ISBN 978-978-60686-8-8

Print @ GSU Printing Press
08029518002, 08036655778

THE DILEMMA OF A NEONATOLOGIST IN LOW RESOURCE SETTING: USING IMPROVISED TECHNOLOGIES TO ENHANCE NEWBORN SURVIVAL

BY

PROFESSOR ILIYA JALO

MBBS (ABU Zaria), MPA (UniMaid), FWACP
Professor of Neonatology, Department of Paediatrics,
Faculty of Clinical Sciences, College of Medical Sciences,
Gombe State University, Gombe

14th

INAUGURAL LECTURE

TUESDAY, 28TH JANUARY, 2025

Gombe State University

PROFESSOR ILIYA JALO

MBBS (ABU Zaria), MPA (UniMaid), FWACP
Professor of Neonatology, Department of Paediatrics,
Faculty of Clinical Sciences, College of Medical Sciences,
Gombe State University, Gombe

THE DILEMMA OF A NEONATOLOGIST IN LOW RESOURCE SETTING: USING IMPROVISED TECHNOLOGIES TO ENHANCE NEWBORN SURVIVAL

BY

PROFESSOR ILIYA JALO

14TH INAUGURAL LECTURE OF

GOMBE STATE UNIVERSITY

GOMBE STATE UNIVERSITY, GOMBE NIGERIA

JANUARY, 2025

ISBN: 978-978-60686-8-8

Inaugural Lecture Series, Number 14

(January, 2025)

Published by:

Gombe State University

INTRODUCTION

The Vice-Chancellor Sir, I count it a rear honour and indeed a privilege for this opportunity to stand before this esteemed audience to deliver my inaugural lecture. An inaugural lecture is an occasion of significance in an academic staff member's career at the university. It provides the opportunity to share achievements in research, innovation, engagement and teaching activities before an audience comprising of members of the University community and the general public. My inaugural is very significant because it is seminal in a number of ways. Permit me to note here that it is the first from the Department of Paediatrics, Gombe State University; more specifically, in the field of neonatology, it is also the first from my Local Government (Kaltungo), the first from Tula Chiefdom, and indeed to the best of my knowledge the first by an indigene of Gombe State in this revered discipline (Neonatology). It is therefore in deep reverence that I return the glory, honour and adoration to God Almighty for sustaining and enabling me to attain this professional height. I am delighted to see so many colleagues, friends, former patients, family members and students from far and near who are here to grace this occasion which I consider as a milestone achievement.

The privilege to stand before an esteemed audience of this magnitude hinges on several factors. For some people, it could be as a result of sheer hard work, some might consider it as luck, and yet others may call it destiny, but in my case, allow me to term it a 'miracle'. Let's go

down memory lane, sixty-two years ago, a woman was in labour for the 12th time in a remote village called Bule, in Wange Community of Tula Chiefdom. The labour was prolonged, she cried all-night but still hadn't been delivered of her baby, Baba Jalo her husband was confused and worried about the plight of his wife, he therefore sent a message to his brother Sukkukum who was an evangelist to come to their aid. On the arrival of the evangelist, the baby was delivered and cried immediately and in response he said 'lo and behold Iliya is here so do not worry, he shall be a great man'.

Thereafter, the boy continued to grow in the village, at the age of four I started following my father to the farm at a time when the most popular way of ploughing was using bulls. With a father who had an average of five bulls at a time, the young Iliya's first occupation was to take the cows for grazing for the rest of the day after they had ploughed from 6:00am to 11:00am daily. I will then gladly and proudly allow the cows to freely mix with those of the Fulani nomads that lived around our village at that time. The cows moved along together in the bush until late hours of the day when I usually pull out my flock to retire home. At the age of seven years, I had mastered the art of using the bulls to plough and was set to become the next village champion until my uncle the evangelist changed the trajectory, he intervened by getting me enrolled into primary school.

Consequently, I started my primary education at Wange Primary School in 1971 but transferred after 4 years to Awak Primary School where I completed my primary education. In 1978 I was admitted to

Government Secondary School Dadinkowa where I was the youngest and only junior student to serve as a school prefect. I held the position of Library and Health prefect before being transferred to Science Secondary School Gombe where I obtained my school certificate in 1983.

Subsequently, I moved to the School of Basic Studies Ahmadu Bello University Zaria, and after passing the IJMB examination, I proceeded to study at the Faculty of Medicine, in the prestigious Ahmadu Bello University Zaria. I graduated with a Bachelor's degree in Medicine and Surgery (MBBS) in 1989. From 1989/90 I went through internship at Bauchi Specialist Hospital and was posted to Jebba Paper Mill in Kwara State for National Youth Service. I served with the then Bauchi State as a Medical Officer in Gombe and Bajoga General Hospitals before leaving for his residency programme in Paediatrics at the University of Maiduguri Teaching Hospital from 1992 to 2000. I also obtained a Fellowship Diploma in Neonatology from Suckler Faculty of Medicine, Tel Aviv University, Israel in 2008. Due to my pragmatic view of life, I enrolled into the Department of Political Science and Administration, University of Maiduguri where he obtained a Masters' degree in Public Administration in 1997. The proper mix of my medical education with administration no doubt contributed to having successful tenures as Head of Department of Paediatrics in Federal Medical Centre (now Federal Teaching Hospital), Gombe and Dean, Faculty of Clinical Sciences, College of Medical Sciences, Gombe State University.

In my thirty-five (35) years of practice in the medical profession, I have had the opportunity of working as a clinician with so many of you across the length and breadth of the Northeast when I was the main Paediatrician visiting and training young medical doctors in State Specialist Hospital Bauchi, Federal Medical Centre Azare, Federal Medical Centre Nguru and Federal Medical Centre, Jalingo in Taraba State respectively. I was also employed in various capacities as associate/visiting lecturer for fifteen years by the University of Maiduguri and eight years by Abubakar Tafawa Balewa University Bauchi before finally being dragged into core academics with the establishment of College of Medical Sciences, Gombe State University. This explains why a unique and important milestone such as an inaugural lecture which should be at the middle of one's academic shelf life is coming at the twilight of my career. At this point, I profoundly thank the management of Gombe State University for giving me the platform to explore and express my academic potentials that culminated in this opportunity to deliver the 14th inaugural lecture of this great institution.

WHAT IS PAEDIATRICS?

Paediatrics emerged as a medical subspecialty more than a century ago, in response to the increasing awareness that the health problem of children differs from that of adults, and that the child's response to disease and stress varies with age and development (1). Paediatrics is the only discipline dedicated to the care and wellbeing of infants, children and adolescents including their physical, mental, social and

psychological growth and ability to achieve full potentials as adults. Paediatricians are concerned not only with specific organ systems, genetics and biological process but also with environmental, cultural, political and psychosocial impacts on the health and wellbeing of children and their families (1). As professionals whose focus is advancement of child welfare, Paediatricians are advocates for the child irrespective of culture, religion, gender, and race, local, state or national boundaries. As such, the more socially, politically or economically disenfranchised the community, the greater the need for advocacy for its children and those who support them.

As a Paediatrician, one deals with routine healthcare issues, such as minor injuries, immunizations and common illnesses. You also monitor a child's growth and development, conducting tests and explaining the results. Opportunities may be available to concentrate in a certain area, such as Paediatric cardiology, neurology, neonatology, or autoimmune disorders etc. It also offers the opportunity to work in a variety of places, such as small clinics, hospitals or private offices.

Despite being a popular specialty at the undergraduate level, Paediatrics lags behind most other medical and surgical specialties for postgraduate recruitment. Many individuals decide on their future career choice while still in medical school, as such, it is important to identify the factors that attract individuals to a career in Paediatrics.

In a survey of doctors who completed internship carried out in Kenya (2), it showed that Paediatrics was chosen by only 50 students (13.0%). Female students were five times more likely than males to select

Paediatrics. Choice of Paediatrics as a career was mainly determined by factors such as encouragement by teaching or clinical staff, role models in the specialty, job opportunities and financial rewards, prestige of the specialty, academic and research opportunities, intellectual challenges in the specialty, lifestyle associated with practice in the specialty, gender distribution in the specialty, ease of entry into residency, lifestyle during residency, and further training required after residency.(2)

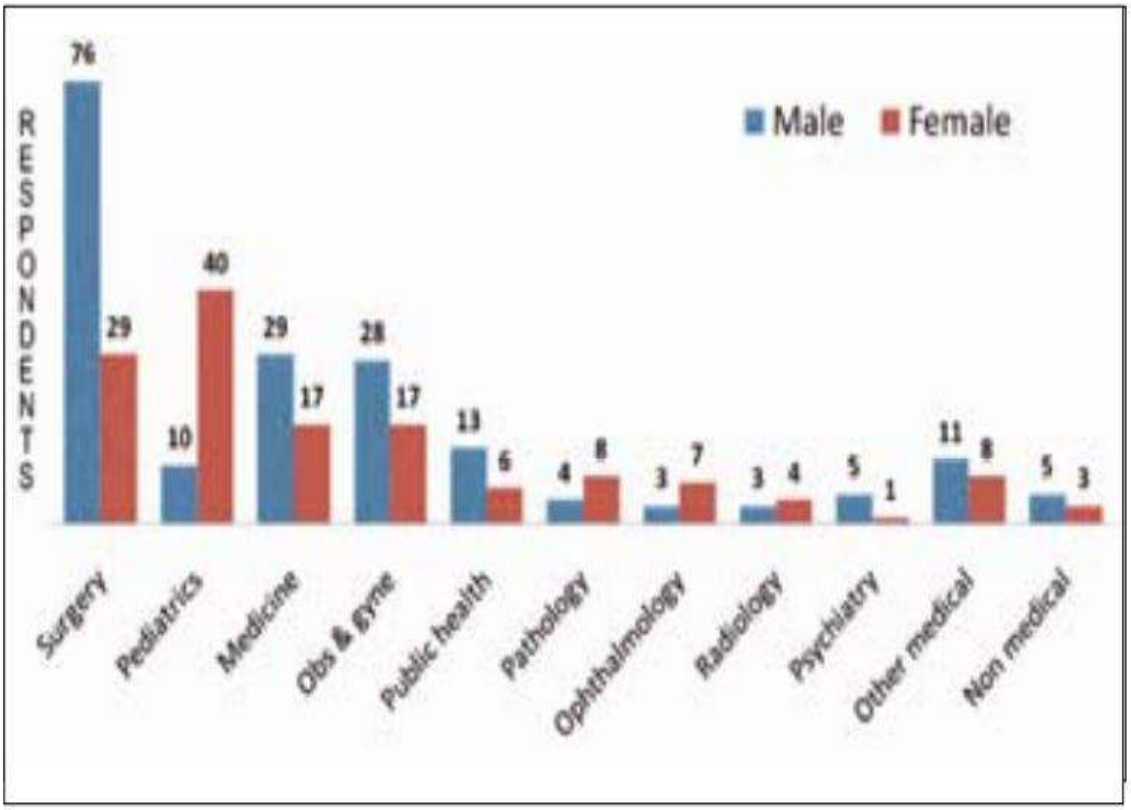

Fig 1. Specialty choice among male and female medical students (Nwachaka et al *SA Journal of Child Health*)

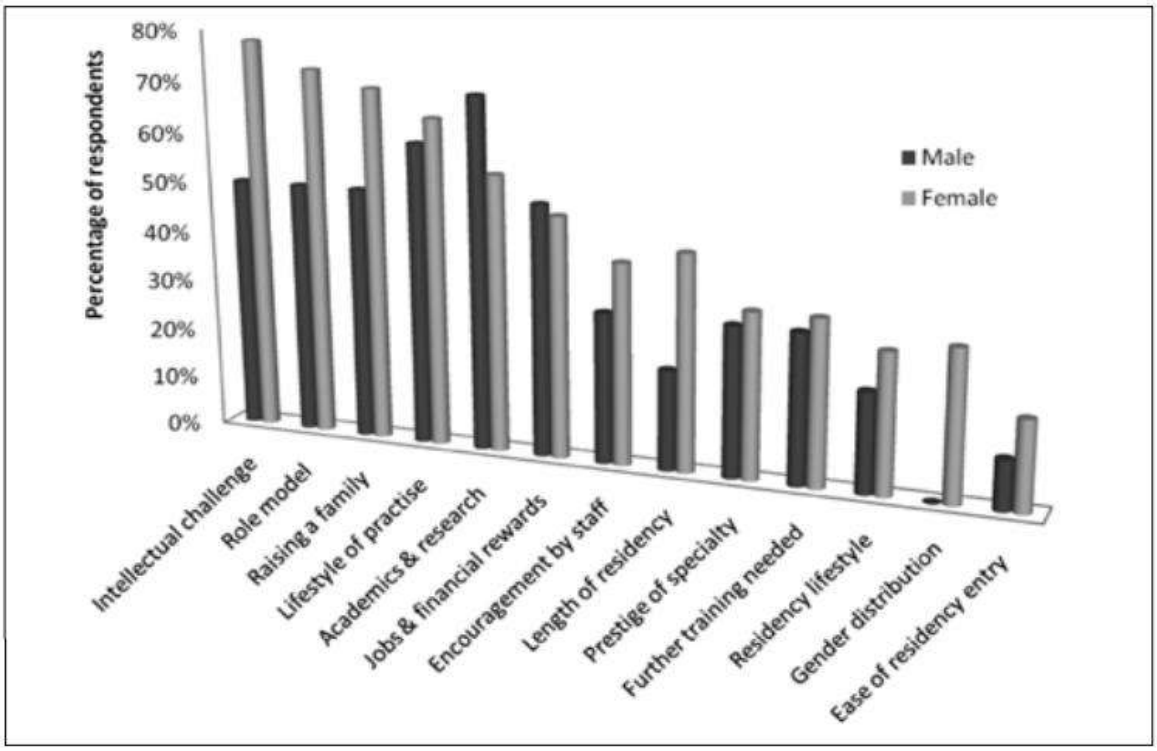

Fig 2. Factors determining choice of a careers in Paediatrics (Nwachaka et al *SA Journal of Child Health*)

