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ESICM 2014: Preventing Readmission to the ICU

Safe ICU discharge is a matter of patient status and infrastructure, according to Peter van der Voort, Amsterdam, speaking at the European Society of Intensive Care Medicine annual congress in Barcelona today.

Making discharge of patients safer, whether they are discharged home or to another ward in the hospital, is important in preventing readmission to the ICU. Many studies show that patients readmitted to the ICU have a higher mortality rate and longer hospital stay. Studies, however, are not always directly comparable as the definition of readmission could be anything from less than 24 hours after discharge to 72 hours.

Data from the Dutch intensive care database shows that the rate of readmission over 1 year is more or less the sam (6.5 - 8.5%), but there is variability between hospitals.

Kramer et al.'s study in Critical Care Medicine showed that the readmission rate depends on the case mix. It is indicator of quality only if the case mix is taken into account. Hospitals with a high readmission rate had more severely ill patients admitted in the first place.

Chrusch et al., writing in Critical Care Medicine in 2009 looked at ICU occupancy and readmisison rate. they found that when the bed rate occupancy is higher, readmission is higher. However, the correlation is not very strong. The underlying data shows that when the occupancy rate is getting higher, adverse events are also higher.

A paper by Town and colleagues published in September 2014 found that when the ICU is full, the cardiac arrest rate in general wards is significantly higher, and readmission rate is higher.

Additionally, discharge in the afternoon and at night-time leads to significantly higher readmission rates.

Nishi et al. looked at why patients returned. Factors included too early discharge, underlying disease complication and ward care. Howver, they found that only five per cent of surgical intensive care unit discharges were felt to be premature.

Reasons for readmission vary, but almost half return with respiratory failure. The profile of those who will return is:

- older
- emergency admissions

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- medical admissions
- comorbidities
- renal failure
- physiologic reserve
- active infection/ inflammation
- step-down facility in existence

Discharge after 6pm also raises the risk of readmission.

7 models of prediction exist, but do not perform well in practice. Research in the Netherlands, for example, showed that use of the SWIFT score made little difference in predicting which patients would return to the ICU. In the Netherlands they also looked at correlation of APACHE and SOFA scores, which were slightly higher in readmitted patients, but it was not a clinically relevant difference. The Sabadell score is useful, but is a subjective score that a clinician can use.

How to Prevent Readmission

A variety of measures are needed, said van der Voort. Take care of triage on discharge, pay attention to time of discharge and ward care. Rapid response teams/ outreach/ nurse liaison all have a role to play in reducing readmission rates.

Intensivists need to make a clinical guess using the Sabadell score. The presence of respiratory distress, active infection or inflammation will rule out discharge.

Van der Voort was asked about the role of protocols or electronic information systems in handover procedures. At present there is no literature on whether it will reduce readmission rates. When questioned about who should take the decision to discharge, he said it should only be taken by senior physicians.

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