

# Comorbidities and deprivation linked to worse outcomes after emergency general surgery

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Patients with comorbidities and from deprived areas have worse outcomes if admitted for emergency general surgery

Such [patients](#) are more likely to die in hospital and stay in hospital longer and are less likely to be discharged directly to home.

Greater levels of comorbidity and, to a lesser extent, socioeconomic deprivation have an adverse impact on outcomes of patients admitted for emergency [general surgery](#), suggests a study published in the online journal *Trauma Surgery & Acute Care Open*.

Deprivation and multiple comorbidities are known to have an individual effect on outcomes for patients who undergo emergency surgical procedures, but their combined impact is not known.

Also many patients admitted to emergency general services are managed non-operatively, and it is not known whether all deprived patients, rather than only those who undergo an operation, are at a health disadvantage.

The authors say that their study is unique in that it looked at all emergency surgical admissions over a long period rather than focusing on a specific diagnosis or procedure conducted over a shorter time period. It was also conducted in Scotland which has a free at point of care health system via the NHS, which means socioeconomic deprivation

is not a hard barrier to accessing healthcare.

The researchers accessed data held by the Scottish government on all [adult patients](#) admitted to hospital as an emergency under the care of a general surgeon between 1997 and 2016. Patients were admitted for a diverse range of conditions, including undifferentiated abdominal pain, colorectal and acute breast conditions, urological conditions and even chest and head trauma. Only 26.9% of admissions had surgery.

In total 1,477,810 admissions were analysed, of which 16.2% involved patients in the most deprived group and 5.6% those in the least deprived.

Three quarters (75.6%) of patients had no comorbidity, 20.3% had mild comorbidity, 2.5% had moderate comorbidity and 1.6% had severe comorbidity. A patient with a mild comorbidity would have a single condition such as diabetes or a peptic ulcer, a patient with a moderate comorbidity would possibly have two such conditions or a more serious single condition such as cancer, and a patient with severe morbidity would have multiple conditions and likely at least one of them severely.

Death rates while in hospital, and within 30 days, 90 days and one year were 1.7%, 3.7%, 7.2% and 12.4%, respectively, and after their [hospital stay](#) 78.6% of patients were discharged directly home.

The proportion of patients discharged home was roughly the same in both the operative and non-operative groups.

Analysis of the data revealed that patients with severe comorbidity were 13 times more likely to die in hospital and 62% less likely to be discharged directly to home than patients with no comorbidity.

Compared with patients from the most affluent areas, patients from the most deprived areas were less likely to be discharged directly to home

and more than a third were more likely to die in hospital.

The study's greatest strength is the large number of hospital episodes included, the authors say, but the study also had limitations as many factors could not be controlled for. For example, there is no information on specific comorbidities experienced by patients or the reason why they were admitted to hospital, such as their symptoms or the severity of their condition.

The authors conclude that patients with multimorbidity are at increased risk of in-hospital, short-term and medium-term mortality. They are also at higher risk of discharge to a non-home environment.

"Early identification of those individuals who are likely to require further care needs may need to be explored in order to ensure patient movement through the acute sectors of NHS care," they say, highlighting that the need for further support structures is greatest in the most deprived regions.

"Clinicians need to better appreciate (and quantify) the impact that comorbidity and, to a lesser extent, socioeconomic deprivation have on length of stay, discharge destination and both in-hospital and post-discharge mortality," they add.

"This pertains to the very nature of patient-provider discussion in setting the expectations for length of [hospital](#) admissions, the likelihood of being discharged home directly or the likelihood of inpatient or post-discharge death, regardless of operative intervention."

While it is not possible to suggest a "comorbidity threshold" for involving services such as physiotherapy, occupational therapy, social work or geriatrics, they say, there needs to be an awareness that, compared with patients with no comorbidity, even patients with a minor

comorbidity are half as likely to be discharged home.

**More information:** Impact of deprivation and comorbidity on outcomes in emergency general surgery: an epidemiological study, *Trauma Surgery & Acute Care Open*, [DOI: 10.1136/tsaco-2020-000500](https://doi.org/10.1136/tsaco-2020-000500)

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