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**CONFERENCE ABSTRACT****Pre- and within hospitalization risk factors for readmission of older adults**18<sup>th</sup> International Conference on Integrated Care, Utrecht, 23-25 May 2018Orly Tonkikh<sup>1</sup>, Efrat Shadmi<sup>1,2</sup>, Natalie Flaks-Manov<sup>2</sup>, Moshe Hoshen<sup>2</sup>, Ran D. Balicer<sup>2</sup>,  
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**Introduction:** Unplanned readmission is indicative of poor quality of care at the hospital-community interface. Yet, the unique contribution of in-hospital care processes to readmission risk is unknown. We aimed to test whether information on processes of hospitalization, such as mobility, functioning, and nutritional intake, contribute to the ability to accurately identify older adults at high-risk of readmission beyond their at-admission risk.

**Methods:** Prospective cohort study included 559 older adults (aged  $\geq 70$ ) admitted to internal medicine wards for non-disabling conditions and discharged to their homes. Data on any urgent readmission up to 30 days after discharge were retrieved from an electronic health record (EHR) database. Information on pre-admission (e.g., chronic conditions and healthcare utilization in the prior year), at-admission (e.g., functional and nutritional status) risk factors was collected from EHRs and survey. Data on processes of hospitalization: mobility, incontinence care, nutritional intake and functional decline, were collected using validated questionnaires. A multiple logistic regression model for predicting readmission was developed.

**Results:** Readmission occurred in 15.2% of the cases. At-admission high and medium (vs. low) risk of malnutrition (Odds ratio (OR)=2.89, 95% Confidence interval (CI)=1.44-5.80; OR=2.35, 95% CI=1.13-4.91, respectively), higher serum albumin levels (OR for each mg/dL increase=0.45, 95% CI=0.28-0.74), prior hospitalizations (OR for each additional hospitalization=1.30, 95% CI=1.13-1.50), diagnoses of malignancy (OR=2.25, 95% CI=1.31-3.86), and/or chronic renal failure (OR=2.90, 95% CI=1.71-4.89), yielded good discrimination (c-statistic=0.79). Among the processes of hospitalization, only admission to discharge functional decline was significantly associated with readmission (OR for each 10-point decrease in the Barthel Index = 1.32, 95% CI = 1.02-1.72), but did not contribute to the overall discrimination of the model as compared with the at-admission data. Classification of patients into risk categories by at-admission combined with the in-hospital data shows that identifying patients in the top-tier category (10th highest percentile) according to the at-admission model misses 7/55 (12.7%) of patients who would have been categorized as highest-risk if risk identification were postponed to the discharge date.

**Discussion:** Information on processes of hospitalization does not contribute to the accuracy of a readmission risk prediction model that utilizes data on prior hospitalizations, baseline nutritional and functional status and chronic morbidity (CRF and malignancy).

**Conclusion:** Older adults can be identified as high-risk for readmission early during the index admission. Early evaluation of the readmission risk is likely to allow timely intervention to improve integration of care transitions in the target population. Further at-discharge functional assessment can detect additional patients whose readmission risk changes during the index admission and who should be considered for inclusion in readmission-prevention interventions.

**Lessons learned:** At-admission clinical and functional status combined with at-discharge additional functional assessment can be used to target older adults at high-risk for readmission.

**Limitations:** A convenient sample of a relatively high functioning group of patients. These inclusion criteria may have affected the readmission rates.

**Suggestions for future research:** Future studies should examine the significance of in-hospital functioning in other older adult populations, such as greater mix of baseline functioning and morbidity.

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**Keywords:** patient readmission; processes of hospitalization; functional decline; activities of daily living

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