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**BEFORE TREATMENT**



**AFTER TREATMENT**



# EDITORIAL



**Professor Mark Tettey**  
*Editor in Chief*

Welcome to the 16<sup>th</sup> Volume of the UGMS Newsletter. Some changes have occurred in the College of Health Sciences regarding the School of Medicine and Dentistry. There has been a break up into the constituent schools (see Dean's message). The Medical School has now 17 Departments made up of 8 pre-clinical (basic and para clinical sciences) and 8 clinical departments with one centre. The basic science departments which are featured in this volume are a testimony of the changes that have occurred. We hope that their presence will increase research diversity and improve on the research output.

The departmental publications were retrieved from Scopus for the period from April to August 2019. Department of Medicine and Therapeutics published the highest number of articles and it was the same achievement in the previous volume. I hope this will inspire other departments in the School to increase their research output. I therefore recommend an annual award be instituted to reward the best department in publications for both clinical and basic science departments. This may create competition in the departments and help improve on the current level of research in the School.

The Department of Pathology has added lessons to the clinical images presented in this section. Clinicians need to always carry out thorough physical examination of patients. Occasionally, this is overlooked and may cost the life of a patient.

The research highlights have featured major research activities in the School which will impact greatly on the quality of life and medical practice in the country. These include the Ghana Heart Initiative project from the Department of Medicine and Therapeutics and an observational study on modifications of lipoprotein metabolism among patients with type 2 diabetes mellitus from the Department of Chemical Pathology. The department of Medical Microbiology is hosting the Fleming first country grant on antimicrobial resistance surveillance in Ghana. A five year audit of maternal mortality at the Department of Obstetrics and Gynaecology is expected to identify the changing patterns of the leading causes of maternal death.

The landmark case featured in this volume was a 7 year old girl with a rare fungal infection. We congratulate Department of Surgery for treating this patient successfully. The education section presents a report of a survey of our medical student's knowledge about Ghana's history with interesting results.

Our distinguished personality for this volume is Professor Joseph Kpakpo Acquaye. He was the first head of Department of Hematology and developed it to train medical students and specialists in hematology. The University of Ghana salutes him for his selfless contributions to the School and Ghana.

Do well to flip through the pages for more interesting articles and the achievements of Professor Emmanuel Kitcher.

As the year draw to a close I sincerely thank the Dean of the University of Ghana Medical School, Professor Margaret Lartey, for her immense support to the research team of the School. I also thank the newsletter and the research committee members for their continuous sacrifice. I wish you all a prosperous and a fulfilling New Year.

# NEW YEAR MESSAGE FROM THE DEAN



**Professor Margaret Lartey**  
*Dean, UGMS*

Happy new year to all our readers and thanks for keeping faith with us. It is customary that at this time I reflect briefly on the past year and share our aspirations for the new.

2019 started like most others, some successes, many unmet objectives and a firm decision to persevere despite the odds. The year quickly took a new turn.

We celebrated successfully the 10<sup>th</sup> anniversary of the Graduate Entry Medical Programme during which we reviewed objectively the academic, financial and administrative aspects. Another major event occurred with the University Council reversing the break up of the Medical School and the formation of the School of Medicine & Dentistry. Thus on 1st August 2019, we reverted to the University of Ghana Medical and Dental Schools and our 8 departments that were ceded to

3 other schools were welcomed back home. On October 25<sup>th</sup> we celebrated 50 years of graduation of the pioneer UGMS class, their perseverance has paved the way for local medical training and the country now boasts of 7 Medical schools. We are grateful to the Minister of Finance and Prof. Angela Ofori-Atta through whom we were able to purchase two 33 seater buses at a reduced cost. The buses will be used to transport students to various hospitals in Accra. In the year under review, we lost some stalwarts of the school among which are Prof. F.T Sai, the foundation head of the Community Health Department and doyen of Family Planning and Reproductive Health, Prof. J.O. Oliver-Commey, the valedictorian of the pioneer class of 1969 and a loved and respected paediatrician and lecturer, Dr. Paulina Kitcher, a lecturer in anatomy and one of the foundation lecturers of the Dental School and also Mrs Theodora Bofo, a woman credited for setting up the systems and processes of the fledging Medical School. She was also known as the encyclopedia of UGMS due to her indepth knowledge of the School. We also lost a pre-clinical student in tragic circumstances. May their souls rest in perfect peace.

Going forward into the new year, we once again welcome everyone on board as together we achieve more. We have plans to implement some of the recommendations from the GEMP review, we need to revamp both undergraduate and graduate programmes in the pre-clinical sciences and renovate and refurbish our infrastructure as well as recruit new faculty to improve on teaching and learning.

Finally, my appreciation goes to all internal and external stakeholders and I encourage all to ride this train with us Once again a happy and prosperous new year to you all.

## DEPARTMENTAL PUBLICATIONS

### SCHOOL OF MEDICINE AND DENTISTRY

#### Department of Anatomy

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1. Arko-Boham B., Aryee N.A., Blay R.M., Owusu E.D.A., Tagoe E.A., Doris Shackie E.S., Debrah A.B., Adu-Aryee N.A. Circulating cell-free DNA integrity as a diagnostic and prognostic marker for breast and prostate cancers. *Cancer Genetics* 2019;235-236

#### Department of Child Health

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1. Sackey A.H. Musings on malaria morbidity and mortality after the new Mosquirix vaccine. *Ghana Medical Journal* 2019;53(2)
2. Sackey A.H., Tagoe I.G. Admissions and mortality over a 5 year period in a limited-resource neonatal unit in Ghana. *Ghana Medical Journal* 2019;53(2)

#### Department of Hematology

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1. Deh-Adomakoh Y.A., Akpalu J., Yawson A.E., Ekem I., Reynolds M., Atiase Y. Steroid induced dysglycemia in patients with haematological disorders: a ten year review in a tertiary hospital in Ghana. *Ghana Medical Journal* 2019;53(2)