MY CHOICE OF PAEDIATRICS AS A CAREER

As a young medical student at the prestigious Ahmadu Bello University, two very important factors influenced my decision to specialize in the field of Paediatrics. The first was an encounter with the legendry Prof Alhassan M. Yakubu during our Junior Paediatrics posting. The Professor came into the ward in the evening around 5pm on routine supervision. He met a woman at the exit of the consulting room with five (5) different syrups medications prescribed for her sick child by the doctor on call. The Professor instructed the woman to come back, he took the medicines from her and asked the doctor on call if he was the one that prescribed these drugs, in response to this question, the doctor affirmed with a “yes sir”. He then instructed the doctor to

take 5mls of each of the five syrups. When the doctor finished taking the syrups, the Professor asked the doctor, “how do you feel”? Following this incidence, the Professor gave us an extensive lecture on the negative effects of Polypharmacy and the need to treat diseases rather than symptoms.

Fig 3. Prof Alhassan M. Yakubu, teaching medical students in the evening. EPU, ABUTH 1987.

Students from left – right Girei, Dikko, Auwal, and Jalo watching Haggai auscultates.

The second factor that stirred this interest is rooted in the teaching we received in Church during Sunday school about the need to love and care for children. The ardent emphasis on this was placed by our

Sunday school teacher. The lesson is drawn from Mark 10:13-16 "*And they brought young children to him, that he should touch them: and his disciples rebuked those that brought them. But when Jesus saw it, he was displeased, and he said unto them, let the little children come unto me, and forbid them not: for of such is the Kingdom of God. Verily I say unto you, whosoever shall not receive the kingdom of God as a little child, he shall not enter therein. And he took them up in his arms, put his hands upon them and blessed them."* This lesson no doubt ignited the passion to care for children in me.

With this mind set, even when I worked as a Medical Officer in the General Hospitals at Gombe and Bajoga, my place of primary assignment was the children's ward and Paediatric Outpatient Department. So then when I saw the advert for recruitment of resident doctors at the University of Maiduguri Teaching Hospital, it was easy for me to make up my mind to start my specialist training in Paediatrics.

No sooner after documentation, in the Department of Paediatrics at the University of Maiduguri Teaching Hospital did I realize that I was actually the only resident doctor on ground at the time. The last batch of resident doctors who were employed by the Teaching Hospital had been sent to Ibadan to train on secondment. It was then that I got know that the institution had not received full accreditation to train residents in Paediatrics. I dared to remain to become the 'Guinea pig' in this regard, and after a period of hard work which included several months of postings at Jos University Teaching Hospital, I became the first

resident doctor to start and complete training in Paediatrics at University of Maiduguri Teaching Hospital.

NEONATOLOGY AS A SPECIALTY

Neonatology is a rapidly expanding subspecialty of paediatrics that focuses on the medical care of infants within the first twenty-eight (28) days of life. The field of neonatology has grown rapidly; the neonatologists primarily work in neonatal intensive care units (NICUs) and provide a high level of technical skill, along with emotional support for families of preterm infants, acutely ill-term infants, and infants with congenital anomalies(1). The uniquely challenging populations found in neonatal intensive care are those newborn babies whose beginnings are compromised by a mixture of medical, psychological and social trauma and whose immature organs cannot cope with breathing, feeding or digesting(3).

Neonatologists are an invaluable part of the care team for seriously ill newborns. In addition to providing highly specialized care, they work with families to help them understand their child's illness and treatment plan. The practice of neonatology today is a reflection of the increasing complexity of clinical problems which result from the increased survival of sicker and smaller babies, the increasing body of scientific knowledge, the increased recognition of the feasibility of surgery for many congenital disorders and the increasingly sophisticated technological support available(4). Although, the neonatologist is highly skilled, compassionate and caring, he/she is a type of medical

doctor that parents hope to never need because having a critically ill newborn is a terrifying experience.

Vice-Chancellor Sir, Ladies and Gentlemen some people may be wondering, why my focus on newborn care? Worldwide, it has been estimated that eight (8) million babies die annually in the first twenty eight (28) days of life (5, 6). Newborn deaths in developing countries result from a combination of medical causes, socio-demographic factors and failure of health facilities to provide adequate care. In the tropics, newborn health is grossly neglected such that in some cultures newborn babies are not named till after the neonatal period because many are at high risk and are likely to die at that stage.

To improve neonatal care and outcomes for most babies, we observed that what is needed is not necessarily the complex, expensive and intensive care requiring highly skilled manpower. That is why we concentrated on improving newborn survival through simple, cheap, improvised and low-cost technology and procedures.

OUTLINE OF MY INAUGRUAL LECTURE.

The Vice-Chancellor Sir, Ladies and Gentlemen, my lecture is an attempt to share my cumulative clinical, research and teaching experience over the past 35 years of practice in Medicine, Paediatrics and Neonatology. Since a considerable number of these years were spent in different capacities, you will notice that at different times that I engaged in research either as a trainee, general clinical service,

continuing medical education or lately as a critical element required for academic progress.

My presentation will be in the following thematic areas:

1. Early research years

2. Newborn care and research

3. My role in medical education

1: **EARLY RESEARCH YEARS**

1:1 Research work as a trainee

Vice-Chancellor Sir, Ladies and Gentlemen, as a young resident doctor who had an ardent passion for research, I had my eyes set on all my teachers and got myself deeply involved in research with each consultant during the periods of posting in their respective units. This led to my being a co-author in their publications which was a very big incentive and encouragement for me to further engage in research.

My first experience was when as a registrar on Neonatology posting under Prof A'K Airede in 1996, we studied the efficacy and tolerability of oral Sultamicillin in the treatment of serious bacterial infections in the neonatal period. This work led to the recommendation of the use of oral sultamycillin in neonatal soft tissue infections (7). This landmark study which also was my first peer reviewed publication encouraged me and increased my interest and commitment to newborn care.

During my posting in Hematology and Oncology at the University of Maiduguri Teaching Hospital, we managed one young boy with

abdominal Burkitt's Lymphoma. After remission he was discharged to be followed up in the clinic but he defaulted follow up, after one year he represented with a relapse in the gluteal region and because of the unusual site of relapse we were encouraged to publish it as a case report(8).

The next rotation in preparation for my membership examination was at the Paediatric outpatient unit. During the period I observed high number of children presenting with skeletal deformities mainly affecting the limbs in form of genu varus/valgum and wrist enlargement, and chest deformities. A careful record of these patients and investigation reports led to our next publication (9.) For my rural posting, we studied the attitude of parents to poliomyelitis immunization in the rural community of Banki in Bama LGA. This was also published.(10)

Working as a Senior Registrar at the Emergency Paediatric Unit of University of Maiduguri Teaching Hospital gave me the opportunity to be mentored by one of our prolific researchers and writer Dr. G O Akepede. During that period, I was privileged to anchor the research on acute bacterial meningitis. The findings led to the development of a revised clinical method for assessment of severity of acute bacterial Meningitis in children.(11) Finally, after the successful completion of my Fellowship training, the research submitted to the College was also published (12).

Vice-Chancellor Sir, Ladies and Gentlemen, with these number of publications at the end of my residency training, the coast was clear for

me to grasp an appointment at the University of Maiduguri and start an academic career. However, the trajectory of my academic journey was changed when I was approached by the pioneer Medical Director of the defunct Federal Medical Centre, Gombe, Dr. Abubakar Ali-Gombe to join him build a formidable and state of the art hospital that all the people in Gombe will be proud of. After careful consideration, I decided to forfeit my academic ambition to come and contribute to the establishment of the Federal Medical Centre, in Gombe. This, we did to the best of our ability and the magnificent edifice stands today as a testimony and legacy of our pioneering efforts and sacrifice.

1:2 RESEARCH WORK ON MALARIA

1:2:1 Work in Role Back Malaria

Malaria is a major public health concern with an estimated 68 million cases and 194,000 deaths globally, Nigeria accounts for nearly 27% of the global malaria burden and the risk of transmission exists throughout the country, all year round with the incidence of malaria being highest in the northern parts Nigeria (13). Despite substantial advances in treatment and prevention over the past decade, malaria still threatens the lives of millions of children in tropical countries (13). The symptoms of malaria are non-specific and parasitological diagnosis uncommon, making precise calculation of disease burden difficult and causing both overtreatment with antimalarial drugs and under treatment of non-malarial causes of fever. Our understanding of the complex pathological mechanisms underlying uncomplicated and severe

malaria in children is limited and once the disease becomes severe, therapeutic options are scarce and risk of mortality is high.

Roll Back Malaria was launched in October 1998 (14). During the preparatory phase, which lasted until February 2000, activities concentrated on partnership building, RBM inception at country level, and development of mechanisms to facilitate RBM action. One of these preparatory activities was the development of a framework and indicators for monitoring the outcomes and impact of RBM. An effective system for monitoring progress and outcomes will be critical for the success of RBM. The objective of the Roll Back Malaria (RBM) partnership was to halve the malaria burden in participating countries through interventions that are adapted to local needs and by reinforcement of the health sector. The principal mechanism for achieving this is through intensified national action by country-level partnerships working together toward common goals within the context of health sector development and using agreed strategies and procedures. Country partnerships will be supported by a global partnership, and technical support networks will provide the necessary technical assistance.

My first involvement in malaria clinical training and research started when some few of us were invited as consultants to the Federal Ministry of Health for training as pioneer National Facilitators in clinical case management of malaria. This was under the auspices of the Global Roll Back Malaria Project. This training held at the Sheraton Hotel and Towers Abuja from 23rd to 26th May 2005. The training set

the stage for my further involvement and engagement in the Role Back Malaria Project as the anchor for the Northeast states. Some of my major engagements include:

- **Resource person at Health Workers Training and Sensitization Workshop on new anti-malaria treatment which held from 27th August to 1st September, 2005 in Damaturu, Yobe State.**
- **Resource person in Health Workers Training and Sensitization Workshop on anti-malaria treatment which held at the Conference Hall SSH, Gombe, Gombe State 2007.**
- **Resource Person in Health Workers Training and Sensitization Workshop on new anti-malaria treatment which held from 10th – 16th December, 2008 in Jalingo, Taraba State.**
- **Resource Person in Health Workers Training and Sensitization Workshop on new anti-malaria treatment which held from 10th – 16th November, 2008 at Bauchi, Bauchi State.**

1:2:2 Cohort Event Monitoring of Antimalarial Drugs

Cohort Event Monitoring (CEM) is an intensive method of post-marketing surveillance for medicines safety. The method is based on prescription event monitoring, which began in the 1970s, and has since been adapted by WHO for monitoring the safety of medicines used in Public Health Program Prospective (15). The CEM study aims to capture all adverse events that occur in a defined group of patients after

starting treatment with a specific medicine during the course of routine clinical practice.

In 2012, the Federal Ministry of Health in conjunction with the National Agency for Food and Drugs Administration and Control (NAFDAC) engaged some Consultants including my humble self to study the adverse events profile of the new Antimalarial (Artemeter-Lumefanthrine and Artemeter-Amodiaquin) drugs that were introduced in the country. Our study was a multicenter, prospective, longitudinal, inceptional, dynamic and observational programme that monitored AEs in a cohort of patients treated with either Artemeter-Lumefanthrine (AL) or Artemter-Amodiaquine (AA). There were 18 healthcare facilities across Nigeria that were involved in the study. Patients who presented to these clinics and community pharmacists were given Antimalarial and recruited consecutively. Twelve (12) of these facilities were government specialist or teaching hospitals serving the six geopolitical zones, while six pharmacy shops involved were private community pharmacists located at densely populated areas within the urban communities (16) (17). These studies helped to generate evidence and supported the findings that artemisinin and its derivatives are effective, safe and remarkably well tolerated.

