Death Investigation and Forensic Medicine in South Africa: Historical Perspectives, Status Quo, and Quo Vadis?

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Introduction

South Africa is burdened by both an exceptionally high crude death rate and a very high non-natural death rate. Efficient death investigation may greatly aid in identifying and addressing public health issues, while also being a prerequisite for the administration of justice. To improve the quality and consistency of death investigation in a country or region, it will help to have an understanding of relevant historical developments as well as the current sociopolitical, legislative, and organizational perspectives which may shape and underpin the forensic medical and scientific investigation of death. This review aims to provide the reader with some insights in this regard.

Colonial Legal Medicine

Recorded history pertaining to the southernmost part of Africa dates back to the writings of the first European mariner–explorer Bartolomeu Diaz, a Portuguese nobleman who rounded the Cape in 1488. Although Diaz sailed only as far as the modern-day Fish River in the Eastern Cape, he paved the way for Vasco Da Gama, another Portuguese mariner who would become the first European to reach the lucrative spice markets of India and the East by sea. Trade between Europe and the East via this route continued to grow, but it took another 150 years before a permanent European settlement was established in what was to become Cape Town. In 1652, Jan van Riebeeck, a merchant of the Dutch East India Company (DEIC), arrived—with his wife and children—in Table Bay from Texel in the Netherlands in order to set up a refueling station for merchant ships on this route. Interestingly, van Riebeeck had joined the DEIC as an assistant surgeon more than a decade earlier, having acquired his barber-surgeon skills from a guild in the Netherlands. For the next 150 years, the Dutch strengthened their position in the Cape, establishing *inter alia* a Roman-Dutch legal system and entrenching what was to become the basis of modern day South African common law. In 1795, however, the British took possession of the Cape and essentially held colonial power there for the next century until 1910 when, following the Anglo-Boer Wars, the Union of South Africa was established, incorporating the provinces of the Cape of Good Hope, the Orange Free State, Natal and Transvaal (1).

Although medical schools had begun to flourish in the Netherlands in the 17th century, the qualifications of the earliest medical practitioners who were deployed at the Cape were not diligently scrutinized. More specifically, relatively little is known about the forensic medical expertise of these early practitioners in the Cape or about the scope of their medicolegal duties, as there are limited contemporaneous records upon which we can draw. Prior to entering practice in the Cape (usually within the service of the DEIC), the surgeon would take the prescribed oath (as was the custom in Holland), *inter alia* undertaking to ascertain (before treating a patient who may have suffered an injury or assault) the names of the patient and his assailant and to report this to the presiding officer. Surgeons would also be called upon to

inspect the bodies of persons who had died from non-natural causes and to record the number and nature of wounds and marks on the body (2).

A specific example of such duties is contained in a report which served before court in 1660, pertaining to a postmortem examination which had been carried out upon the body of a boatswain's mate, as prepared and collectively signed by the Senior Ship's Surgeon (P Chevalier): "Having been requested by Mr van Riebeeck to report my examination on the body of the boatswain's mate, made in the presence of the Fiscal and the surgeon Pieter van Clinckenbergh, I beg to state that the jugular vein and carotid artery (*vena jugeloere en aortery carotides*) were severed; death ensued from loss of blood. The junior surgeon, Pieter van Meerhoff, is of the same opinion." It is interesting to note that the young surgeon here mentioned, Pieter van Meerhoff, will probably best be remembered in South African history for the fact that he was the first European at the Cape to marry a native, when in 1664 he took for his bride the daughter of one of the leaders of the Indigenous inhabitants, a young girl who was to gain some measure of fame as "Eva van de. Kaap" (and who is said to have been the first member of her race to profess Christianity). Sadly, the surgeon Pieter van Meerhoff was murdered while on expedition in service of the DEIC by native inhabitants of Madagascar, some 3 years later (2).

After the British superseded the Dutch as the colonial masters of the Cape (1795), it is likely that the Dutch merchant-surgeons and physicians (both those in the employ of the DEIC and those who by the late 1700s were plying their trade/profession as free burghers of the Cape and in the hinterland) were supplemented and in part replaced (especially those in official positions) by military surgeons of the British colonial forces, with some notable figures such as Dr James Miranda Stuart Barry (1795-1865) making substantial contributions to health care delivery and the organization of health services. Dr Barry had arrived at the Cape in 1815, having qualified as a medical doctor in Edinburgh in 1812. The clinical and organizational skills of Dr Barry soon led to his appointment as Surgeon-General in the Cape. Interestingly, it was only discovered upon the death of Dr Barry that she was a woman making her the first qualified female medical doctor in the British realm! (3) Moreover, the enigmatic Dr James Barry is also credited with having performed the first successful, caesarean section—where both the mother (a Mrs Munnik) and infant survived the procedure—in the British Commonwealth. Out of gratitude, the infant thus born was christened as James Barry Munnik. Equally interesting is that a century later, the grandson of the infant who had thus been brought into the world became the Prime Minister of South Africa (James Barry Munnik Hertzog)! (4)

Twentieth Century Medicolegal Practice

By 1910, the common law of South Africa ("…from Cape Point to the Zambesi") was that of Roman Dutch law, modified by local judicial decisions and institutes. However, statutory law which had largely come from England had become firmly established (5). These statutes included, for example, the Inquests (Death) Act of 1875 and the Fire Inquests Act of 1883 of the Cape of Good Hope, as well as the 1884 Fire Inquests Law of Natal. It is worth noting that the office or title of "coroner" was never introduced or established in South Africa. It would appear that the responsibilities and discretion pertaining to the medicolegal investigation of death were instead vested in magistrates. As described by Kitchin in 1913, a magistrate was a civil servant and appointment to that position did not require formal legal training or a qualification and in fact "…only occasionally is a legal practitioner appointed to this post" (5).

