

SPECIAL ARTICLE

AUTOPSY PRACTICE IN GHANA – REFLECTIONS OF A
PATHOLOGIST

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SUMMARY

Autopsy practice in Ghana can be said to be far from satisfactory. Most Ghanaians do not know that there are different categories of death, which categories of death require an autopsy and who is required to perform the autopsy. The problems have further been complicated by the fact that, unlike other countries where separate facilities are available for storage of the different categories of dead bodies, all dead bodies in Ghana are conveyed to the hospital mortuary, thus encouraging hospitals to expand body storage facilities in their mortuaries to meet the increasing demand. Public or community mortuaries used elsewhere for storage of bodies of deaths occurring in the community pending the Coroner's directions are non-existent in Ghana. Storage of all categories of dead bodies in hospital mortuaries has resulted in virtually all autopsies being done by the hospital pathologists, especially in the large centres, at the expense of other very important diagnostic functions of the pathologist. This paper explains relevant portions of the Coroner's Act of 1960 and emphasises the need to separate the few hospital autopsies that require the expertise of the pathologist from Coroner's autopsies that may be carried out by any registered medical officer, as specified in the Act, or better still, by specially trained Forensic Physicians/Medical Examiners, as pertains in other countries. The paper also clarifies the different categories of death, those that fall in the jurisdiction of the Coroner and the personnel required to assist the Coroner in his investigations. Suggestions have also been made on how to approach manpower development to ensure that appropriate personnel are trained to assist the Coroner in the investigation of medico-legal cases.

Key words: Coroner, autopsy, public mortuary, pathologist, forensic

INTRODUCTION

Health care delivery in developing countries has been bedevilled with misconceptions, particularly concerning the personnel involved in care delivery. Thus, while doctors practising the clinical art of medicine, namely: Internal Medicine, Surgery, Paediatrics and Obstetrics and Gynaecology are generally well known to majority of lay people in these countries, doctors practising the clinical sciences are sometimes unknown to the general public, much less their role in health care delivery. By clinical sciences, I refer to the specialties concerned with generation of data that form the basis of scientific diagnosis of disease. These include specialties such as: Laboratory Medicine and Radiodiagnostics, specialties that provide evidence to support or refute clinical diagnoses and provide the basis for evidence-based medical practice. It is in this vein that the Royal College of Pathologists of the UK has described pathology (Laboratory Medicine) as the "science behind the cure".

Indeed, many world acclaimed medical centres of excellence owe their fame to attention given to the development of specialties such as, Laboratory Medicine. Examples include The Royal Postgraduate Medical School and Hammersmith Hospital in London (now the Imperial College), The Mayo Clinic, The Walter Reed Medical Centre and National Institute of Health of the USA and several other centres in Europe. I have already discussed the role of the pathologist in modern medical practice.¹ The central and pivotal role played by pathology or Laboratory Medicine in general, in clinical medical practice became obvious back in the 18th Century, leading to its recognition as a medical specialty at the end of that century.²

Sadly, in Ghana, the Laboratory Physician is largely unknown to the general public, even to some health workers. Many young doctors are unfamiliar with the role of specialties that make up Laboratory Medicine in clinical medical practice. The result has been lack of interest on the part of young doctors to specialise in these areas, namely: Anatomic Pathology (Histopathology), Haematology and Transfusion Medicine, Chemical Pathology and Medical Microbiology. Even those with some knowledge about Laboratory Medicine still prefer to specialise in the other better known clinical specialties, with the notion that financial rewards are better in those specialties, because of easier opportunities for private practice. There is also the misconception that because Laboratory Medicine is largely laboratory-based, it must be regarded as belonging to Basic Medical Sciences. Nothing can be further from the truth because, like all other clinical medical specialties, trainees undergo residency training and the training is high in clinical content. In fact, Laboratory Medicine is the bridge that links clinical medical practice to the basic sciences; the unique position that enables the Laboratory Physician to translate basic laboratory data and research results into clinical practice.

Whereas in the UK and Europe, the term 'Pathology' refers to all branches of Laboratory Medicine, in the USA, the term 'Laboratory Medicine' is preferred and the practitioner is referred to as the Laboratory Physician. In Ghana, the pathologist is the equivalent of the anatomic pathologist of the USA or the histopathologist of UK or Europe. Usage of the term pathologist in this paper, therefore, refers to the anatomic pathologist or histopathologist.