Table I. Potential risk factors for adverse event

Effects of risk factor on AEs	*B*	SE	*P*	95% CI
Co-morbid conditions				
Asthma/allergy	−0.413	0.349	0.238	0.334-1.313
HTN	0.439	0.462	0.342	0.261-1.594
Diabetes	−0.283	0.365	0.439	0.368-1.543
Epilepsy/seizures	−1.426	0.584	0.015*	0.077-0.755
HIV/AIDS	0.235	0.878	0.789	0.226-7.068
HTN/DM	1.206	0.461	0.009*	0.121-0.734
SCD	0.838	0.844	0.320	0.083-2.259
Arthritis	0.034	0.910	0.970	0.174-6.159
Dyspepsia	0.096	0.404	0.813	0.499-2.428
Tuberculosis	−0.708	0.702	0.314	0.124-1.952
Respiratory tract infections	−0.434	0.386	0.261	0.304-1.381
Diarrhoea	0.189	0.378	0.261	0.304-1.381
Others	−1.99	0.346	0.001*	0.153-0.595
Drug				
AA	0.163	0.063	0.010*	1.040-1.333
AL	−19.087	28,420.436	0.999	0.000-0.000
Traditional medication	2.603	0.761	0.001*	3.043-59.987
Age group				
5<4	−0.851	0.070	0.000*	0.372-0.490
4<9	−20.262	40,192.97	1.000	0.000-0.00
9<15	−0.679	0.078	0.000*	0.435-0.591
≥15	−0.443	0.083	0.000*	0.545-0.756
Pregnancy	−1.123	0.556	0.043*	0.109-0.967
Gender (Male)	−0.065	0.048	0.176	0.853-1.030
Weight group				
5<15	−0.535	0.169	0.002*	0.420-0.816
15<25	−0.458	0.162	0.005*	0.460-0.869
25<35	−0.271	0.159	0.89	0.558-1.042
≥35	0.758	0.033	0.000*	2.002-2.274

Bassi et al. (Drug Safety 2013. Vol 36 No. 4 pp)

1:2:3 Malaria in children

Further work on malaria led to documentation of the malaria burden, clinical presentation and outcome in children in Federal Teaching Hospital Gombe. Case notes of patients admitted to the Emergency Paediatric Unit and Paediatric Medical Ward of Federal Teaching Hospital, Gombe with severe malaria from January 2014 to December 2018 (5years) were reviewed. Information sought included age, gender, use of ITN, parents' education and occupation, criteria for diagnosis, treatment and outcome.

A total of 2,808 children were admitted during the period of study, out of these 237 (8.4%) had severe malaria. There were 140 (59.1%) male and 97 (40.9%) female with M: F of 1.4:1. Majority 129 (54.4%) of patients were aged more than 5 years. The most frequent modes of presentation were multiple convulsions 124 (52.3%), cerebral malaria 97 (40.9%) and severe anaemia 61 (25.7%). Some 45 (19.0%) of the subjects presented with multiple diagnostic criteria. Multiple convulsions, cerebral malaria and severe anaemia were significantly related to likelihood of mortality (18).

Table II. Clinical manifestation of children with severe malaria

Present			Absent	
Symptom	**No**	**(%)**	**No**	**(%)**
Multiple convulsions	124	52.3	113	47.7
Cerebral malaria	97	40.9	138	58.2
Prostration	78	32.9	159	67.1
Jaundice	26	11.0	211	89.0
Dark urine	15	6.3	222	93.7
Hypoglycaemia	15	6.3	222	93.7
Shock	8	3.4	229	96.6
Acute kidney injury	7	3.0	230	97.0
Abnormal bleeding	4	1.7	233	98.3

12. Jalo et al (Int J Contemp Pediatr 2020;7:1659-64)

Table III. C **Clinical manifestation and outcome in children with severe malaria**

Parameter	Discharged (%)	Death (%)	p-Value
Multiple convulsion			
Yes	102 (83.6)	20 (16.4)	0.000*
No	111 (96.5)	4 (3.5)	
Cerebral malaria			
Yes	78 (78.0)	22 (22.0)	0.000*
No	135 (96.4)	2 (3.6)	
Prostration			
Yes	75 (77.3)	22 (22.7)	0.000*
No	138 (98.6)	2 (1.4)	
Severe anaemia			
Yes	61 (98.4)	1 (1.6)	0.002*
No	152 (86.7)	23 (13.3)	
Jaundice			
Yes	26 (89.7)	3 (1.3)	0.512*
No	187 (89.9)	21 (10.1)	
Hypoglycaemia			
Yes	15 (88.2)	2 (1.8)	0.588*
No	200 (90.1)	22 (9.9)	
Acute kidney injury			
Yes	4 (57.1)	3 (42.9)	0.137*
No	209 (90.7)	21 (9.3)	

*Likelyhood ratio

12. Jalo et al (Int J Contemp Pediatr 2020;7:1659-64)

1:3. My work on Pneumonia

Pneumonia is the leading infectious cause of child mortality despite the availability of vaccines and medicines that can prevent and treat it. Most of the estimated 700,000 children under five who die from pneumonia each year live in a relatively small number of low- and middle-income countries with weak health systems that struggle to provide these vaccines and medicines (19). In 2021, there were seven million fewer episodes of childhood pneumonia compared to 2019, this 16% drop from 45 to 38 million episodes was the result of pandemic infection control measures, including, stay-at-home orders, school and

community closures, and face mask requirements (19). Although, all regions experienced significant declines in the spread of pneumonia infections, children in higher income countries benefited more, with pneumonia episodes dropping by one-third. In contrast, Sub-Saharan Africa and South Asia experienced much lower declines – 12% and 9% respectively.

My initial attempt at documenting the pneumonia burden in FTH, Gombe was presented at the Conference of West African College of Physicians that held in 2016 at Gombe International Hotel (20). The findings showed that 50% of patients admitted with community acquired Pneumonia in Federal Teaching Hospital Gombe were under one year of age.

This led to the next step of looking at the total in patient burden of Pneumonia and case fatality rate in children in Federal Teaching Hospital, Gombe. The study was a twenty-year review of all children admitted at the Paediatric Medical Ward of the Federal Teaching Hospital, Gombe. A total of 26,716 children were admitted during this period, 1,151 had pneumonia (4.3%) and 118 died. Under-5 constituted 84% (969/1151) of pneumonia admission with a CFR of 9.3% (21).

In January, 2020 I was appointed as a member of Paediatric Association Nigeria (PAN) committee to review the National Strategic Plan for Control of Pneumonia and outline an action plan for pneumonia control in selected states in the country. The document was presented in a plenary in PANCONF in Kano. This gave birth to the **Clinical Practice Guidelines by The Paediatric Association of Nigeria (PAN) on**

Management of Community Acquired Pneumonia in children (19**).** The goal of this guideline is to reduce morbidity and mortality rate of CAP in children by providing recommendations that are relevant in assisting clinicians to make timely diagnosis and institute appropriate antibiotic therapy of children with CAP.

Vice-Chancellor Sir, permit me to provide further details of one of my major research involvements in childhood pneumonia, which was a national study that evaluated the impact of Pneumococcal Conjugate Vaccine ten valent (PCV10) on Pneumonia hospitalizations and mortality in children in Nigeria. Since the introduction of Pneumococcal Conjugate Vaccine ten valent (PCV 10) Phase 3 in August 2016, its impact on pneumonia admissions and mortality among vaccinated Nigerian children was yet to be determined. This led to a national study to determine the impact on pneumonia admissions and mortality among vaccinated Nigerian children.

Data in the period before PCV-10 introduction (3rd August 2013 – 2nd August 2016), and after (3rd August 2017–2nd August 2020) were retrospectively extracted from the medical charts of eligible patients aged 3–24 months with hospitalized radiological pneumonia at the University College Hospital (UCH), Ibadan; National Hospital (NH), Abuja; and Federal Teaching Hospital (FTH), Gombe, allowing for an intervening period of 1 year. National Hospital (NH), Abuja; and Federal Teaching Hospital (FTH), Gombe, allowing for an intervening period of one (1) year.

Table IV. Pneumonia admissions stratified into two age groups at the three sites during the pre PCV 10 and post PCV 10 introduction period

	National Hospital Abuja			Federal Teaching Hospital Gombe			University College Hospital		
	3–11 months	12–24 months	Total	3–11 months	12–24 months	Total	3–11 months	12–24 months	Total
Pre-PCV10 Period									
3 Aug. 2013–2 Aug. 2014	28(65.1)	15(34.9)	43(100.0)	13(72.2)	5(27.8)	18(100.0)	11(91.7)	1(8.3)	12(100.0)
3 Aug. 2014–2 Aug. 2015	66(62.3)	40(37.7)	106(100.0)	18(60)	12(40)	30(100.0)	15(75.0)	5(25.0)	20(100.0)
3 Aug. 2015–2 Aug. 2016	70(56.9)	53(43.1)	123(100.0)	23(50)	23(50)	46(100.0)	41(59.4)	28(40.6)	69(100.0)
Total	164(60.3)	108(39.7)	272(100.0)	54(57.4)	40(42.6)	94(100.0)	67(66.3)	34(33.7)	101(100.0)
Post-PCV10 Period									
3 Aug. 2017–2 Aug.2018	36(70.6)	15(29.4)	51(100.0)	17(58.6)	12(41.4)	29(100.0)	64(65.3)	34(34.7)	98(100.0)
3 Aug. 2018–2 Aug.2019	99(55.9)	78(44.1)	177(100.0)	86(60.1)	57(39.9)	143(100.0)	45(52.3)	41(47.7)	86(100.0)
3 Aug. 2019–2 Aug. 2020	36(53.7)	31(46.3)	67(100.0)	45(60.0)	30(40.0)	75(100.0)	29(56.9)	22(43.1)	51(100.0)
Total	171(58)	124(42)	295(100.0)	148(59.9)	99(40.1)	247(100.0)	138(58.7)	97(41.3)	235(100.0)

Figures in parentheses are percentages.

Iliya et al (HUMAN VACCINES & IMMUNOTHERAPEUTICS 2023, VOL. 19, NO. 1)

Table V. Case fatality rate among 3-24 months old admitted with pneuminia in each of the pre and post pcv 10 introduction

	University College Hospital, Ibadan		Federal Teaching Hospital, Gombe		National Hospital, Abuja	
Variable	Pre-PCV 10	Post-PCV 10	Pre-PCV 10	Post-PCV 10	Pre-PCV 10	Post-PCV 10
Male (%)	53(52.5)	126(56.3)	47(50.0)	141(57.1)	152(55.9)	161(53.5)
Female (%)	48(47.5)	98(43.7)	47(50.0)	106(42.9)	120(44.1)	140(46.5)
Total	101(100%)	224(100%)	94(100%)	247(100%)	272(100%)	301(100%)
Outcome	2(2.0)	3(1.3)	3(3.2)	7(2.8)	5(1.8)	1(0.3)
*LAMA (%)						
Death (%)	2(2.0)	0(0.0)	11(11.7)	19(7.7)	18(6.6)	12(4.0)
Discharged (%)	85(84.2)	207(92.4)	80(85.1)	218(88.3)	249(91.5)	281(93.4)
**Unclassified	12(11.9)	14(6.3)	0(0.0)	3(1.2)	0(0.0)	7(2.3)

*LAMA: Left against medical advice; **Unclassified: Outcome not stated in the medical chart; figures in parentheses are percentage.

Iliya et al (Iliya J et al (HUMAN VACCINES & IMMUNOTHERAPEUTICS 2023, VOL. 19, NO. 1)

Adjusted pneumonia hospitalization rates between the two periods increased at the NH Abuja (10.7% vs 14.6%); decreased at the UCH, Ibadan (8.7% vs 6.9%); and decreased at the FTH, Gombe (28.5% vs 18.9%). This translates to a calculated weighted adjusted difference pre- vs post-vaccination per hospital of: NH Abuja (increase of 37%); FTH, Gombe (decrease of 34%); and UCH, Ibadan (decrease of 21%). The rates decreased across all the sites during the post-PCV 10 introduction period but only significantly at one site: NH Abuja, from 6.6% to 4.4% (p = .106); FTH, Gombe, 11.7% to 7.7% (0.477); and UCH, Ibadan, 2.0% to 0% (p = .045)(22).

2.0 Newborn care

Vice-Chancellor Sir, at this point I wish to examine further my topic "**Navigating the Dilemma of the Neonatologist in low resource setting: using improvised technologies to enhance newborn survival"** and highlight my work and research to enhance newborn survival in our setting.

