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Trainee led Emergency Laparotomy operating; does it impact on outcomes?

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Introduction: To achieve completion of training in general surgery, trainees are required to demonstrate competency in common procedures performed at Emergency Laparotomy (Em Lap). We describe the patterns of trainee led emergency laparotomy operating and the association between post-operative outcomes.

Methods: All patients who had an Em Lap were extracted from the National Emergency Laparotomy Audit database from December 2013 to November 2017. Patients were grouped by grade of operative surgeon; trainee (speciality registrar) or Consultant (including Post Certificate of Completion (CCT) fellows). Trends in trainee operating by

education deanery, hospital size and time of day of surgery were investigated. Adjusted regression analysis for the outcomes of 90-day mortality and return to theatre in operative subgroups of segmental colectomy, Hartmann's procedure, adhesiolysis and repair of perforated peptic ulcer disease were performed.

Results: The study cohort contained 95 520 patients. There were no increased odds of death by 90 days or of return to theatre across any of the operative groups when a trainee was listed as the most senior surgeon present in theatre. Trainees were more likely to operate independently in the Welsh deanery, high volume centres and at night (all $P < 0.001$).

Conclusion: There is significant variation in trainee led operating in Em Lap cases by deanery, hospital size and by time of day. However, this involvement in cases required for CCT in general surgery does not appear to impact on mortality or return to theatre in patients when adjusting for various pre-operative features.