The law pertaining to the medicolegal investigation of death was first standardized in South Africa with the promulgation of the Inquests Act (Act no. 12 of 1919). This law was later repealed and replaced by the Inquests Act of 1959 (Act 58 of 1959). The role of the magistrate in directing the medicolegal investigation of death (in persons who had allegedly died from other than natural causes) was clearly set out in Section 3 of the Inquests Act of 1959, which read as follows: "If the body of such a person is available, any magistrate to whom the death is reported shall, if he deems it expedient in the interests of justice, cause it to be examined by the district surgeon or any other medical practitioner…" From this, it is clear that the medicolegal postmortem examination (including autopsy) was subject to the prior instruction and authorization of the magistrate and could in fact not be initiated and/or performed by a district surgeon or any other medical practitioner, without the prior knowledge and consent of the magistrate.

Thus, at that stage, the discretion and initiative in respect of conducting a medicolegal postmortem examination in a particular case lay with a civil servant who was neither a medical nor a legal practitioner. A very important (but rather unheralded) amendment to the Inquests Act of 1959 followed however, with the promulgation of the Inquests Amendment Act of 1991 (Act no.8 of 1991), resulting in the legislation as it still stands today: "If the body of a person who has allegedly died from other than natural causes is available, it shall be examined by the district surgeon or any other medical practitioner, who may, if he deems it necessary for the purpose of ascertaining with greater certainty the cause of death, make or cause to be made an examination of any internal organ or any part or any of the contents of the body, or of any other substance or thing" (6). It is clear that this amendment introduced a very important and fundamental shift, making it a direct statutory prescription that in all cases of alleged unnatural death, a medicolegal postmortem examination must be undertaken by a medical practitioner. Importantly, not only is a forensic medical practitioner thus given a direct mandate to perform a medicolegal postmortem examination, but such mandate extends to include (at the discretion of the medical practitioner) an examination of any organ, tissue, or fluid in the body "…or of any other substance or thing"—thus vesting a truly broad and encompassing authority and responsibility with the forensic medical practitioner. It may thus well be argued that Section of the Inquests Act, as it reads at present, had *de facto* established a "Medical Examiner" system of death investigation in South Africa, licensing the forensic medical practitioner to do or investigate such a death by whatever means or process in order to establish the cause of death with greater certainty.

Indeed, the legislative framework pertaining to the medicolegal investigation of death which had been established in South Africa early in the 20th century thereafter also prevailed in various other southern African states, including those of Namibia (then South West Africa, under the administrative control of South Africa), Swaziland, Botswana, Lesotho, and Southern and Northern Rhodesia. However, fundamentally different approaches and legislative frameworks existed in other southern and central African territories (including Angola, Mozambique, and the Congo), which fell under the dominion of other continental European colonial powers, such as Portugal, France, and Germany.

The Inquests Act further makes it obligatory for every person who has reason to believe that another person has died of other than natural causes, to report this to the police, who in turn are then obliged to initiate an investigation into the circumstances surrounding such a death. In cases where it is apparent (on the basis of the initial police investigation and/or medicolegal postmortem examination) that a crime has (or may have) been committed, a culpable homicide or murder docket will be opened by the police and the Director of Public

Prosecutions (DPP) may then exercise his/her prerogative to institute criminal prosecution. However, in cases where the cause, manner, or circumstance of death is not initially clear, an inquest docket will be opened by the police and an investigation launched into the circumstances surrounding the death. Over and above the medicolegal postmortem examination, various other parties including police experts (e.g., crime scene and ballistics experts) and biomedical scientists may then participate or contribute to such an investigation. Upon completion of the latter, the docket will be handed to the DPP for consideration of prosecution in cases where it is apparent that there may have been criminal actions. Alternatively, in cases where the cause and/or circumstance of death are unclear and where criminal actions are not immediately apparent, the docket will be presented to the inquest magistrate for further deliberation. This may culminate in a "paper inquest" (administrative decision taken by the magistrate) or in a "formal" inquest (comprising legal proceedings in an open court, providing all interested parties with an opportunity to be involved—with or without legal representation).

It then remains the final responsibility of the magistrate (in terms of Section 16 of the Act) to make a finding "as to whether the death was brought about by any act or omission prima facie involving or amounting to an offence on the part of any person." Although the magistrate is therefore not formally charged to make a finding as to the specific *manner of death* (homicide, suicide, accident, or natural causes), it is clear that the finding of the magistrate will nonetheless serve to direct the further attention and actions of the DPP based on these categories of manner of death.

Other statutes that play an important role in defining the legal landscape pertaining to the medicolegal investigation of death in South Africa include the provisions of the Criminal Procedure Act of 1977, the Registration of Births and Deaths Act of 1992, the National Health Act of 2003, and the Health Professions Act of 1974. In terms of the Registration of Births and Deaths Act, a medical practitioner who is convinced that a patient had died of natural causes may issue a certificate to that effect, stating the cause of death which would allow for the registration of the death and subsequent burial/disposal of the remains. However, if the medical practitioner is not in a position to issue such a certificate confirming a natural cause of death, he/she must report the death (in terms of the Inquests Act) to the police for further investigation (7). Section 56 of the Health Professions Act of 1974 furthermore directs that the death of a person who dies while undergoing a medical procedure or where such a medical procedure has caused or contributed to the death of the patient (so-called "procedure-related deaths") cannot be deemed to be a death due to natural causes—and must be investigated in terms of the Inquests Act (8).

