



# Association of dyspnoea, mortality and resource use in hospitalised patients

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**In a study of over 67 000 patients, dyspnoea reported by patients during a rapid nursing assessment on admission was associated with two-fold odds of death in 2 years. A low-cost screening tool can be used to identify patients at risk of future harm.** <https://bit.ly/3izDXy2>

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## Abstract

As many as one in 10 patients experience dyspnoea at hospital admission but the relationship between dyspnoea and patient outcomes is unknown. We sought to determine whether dyspnoea on admission predicts outcomes.

We conducted a retrospective cohort study in a single, academic medical centre. We analysed 67 362 consecutive hospital admissions with available data on dyspnoea, pain and outcomes. As part of the Initial Patient Assessment by nurses, patients rated “breathing discomfort” using a 0 to 10 scale (10=“unbearable”). Patients reported dyspnoea at the time of admission and recalled dyspnoea experienced in the 24 h prior to admission. Outcomes included in-hospital mortality, 2-year mortality, length of stay, need for rapid response system activation, transfer to the intensive care unit, discharge to extended care, and 7- and 30-day all-cause readmission to the same institution.

Patients who reported any dyspnoea were at an increased risk of death during that hospital stay; the greater the dyspnoea, the greater the risk of death (dyspnoea 0: 0.8% in-hospital mortality; dyspnoea 1–3: 2.5% in-hospital mortality; dyspnoea ≥4: 3.7% in-hospital mortality;  $p<0.001$ ). After adjustment for patient comorbidities, demographics and severity of illness, increasing dyspnoea remained associated with inpatient mortality (dyspnoea 1–3: adjusted OR 2.1, 95% CI 1.7–2.6; dyspnoea ≥4: adjusted OR 3.1, 95% CI 2.4–3.9). Pain did not predict increased mortality. Patients reporting dyspnoea also used more hospital resources, were more likely to be readmitted and were at increased risk of death within 2 years (dyspnoea 1–3: adjusted hazard ratio 1.5, 95% CI 1.3–1.6; dyspnoea ≥4: adjusted hazard ratio 1.7, 95% CI 1.5–1.8).

We found that dyspnoea of any rating was associated with an increased risk of death. Dyspnoea ratings can be rapidly collected by nursing staff, which may allow for better monitoring or interventions that could reduce mortality and morbidity.