

# A Proposed Model for Medico-legal Death Investigations Given the Critical Shortage of Forensic Pathologists: Strategic Directions for Zambia, Africa

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## Abstract

Many other developing countries in southern Africa, Zambia has a shortage of forensic pathologists. Unfortunately, the situation is not envisioned to improve in the foreseeable future due to resource constraints.

Medico legal deaths are widely scattered to permit investigation by the few pathologists. General medical practitioners who conduct forensic autopsies are not orientated, a situation that is hazardous to the criminal justice system. Therefore, strategic directions are required to orient medical practitioners in medico legal death investigations until Zambia has an appropriate number of pathologists.

To mitigate the critical shortage of forensic pathologists, the model will ride on the availability of general medical practitioners who practice medicine in the districts and far-flung areas in Zambia to conduct forensic autopsies. General medical practitioners remain a feasible option in the administration of justice, public health, and vital statistics.

**Keywords:** Critical shortage • Forensic pathologists • Forensic autopsy • Proposed model

## Introduction

Zambia has a critical shortage of FPs [1]. According to institutional memory at the Office of the State Forensic Pathologist (OSFP) in Lusaka, Zambia, the caseload for a pathologist was 630 in 2020. This exceeds the acceptable number of 250-300 forensic autopsies per year. A high caseload reduces work quality and increases errors [2]. The number of deaths that require forensic autopsies is extensive and continues to increase. These deaths are widely scattered to permit investigation by the few pathologists available. In the districts far from the capital, General Medical Practitioners (GMPs) conduct forensic autopsies based on the Inquests Act [3]. GMPs are general medical officers who have completed an internship and are on a full medical register with the Health Professions Council of Zambia (HPCZ) [4]. However, forensic autopsies conducted by GMPs not orientated forensic procedures are hazardous and unreliable to the criminal justice system and may lead to miscarriage of justice [5, 6]. To improve the quality of forensic autopsies, we propose a model that will orient GMPs in forensic procedures by providing strategic directions until Zambia has an appropriate number of forensic pathologists. Death

investigations are extremely important in terms of criminal justice and public health. Death investigations produce evidence that may be used to punish the guilty and protect the innocent, whether they are suspected of murder, child mistreatment, neglect, or other offenses. Death investigations are useful in civil litigation, such as malpractice, personal injury, and life insurance claims. Death investigations are essential for many elements of public health practice and research, including surveillance, epidemiology, and preventive programs, most commonly in injury prevention and control, but also in suicide, violence, and drug abuse prevention. Death investigations are also becoming increasingly crucial in assessing healthcare quality and the nation's reaction to bioterrorism.

## Literature Review

### The model is premised on the following principles

This model is meant to provide credible, reliable, and accountable forensic autopsies by taking an evidence-based approach [2]. GMPs will undertake forensic autopsies with objective thinking in search of the truth [2]. The deaths will be investigated to the extent necessary to meet the purposes of the criminal justice system, public health, and vital statistics. The GMPs will be accountable through the regulatory regimes of the National Forensic Authority and Health Professions Council of Zambia (HPCZ) [4,6]. The OSFP will provide Continuing Medical Education (CME) to orient GMPs in forensic procedures. This will improve the quality of forensic autopsies and enable the GMPs to perform ethically, efficiently, and effectively [2]. Upon completing the CMEs, the GMPs will demonstrate knowledge, skills, and aptitudes related to the multi-disciplinary approach needed for MLDIs and competently function as a medical expert in defined categories of deaths. The defined categories of deaths that will be investigated by the GMPs and supervised by the OSFP include; sudden natural deaths in adults, deaths associated with pregnancy, hangings, accidental death (road and rail traffic fatalities, drowning, toxicological deaths, lightning, and electrocution deaths). In addition, the GMPs will make preliminary external examinations for cases of homicides, which will be buried pending exhumation by the forensic pathologists in far-flung areas. This will enable the OSFP pathologists to have access to the initial appearance of the victim before burial.

