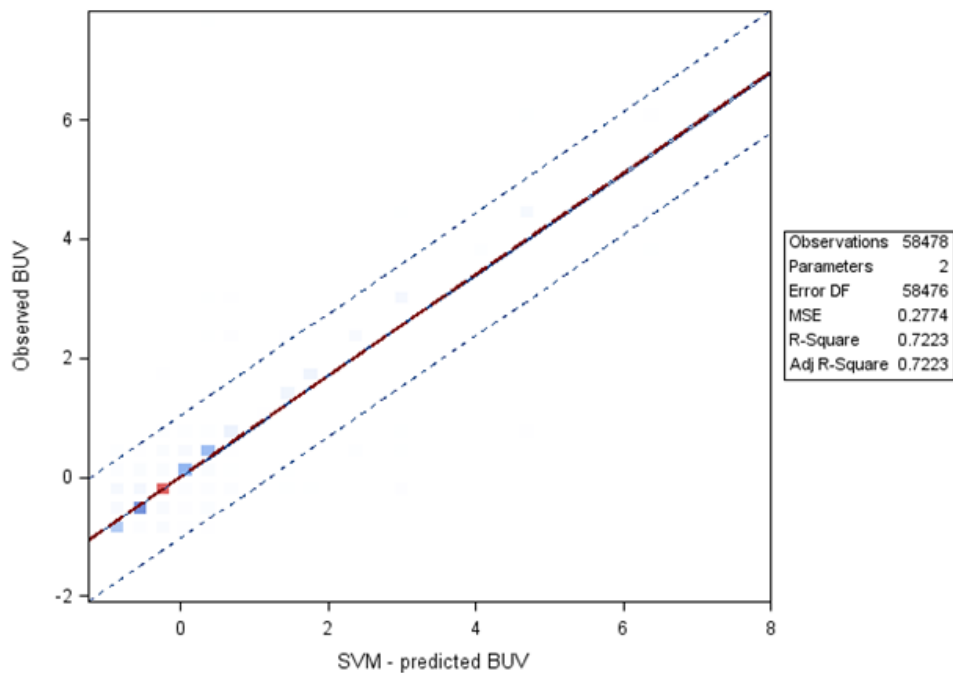
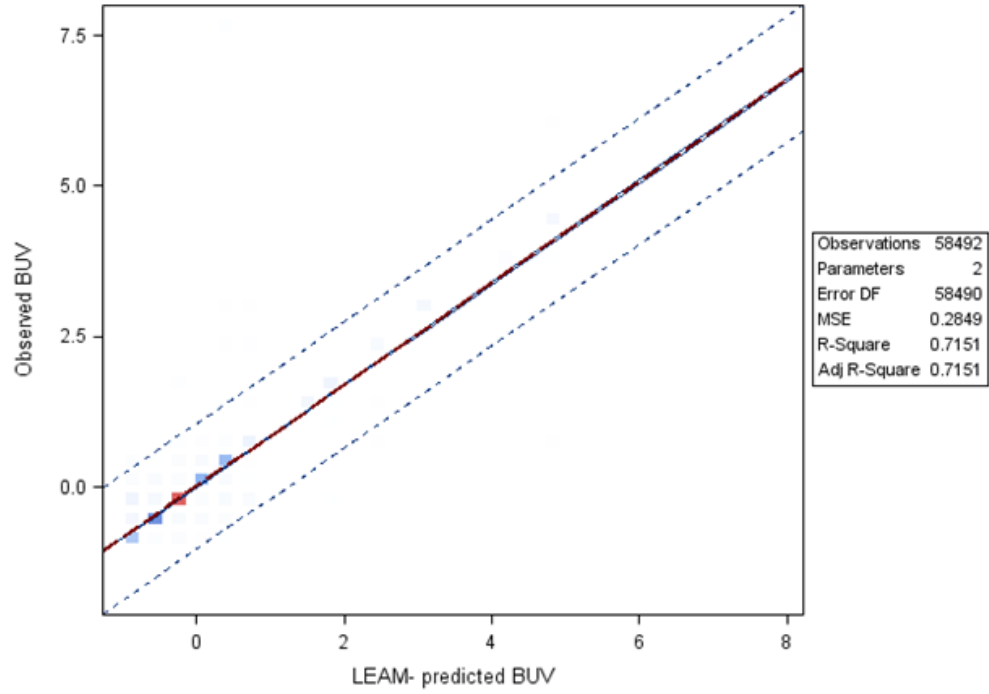


Supplemental Digital Content 4 – Calibration Plots

Calibration plots were performed using z-scores for both relative base unit value (BUV) associated to the Current Procedural Terminology codes reported as well as for the Current Procedural Terminology code estimates with each model. The figures below show scatterplots of z-scores BUV associated to the reported Current Procedural Terminology code on the (y-axes) vs and the z-score of the BUV codes associated to the Current Procedural Terminology code estimates, on the (x-axes) for the support vector machine (SVM) model (graph 1) and label-embedding attentive model (LEAM) model (graph 2), respectively:



(graph 1)



(graph 2)

For our data, **using BUUVs**, the estimates of model intercept and slope are summarized in the table below (estimates of intercepts and slopes for calibration regressions):

Prediction Model	Calibration plot Intercept	Calibration plot Slope
SVM	-0.000 (p=0.855)	0.849 (p<0.001)
LEAM	-0.000 (p=0.995)	0.845 (p<0.001)

Together, the results from the figures and table above show a high level of calibration of the prediction models; we now report these analyses in the manuscript.