#### Department of Medicine and Therapeutics

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1. Nartey E. T., Tetteh R. A., Yankey B. A., Mantel-Teeuwisse A. K., Leufkens H. G. M., Dodoo A.N.O., Lartey M. Tenofovir-associated renal toxicity in a cohort of HIV infected patients in Ghana. *BMC Research Notes* 2019;12(1)
2. Blankson P.K., Amoako J.K.A., Asah-Opoku K., Odei-Ansong F., Lartey M.Y. Epidemiology of injuries presenting to the accident center of Korle Bu Teaching Hospital, Ghana. *BMC Emergency Medicine* 2019;19(1)
3. Archampong T.N., Asmah R.H., Richards C.J., Martin V.J., Bayliss C.D., Botao E., David L., Beleza S., Carrilho C. Gastro-duodenal disease in Africa: Literature review and clinical data from Accra, Ghana. *World Journal of Gastroenterology* 2019;25(26)
4. Adeoye A.M., Ovbiagele B., Akinyemi J.O., Ogah O.S., Akinyemi R., Gebregziabher M., Wahab K., Fakunle A.G., Akintunde A., Adebayo O., Aje A., Tiwari H.K., Arnett D., Agyekum F., Appiah L.T., Amusa G., Olunuga T.O., Onoja A., Sarfo F.S., Akpalu A., Jenkins C., Lackland D. Echocardiographic abnormalities and determinants of 1-month outcome of stroke among West Africans in the SIREN Study. *Journal of the American Heart Association* 2019;8(11)
5. Duah A., Nkrumah K.N., Tachi K. Non-invasive markers as predictors of oesophageal varices in cirrhotic patient in a teaching hospital in Ghana. *Ghana Medical Journal* 2019;53(2)
6. Adjei D.N., Stronks K., Adu D., Beune E., Meeks K., Smeeth L., Addo J., Owusu-Dabo E., Klipstein-Grobusch K., Mockenhaupt F.P., Danquah I., Spranger J., Bahendekaa S., De-Graft Aikins A., Agyeman C. Cross sectional study of association between socioeconomic indicators and chronic kidney disease in rural-urban Ghana: *The RODAM study* *BMJ Open* 2019;9(5)

7. Ademola A., Boima V., Odusola A., Agyekum F. Nwafor C., Salaka B. Prevalence and determinants of depression among patients with hypertension: A cross sectional comparism study in Ghana and Nigeria. *Nigerian Journal of Clinical Practice* 2019;22(4)
8. Akpalu A., Gebregziabher M., Uvbiagelie B., Sarfo F., Ineonye H., Akinyemi R., Akpa O., Tiwari H.K., Arnett D., Wahab K., Lackland D., Abiodun A., Ogbale G., Jenkins C., Arulogun O., Akpalu J., Obiako R., Olowoyo P., Fawale M., Komolafe M., Osaigbovo G., Obiabo Y. Differential impact of risk factors on stroke occurrence among men versus women in West Africa. *Stroke* 2019;50(4)
9. Adjei D.N., Adu D., Quayson S. E. Kardaun J.W.P.F., Erskine I.J., Lartey I.S., Agyeman C. 20 year trends in renal disease mortality in Ghana: A review of autopsies. *Nephrology* 2019;24(4)

## Department of Obstetrics and Gynaecology

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1. Oppong S. A., Bakari A., Bell A. J., Bockarie Y., Adu J. A., Turpin C. A., Obed S. A., Adanu R. M., Moyer C. A. Incidence, causes and correlates of marternal near-miss morbidity: a multicenter cross-sectional study. *International Journal of Obstetrics and Gynaecology* 2019;126(6)
2. Adu-Bonsaffoh K., Gyamfi-Bannerman C., Oppong S. A., Seffah J. D. Determinants and outcomes of preterm births at a tertiary hospital in Ghana. *Placenta* 2019;79
3. Rijken M.J., Ansah-Opoku K. Interpretation of caesarean section classifications. *International Journal of Obstetrics and Gynaecology* 2019;126(6)
4. Coleman J., Okere M., Seffah J., Kember A., O'Brien L.M., Borazjani A., Butler M., Wells J., Macritchie S., Isaac A., Chu K., Scott H. The Ghana PrenaBelt trial: A double-blind sham-controlled, randomized clinical trial to evaluate the effect of maternal positional therapy during third-trimester sleep on birth weight. *BMJ Open* 2019;9(4)

## Department of Pathology

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1. Krings A., Boateng G., Dunyo P., Amuah J.E., Adams R.A., Adunyame L., Nkansah D.O., Wormenor C.M., Hansen B.T., Gedzah I., Asmah R.H., Wiredu E.K., Kaufmann A.M. Dynamics of genotype-specific HPV clearance and reinfection in rural Ghana may compromise HPV screening approaches. *Papillomavirus Research* 2019;7

## Department of Physiology

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1. Antwi-Bosiako C., Dankwa G.B., Aryee R., Hayfron-Benjamin C., Doku A., N'guessan B.B., Asiedu-Gyekye I.J., Campbell A.D. Serum iron levels and copper-to-zinc ratio in sickle cell disease. *Medicina Lithuania* 2019;55(5)

## Department of Psychiatry

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1. Agyapong V. I. O., Hrabok M., Agyapong-Opoku G., Khinda H., Owusu-Antwi R., Osei A., Ohene S., Ulzen T., Gilligan P. Evaluating the impact of an innovative public speaking competition to promote psychiatry as a career option for Ghanaian medical students. *Academic Psychiatry* 2019;43(2)

## Department of Surgery

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1. Singh S. R., Stewart M. W., Chattahnavar G., Ashrat M., Souka A., ElDardeery M., Wadhwa N., Sarvalya C., Mansour A. M., Marashi A., Ramchandani S., Braimah I. Z., Bonyadi M. H. J., Ramezani A., Soheilian M., De Oliveira Dias J. R., De Andrade G. C., Maia A., Rodrigues E. B. Safety of 5914 intravitreal ziv-aflibercept injections. *British Journal of Ophthalmology* 2019;103(6)
2. Braimah I., Singh S., Uplanchiwar B., Mansour A., Chhablani J. Bevacizumab versus ziv-aflibercept in branch retinal vein occlusion. *Indian Journal of Ophthalmology* 2019;67(7)
3. Bediako-Bowan A.A.A., Owusu E., Labi A.K., Obeng-Nkrumah N., Sunkwa-Mills G., Bjerrum S., Opintan J.A., Bannerman C., Malbak K., Kurtzhals A.L., Newman M.J. Antibiotic use in surgical units of selected hospitals in Ghana: A multi-center point prevalence survey. *BMC Public Health* 2019;19(1)
4. Nilsson E., Olsson S., Regner S., Polisterna A., Ali A., Dedey F., Avenia N., Wu L., Johnson L.B. Surgical intervention for intestinal typhoid perforation. *Giornale di Chirurgia* 2019;40(2)

## Department of Radiology

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1. Brakohiapa E.K., Botwe B.O., Sarkodie B.O. Prostatic volume determination by transabdominal ultrasonography: Does accuracy vary significantly with urinary bladder volumes between 50 to 400 mls? *Journal of Medical Radiation Sciences* 2019;66(2)

# IMAGES IN PATHOLOGY – LESSONS

## THE VALUE OF A THOROUGH PHYSICAL EXAMINATION

By Drs. Kofi Ulzen Appiah and Afua Darkwah Abrahams  
Department of Pathology, UGMS/KBTH

**“More is missed by not looking than by not knowing”**

*Thomas McCrae, 1870-1935*

The physical examination is an important part of the diagnostic process and its' value in making a diagnosis cannot be overemphasized. Features that clinch the diagnosis may be present and enable one to make a spot diagnosis. A physical examination that is not done thoroughly, or not done at all leads to delays and or errors in diagnosis, prolonged hospitalization, increased financial burden for the patient and may even lead to death of the patient.

We present one such case in which the diagnosis was evident from features on the foot but was missed while the patient was on admission.