My interest in neonatology started when as a young registrar on neonatology posting under Prof A'K Airede in 1996, I was nominated to coordinate a study on use of oral Sultamicillin, efficacy and tolerability in the treatment of serious infections in the neonatal period. The study cohort comprised newborns with suspected or confirmed infections in the Special Care Baby Unit (SCBU) of University of Maiduguri Teaching Hospital. There were 12 babies with skin and soft-tissue infections, although pneumonia was most predominant in our series. Bacterial isolates were mainly *Staphylococcus aureus,*

Escherichia Coli and *Klebsiella pneumoniae* with a β-lactamase production rate of 88%. The clinical cure and improvement rates were 96.3 and 100%, respectively and the evaluable bacteriologic cure-rate was 93.8%. The mean (S.D.) duration of therapy was 7.4 (2.6) days (7). This landmark study which was also my first peer reviewed publication encouraged me and increased my interest and commitment to newborn care.

TRAINING ON LACTATION MANAGEMENT

Then came the era of Baby Friendly Hospital Initiative which was launched by UNICEF and WHO to encourage health facilities worldwide to better support breastfeeding. It is viewed that the first few days of a newborn's life are not only critical for the child, but also an important window for providing mothers with the support they need to breastfeed successfully. My nomination to attend the Trainer of Trainer (ToT) course in lactation management in Port-Harcourt in 1999 that led to my certification as Master Trainer in Breastfeeding and Lactation Management further reinforced my commitment to neonatal care.

Federal Ministry of Health/UNICEF course on Training of Master Trainers

Lactation Management at University of Port-Harcourt, Nigeria, August 16th – 28th 1999

After the training and certification as master trainer, we took on the role of inspecting and assessing facilities on behalf of UNICEF, to recommend those to be designated as Baby Friendly (BHFI) Hospitals.

Armed with the knowledge and enthusiasm, I took up the role of breastfeeding Champion in Gombe State. This led to securing a grant from UNICEF for the training of health workers in Gombe State on lactation management. Two batches of health workers from both the State Ministry of Health and Federal Medical Centre were successfully trained. **Training of Health Workers on Lactation Management in Gombe State. Lead consultant Dr Jalo I. FMOH/UNICEF Grant – 2005.**

2:1 SITUATION ANALYSIS FOR INTEGRATED MATERNAL, NEWBORN AND CHILD HEALTH (IMNCH) STRATEGY GOMBE STATE

In 2009, I was appointed as consultant by the Federal Ministry of Health to carry out a situation analysis of integrated maternal and newborn services in Gombe state. The main objective was to carry out a desktop review to ascertain the common causes of neonatal, infant and maternal mortality in the state. A total of 30 health facilities were surveyed, this was carried out by randomly selecting 10 health facilities from each of the senatorial zones of the state. The results were as shown below:

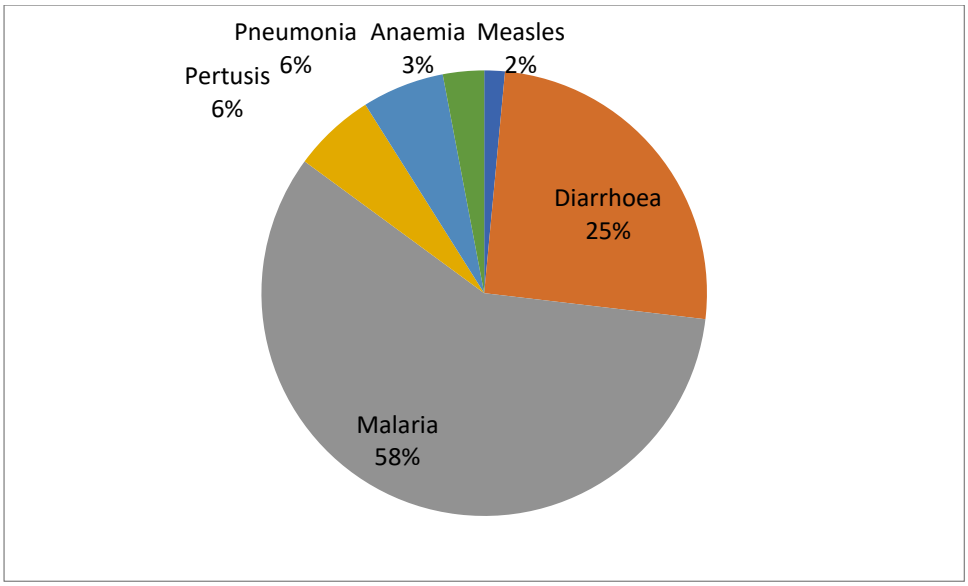

Fig. 4 Causes of under mortality (Situation analysis, Gombe 2009)

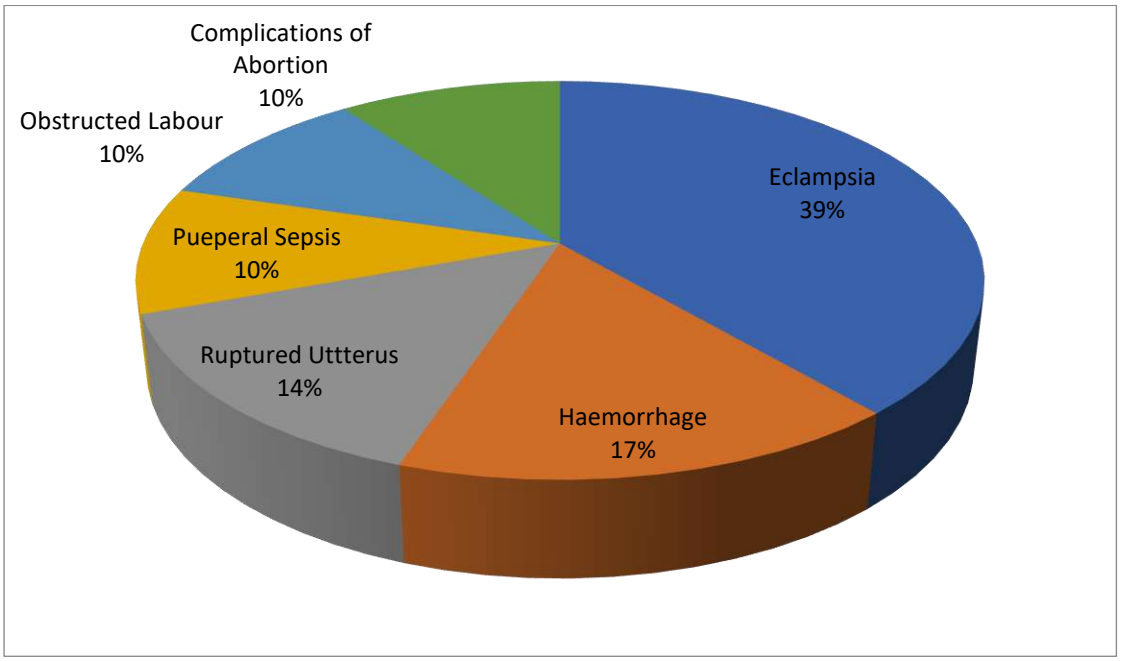

Fig. 5 Causes of Maternal Mortality (Situation Analysis, Gombe 2009)

It was noted with dismay that there was a complete lack of documentation of neonatal morbidity and mortality in Gombe state. This finding led to the institutionalizing of neonatal morbidity and mortality records in the state. The findings on the situation analysis from the 36 states of the federation were harmonized to form the

Nigerian Newborn Situation Analysis Document. FMOH/Save the children/USA/UK.

Vice-Chancellor Sir, Ladies and Gentlemen, other activities and strategies for newborn survival that I was involved in at both the planning and implementation stages in the Northeast in particular and Nigeria at large include: Essential Newborn Care Course (ENCC) and the Kangaroo Mother Care Initiative (KMC).

2:2 Essential Newborn Care Course

The Essential Newborn Care Course (ENCC) aims to ensure that health workers have the skills and knowledge to provide appropriate basic and affordable care at the most vulnerable period in a baby's life (23). Health workers are taught to use a Guide for Essential Practice (the PCPNC Guide) and particularly the sections concerned with newborn care – that provides up-to-date evidence-based information and management of babies with a range of needs in the initial newborn period. The course contains several different approaches to teaching. It uses an interactive approach that includes using Practical demonstrations, PowerPoint presentations and short video clips. In all sessions suggested questions are given to stimulate discussion or constructive thinking about the topic being studied (23).

Vice-Chancellor Sir, Ladies and Gentlemen, I am proud to say that being part of the first Trainer of Trainers in ENCC in Nigeria, gave me the opportunity to be involved in training of health workers in many communities and health facilities in Gombe, Bauchi, Taraba and Adamawa states in the Northeast. My contributions to training,

education, and capacity building in the area of newborn resuscitation has spanned beyond the classroom to national, regional, state and community levels. This has no doubt impacted positively to newborn care and survival in the northeast region in particular and Nigeria in general.

To relate this with the topic of my inaugural lecture, saving newborn lives using low-cost technologies, my experience has shown that with the commitment and enthusiasm of the Doctors, Midwives, Community Health Extension Workers (CHEW) and Nurses at the primary health care level, they will perform creditable well and save more lives if they are taught how to effectively use low-cost resuscitative devices like bag and mask and improvised CPAP.

2:3 Kangaroo Mother Care.

Kangaroo Mother Care (KMC) was first developed in Colombia (24) and it describes how bundling your baby against your chest resembles the preterm kangaroos crawling inside their mother's pouch and latching on to a nipple for feeding. With about one-third of deaths in children under 5 years in Nigeria occurring in the first month of life, The World Health Organization has endorsed KMC, and some Nigerian hospitals have adopted it since 2008.

In 2016, the Federal Ministry Health in conjunction with Save the Children appointed some consultants including my humble self to undertake a national survey of facility-based care of the small and sick newborn with emphasis on the use of KMC. The survey which included

hospital assessment, and key informant interviews provided an extremely rich picture of newborn care in Nigeria and highlighted many areas for improvement. The report included detailed recommendations for action at many levels to enhance care, including better equipped facilities, increased training, and smarter staff management, community awareness-raising, and closer coordination between government, Development Partners, and Hospitals.

Kangaroo mother care (SCBU FTH, Gombe)

3.0 Research in Neonatology

3:1 Perinatal Asphyxia

Perinatal asphyxia refers to when the baby does not begin or sustain adequate breathing at birth leading to Lack of oxygen supply to organs especially the brain before, during, or immediately after birth, this results in multi-organ dysfunction especially hypoxic ischaemic encephalopathy(25). Globally, it remains a common cause of neonatal morbidity and mortality, leading to about 4 million deaths annually. Perinatal asphyxia can result in profound systemic and neurologic sequelae due to decreased blood flow and/or oxygen to a foetus or infant during the peripartum period. Long-term survivors have been found to have disabling cerebral palsy, inadequate mental development or low psychomotor scores, seizures, blindness, and severe hearing impairment.(25)

With high numbers of babies presenting to our neonatal unit with Severe Perinatal Asphyxia (SPA) due to obstetrics complications like preeclampsia/eclampsia, prolonged obstructed labour etc. The author sets out to assess the role of magnesium sulphate and the timing of administration of the first dose on survival and short-term neurologic outcome of neonates with Severe Perinatal Asphyxia (SPNA) treated at Federal Teaching Hospital, Gombe (26).

A prospective cross-sectional observational study was conducted from March, 2017 to February, 2020 (3 years).

Table VI. Admission parameters associated with outcome of neonates.

Variable	Dead n=32 F (%)	Alive n=104 F (%)	X2	p-value
Gestational age				
Preterm	19(28.8)	47(71.2)	1.971	0.160
Term	13(18.6)	57(81.4)		
Birth weight				
VLBW	4(44.4)	5(55.6)	20.521	<0.001
Normal weight	10(11.4)	78(88.6)		
LBW	18(46.2)	21(53.8)		
Admission RR				
<40bpm	1(12.5)	7(87.5)	2.528	0.283
40-60bpm	10(18.2)	45(81.8)		
>60bpm	21(28.8)	52(71.2)		
Admission BCS				
0-2	5(50.0)	5(50.0)	4.212	0.122
3-4	9(20.9)	34(79.1)		
5	18(21.7)	65(78.3)		
HIE				
Yes	26(31.0)	58(69.0)	6.728	0.009
No	6(11.5)	46(88.5)		

RR= respiratory rate, BCS=Blantyre comma score

Jalo et al(Int J Contemp Pediatr. 2020;7)

Table VII. Comparison of neonate neurologic parameters on day 1 and 5

Variable	Day 1 day 5	X2 p-value
Moro reflex		
Normal	110(88.7) 62(83.8)	0.981 0.322
Abnormal	14(11.3) 12(16.2)	
Total	124(100) 74(100)	
Tone		
Normal	93(68.9) 66(78.6)	
Abnormal	42(31.1) 18(21.4)	2.429 0.119
Total	135(100) 84(100)	
Seizure		
Present	19(15.6) 1(1.3)	
Absent	103(84.4) 76(98.7)	<0.001*
Total	122(100) 77(100)	
Apnoea		
Present	6(4.9) 1(1.3)	
Absent	115(95.1) 75(98.7)	0.969*
Total	121(100) 76(100)	

*Fischers exact NB The total number (n) for each parameter was different on day I and 5 due to discharge, death and DAMA before re-assessment on day 5.