To many people in Ghana, including many health workers, the pathologist only performs autopsies. This misconception has done great disservice to the practice of this particular specialty and has added to the difficulty in recruiting young medical graduates into pathology in Ghana. The result is that over the years only a few new pathologists have been trained for the whole country. At the moment, there are less than 20 qualified pathologists in the country and they can be found mainly in the large medical centres, such as: Korle Bu Teaching Hospital in Accra (7) and Komfo Anokye Teaching Hospital in Kumasi (6). There are also about a dozen more at varying stages of training in these two teaching hospitals. Other specialties of Laboratory Medicine are not faring any better. Naturally, this state of affairs is bound to affect the standard of clinical care in Ghana, as laboratory medical practice has been proved to enhance the quality of patient care globally. While the numbers of pathologist are small and not evenly distributed in the

country, hospitals have been built without adequate infrastructure for pathology practice. This has resulted in outsourcing of such services to countries like South Africa. Instead, hospitals have been provided with more than adequate mortuary accommodation for dead bodies, even bodies from outside the hospital. It is sobering to note that Medical Administrators of some regional and district hospitals in Ghana consider provision of a fair-sized mortuary in the hospital as enough facilities for pathology service in those hospitals, even in the absence of facilities for histopathology or cytopathology.³ This paper addresses some of these misconceptions about pathology practice and suggests ways in which these can be rectified to bring it in line with best practices in other countries.

CATEGORIES OF DEATHS

Deaths occurring in the community, outside a health care facility, are ordinarily considered as falling under the jurisdiction of the Coroner. Certain specific deaths within a health facility, especially those considered to be unnatural, also fall into the category of Coroner's cases, all of which require investigation by the Coroner to ascertain the cause of death. In addition to providing an accurate cause of death for registration by the Registrar General, as required by the Law, the Coroner's investigation helps to establish which deaths are the result of a crime, including homicide, that may require further criminal investigation.

On the other hand, deaths occurring within a health facility (or hospital), in the normal course of management or treatment of the subject, is the responsibility of the health institution and any need for further investigation into the cause of death or the need for further understanding of the clinical course of the disease and circumstances of death, rest with the treating physicians. In such cases, permission is usually sought from the next of kin or relatives of the deceased for further investigations to be carried out, including autopsy on the body. Additionally, where death occurs within a health facility before a diagnosis has been made for appropriate treatment to commence, such deaths must also be reported to the Coroner for the purposes of establishing the cause of death.

Traditionally, the cut-off between death in a health institution that must be referred to the Coroner and that which may be investigated further by the institution has been set at 24 hours, with Coroner's cases being those where death occurs within 24 hours with no established diagnosis. In such cases, it is assumed that whether or not the death was due to an unnatural cause would not have been established before death and the Coroner must be notified about the death.

Other institutional deaths that may require investigation by the Coroner are those where negligence or other medico-legal questions may need to be answered. Thus, where there is suspicion that a person died an unnatural death while in hospital, it does not matter how long the person has been in hospital, the Coroner must be notified of that person's death. Deaths in a mental asylum or prison institutions shall be reported to the Coroner in accordance with the Coroner's Act.⁴

This paper also serves to re-emphasise the need to separate the administration of Coroner's investigation of deaths, from investigation of hospital deaths. Investigation of hospital deaths requires the expertise of the hospital pathologist, who is trained not only to perform an autopsy, but also to carry out histopathological or other suitable laboratory investigations required to further understand the mechanisms leading to death of the deceased. The Coroner's investigation of deaths requires any registered medical practitioner or where available, a forensic physician/forensic pathologist, not necessarily a hospital pathologist. Separation of the two services (the Coroner's service and the hospital pathology service) is urgently required to improve efficiency in the two systems in Ghana.

TYPES OF DEATH

All deaths can be classified into two main types, namely: *natural* or *unnatural*. A death is classified as natural when it is the result of a disease process or an abnormality in the human body, whether or not the deceased has undergone treatment for the disease or abnormality. An unnatural cause of death is where death is the result of circumstances such as: homicide, suicide, accident or misadventure. Although the two appear easily separable, there are often areas of overlap and further investigations in the form of an autopsy or other special investigations may be necessary to separate them. Certain types of unnatural death would require further criminal investigation, hence the need for the Coroner's system, which also authorises investigation of circumstances of the death.

