ICU organization

A600 - Icu discharge into weekends and public holidays: an observational study of mortality

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Introduction:
Up to a third of in-hospital deaths in ICU patients occurs following ward stepdown [1]. Discharge time seems to be associated with in-hospital prognosis, but meta-analyses have not shown a difference in weekday compared to weekend discharge [2,3]. However, papers that examined discharge ‘into’ out-of-hours days, particularly on Fridays, have found differences [3]. Our aim was to assess whether discharge from ICU ‘into’ out-of-hours (OOH - weekends and public holidays) is associated with in-hospital mortality or re-admission to ICU, and whether these patients were seen on the wards OOH by medical staff.

Methods:
All adults discharged from the general ICU to a ward at the Bristol Royal Infirmary in December 2016-18 were included. In-hospital mortality rates were assessed for each day, with ‘into weekdays’ defined as Sunday to Thursday and ‘into OOH’ Friday, Saturday and the day before a public holiday. A subset of patients with data on readmission rate to ICU was also examined. All available notes from patients discharged into OOH in 2018 were reviewed.

Results:
The study included 1732 patients with a subset of 443 with readmission data. 117 sets of notes were reviewed from patients discharged into OOH. The in-hospital mortality was significantly higher in patients discharged into OOH (5.1% vs 7.6%, P=0.012). Within the subset, OOH was associated with in-hospital mortality or readmission to ICU (6.8% vs 11.9%, P=0.044), though readmission rate alone was not (1.7% vs 2%, P=0.35). Of patients discharged into OOH, once on a ward 64% were reviewed by a specialty doctor but 20.5% were not seen.

Conclusion:
This is the first study to examine ICU discharge ‘into’ OOH days including public holidays. We found increased hospital mortality in OOH, similar to other studies [3]. Up to a fifth of high-risk ICU stepdown patients were not reviewed by a doctor on OOH days.

References:

Image:

% mortality according to day of discharge from ICU

<table>
<thead>
<tr>
<th>Day</th>
<th>Mortality Rate</th>
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<tbody>
<tr>
<td>Weekday</td>
<td>5.1%</td>
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<tr>
<td>Out-of-hours</td>
<td>7.6%</td>
</tr>
<tr>
<td>Sunday</td>
<td>3.0%</td>
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<tr>
<td>Monday</td>
<td>4.7%</td>
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<tr>
<td>Tuesday</td>
<td>6.2%</td>
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<tr>
<td>Wednesday</td>
<td>5.0%</td>
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<tr>
<td>Thursday</td>
<td>3.9%</td>
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<tr>
<td>Friday</td>
<td>8.1%</td>
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<tr>
<td>Saturday</td>
<td>6.8%</td>
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<tr>
<td>OOH</td>
<td>8.3%</td>
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Percentage mortality according to day of discharge from ICU