24. BIG DATA and AI: Should we be concerned about patient identification from MRI head scans?

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Purpose
Volumetric MR imaging is now routine in clinical neuroradiology. With the advent of big data research and the need for image sharing, the question of identification from volumetric imaging is raised. There is ambiguity of interpretation of the current HIPAA privacy rules in the US which state that full face photographic images and any comparable images are classed as identifiable information (1). Previous studies assessing identification of full-face 3D renderings with photographs have shown results of correctly matching faces is higher than a random guess (2,3). There are currently no specific UK guidelines for de-identification of volumetric neuroimaging.

Methods and Materials
Twenty T1-weighted volumetric acquisitions of the brain were 3D rendered using the Agfa-PACS system. Of these, three reconstructions were of members of staff from the Imaging Department, and included only partial facial features given the acquisition technique. Forty members of staff from the department, were individually shown the twenty reconstructions and asked whether they were able to identify anyone. A full-

Conclusions
In this study, MRI 3D reconstructions from volumetric brain imaging with partial face reconstructions has proven difficult to be identifiable, demonstrated by 95% of participants not being able to identify the individual despite being provided with a full-face-photograph for correlation.