THE CORONERS ACT

The Coroner is vested with the responsibility of investigating all unexplained deaths classified as medico-legal that occur within his jurisdiction in order to determine which deaths are natural and which are unnatural. In Ghana, the law that defines this is the Coroners Act of 1960 (Act 18).⁴ This law clearly defines the Coroner as the District Magistrate and states the duties and powers of the Coroner (see Section 1 – on who is the Coroner; and Section 5 – on when an inquiry is to be held by the Coroner). As expected, this law derives from and is similar to that of England and Wales, ie the

Coroners Act 1988, (1988 c 13), the current English legislation which has consolidated the Coroners Acts 1887 to 1980 and certain enactments.⁵ Like other former British colonies, including the USA, the law makes provision for effective administration of justice with respect to deaths that may result from criminal activities, through separation of deaths into those due to natural causes and those due to unnatural causes. Variations in implementation of the Law are seen in the USA in its Medical Examiner system and in Scotland, the equivalent of the Coroner is the Procurator Fiscal. However, in addition to defining the Coroner and his duties, Act 18 (1960) also makes provision for other personnel required to assist the Coroner in the investigation of deaths. The essentials include:

The Coroner

The Coroner is essentially, the administrative head of the team. The Coroner makes decisions on which deaths reported to his office should be investigated and which personnel should assist in the investigation. The personnel required to assist the Coroner include: the Police investigating officer (Section 4) and a Registered Medical Practitioner (Section 7). On completion of the investigations, the Coroner authorises the issue of a Burial Certificate to enable the disposal of the body of the deceased (Section 6). The Coroner also has the authority to determine the fees payable to the Registered Medical Practitioner or other qualified persons he may require to assist in the investigations (Section 22). An important function of the Coroner is to decide, under Section 5 of the Act, whether or not to hold an inquest or inquiry as part of the investigation.

The Registered Medical Practitioner.

The Coroner requires the assistance of the Registered Medical Practitioner (Section 7, sub-section 1a) who will perform an autopsy or post-mortem examination of the body to determine the cause of death. Note that the Act does not state that the post-mortem examination must be performed by a Pathologist, although this has been the general assumption in Ghana. In many other countries, especially the developed countries, specialists have been trained as Medico-Legal or Forensic Physicians to work closely with the Coroner. In the UK, these are the Forensic Physicians and Forensic Pathologists. The difference between the two is in the extent of training in laboratory procedures. The forensic pathologist is a trained pathologist who has further sub-specialised in forensic medicine, while the forensic physician only specialises in forensic medicine. Both medical personnel are trained in Medical Jurisprudence and are able to participate in other medico-legal investigations and also perform autopsy examination.

Their involvement in the Coroner's investigation may include crime scene investigation, exhumation of bodies and other forensic procedures for which they are expected to have been adequately trained. The equivalent of the forensic physician in the USA is the Medical Examiner.

Police Investigating Officer

Under Section 4 of the Act, the police are usually the first to be informed of death in the community outside a health care facility, especially where there is suspicion of foul play. The police then inform the Coroner whose responsibility it is to decide what to do with the body. The police carries out investigation of the scene (in Ghana, often without the assistance of a doctor), following which the body can be conveyed to the mortuary either for further investigations, including autopsy, or to await instruction from the Coroner on the disposal of the case. To assist the police investigating officer and the doctor, it is desirable to have facilities such as, a Crime Laboratory, together with the requisite specialists to assist in carrying out further tests. These tests include biochemical analyses (including toxicology), ballistics, crime reconstruction, etc.

Forensic Toxicologist/Medical Laboratory Scientist

Investigation of death often requires testing samples taken from the scene or from the body (including at autopsy) for analysis for toxic or other noxious agents. This is provided for in Section 7, sub-section 1b. For this purpose, a comprehensive laboratory is essential to carry out biochemical and toxicological examination of samples. In addition, DNA and other molecular biological techniques may be required in identification of bodies and other forensic studies. In some countries, comprehensive facilities have been developed to provide for the needs of both the Police investigating officer and the Toxicologist/Molecular Biologist. Such Forensic Institutes are available in developed countries such as, the USA and countries in Europe where, in addition to the service they provide to the Coroner, personnel are also trained for the forensic team.

