The practice of Medical Laboratory Science Post-Act 857 era: Perceived role conflicts with 'Laboratory Physicians' and other scientists in Ghana

Dennis Adu-Gyasi^{1,2,3*}, Abdul-Rahman Bayong¹, Obed Ohene-Djan Atuahene¹, Robert Kwashie Adedze-Kpodo^{1,2}, Michael Amo Omari^{1,2,4}, Michael Amewonye^{1,2}, Victor Amesawu Degenu^{1,2,4}, Jacob Akuetteh Armah^{1,2}, Abdul Latif Adam^{1,2,4}, Prince Sodoke Amuzu^{1,2}, Thomas Kwabena Gyampomah^{1,2}, and Ignatius Abowini Nchor Awinibuno^{1,2,4}

¹Ghana Association of Medical Laboratory Scientists, P. O. Box 144, Korle Bu, Accra, ²West Africa Postgraduate College of Medical Laboratory Science, Abuja, Nigeria. ³[AFPAD Medical Services Ghana, XB0582, Habitat, Kintampo North. ⁴Korle Bu Teaching Hospital, Central Laboratory Services, P O Box 77, Accra, Ghana *Corresponding Author: E-mail: dennis@adugyasidennis.com

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D. Bayong, A., Atuahene, O., Medical Laboratory Science practice in Ghana faced several challenges at a Adedze-Kpodo, R. K., Amo, M. O., period without regulation. In this era where the practice of the profession is Amewonye, M., Degenu, V. A., regulated, turfs are being held to impede the development of medical laboratory professionals. In responding to the threat to the profession, the Medical Laboratory Science Professional Body in Ghana commissioned an expert committee to review what pertains to international practice. The committee was to proffer direction to the implementors of health policies in Ghana. The outcome of the committee's work was disseminated as a position paper which is presented to the scientific community to inform of the autonomy of the medical laboratory science profession post regulatory era in Ghana. Annals of Medical Laboratory Science (2022) 2(2), 1 - 11

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INTRODUCTION

The practice of Medical Laboratory Science (Biomedical Science) in Ghana faced several challenges in an era where there was no regulation. The absence of regulation created a phenomenon where individuals who had completed qualifications in Oceanography, Chemical Engineering, Natural Resources, Chemistry, Physics, Botany, Science Laboratory and other Basic sciences and some without any qualifications were employed in both public and private facilities as Medical Laboratory Science (MLS) professionals sometimes with or without any form of professional orientation or training.

The lack of regulation further promoted the proliferation of substandard Medical Laboratories as though they were mushrooms, without regard for professional competence and client safety and standards of practice. The passage of the Health Professions Regulatory Bodies ACT, 2013 (ACT 857) by Parliament and assented to by the President of Ghana in 2013 was to address all the above challenges.

The PART ONE of this ACT establishes the ALLIED HEALTH PROFESSIONS COUNCIL (AHPC) responsible for the regulation of twelve (12) different professional groups including professionals MEDICAL LABORATORY **SCIENCE** presented on pages 70 and 71 (HPRB, 2013). Despite the clarity of the law, it has become necessary for the professional body to present its position on what the law says about who can be licenced to practice the MLS profession in Ghana (a Sovereign nation) in the light of recent claims to the practice of Medical Laboratory Science by some Physicians (Medical Officers) who are members of the Ghana College of Physicians and Surgeons (GCPS) and another group who call themselves the Medical Scientists Society of Ghana (MSSG) who claim they work as Scientists in Out-Patient Departments of health facilities. These two have jointly made attempts to register with AHPC of Ghana to practice Medical Laboratory Science but were turned down.

The Profession of Medical Laboratory Science:

The profession of Medical Laboratory Science (MLS) is distinct and duly recognized by the International Labour Organization (ILO) (International Labour Organization 2008) and World Health Organization (WHO) (World Health Organization 2011, World Health Organization 2015), and guided locally and internationally by professional code of ethics that sets forth its principles and standards.

It is well established that Medical Laboratory Science is an autonomous profession: distinct from the practice of medicine; characterized by its own body of knowledge and scope of practice; which certifies its own practitioners; and requires of its practitioners impeccable competency in scientific, technical, managerial and scholarly principles, and high standards of performance and professional conduct (The American Society for Clinical Laboratory Science 2012). The American Society for Clinical Laboratory Science (ASCLS) defines the profession of Medical Laboratory science as encompassing the design, performance, evaluation, reporting, interpreting, and clinical correlation of clinical laboratory testing, and the management of all aspects of these services (Darlene Berger 1999).

