

A Multi-Centre Database for Multimodality Clinical Monitoring*T. Howells, D.F. Signorini, P. Jones, P. Andrews**Clinical Neurosciences, Western General Hospital, Edinburgh, UK**I. Piper, G. Teasdale**Department of Neurosurgery, Southern General Hospital, Glasgow, UK**C. Contant, C. Robertson**Department of Neurosurgery, Baylor College of Medicine, Houston, USA**M. Czornyka, S. Piechnik, J. Pickard**Academic Neurosurgical Unit, Addenbrookes Hospital, Cambridge, UK.*

Introduction: Recent advances in computerized clinical monitoring have enabled the collection of databases containing minute by minute samples of physiological parameters for head-injured patients in intensive care. It has been demonstrated that these detailed records reveal significant clinical events missed in nurses' charts [1]. They also present the data in a form readily accessible for later inspection and analysis. Despite this progress, serious problems remain regarding the collection, validation and interpretation of clinical monitoring data [2, 3]. We are currently establishing common standards for collecting and sharing data, which will allow us to develop and maintain a joint database. In addition to producing an expanded dataset, this will allow us to share more readily and to validate theoretical concepts and practical results.

Methods: We have developed software for collecting data in the intensive care unit and for displaying and accessing the data offline [4]. Data collection modules have been developed for the Marquette 7000, Baxter Explorer, and Kontron Kolormon 7250. We are developing interfaces for the Marquette Transcom, Eagle and Solar monitors, and for the HP Merlin, which incorporates its own data collection system. We are in the process of defining a core set of demographic and clinical data fields which we will share in an ASCII format. Similarly, an ASCII format will be agreed upon for sharing the monitoring data. This will allow easy translation to any database or data analysis system.

Discussion: As it becomes more easy to collect clinical monitoring data, it becomes more important to decide how best to manage the data. Without the appropriate demographic and clinical data, or proper data validation and sufficient sample sizes, these databases will be of little use. The development of this joint database will be a step towards a world-wide consensus on how best to manage this important resource.

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