

Plain English Summary

Background - Many patients are admitted to NHS hospitals in an emergency with common acute conditions. In England, just over half have surgery within days of admission. This is emergency surgery. Others have another approach to care e.g. drug treatment, or surgery at a later date. Patients are treated differently across England. We do not know whether the benefits and costs of emergency surgery are greater than alternative approaches to care.

Methods - We aimed to find out which patients should have emergency surgery, and to understand the benefits, risks and costs involved. We used routinely collected information from hospitals in England for 2009-2019 to compare:

- outcomes for patients who had emergency surgery or another approach to care
- the costs of emergency surgery and other approaches to care
- how benefits and costs change for different types of patients.

Results - Overall, we found that people tended to have similar outcomes and costs, whether they had emergency surgery or another approach to care.

For some subgroups we did find important differences:

- for patients with intestinal obstruction who were not frail, we found that **emergency surgery** generally improved outcomes and reduced costs
- for people who were very frail, **other approaches to care** led to greater benefits and reduced costs. For these patients, emergency surgery could lead to worse outcomes.

Further research to find out whether emergency surgery or later surgery improves outcome for patients with several long-term conditions, would be useful.

Patient and public involvement - A PPI panel initially helped us focus on what outcomes matter for patients, and later helped us plan how to communicate our results to the public.

We worked with people with autism or learning difficulties to produce an easy-read guide explaining the study and how research can use health records.