Medical Laboratory Science refers to (a) the practice involving the analysis of human tissues, body fluids, excretions, and other materials derived from the human body and the environment, production of biologicals, design and fabrication of equipment for the purpose of providing information for the diagnosis, research, management, prevention and treatment of disease in, or assessment of the health of, human beings, and which may provide a consultant advisory service covering all aspects of medical laboratory investigations including the validation of test procedures. kits, equipment and results, interpretation of results and advice on further appropriate investigation; these examinations also include preparation of reagents, sampling, procedures for determining, calibration of test equipment and measuring or otherwise describing the presence or absence of various substances or microorganisms; and (b) includes Bacteriology, Mycology, Virology, Parasitology, Chemical Pathology (Clinical Chemistry), Haematology, Blood Transfusion Science, Histopathology, Histochemistry, Immunology, Cytogenetics, Exfoliative Cytology, Forensic Science, Molecular Public Health, Biology, Jurisprudence and Ethics, Bioinformatics, Laboratory Management; just to name a few (International Standards Organization 2012).

Medical laboratory tests are utilized for the purpose of diagnosis, treatment, monitoring, research, surveillance and prevention of disease. The profession includes generalists as well as individuals qualified in a number of specialized areas of expertise including microbiology, virology, haematology, immunology, blood transfusion science, clinical chemistry, endocrinology, toxicology, cytogenetics, histology, cytology and molecular diagnostics (Institute of Biomedical Sciences 2015, Institute of Biomedical Sciences 2015). Integral features of each of the specialties include diagnostic testing, research, education, laboratory information management, marketing, and administration.

History of the Profession of Medical Laboratory Science

From tasting urine through microscopy to molecular testing, the sophistication of diagnostic techniques has come a long way and continues to develop at breakneck speed. The history of the medical laboratory is the story of medicine's evolution from empirical to experimental techniques and proves that the medical laboratory is the true source of medical authority. In 300BC, Hippocrates advocated examination of urine to diagnose disease (Darlene Berger 1999). To date, the practice of medical laboratory science continues to serve the purpose of disease diagnosis, monitoring of therapy, disease surveillance and research. Our services have expanded greatly to benefit not only orthodox medicine but also the traditional and alternative medicine practitioners in Ghana.

In Ghana, the practice of medical laboratory science started modestly in 1908 at James Town, Accra where the first medical laboratory was located (Medlab News Update 2013). The professional Association in Ghana was formed in 1971 and duly registered under the Professional Bodies Registration Decree 1973, (NRCD) 143 in 1973 with a registration number, PB 2 (Republic of Ghana 1973). The Ghana Association of Medical Laboratory Scientists (GAMLS) is and remains the sole professional body for the practice of Medical Laboratory Science in Ghana, so formed to among other things promote the professional development, competencies, scholarship and to seek the total welfare of its members.

Who can practice as a Medical Laboratory (Biomedical) Scientist?

Before one can practice in the medical laboratory as a professional scientist, you need to provide academic qualification which shows the individual has undertaken;

Core Subject areas: Biology: Primarily anatomy and physiology which should include cell biology, genetics, molecular biology and immunology. Biochemistry: Essentially the study of chemical processes which support life.

Key subject areas: The programme should cover adequately the main traditional pathology specialties cellular pathology/cytology, clinical chemistry, clinical hematology, immunohaematology and transfusion science, medical microbiology/virology and clinical immunology (Institute of Biomedical Science: IBMS degree accreditation requirements November 2015).

In fact, a fundamental requirement of medical laboratory science degrees is an integration of the core science and the key/specialist subject areas through a study of a pathophysiology or biology of disease component, which should consider the human disorders and disease processes together with their investigation (Institute of Biomedical Science: IBMS degree accreditation requirements November 2015).

Regulation of the Profession of Medical Laboratory Science and Medicine

Every health profession as per a particular jurisdiction is defined and recognized by law. The practice of medical laboratory science and medicine as health professions like many others are recognized and regulated globally in many jurisdictions including UK, USA, South Africa, Kenya, Uganda, Nigeria, just to name a few.

