

Concordance of knowledge of care plan in hospitalized adults: Outcomes and drivers

Surekha Bhamidipati, MD,^{1,2} LeRoi Hicks, MD, MPH,^{1,2} Kimberly Williams, MPH,² Edmondo Robinson, MD, MBA^{1,2,3}

¹Department of Medicine, ²Value Institute, ³Office of Transformation, Christiana Care Health System, Newark, DE

Background

Communication and coordination between hospitalized patients, their nurses and physicians is vital to patient care.

Prior studies have shown that a substantial number of patients do not understand their care plan.

To our knowledge, there have been no prior studies showing the relationship between concordance of the care plan between physicians, nurses, patients and outcomes in hospitalized adults.

Hypothesis

- Increased concordance leads to improved patient outcomes
- Interdisciplinary rounds (IDR) with a hospitalist increases concordance of care plan among patients and providers

Methods

Study design: Prospective cohort study

- We measured concordance of the care plan between hospitalists, nurses and patients on medicine units
- We identified the relationship between concordance and outcomes including inpatient length of stay (LOS) and 30-day readmissions
- Additionally we explored the determinants of concordance with particular interest in IDR with hospitalists

Participants: Adult hospital medicine patients over 18 years of age admitted to five general medicine units and hospitalists, nurses

Patient exclusions: ICU & step-down patients; confused patients; hospice, teaching service and confidential patients

Patient enrollment: We screened eligible patients for inclusion by talking to bedside nurse and enrolled after obtaining informed consent

Methods

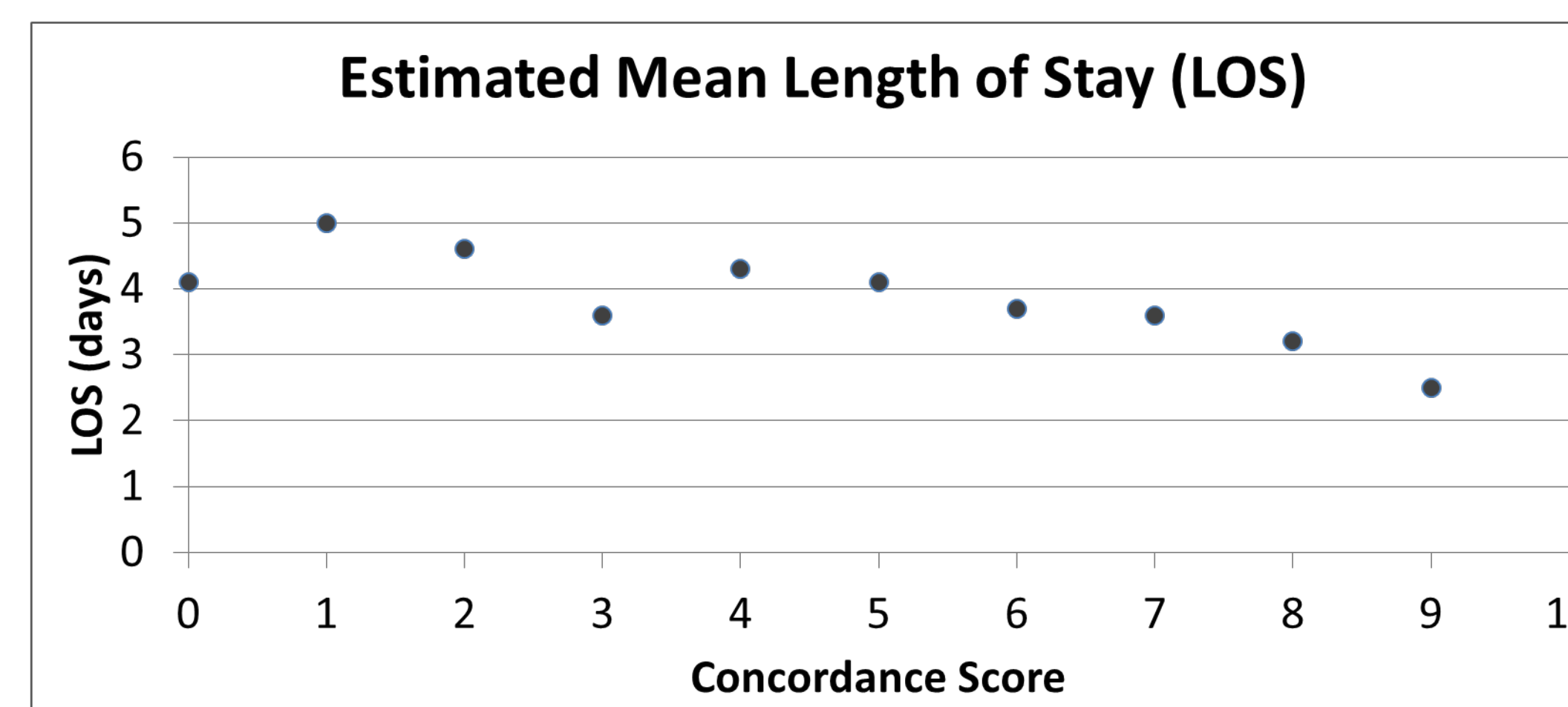
- We collected information on type of IDR completed on patient. In addition, we collected demographic data, expected mortality, admission status, hospitalist group and payor
- Following IDR, trained research assistants interviewed patients, hospitalists and nurses to evaluate concordance across three domains of care plan: 1) diagnosis, 2) tests and procedures for the day, 3) anticipated discharge date
- A total concordance score was calculated by counting the number of full concordance events
- We used logistic regression model to test for associations between the likelihood for full concordance events and contributors while controlling for patient characteristics
- We used linear and logistic regression to evaluate the association between concordance and outcomes while controlling for covariates

Results

Factors Influencing Concordance

Effect	Odds Ratio Estimate (95% Confidence Interval)	p-value
Age in years	0.994 (0.989, 0.998)	0.0067
UHC Expected Mortality*	0.953 (0.916, 0.991)	0.0158
Male vs Female	0.884 (0.795, 0.983)	0.0232
African American/Black vs White	0.843 (0.742, 0.959)	0.0305
Initial Observation vs Inpatient	0.818 (0.721, 0.928)	0.0018
Payor None/Other vs Medicare	1.474 (1.053, 2.063)	0.0167

*expected mortality risk obtained from University HealthSystem Consortium (UHC) database as surrogate measure for clinical severity



Results

- We interviewed 658 patients, 658 hospitalists and 658 nurses
- Patient age, gender, admission status, payor, physician group were evenly distributed across groups
- Average LOS decreased by 6% with each unit increase in concordance score (95% CI = 4%, 8%); the odds of 30-day readmission decreased by 16% for each unit increase in concordance score (95% CI = 6%, 24%)
- Presence of hospitalists during IDR did not increase concordance

Conclusions

- Increased patient and provider concordance regarding care plan is associated with decreased inpatient LOS and 30-day readmissions
- Several patient factors seem to influence concordance but IDRs with hospitalists does not
- It is important for health care teams, including IDR teams, to tailor communication at point of care to optimize patient understanding of care plan

Bibliography

Lynn Nielsen-Bohlman, Allison M. Panzer DAK. *Health Literacy*. IOM; 1999. doi:10.17226/10883.

OECD: Health Data 2009: Statistics and Indicators for 30 Countries. 2009.
http://stats.oecd.org/Index.aspx?DatasetCode=HEALTH_STAT.

O'Leary KJ, Kulkarni N, Landler MP, et al. Hospitalized patients' understanding of their plan of care. *Mayo Clin Proc*. 2010;85(1):47-52. doi:10.4065/mcp.2009.0232.