The Mortuary

Bodies of individuals who die in the community outside a health care facility must be stored in a mortuary to await instructions of the Coroner (Section 8). The mortuary does not only provide storage facilities, but also should provide facilities for autopsy by the Registered Medical Practitioner or where available, the Forensic Physician or the Forensic Pathologist. A public mortuary usually serves this purpose and in developed countries (even many developing countries) which operate the Coroner's system or its equivalent, the public mortuary is separate from the hospital mortuary and is administered by the District, Municipal or

County administration, as the case may be, under the supervision of the District Health Authority. Deficiencies in the current system as it operates in Ghana include the following:

Absence of Public or Community Mortuaries

A little historical perspective on the development of laboratory service and mortuaries in Ghana might be helpful at this stage. I am reliably informed that during the Colonial Administration of the then Gold Coast, public mortuaries were available in Accra and Kumasi in the early parts of the 20th Century. When the decision was finally taken to expand health facilities for the natives of the then Gold Coast, larger hospitals were built but were not provided with the full complement of medical personnel for all branches of medicine. Medical Laboratory facilities were initially meant for research into various tropical diseases, carried out mostly by expatriate general medical practitioners. A proper Pathology Department was established with the appointment of a full time pathologist in 1914, in charge of all aspects of Laboratory Medical practice, in addition to medical research. Subsequently, other laboratories were established in Sekondi in 1922 and Kumasi in 1930. They all undertook research, clinical pathology service and autopsies. By 1930 there were as many as eight (8) pathologists in Ghana, but this number decreased progressively during the Depression of the 1930s and World War II. Clinical laboratories in hospitals outside Accra were rudimentary, and mostly housed in small side-rooms of the hospitals.

In the 1940s and 1950s the Medical Field Unit was developed to continue with research efforts and local personnel trained to assist with this scheme later became available for work as assistants in the clinical laboratories after it was disbanded in late 1950s. In the post-war period, new laboratories were built at Korle Bu Hospital, Sekondi, Kumasi, Tamale and other stations and by 1957 there were 26 laboratories attached to government hospitals, though none of them had a pathologist, apart from the Laboratory in Korle Bu, Accra. For more information on development of laboratories in Ghana, the reader is referred to the excellent historical work by Addae S.⁶

By the 1950s there was one fully trained pathologist in Korle Bu Hospital, the largest hospital in the country. In the absence of forensic physicians or forensic pathologists, most medico-legal autopsies in Southern Ghana were referred to Korle Bu Hospital in Accra. Whatever other forensic autopsies were performed outside Korle Bu Hospital, were done by Medical Officers as provided for in the Coroners Act.

Over the years, the desire to have most medico-legal autopsies done in the hospitals however, resulted in the mortuary space in the Korle Bu Hospital being progressively expanded to accommodate the increasing numbers of bodies, the vast majority of which were deaths occurring in the community and not the hospital itself. Thus, the vast majority of medico-legal cases were referred there for the attention of the pathologist. With the construction of other large hospitals such as, Komfo Anokye Hospital in Kumasi, Effia-Nkwanta Hospital in Sekondi and Tamale Hospital, some of the autopsy load has been taken from Korle Bu, but with the few trained pathologists being concentrated in Korle Bu and Komfo Anokye Teaching Hospitals, the bulk of autopsies are still handled in these hospitals. In Accra, some assistance has come from the Military Hospital and more recently, the Police Hospital.

This anomalous situation, whereby medico-legal cases are sent to hospital mortuaries has resulted in the inappropriate expansion of storage facilities for bodies in the hospitals and corresponding neglect and eventual abandonment of the few public mortuaries. Instead of developing public or community mortuaries in the districts and municipalities to cater for the needs of the Coroner, hospitals have resorted to expanding body storage facilities in their mortuaries, mainly for income generation from embalment and other services. The administration of these inappropriately expanded mortuaries have unwittingly, become the responsibility of pathology departments in these large hospitals. The result has been the increased autopsy load on the small number of pathologists in these hospitals thus, adversely affecting the optimal functioning of pathologists. It has also negatively impacted on residency training in Pathology as will be discussed later.