The Health Professions Regulatory Bodies Act, 2013 (ACT 857) is the law that spells out the procedures for registration and practice for all recognized health professions in Ghana. Whereas, Physicians are registrable only by the Medical and

Med-Dental Council under part two of ACT 857, ical Laboratory Scientists are registrable only by the Allied Health Professions Council under part one of the law (Republic of Ghana). In Ghana, the Health Professions Regulatory Bodies Act, (ACT 857, Part One, Section 1) establishes the Allied Health Professions Council (AHPC) which regulates the profession of Medical Laboratory Science. The schedule of Allied Health Professions defines Medical Laboratory Science as the study and practice of laboratory investigations necessary for the diagnosis and treatment of diseases by health professionals including Medical Laboratory Scientists, Medical Laboratory Technologists, and Medical Laboratory Technicians (Republic of Ghana).

The same (HPRB) Act 857, 2013, Part Two, Section (50), interprets Medicine to include surgery, anaesthesia, obstetrics and gynaecology, paediatrics, psychiatry, public health, internal medicine, radiology and radiotherapy; and regulated by the Medical and Dental Council (HPRB, 2013). Clearly, it is an undeniable fact that Physicians practice the profession of Medicine while Medical Laboratory Scientists practice the profession of Medical Laboratory Science. These legal interpretations obviously support the fact that Medicine and Medical Laboratory Science are two distinct professions recognized by law under two different Councils, without any form of role conflict or ambiguity.

It is a serious offence under Section 21(c) of ACT 857: 2013 to practice or profess to practice as an Allied Health Professional (Medical Laboratory Science) without prior registration with the Allied Health Professions Council. All the health professions in Ghana are regulated by different sections of the same common law and not by different laws before (HPRB) Act 857, 2013, was passed and this signifies the autonomy and uniqueness of each profession and that each professional takes full profession liability for the practice. Medical Laboratory Science is therefore distinct, by law regulated and recognized as a profession in its own right to practice and bear responsibility for it. This is so designed to protect

the public interest and ensure the highest standards of medical care.

Claims by some Medical Officers, Findings and Position of GAMLS

Claims by Medical Officers who call themselves Laboratory Physicians'

In our search we found several claims made by these Physicians, to the practice of Medical Laboratory Science in Ghana, in obvious contravention of the provisions of the Ghanaian Law (ACT 857).

Prominent among the claims made by these Physicians are: 1) That their role will be to perform medical laboratory tests (Ghana College of Physicians and Surgeons 2011). 2) That their role will be to establish and manage medical laboratories (Ghana College of Physicians and Surgeons 2011). 3) That their role will be to provide oral and written communication of laboratory results interpretation to clinicians (Ghana College of Physicians and Surgeons 2011). 4) That their role will be to assume responsibility for approval of specialized testing requiring shipment to a referral specialty laboratory (Ghana College Physicians and Surgeons 2011). 5) That worldwide, the administrative head of a medical laboratory has always been the physician (Ghana College of Physicians and Surgeons 2014).

That in laboratory testing any legal responsibility rests with the physician.

That they have the mandate to accredit medical laboratory facilities in all teaching hospitals. (Ghana College of Physicians and Surgeons 30th June, 2015).

Findings:

After an extensive search and review of relevant documents and health systems in Ghana and abroad, we publish the following findings:

That these persons are actually Physicians and are registered in Ghana as such by the Medical and Dental Council (MDC) to practice the profession of Medicine or Pathology but not Medical Laboratory Science.

That these Physicians are actually trainees of the Faculty of 'Laboratory Medicine' of the Ghana College of Physicians and Surgeons (GCPS).

That this Faculty has plans, as revealed in their curriculum for Membership and Fellowship to train two hundred and fifty (250) Physicians to be posted to all Teaching, Regional and Districts hospitals as Heads of Departments of medical laboratories across the country (Ghana College of Physicians and Surgeons 2011).

Position of Medical Laboratory Science Professional Body

Concerning the findings and claims as captured above we position that:

The curriculum of the Faculty of Laboratory Medicine of the GCPS for their trainees and the roles they claim to be playing, particularly A, B, C, & D are within the broader job description of qualified Medical Laboratory Scientists as obtainable in the Ministry of Health (Ghana Health Service, Teaching Hospitals, Mission hospital etc) for Biomedical (Ghana Ministry of Health Scientists International Standards Organization ISO 15189 2012) and as pertains in other countries like Canada (Canadian Society for Medical Laboratory Science 2005, College of Medical Laboratory Technologists of Ontario 2014) and the UK. Indeed, it is an offence under ACT 857, Part One, Section 21 (C) for a person to practice or profess to practice as an Allied Health Professional (Medical Laboratory Science) without prior registration. The fact is that "Laboratory Physicians" are registered by the Medical and Dental Council, and NOT by the Allied Health Professions Council (AHPC) as is the case for Medical Laboratory Scientists. GAMLS therefore condemns the blatant disregard for the Law by these and other non-medical laboratory Physicians graduates who openly profess to perform laboratory tests, even though they are not registered/licensed to do so.

