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# Towards ethical forensic practice: Undertaking research on biomaterials and applications for forensic science

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ABSTRACT

The article by Maseme, Gardner and Mahomed discusses the need for clarifications and amendments to South Africa's legal framework, particularly the Protection of Personal Information Act (POPIA), 4 of 2013, which governs broad consent for biobank research. The authors emphasise the importance of addressing conflicts between POPIA and the ethical standards stipulated by the Department of Health. The article calls for collaboration between the forensic science community and the Academy of Science of South Africa, to develop a uniform code of conduct, as per the requirements of POPIA. The authors stress the imperative of a DNA statistical population profile database for diverse representation in forensic science. The article highlights the significance of voluntary informed consent and compliance with ISO/IEC 17025 standards, with a view to mitigating potential risks and ethical concerns.

*Dear Editor-in-Chief of the Global Bioethics Journal*

In their article titled "Broad consent for biobank research in South Africa: Towards an enabling ethico-legal framework", Maseme, Gardner and Mahomed [1] raise essential questions for the forensic science community. Their observations deserve a more thorough discussion on whether the current enabling legal framework needs to be clarified and amended [1]. The Protection of Personal Information Act (POPIA), 4 of 2013, which grants broad permission to conduct biobank research, requires clarification, as the authors point out [2] This is especially true in respect of the health sector [3]. Other government agencies and science fields that gather biological samples from individuals and oversee biobanks to support their work, further compound this ambiguity.

The division responsible for forensic science in South Africa is a national competency that oversees the processing of crime scenes, forensic exhibit material analysis, and DNA database administration [3]. To facilitate the reporting of forensic DNA results, a DNA statistical population profile database must be created to support the new markers whenever new, cutting-edge forensic profile DNA test techniques are produced, for analysing DNA exhibit material. The South African population can be broadly classified into four demographic categories, based on the results of paternity and forensic DNA testing: Asian, Caucasian, black, and coloured. These distinct demographic groups form the basis of an up-to-date forensic DNA statistical population database [4]. Following a systematic methodology ensures that South Africa's demographic diversity is appropriately considered in forensic DNA and paternity testing, thereby allowing for the context-specific interpretation of DNA profiles.

Using voluntary informed consent, anonymised unlinked buccal samples from the demographic groups represented in each of the country's nine provinces are gathered to support the DNA statistical population database and the corresponding biobank. When new forensic DNA markers are introduced in the laboratory, the consent granted allows the samples to be utilised solely to update the forensic DNA statistical population profile database. The consent form clarifies that confidentiality precautions will be followed, and that the samples cannot be used for any other type of research.

The forensic DNA statistical population biobank complies with the same ethical-legal conditions for informed consent as those which are relevant to health research, as mentioned by Maseme et al. We concur with Maseme et al. that section 13(1) of POPIA may be regarded by some as being in direct contradiction with the broad consent specified by the Department of Health ethical standards, given the lack of legal precedent on the implementation of the law regarding its effect on personal information. Furthermore, forensic laboratories, following the ISO/IEC 17025 standard, are mandated to conduct risk assessment and management, particularly in handling sensitive samples and data [5]. Therefore, it is advisable to clarify any interpretations regarding compliance with POPIA concerning the DNA statistical population database and its associated biobank. This precautionary step is crucial for preventing potential issues of inadmissibility and ethical concerns.

The Code of Conduct (CoC) developed by the Academy of Science of South Africa (ASSAf) will provide guidelines for adequately applying POPIA to biobank research. The article by Maseme et al. [1] stimulates a critical discussion within the forensic science community on managing biobanks and associated information. Their observations and insights lay the foundation for a collaborative effort to improve the applicability of forensic science practices. To establish a unified, working towards a global consensual strategy for undertaking research on biomaterials, including applications for forensic science, the forensic community should interact with professional statutory and non-statutory bodies (e.g., ASSAf) in their respective countries, continental unions (e.g., the African Union), regional unions (e.g., the European Union), and intergovernmental organizations (e.g., BRICS).

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## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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