

'Weekend effect': Risk of dying higher if admitted to intensive care units at the weekend

6 September 2017

A person's risk of dying is higher if they are admitted to the Intensive Care Unit (ICU) at the weekend compared to a weekday, according to a study involving 119 ICUs in Austria. Conversely, the risk of dying in the ICU on a weekend is lower than on a weekday, highlighting the complexity of the so-called 'weekend effect'. The study was published in the open access journal *Critical Care*.

Dr Paul Zajic, lead author from Medical University Graz, Austria, said: "Our study demonstrates that patients admitted to ICUs at weekends are at increased risk of death. This effect requires thoughtful considerations both by clinicians and policy makers because in the 21st century, the day of admission should not influence [patient outcomes](#). While one must avoid jumping to conclusions based upon retrospective studies, our findings may guide further research, and ultimately lead to systematic improvements that aim to eradicate the '[weekend](#) effect'."

Some studies conducted on data from the NHS in the UK have suggested that there is increased risk of death if admitted at the weekend but findings from different studies have been inconsistent.

In this Austrian study, the researchers took into account the severity of illness at admission, the reason for admission, the chance of discharge from the ICU to the hospital or home and risk of death following discharge to the hospital, in order to get a better understanding of the factors that might contribute to a weekend effect. The study used data on 167,425 patients collected from 119 ICUs across Austria between 2012 and 2015. Data was obtained from the Austrian Centre for Documentation in Quality Assurance in Intensive Care.

Dr Zajic explained: "Contrary to what one might

expect, weekend admissions do not alter patient outcomes immediately but are felt further down the line, potentially explaining why risk of death in the week was actually higher than the weekend. We noticed that several key interventions in the ICU were less likely to be performed at the weekend, suggesting that the increased mortality in the week is not due to an increased rate of something that would increase mortality immediately, but is more likely to be caused by systematic issues that prevent optimum provision of care for [critically ill patients](#) at weekends and so raises their risk of dying in the days following a weekend admission".

The researchers found that severity of illness varied noticeably between weekends and weekdays, with more patients with a higher severity of illness being admitted on a Saturday or Sunday. The case mix was also different at the weekends, with more patients being admitted for 'medical' purposes as opposed to 'scheduled surgery'. The chance of being discharged to the hospital from the ICU on a weekend was lower than on a weekday.

The authors state that their findings are not necessarily generalizable to other health systems in other countries, and their data may be limited by its retrospective nature. However, this study provides strong evidence for the presence of the '[weekend effect](#)' and allows for a more nuanced description of the implications of weekend [admission](#) of [patients](#) to ICUs.

More information: Paul Zajic et al, Weekends affect mortality risk and chance of discharge in critically ill patients: a retrospective study in the Austrian registry for intensive care, *Critical Care* (2017). [DOI: 10.1186/s13054-017-1812-0](https://doi.org/10.1186/s13054-017-1812-0)

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