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QUALITY OF CARE AND OUTCOMES ASSESSMENT

ACCURACY OF INPATIENT ELECTRONIC IDENTIFICATION TO ALERT DISEASE MANAGEMENT STRATEGIES IN A LARGE ACADEMIC MEDICAL CENTER

ACC Poster Contributions
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Background Heart failure (HF) remains a leading cause of hospital admissions. Multidisciplinary approaches and patient education during a hospital admission improves HF outcomes and readmission rates. Electronic medical indicators from admission that correctly identify HF patients may be fundamental to the proper initiation of physician order sets, and disease management education.

Methods Using the electronic medical records, two data sets of patients admitted to an academic hospital were collected over two ten day periods. One data set was analyzed with 55 patients admitted to the cardiac telemetry floors and the other was 150 all general hospital admissions. Electronic identifiers of BNP (b-type natriuretic peptide) ordered, BNP >500 pg/ml, IV diuretic ordered, or previous history of HF, were tested for discrimination performance in a logistic regression model. A confirmed diagnosis of HF was assigned by a cardiologist's chart review.

Results When IV diuretic use and BNP > 500 pg/ml were combined there was additive predictive value in the telemetry and general admission groups (96.9%, 99.0% probability of confirmed diagnosis of HF respectively).

Conclusion Using electronic identifiers of a BNP >500, and IV diuretic in patients admitted to the hospital regardless of location, accurately predicts a confirmed diagnosis of HF. Therefore, instituting electronic identifiers that automatically prompt HF order sets, disease management education, and TV education videos may improve HF outcomes.

General Hospital Admissions n=150	ROC	Sensitivity	Specificity	Probability of HF dx (%)
BNP>500	0.640	29.4	98.5	71.5
BNP ordered	0.842	70.6	97.7	80.0
IV Diuretic	0.728	47.1	98.5	80.0
Hx of HF	0.772	58.8	95.5	62.7
BNP ordered & IV diuretic	0.845	70.6	96.2	94.0
BNP > 500 & IV diuretic*	0.812	64.7	97.0	99.0
Cardiac Telemetry Admissions n=55	ROC	Sens	Spec	Probability of HF dx (%)
BNP>500	0.785	60.7	96.3	94.4
BNP ordered	0.743	85.7	63	68.7
IV Diuretic	0.799	85.7	74.1	77.4
Hx of HF	0.659	39.3	92.6	84.6
BNP ordered & IV diuretic	0.878	71.4	88.9	89.3
BNP > 500 & IV diuretic	0.895	60.7	96.3	96.9
* all P values <0.05				