A Framework for Assessing the Clinical Actionability of Functional Neuroimaging for Disorders of Consciousness

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Introduction

The consequences of traumatic brain injury leave many in a disordered state of consciousness and unable to communicate or respond to their environment. Brain imaging research with functional MRI, PET, MEG, and EEG may eventually open up unprecedented channels of quantitative diagnostics and communication with these patients. The clinical prospects of using such technology at the bedside signals potentially actionable changes in patient care and raises many ethical, policy, legal and financial challenges.

To explore the criteria for clinical actionability of neuroimaging research, we propose an assessment framework to evaluate its impact on patients, families, practitioners, and broader social and regulatory institutions.

The Framework

The assessment frames each major theme in the context of actionability within health care systems, health policy, and the health care team. Intricate relationships between sub-themes illustrate the heterogeneity of traumatic brain injury, patient autonomy, and human values. Challenges around decision-making have the greatest overlap between nodes.

Future interviews with key stakeholders will reveal whether the proposed nodes are sufficient, refine the relationships between them, and further clarify priorities for both clinical actionability and ethics analysis.

References


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