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Reporting of innovations in surgery: a systematic review of robotic liver resections

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Introduction: Liver resections are most commonly performed for either primary or secondary cancers. Consensus guidelines recommend that minor liver resections should be attempted laparoscopically, however this technique has limitations. These include difficulties with surgical access, ergonomics and visualization. Consequently, there has been increasing interest in innovative solutions such as robotic surgery. The IDEAL Collaboration has provided guidance for the reporting of surgical innovations, but it is not known how robotic liver resections have been reported. The aim of this study is to summarize technique descriptions and governance procedures, and understand which clinical outcomes have been reported.

Methods: A systematic review is being conducted in accordance with the PRISMA guideline. A search of Embase, Ovid Medline, the Cochrane Library and Web of Science was performed, using search concepts of "robotic" and "liver resection". Articles will be screened to select primary research reporting outcomes of robotic liver resections. Data will be extracted on the reporting of study characteristics, governance and ethical arrangements, mitigations of harm, techniques and

modifications, and outcomes. A descriptive summary of the data will be produced. The results will be critiqued in relation to guidance from the IDEAL Collaboration.

Results: The search returned 3063 articles, with 2385 remaining after de-duplication. An interim descriptive analysis of the data will be presented, summarizing how robotic liver resections have been reported. A critique of the available results in the context of IDEAL guidance will be provided.

Conclusion: This systematic review will describe how robotic liver resections have been reported as surgical innovations.