Jalo et al(Int J Contemp Pediatr. 2020;7)

A total of 706 neonates were admitted in the inborn and out born units of SCBU at Federal Teaching Hospital, Gombe from March, 2017 to February, 2020. Out of these neonates 136 (19.3%) had SPNA. Out of the 52 neonates that had the first dose of MgSO4 within 12 hours of delivery 16(30.8%) died while 36 (69.2%) survived. Of the 14 that had the first dose between 12 to 24 hours, 4 (28.6%) died while 10 (71.4%) survived. Sixty (47.6%) of the patients received the first dose of MgSO4 after 24hours out of whom 9 (15.0%) died and 51(85.0%) survived. There was no statistically significant difference in mortality with time of administration of first dose of MgSO4 (p – 0.123). Most 67 (56.3%) patients were admitted with SPO2 of < 90%, 18 (26.8%) of them died and 49 (36.0%) survived (26).

3:2 Congenital Malformations

Congenital malformations remain a leading cause of death in neonatal period with an estimated 240 000 newborns deaths worldwide within 28 days of birth every year. (WHO2024). Congenital disorders also contribute to long-term disability, which takes a significant toll on individuals, families, health care systems and societies. It is a devastating experience for parents to discover after nine months of pregnancy that their baby is abnormal at birth with little chances of survival.

The author’s contribution in the area of congenital malformation include a review of the spectrum of congenital malformation in FTH Gombe. The study was a retrospective review of records of all patients admitted into the Special Care Baby Unit of Federal Teaching Hospital

Gombe who had a diagnosis of Congenital Malformations over a period of ten years (May 29, 2000-May 29, 2010).

Table VIII. Congenital malformation by system and gender in FTH, Gombe North Eastern Nigeria

Congenital disorders also contribute to long-term disability, which takes a significant toll on individuals, families, health care systems and societies. It is a devastating experience for parents to discover after nine months of pregnancy that their baby is abnormal at birth with little chances of

System Affected	Male (%)	Female (%)	Total (%)
Central nervous system	54	43	97
Digestive system	53	35	88
Urogenital system	10	2	12
Musculoskeletal system	6	0	6
Multiple system involvement	8	4	12
Total	**131**	**84**	**215**

Jalo et al (West African Journal of Medicine. 2018 Sep-Dec;35(3):195-198.)

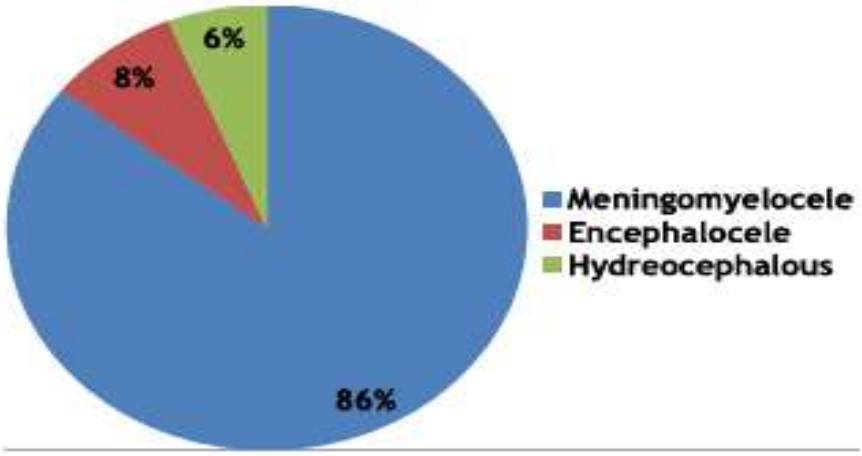

Fig. 5 central nervous system malformation among neonate in FTH Gombe

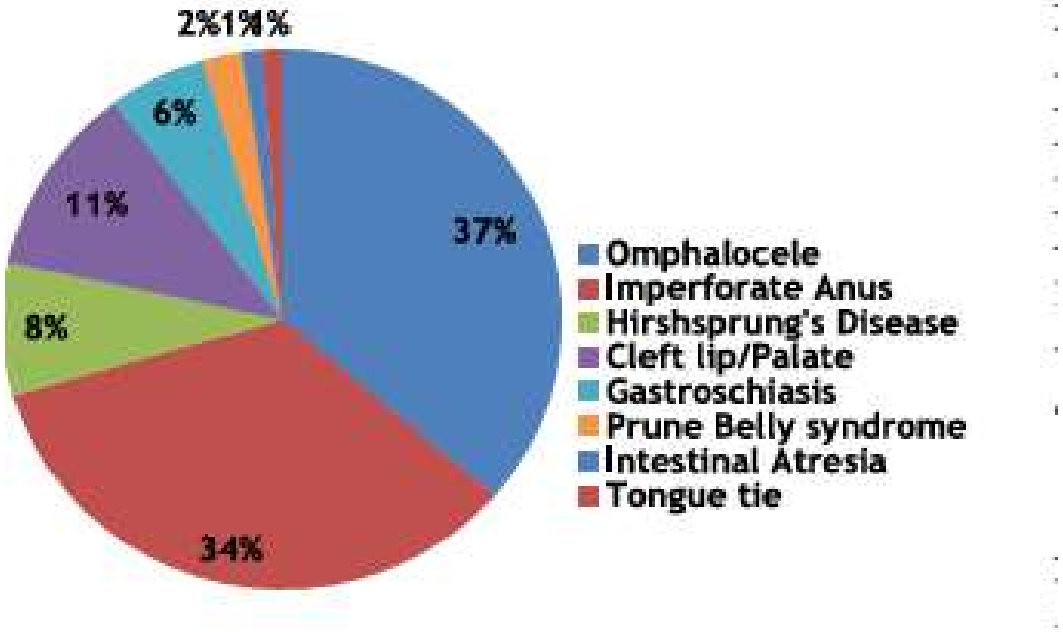

Fig. 6 Digestive system malformation among neonates in FTH Gombe

Jalo et al (West African Journal of Medicine. 2018 Sep-Dec;35 (3):195-198.)

The findings suggest that congenital malformations are common in Gombe, Neural tube defects were the commonest congenital malformations seen in this study (27).

The author was also involved in the management of special group of children with congenital abnormalities involving cleft of the lip and palate. This was through the Smile Train Organization that graciously sponsored the treatment of these children. About 149 patients with cleft lip, alveolus and palate benefited from repair during the period of this study (28). The research group has since established an organized Cleft Lip and Palate Group, an affiliate of The Smile Train, which is currently still making significant impact in Gombe state.

Further contribution to the literature on congenital malformation by the author included a case report of a rare congenital malformation involving maxillomandibular fusion with pectus excavatum and

craniosynostosis in a neonate (29) and the study on the outcome of surgical management of children with congenital malformation at Federal Teaching Hospital, Gombe (30).

3:3 Neonatal malaria

The World Health Organization (WHO) recommends testing using microscopy or Rapid Diagnostic Test (RDT) before treatment for malaria. However, the use of RDT to diagnose neonatal malaria has not been widely validated. We conducted this study to determine the utility of RDT in the diagnosis of congenital and acquired malaria in febrile neonates in Nigeria. It was found that RDT was not sensitive in the diagnosis of congenital or acquired neonatal malaria; therefore, microscopy remains the preferred method of diagnosis of neonatal malaria (31).

Table IX. Sociodemographic characteristics of study subjects

Variable			Total N=131
Malaria parasite Age (days)	Positive 78 (59.5%)	Negative 53 (49.5%)	
0–7	67 (77.0)	33 (62.3)	100
>7	11 (33.0)	20 (37.7)	31
Gestational age			
Preterm	27 (34.6)	10 (18.9)	37
Term	51 (65.4)	43 (81.1)	94
Place of birth			
FTHG	49 (62.8)	32 (60.4)	81
SSHG	2 (2.6)	4 (7.6)	6
PHC	20 (25.6)	13 (24.5)	33
Private facility	3 (3.9)	0 (0.00)	3
Home	4 (5.1)	4 (7.6)	8
Social class			
Low	20 (25.6)	16 (30.2)	36
Middle	18 (23.1)	20 (37.7)	38
High	40 (51.3)	17 (32.1)	57

FTHG, Federal Teaching Hospital Gombe; PHC, Primary Health Centres; SSHG, State Specialist Hospital Gombe.

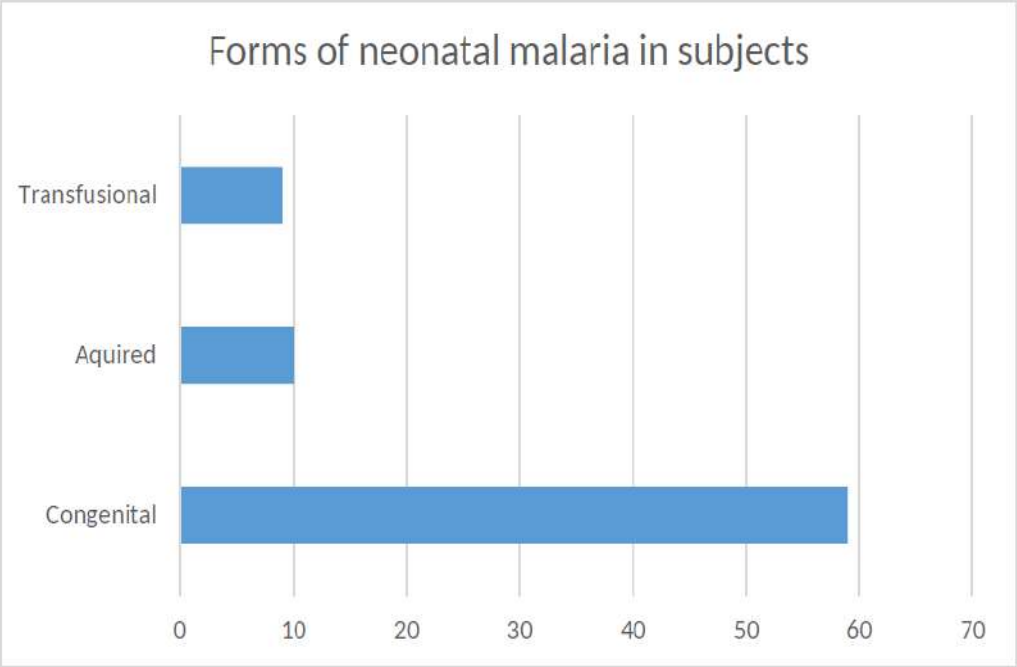

Fig. 7 Types of neonatal malaria

Table X Comparison between blood film microscopy and RDT for Malaria

Table 2 Comparison between blood film microscopy and RDT for malaria

	Parasitaemia (microscopy)	No parasitaemia (microscopy)	
Test (RDT)	Positive	Negative	
Positive	TP 0	FP 0	0
Negative	FN 78	TN 53	131
Total percentage	59.5	40.5	100

FN, false negative; FP, false positive; TN, true negative; TP, true positives.

Adeniji et al (Archives of disease in childhood 109 (1), 11-15)

3:4 Transfusion in newborn

Blood transfusion is a lifesaving procedure with varying indications. Transfusion of red blood cells, platelet and plasma are critical to providing constituents that play specific roles in newborn to increase oxygen carrying capacity, boost immunity or remove toxin from the body.

A review of the rates, indication and outcome of blood transfusion in Federal Teaching Hospital Gombe was carried out to evaluate the pattern of blood transfusion. A total of 2,748 neonates were admitted during the 5year under review out of which 96 neonates had blood transfusion giving, a blood transfusion rate of 3.5%.