In terms of the Regulations Regarding the Rendering of Forensic Pathology Services (promulgated in 2008 in terms of the National Health Act of 2004), unnatural deaths are specifically defined to include four categories or circumstances of death: those which are the result of physical or chemical influence(s); those which are due to conditions which otherwise would constitute natural cause(s) of death, but where negligence may be implicated in the diagnosis or management of such conditions, resulting in the death of the patient; procedure-related deaths; and sudden, unexplained deaths (9). It is furthermore noteworthy that the above Regulations Regarding the Rendering of Forensic Pathology Services have further entrenched and expanded the elements of a medical examiner system in South Africa by providing, among other, the following statutory mandate and prescriptions pertaining to the medicolegal investigation of death: only medical practitioners who are specifically appointed and authorized thereto may perform medicolegal postmortem examinations;

medical practitioners and forensic officers are specifically authorized to attend death scenes and to obtain any information which may be relevant to the circumstances surrounding a (presumed or possible) unnatural death—by questioning of any individual, obtaining medical histories, taking custody of evidentiary material (such as drug paraphernalia and/or medication), and of course, performing the requisite medicolegal postmortem examination and/or any further special investigations which may be required in the discretion of the attending forensic medical practitioner. Although forensic medical practitioners are obliged to always be aware of financial considerations, there are essentially no restrictions on the number and nature of such special investigations and/or additional expertise which may be called upon. In practice, it is in reality only the availability and reliability (as well as validity) of such specialized support services or expertise (e.g., molecular biology, toxicology, electron microscopy, etc.) which would determine whether they are utilized or consulted. Indeed, the broad legal premises and provisions which underpin and define or direct the medicolegal investigation of death in South Africa may be considered to be almost unique—and very favorable, from a professional and scientific point of view. Unfortunately, despite this favorable platform, resource constraints and organizational/functional inefficiencies may however be responsible for what is overall still a suboptimal service.

District Surgeons

After its formation in 1910, the Union of South Africa was divided into magisterial districts, with each of these judicial districts having regional and district courts presided over by magistrates. Under British colonial rule across the empire, many medical practitioners had been drafted into service of the state as "civil surgeons" to perform *inter alia* medicolegal duties (10). In South Africa, these medical practitioners were known as—referred to as—"district surgeons" in South Africa. In addition, one or more medical practitioners were appointed by state health authorities as "district surgeons"—and compensated for their services on either a full-time or part-time basis essentially in order to render the following spectrum of medical services: medical care of the indigent and those in state institutions (including prisons and police cells), pre-employment medical assessment for purposes of entry into government service, medical "disability boarding," vaccinations and other/similar public health duties, and last but not least, clinical forensic medical services and the medicolegal investigation of death. With approximately 315 magisterial districts across the entire country—and as more than 1 district surgeon was often appointed in each district—it is clear that overall, a large number of medical practitioners were thus officially engaged in rendering forensic medical services nationwide.

The geographic and demographic profile of such magisterial districts varied greatly, some being sparsely populated and stretching across hundreds of kilometers, whilst others were geographically small and densely populated (including, for example, metropolitan districts such as those incorporating Cape Town, Johannesburg, and Pretoria). In the latter districts, medical practitioners were often appointed on a full-time basis to perform exclusively clinical forensic medical work or to render a medicolegal investigation of death service. In the earlier part of the 20th century, there were no specialist forensic pathologists, although a small handful of general pathologists were appointed as "state" or "government" pathologists, usually in the larger urban centers, to perform medicolegal autopsies. However, the vast majority of medicolegal autopsies across the country were conducted by general medical practitioners who held appointment as part-time district surgeons and who had, in most cases, no formal or postgraduate training in forensic medicine/pathology.

Because of the need for so many general medical practitioners to perform clinical forensic medical work and to conduct medicolegal autopsies, the subject of forensic medicine had (by the latter half of the 20th century) become well established as a curriculum component in the undergraduate programs of all medical schools in the country. All medical students attended—and indeed, often performed—forensic medical autopsies as part of their undergraduate training, usually spanning a number of weeks in the fourth or fifth year of the 6-year medical training program. To this day, forensic medicine forms an integral and requisite component of the undergraduate medical program at all medical schools in South Africa—and students to this day routinely attend medicolegal autopsy sessions at state forensic mortuaries. All undergraduate and postgraduate medical training programs in South Africa are accredited by the statutory professional body, the Health Professions Council of South Africa (HPCSA—formerly known as the South African Medical and Dental Council [SAMDC]). It is still a requirement for undergraduate medical programs to incorporate formal training in the field of forensic medicine in order to receive accreditation for the program with the HPCSA.

Forensic Pathology Takes Shape

The first formal professional grouping of pathologists in South Africa was that of the Transvaal Society of Pathologists, formed in the early 1950s, followed by the formation of the South African Society of Pathologists in 1960. At the time, there was only one category of specialist registration for pathologists with the SAMDC, with no official separation between the disciplines of histopathology, chemical pathology, forensic pathology, microbiology, or hematology. Indeed, there was then no College of Pathologists in the British Commonwealth, and it was not unusual for nonmedically qualified laboratory scientists to be incorporated in this grouping. In 1962, the SASP affiliated with the International Council of Societies of Pathology in Zurich, Switzerland and in 1966 also affiliated with the International Academy of Pathology (11). In the late1960s, the first formal postgraduate program aimed at training specialist forensic pathologists was introduced at medical schools in South Africa—including those of Pretoria, Stellenbosch, and Cape Town. Trainee pathologists known as registrars (residents) were appointed in SAMDC-approved training posts and followed a prescribed postgraduate training program for a minimum of 4 years (full time service)—in most cases (3) comprising 1 year of general pathology training (bacteriology, parasitology, virology, immunology, chemical pathology, and hematology), 1 year of anatomical/histopathology rotation, and 2 years of dedicated (in-service) forensic pathology training.

The first formal text book on forensic medicine and pathology to be published in South Africa was that of Rhodes, Gordon, and Turner from Cape Town in 1942 (12). In 1975, the respected publication of Gordon and Shapiro appeared, followed in 1984 by the first Afrikaans text book on forensic medicine/pathology and death investigation (Shwär, Olivier and Loubser)—later also translated into English (13 -15).

