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Mobility assessment in the hospital - what are “next steps”?

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Mobility impairment (reduced ability to change body position or ambulate) is common among older adults during hospitalization¹ and is correlated with higher rates of readmission,² long-term care placement,³ and even death.⁴ Although some may perceive mobility impairment during hospitalization as a temporary inconvenience, recent research suggests disruptions of basic activities of daily life such as mobility may be “traumatic”⁵ or “toxic”⁶ to older adults with long-term post-hospital effects.⁷ While these studies highlight the underestimated effects of low mobility during hospitalization, they are based on data collected for research purposes using mobility measurement tools not typically utilized in routine hospital care.

The absence of a standardized mobility measurement tool utilized as part of routine hospital care poses a barrier to estimating the effects of low hospital mobility and programs seeking to improve mobility levels in hospitalized patients. In this issue of the *Journal of Hospital Medicine*, Valiani and colleagues found a novel approach to measure mobility using a universally disseminated clinical scale (Braden). Using the activity subscale of the Braden, the authors found that mobility level changes during hospitalization can have a striking impact on post-discharge mortality. Their results indicate that older adults who develop mobility impairment during hospitalization had higher odds of death, specifically 1.23 times greater risk of death within six months after discharge (23% decreased chance of survival), with most of the effect in the first 30 days and persists to a lesser extent up to five-years post-hospitalization. An equally interesting finding was that those who enter the hospital with low mobility but improve have a 46% increased survival rate. Again, most of the benefit is seen during hospitalization or immediately afterward but the benefit persists to five years. A schematic of the results are presented in Figure 1. Interestingly, Valiani et al did not find regression to the mean Braden score of 3.

This novel use of the Braden activity subscale raises the questions: should we be using the Braden activity component to measure mobility in the hospital? Put another way: what scale *should* we be using in the hospital? Utilization of the Braden Activity subscale to measure mobility in the hospital is convenient, since it capitalizes on data already being gathered, however, this subscale focuses solely on ambulation frequency without capturing other mobility domains, such as ability to change body position. Ambulation alone is only half of

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the mobility story. It is interesting that although the Braden Scale does have a mobility subscale, which captures body position changes, the authors chose not to use it which begs the question whether an ideal mobility scale should encompass both components.

Previous studies of hospital mobility have deployed tools, such as Activities of Daily Living (ADLs)⁸ and the Short Physical Performance Battery (SPPB).⁹ There is a recent trend toward the use of the Activity Measure for Post-Acute Care (AM-PAC);¹⁰ however, none of these tools, including the current one discussed in this review, were designed to capture mobility levels in hospitalized patients. The Katz ADLs and the SPPB were designed for community living adults, and the AM-PAC, was designed for a more mobile post-acute care patient population. Although these tools do have limitations for use in the hospitalized patient, they have shown promising results.^{9,11}

What does all this mean for implementation? Do we have enough data on the existing scales to say we should be implementing or using them (in the case of Braden which is already implemented) to measure function/mobility in hospitalized patients? The implementation of an ideal mobility assessment tool into the routinized care of the hospital patient might be necessary, but not sufficient. Complementing the use of these tools with more objective and precise mobility measures (e.g. activity counts or steps from wearable sensors) would greatly increase the ability to accurately assess mobility and potentially enable providers to recommend specific mobility goals for patients in the form of steps or minutes of activity per day. In conclusion, the provocative results by Valiani and colleagues underscore the importance of mobility for hospitalized patients but also suggest many opportunities for future research and implementation to improve hospital care, especially for older adults.

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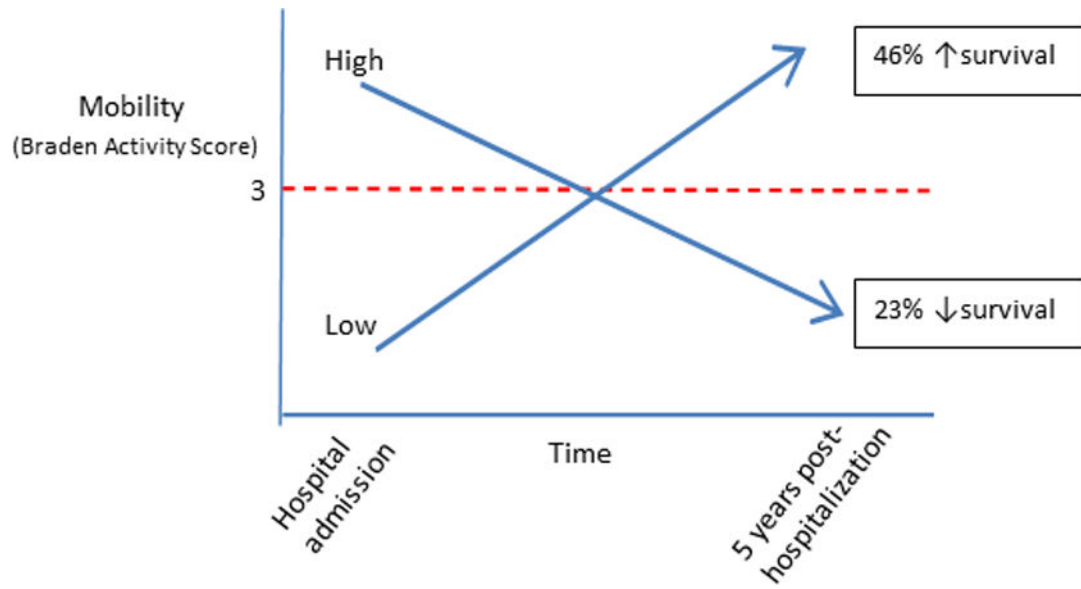


Figure 1. Changes in admission mobility level impact post-hospitalization survival