Dr, Afua Darkwah Abrahams

## THE CASE

A farmer in her 7<sup>th</sup> decade presented with symptoms of sensation of a mass in her lower abdomen and groin as well as swelling of her right leg and significant weight loss. Imaging investigation showed complex right adnexal mass with metastatic nodular deposits.

A provisional diagnosis of right ovarian tumour with lung and liver metastasis was made and an exploratory laparotomy was planned, but she died before this could be done, after eighteen days on admission.

External (Autopsy) examination showed a cachectic middle aged woman with pitting edema of the right leg up to the upper thigh. At the heel was an irregular black lesion measuring (50X50mm) with central area of ulceration (20mm across). There were multiple black papules distributed over the anterior chest, upper back and face. There were matted superficial and deep inguinal lymph nodes measuring (80X40mm) and (40X20mm) respectively. Internal examination showed disseminated flat to nodular black lesions (5 to 20mm) of the parietal pleurae, lungs, liver, heart, adrenals, pancreas, kidneys, spleen, uterus, calvarium, brain and pituitary gland. The para-tracheal, pulmonary hilar and mesenteric lymph nodes showed black pigmented tumour deposits and there was a mature cystic teratoma of the right ovary. Histological evaluation of samples from the foot and other black nodular lesions of the various organs confirmed the diagnosis of melanoma.

**Final Diagnosis** – 1. Disseminated Melanoma  
2. Teratoma of Right Ovary

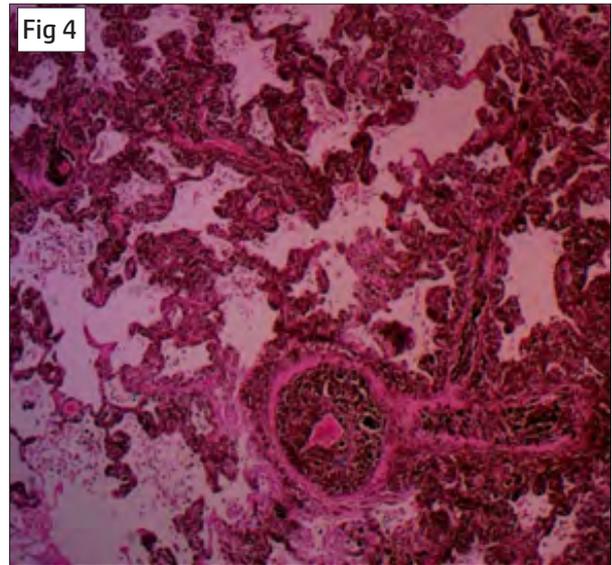
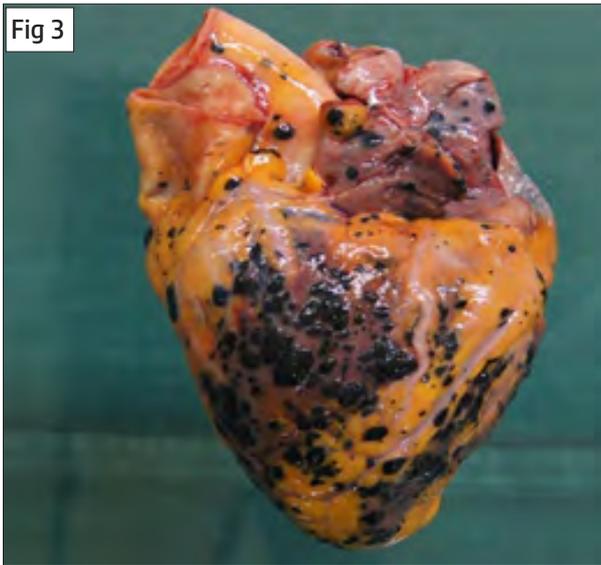
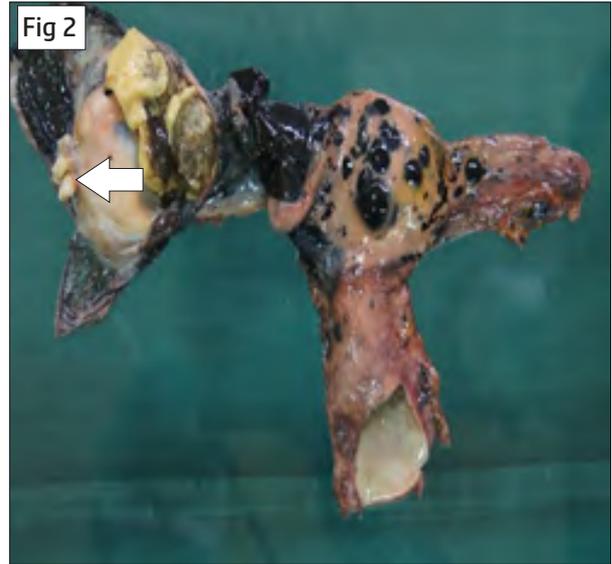
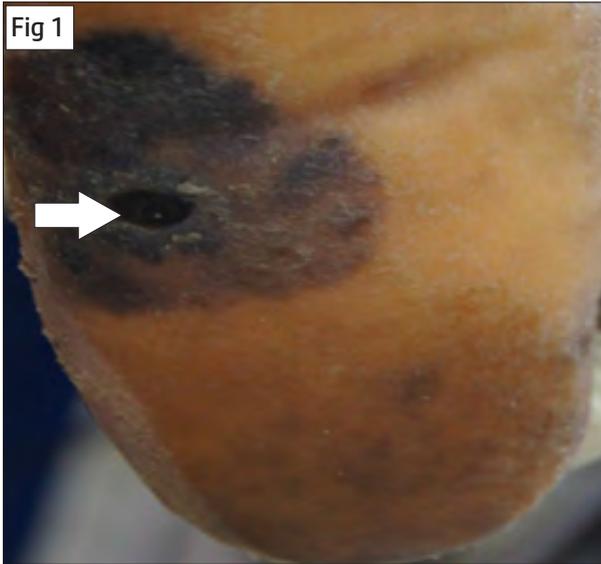


Fig 1- Ulcerated black lesion at the heel of right foot. (*arrow*)

Fig 2- Teratoma of right ovary showing tooth-like structures (*arrow*). The serosa of the ovary, corpus uteri and both fallopian tubes is diffusely infiltrated by black tumour nodules.

Fig 3- Visceral pericardium of the heart infiltrated diffusely by black tumour nodules.

Fig 4- Photomicrograph of the lung showing infiltration and expansion of the alveolar septae and vascular spaces by pigmented malignant spindle cells.

### **THE LESSON**

Make time to examine your patient thoroughly, from head to toe!

# RESEARCH HIGHLIGHTS

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## **GHANA HEART INITIATIVE- A SYSTEMATIC APPROACH TO SOLVING GHANA'S CARDIOVASCULAR BURDEN.**

### **The Concept of The Ghana Heart Initiative**

The Ghana Heart Initiative is a collaborative effort of the GHI with the Ghana Health Service (GHS)/Ministry of Health (MOH), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and Bayer to improve risk assessment and management of Cardiovascular Diseases in Public Hospitals from primary to tertiary levels across the length and breadth of Ghana. It was officially launched in January 2019. The pilot phase of the project will target supply of basic equipment to health facilities and training of health personnel in the Greater Accra Region for twenty-four months, after which the project would be extended to other parts of the country.