The first specialist forensic pathologists were registered with the SAMDC in the early1970s, and by the late 1980s, there were between 30 and 40 specialist forensic pathologists on the register of the HPCSA, the latter body having been created by the Health Professions Act of 1974, replacing the previous SAMDC. Today, the majority of postgraduate training programs in forensic pathology, leading to eligibility to sit for the Fellowship of the College of Forensic Pathology (of the South African Colleges of Medicine), require a minimum training period of 3 years in-service residency training in forensic pathology plus 1 year in anatomical

pathology (thus, a minimum postgraduate training period of 4 years in full-time service). In addition, it is a prescribed requirement for all fellows, over and above passing the various fellowship examinations, to prepare a research dissertation (subject to external examination) and/or to publish an article in a peer-reviewed scientific journal before they can be licensed/registered with the HPCSA as specialist forensic pathologists.

After the early years of relatively rapid growth in the numbers of specialist forensic pathologists in South Africa, there has however been a substantial slowing in the production rates. Although there are currently in total between 80 and 90 specialist forensic pathologists on the HPCSA register, many of these are not actively practicing in the field of forensic pathology, having moved into other (often more lucrative) pathology disciplines—or having left the troubled and turbulent sociopolitical scenario in South Africa to practice (mostly) in other Commonwealth countries such as Australia, New Zealand, Canada, and the United Kingdom.

Forensic Pathology in a State of Apartheid

The political dispensation which grew out of (Dutch and British) colonial occupation and crystallized into the apartheid policy of separate development also impacted the medical profession—in multiple ways. By the 1960s, South Africa had become a virtual police state which was very much under the control of state security agencies, the police, and military leaders. Civilian agencies often did not receive the same level of budgetary support, thus paving the way in the 1960s and 1970s for the establishment of (*inter alia*) large and well-equipped police forensic laboratories. Many of the scientific services and functionalities that were previously rendered by state health and other civilian scientific agencies were then taken over or incorporated, or reduplicated, within the richly resourced police forensic laboratories. Indeed, all state/government (forensic) mortuaries fell under the jurisdiction, management, and control (including budgetary allocation) of the South African Police Services (SAPS)—such facilities very often being physically located on the premises of police stations.

All staff serving within the government mortuaries (with the exception of medical doctors themselves) were in the employ of the SAPS. The police were tasked with attending death scenes and collecting bodies, transporting these to the government mortuaries (usually in police "vans") and performing all administrative functions pertaining to the admission and storage of bodies at the mortuaries. Police officers (deployed at medicolegal mortuaries on a full-time basis as forensic assistants) then presented the bodies to pathologists or district surgeons (in the employ of the state department of health) who would be responsible for conducting the medicolegal autopsies and drawing up the relevant reports. These same mortuary-based police officers would in fact physically assist the district surgeons in performing the medicolegal autopsies under the supervision and guidance of the district surgeon—also assisting with initial undressing, evidence collection, photography, and indeed opening of the body and evisceration of organs.

Importantly, all administrative and other/related functionalities surrounding such medicolegal postmortem activities, such as identification procedures, the receipt, sealing, and dispatch of specimens, administrative case management, and archiving of reports, fell within the realm of responsibility of the mortuary-based police officers—in some cases with the assistance of civilians who were employed by the police in administrative capacities, for example, typists, filing clerks, cleaners, and so on. Since the statutory investigation into non-natural deaths

resided within the ambit of the police service, it may have seemed (at the time) to be logical and appropriate that such state mortuaries should be operated, staffed, and managed by police. In the vast majority of cases, there was probably no reason for concern regarding the proximity and intimate involvement of the police in these investigations.

A Police State

From the 1950s, there was an ever-increasing resistance and civil unrest among disenfranchised population groups, leading to progressively greater—and harsher—responses by state authorities, including military and police agencies. Those persons and parties deemed by the state to constitute a threat to national safety and security were targeted and often apprehended, incarcerated, and interrogated. There can be little doubt that the police and related state security agencies—such as the notorious Bureau of State Security (with the ironic acronym BOSS)—were complicit in the deaths of many individuals who may have been identified or branded as enemies of the state or even as terrorists. In the 1960s and 70s, there were indeed a number of high-profile cases involving the deaths of political prisoners or civilian opponents of the state. Although relatively few of these cases progressed to criminal prosecution, a number of formal inquests were indeed held in order to establish the facts and circumstances surrounding the deaths of such individuals. It may well be said that at least some of these high-profile inquests ultimately served to highlight the potential complicity or role of the police and other state agencies, not only in causing the demise of individuals but also in perhaps undermining the course of justice by obfuscating the investigation. Not least of these cases would have been that of political activist Bantu Stephen Biko, a medical student and leader of the Black Consciousness Movement, who was arrested by the security agencies.

Biko suffered a severe head injury (amongst other injuries) while in police detention in 1977—which injury was apparently not diagnosed or treated by the clinicians (district surgeons) who attended to him at the time (in his holding cell), resulting in his death some days later. At the subsequent highly publicized formal inquest proceedings, the presiding magistrate found that no one could be held criminally accountable for Steve Biko's death—accepting the version of the police officers who were involved and who had testified that Biko had probably sustained the head injury accidentally during an altercation or scuffle with the police. An international outcry and serious diplomatic and economic consequences and sanctions followed for the South African government, in the wake of that decision. Subsequent investigations revealed that there may have been at least 70 to 80 such "deaths in custody." Although a few of these victims were provided the same high level of investigation and media coverage (such as political activists Ahmed Timol and Dr Neil Aggett), many more died in obscurity, with little or no subsequent (public) mention or interrogation of the circumstances surrounding their deaths, or formal inquest proceedings or criminal charges against those who may have been implicated in causing their demise.

