

# Length of Critical Care Admission Compared to Physical Outcome on Discharge from Critical Care, and Hospital Discharge Destination for COVID-19 Patients in a Regional Surge Centre: A Retrospective Review

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## Background

Increasing length of stay on critical care is directly associated with increased ICU acquired weakness (ICU-AW) and poorer physical outcomes (1). The Manchester Mobility Score (MMS) has been shown to be a valid and reliable measure of physical function within the intensive care unit, see table 1 (2).

1	Passive movements, active exercise, chair position in bed
2	Sit on edge of bed
3	Hoisted to chair
4	Standing practice
5	Transfers with assistance
6	Mobilising with or without assistance
7	Mobilising >30m
A	Agitated
U	Unwell

Table 1 Manchester Mobility Score

## Method

This was a retrospective review of critical care patients admitted with COVID-19 between October 2020 and March 2021. Data was extracted from the electronic patients records and inputted into an Excel spreadsheet.

For all patients who survived their critical care admission comparisons were made between; total LOS and their physical outcome on transfer to the ward as evaluated by the MMS and; LOS and discharge destination from hospital.

## Objective

To establish if the length of critical care stay of COVID-19 patients in a regional surge centre was related to functional ability on discharge, evaluated using the Manchester Mobility Score (MMS) and to compare length of critical care stay with subsequent discharge destination when they left hospital.

## Results

- 206 patients were reviewed.
- 1 was excluded due to incomplete data.
- 71 died prior to critical care discharge.
- Median LOS was 15 (2-145) days.
- For this cohort the highest incidence of low scores (lower physical function) was found with the shortest LOS (1-5 days).
- The higher MMS scores were found in patients with a LOS of 6-10 days.
- For the patients with a LOS exceeding 31 days the median (range) MMS score was 4 (3-6). With no patients scoring in the lowest 2 brackets.
- 79% of patients were discharged home followed by 11% to in-patient rehabilitation facilities.
- Of those patients that were discharged home (n=106), 22% had a critical care LOS of 0-5 days and 51% had a critical care LOS of 6-10 days.
- For patients who were transferred to in-patient rehabilitation (n=11) 55% had a critical care LOS of 31 days or more.

## Conclusion

In this review all patients on discharge from the Critical Care unit scored 3 or over on the MMS, which was only possible due to the redeployment of Physiotherapy staff and the joint effort from all of the staff working in Critical Care over the surge period. Patients who survived their admission were most likely to be discharged home. Patients with a shorter length of stay in Critical Care had poorer scores on the MMS on discharge from Critical Care, which is unusual. This maybe due to the increased focus on the patients who were slow to wean and who required more Physiotherapy input.

In terms of discharge destination a LOS of less than 10 days suggested a higher likelihood of discharge home and a LOS of longer than 31 days was associated with a higher likelihood of the patient being discharged to an in-patient rehabilitation facility. This is more representative of the usual clinical outcomes seen in the critical care cohort.

## References

1. Vanhorebeek, I., Latronico, N. & Van den Berghe, G. ICU-acquired weakness. *Intensive Care Med* 46, 637–653 (2020). <https://doi.org/10.1007/s00134-020-05944-4>
2. McWilliams D, Atkins G, Hodson J, Boyers M, Lea T, Snelson C. Is the manchester mobility score a valid and reliable measure of physical function within the intensive care unit. *Intensive Care Med Exp*. 2015;3(Suppl 1):A553. Published 2015 Oct 1. doi:10.1186/2197-425X-3-S1-A553