But has the incidence of acute watery diarrhea in the

country reduced significantly? The answer is probably, 'NO'. the reason for this is not difficult to work out. Let me illustrate this with one study one study from the University of Port Harcourt Teaching Hospital. We studied the functional state of the Diarrhoea Training Unit (DTU) of the hospital and its impact, if any, on the frequency and severity of diarrhoeas in the catchment area of the hospital. The Unit was set up in 1991 and since then it has been treating diarrhea cases and training medical students, paediatric residents and health workers from different parts of the State on correct management of diarrhea cases. An important hallmark of Diarrhoea Case Management is that the parent s or the caretaker of the child is empowered to be able to confidently initiated treatment, at the onset of diarrhea, at home before proceeding to hospital. In assessing the impact of the DTU we used several indicators – number of

diarrhea cases (the acute watery variety) seen in the DTU per unit time over a defined time frame from January 1993 to December 1999, the number of Oral rehydration salt (ORS) sachets used in the unit, the degree of dehydration suffered by each case during the same period of observation and outcome of each case.

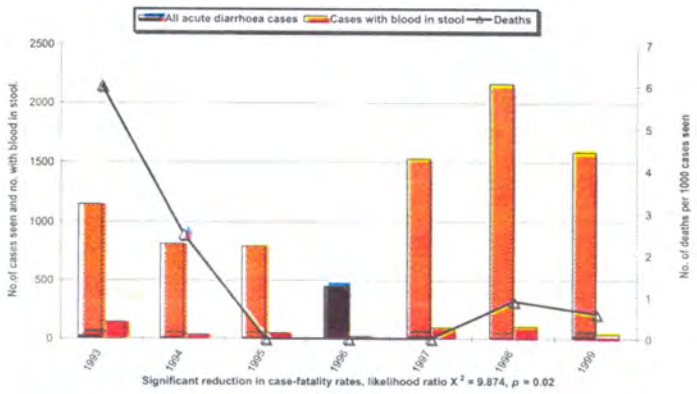

Fig. 10: Combined bat and line chart showing number of cases seen, those with blood in stool and deaths in the observation period.

Eight thousand, four hundred and eighty-six cases of acute diarrhea were treated in the unit during the seven-year period – 4557 males and 3929 females. The highlights of the results were that the proportion of cases with severe dehydration dropped significantly during the same period. However, the

proportion of cases attending the unit has continued to increase over the years and the number of ORS sachets used has correspondingly increased.

Fig. 11a

The Environment

Fig. 11b

The Environment

An important component of the correct case management of diarrhea is its prevention and this involves much more than the use of ORS. This finding is not unique to Port Harcourt and involves major non-health factors, in this case control of the environment. ***What does 'the environment' mean in this context?*** Let us examine the next slide

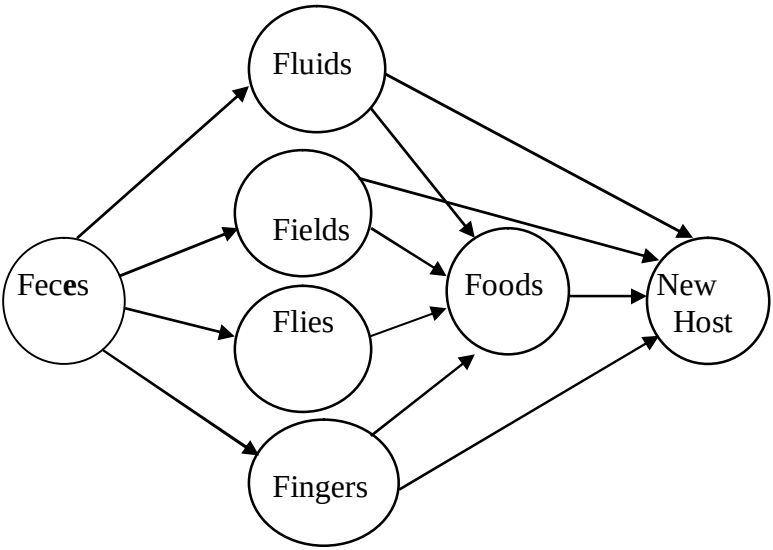

Fig. 12

Domestic hygiene and diarrhea

Once excreted, most of the pathogen progeny usually die, However, some may get onto fingers, into food or fluids and some of these may reach a new host. Flies landing on excreta can carry pathogens to foods or surfaces that are used for food preparation or eating. Human or animal feet that tread in faecal material deposited in the open bring pathogens into the domestic environment, and children playing with, or eating faecally contaminated earth can ingest pathogens. Excreta can contaminate water sources, and contaminated water can be

