

Poster 59**Recommendations for Medical Device Connectivity: Turning the NCS Multimodal Monitoring Consensus Statement into Action**

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Introduction:

In 2014, the Neurocritical Care Society (NCS) published a consensus statement in support of multimodal neuromonitoring, emphasizing the essential need for systems to integrate data in meaningful ways to support decision making in patient care. A significant barrier to the integration of data from multiple sources is the lack of standards for medical device data.

Methods:

In order to accelerate the development of a “connected environment” in neurocritical care, the Working Group on Neurocritical Care Informatics was established in 2015; it includes experts from the clinical and research side of neurocritical care and representatives from medical device manufacturers. Through an open meeting and continued discussion, a recommendation document “Medical Device Connectivity” was produced. Its objective is to provide guidance to medical device manufacturers desiring to design a communication protocol that allows external systems to acquire data from their devices.

Results:

Our research on this project uncovered a high percentage of errors in medical device protocols as well as undocumented characteristics and safety issues. The group developed recommendations for providing robust communications as well as address usability and safety concerns. The document outlines the content that should be transmitted which includes device identification, protocol version identification, patient identifier, events, alarm conditions, system status, data labels, and units. Finally, it must be thoroughly documented and validated by the manufacturer.

Conclusions:

Multimodal monitoring (which requires medical device connectivity) reportedly improves quality of care through reduction of errors and increased detection of adverse events. However, widely adopted communications standards that facilitate these benefits are lacking. Updated standards for device connectivity are on the horizon. In the meantime, the document created in this project will provide guidance for manufacturers in their communications protocol development. In doing so, they will then further the NCS’s recommendations on device connectivity for multimodal monitoring.