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Conflicts of Interest in Neurosurgical Innovation: Ethical Considerations

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Introduction

Developmental incentives for new devices and techniques are fundamental to neurosurgical progress. While neurosurgery is dependent on technology and innovation, financial and professional incentives inherently create conflict of interest (COI) that can influence care. Understanding the sources of COI within innovation and their potential impact on patient care is crucial.

Methods

A review of the literature was performed to assess sources of COI that affect neurosurgical innovation, and to review proposed ways to manage these COI in an ethically sound manner.

Results

COI is an implicit component of neurosurgical innovation with both direct and downstream effects on clinical practice. The flexibility to use off-label devices, lack of a clear distinction between clinical practice and neurosurgical innovation, and lack of mandated disclosures to patients could create inconsistencies in the way that COI is handled, which could directly affect patient safety and autonomy. To protect patients, we advocate transparency and full disclosure in discussing innovative techniques and technologies. Patients should be given resources to understand alternative treatment options and what a COI means, in order to remain autonomous. Furthermore, unstandardized requirements for COI disclosure in medical journals, a lack of a mandatory requirement to compare devices to the standard treatment in publications, and inherent bias that affects study design and data interpretation by those with a stake in the work can have profound effects on the medical literature. Because these COI can have a pervasive effect and thus indirectly affect neurosurgical practice, we advocate for stricter standards for study design and transparent COI reporting to allow the reader to understand the results in context and preserve evidence-based practice.

Conclusions

COI in neurosurgical innovation can have both direct and indirect effects on patient care. Steps can be taken to proactively confront bias, ensure patient autonomy and safety, and maintain evidence-based neurosurgical practice.

Learning Objectives

1. Understand how COI can directly affect neurosurgical innovation and patient care

2. Recognize how inherent bias and unstandardized requirements can affect neurosurgical literature

3. Understand strategies to maintain ethical practice without compromising innovation and progress

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