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**PRESS RELEASE**

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**New scanner at University of Pretoria paves way to virtual autopsies**

Within a decade, hopes [Professor Gert Saayman](http://www.up.ac.za/en/forensic-medicine/article/39224/staff), conventional invasive autopsies could just about be a thing of the past. Instead, pathologists would use imaging technologies to conduct virtual post-mortems.

Such an advance would be welcomed in morgues within resource-poor settings like South Africa, and it would likely make the autopsy process more acceptable to grieving families.

Video: <http://youtu.be/1MJu7jCNgLw>

The Lodox scanner was initially developed in the diamond mining industry where it was used to prevent the stealing of gems by staff and workers, but the potential for use in medical settings such as emergency rooms was soon realised, leading to the installation of the first unit at Grootte Schuur Hospital some years ago. More recently, the apparatus was adapted for use in forensic mortuaries. Currently, there are only four of these scanners in use at forensic mortuaries in South Africa and only fifteen elsewhere in the world.

With the Gauteng Department of Health having recently purchased a low dosage, full-body digital X-ray scanner known as the Lodox StatScan, forensic pathologists at the Department of Forensic Medicine at the University of Pretoria (UP) have joined the quest to make virtual autopsies a common reality.

In fact, says Saayman, head of the Department of Forensic Medicine at UP, a focussed research programme has already been established. Senior lecturer Dr Janette Verster will soon travel to Switzerland to attend an advanced course in post-mortem imaging at the University of Zurich, which has introduced the concept of a virtual autopsy, or “Virtopsy”, through using advanced equipment and techniques.

Besides promising a boost in research outputs for the Department, the installation of Lodox scanner at the Pretoria Medico-Legal Laboratory has already eased the load on pathologists, who conduct post-mortem examinations whenever a non-natural or unexpected death has occurred. The machine greatly improves the accuracy of diagnosis, as well as the ability to present evidence in court.

“The scanner allows us to identify and locate bullets and sharp objects in the body and to detect the presence of contagious diseases like tuberculosis (which may pose a health risk for pathologists and assistants),” says Verster.

“It also provides tremendous help in positively identifying individuals by revealing old skeletal fractures or the presence of prostheses and medical devices like pacemakers.”

She adds that cases which are traditionally difficult to examine, such as charred or decomposed bodies, can now be easily scanned to reveal the presence of bullets, fractures, or other possible evidence of foul play.

While it was possible to perform such scans previously using traditional X-rays or fluoroscopy, these devices resulted in high radiation exposure for pathologists and support staff. Operating them was also time and labour intensive, and records of the scans for court reports were hard to come by.

Now, each body admitted to the mortuary is scanned head-to-toe in just 13 seconds by forensic officers, generating a digital record within a further 10 seconds. In a facility that examines almost 2000 bodies every year, this fast, easy-to-use scanner not only relieves pressures on staff, but has significantly improved the quality of forensic investigations.

Saayman hopes that UP’s new research in the field of post-mortem imaging will help make the technology more economic and accessible.

Collaborative research in the field of radiography is already underway with the Department of Diagnostic Radiology at UP, including investigations into lightning- and electrocution-related deaths. Further partnerships within other disciplines and at international institutions are also taking shape.

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