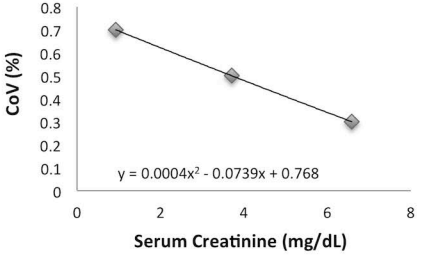
Supplemental Figure Legend

Figure S1. These graphs show the mathematical model generated for determining the coefficient of variation (CoV) for low, medium, and high laboratory variation based on Beckman Coulter's manufacturer's data for three of their analyzer machines. The laboratory CoV for a simulated patient's true serum creatinine was calculated according to the equation listed for each model, where y represents the CoV and x represents the true serum creatinine variable. Because the CoV equation depends on the SCr level, it varies by true serum creatinine and is not a fixed value across the Simulation Cohort **A.** Low (1+) CV% of serum creatinine model (SN0070562 analyzer, Beckman Coulter, Inc., Brea, CA). **B**. Medium CV% of serum creatinine model (DxC 800 analyzer, Laboratory of the Hospital of the University of Pennsylvania Quality Control Data, Beckman Coulter, Inc., Brea, CA). **C.** High CV% of serum creatinine model (Unicel DxC analyzer, Beckman Coulter, Inc., Brea, CA).

Figure S2. Time to diagnosis of AKI in the alternative models.

FIGURE S1

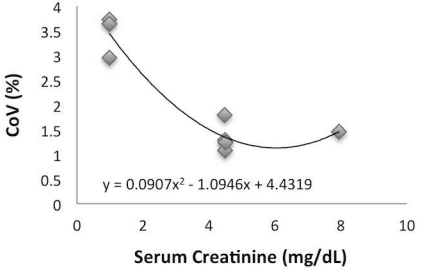
A



Low Laboratory Variation Model

Mean SCr (mg/dL)	% CoV
0.925	0.7
3.706	0.5
6.584	0.3

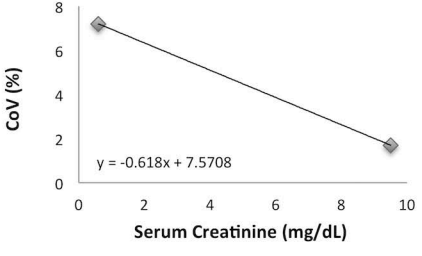
B



Medium Laboratory Variation Model

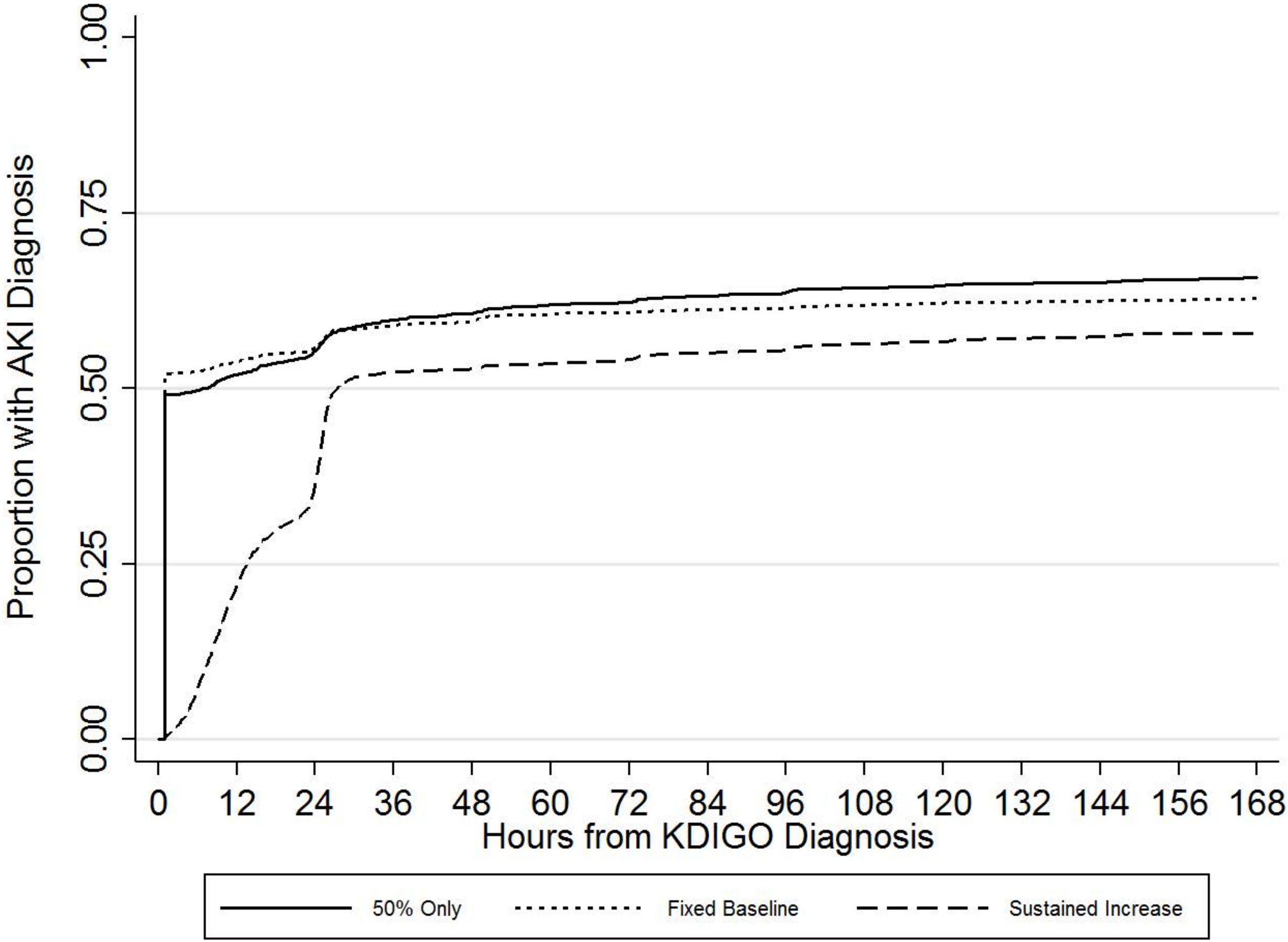
Mean SCr (mg/dL)	% CoV
0.9824	2.9548
0.9829	3.7309
0.9851	3.6427
4.4676	1.7946
4.4798	1.2854
4.4838	1.0758

C



High Laboratory Variation Model

Mean SCr (mg/dL)	% CoV
0.6	9.5
7.2	1.7


Proportion with AKI Diagnosis
0.00
0.25
0.50
0.75
1.00
0
12
24
36
48
60
72
84
96
108
120
132
144
156
168
Hours from KDIGO Diagnosis
50% Only
Fixed Baseline
Sustained Increase