ii GAMLS as the sole professional body for Medical Laboratory Science in Ghana is happy about the

heightened level of interest shown by some physicians and science graduates in the practice of Medical Laboratory Science, which proves the profession is a noble one contrary to what is being suggested by some people. We, however, wish to remind such interest groups and their employers that medical laboratory science is not solely an academic but also a professional program of study made up of a body of a knowledge and skill. Physicians and scientists who aspire to our practice must therefore subject themselves to the requisite and approved course of training, skill and supervision, licensure examinations and certification by the Allied Health Professions Council of Ghana as provided for under ACT 857: 2013 and not any other law.

The National Labour Commission (NLC) in a Directive letter dated 10th August, 2016 with subject matter RE: in the matter of Ghana Association of Certi-Registered Anaesthetists (GACRA) Vs Ministry of Health (MOH)' and reference number NLC// C364/2016, refers to the report submitted to it by the Hon. Minister of Health of Ghana. In his report dated 19th July, 2016, which formed the basis for the final settlement of the matter the then health minister emphatically stated the fact that Act 857:2013 is a reality until it is amended and that the ministry of health wishes to respect the spirit and the letter of the law as it exists. GAMLS lauds the wise decision of the Ministry of Health and parties in this matter to uphold the letter and spirit of ACT 857:2013 which is a reality. There is the need to apply consistency and be guided by the precedence established above in the application of ACT 857: 2013 by the ministry of health and its agency; the AHPC, to the practice of Medical Laboratory science in Ghana.

The actual roles and benefits of "Laboratory Physicians" to healthcare delivery need to be re- evaluated on the basis of value for money and efficient allocation of human resources. The Ghanaian tax payer's money is used in training these persons to become physicians for the sole purpose of providing clinical care as medical doctors. The question we should be asking ourselves as a country is whether in the light of the

current huge doctor-patient ratio of 1:9,043 (Ministry of Health 2014), we can afford to misapply the few number of physicians in this manner?" In our view, the focus of the Faculty of Laboratory Medicine of the Ghana College of Physicians and Surgeons to train as much as 250 doctors to compete for the job of Medical Laboratory Scientists cannot be in the interest of the country.

We position therefore that the Ministry of Health, and for that matter the Government of Ghana, must tell the GCPS to re-direct its efforts at training in the specialty and sub-specialty areas in Medicine for better quality of care for the Ghanaian citizenry; so that Ghana can have value for money considering the huge investment required in training persons to become physicians and re-training same to become specialists in the core areas of their field of practice. It is preposterous for some physicians and medical doctors who have not been appropriately trained and licensed to practice medical laboratory science to venture into the practice, supervision, headship and directorship of the Medical Laboratory professionals, facilities or directorates while being rewarded with the salary of specialist medical doctors. Medical doctors are macro-managers of many health institutions, agencies and departments but cannot be allowed micro-manage medical laboratories and profession in Ghana. This will surely meet with resistance from the practitioners of medical science who are enjoined by law to take legal responsibility for their work since it smacks of bad faith.

The training and practice of Medical Laboratory Science in Ghana have improved remarkably over the years to the extent that external assessments by recognized bodies such as the South African National Accreditation System (SANAS) African Society for Laboratory Medicine (ASLM) have confirmed unparalleled results on the competencies of the Ghanaian Medical Laboratory scientist. For example; there are three medical laboratories in Ghana with ISO 15189 accreditation. We also have five out of the nine internationally assessed government owned laboratories (within Africa) with 4 stars (out of the maximum 5 stars) in WHO AFRO Stepwise Laboratory

Improvement Towards Accreditation (SLIPTA) in Ghana (Ghana Business News 2015). It is important to note that none of these laboratories with the above-mentioned achievements have Physicians running tests or heading the technical discipline of medical laboratory services.

