Fingerprint technology pioneered in Leicester -- To identify the dead

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Technology developed for roadside fingerprints using hand-held devices -- announced in the media this month -- has also been pioneered in identifying the dead, it has been revealed.

The University of Leicester, working with Leicestershire Constabulary and the Institute of Legal Medicine, University of Hamburg, recorded the first ever use of the technology on the dead over six months ago.

The purpose of developing the technique is to enable rapid identification of the deceased and would be of particular benefit in cases of mass fatalities.

The research has been submitted for consideration for publication to an international forensic medical journal and has been carried out by Professor Guy Rutty of the East Midlands Forensic Pathology Unit at the University of Leicester; Karen Stringer, Leicestershire Constabulary Fingerprint Bureaux, and Dr E.E.Turk Institute of Legal Medicine, University of Hamburg.

Professor Rutty said: “No matter where one works in the world, the primary purpose of a medico-legal autopsy is the investigation of who the person was, where, when and by what means they came by their death.

“In mass fatality investigations there is a shift of emphasis of the investigative process towards gathering information for the identification

of the deceased. Fingerprinting is usually undertaken by scene of crime or fingerprint officers at the mortuary and although the recovery of fingerprints is possible at the scene of death, as with mortuary recovery, to date handheld real-time on-site analysis (near-patient testing) is not available to investigators."

The researchers made use of a handheld, mobile wireless unit used in conjunction with a Personal Digital Assistant (PDA) device for the capture of fingerprints from the dead. They also used a handheld single digit fingerprint scanner which utilises a USB laptop connection for the electronic capture of cadaveric fingerprints

Professor Rutty added: "We believe that, through conversations with our colleagues throughout the fingerprint world and the failure to identify any previous peer reviewed publication, we have demonstrated the first use of a handheld PDA based biometric fingerprinting device for use for fingerprinting the dead.

"We have also demonstrated the use of a single digit fingerprint unit with the dead, building upon the scanty literature on the use of larger Livescan devices but more importantly highlighting the limitations of such devices to date. We have applied this technology to an actual real case which resulted in a positive identification, the first of its type to have been undertaken in the UK."

The researchers also tested the technique on 'live' candidates and found some interesting results.

Professor Rutty said: "Although prints were acquired in all cases we observed a number of difficulties with the use of the unit which affected its operation and print quality. The quality of the prints depended on the gender and age of the individual with females worse than males; elderly female pads showed more cracking and loss of ridge details than males

in the series captured. Greasy fingers or the use of hand creams decreased the ability to capture images. Grease, creams or sweaty fingers lead to the persistence of fingerprints on the scanner pad which caused smudged images or multiple images of later fingers. This was overcome by drying of the fingers with a cloth prior to capture."

Source: University of Leicester