Lack of training of Forensic Physicians

Along with inappropriate use of pathology departments of hospitals for forensic autopsies, has been the neglect of the training of Forensic Physicians for Ghana, even as training of these essential personnel has become well established in Europe, the USA and other countries. Thus, in the UK and Europe, recognised institutions are available to train forensic physicians, while in the USA, the Medical Examiner is well recognised in forensic medical investigations. As at now, Ghana does not have a single Forensic Physician or Forensic Pathologist, although a few hospital pathologists do undertake investigation of high-profile medico-legal deaths by virtue of their training in autopsy practice as an integral part of pathology training.

At the district level, medico-legal autopsies are still performed by registered medical practitioners, but majority of cases are still referred to larger hospitals to be handled by the few pathologists.

The stipulation of ‘Registered Medical Practitioner’ in the Coroner,s Act is similar to the provision in the English Law and predates the training of Forensic Physicians. Whereas the British, the Americans and other nations have moved on, as dictated by medical advances and their legal requirements, progress in this area in Ghana, has been generally lacking.

Lack of Training facilities in Forensic Science

Forensic science has to do with crime investigation and is directly relevant to the Coroner’s mandate. In many other countries there are institutions that carry out investigation of crime. Internal crime investigation is in the province of the Ministry of Interior and involves various national investigative personnel, especially the Police. The Ghana Police service has a Crime Laboratory, but to all intents and purposes and compared to other countries, it is still rudimentary. It is not adequately developed to undertake the training of Forensic Physicians, nor is it capable of carrying out advanced techniques in molecular biology.

Historically, the Government Chemical Laboratory, now Ghana Standards Authority has assisted the investigative processes by analysing specimens submitted by the doctor carrying out the autopsy or the investigating police officer, for various chemicals and toxins. However, the laboratories are not equipped to carry out a wider range of forensic investigations, as this is not their core mandate. Some universities in Ghana offer, or are in the process of offering courses in forensic science. It remains to be seen the effect of this new addition to human resource development on the Coroner’s system, with respect of forensic scientists.

EFFECTS OF LARGE AUTOPSY LOAD ON PATHOLOGY PRACTICE

As an example of the negative effects of the current arrangement on effective practice of pathology in Ghana, the Pathology Department of Korle Bu Hospital performs between 3,000 and 5,000 autopsies every year, over 80% of which are medico-legal or Coroner,s autopsies. Thus, at least 80% of the workload of each pathologist in the department is performing of medico-legal autopsies. The pathologists in Korle Bu Hospital are hospital and/or academic pathologists and not forensic pathologists or forensic physicians.

Each forensic autopsy, apart from the time taken to perform the autopsy, requires a detailed report to be submitted to the Coroner as early as possible, to enable him to dispose of the case. In addition, when necessary, the pathologist may be required to attend an inquest or provide expert witness in criminal cases on which he has performed an autopsy.

This excessive workload, occasioned by the large numbers of autopsies is at the expense of more pressing and core clinical diagnostic pathology duties, namely: surgical pathology and cytopathology. These are duties that are essential for accurate diagnosis of disease in living patients. Under normal circumstances, the pathologist performs an autopsy only on hospital deaths for which permission is obtained from relatives of the deceased for the purposes of further investigation of the disease and for teaching, as previously discussed. In many other countries, the pathology department does only a handful of autopsies each week and the bulk of work done in the department is diagnostic histopathology and cytopathology. Thus, pathology departments in such countries handle in excess of 20,000 clinical diagnostic cases each year in a 600-bed hospital, compared to the paltry 6,000 in Korle Bu hospital with over 1,200 beds. Even with the high autopsy load, the few pathologists in Korle-Bu hospital are academic pathologists with teaching and other academic duties.

Little wonder patients and attending physicians sometimes complain about delay in obtaining clinically urgent reports from the department. It is also sad to note that intraoperative consultation service which is regularly offered to surgeons by the hospital pathologist in other countries, is currently not available in most hospitals in Ghana, including Korle Bu Teaching hospital. This is partly due to the inappropriate use of the few pathologists in favour of Coroner's autopsy service. The current situation also has a negative effect on the Coroner system itself. With large numbers of cases as against the meagre and insignificant fees offered to pathologists by the Coroner, most pathologists take a long time, sometimes years to write full reports if they ever write them and cases are done grudgingly and poorly. In addition pathologists may delay proceedings in court because they cannot be available at sessions, for various reasons.

