

Analytics Presentation Implementation of LACE

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Objectives

- Describe the current state of readmissions within our institution
- Describe the development of model to predict patient at high risk of readmission

Current State of Readmissions

- 150 readmissions per 1,000 index visits
- Index visits (n = 34,532)
 - Median LOS is 6 days
 - 5,169 visits with readmit within 30 days
- Readmissions (n = 5,169)
 - Median LOS is 10 day
 - 49,300 patient days
 - 15% all patient days delivered between Jan-Nov 2014

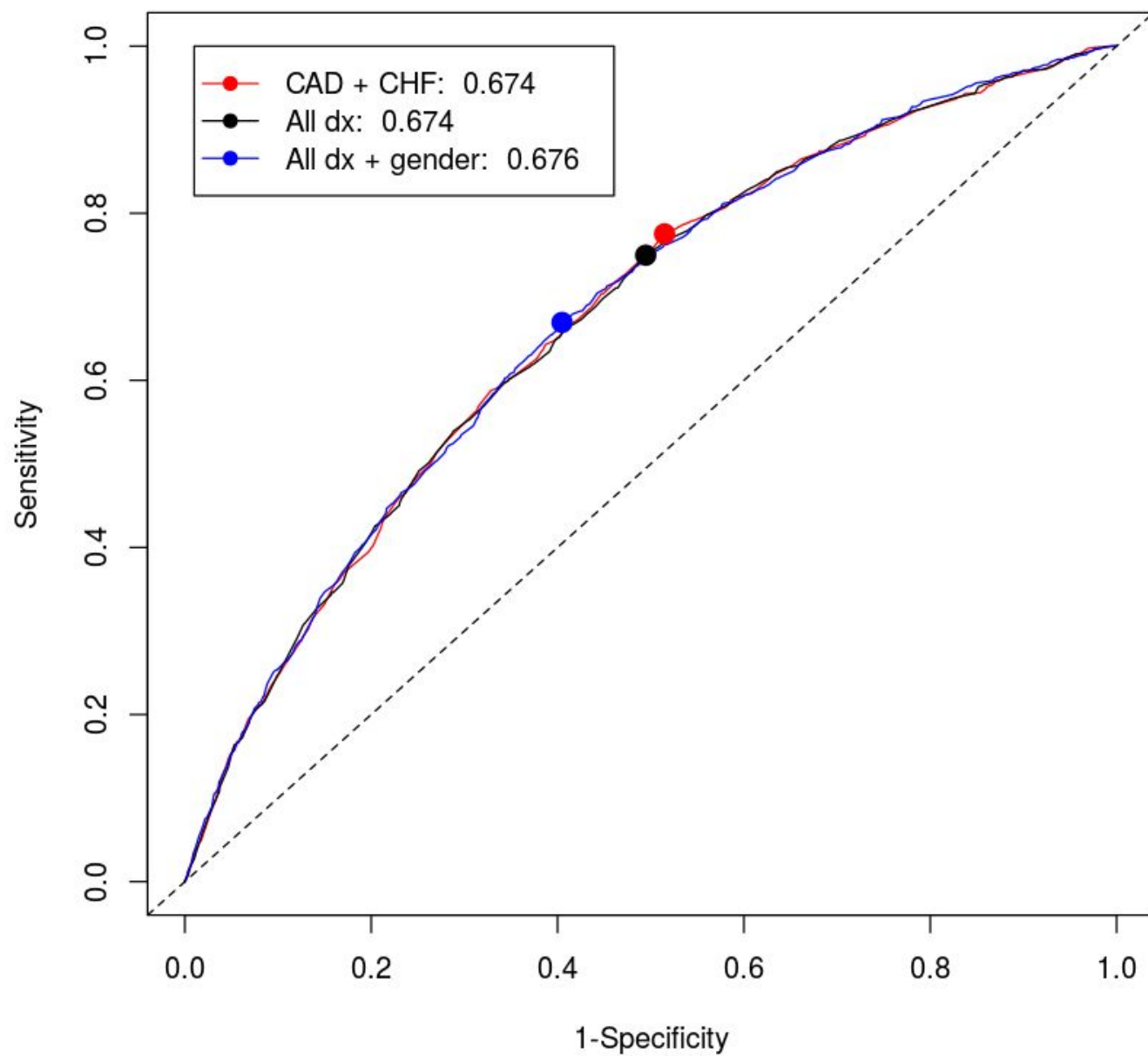
Impact of not changing

- Continued high readmission rate
 - Increased cost
 - Financial cost of care
 - Personnel and resource consumption
 - Reduced medicare/medicaid reimbursement
- Poor patient outcomes
 - Patient satisfaction
 - Sequelae/complication of disease → increased complexity of care