### **The Four-Pronged Approach**

The Ghana Heart Initiative hinges on four main sub-projects to effectively implement its sets goal which include:

**The National Guidelines for Cardiovascular disease management-** The National Guidelines for Risk Assessment and Management of Cardiovascular diseases have been developed, submitted to the Ministry of Health and is awaiting approval. The National Guidelines were developed with input from doctors, nurses and physician assistants. The Guidelines would be applied to the management of diseases such as Hypertension, Acute Coronary Syndrome, Heart failure, Arrhythmias and Stroke. The National Guidelines would serve as a training material for health facilities to improve the quality of care to patients.

**Capacity strengthening -** The second sub-project would be to strengthen the capacity and expertise of Health professionals with regards to efficient management of cardiovascular diseases. Training manuals based on the guidelines for cardiovascular disease would be developed and used for training of health professionals from CHPs zones, Quasi Government Hospitals to Teaching Hospitals all located in the Greater Accra Region.

**Equipment improvement-** The third sub-project hinges on improving infrastructure and equipment of participating Health Facilities. Equipment such as sphygmomanometers, glucometers, ECG machines, defibrillators and



**Dr, Alfred Doku**

echocardiogram would be purchased to facilitate screening, diagnosis and management of cardiovascular diseases.

**Establishment of a support centre for Cardiovascular Disease management-** The fourth sub-project would be the establishment of a 24/7 Call Centre which would provide medical professional advice and support. The call centre would be located at the Department of Medicine of the Korle-bu Teaching Hospital and would offer prompt referrals to residents on cover.

There are delineated indicators for each sub-project, which would be used to assess the various stages of implementation of each sub-project. The pilot phase of the GHI project would require all stakeholders to come on board to attain the set targets within the 24-month time frame. Ghana Heart Initiative seeks to reduce the burden of cardiovascular disease in Ghana by implementing this four pronged approach.

## **MODIFICATIONS IN LIPOPROTEIN METABOLISM AMONG PATIENTS WITH TYPE 2 DIABETES: AN OBSERVATIONAL, CROSS-SECTIONAL STUDY**

**Dr. Emmanuel Kwaku Ofori**, (Principal Investigator)

**Dr. Sandra A.N.A. Crabbe**

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### **Summary**

Cardiovascular complications are now the leading causes of diabetes-related morbidity and mortality. Low density lipoprotein (LDL) represents a range of apolipoprotein B containing particles ranging in density from 1.019-1.063 g/ml. Low-density lipoprotein (LDL) is the permissive factor that allows other risk factors for atherosclerosis to operate. Atherosclerotic lesion development begins with internalization of circulating LDL into monocyte-derived macrophages in arterial walls. Both glycated and oxidized LDLs have been demonstrated in the atheromatous plaque. Glycated LDL is present in circulation under physiological conditions and at higher concentrations in persons with diabetes. Although the concentration of glycated LDL in circulation is several-fold higher than that of oxidized LDL, it remains relatively unstudied. Further to this, it has been observed that elevated high-density lipoprotein (HDL) cholesterol levels do not always protect against CVD with emerging evidence supporting the view that HDL functionality is more important than plasma HDL levels. HDL can undergo modification in structure and composition to become dysfunctional in conditions associated with systemic inflammation and oxidative stress as is the case with type 2 diabetes (T2DM). Dysfunctional HDL may promote the transfer of lipid hydroperoxides to apoB-containing lipoproteins and promote LDL oxidation required for atherosclerotic lesion formation. Concentrations of lipoprotein modifications in persons with metabolic disorders such as type 2 diabetes have not yet been observed or established in Ghana, a country diversified by ethnicity.



**Dr. Emmanuel Kwaku Ofori**

The overall aim of this project is to investigate lipid metabolism and the potential importance of glycation and oxidation as atherogenic modifications in persons with type 2 diabetes. This will be an observational cross-sectional study. Serum levels of biochemical analytes and inflammatory markers will be assessed by standard methods. Urine samples will also be collected during each visit to evaluate for proteinuria and routine urinalysis. Demonstrating LDL and HDL dysfunction would explain some of the increased CVD burden seen in T2DM and provide new insight into their functionality, offering potential management and therapeutic targets.

## DEPARTMENT OF MEDICAL MICROBIOLOGY, UNIVERSITY OF GHANA MEDICAL SCHOOL IS HOSTING THE FLEMING FIRST COUNTRY GRANT ON ANTIMICROBIAL RESISTANCE SURVEILLANCE IN GHANA

Dr. Japheth Opintan, Prof. Mercy Newman, Prof. Eric Sampane-Donkor, Dr. Nicholas T D K Dayie, Dr. Appiah-Korang Labi, Dr. Noah Obeng-Nkrumah

*Department of Medical Microbiology*

Antimicrobial resistance (AMR) though a natural phenomenon, is 'accelerated' by irrational use of antibiotics in the treatment of human and animal infections. Additionally, the abuse of antibiotics as growth promoters and their use in animal farming and aquaculture further aggravates the problem. Increasingly, AMR has become a major global threat, eroding the gains made in modern medicine, especially in the management of both human and animal diseases. Additionally, AMR undermines the safety of our food and environment.

Globally, AMR surveillance was recognised as an important boost needed to tackle drug resistance, especially in Low and middle-income countries (LMICs). In response to this, the UK government and Department of Health initiated the Fleming Fund to improve disease surveillance with a focus on drug-resistant infections in LMICs. The Fleming Fund Project is being implemented in four (4) hubs including South East Asia, East and Southern Africa, South Asia and West Africa. The West African hub coordinates/oversees five (5) countries namely Ghana, Nigeria, Senegal, Sierra Leone and Burkina-Faso. The fund managers of the Fleming Fund, Mott Mac Donald conducted a scoping and positioning exercise for Ghana after which a request for proposal (RFP) was developed and advertised in the newspapers for prospective applicants to apply.

Dr. Japheth A. Opintan of the Department of Medical Microbiology, University of Ghana Medical School successfully led a UG team to apply for this First Country Grant. The UG team included other faculty from the Medical Microbiology department, Noguchi Memorial Institute for Medical Research, Department of Biochemistry, Cell & Molecular Biology and the School of Veterinary Medicine. Other team members are from the Veterinary Services Directorate, as well as a consortium partner, Mangel Kicks Ltd.



**Dr. Japheth Opintan**

The Fleming Fund Country project adopts a well-functioning One-Health governance structure comprising key stakeholders/technical leads from four Ministries; Health, Food and Agriculture, Environment, Science, Technology and Innovation and Food and Aqua Culture. UG's team will work in tandem with the above sector ministries to implement the activities of the NAP, focusing on Surveillance. Under the Fleming Fund, the Department of Medical Microbiology of the University of Ghana Medical School has been designated as the National Reference Laboratory for Antimicrobial Resistance Surveillance by the Ghana Ministry of Health.

