Concerns about whether the junior doctor changeover in the UK is associated with an increased risk of death have been reawakened by a recent retrospective study. Examination of overall mortality data has consistently failed to demonstrate any increase in mortality during the changeover. However, regional and national trends may mask this increase, so we undertook a study to compare mortality in University College Hospital, London, a busy teaching hospital, with regional and national trends. We chose to examine three time periods: 1990-1993 (pre-Calman), 2000-2003 (introduction of EWDT) and 2007-2009 (completion of EWDT implementation and introduction of Modernising Medical Careers). For each time period, we examined daily mortality during July and August and monthly mortality throughout the year, and compared them with regional and national mortality data obtained from the Office of National Statistics. Data were analysed using a Repeated Measures ANOVA; deviation from the regional and national trends was assessed by searching for a significant interaction between the effects of time and region. We found no evidence of an increase in mortality in August for any of the time periods examined, even after comparison with regional and national trends. We conclude that examination of overall mortality data is a blunt and impractical instrument for settling the question of whether an increase in morbidity and mortality occurs. It is clear that the magnitude of the problem does not amount to a "killing season", but preventable morbidity and mortality should be audited; even one preventable death is one too many.