We state unambiguously that it is unnecessary to spend state resources to train persons for 10-12 years in medicine only to be appointed to do the job of medical laboratory scientists, medical laboratory technologists and medical laboratory technicians who have already been appointed and paid to do better quality of work. It would be a typical example of wanton waste of national resources, duplication of efforts, and obviously suicidal for an economically constrained nation as Ghana with myriad of healthcare challenges to undertake such a venture. Besides, most of our regional and district hospitals are in urgent need of more medical doctors to augment their work in the clinical and surgical fields.

It is noteworthy that there are now about seven tertiary training institutions in Ghana currently training Medical Laboratory Scientists to the Doctor Philosophy degrees the very purpose of providing quality medical laboratory services. Any attempt to train physicians in some aspects of medical laboratory science undertake the same duties as medical laboratory professionals is a misplaced national priority and an attempt to propagate confusion and role conflicts among professional in medical laboratory science and medicine.

v. There are currently over 45000 medical laboratory professionals in Ghana, many of whom hold post graduate qualifications (i.e., MSc., MPhil., PhD) in medical laboratory disciplines as well as MBA, MPH, corporate governance, marketing and law. It is also refreshing to note that graduates of the Six (6) years Doctor of Medical Laboratory Science programs and imminently Specialists from Professional Colleges of Medical Laboratory Science of Ghana and West Africa will soon be churned out to further augment level of specialised laboratory care of our dear nation. This spectrum

of qualifications coupled with the cream of professional ranks and skills clearly positions the medical laboratory professionals as adequately resourced to fulfil their duties with no augmentation required of some physicians who are already limited in number. The practice of Medicine is plagued with myriad of challenges that have not been fully resolved similar to that of the medical laboratory science which requires the attention of each profession aimed at addressing them. This may require collaborations among the two professions periodically in resolving them for the sake of our common client and not necessarily the "Capitation" or "capture" of medical Laboratory science by medicine.

The claim by some of these physicians that their fellow Ghanaian trained doctors cannot interpret medical laboratory results and will only require some specially trained Physicians posted at to or appointed to head medical Laboratories in order to provide those services is questionable. This is a serious indictment on the institutions which train our medical doctors and medical doctors, if they have is serious limitations interpreting a laboratory result after a request for laboratory investigation has been completed by medical laboratory professional. In situations where this may hold true, Medical laboratory practitioners by training, are well resourced to provide this service and in addition recommend follow-up part tests comprehensive services. It does not call re-training or appointment of medical doctors into medical laboratory facilities before interpretations of laboratory results can be done for fellow physicians do not work in the laboratories but to the contrary work in consulting rooms and ward.

Claims E & F are Mendacious. The evidence exists today that in countries where there was a lack of well -trained medical laboratory professionals, physician used to head tertiary level laboratories, but this phenomenon has changed drastically. For example; in the USA, UK, and Nigeria, medical laboratory professionals head laboratories (Centers for Disease Control 2003, Department of Community Health 2006, Medlab News Update 2013). Anywhere in the world, Medical Laboratory Scientists manage

laboratories and provide leadership in quality management, laboratory information management, verification and validation, reporting and authorization of results (American Academy of Family Physicians 2015).

In Ghana, these duties form part of the job description of Biomedical Scientists (Ghana Ministry of Health 2005). In addition to obtaining the highest level of professional education at the PhD level, some medical laboratory professionals have also attained Fellowships which qualify them to the post of a consultant. In the UK, some medical laboratory scientists are Fellows of the Royal College of Pathologists and are appointed as consultants in their health delivery system (Institute of Biomedical Sciences 2015, Institute of Biomedical Sciences 2015). Therefore, an MLS can be a specialist and consultant in his field of study.

In the United States of America medical laboratory scientists head laboratories, and further to this, there exists a pathway for Medical Laboratory Scientists (even those who already have PhD) to take up clinical residency programs so they can be appointed as heads of tertiary institution laboratories (Genzen J.R 2014, Kirchner P.A and Johnson S.T 2014, Scanlan P.M 2014, Straseski 2014). In the UK, medical laboratory scientists are trained to do specimen dissection, being description and histopathology reporting while both countries have had cytology screeners for many years now (Duthie, Nairn et al. 2004, Royal College of Pathologists and Institute of Biomedical Science 2004, East Pennine Cytology Training Centre 2010, Institute of Biomedical Sciences 2015). Even in Ghana today, there are cytologists who are not physicians.

vii. Only medical laboratory scientists are by law allowed to practice medical laboratory Science and therefore head medical laboratories (Medlab News Update 2013) in Nigeria which serves as the headquarters for the Ghana College of Physicians and Surgeons in the West African Sub-Region and the first products of specialists and consultants were trained. This matter has also been decided by

a court of competent jurisdiction which ruled on this professional rivalry stating that medical laboratory science is a distinct profession from medicine and thus must be practiced, managed and headed by medical laboratory scientists (Medlab News Update 2013).