drunk directly or used in food preparation. For small children, the principal victims of diarrihoeal disease, **'the environment' is likely to be the home and its immediate vicinity.** All of the transmission routes shown in the last set of slides can be blocked by changes in domestic hygiene practice. Improved infrastructure, such as water and excreta disposal facilities, can also contribute to preventing transmission. However, public infrastructure can only be fully effective if employed in conjunction with safe hygiene practices in the home. A closer look at the last slide will reveal a distinction between **Primary** and **secondary** measures to prevent the spread of diarrhoeal pathogens in the environment. The four arrows originating from excreta on the left represent the primary routs by which infectious organisms get into the environment. **Primary barriers** are the practices that stop this happening. These include the disposal of stools in such a way that they are isolated from all future human contact **by the use of latrines, sewers, burying, etc.)** and the removal of traces of faecal material from hands after contact with excreta . **Secondary barriers** are hygiene practices that stop faecal pathogens that have got into the environment in stools or on hands, from multiplying and reaching new hosts. Secondary barriers thus include washing hands before preparing food or eating, and

preparing, cooking, storing and re-heating food in such a way as to avoid pathogen survival and multiplication. They also include protecting water supplies from faecal contaminants and water treatments such as boiling or chlorination. Other secondary barriers include keeping play spaces free of faecal material, preventing children from eating earth, and controlling flies.

We could draw some useful inferences from the last slide. Firstly, it reminds us that diarrhoeal pathogens originate in stools. Secondly, it suggests that if primary barriers to the transmission of faecal pathogens were in place, then secondary barriers would be less important. Interventions to encourage the safe disposal of stools and adequate hand washing after stool contact should thus pay greater dividends than those that concentrate on the secondary barriers.

SOME THOGHTS ON REMEDIAL MEASURES

The need for overall improvement in social services and other non-health determinants of child survival and lack of synergism in intervention strategies have been highlighted earlier. I will in concluding, this lecture, rather focus on my thoughts on improving the health-care delivery system with the

ultimate objective of reducing the under-five mortality rate in the country. The model I have suggested, though it is based on experiences in Rivers State, can be easily reproduced in any other region of the country.

At this juncture I will state categorically that what I am going to say about the National Health Policy of the country is not new for, as far back as the 3rd Development Plan of 1975 to 1980; there were clear decisions on the need for Intersectoral Collaboration and well defined Referral Systems. These two areas represent some of the weakest links in the health-care delivery system in the country. On intersectoral collaboration it was stated thus:

"Mechanisms shall be established to ensure that all sectors related to health and all aspects of national and community development, in particular, agriculture, animal husbandry, rural development, food industry, education, social development, housing, water supply, sanitation and communication are involved and their health related activities are coordinated."

On referral system, the entry ran thus:

"In order to ensure that the primary health care services are appropriately supported by an efficient referral system, Ministries of Health shall review the resources allocated to, and the facilities available at, the secondary and tertiary levels. Whilst high priority shall be accorded to primary health care, within available resources, the secondary and tertiary levels shall be strengthened. The long-term goal is that eventually all Nigerians shall have easy access not only to primary health care facilities but also the secondary and tertiary levels as required. Particular attention shall be placed on the needs of remote and isolated communities, which have special logistic problems in providing access to the referral system".

The School Health Programme as a model of intersectorality

School Health Programme (SHP) refers to all aspects of the school programme that contribute to the understanding, maintenance and improvement of the health of the school population, i.e. school children and staff. Its objectives are to ensure that children from preschool age to adolescence are in optimum health at all times so that they cay achieve their physical and intellectual potential as well as receive maximally, moral and emotional benefits from health providers, teachers and the school environment. There are four components of the School Health Programme – school health service, healthful school environment, school health instructions and school/Home/community relationship.