Post-Apartheid South Africa

After the fall of the apartheid regime and the introduction of the first democratic government in South Africa in 1994, the hearings of the Truth and Reconciliation Commission (TRC) exposed a number of cases where the state police agencies (and rogue individuals or units) had been involved and implicated in the death of political activists and detainees—some of which clearly showed (in retrospect) that individuals had died during periods of interrogation, involving the use of electric torture and other methods, such as "tubing." The latter involved

the placing of the inner soft rubber tube of the tire of an automobile wheel over the mouth and nose openings of the victim, resulting in oxygen deprivation and, in some cases, a fatal outcome—but which left minimal (or no specific or discernible) autopsy findings, thus often precluding pathologists or forensic medical practitioners from establishing the actual cause of death. The highly problematic issues surrounding the medicolegal investigation of deaths in detention were clearly highlighted at a number of these inquests and of course the TRC hearings: in many cases, police alleged that the victims had died as a result of suicidal hanging, by jumping from high level floors in police stations, or by drowning while trying to escape by swimming across dams or rivers in a bid to escape their captors. In such cases, even a meticulous autopsy by an experienced practitioner may not have helped to definitively establish with certainty the circumstances or true cause/mechanism of death.

The revelations of the TRC and the confirmed complicity of police and other state agencies in the deaths of individuals who may have been targeted or branded as enemies of the state made it clear that a system of medicolegal investigation of death where the perpetrators (state security or police operatives) were from the same agency or department could not be justified. Inevitably, suspicion as to the independence, integrity, and thoroughness of the investigation would arise, as the police officers (at mortuaries, at least) would have had intimate and contemporaneous knowledge of (medicolegal) investigative proceedings and findings in such fatal outcome cases—as they would also potentially have the opportunity to influence or obfuscate the investigations and outcome by interfering with the identification, collection, preservation/integrity, and further management of evidentiary material (including the bodies and possessions of deceased individuals, as well as, for example, tissue and serum samples).

Although district surgeons and state pathologists were never in the employ of the police, it is clear that a close working relationship would likely develop over time between such state pathologists/medical practitioners and the mortuary police officers and management structures, working together on a daily basis—with the potential at least, for dual loyalties and lack of independence, to develop. Whether indeed there were material instances of (forensic) medical practitioners colluding with police officers or contriving to falsify, misrepresent, or misinterpret autopsy findings is hard to say. The author is not aware of specific cases where such professional misconduct, misrepresentation, or criminal activity by a medical practitioner in respect of forensic duties was identified or punished by the courts or by disciplinary structures of the Health Professions Council.

The real or alleged involvement of the police in influencing, interfering, or otherwise befuddling the medicolegal investigation of certain deaths (or at least, the perception that they had opportunity to do so) had multiple consequences in the early post-apartheid dispensation: one of these was the introduction of the civilian police watchdog agency, the Independent Complaints Directorate (created by statute in the SA Police Services Act, Act no. 68 of 1995), and which was subsequently replaced by the Independent Police Investigative Directorate (IPID Act, Act 1 of 2011). This agency was mandated to oversee and take control of all investigations where police officers may be implicated in any (possible) criminal activity (e.g., during pursuit and arrest operations, death of a person while in police custody, or detention or even involving off-duty police officers in a civilian setting).

In addition, in the late 1980s and early 1990s, some forensic pathologists began to advocate the reorganization of medicolegal investigation of death services, primarily aimed at establishing this as a stand-alone, scientific and professional service—and specifically one

that should be quite independent of other state agencies (especially prosecutorial agencies, such as the Department of Justice or police). Various advisory reports were then submitted to the National Department of Health by concerned forensic pathologists and others, requesting not only a repositioning and reorganization of forensic medical services but also for a thorough audit to be undertaken of the legislative framework, physical/fiscal resources, and overall functionalities related to death investigation in South Africa. Of course, the new African National Congress-led government, which came into power in 1994, had many priority projects and objectives for reorganizing state structures and government services—and medicolegal investigation of death services was not high on this priority list. In time, however, the need for such reorganization was recognized and project managers were appointed and a steering committee was formed (with representation from all provincial health authorities, but also incorporating representation from the office of the National Prosecuting Authority, the South African Military Health Services, the SAPS, and academic institutions/medical schools). The committee had a dual mandate: on the one hand, to undertake an audit of existing facilities and functionalities, while on the other hand, preparing proposals for the reorganization of the medicolegal investigation of death in South Africa.

In 2004, the newly promulgated National Health Act (Act 61 of 2003) came into effect—with one of its provisions being that henceforth every provincial health department was to be responsible for providing a Forensic Pathology Service (FPS) (16). This paved the way for the transfer of medicolegal death investigation services from the SAPS to provincial health authorities. In 2006, all medicolegal mortuaries in the country thus passed formally from the SAPS to the provincial health departments, who were henceforth to administer and manage all medicolegal mortuary facilities, human resources, and related functionalities. A revised (and markedly improved) ring-fenced budget for forensic pathology services was approved by the national treasury—which provided not only for the systematic improvement of physical facilities (among others, by separating or moving such government mortuaries from police stations, where possible, and by building new mortuaries to replace the many dilapidated and old facilities which had been administered by SAPS). In terms of the Regulations Regarding the Rendering of Forensic Pathology Services, gazetted in 2007, a National Forensic Pathology Service Committee (NFPSC) was to be formed and appointed to assist and advise the National Minister of Health in implementing and providing FPS across the country. These regulations were first promulgated in 2008 (9). These regulations were revised and again gazetted in 2018 under the guidance of the NFPSC.

Current State: A Revised and Improved Dispensation for Forensic Medicine and Pathology

The NFPSC did not become fully functional until a number of years after the Regulations first came into effect, due to delays in formalizing the appointment of committee members by the Ministry of Health. However, a preliminary advisory committee had met on a regular basis to discuss improvements to the death investigation process, under the auspices of the National Department of Health. In 2007, the provisional committee had drafted a "Code of Guidelines for the Practice of Forensic Pathology in South Africa," which served as an interim guide on standard operating procedures and administrative framework for the rendering of such a service (17).

