Supplementary Appendix S1. Probability Modeling Equations. Equations used to model the effects of various factors on readmission.

We modeled the impact of these factors to predict risk of 30-day readmission with the following equation:

$$p = \frac{e^{-2.866+(0.465x1+0.725x2+0.691x3+0.079x4)}}{1-e^{-2.866+(0.465x1+0.725x2+0.691x3+0.079x4)}}$$

Where,

p= probability of readmission within 30 days (ROC 0.68)

x_1= Charlson score >3

x_2= Heart failure diagnosis 'yes'

x_3= Patient not handling medications (family handles all)

x_4= 3 or more admissions in 12 months prior index admission

We modeled the impact of these factors to predict risk of 6-month readmission with the following equation:

$$p = \frac{e^{-2.97+(0.30x1+0.53x2)+0.60x3+1.25x4+0.55x5)}}{1-e^{-2.97+(0.30x1+0.53x2)+0.60x3+1.25x4+0.55x5)}}$$

Where,

p= probability of readmission within 6 months (ROC 0.69)

x_1=Charlson score >3

x_2= Heart failure diagnosis ‘yes’

x3= Patient not handling medications (family handles all)

x4 =3 or more admissions in prev12 months prior to index admission

x5 = more than 7 prescriptions