In Ghana, by the provisions of the Act 857, all recognized health professions are distinct and provide services that are clearly defined and thus must head up their distinct services. Already, Pharmacist and Nurses have their respective postgraduate colleges and by establishments have directorates in the Ghana Health Service and the Ministry of Health (Republic of Ghana 2011). The recent inauguration of the West Africa Postgraduate College of Medical Laboratory Science in Nigeria obviously makes the commencement of a Ghana College of Medical laboratory Science imminent in order to train specialists and consultants with the right skill and competence to further augment the quality of service to global standards.

In response to claim G, that they have the mandate to accredit medical laboratory facilities in all teaching hospitals; we wish to state that accreditation of medical laboratories as defined by the International Organization for Standardization (ISO) requires an independent body that is also accredited to ISO standard 17011 and a member of the International Laboratory Accreditation Cooperation (ILAC). The internationally accepted standards for medical laboratories are ISO 15189 and ISO 17025. In resource limited countries like Ghana, WHO AFRO SLMPTA/SLIPTA approach been recommended (Gershy-Damet, Rotz et al. 2010, Yao, McKinney et al. 2010, Nkrumah, Van der Puije et al. 2014, Yao, Maruta et al. 2014).

It is therefore not the case that the GCPS accreditation is for the practice of the profession of medical laboratory science. Our finding is that, it is merely for the purposes of training the so called 'laboratory physicians'. There are other professions who also require the use of medical laboratory facilities for aspects of their training. For instance, the pharmacy profession, nursing profession, other

faculties of the GCPS, and more importantly the profession of medical laboratory science itself all require medical laboratories for teaching purposes. So should it be the case that all professions that require the use of medical laboratories for training students must have their own professionals in the laboratories? Definitely not! The fulfilment of any accreditation requirement of GCPS by any medical laboratory is only deemed as a voluntary gesture and not mandatory. So for the Faculty of Laboratory Medicine of the GCPS to suggest that Physicians must head the Teaching hospital laboratories as a requirement for their training is rather irritating and sheer disrespect to our profession, which we condemn, and further state our resolve not to tolerate any longer.

CONCLUSION

In the light of the foregoing, we conclude as follows: That the title 'Laboratory Physician' is alien to the practice of medical laboratory science in Ghana, and that the said specialty has no place nor recognized under ACT 857(2013) as a profession in Ghana; That, in Ghana and in many jurisdictions across the globe, Physicians are NOT Medical Laboratory Scientists and therefore have no legitimate right to perform laboratory tests or profess to do anything related to particular role of medical laboratory science; That it appears to be the case, and we believe very strongly so, that the GCPS is training physicians purposely to scramble for positions in the Medical laboratory facilities across the country; That the plan by the GCPS, to retrain physicians to perform the job of medical laboratory professionals, is a misdirection that must be rejected by the Government and the good people of Ghana.

Medical doctors must rather stay and develop within their profession of medicine and help close the wide doctor-patient gap, which the Ghana Medical Association had complained about time without number; That GAMLS shall use every means legally possible, to protect the profession of Medical Laboratory Science in Ghana from intruders, and shall at all times work to protect the citizenry from the unauthorized practice of medical laboratory science

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by non-medical laboratory Science trainees, unlicensed personnel and physicians who wish to work or profess to work as Medical Laboratory Scientists.

This is unlawful, poses danger to client and their safety, poses medico-legal issues, poses ethical issues and must be profusely discouraged; Finally, we pledge to protect the laws of the Republic of Ghana from abuse and further pledge to defend and protect the practice of our profession as enshrined in the laws of Ghana and provided for in the ACT 857 (2013); these we shall commit ourselves to do at all times in the public interest.

COMPETING INTEREST

Authors declare that they have no competing interests.

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AUTHORS' CONTRIBUTIONS

The committee was established by GAMLS. The chairperson together with the members of the committee formulated and task assigned. All inputs were put together, reviewed and accepted by the committee before final submission to the Professional Body for onward distribution. All authors contributed to the development of the manuscript, read, and approved the final version.

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