In 2015, the National Minister of Health formally appointed the first duly constituted NFPSC, which thereafter met on a regular basis in order to advise the minister on matters pertaining to policy, as well as norms, standards, and guidelines pertaining to all matters related to the

medicolegal investigation of death. The initial objectives and priorities identified by the NFPSC were to 1) revise and amend the FPS Regulations, 2) to assess and advise on improvements pertaining to the rendering of forensic toxicology services (in particular also, on ways to address the backlog of cases at the state forensic chemistry/toxicology laboratories), 3) to review the under- and postgraduate training programs and curricula in forensic medicine and pathology at medical schools, 4) to advise on the scope of practice, formal training requirements, and professional registration of vocationally trained medicolegal investigators, forensic officers, and autopsy assistants, and 5) to prepare a memorandum of understanding to clarify and define the relationship and respective functionalities of the SAPS and FPS in providing a modern medicolegal investigation of death service. Progress on each of these matters has unfortunately been very slow—and understandably, dissatisfaction amongst both forensic support staff and medical professionals may at present be at an all-time low. This may perhaps primarily be so because there had been such (legitimately) high expectations for progress and improvement in the spheres of both personal development and career enhancement as well as the overall enrichment of this service to promote the administration of justice in society.

As is the case with so many other countries, the tidal wave of allegations of negligence in clinical practice and associated medical malpractice litigation has impacted massively on the profession in South Africa: medical practitioners in the private sector are buckling under the burden of ever-increasing annual indemnity insurance premiums, while provincial health budgets are being crippled by defense costs and pay-outs to successful litigants who have suffered harm in state hospitals. In 2018, government reported that it had paid out R43 billion (R43,000,000,000-00 or approximately US$3,000,000,000-00) during 2017 in settling legal claims arising from medical malpractice and negligence at state hospitals (17). Clearly, this would have had a massive negative impact on health care delivery by curtailing expenditure on otherwise essential health care services. The much publicized Esidimeni debacle pertaining to the injudicious and inappropriate discharge of a large number of mentally handicapped patients from a private health care facility should be cited here. Hundreds of these patients (for whom the state had a duty of care) were being treated at a private mental health care hospital in terms of a contract between the state and the private health care provider. However, in order to save costs, hospital and the Provincial Department of Health (at short notice and against the advice of various parties) decided in mid-2015 to terminate the contract and to relocate the patients to multiple smaller, often unlicensed and poorly staffed or equipped centers. Sadly, this resulted in the premature and often undignified demise of some 150 of these most vulnerable patients within a matter of months of their removal from the private special care facility. A hugely emotional saga followed for family members, with a national outcry in the media—and with disastrous reputational harm for the state health authorities. This tragedy has been referred to as “the greatest cause of human rights violations since democracy” in South Africa and brings to the fore a further critical consideration in terms of FPS delivery (18). The perceived allegiance between state institutions (and personnel within the same state department) and the opportunity for either undermining effective investigation or possible complicity in covering up findings of fatal outcome medical negligence at state hospitals. This has driven the media, members of the public, and legal practitioners to question the independence and reliability of the investigation and even forensic reports in such cases (19). The situation is thus now indeed analogous to the dilemma which beset the police some decades ago, when medicolegal mortuaries resided under their care. It may therefore now be argued with equal validity that there must be a clear separation (in terms of overall management and budgetary control) of the agency responsible for such investigations (i.e., FPS) from state health care providers. When there is a clearly

visible and declared independence and autonomy of investigative agencies (such as coroners and medical examiners), society is provided with the greatest assurance that the scientific forensic investigative service would be objective and impartial. The establishment of a distinct and autonomous national state forensic pathology entity, similar in nature to agencies such as the Office of the Public Protector, the Auditor General, and the Health Ombudsman, must therefore now be a prime consideration for those who truly seek justice and to serve the best interests of society. The costs to be associated with such a National Forensic Pathology Service agency can now be reliably calculated (based on actual expenditures incurred over the last decade), and with a good governance model involving civilian and technical oversight of the service, very little meritorious argument against such a proposal can be raised.

In the Western Cape Province, great progress continues to be made in the delivery of FPS, driven by dedicated professionals and managers, within an overall provincial framework of good planning and judicious expenditure. The soon to be opened world class institute of forensic medicine and science in Cape Town will no doubt serve to attract young doctors and scientists into the field and will be of immense benefit to that violence-stricken society. Hopefully, other provinces and centers will also sooner rather than later achieve similar outcomes and successes. Indeed, another very large and modern forensic medical/pathology facility is under construction in Johannesburg and this too will hugely aid in service delivery in the very populous Gauteng Province. But if these centers of excellence are not supported and buttressed by other organizational and operational improvements on a national scale, death investigation in this country will sadly not materially improve, but rather deteriorate.

Thus, despite pockets of excellence and an overall legal framework which is very favorable for the rendering of a modern medicolegal death investigation service, practical issues frustrate and compromise actual service delivery in South Africa—issues which can readily be addressed. Organizational shortcomings and managerial inefficiencies, perceived lack of independence, and potential for complicity are millstones around the neck of the service. Sadly, South Africa is today an inherently violent society: the reasons for this are probably complex and multifactorial. Extremely high rates of interpersonal violence are experienced across the country, as reflected in annual statistics of rape and other forms of sexual assault, aggravated assault and homicide—and indeed suicide. During the previous political era, district surgeons became highly skilled and very experienced, not only in the assessment of victims (and alleged perpetrators), as they were called upon to perform hundreds such examinations annually. For many district surgeons, this was their exclusive area of responsibility and expertise, specializing in the clinical evaluation of victims (and alleged perpetrators) of physical and sexual assault and child and elder abuse, driving under the influence and various forms of intoxication. Whenever such alleged crimes were reported to the police, the latter would indeed escort the complainant or victim to a state hospital or more commonly to dedicated medicolegal clinics where district surgeons would be in attendance or called to assess the victims.