### Content of the forensic autopsy for general medical practitioners

The GMPs will be introduced to the principles of forensic autopsy procedures. The GMPs will be taught to decide on data sources, develop a diagnostic database, integrate data into the decision process, and arrive at objective opinions. The laws (the National Forensic Act and the Inquests Act) that govern MLDI in Zambia will be discussed. Understanding the legal framework, guides the practice of forensic autopsies as the endpoint of MLDI is a legal process, usually a criminal court trial or a coroners' inquest [2]. The GMPs will be introduced to the categories of cases that present to the OSFP for forensic autopsies, the qualifications (Forensic Pathologist, Anatomical Pathologist and GMP) needed to investigate particular deaths. This model will rely on a referral system for cases that cannot be investigated by the GMP.

They will be taught about the objectives of a forensic autopsy, cause, mechanism, and manner of death and steps involved in a forensic examination of a body. They will be instructed on physical evidence, with particular emphasis on; the types, preservation, recovery, procedures for collection of biological and non-biological evidence. The GMPs will be taught the concept of trauma and its classification to enable them adequately describes wounds and determines if the traumatic event was

solely responsible for the death. The processes, principles of testing and the equipment used in forensic toxicology will be introduced to the GMPs. This will include topics such as; forensic toxicology, tissues to be collected, and specimen containers.

## Discussion

Like many other developing countries in Southern Africa, Zambia has a shortage of pathologists who perform forensic autopsies. This situation is not envisioned to improve in the foreseeable future due to resource constraints. The proposed model is adopted from the practice of our clinical colleagues who have orientated community birth attendants to bridge the gap of a lack of midwives in developing countries. We believe that this model is feasible and will improve accessibility to quality forensic autopsy services, given the legal framework in place to support MLDI supervision. We acknowledge that GMPs cannot be trained in forensic pathology through CMEs; however, with orientation and oversight by the OSFP, categorized deaths may be investigated adequately.

Forensic pathologists around the world have argued that GMPs lack the necessary knowledge and skills to conduct forensic autopsies. However, FPs who practices in developing countries knows that orientated GMPs are indispensable in resource-limited countries like Zambia. Any attempt to abandon the integration of oriented GMPs to conduct forensic autopsies in resource-poor settings creates the danger of having a huge backlog of medico-legal cases and over detention of the accused persons. Recommendations which suggest increasing the number of pathologists in the country are well placed but it will take time to achieve this given the limited resources in the country [1].

The OSFP has the capacity to orient GMPs in forensic autopsies as it conducts 2000 forensic autopsies per year in Lusaka according to OSFP records and has personnel trained in forensic pathology. Its close association to the University Teaching Hospitals (UTH), the University of Zambia, School of Medicine, Department of Pathology and Microbiology, and the Levy Mwanawasa Medical University gives the GMPs a favorable environment for education, research, and service delivery. This association gives the OSFP credibility to orient GMPs in forensic autopsies. It is encouraging that there is a legal framework for the regulation, training, and supervision of forensic autopsies in Zambia. The model will ride on the availability of GMPs who practice medicine in the districts and far-flung areas in Zambia to conduct forensic autopsies. GMPs thus MPs remain a feasible option in the administration of justice, public health and vital statistics given the lack of forensic pathologists.

## Conclusion

The model for medico-legal death investigations integrating orientated by general medical practitioners. The principles on which medico-legal death investigations with general medical practitioners is based on the course content of the continuing medical education in forensic autopsies. Even within pathology residencies, there may be a surprising lack of forensic pathology exposure. This is because most medical school pathology departments do not do forensic autopsies and so do not have forensic pathologists on board. Residents have stated that certain academic pathology instructors deliberately prevented them from pursuing careers in forensic pathology. If students are not introduced to forensic pathology, they are unaware of the options available and do not consider them. When students are exposed to the field, they are surprisingly drawn to it in large numbers. The National Association of Medical Examiners (NAME) is attempting to raise awareness.

In the United States, autopsies are not compensated, and the number of necessary autopsies "performed" by pathology residents has declined, as has the participation requirement, which has been reduced to passive observation. This, too, diverts attention from exposure and training for a career in forensic pathology.

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