Over the past few decades, hospital autopsies and to some extent, Coroner's autopsies have declined in numbers in most countries, especially the developed countries. This is because of a combination of factors including, improved clinical diagnostic and treatment facilities and alternatives to conventional autopsy

methods. The autopsy now accounts for 10% or less of the duties of a hospital pathologist in some of these countries and they are thus, able to carry out more detailed investigation of diseases and also issue timely and appropriate reports to the treating physicians.

Therefore, the inappropriately high demand on the time of the few Ghanaian pathologists in favour of medico-legal autopsies is anomalous and requires correction, in order to improve the quality of care given to living patients.

The question asked in our present set-up is: who should perform medico-legal autopsies if not the the pathologist? The answer to this is that, all medical practitioners must be equipped with the necessary skills to perform autopsies in the districts and smaller health centres as prescribed in the Coroner's Act. It is in fulfilment of this that in some Ghanaian medical schools, the undergraduate medical curriculum has made provision for rotation of final year medical students through the pathology department to acquire minimum skills for carrying out an autopsy.

Unfortunately, this provision in undergraduate medical training has been gradually undermined in recent times, resulting in some medical graduates passing out with no skills in performing an autopsy. The result has been increasing reliance on hospital pathologists for nearly all medico-legal autopsies in Ghana. As applies in most developed countries, hospital/academic pathologists may sometimes be requested by the Coroner to assist with autopsies where there are no forensic physicians or where they are few and overworked. In such circumstances, the pathologist works as a special consultant to the Coroner and is paid a respectable fee as prescribed in the Act (Section 22). Fees are also paid for attendance at the Inquest or Court. In all this, it is important to note that the Coroner's autopsy is not the prime responsibility of the hospital/academic pathologist, To build better systems in Ghana with reference to autopsy service, the following suggestions may be considered as the way forward for Ghana:

THE WAY FORWARD

Separation of Hospital and Forensic Autopsy Services
The Coroner, being a District Magistrate, is in charge of medico-legal deaths within the district. Reactivation of Public Mortuaries within the districts under the District Administrations (Assemblies) would enable the Coroner to have a better oversight on the cases in his jurisdiction. This would require the assistance of the Ministry of Local Government, together with the Ministry of the Interior and the Judicial Service and ensure separation between hospital deaths and medico-

legal (Coroner's) cases, thus allowing the hospital pathologists the opportunity to concentrate more on their core duties to the living.

Where the Coroner needs the assistance of hospital pathologists because of non-availability or inadequate numbers of Forensic Physicians as stated above, this may be arranged with the respective pathologists through a contract with the Ministry of Justice and Judicial Service, in accordance with the payment of fees authorised in the Coroner's Act (Section 22). Indeed, this arrangement is practiced in other countries such as, the UK.

Forensic Medicine is as yet little known specialty among Ghanaian medical graduates. So far, no Ghanaian medical graduate has opted for specialization in this area. Besides, the fact that all medico-legal autopsies are currently done in hospitals by hospital pathologists and other medical officers has obscured the need for such specialists. It is essential to point out once again, that this is at the expense of efficient hospital diagnostic practice. To correct this anomaly and restore efficiency to both hospital pathology practice and the Coroner's system, it is suggested that the Ministry of Justice and the Judicial Service take the initiative in sponsoring the training of forensic physicians. This arrangement will be of benefit to both the Coroner and hospital pathology service. Similar points have already been made in an earlier publication.⁷

Training of Forensic Physicians

Immediate plans must be made by the Ministry of Justice and the Judicial Service to sponsor the training of Forensic Physicians or Forensic Pathologists. The Faculty of Laboratory Medicine of the Ghana College of Physicians and Surgeons currently offers training to medical graduates in the specialty of Anatomic Pathology, within the Faculty of Laboratory Medicine, but has no facilities or personnel for the training of Forensic Pathologists or Forensic Physicians in Ghana. It is therefore, suggested that for the interim, medical graduates be recruited for training in the UK or USA to participate in this important function of the administration of justice in the country, while also providing human resource for local training of such personnel.

After the Second World War, Training of Forensic Physicians took off in earnest in some institutions in the UK with the award of Diploma in Medical Jurisprudence (DMJ), following a one-year training period. This was converted into an MSc in Forensic Medicine and later PhD in Forensic Medicine, in designated institutions.