Indeed, in many of the larger metropolitan centers, such medicolegal offices or centers were established on the same physical premises as large government mortuaries, the latter complexes subsequently becoming known as “medicolegal laboratories.” District surgeon (equivalent to “police surgeons” in other parts of the Commonwealth) would then complete a structured report pertaining to his/her findings on the so-called “J88” form, setting out the detail of the clinical findings and conclusions of the practitioner as to the likely circumstances and causes of the injuries or findings—and with the completed report being incorporated into the SAPS criminal investigation docket. It is important to note that in the vast majority of

instances, district surgeons were essentially career appointments, holding office for many years and performing hundreds of examinations annually. These clinicians also testified on a regular basis in courts of law and thus became comfortable in that particular environment—an important attribute, as many doctors who do not regularly participate in legal proceedings can readily become intimidated and even flustered in an adversarial legal arena.

As a result of the perceived inadequacies pertaining to medicolegal (and other) services as rendered by district surgeons during the previous political era, the new political dispensation in the late 1990s abolished this official name and functionality within the state health system. Unfortunately, this step resulted in the discharge of a vast number of highly experienced medicolegal practitioners—where after a significant number of these doctors then left South Africa, taking up employment in other countries where their practical skills and expertise were highly valued. In lieu of the district surgeon system, health authorities then directed that essentially all clinical forensic medical services were henceforth to be provided at district and regional state hospitals by those clinicians who would be in regular attendance at emergency and casualty wards. The SAPS officers would then bring complainants and victims to such hospitals for assessment, treatment, and the completion of a medicolegal report. Not only did this burden the emergency medical services even more (considering also that in many cases these victims were not seriously injured to the extent that they actually required emergency medical treatment or intervention but rather had the need for proper documentation of injuries and for the collection of evidentiary material for later legal proceedings).

The most problematic consequence of the abolition of district surgeons was however the fact that the evaluation of patients (victims) and perpetrators was in future to be routinely undertaken by emergency medical officers, who (in state hospitals) were most often very junior medical practitioners, typically serving in such facilities only for a brief, transient period as interns, community service doctors or residents in training, or sessional doctors serving on a part-time or rotation basis only. Very few of these junior practitioners built up substantive experience in medicolegal matters and were seldom supervised by senior or experienced practitioners in providing their clinical medicolegal evaluations—even less so when providing subsequent testimony in court. Furthermore, most of these young practitioners were very negatively disposed toward the management of such victims, not at least because of the trepidation of becoming involved in later legal proceedings, which would often be confrontational and time-consuming. Prosecutors and investigating officers also found it very difficult to trace doctors a year or two later when the matter came to trial, as doctors had often in the interim been transferred to other parts of the country (or may even have gone abroad). These developments had a very negative impact on the presentation of expert medical evidence at trial proceedings. Those few doctors who did end up testifying in courts of law were often bullied and intimidated by antagonistic defense lawyers who exploited—and indeed delighted in exposing—the shortcomings in clinical forensic expertise by those who had attended to victims. An almost complete collapse of clinical medicolegal services ensued, with thousands of cases of physical and sexual assault, as well as driving under the influence and child abuse, being thus prejudiced and struck from court rolls. In an attempt to provide additional support or supplementary expertise, an attempt was made to build clinical forensic medical expertise among nurse practitioners, with international experts like Prof Virginia Lynch of the United States being invited to present courses in South Africa. Sadly, this program met with very little success, and save for perhaps one or two remaining centers of clinical competence, the contribution of nurse practitioners to rendering forensic medical services has probably not had a major positive impact in this domain in South Africa.

More recently, the (re-)introduction of dedicated medicolegal centers of expertise (located usually at a few large state hospitals) has helped to (re)build some capacity in the evaluation of sexual assault and child abuse victims, but these are few and far between and do not adequately serve the huge needs of the criminal justice system and of society. It is clear that a substantive rethink of the delivery of clinical forensic medical services is required: lack of success in the prosecution of cases of alleged rape and assault due to minimal contribution of scientific evidence and medical testimony must be recognized and rectified. Indeed, the need for a revision and enhancement of clinical forensic medical services was appreciated more than decade ago, when it was advocated that an expert advisory committee be appointed to serve the National Minister/Department of Health in this regard. The so-called National Clinical Forensic Medical Services Committee was created, but unfortunately, this committee is essentially still nonfunctional and has not substantially contributed to alleviating the problem. Forensic pathologists in South Africa have for some decades now advised that they cannot be seen as the custodians or providers of such services—and that clinical forensic medical services must be attended to by duly trained and accredited clinicians who work in this field on a regular basis, rather than by specialist forensic pathologists. At this stage, therefore, there is for the most part a clear and distinct separation of those medical practitioners who practice and render clinical forensic services to victims of assault, and so on, and those who engage in the medicolegal investigation of death.

Back to the Future

In order for there to be substantial progress in the rendering of forensic pathology services in South Africa in the coming years, it is essential that proactive and specific steps and initiatives now be taken to build on the definitive and very positive steps that were taken in removing medicolegal mortuaries from police oversight and control and in establishing a national advisory committee on FPS. A loss of momentum and morale now has the potential to undercut and undo much of the gains achieved between 2005 and 2015.

In the author's view, the single most significant and fruitful action would be to effect the organizational repositioning of FPS to become an independent state agency which is not aligned with or subservient to a specific government/ service department—but rather one that is duly governed by a clearly defined multidisciplinary authoritative structure (such as a board of governors or council, perhaps comprised of one or more judges, senior medical academics, representatives from the national prosecuting authority, forensic pathologists, and other forensic scientists) and which is managed by competent and experienced professionals and managers with a full understanding of the complexities and technicalities of this niche service. There are various existing state agencies that can serve as model or template for the implementation of such a proposal (including those of the National Health Laboratory Service and the Offices of the Auditor-General and Public Protector).