Table XI. Outcome of transfusion by patient character

Variable	Outcome of Transfusion			p-value
	Dead	Discharged		
Gender			0.376	0.54 χ^2
Male	13(13.5)	49(51)	64.5	
Female	9(9.4)	25(26)	35.4	
Place of Delivery			8.130	0.10'
Tertiary Health Facility	16(16.7)	29(30.2)	46.9	
Secondary /Primary Facility	4(4.2)	22(22.9)	27.1	
Home/Private health facility	2 (1)	13(15.6)	16.6	
Admitting Section			8.256	0.04* χ^2
Inborn	15(15.6)	25(26)	41.6	
Outborn	7(7.3)	49(51)	58.3	
Gestational Age (weeks)			8.423	0.84'
<37	15(15.6)	46(47.9)	63.5	
38–41	7(7.3)	27(28.1)	35.4	
≥42	0(0)	1(1)	01	
Weight (kilogramme's)			1.573	0.81'
<1	1(1)	3(3.1)	4.1	
1–1.49	4(4.2)	9(9.4)	13.6	
1.5–2.49	8(8.3)	28(29.2)	37.5	
2.5–3.99	8(8.3)	33(34.4)	42.7	
≥4	1(1)	1(1)	2.0	

**p-value <0.05 statistically significant; Chi square χ^2 = Fisher's exact = '*

Jalo et al (West Afr J Med. 2021 Feb;38 (2):152-157).

This review has contributed in helping the team working in the neonatal unit to plan transfusions in the newborn including adopting the restrictive approach to blood transfusion especially in preterm (32).

3:5 Respiratory Support

The first month of life is the most vulnerable period for child survival, nearly half (47%) of all deaths in children under 5 years of age occur in the newborn period (the first 28 days of life), which is among the most vulnerable periods of life and requires intensified quality intrapartum and newborn care. Sub-Saharan Africa has the highest neonatal mortality rate in the world at 27 deaths per 1000 live births, followed by Central and Southern Asia, with a neonatal mortality rate of 21 deaths per 1000 live births (33).

Premature birth complications (birth asphyxia/trauma), neonatal infections and congenital anomalies remain the leading causes of neonatal deaths. Children who die within the first 28 days of birth suffer from conditions and diseases associated with lack of quality care at birth or skilled care and treatment immediately after birth and in the first days of life. Common causes of neonatal mortality are as shown in figure below.

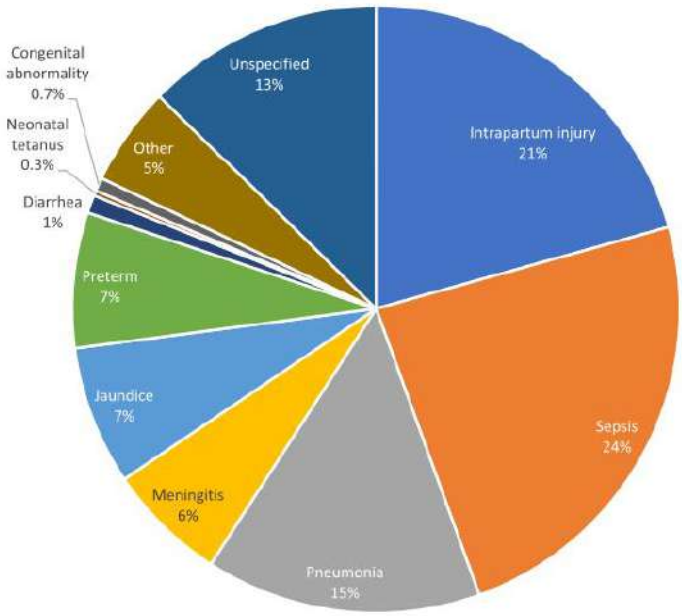

Fig. 8 Causes of mortality in newborn (The Lancet. 2023 Oct 7;402 (10409):1261–71)

Respiratory distress is a key presentation in most diseases of the newborn and contributes significantly to morbidity and mortality in the newborn and is one of the most common reasons an infant is admitted to the neonatal intensive care unit (34). Fifteen percent of term infants and 29% of late preterm infants admitted to the neonatal intensive care unit develop significant respiratory morbidity; this is even higher for infants born before 34 weeks' gestation (35). Regardless of the cause, if not recognized and managed quickly, respiratory distress can escalate to respiratory failure and cardiopulmonary arrest. Therefore, it is imperative that any health practitioner caring for newborn infants can readily recognize the signs and symptoms of respiratory distress, differentiate various causes, and initiate management strategies to prevent significant complications or death.

Management

Newborns with respiratory distress require support while the main cause of respiratory distress is being treated. The use of ventilators, continuous positive airway pressure ventilation, extracorporeal membrane oxygenation and meticulous blood gas analysis have definitely improved outcome of neonates with respiratory distress in high income countries.

Fig. 9 Medical ventilator

Types of continuous positive airway pressure machines

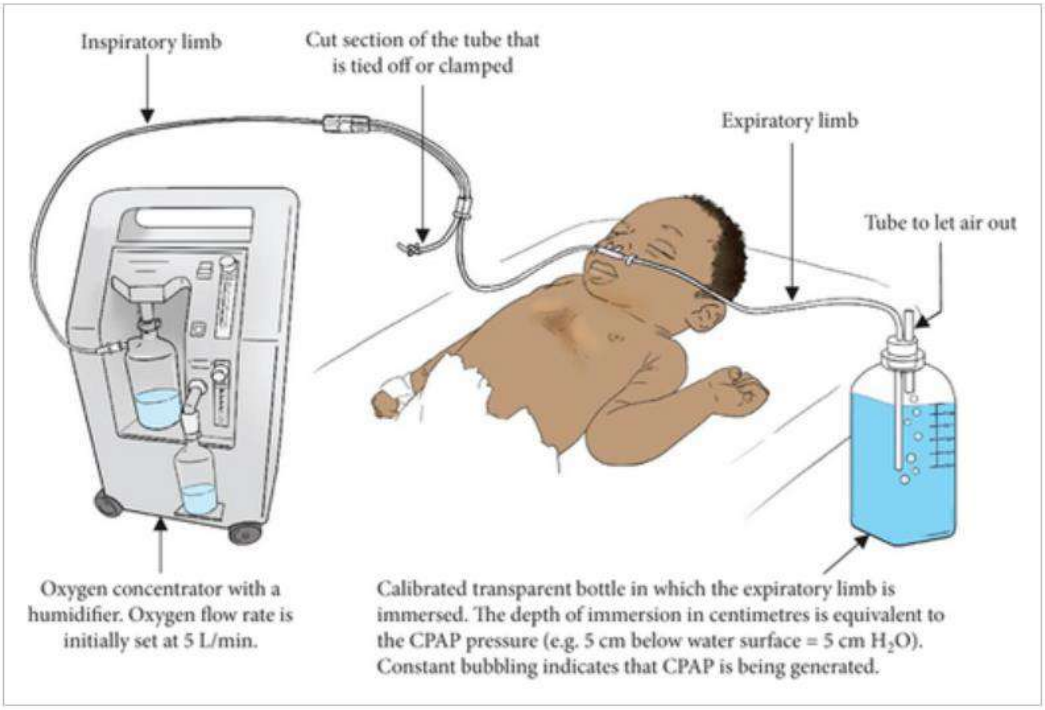

Fig. 11 illustration of lowcost improvised CPAP

Unfortunately, many resource-poor neonatal centres in developing countries have little or no facilities for the care of newborns with respiratory distress, the outcome of babies with this condition is still poor.

Vice-Chancellor Sir, having recognized that respiratory distress is a very important cause of morbidity and mortality in neonates, I sponsored myself for a training in management of respiratory distress targeted at low-income countries in Kampala, Uganda. At the completion of the training, attempts were made to get the management of the hospital to at least acquire the machines that were meant for the low- income settings but this was not acquired. Thus, we were left with no option but to adopt an improvised model of the CPAP in order to manage our newborn patients with respiratory difficulty. **This is one of situations that highlights the dilemma of practice of neonatology in low resource settings like ours**.

Vice-chancellor Sir, Ladies and Gentlemen armed with this knowledge and having no other option, I decided to start the implementation of the improvised CPAP model in FTHG. This was started with an observational, prospective study of 41 neonates presenting with respiratory distress. The results showed that 22 patients (53.6%) improved and were successfully weaned off bCPAP, 15 (36.6%) died and 4(9.7%) were discharged against medical advice (36).

Fig.12 improvised continuous positive airways ventilation device
Jalo I, et al (Jewel Journal of Medical Sciences 2020. 1; 1:24-30).

Table XII. Demographic and baseline characteristics of the study subjects

Variables	Alive n(%)	Died n(%)	Total n(%)	P-Value
Gender				
Male	19(46.3)	8(19.5)	27(65.8)	
Female	7(17.1)	7(17.1)	14(34.2)	0.346
SCBU Unit				
Inborn	19(46.3)	7(17.1)	26(63.4)	
Outborn	7(17.1)	8(19.5)	15(36.6)	0.172
Birth Weight				
Normal	12(29.2)	6(14.6)	18(43.8)	
LBW	10(24.4)	3(7.3)	13(31.7)	
VLBW	1(2.4)	3(7.3)	4(7.9)	
ELBW	4(9.7)	2(4.9)	6(14.6)	0.359
Diagnosis				
RDS	8(19.5)	4(9.7)	11(26.8)	
MAS	6(14.6)	3(7.3)	9(21.9)	
SBA	3(7.3)	2(4.9)	5(12.3)	
MAS/SBA	10(24.4)	6(14.6)	16(39.0)	0.980

Table XII. Complications and outcome of the study subjects

	Male n(%)	Female n(%)	Total n(%)
Complication			
Hypothermia	8(19.5)	4(9.8)	12(29.4)
Excessive Secretion	3(7.3)	1(2.4)	4(9.7)
Others	2(4.9)	1(2.4)	3(7.3)
None	14(34.1)	8(19.5)	22(53.6)
Outcome			
Improved and Weaned	13(31.7)	9(21.9)	22(53.6)
Deteriorated	1(2.4)	1(2.4)	2(4.9)
Died	11(26.8)	4(9.8)	15(36.6)
LAMA	2(4.8)	0(0)	2(4.9)

Jalo I, et al (Jewel Journal of Medical Sciences 2020. 1; 1:24-30).

From the findings of this study, which demonstrated that neonates with respiratory improved on CPAP, The unit has been using CPAP for the treated of respiratory distress with remarkable success.

Fig. 13 Patients on improvised CPAP at SCBU, Federal Teaching Hospital, Gombe

TEACHING AND MENTORSHIP

My journey to the classroom began in February, 1997 when as a Senior Registrar in Paediatrics I was appointed by the Management of University of Maiduguri as an Associate Lecturer. This indeed opened a new chapter in my life and made me to take on additional responsibility other than my primary role as a resident doctor. It was a task that I enjoyed and discharged with high level of dedication and great sense of responsibility. I was retained on this position up to the completion of my residency training in the year 2000 when the appointment was converted to visiting Lecturer I. My appointment as visiting Lecturer with University of Maiduguri lasted till 2012 when I tendered my voluntary resignation because the state of insecurity in the Northeast made it difficult for me to travel from Gombe to Maiduguri to discharge my duties and responsibility.

I will always cherish the period of my service as a lecturer at the University of Maiduguri, first because it introduced me to the rudimentary elements of undergraduate teaching, mentoring and supervision. Secondly, it was an opportunity for me to be part of the training of a cohort of intelligent, brilliant young minds most of whom are today making waves as professors, directors, politicians and many other fields of human endeavour. This no doubt is a highly rewarding experience and I will always be proud of this accomplishment.

When I joined the services of the defunct Federal Medical Centre, Gombe as the pioneer Consultant Paediatrician, it was obvious that the task of building the department rested squarely on my shoulders. With that in mind, it was necessary to consolidate my involvement in the activities of the West African College of Physicians to be able to obtain accreditation to train resident doctors. With the coming on board of Dr Elon W. Isaac we were able to convince Prof Okolo S. N. and Prof Bode-Thomas both from Jos University Teaching Hospital and Prof Olufemi Ogunrinde from Ahmadu Bello University Teaching Hospital

Zaria to join us as visiting consultants. That was how we were able obtain accreditation from West African College of Physicians to train residents in the Department of Paediatrics, Federal Medical Centre, Gombe. From this humble beginning I am glad to announce that I have supervised to completion twenty-two (22) Fellowship Dissertation. All those who applied for placement were offered appointments as Consultants by the Federal Medical Centre/Federal Teaching Hospital, Gombe. Expectedly but regrettably a good number of them have joined the brain drain to other countries for better conditions of service and further professional development. At the level of FWACP I have examined over Twenty (20) Fellowship Dissertations and have been involved in accreditation assessment visits to several training institutions in Nigeria: today I serve as one of College Officers in the Faculty of Paediatrics as Accreditation Representative in Council.

With the establishment of the Clinical arm of the College of Medical Sciences, Gombe State University, I was invited to join core academics to help give life to the new Faculty of Clinical Science. It was not an easy decision to make as it entails taking a lower position of Senior Lecturer compared to my rank at the time as Chief Consultant and moving from Federal to State service. The consequent loss of monthly earnings notwithstanding, I gladly took up the challenge for the love of my dear state, concerned for our children who will benefit from the training and for the sake of posterity.