LACE

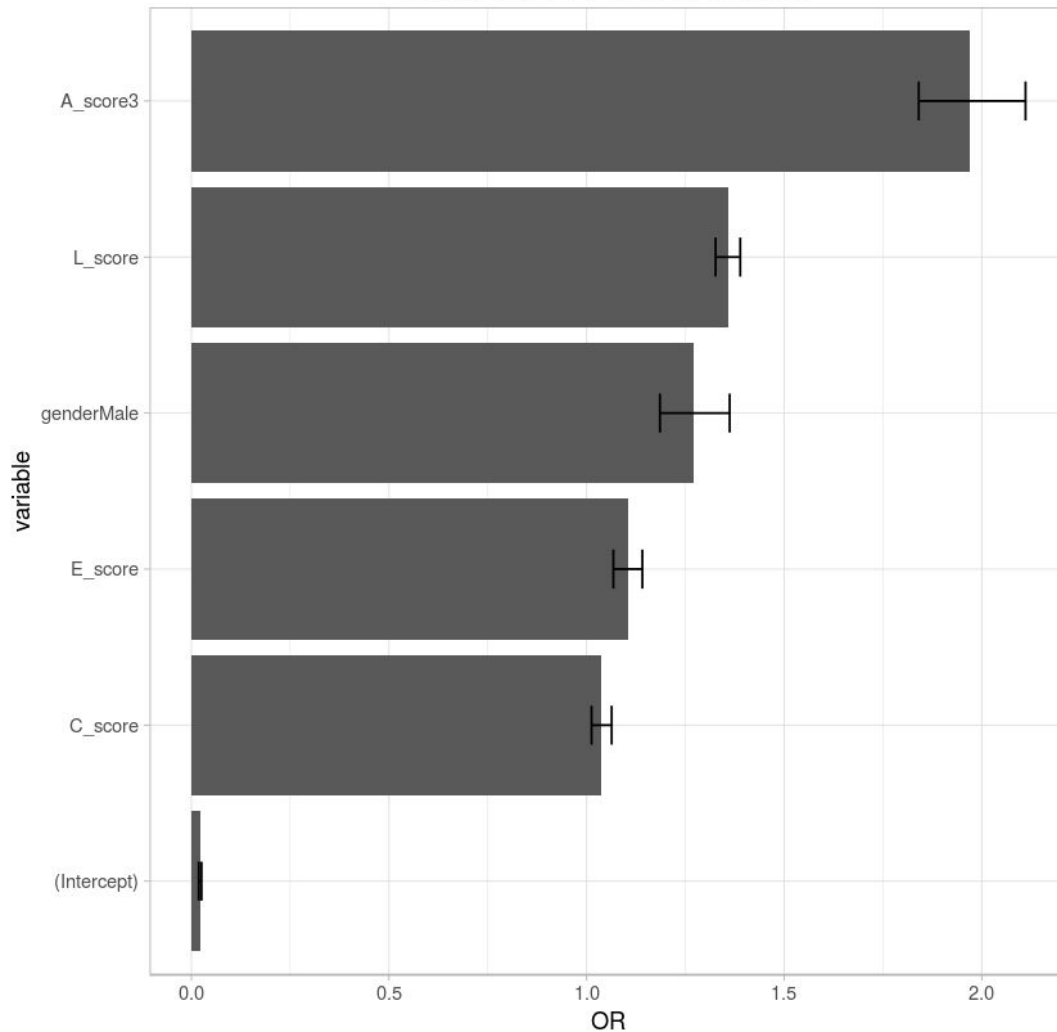
- Length of stay, acuity of illness, prior ED use, and comorbidities have been shown to correlate with readmission risk
- LACE model has been previously validated to predict readmission risk
- LACE implements covariates that have already been collected secondary to patient care
 - No extracurricular data collection required

