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**Re-admission following laparotomy in Emergency General Surgery a meta-analysis: Time to take action.**

**Background:** Emergency General Surgery poses one of the great challenges in surgical outcomes; currently accounting for up to 10% of hospital admissions with mortalities between 5% and 30%. Despite the seriousness of laparotomy and its outcomes patterns of re-admission following laparotomy are not well defined. This study undertook a meta-analysis to determine patterns of re-admission post emergency laparotomy.

**Aim:** The primary outcome of interest was unplanned readmission of patients post index emergency laparotomy, with a secondary outcome of identifying predictors for readmission.

**Methods:** An ethically approved, PROSPERO registered (ID: CRD42019102512) meta-analysis searching PubMed and Scopus electronic databases from January 2013 to June 2018 and adhering to PRISMA guidelines was undertaken. Search headings included 'laparotomy', 'readmission', 'rehospitalisation', 'open surgery', 'abdominal surgery' and 'mid line excision'. Publications potentially suitable were graded using Methodological Index for Non-Randomised Studies; papers scoring  $\geq 18/24$  were included for data analysis. The primary outcome of interest was unplanned readmission within 30 days post index emergency laparotomy.

**Results:** This scientific review identified 1,130 articles. 42 were found to be potentially suitable, and 14 were included after applying MINORS score cut off. The final cohort included 18,075 patients from seven countries. Five papers came from the USA, four UK and the remainder from Italy, Thailand, Switzerland, Sweden and India. The mean rate of readmission was 9.3% (range 0%-34%) with 1,680 readmissions in 18,075 emergency laparotomies.

Analysis of risk factors for readmission was not possible due to inadequate reporting of data.

**Discussion:** This study showed a wide variation in re-admission rates with an average 9.3% of patients being re-admitted post emergency laparotomy. Reporting of emergency laparotomy patients' readmissions is inadequate on a number of fronts. We recommend the implementation of registries and data analysis for all patients undergoing Emergency Laparotomy Surgery to identify risk factors for readmission and potential improvement in outcomes.