My joy knew no bounds when coincidently while serving as the Dean of the Faculty of Clinical Sciences the whole world witnessed the graduation of the first set of medical students from Gombe State University. I am glad to also see the College grow and proud to be associated with our graduates who are excelling in their areas of specialties.

My teaching and mentoring experience is not limited to Gombe, as visiting Consultant to Abubakar Tafawa Balewa Teaching Hospital

Bauchi, I was able to convince all the Medical Officers there to enrol into the residency program, after passing the Primary Fellowship examinations. We sought the cooperation of the management of ATBUTH to send them to other institutions as supernumerary to train. Today, it is gratifying to say that all of them have been appointed consultants and with my involvement as trainer and an accessor at the West Africa Postgraduate College, ATBUTH is now fully accredited for postgraduate training in Paediatrics. I was also a pioneer staff as visiting Lecturer at the Department of Paediatrics, Abubakar Tafawa Balewa University Bauchi.

At the Federal Medical Centre, Azare, I was one of the first Fellows to be appointed visiting consultant in the Department of Paediatrics, I used the opportunity to encourage the medical officers in their employment then to enrol into the residency program. Through these efforts, all the Medical Officers have been able to successfully complete their residency training and are now consultants as a result of which Federal Medical Centre Azare is now fully accredited for residency training in Paediatrics by the West African College of Physicians. At various times I also served as visiting consultant to Federal Medical Centres at Yola Adamawa State, Jalingo, Taraba State and Nguru in Yobe State.

In 2005, the Federal Medical Centre, Gombe had a research collaboration with the University of New Mexico which involved students exchange program. I was privileged to have four students posted from University of New Mexico under my mentorship and supervision for their research project. The project was for three months and it studied pulmonary function correlates with body mass in children and young adults with sickle cell anaemia. The successful implementation of that project encouraged me and my trainees/mentees to study four other correlates in patients with sickle cell anaemia which were all published in national and international journals.

CONCLUSIONS

- The neonatal mortality rate in low resource settings is still very high due to a combination of medical, sociodemographic factors, cultural beliefs and stereotypes. The leading causes of newborn deaths are infections, perinatal asphyxia, prematurity and congenital malformations.
- There exist considerable gaps in the practice of neonatology arising from challenges with service delivery, to lack of equipment required for appropriate care of the newborn. This led to use of improvised materials, employing low-cost technologies and procedures to reduce morbidity and mortality especially in newborns presenting with respiratory distress.
- The challenges that impedes the survival and welfare of the newborn in Nigeria are numerous. These challenges are symptomatic and represent the general developmental problems in low resource setting.
- I have chronicled my work and research in the field of Paediatrics and Neonatology and also highlighted my involvement in teaching and mentoring of young doctors not only in Gombe State, but across the length and breadth of the Northeast and Nigeria in general.

RECOMMENDATIONS

(A) GOVERNMENT

i. To improve coverage and quality of existing neonatal services through targeted investment in health personnel and infrastructure.

This can be achieved by regionalization of neonatal care services at state level so that at least one facility per region is equipped as referral facility and also for training of health care practitioners on effective low-cost interventions like KMC, bag and mask ventilation, lactation management and improvised CPAP to enhance newborn survival.

ii. Provide incentives to encourage institutional delivery such as free antenatal care and delivery, mobile ambulance services, conditional cash transfer where there are obvious financial barriers and boosting male involvement in the delivery process.

iii. Critical investment, unwavering commitment and collaboration by stake holders are the keys to creating a world where children in low resource settings can access the quality health care, they deserve to ensure their survival and wellbeing.

iv. Promote task shifting among health work force to allow for moving specific responsibilities where appropriate from highly qualified health workers to those with shorter training to make more efficient use of available manpower.

v. The Federal Government should assist the Local Government in delivery of Primary Health Care at the Ward level where majority of the people live. Alternatively, a public private partnership at the PHC

level where government provides the infrastructure whilst private sector manages it to prudently utilize scarce resources.

vi. The Essential Newborn Care Course (ENCC) package which is a standard tool that has been tested as global best practice to ensure provision of full range of updated, evidence-based intervention during child birth should be incorporated into the curricular of all schools that train health care providers.

(B) PROFESSIONAL ASSOCIATIONS

i. The Paediatric Association of Nigeria should offer support to government through strong advocacy and research. Because of its vast pool of knowledge and skills and the spread of its members nationwide, PAN is strategically place. It should work closely with the government especially to accelerate the pace of health education to reach all children and their mothers/carers, in all corners of the country**.** This will help to reduce neonatal morbidity and mortality.

ii. The task of supporting government effort in improving newborn health is huge and PAN cannot do it alone. Therefore, PAN should partner and **collaborate** with other professional groups, NGO's, Civil Society Organizations.

iii. The Nigeria Society for Neonatal Medicine (NISONM) should lead other professional associations to ensure establishment of centres for

training of neonatal nurses. This will help to boost the required manpower for newborn care in the country.

iv. Media practitioners in collaboration with civil societies should write compelling reports that are evidence-based and of maternal and newborn health importance. Messages with focus on exclusive breastfeeding, immunization and use of oral rehydration solutions and policy financing for newborn health.

ACKNOWLEDEMENTS

Let me first of all thank the Almighty God for His love, grace and mercies that enabled me to see this day and the strength, wisdom and knowledge given to me to be able to make my modest contribution to medical science in particular and humanity in general; to Him be glory, honour and adoration.

At a time like this, I would have wished to see seated in the crowd my father and mother, Late Mr. and Mrs. Jalo Swekuswere who though did not go through any form of formal school, spared no expense to make sure their children attained the highest available level of education at the undergraduate level and inculcated in us good moral values. I will forever value their investment in my life and remain eternally grateful that God allowed these loving and caring people to be my parents. As the youngest in the family, I was equally blessed with siblings who supported me tremendously at various stages of my academic career. They are Late Mr. Lazarus Sukkukum, Late Ladi Ishaku Beyah, Late

Engr. Stephen Jalo and Late Barrister Simon Saidu. Others are Mr. Ishaya Jalo and Mr. Haruna Saidu, their efforts and sacrifices made me what I am today. I also appreciate the support received from my in-laws, Mrs and Mrs Leonard Yakubu, whose consistent counsel and guidance helped me during my residency training years.

I sincerely appreciate my teachers during my undergraduate days at Ahmadu Bello University Zaria, especially Prof Alhassan M. Yakubu from whom I drew inspiration to specialize in Paediatrics and Prof William N. Ogala who incidentally was also my supervisor at the postgraduate level. I thank Prof S.S. Danbauchi of Internal Medicine Department for being a brother, friend and a pillar of support during my medical school days.

My gratitude also goes to all my teachers at Post Graduate level especially Prof G. O. Akpede, Prof A. K. Airede, Prof J. P. Ambe, Prof Adamu Rabasa, Prof S. Oguche, Dr Roger Sykes, and Dr Ogiji who laid the solid foundation for my Postgraduate training at the University of Maiduguri Teaching Hospital. I am also grateful to Prof A. A. Okolo, S. N. Okolo, Prof Bode-Thomas, of Jos University Teaching Hospital who also played key roles in my training during my posting at the institution which was a qualifying requirement to enable me take the membership examination.

To my colleagues and friends, Dr Solomon Thliza with whom we shared the little we had during our undergraduate days and Dr Dennis Shatima my office mate during the stormy days of residency training, both have remained very close and dependable allies, I appreciate their

support. Also worthy of mention are Dr Ahmadeen Abba, Dr Usman Alkali, Dr Tertenger Akhuwa, and Prof Mustapha Bello with whom we toiled during the early days of residency in Department of Paediatrics at the University of Maiduguri Teaching Hospital. To my peers at Jos University Teaching Hospital, Prof Isaac Ocheke, Prof Sylvanus Okpeh, Prof Atana Ewa, Dr Isaac Elon, Late Dr Y. S. Alkali and Late Dr Brown I equally appreciate their support.

Let me thank profusely my friends who made life enjoyable even during the harrowing days of residency training. They stood by me and gave me all the necessary support that no doubt contributed to the success of my training. They are Senator (Col) B. K. Amos, Barrister Dammo Nankham, Air Com Danladi Bausa, Air Com P J Usman, Professor Nicholas Dibal, Professor Bitrus Tarfa, Mr Apagu Gadzama and many others.

To my second family, the Department of Paediatrics which we have built over the past twenty-four years filled with love, care and support for each other. I pay glowing tribute to my colleagues and founding members of the Department Prof Isaac E. W., Late Dr Y. S. Akali, Dr Y. B. Ghidazuka and Late Mohammed Lano. I am also proud of the twenty-two (22) hard working and dedicated Consultants that I have mentored and was privileged to have supervised their postgraduate dissertation to successful completion.

Let me specially acknowledge and appreciate my dear wife, Dr Leah Iliya Jalo for her love, patience, understanding and support. You are indeed a very rare specie among women, an excellent companion and

a marvellous mother. My appreciation also goes to my children Nmaduwan, Niduwan, Nsuduwan and Yimiduwan for enduring during this long period of academic struggle, as well as to my other adopted children too numerous to mention here.

Finally, I would like to express my gratitude to all members of the University management and Senate for providing the enabling environment for academic excellence. Special thanks to members of the inaugural lecture organizing committee for their guidance during the preparation of the manuscript.

REFERENCES

1. Richard E. Behrman. Overview of Paediatrics. In; *Nelson Textbook of Paediatrics*. Richard E. Behrman Robert M. Kliegman, Hal B. Jenson. Eds (2022). Saunders Company Philadelphia. Pg 1-5

2. Mwachaka, P. M., & Mbugua, E. T. (2023). Factors influencing choice of paediatrics as a career among medical students at the University of Nairobi, Kenya. *SA Journal of Child Health* Vol.4 No.3 (2010).

3. Tsikouras P, Bothou A, Gerede A, Apostolou I, Gaitatzi F, Deuteraiou D, et al. Premature Birth, Management, Complications [Internet]. Available from: www.intechopen.com

4. Wright NJ, Leather AJM, Ade-Ajayi N, Sevdalis N, Davies J, Poenaru D, et al. Mortality from gastrointestinal congenital anomalies at 264 hospitals in 74 low-income, middle-income, and high-income countries: a multicentre, international, prospective cohort study. The Lancet. 2021;398(10297).

5. Ohuma EO, Moller AB, Bradley E, Chakwera S, Hussain-Alkhateeb L, Lewin A, et al. National, regional, and global estimates of preterm birth in 2020, with trends from 2010: a systematic analysis. The Lancet. 2023 Oct 7;402(10409):1261–71.

6. OECD/WHO (2024), Health at a Glance: Asia/Pacific 2024, OECD Publishing, Paris, https://doi.org/10.1787/51fed7e9-en.

7. Airede AI, **Jalo I,** Weerasinghe HD, Bello M, Adeyemi S. Observations on oral Sultamicillin/Unasyn CP-45899 therapy of neonatal infections. Int J Antimicrob Agents. 1997;8(2).

8. Ambe JP, Pindiga UH, **Jalo I.** Burkitts' Lymphoma: An usual relapse presentation in the subcutaneous Gluteal Region .Journal of life and Environmental Sciences. 2001 Vol.2: 149 - 150.

9. Akpede GO, Solomon EA, **Jalo I,** Addy EO, Banwo AI, Omotara BA. Nutritional rickets in young Nigerian children in the Sahel savanna. East Afr Med J. 2001;78(11).

10. Ambe JP, Bassi AP, Yahaya SJ, **Jalo I**. Knowledge, attitude and practices of parents/guardians toward poliomyelitis infection and its immunization in Banki Community, Bama LGA, Borno State. Trop Doct. 2002;32(4).

11. Akpede GO, **Jalo I,** Dawodu SO. A revised clinical method for assessment of severity of acute bacterial meningitis. Ann Trop Paediatr. 2002;22(1).

12. **Jalo.I,** Ogala W.N, Omotara B.A, Ambe J.P, Shatima R.D. Prevalence, Intensity and Factors Influencing Intestinal Helminthiasis in Children in a Rural Community in North-eastern Nigeria Journal of Life and Environmental Sciences 2005 Vol. 7 No. 1and 2 414-418

13. World Health Organization Executive Board EB106/4 106th Session 25 April 2000 Provisional agenda item 5 Roll Back Malaria Report by the Secretariat [Internet]. Available from: http://www.rbm.who.int

14. Delacollette C. Meeting of National Directors of Epidemiology and Malaria Programs. 2005.

15. Aliyart Roqayeh, Mahdavi Sepideh, Enayatrad Mostafa, Neggagah Sajad. Study protocol: Cohort Event Monitoring for Safety signal detection after vaccination with COVID -19vaccine in Iran 22DO- 10.1186/s12889-022-135-IJO-BMC Public Health.