## MATERNAL MORTALITY AT THE KORLE BU TEACHING HOSPITAL: A FIVE YEAR REVIEW

Dr. Theodore Boafor<sup>1,2</sup>, Nelson Damale<sup>1,2</sup>, Perez Sepenu<sup>2</sup>, Kwaku Asah -Opoku<sup>1</sup>, Ofofu<sup>2</sup>, Anabel Bawah<sup>2</sup>, Stephen Gyampoh Asare(Biostatistician)<sup>2</sup>, Mercy Nuamah<sup>1</sup>, Samuel Oppong<sup>1,2</sup>

1. Department of Obstetrics and Gynecology, University of Ghana Medical School, College of Health Sciences
2. Department of Obstetrics and Gynecology, Korle Bu Teaching Hospital

Maternal death is a major global health issue with the highest impact in low income countries. Though there has been some modest decline in maternal mortality rate (MMR) in Ghana since the 1990s, this has been well below expectation. While there is a general trend towards a reduction in maternal death nationally, institutional MMR remains high. This review seeks to document maternal mortality trends over a five-year period and to describe the leading causes of maternal death at the Korle-Bu Teaching hospital.

This will be a retrospective study of all maternal deaths that took place at the KBTH from 2014 DEC to 2019 NOV. The data will be collected from the departmental Biostatistics unit on annual total deliveries, total live births, detailed review of mortality file, autopsy records from the pathology department and death certificate books to document clinical course of patients, clinical diagnosis on admission, clinical cause of death, autopsy diagnosis as well as any other contributory factors. Clinical and autopsy data will be managed on Microsoft Excel spreadsheet and SPSS version 23. The yearly maternal mortality ratio and the top ten leading causes of death will be computed and compared over the study period. The data will be presented as tables and charts. Chi square will be used for association between categorical outcome measures such as mode of delivery and occupation and maternal mortality. T-test will be used to test for association between continuous outcome measures such as age and maternal mortality rates. Binary logistic regression will be used to describe the association between contributory factors and maternal mortality and potential confounders will be



**Dr Theodore Boafor**

accounted for using adjusted odds ratio (AOR) at 95% confidence intervals. In all statistical analysis, a p-value of less than 0.05 will be considered statistically significant.

This study is expected to identify the leading causes of maternal death, recognize the changing patterns and examine the contributory factors to these deaths. These important findings will guide recommendations for improvement in maternal health delivery in Korle Bu Teaching Hospital.

# LANDMARK CASE

## **BASIDILOBOMYCOSIS (SUBCUTANEOUS PHYCOMYCOSIS): CASE REPORT OF AN UNCOMMON DISEASE IN GHANA**

Dr. Appeadu-Mensah W, Dr. Smart-Yeboah AAA, Dr. Nyame CA  
Paediatric Surgery Unit, Department of Surgery, Korle Bu Teaching Hospital

Basidiobolomycosis is an uncommon chronic deep fungal infection of the skin and subcutaneous tissue characterized by firm to woody hard painless swellings. It is seen in immunocompetent children and young adults primarily, and usually involves the extremities, chest, trunk, and rarely other parts of the body. It is caused by the fungus *Basidiobolus ranarum*. The fungus resides in decaying vegetable matter and as a saprophyte in the gut of insectivorous reptiles (lizards), amphibians and fish. Entry into skin is usually through an innocuous skin trauma or an infected insect bite, which often goes unnoticed. The lesion begins as slowly spreading, painless, and hard subcutaneous nodule, usually single, well-circumscribed with rounded edges.

It mimics a soft tissue tumour and as such a biopsy is essential to prove the diagnosis. The typical histopathological feature is the presence of thin-walled, broad aseptate hyphae with an eosinophilic material "Splendore-Hoeppli" phenomenon. Treatment includes various drugs such as potassium iodide (KI), ketoconazole, itraconazole, and fluconazole. KI and itraconazole are commonly used. Treatment is usually continued for 6–12 months. The disease is widely prevalent in the tropical and subtropical regions of the world.

### **CASE REPORT**

A 7-year old female presented with a one year history of a painless right armpit swelling and a seven month history of swelling of the right arm, right anterior, posterior and lateral chest wall and neck. The patient was afebrile, had moderate anaemia and was an active, playful, healthy looking young girl.

She had a diffuse swelling on the right side of the neck, extending down to involve the right anterior, posterior and lateral chest wall and distal third of right arm. Swelling extended at the back across the spine to the left scapula and left supraclavicular fossa. It was non tender, not warm to touch, and had a few areas of hyperpigmentation on the right arm. There was no palpable cervical or axillary lymph nodes and no loss of sensation over the affected areas. Swelling had a few firm to nodular areas and scarifications over the swelling at the back. She was of normal height and weight.

A Computed Tomography (CT) Scan of the neck and chest revealed no pathology. Incisional biopsy of the lesion was reported as a subcutaneous phycomycosis.



**Dr. W. Appeadu-Mensah**

Patient was started on Oral Itraconazole twice daily (10mg/kg in 2 divided doses) and required no surgical intervention. She has had 5 weeks of Itraconazole with substantial resolution of the swelling.

### **CONCLUSION**

Subcutaneous phycomycosis is a rare fungal infection of the deeper layers of the skin which should be considered as a differential diagnosis for diffuse soft tissue swellings involving the extremities and trunk. This can be a disfiguring condition which is treatable but if not correctly diagnosed, could result in inappropriate interventions such as amputation. Treatment is medical using potassium iodide (KI), ketoconazole, itraconazole, and fluconazole.



Before treatment



After treatment



Before treatment



After treatment



Before treatment



After treatment

# EDUCATION

## TEACHING BY TESTING

**Dr. Adziri Sackey**  
Department of Child Health  
University of Ghana Medical School.

### "Of what use is your education...?"

Dear reader, can you complete the quotation above?  
If not, let me help you – “Of what use is your education if you do not come to the aid of your country in her hour of need?”

This seems a good idea to pass on to current medical students when one considers the number of diasporian Ghana-trained doctors who have little intention to return.<sup>1,2</sup>

### So how better to impart this idea than by testing?

A good opportunity was offered by the short tests administered at the beginning of clerkship tutorials. These tests are meant to encourage students to read about the topic and to turn up on time!

So, for this project, one of the pre-tutorial test questions was – Who said, “Of what use...?”

The project was carried out serially on students in six clerkship groups in 2015 and 2016.

### The results are as follows:

Table 1. Percentage of students providing correct answer to question 2015/2016.

Session	% of students with correct answer
2015-1	35%
2015-2	38%
2015-3	38%
2016-1	44%
2016-2	26%
2016-3	94%



**Dr. Adziri Sackey**

As you can see, by the 6<sup>th</sup> session, 94% of students now knew the quotation and its author. This must have occurred through the magic of “APOR”, a process in which outgoing medical students pass on the answers to previous examination questions to incoming students. It's not clear what went wrong in the 2016-2 session.