Following the establishment of the Royal College of Pathologists, pathologists wishing to sub-specialise in forensic medicine have been allowed to do their senior residency training in forensic medicine, becoming Forensic Pathologists at the end of their residency training. Training of the above two medical forensic personnel is still available in the UK to overseas medical graduates. In the USA, the situation is similar to that in the UK, with Medical Examiners (Forensic Physicians) requiring a minimum of 2 years training, while Forensic Pathologists require a Fellowship training in Forensic Medicine following a regular residency programme in Anatomic Pathology (Pathology/Histopathology). In the initial stages of recruitment of medical graduates for training, it is recommended that preference, be given to the training of Forensic Physicians who will take care of the current load of forensic autopsies and also assist with further investigation of Coroner's cases. Help with histological confirmation of individual cases may be sought from the hospital pathologists until forensic pathologists become available to the Coroner.

It is worth pointing out that this is not the responsibility of the Ministry of Health, as the specialists are not trained to work in the health care delivery system, but in the Judicial system. Of course, co-operation with the Ministry of Health would be essential. After all, this involves further training of medical graduates, albeit for duties in the Judicial Service. I am aware of medical graduates who have either studied Law, or are in the process of studying Law. Some of these graduates may be encouraged to train in forensic medicine. While waiting for the above proposal to materialise, the Specialty of Pathology of the Faculty of Laboratory Medicine of The Ghana College of Physicians and Surgeons may be encouraged to offer a short training module in Autopsy methods for medical graduates, preferably during their Internship. This would help in meeting the needs of the Coroner's system until enough forensic physicians have been trained for the service.

Recruitment of Forensic Scientists

This would include toxicologists, ballistics experts and other biomedical scientists as mentioned earlier in the description of personnel required to assist the Coroner. A country the size of Ghana, with the number of forensic cases requiring investigation, would benefit from the establishment of at least, one comprehensive Forensic Institute, established jointly under the auspices of the Ministry of Justice/Judicial Service and the Ministry of the Interior. Once established, it can serve as a centre for training to provide personnel for all the districts in the country.

Orientation and Training of District Magistrates

Newly recruited District Magistrates, as well as existing ones would benefit from periodic training on the functions of the Coroner. This would improve upon the current situation where some Magistrates appear unfamiliar with their role in the investigation of medico-legal deaths, especially the holding of inquests into medico-legal deaths. It is also suggested that retired medical practitioners and pathologists interested in law and forensic medicine be considered for appointment as Coroners to augment the human resource base of the Coroner's system, as pertains in some countries.

CONCLUSION

An example of a serious administrative problem affecting health care delivery in Ghana has been presented above, where aspects of the duties of the Ministry of Justice/Judicial Service appear to have been wholly taken over by an under-resourced segment of the Ministry of Health. Thus, instead of developing public mortuaries to serve the needs of the Coroner, hospitals have resorted to expanding mortuary storage facilities often in situations where such hospitals lack essential emergency care facilities. Medical practice is currently in the era of "Laboratory Medicine", in which diagnosis of disease has become heavily dependent on advanced scientific techniques which are available in the clinical laboratories. This provides the basis for evidence-based medicine which is currently being espoused in various developed nations. To back this up, there has been steady growth of Laboratory Medicine, together with high level of training of Laboratory Physicians. Unfortunately, this does not appear to be so in developing countries, where little attention is paid to specialization in Laboratory Medicine and diagnoses are still heavily based on clinical skills, often with insufficient laboratory confirmation. The pathologist is a

Laboratory Physician whose clinical duties are essential for the care of patients. His inappropriate and heavy involvement in medico-legal investigations at the current rate has become counter-productive and must be reduced in Ghana, in line with what pertains in other countries, to enable him to contribute more effectively to clinical patient care and scientific medical investigations. Separation of hospital pathology practice from investigation of medico-legal deaths is thus, necessary and that means developing public or community mortuaries for the use of the Coroner, instead of expanding hospital mortuaries to meet the needs of the Coroner. In addition, essential personnel required for effective administration of the Coroner's system must be trained and equipped by the relevant agencies. Suggestions as to how these can be effected have been offered in this paper. There is need for a paradigm shift in this regard both to improve hospital pathology service and to ensure efficiency in the judicial system with respect to administration of the Coroner's service.

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