ROC Analysis



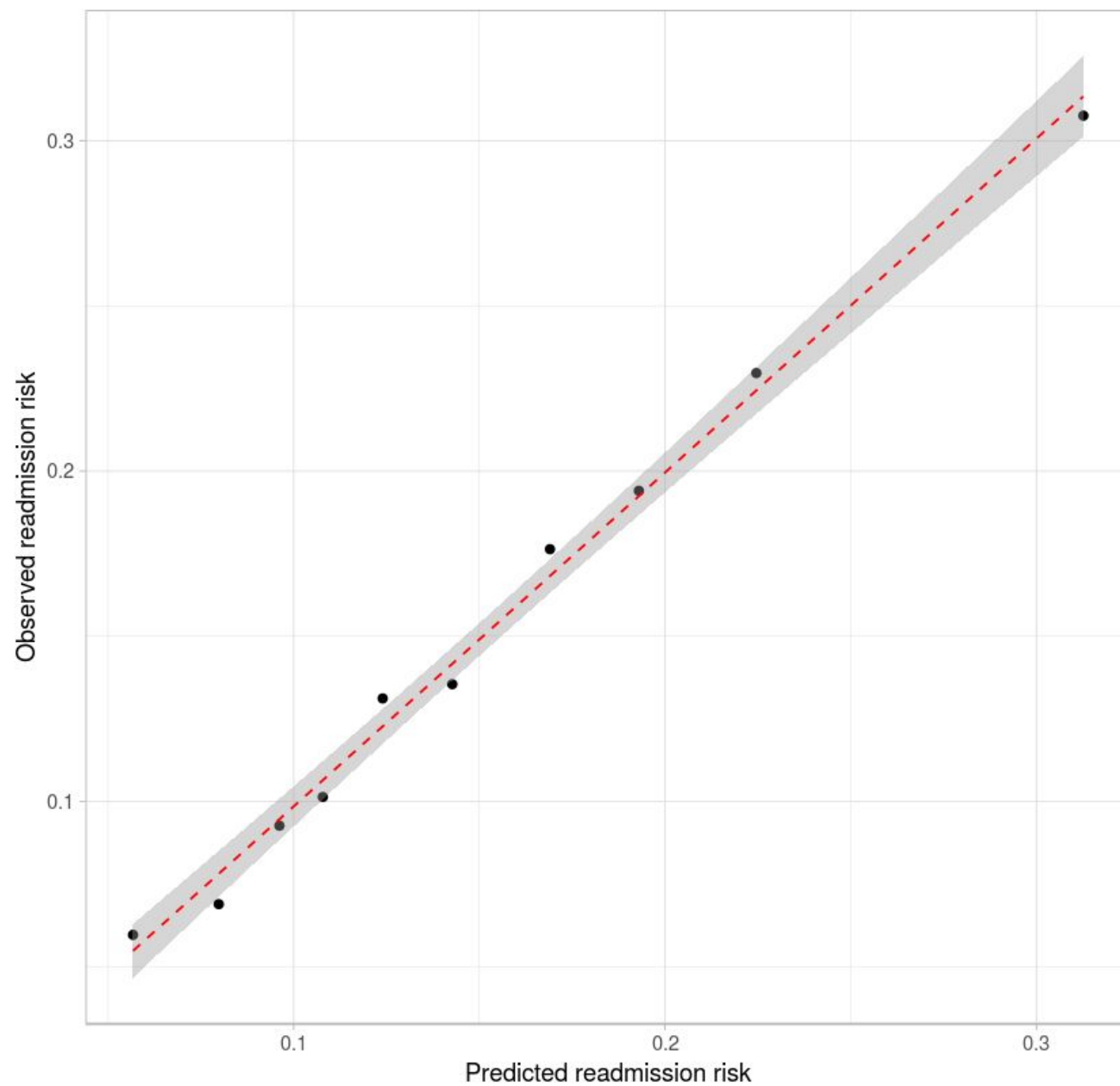
Final Model Coefficients

Odds Ratios for Model Predictors

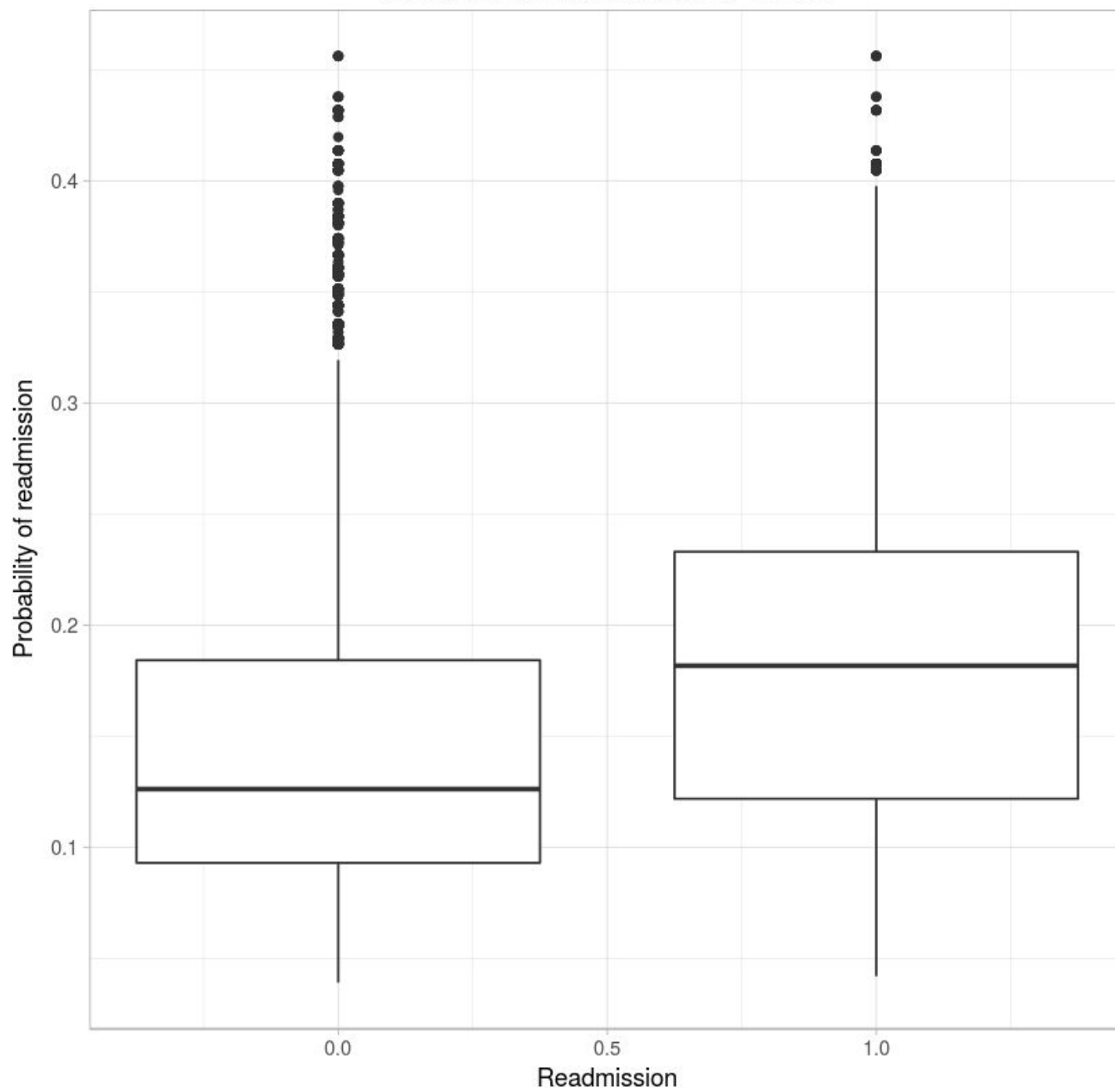


Predictor	Odds Ratio
L	1.36 (1.33,1.39)
A	1.97 (1.84,2.11)
C	1.04 (1.01,1.06)
E	1.10 (1.07, 1.14)
Gender (Male)	1.27 (1.19,1.36)

LACE+gender Calibration Plot



Distribution of Readmission Scores



Model Summary

Accuracy	AUC	Sensitivity	Specificity	PPV	Threshold
60.7%	0.676 vs 0.684	0.67	0.59	22%	0.15

- 5,169 visits resulting in readmission
 - 3,293 would have been flagged for follow-up
 - Potentially preventing 31,512 patient days (down from 49,300)
 - A 64% reduction in patient days

Why use LACE

- Importance of LACE implementation
 - Patient
 - HCO and its leaders
 - Clinicians
- Impact of LACE implementation
 - Increased patient care
 - Decreased cost of care and resources
 - Increased ROI.

Final note

- Role of HCO and leaders
 - Implement LACE
 - cost of care
 - quality of care
 - decrease readmission
- The clinicians
 - participate in the implementation of the LACE
 - actively use LACE
- Analysts