

## Patient Safety Tip of the Week

June 30, 2020

### What Happens after Hospitalization?

It’s been 7 years since Harlan Krumholz described the “Post-hospital syndrome—an acquired, transient condition of generalized risk” ([Krumholz 2013](#)). He described that recently hospitalized patients experience a period of generalized risk for a range of adverse health events and called this a post-hospital syndrome, “an acquired, transient period of vulnerability”. He suggested that the “the risks in the critical 30-day period after discharge might derive as much from the allostatic and physiological stress that patients experience in the hospital as they do from the lingering effects of the original acute illness”. This state leaves patients vulnerable to readmission, often for conditions different from that of the index hospitalization. He went on to describe some of the likely factors contributing to this reduction of functional reserve, including metabolic derangements, disturbed sleep patterns, nutritional factors, cognitive factors, pain and other discomforts, etc. The data presented by Krumholz pertained primarily to Medicare patients, hence those age 65 and older.

We bleed them. We don’t feed them. We don’t let them sleep. We force them to stay in bed. We give them medications that cloud their attention and cognitive abilities. And our interventions draw upon their limited reserve capacities. So, should you be surprised they have new disabilities following discharge?

A new study ([Dharmarajan 2020](#)) shows that a significant percentage of older adults develop new disabilities after hospitalization and that these disabilities may persist for months. The researchers followed for at least 6 months 515 community-living persons, mean age 82.7 years, hospitalized for acute noncritical medical illness and alive within 1 month of hospital discharge. Patients were participants in the Precipitating Events Project (PEP) who lived in the community at the beginning of the study. On entry into PEP they were not disabled and were independent in activities of daily living.

They found that disability was common 1 and 6 months after hospitalization for activities frequently involved in leaving the home to access care, including walking a quarter mile (prevalence 65% and 53%, respectively) and driving (65% and 61%). Disability was also common for activities involved in self-managing chronic health conditions including meal preparation (53% and 41%) and taking medications (41% and 31%). New disability was common and often prolonged. For example, 43% had new disability walking a

quarter mile, and 30% had new disability taking medications, with mean recovery time of 1.9 months and 1.7 months, respectively. Findings were similar for the subgroup of persons residing at home (ie, not in a nursing home) at the first monthly follow-up interview after hospitalization.

The authors note their findings have important implications for clinical practice and research. Because so many patients who have disability after hospitalization may have undue difficulty leaving their homes to access office-based ambulatory care, we need better ways to deliver care in the home. Their suggested potential interventions include provider house calls, home-based laboratory and radiology testing, and telehealth. They note, however, factors hampering such services include poor reimbursement rates by payers, limited workforce capacity, and regulatory restrictions limiting qualification for these options. (Note that we are hopeful that the success of telehealth during the COVID-19 crisis may lead to permanent changes in reimbursement for telehealth services.)

They also note that services should extend to nonskilled providers such as home health aides and homemakers, who can help patients self-manage their health through many means including meal preparation and medication management.

Significantly, their data show these home services may be needed for prolonged periods of time (beyond the 30-day period that has been the focus of hospitals' readmission prevention efforts to date).

What's most striking in the Dharmarajan study is the magnitude of the new disabilities. Perhaps the biggest message is that the time horizon for discharge planning should focus on more than just the next month. Life significantly changes for many patients after discharge following serious illness. Failure to recognize their new disabilities and provide resources necessary to deal with them will likely lead to avoidable future use of even more healthcare resources. For example, our July 2020 What's New in the Patient Safety World column "[Not Following Medication Changes after Hospitalization?](#)" discusses some serious consequences of failure to heed medication changes after a hospitalization.

We are often too focused on what happens in the hospital. We don't focus enough on **what happens after hospitalization**. 46.6% of patients in the Dharmarajan study were living alone. We need to put systems in place to help those patients navigate a complicated healthcare system at a time when their disabilities make such navigation difficult. Managed care organizations have long recognized those vulnerabilities and assigned case managers, clinical pharmacists, home care workers, community healthcare advocates, meals on wheels, etc. to such patients and made available transportation to facilitate access to pharmacy and other healthcare resources. (The patients in the Dharmarajan study were said to be from "a large health plan", possibly a Medicare Advantage plan, but details of the resources made available were not included in the article.). It's clear that the expenses for some of those services may not be recognized as "traditional medical expenses" but they can obviously go a long way to reduce overall "medical" expenses.

### Some of our prior columns on frailty:

- March 31, 2009 “[Screening Patients for Risk of Delirium](#)”
- January 26, 2010 “[Preventing Postoperative Delirium](#)”
- June 2010 “[The Frailty Index and Surgical Outcomes](#)”
- August 17, 2010 “[Preoperative Consultation – Time to Change](#)”
- August 31, 2010 “[Postoperative Delirium](#)”
- August 9, 2011 “[Frailty and the Surgical Patient](#)”
- September 2011 “[Modified HELP Helps Outcomes in Elderly Undergoing Abdominal Surgery](#)”
- October 18, 2011 “[High Risk Surgical Patients](#)”
- November 2011 “[Timed Up-and-Go Test and Surgical Outcomes](#)”
- April 3, 2012 “[New Risk for Postoperative Delirium: Obstructive Sleep Apnea](#)”
- August 7, 2012 “[Cognition, Post-Op Delirium, and Post-Op Outcomes](#)”
- August 14, 2012 “[Gait Speed: A New Vital Sign?](#)”
- September 25, 2012 “[Preoperative Assessment for Geriatric Patients](#)”
- September 3, 2013 “[Predicting Perioperative Complications: Slow and Simple](#)”
- November 2013 “[Predicting Perioperative Complications: Even Simpler!](#)”
- June 2014 “[Another Study Linking Frailty to Surgical Complications](#)”
- September 2, 2014 “[Frailty and the Trauma Patient](#)”
- February 17, 2015 “[Functional Impairment and Hospital Readmission, Surgical Outcomes](#)”
- June 2015 “[Get a Grip on It!](#)”
- January 26, 2016 “[More on Frailty and Surgical Morbidity and Mortality](#)”
- May 2016 “[Guidelines for Perioperative Geriatric Care](#)”
- May 31, 2016 “[More Frailty Measures That Predict Surgical Outcomes](#)”
- May 16, 2017 “[Are Surgeons Finally Ready to Screen for Frailty?](#)”
- February 2018 “[Global Sensory Impairment and Patient Safety](#)”
- April 10, 2018 “[Prepping the Geriatric Patient for Surgery](#)”
- January 15, 2019 “[Another Plus for Prehabilitation](#)”
- September 17, 2019 “[American College of Surgeons Geriatric Surgery Verification Program](#)”
- April 7, 2020 “[From Preoperative Assessment to Preoperative Optimization](#)”

### References:

Krumholz HM. Post-hospital syndrome—an acquired, transient condition of generalized risk. *N Engl J Med* 2013; 368(2): 100-102  
<https://www.nejm.org/doi/full/10.1056/NEJMp1212324>

Dharmarajan K, Han L, Gahbauer EA, Leo-Summers LS, Gill TM. Disability and Recovery After Hospitalization for Medical Illness Among Community-Living Older Persons: A Prospective Cohort Study. J Am Geriatr Soc 2020; 68: 486-495 Published online February 21, 2020

<https://onlinelibrary.wiley.com/doi/10.1111/jgs.16350>



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