16. Bassi P, Osakwe A, Suku C, Kalat M, Elagbaje C, Isah A, et al. Cohort event monitoring of patients treated for uncomplicated malaria with artemisinin-based combination therapies in selected hospitals and community pharmacies in Nigeria. Nigerian Postgraduate Medical Journal. 2016;23(4):172.

Bassi PU, Osakwe AI, Isah A, Suku C, Kalat M, **Jalo I,** et al. Safety of artemisinin-based combination therapies in nigeria: A cohort event monitoring study. Drug Saf. 2013 Sep;36(9):747–56.

17. **Jalo I,** Warnow IE, Shina HK. Burden, clinical manifestation and outcome of severe malaria in children at a tertiary hospital in Northeast, Nigeria. Int J Contemp Pediatr. 2020;7(8).

18. Osarogiagbon OW, Ayuk AC, Meremikwu M, Oguonu T, Umar LW, Garba IB, et al. Management of community acquired pneumonia (CAP) in children: Clinical practice guidelines by the Paediatric Association of Nigeria (PAN). Niger J Paediatr. 2022 Oct 26;49(3).

19. **Jalo I,** Isaac EW, Alkali YS, Ghiduzuka YB, Aliu R. Clinical characteristics of childhood pneumonia in Federal Teaching Hospital, Gombe. Proceedings of Annual General Scientific Conference of West Africa College of Physicians held at Gombe Internal Hotel. July 18th to 22nd 2016.

21. We Isaac, **I Jalo,** G Yohanna, R Aliu, K Ebiseke, A Girbo, L Olatoke, In-Patient Pneumonia Burden and Case Fatality Rates in Children over two Decades in Federal Teaching Hospital, Gombe (FTHG). West African Journal of Medicine 40 (11 Suppl 1), S10-S10

22. **Iliya J,** Shatima DR, Tagbo BN, Ayede AI, Fagbohun AO, Rasaq A, et al. Pneumonia hospitalizations and mortality in children 3–24-month-old in Nigeria from 2013 to 2020: Impact of pneumococcal conjugate vaccine ten valent (PHiD-CV-10). Hum Vaccin Immunother. 2023;19(1).

23. Essential Newborn Care Course Trainer's Guide.

24. Liu X, Li Z, Chen X, Cao B, Yue S, Yang C, et al. Utilization pattern of kangaroo mother care after introduction in eight selected neonatal intensive care units in China. BMC Pediatr. 2020 May 29;20(1).

25. Antonucci R, Porcella A, Pilloni MD. Perinatal asphyxia in the term newborn. Journal of Pediatric and Neonatal Individualized Medicine [Internet]. 2014;3(2). Available from: www.jpnim.com

26. **Iliya J,** W IE, Wariri O, R A, P RM, M A. Role of magnesium sulphate in the treatment of severe perinatal asphyxia: Experience from a tropical tertiary hospital. International Journal of Pediatrics and Neonatology. 2022 Jan 1;4(1):1–5.

27. **Jalo I,** Elon Warnon Isaac, Y S Alkali, Spectrum of Congenital Malformations in Federal Teaching Hospital Gombe: A Ten-Year Review. West African Journal of Medicine 35(3):195-19

28. Akintububo DOB, Ojo EO, Kokong DD, Adamu SA, Nnadozie UU, Yunusa-Kaltungo Z, **Jalo I**. et al. Cleft Lip, Alveolus and Palate in African Natives: An Update on Demographics and Management outcome.

29. Ajike SO, Adeosun OO, Adebayo ET, Anyiam JO, **Jalo I,** Chom ND. Congenital bilateral fusion of the maxillomandibular alveolar processes with craniosynostosis: Report of a rare case. Niger J Clin Pract. 2008;11(1).

30. S. Adamu, S. Wabada, A.M Abubakar**, I. Jalo,** S.A Faruq, Nwosu, K.J Bwala, K. Ofozor. Determinants of Outcome of Neonatal Surgical Emergencies in Gombe: a 3-year retrospective review. Ann Ibd. Pg. Med 2024. Vol.22, No.1 47-50. Determinants of outcome of NN surgical emergencies.

31. Adeniji YR, **Jalo I,** Okonkwo I, Poksireni MR, Manga M, Wariri O, et al. Diagnostic value of rapid test for malaria among febrile neonates in a tertiary hospital in North-East Nigeria: A prospective cross-sectional study. Arch Dis Child. 2024 Jan 1; 109 (1):11–5.

32. **Jalo I**, E W Isaac, MP Raymond, M Amina, R Y Adeniji. Rate, Indications and Outcome of Blood Transfusion in Neonates at Federal Teaching Hospital, Gombe, Nigeria. West Afr J Med. 2021 Feb; 38 (2):152-157.

33. Odejimi A, Quinley J, Eluwa GI, Kunnuji M, Wammanda RD, Weiss W, et al. Causes of deaths in neonates and children aged 1–

59 months in Nigeria: verbal autopsy findings of 2019 Verbal and Social Autopsy study. BMC Public Health. 2022 Dec 1;22 (1).

34. Kuti BP, Mohammed LO, Oladimeji OI, Ologun BG, Kuti DK, Fawale OO. Respiratory distress in nigerian neonates: Prevalence, severity, risk, and etiological factors and outcome. Nigerian Journal of Basic and Clinical Sciences. 2018 Jan 1;15(1):42–9.

35. Adebami OJ, Joel-Medewase VI, Agelebe E, Ayeni TO, Kayode O V., Odeyemi OA, et al. Determinants of outcome in newborns with respiratory distress in Osogbo, Nigeria. Int J Res Med Sci. 2017 Mar 28;5(4):1487.

36. **Jalo I,** Isaac EW, Aliu R, Raymond MP. Improvised continuous positive Airway Ventilation for treatment of respiratory distress in Neonates, in a Resource Limited Setting. Jewel Journal of Medical Sciences 2020. 1;1:24-30.

CITATION ON PROFESSOR ILIYA JALO

Professor Iliya Jalo was born on January 10th, 1963 in Bule, Tula, Kaltungo Local Government of Gombe State. He enrolled initially at Wange and subsequently at Awak Primary Schools for his primary education. His Secondary education commenced immediately afterwards at Government Secondary School Dadinkowa and was wrapped up at Science Secondary School Gombe. He then proceeded to Ahmadu Bello University Zaria where he underwent the IJMB program and thereafter started a degree in Medicine and Surgery (MBBS) which he concluded in 1989.

After the mandatory NYSC program in Kwara State, he furthered his training through a residency program in Paediatrics culminating in passing the fellowship exam in 2000 when he became a consultant. In additional to these, he possesses a Master's Degree in Public Administration from the University of Maiduguri, a Diploma in Neonatology from Sackler Faculty of Medicine, Tel Aviv University in addition to several professional courses he partook of over the years. He has served with the Bauchi State Government, as Medical Officer in Gombe and Bajoga General Hospitals, The University of Maiduguri Teaching Hospital, Federal Teaching Hospital Gombe (Formerly known as Federal Medical Centre), as well as London Hospital Kuwait. He is presently with Gombe State University. Through the span of this time, he occupied different positions as a Chief Resident, Head of Paediatrics Department, Dean of Clinical Sciences, Collage of Medical Sciences, and is presently a Professor of Paediatrics. He has equally served as examiner at the undergraduate and postgraduate levels in addition to being an external examiner to the University of Maiduguri, University of Jos and Ahmadu Bello University, Zaria.

As a Paediatrician, whose dedication to advancing the field of Paediatrics has earned him recognition as a leading expert and an inspiration to his peers and students, he has acquired additional

certification in courses such as Essential Newborn Care Course, Vaccinology Course and Training on Critical Newborn Care. As an academician, he has been involved in training of Resident Doctors, House Officers and Medical Students; this covers teaching, conducting research and supervision of fellowship dissertations. He has also mentored medical students from the University of New Mexico Medical School, United States of America. Professor Iliya Jalo is a dedicated educator and mentor, he has trained countless young doctors and researchers, instilling in them the values of compassion, curiosity and excellence.

His passion for improving child health outcomes led to groundbreaking research in the areas of tackling Pneumonia in children, advancements in the care of neonates etc where he made significant contributions to both clinical practice and policy development. Over the years, Professor Iliya Jalo has published over fifty-five (55) peer-reviewed papers in local and international journals and his work has been pivotal in shaping adaptive measures for the survival of neonates in Northeast Nigeria. The research not only reflects academic rigour but also demonstrates a commitment to addressing the real-world challenges faced by children, families and healthcare systems globally.

His leadership role has reflected in his work as Head of Paediatrics Department, President Association of Resident Doctors (ARD, UMTH), Assistant Secretary Nigerian Medical Association (NMA), Chairman, NMA Committees on both Ethics and Lobby, Chair Nigerian Medical Association Gombe State, among many others. He is currently the Accreditation Representative, Faculty of Paediatrics, West African College of Physicians and this exemplifies his ability to bridge clinical care, research and education seamlessly.

Professor Iliya Jalo is a quintessential member of a number of professional bodies such as NMA, Paediatric Association of Nigeria (PAN), International Paediatrics Association (IPA), Nigerian Society of

Neonatal Medicine (NISONM) to mention but a few. He has offered his services in advocacy and many community service engagements as either chair or member of ad-hoc committees. He was the Chairman of committees such as Research and Ethics, Clinical Meeting and Laboratory Revolving Fund in the defunct FMC Gombe. Top among his other engagements was when he served as Chair, Local Organising Committee (LOC) during the West African College of Physicians National Conference which held in Gombe in 2016 and LOC Chair at the recently concluded Paediatrics Association of Nigeria Conference (PANCONF) which was hosted here in Gombe from 22nd to 25th January 2025.

He has served as the Chair of Tula Community in Maiduguri, Borno State and was the Pioneer Chairman of wange Youth Vanguard. His continued service to the community earned him the title of Dan Masanin Tula, and this availed him the opportunity to keep offering his untiring support to Tula Traditional Council till date. Professor Iliya Jalo has also participated in a number of health interventionist programmes in his immediate and extended community. To mention but a few, he was member of the National Health Committee to the Holy land of Israel in 2009 as well as the Chair, Medical Outreach in 2023 and 2024 in Tula Community. Professor Iliya Jalo is happily married to Dr. Leah Iliya Jalo and they are blessed with four children.

Today, we celebrate not only his remarkable achievements, but also his vision for the future of paediatrics. As he delivers this inaugural lecture, we are reminded of his unwavering commitment to improving the life of children everywhere. Ladies and gentlemen, please join me in welcoming Professor Iliya Jalo to the podium for his inaugural speech.

INAUGURAL LECTURES OF GOMBE STATE UNIVERSITY

LECTURE SERIES	NAME	TITLE	DATE
1st	Prof. Ibrahim Waziri Abubakar	Western Healthcare System in Northern Nigeria: An outline of its Foundation and Development	27th January, 2022
2nd	Prof. Oluwasanumi Adedimeji Adepoju	The Infrangible Nature of Knowledge: The need for Researchers to be Multipotentialities	15th December ,2022
3rd	Prof. Mahmoud Umar	Public Sector Reforms in Nigeria: The Imperatives of New Public Governance Model	25th May, 2023
4th	Prof. Adewale Olukayode Ogunrinade	Aladura and the Perpetuation of Indigenous Christianity Among the Yoruba	13th July, 2023
5th	Prof. Rasheed Abdulganiy	Academicizing the Hadith: Comprehensive Exploration of Prophetic Guidance in Addressing Human Multi-Dimensional Challenges	26th September , 2023
6th	Prof. Halima Mohammed Abba	Green Solutions for a Sustainable Future	7th March, 2024
7th	Prof. Mohammed M. Manga	A Privileged Nomadic Microbial Warrior: Battles in Health and Medical Education	23rd April,2024
8th	Professor Bulus Wayar	Demographically Undetermined, Territorially Boundless, Linguistically Attritional: The Lifeline of Fulfulde in Africa	28th May, 2024
9th	Professor Seydou Hankouraou	Physics, Health and Sustainable Development	25th June, 2024

10th	Professor Danladi Adamu Bojude	Championing Community Oncology: Saving Lives, Empowering Communities	30th July, 2024
11th	Professor Kennedy Poloma Yoriyo	The Lady Mosquito Which Underdeveloped and Kept Africans in A Poverty Vicious Circle	27th August, 2024
12th	Professor Sani Adamu	Toxicology Versus Nutrition; Pro-Oxidants Versus Antioxidants; Each, A Coin with Two Sides: Which One Is the Killer?	26th November, 2024
13th	Professor Lazarus Mbaya	The Intractable Environmental Challenges in the Jewel State: Perspectives of a Geomorphologist	17th December, 2024
14th	Professor Iliya Jalo	The Dilemma of a Neonatologist in Low Resource Setting: Using Improvised Technologies to Enhance Newborn Survival	28th January, 2025