I hope you guessed or knew that the author of the quotation was Dr Kwame Nkrumah in 1948 when he was opening the Ghana National College in Cape Coast. You will notice that the name Ghana was in use almost a decade before independence.

**TABLE 2.** Numbers and percentages of students who suggested various authors of the quotation.

Number of students	% of total	Name
183	49%	Osagyefo Dr Kwame Nkrumah
56	15%	No answer / don't know
37	10%	Kwegyir Aggrey
22	6%	Name of lecturer asking question
18	5%	Nelson Mandela
12	3%	Abraham Lincoln
8	2%	Dr Busia
6	2%	Prof Joo Commey
6	2%	Churchill
5	1%	Robert Mugabe
3	1%	President John Mahama
2	1%	Kofi Annan
4	1%	Mahatma Gandhi
2	1%	John F Kennedy
2	1%	J J Rawlings
3	1%	Prof Atta-Mills
2	1%	Ako Adjei
2	1%	Prof Charles Easmon
1	0%	Dr Dubois
1	0%	Einstein
1	0%	Sir Gordon Guggisberg
1	0%	Hippocrates
1	0%	Ayittey Powers

Table 2 shows which other people the students thought may have authored the saying, and provides some insight into what medical students think of our past leaders. It was impressive that many students “voted” for Dr Kwegyir Aggrey who probably said something similar in his time.

One student, however, offered his own name, and another suggested Ayittey Powers, a local boxer! It would therefore seem that not all the students took the exercise seriously, and that at least a few attempted to resist being infused with patriotism.

This report provides some insight into what our medical students know about Ghana history, and illustrates a method of imparting information to successive groups of students.

#### References

1. Lassey AT, Lassey PD and Boamah M. Career destinations of University of Ghana medical school graduates of various year groups. Ghana Med J. 2013 Jun; 47(2): 87–91.
2. Dovlo D, Nyongator F. Migration by graduates of the UGMS: A Preliminary Rapid Assessment. [05 March 2012]. [http://www.who.int/hrh/en/HRDJ\\_3\\_1\\_03.pdf](http://www.who.int/hrh/en/HRDJ_3_1_03.pdf).

# DISTINGUISHED PERSONALITY

## PROFESSOR JOSEPH KPAKPO ACQUAYE



Professor JK Acquaye was born in Accra on 1st December 1940. He had his basic school education at the Accra United Primary School and James Town Methodist Middle Mixed School. His secondary education was at the Accra Academy and the Government Secondary School, Tamale from 1954 to 1960. He attended the University of Ibadan from 1961 to 1966 where he obtained MB, BS degrees.

From October 1966 to October 1967, he did housemanship at the Korle Bu Teaching Hospital (KBTH). His residency training was at KBTH, St Georges Hospital, Hyde Park Corner, Royal Infirmary Huddersfield, and the Royal Postgraduate Hospital, Hammersfield, from where he obtained a Diploma in Clinical Pathology. From March 1981 to December 1981, he trained in blood transfusion at the East Anglian Blood Transfusion Centre, England.

He worked for the Ministry of Health in various capacities from November 1967 to February 1997, as Medical Officer, Senior Medical Officer and Specialist at KBTH, Cape Coast, Saltpond, Tamale hospitals and the National Blood Transfusion Service.

The working life Prof Acquaye in Ghana has been varied. As the pioneer Pathologist at Tamale, he had to equip and train the staff to man this new laboratory in a newly constructed Regional Hospital. This they did excellently from 1974 to 1981.

He was employed as a Haematology Specialist at the King Abdulaziz University Teaching Hospital from 1982 to 1985, and with the Haematology research team they published five papers in four years on haemoglobinopathies. His teaching carrier started here where his first training in curriculum development started and it contributed tremendously to his career.

He returned to KBTH campus in June 1986 where he was posted to the NBTS. The headship of which was handed over to him towards the end of that year and he remained in that post till he voluntarily retired in 1997. HIV/AIDS was top of the news then but there was no transfusion specialist on the AIDS committee. The only intervention in blood transfusion was screening blood for HIV. Blood was transfused without pre and post transfusion Hb estimation as a result of ignorance and in some cases due to absence of photocolormeter in the hospitals. Blood donors with Hb about

7.0gm/dl were bled for the anaemic blood to be transfused. Blood grouping sera were often unavailable. The initial intervention was to advise for the purchase of colorimeters and blood bank refrigerators. The mission hospitals responded quickly but MOH hospitals were slow to respond. Professor Acquaye and his team provided locally-made blood grouping reagents free to MOH hospitals. Due to lack of information on the various blood group antigens, this became his first line of research for which two papers were published. Information was completely lacking on pattern of blood usage and blood safety to which the rest of his research was directed.

He became the Medical Administrator (now designated CEO) of KBTH in 1987 in addition to being head of NBTS. He immediately formed a committee of heads of departments to constitute the policy making body of the hospital. This made management easier with the heads being in full control of their departments. The landmark decisions taken included the following; the annual strike action of housemen was brought to an end by making them sign tenancy agreements; with Professor Joe Oliver-Commey they developed an objective format for assessment of house officers (Medical and Dental Council format came years after that); Prof Acquaye obtained financial autonomy for KBTH, freeing it from the control of MOH.

On arrival at KBTH compound Prof Acquaye joined the UGMS as a part time senior lecturer in Haematology in 1987, a position he held till 1997 when he became full time Associate Professor. His de facto position in UGMS from 1987 was that of full timer having been acting head of the department and later substantive head, serving on numerous committees, most of which he was the chairman, writing curricula for the department and also for Medical Laboratory Technology, coordinating the MB III examination in Pathology and many more. He was the chairman of the Committee which wrote the modalities for the establishment of income generating activities in

UGMS and the same committee was tasked to implement it. This he did for two years and handed over though they did not pay themselves. He chaired the committee which wrote on the functions and management of the Radiation Oncology unit with recommendations on hospitality for care givers coming from outside Accra. He chaired the Awards Committee of the 50<sup>th</sup> anniversary celebration of UGMS where they categorized the awards and wrote the qualifications for the recipients. They were satisfied with their work and there were no significant complaints of anybody being left out. The few significant things he did for the Haematology Department were the writing of curricula at different points in time, securing a clinic time at the Specialist Medical Clinic and getting KBTH to provide the Day Care Ward when the Central Laboratory was under construction. From 1990 to date he has supervised the dissertation of all candidates in the Department who took the Fellowship examinations of the West African College of Physicians and two others from Internal Medicine. Three times he received the best teacher award in the Paraclinical Departments

Professor Acquaye was made the Chairman of the continuing medical education committee of the Ghana Medical Association (GMA) in 1992 and he turned one man committee into a larger committee with expanded functions. They started the organization of one day symposia, twice a year in the Northern and Southern zones. This was at a time when there were no academic medical conferences or symposia in the country. With appreciation for the support they received from colleagues in MOH and the Greater Accra Division of GMA led by Professor Kwame Wiredu, he led the GMA team which wrote job description for doctors for salary negotiation in the early nineties.