School Health Services address prevention of communicable diseases in school and treatment of minor ailments, referral of cases to appropriate agencies for further management. The services also include health appraisal of pupils and school personnel and provision of school meals. **Healthful school environment** is the aspect that addresses that issue of provision of an environment in the school conducive to healthy living and promotion of health-seeking behavior. The physical

environment refers to a clean and safe environment such as clean water supply, disposal of refuse, ensuring clean toilet facilities,. The quality of the school building etc. The motional component ensures a cordial relationship between staff and students. **The health instruction** component is concerned with the provision of adequate and accurate knowledge for the purpose of health protection and health promotion of the pupils and teachers. It also addresses such issues as the quality of teachers and teaching materials and the achievement of the students. **The school/Home/Community component** encourages community participation in the school health programme. These components are all interwoven and help promote the health of the school child. Paramount here is the interest of the community, which primarily is the education of their children. Towards this end, they are very interested in the physical location of the school – proximity and otherwise – and the construction of the school to ensure the health of the pupils. Regarding the latter aspect, there has to be legislature to set minimum standards on the physical location, construction of the school and maintaining a health school environment. The healthful school environment ensures that the school surrounding is clean and waste is properly disposed of. ***Thus a successful school health programme depends on a***

close cooperation among various agencies of the government (works, education, health, environmental engineering, finance, etc.) and non-governmental agencies. There has to be adequate financial commitment by the government from the federal, state to the local government level. It is of particular importance that the process should commence at the community level because success at this level will ensure success at the national level as well, for a good school programme in effect means success of intersectoral collaboration.

Sustainability of the healthful school environment

The school health programme itself has to be sustained it we are to ensure sustainability of the healthful school environment in most developed economies, the school Health Programme has evolved to become the focus of political and economic activities of the community, the local government and by extension the nation. In the countries, they constituted what they called **School Health Districts.**

Table III: The School Health Programme as a Model of Intersectorality

Sustainability of the School Health Programme

Concept of the SCHOOL HEALTH DISTRICT

R*epresentative of the Ministries of Health, Education, Works, Agriculture, Town Planning, etc*

Organized Private Sector

Traditional rulers and other leaders in the community

A school health district consists of representatives of ministries of education, health, works, town planning, agriculture, organized private sector, etc. Done this way, all decisions will be readily implemented. In Nigeria, a similar set-up could be achieved at the local government level and the composition would be made up of the Supervising Councillors of Education, Health, Works, Agriculture, the Organized private sector, parents, traditional rulers and other respected leaders in the community. This way, the school not only ensures the health of the pupils, buy also that of the community at large. The ultimate is that sustainable development begins at the community level.

As a first step towards reactivating the School Health Programme in Nigeria, the Paediatric Association of Nigeria, during its 34th Annual General Meeting and Scientific Conference held in Port Harcourt in January 2003, made School Health Programme the central theme. In addition, Rivers State Government in November 2004 sponsored a two-day sensitization workshop for Chairmen of the 23 Local Government Councils and their supervising councilors of health and education. Furthermore, follow-up workshops are being planned.

Improving the referral system: placing the health pyramid the right way up

The vast majority of Nigerians – approximately 78% - reside in rural communities and these communities in most parts of Nigeria are characterized by lack of basic infrastructure and amenities. The direct consequence of this state of affairs is that health indicators in these communities are bad. For example results of surveys carried out by staff of the Department of Paediatrics in 1995, showed lower exclusive breast-feeding rates in rural than urban communities in the state and similarly lower immunization coverage rates in rural communities. The rural communities in this country represent the base of the