At present, few countries in the world are not experiencing a shortage of specialist forensic pathologists—a problem that has become particularly acute in the United States but also in Australia and a number of other countries, with South Africa no exception here. In order to properly serve the needs of our abnormally violent society, more than a hundred additional forensic pathologists are urgently required here. The irony is that most of those which we are producing are in fact following the already massive medical "brain drain" due to poor working environment and the perceived negative future prospects for medicine in South Africa (largely associated with the imminent advent of a national health system). Clearly then, a program should be implemented which would specifically seek to attract and facilitate

the training of forensic pathologists—and to then retain them by providing an optimal service delivery environment and favorable organizational dispensation. As head of a hybrid service/academic department with an active residency program, the author can state without reserve that there certainly is enough interest in forensic medicine among young medical graduates to satisfy the (forensic medical) needs of our society, if the above measures can be implemented. One specific measure that could be relatively easily introduced in order to attract and expose young colleagues to this discipline in South Africa would be to create 5 or more posts in each province for community service doctors (an obligatory postgraduate year of service for all medical practitioners) at larger facilities where they can be appropriately supervised.

Other measures which should—and could—be implemented in the immediate and short term in order to materially improve the rendering of FPS in South Africa would be to reestablish pathologists as senior line functionaries/managers within the service, in contrast with the current practice where they have effectively been sidelined and excluded from executive responsibilities and functions, stripped of the power to make material decisions. Unlike the American counterpart Chief Medical Examiner, the FPS Chief Specialist (forensic pathologist) has effectively no authority to appoint personnel, to authorize procurements, or to implement policy or procedure. Inevitably, frustration and conflict thus arise within the service.

Except for a few regional centers of excellence, where new and/or improved facilities have been built and where there are real efforts toward organizational development, there has unfortunately been very little overall progress and enhancement in FPS over the last decade. There are many dedicated forensic pathologists in South Africa, working hard under suboptimal circumstances to contribute to the administration of justice. However, most pathologists are so deeply immersed in day-to- day service delivery obligations that they have little opportunity or time to engage in lobbying for change or strategic management in order to improve the overall structures and delivery of a FPS in this country. Nonetheless, it is imperative that especially the younger generation of forensic pathologists become actively engaged in these activities in order to achieve the improvements that are necessary and indeed, attainable.

There is furthermore a critical requirement for the implementation of a quality control and audit program to review, monitor, and improve standards of service delivery across the board (and in particular, in regional and smaller centers where the lack of personnel, equipment, and other infrastructure, together with inadequate professional oversight, is common). Currently, there is no national or coordinated program or plan to introduce such professional and institutional quality review. Undoubtedly, this basic shortcoming will yet be exploited to the detriment of the administration of justice. It is imperative that there now be an effort to develop criteria—appropriate for the South African setting—which will aim at introducing prescribed standards for the building and maintenance of medicolegal mortuaries, equipment allocation, staffing norms, and training requirements for personnel as well as the introduction of standard operating procedures and the routine monitoring of all aspects of service delivery.

More than a decade ago, a fundamental shortcoming in the medicolegal investigation of death service in this country was identified in the form of a critical shortage of skilled analysts in state chemical/toxicology laboratories and insufficient or outdated laboratory facilities and equipment, as well as poor management and organizational control. Following intensive discourse and planning, some improvements have been introduced to alleviate and address

this problem, but unfortunately, a massive backlog of thousands of outstanding specimens (yet to be analyzed years after being collected from bodies) still burdens the service. Unless there is a dramatic improvement and practical, goal-orientated effort to implement a modern forensic toxicology service, forensic pathologists (as well as family members and the courts) will remain deprived of a critically important and indeed absolutely essential diagnostic pillar in death investigation.

Although there are inordinately high numbers of non-natural deaths in relation to the overall population in South Africa, the total number of admissions to medicolegal mortuaries in South Africa is relatively well known, constituting a "captive" population for which detailed records are created on an ongoing basis. Surprisingly, however, with the exception of the Western Cape Province, there is no coordinated or sustained regional or national initiative or program in order to capture these data for purposes of policy development and strategic planning or for resource allocation, let alone the implementation of preventative strategies in our society, based upon epidemiological profiles of death and injury so clearly seen by pathologists. Considering South Africa's well-developed infrastructure of mobile communications technology, abundance of expertise, and the availability of various cloud-based data collection and information management systems, it is remarkable that essentially all mortuary records in this country are still primarily paper-based.

Urgent efforts should be made to finalize the minimum training requirements, professional qualifications, and scope of practice of support staff working in the domain of medicolegal death investigation and forensic mortuaries. It is imperative that appropriately trained professionals and scientists (including medicolegal death investigators, similar to those who are now routinely deployed in coroner and medical examiner offices in the United States) be integrated into this service to supplement the skills of forensic pathologists and to enhance the quality of death investigation. For decades to come, there will be a critical shortage of forensic pathologists—but this can be substantively mitigated by the introduction of biomedical scientists and persons with appropriate investigative skills in this setting. A number of universities in South Africa are now offering graduate training programs in forensic and biomedical sciences, which would provide a superb reservoir from which to select such candidates and make appointments. The implementation of a (supervised) internship program for such graduates at larger medicolegal mortuaries, with the opportunity to subsequently register with the HPCSA as medical scientists and to be employed as death investigators or in-house scientists (as for example, anthropologists, toxicologists, molecular biologists, and crime scene analysts with appropriate practical exposure and understanding of the forensic landscape in South Africa), would certainly be a very strong incentive for many of these students.

In summary, forensic medicine and pathology in South Africa is (historically) a well-developed service with substantial infrastructure and a favorable legal framework—and with the capacity to train and produce enough competent specialist forensic pathologists and support scientists, even in the short term. The repositioning of medicolegal mortuaries, a favorable legal framework for death investigation, and the creation of a statutory advisory committee intended to improve FPS delivery have provided a platform from which great further improvements can be introduced. But lack of proactive high-level management and strategic planning in respect of improved organizational structures, the failure to make progress on human resource issues, and lack of quality control and introduction of operational standards will undermine and undo much of the good work which has been done since 1994. It is hoped that both senior managers and, in particular, the younger generation of forensic

pathologists will join hands and minds in taking this critical service to a higher level in South Africa in order to benefit this wonderful country and its people.

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