Professor Acquaye played very significant roles spanning over 20 years with the West African College of Physicians (WACP). He was the Chairman of the Ghana Chapter for four years, director of training of the chapter for 10 years, Secretary and Chairman of the Faculty of Laboratory Medicine, President of the College and lastly for 10 years director of training. The training post involved working with others to

develop training programmes for the trainers, performing training activities for them on teaching and examination among others. He led in the writing of the Faculty curricula in 2006 and 2014. He is also a historian of the WACP leading the writing of the history of the College.

He loved teaching and insisted on proper documentation of all activities. He made sure he imparted clinical, laboratory and managerial skills

to the residents, Laboratory scientists and the Secretaries with whom he worked.

The organizations he worked with honored him in various ways. He was made a Member of the Order of the Volta in 2016 from the State; received a Gold Medal from the WACP, and the naming of the Conference Hall of the National Blood Service as PROFESSOR JOSEPH KPAKPO ACQUAYE CONFERENCE HALL in 2018.

# STUDENTS CORNER

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## THE FIRST-EVER MODEL WORLD HEALTH ASSEMBLY SIMULATION, “ACCRAWHO”, HELD IN KORLE BU.

Written by **Hillary Attah-Sarfo**

In recent times, many disease outbreaks have highlighted the fast turn toward the management of various health challenges on a global front, and this we see to be spearheaded by the World Health Organization (WHO), with representatives from member states on its World Health Assembly.

It is with this realization, and an increasing desire to understand, and prepare for impact in global assemblies that the “AccraWHO”, a simulation of the World Health Assembly, was organized. This event, which is the first of its kind in Accra, was organized by the University of Ghana Medical Students' Association (UGMSA) as part of its week celebration. The 3 - day conference, took place from Thursday 4<sup>th</sup> to Saturday, 6<sup>th</sup> April at the Level 200 lecture auditorium, Korle - Bu.

The event was a refreshing and insightful opportunity for Medical students from First year medical classes to Final Year medical classes to learn from each other, engage in intellectual discourse, and debate on pertinent global health issues and policies. Indeed this exposure to the need to have a world view of medical practice, emphasized the worth of medical education and how it is an effective tool to transform many societies and individuals.

The theme for the event was, “The Resilience of the Global Health System; The Ebola Crisis in Perspective” this was an opportunity for delegates who participated to do extensive research on the Ebola crisis, from the features of the virus, the clinical presentation, management and ultimately to the impact it had on the immediately affected countries and the global response to the pandemic.

The 3- day event started with an opening ceremony and the first committee meeting, where preliminary discussions and deliberations were made on the theme.



**Hillary Attah-Sarfo**

The next day was highlighted by more discussions, with delegates who represented various countries, news agencies and nongovernmental organizations presenting ideas and engaging in diplomatic dialogue and consensus building?? There was a special session, where delegates who represented various countries, showcased some interesting facts and practices of the countries they represented. It was indeed a great learning experience. The final day of the 3 -day conference was the day for the preparation of a formal document of legislation, based on deliberations from the days before. The resolution was discussed and approved by delegates present. An awards and closing ceremony was held on Saturday, April 6<sup>th</sup>, 2019. All deserving delegates were given special citations and prizes. In attendance for the closing ceremony was Mr. Ernest Gyimah - Danquah, the CEO of Lifelink Tertiary Model UN Ghana.

He further awarded the overall best delegate with a fully paid trip to the Harvard Model UN Simulation. Other outstanding delegates were selected to participate in the Lifelink Tertiary Model United Nation simulation this year.

There were interviews of delegates and organisers of the event, by reporters from Joy FM, who came to cover the final day of the event.

The maiden Edition of the AccraWHO was a great educational experience for all participants, equipping them with skills for international diplomacy, public speaking, leadership and developing organizational skills. These

documents will be collected by the International Federation of Medical Students Associations (IFMSA) and submitted to WHO for their consideration at the World Health Assembly in May.

Sponsorship for the event was by Twellium Ghana Ltd, with support from Lifelink Ghana, which organises annual Model UN conferences for various institutions in Ghana.



Students at the model World Health Assembly simulation

## SEMINARS/TRAINING

### **CENTRE FOR TROPICAL CLINICAL PHARMACOLOGY AND THERAPEUTICS HANDS-ON TRAINING WORKSHOP FOR EARLY-CAREER CLINICIANS ON “APPLICATION OF MOLECULAR METHODS IN CLINICAL RESEARCH”**

The Centre for Tropical Clinical Pharmacology and Therapeutics organized an intensive lecture and hands-on training workshop in basic molecular methods, exclusively, for early career clinicians from the 6th to 10th May 2019 at the Centre. The main objective of this maiden training workshop was to, among others, introduce the young clinician to basic molecular techniques and their application in biomedical research. It was also meant to arouse the interest of these youngsters in medical research. Facilitators for the workshop were drawn from the University of Ghana faculty and they included Prof George Obeng Adjei (ORID), Prof Kwamina Sagoe (SAHS), Dr William Kudzi (SMD), Dr Linda Amoah (NMIMR), Dr Nancy Quashie (NMIMR) and Dr Edmund Nartey (NMIMR). The workshop organizer was Prof Neils Ben Quashie.

The 5 days program which was opened by the vice Dean of the then SMD, Dr Kwamin was attended by 18 early-career clinicians. The special guest speaker at the opening ceremony was the Director of the West African Centre for Cell Biology of Infectious Pathogens (WACCBIP), Professor Gordon Awandare. In his brief remarks, Professor Awandare, expressed his joy for the high interest shown by the young doctors in the workshop and emphasized on the importance of clinicians as partners in biomedical research.

Participants received theoretical and hands-on training in basic molecular techniques over the period including:

- High throughput genomic DNA Extraction
- Nucleic Acid quantification and qualification
- Polymerase Chain Reaction (PCR) amplification
- Gel electrophoresis
- Digestion of PCR product
- RFLP

They were also taken through application of molecular methods in antimalarial drug resistance surveillance and Pharmacogenetics. Additionally, they were introduced to lessons in basic study design. During the workshop each of the participants was assisted to develop a one page research proposal. Excellent proposal were produced and currently, some of the participants are in contact with the facilitators to further develop their proposal for grant application. At the end of the workshop, participants expressed their satisfaction at the depth of knowledge acquired within that short period and requested for an advance form of the course for the same cohort in the near future. Certificates of participation were awarded to all attendees by the Vice Dean of the SMD at the closing ceremony. Due to the high demand, the Centre has planned to repeat the training workshop for the benefit of others in the near future

Figure One: Group Picture of participants and some facilitators at the end of the workshop



Picture of participants at the workshop

## ANNOUNCEMENTS

The ENT & Audiology News published the achievements of Prof. Emmanuel Kitcher titled “Visionary leadership for ENT , audiology and speech therapy training at the Korle Bu Teaching Hospital, Accra, Ghana.”