health pyramid, which should be wide if it is to remain stable. Widening the base of the health pyramid in this context means providing the necessary infrastructure in the communities, strengthening primary health care, etc. If this is achieved, emphasis could then shift towards more of horizontal cooperation among health establishments in rural settings and less of vertical unidirectional patient flow from primary health care establishments through secondary health care centers to tertiary levels; only such flow being strictly controlled and by referrals only. Let us examine a hypothetical situation. A four-year old boy with a high fever and convulsion is rushed from a Comprehensive Health Centre in Obuama to Degema General Hospital at 5.00pm on a Friday. In the current setting, the following scenario is likely to occur. The doctor in Degema General Hospital may not be immediately available and the staff are unable to locate him. Most likely, the nursing staff would advise the parents to take the child to Port Harcourt after administering drugs to arrest the convulsion. To Port Harcourt here means either the teaching hospital or Braithewaite Memorial Specialist Hospital. This is what I refer to as vertical unidirectional patient flow. It should be possible to either call for another doctor from say Buguma General Hospital in the first instance or transfer the patient to the same

Buguma General Hospital rather than all the way to Port Harcourt with loss of valuable time and possibly unfavorable outcome. The same system should apply to emergencies occurring in other rural areas of the state.

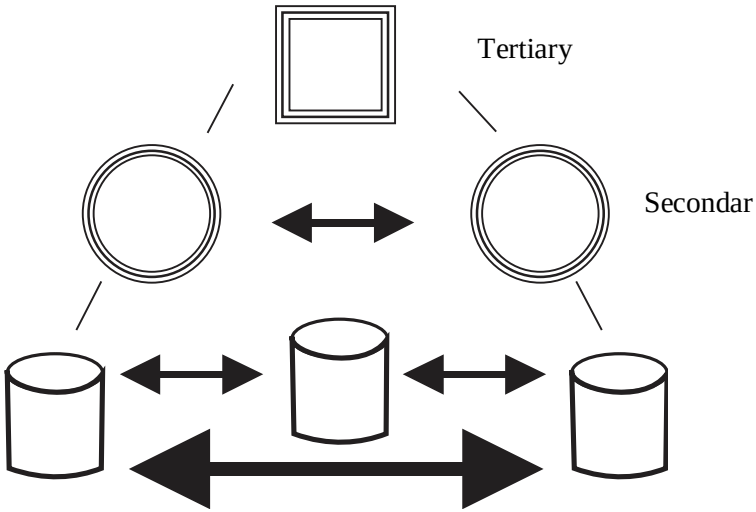

Fig. 13

THE PYRAMID OF HEALTH:

how we got it wrong

This initial cooperation among hospitals at the same level of care is what I refer to as horizontal cooperation. The advantages are sound time management, which is of immense benefit to the patient, capacity and confidence building among the rural communities. However, this concept will function

smoothly only if basic infrastructures such as telephones, reasonably well maintained transport system has to be rigorously monitored and any hitch, no matter how minor, immediately rectified. There should at the same time exist a bilateral relationship between the tertiary and secondary hospitals on the one hand and the peripheral hospitals on the other. The relationship should cover such areas as: feedback on referrals, joint hosting of sessions on case presentations, seminars, symposia.

It is pleasing to note that Rivers State Government has taken up this suggestion and in October 2004, a committee –joint Consultative Committee – was inaugurated to look into ways and means of improving the referral system in the state. The committee consists of representatives of the State Ministry Health, the Health Management Board and the University Teaching Hospital.

HIGHLIGHTS

- The under-five mortality rate remains unacceptably high in the country and the causes of these deaths are largely preventable, but are determined by mainly non-health influences. In other words our children are still suffering and dying for nothing Solution will require improving

upon the level of inter-sectoral collaboration among the various health-promoting strategies in the country. In this respect, there is need to urgently resuscitate the School Health Programme in the country. The School Health Programme in my opinion represents a model for intersectoral collaboration.

- There is urgent need for organizational reorientation in the health care delivery system in the country. There should be more of horizontal cooperation among health establishments in rural areas and less of vertical unidirectional flow from primary health care establishments through secondary health care centers to tertiary levels; any such flow being strictly controlled and by referrals only. Such a system would work provided basic infrastructures such as telephones, reasonably well maintained transport system by land by water, uninterrupted power supply were put in place as a top priority in rural communities. As part of remedy, a health-care delivery structure has been suggested using Rivers State as an example, but the same model can easily be reproduced anywhere else in the country.

Finally Mr. Vice-Chanellor Sir, Ladies and Gentlemen, I thank you all for your time.

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