Medical Xpress

New decision support tool improves discharge outcomes

November 8 2018

Penn Nursing's Kathryn H. Bowles, PhD, RN, FAAN, FACMI, Professor of Nursing, the van Ameringen Chair in Nursing Excellence, and a member of the NewCourtland Center for Transitions and Health Credit: Penn Nursing

In an effort to lessen readmission risk after discharge and achieve the

best possible outcomes for patients, hospital-based clinicians are more intentionally planning discharge of those who require post-acute care (PAC). Yet, although hospital clinicians strive to effectively refer patients who require PAC, their discharge-planning processes often vary greatly and typically are not evidence-based.

To optimize PAC decision-making, a team led by the University of Pennsylvania School of Nursing (Penn Nursing) developed, validated, and tested a two-step clinical decision support (CDS) algorithm called Discharge Referral Expert System for Care Transitions (DIRECT). The DIRECT CDS helps clinicians identify patients most in need of PAC and suggests whether skilled home care or facility level care is best. An article in the *Journal of the American Medical Directors Association* (*JAMDA*) explains how the DIRECT CDS was evaluated in two hospitals and its promising effects on PAC referrals and improved patient outcomes.

The researchers developed the DIRECT CDS using values of structured patient data drawn from the electronic health record and knowledge elicitation from clinical experts as they reviewed de-identified case studies of actual patients. The team then conducted a four-month control phase of study without CDS with more than 3,000 patients aged 55 and older who were admitted and discharged alive, followed by a six-month intervention phase of study when clinicians received the DIRECT CDS advice for more than 5,000 patients. They compared readmission rates between the two phases after controlling for differences in patient characteristics.

"While the proportion of patients referred to PAC between the two phases did not change significantly, the algorithm may have identified those patients most in need, resulting in significantly lower inpatient readmission rates for same day, 7-, 14- and 30-day intervals," explained Kathryn H. Bowles, Ph.D., RN, FAAN, FACMI, Professor of Nursing,

the van Ameringen Chair in Nursing Excellence, and a member of the NewCourtland Center for Transitions and Health. Bowles is the Principal Investigator and lead author of the *JAMDA* article "A Decision Support Algorithm for Referrals to Post-Acute Care."

"Health care providers are increasingly pressured by policies and initiatives to decrease health care utilization and contain costs. Policy requirements and bundled payment programs seeking the least costly site of care may limit options and result in patients not getting the optimal level of PAC needed to prevent poor discharge outcomes," said Bowles. "We developed DIRECT to improve the patient-centered discharge process using an evidence-based, objective tool."

During the test of the DIRECT CDS algorithm, it proved valuable in providing advice on whom to refer and the level of care. It also showed case managers the important patient characteristics that led to that advice such as fall risk, unmet caregiver needs, who declined in activities of daily living function and in which activity.

"The DIRECT CDS indicates potential as a useful tool to optimize PAC decision-making and improve patient outcomes. It may also identify patients who need PAC but are unable to receive it because of policy or insurance barriers. Future studies examining the outcomes of these patients may have policy implications," said Bowles.

Provided by University of Pennsylvania School of Nursing