The following are the highlights of his achievements:

- Prof E D Kitcher supports residents at every opportunity to present at meetings, local and national and to undertake research from the very beginning.
- He established an audiology training centre in 2005 which provides comprehensive audiology services in Ghana
- He has built a department with his colleagues that is equal of many in wealthy countries in Europe, the Americas and Australasia.

The University of Ghana Medical School recognizes these achievements and congratulates Prof. Emmanuel Kitcher for his amazing carrier. He is an Associate Professor of Surgery, University of Ghana Medical School, Department of Surgery and a Consultant at the



**PROFESSOR ED KITCHER**

Otorhinolaryngology/Head and Neck surgery department of the Korle Bu Teaching Hospital.

**Reference:** ENT & Audiology News 2019;28(4)

## APPROVED PROTOCOLS OF THE COLLEGE ETHICAL AND PROTOCOL REVIEW COMMITTEE FROM MAY-DECEMBER, 2019

1. Stroke Investigative Research and Educational Network (SIREN) Project	Dr. Albert Akpalu	Medicine and Therapeutics
2. African Neurobiobank for Precision Stroke Medicine: ELSI Project	Dr. Albert Akpalu	Medicine and Therapeutics
3. Investigating Rapid-Onset Antidepressant Potentials of Extracts from the Leaves of <i>Mallotus Oppositifolius</i> in Animal Models.	Richard Kofi Begyinah	Pharmacology and Toxicology
4. Quality of Life of Adolescents with Sickle Cell Disease Attending the Ghana Institute of Clinical Genetics, at Korle Bu Teaching Hospital	Mary Ama Meyiwa Fynn	Social and Behavioral Sciences
5. Development of an Ex Vivo 3-D Human	Professor Stiles Jonathan K.	Microbiology, Chemistry and Immunology
6. Assessment of Hypertension among Children and Adolescents in the Accra Metropolitan Area Accra	Dr. Kwabena Osman	Child Health
7. Prematurity in Ghana: Determinants, Clinical Course and Outcomes of PreTerm Births in Tertiary Hospitals in Accra (PETITE study)	Dr. Kwame Adu -Bonsaffoh	Obstetrics and Gynaecology
8. Effect of a Glutathione-Enhancer Dietary Supplement on Diabetic Nephropathy in Type 2 Diabetic Mellitus Rat	Mr. Augustine Boadu Asare	Pharmacology and Toxicology
9. Elemental Characterization of local dental products sold on the Ghanaian Market	Dr. Neils Quartey-Papafio	Biomaterial Sciences
10. Investigating the impact of iron supplementation on antidepressant effect of citalopram and imipramine in female ICR mice	Boakye Burns Frederick	Pharmacology and Toxicology
11. Pharmacokinetic Evaluation and Biodistribution of Chitosan Microparticles of Levodopa and Carbidopa	Benedicta Obenewaa Dankyi	Pharmacology and Toxicology
12. Severity and Pattern of Coronary Artery Disease in Ghana: Contribution of Risk Factors	Dr. Nehemiah Joshua Dung	Surgery
13. Perspectives and References of Research Participants and Families on Feedback of Individual	Dr. Dwomoa Adu	Medicine and Therapeutics
14. Predictors of Recovery after Stroke: Examining the Neuropsychology and Social Determinants	Ms. Ophelia Anarfi	Psychology
15. Utilization of Changes in Vital Signs to Predict Adverse Events in Pregnant Women with Sickle Cell Disease in Low Resource settings	Dr. Titus Breyuo	Obstetrics and Gynaecology
16. Ankle Bra chial Index in Ghanaians with Ischemic and Hemorrhagic Strokes	Dr. Teye Newman	Physiology

<b>17.</b> Pain Management after Elective Major General Surgical Operations; Implications for Early Patient Recovery, Morbidity and Mortality at Korle Bu Teaching Hospital	Prof. Jonathan C. B. Dakubo	Surgery
<b>18.</b> Unravelling Mechanisms of Epileptogenesis Following Parasitic Infestions	Dr. Thomas Amatey Tagoe	Physiology
<b>19.</b> Epidemiology of Pain Incidence Rates During and after Pregnancy	Dr. Euginia Vicky N. K. Asare	Obstetrics and Gynaecology
<b>20.</b> Diarrhea Classification in Domestic Dogs Using Fecal Analytes	Obed Danso Acheampong	Chemical Pathology SBAHS
<b>21.</b> Exploring Midwives Hope-Focused Practices in HIV Care in Ghana: A Narrative Inquiry Study	Dr. Gideon Pupilampu	Mental Health, School of Nursing SON
<b>22.</b> Assessment of Circulating Cell-Free DNA (CFDNA) as a blood Biomaeker in monitoring response to Chemotherapy in Breast Cancer Patients	Ms. Evelyn Adusei	Anatomy, UGMS
<b>23.</b> Flexible Bronchoscopy in a tertiary Facility: A Review of Indications and Outcomes	Dr. Jane S. Afriyie Mensah	Medicine and Therapeutics
<b>24.</b> Scanning Electron Microscopy study of the Morphology of Hairs of Ghanaian African Albinos	Ms. Abigail Owusua Yeboah	Anatomy, UGMS
<b>25.</b> Evaluation of BRCA 1 Gene Polymorphism and finger Dermatoglyphic patterns in Breast Cancer	Emmanuel Osei Nkansah	Anatomy, UGMS
<b>26.</b> Evaluation of Pharmacological Management of Pain in Diabetes at the National Diabetes Management and research center	Mr. David Arhin	Pharmacology and Toxicology, SOP
<b>27.</b> The Role of Mallotus Oppositofolius in Reducing Self-Harm and Suicidal Tendencies Associated with Depression: A Study in Murine Medels	Mr. Appiah Frimpong	Pharmacology and Toxicology, SOP
<b>28.</b> Detriments of Morbidity, Mortality and Oncological Outcomes after Intersphincteric Resection of the Rectum for Low Lying Rectal Tumours	Prof. Jonathan C.B. Dakubo	Surgery
<b>29.</b> Atherogenic modification of small dense low density lipoprotein in Ghanaian subjects with type 2 diabetes	Mr. Patrick Obeng Boahen	Chemical Pathology, UGMS
<b>30.</b> Assessing Nutrient Intake Adequacy and Nutritional Status In Patients for intersphincteric resection of the rectum in Relation to early Post-Operative Outcomes	Prof. Jonathan C.B. Dakubo	Surgery
<b>31.</b> Emerging Adults' Attitudes and Perception towards Ultra processed Foods, Meat, Fruits and vegetable Consumption in a University Food Environment	Mr. Daniel Mensah	Division of Health Sciences Warwick
<b>32.</b> The Anti-inflammatory Activity of Mallotus Oppositofolius in its Antidepressant Effect	Mr. Takyi Yaw Ferka	Pharmacology and Toxicology, SOP
<b>33.</b> Radiographic and Cadaveric Determination of the Mental Foramen Position in Adults in Ghana	Mr. Bright Anneh Awaitey	Anatomy, UGMS

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