

Biases in electronic health record data due to processes within the healthcare system: retrospective analysis of observational health data

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30-Day Readmission Experiments

To test whether our conclusions were unique to 3-year survival predictions, we repeated the experiments using 30-day readmission as the clinical outcome.

Methods

In the 30-day readmission experiments, for each patient, one inpatient visit with a discharge date in the final year of the data collection period was randomly selected, and whether the patient returned for another inpatient visit at either of the two hospitals within 30 days was recorded. (Not all patients had an inpatient visit. Return visits past the main five-year data collection period were counted.) The last observation of each distinct LOINC code during that inpatient visit was selected as well as the most recent test prior to that one. As with the 3-year survival experiments, the prior test could go back to 7/28/2001, and it did not have to occur during the selected inpatient visit. Only the 107 test types that were ordered in at least 1,000 patients during an inpatient visit were used in the readmission experiments. A total of 1,165,741 observations of these tests were used in these experiments.

Results

The 30-day readmission rate for all 42,965 patients with an inpatient visit was 4.20%. Of those patients, 34,300 had a white blood cell (WBC) count test during the inpatient visit, with an overall 30-day readmission rate of 5.01% (Figure S2). A high final WBC value flag before the patient was discharged was associated with a lower readmission rate (4.20%) than either a normal (5.05%, $p<0.001$) or low (12.9%, $p<0.001$) flag; a final WBC test ordered between 4pm-11pm had a lower readmission rate (2.98%) than a WBC test ordered between 12am-7am (5.43%, $p<0.001$) or 8am-3pm (5.11%, $p<0.001$); and a final WBC test ordered on a weekend had a lower readmission rate (4.51%) than a WBC test ordered on a weekday (5.16%, $p=0.017$).

Predictive Models

Methods

As described in the main text, generalized additive models (GAMs) with a logistic link were used to predict survival and 30-day readmission rates using (1) only the age, sex, and race (ASR) of the patients; (2) ASR and a single PP or HCP variable; (3) ASR and the combined PP variables; (4) ASR and the combined HCP variables; and (5) ASR and both the combined PP and HCP variables.

For each LOINC code, Brier scores¹ were calculated based on the fitted GAMs to assess the predictive accuracy of the models. Ten-fold cross-validation was used, where in each iteration, 90% of the observations were used as a training dataset, and the remaining 10% were used to test the model. Results were only reported for folds that had at least 50 training and 5 test observations. If fewer than 10 individuals of one sex were present in the training set, sex was excluded from all models. If the test result had fewer than 10 distinct values, a linear term was used. If the high-low flag only took one value or if a flag was present in the test set but not the training set, the flag was dropped from the model. If fewer than 5 distinct hours were present in the training set, a categorical variable was used to model time.

Brier scores were used to evaluate the models because they have a direct interpretation as a reduction in variance (or prediction error or mean squared error). Thus, comparison of Brier scores enables us to compute the relative benefit of using PP vs HCP variables in predicting patient outcomes. Brier scores range from 0 to 1, with lower values corresponding to better predictive models. Note that in these analyses, we separate ASR from other PP variables for clarity; however, they are similar because ASR variables are characteristics of the patient that are unaffected by the healthcare system.

The “mgcv” package² in R was used to fit the GAMs, and the default penalized thin plate regression splines were used. Generalized cross-validation was used to select the smoothing parameter.

Results

Predicting Three-Year Survival Using HCP Dimensions of WBC

The Brier score of the GAM predicting three-year survival based only on ASR for all patients is 0.04252. For patients with a white blood cell (WBC) test, ASR GAM has a Brier score of 0.05859. Individually adding the day of the week, high-low flag, test value, and hour of the day to the ASR GAM reduces the Brier score by 0.83%, 2.22%, 2.33%, and 2.50%, respectively. Adding both HCP variables (day of the week and hour of the day) to the ASR GAM reduces the Brier by 2.76%, and adding both PP variables (high-low flag and value) to the ASR GAM reduces the Brier score by 2.93%. Finally, adding both the HCP and PP variables to the ASR GAM reduces the Brier score by 4.94%. Thus, when using a single WBC test observation to predict three-year survival, the HCP dimension of the data is nearly as good as the PP dimension; and, using both the HCP and PP dimension is about 75% better than either dimension alone. Note that although the percent reduction in Brier score for all models is small, these findings are actually quite remarkable given that we’re predicting a three-year patient outcome using a single laboratory test.

The Brier score of the ASR GAM for the 164,672 patients who have a pair of WBC test observations is 0.06955. Individually adding the day of the week, high-low flag, test value, and hour of the day for the pair of observations to the ASR GAM reduces the Brier score by 1.01%, 3.00%, 3.33%, and 4.56%, respectively. Adding the time interval between the two tests to the ASR GAM reduces the Brier score by 7.57%. With the inclusion of time interval, the combined ASR+HCP GAM reduces the Brier score by 8.44%, which is 2.27 times better than that of the combined ASR+PP GAM (3.72%). The full ASR+PP+HCP GAM for two WBC test observations reduces the Brier score by 9.85%, or 2.65 times better than the ASR+PP GAM.

Predicting 30-Day Readmission Using HCP Dimensions of WBC

The ASR GAM for 30-day readmission when a pair of WBC tests was available had a Brier score of 0.05144. Adding day of the week, time interval, high-low flag, value, and hour of the day reduces it by 0.005%, 0.30%, 0.39%, 0.46%, and 0.67%, respectively. Adding the combined PP, HCP, and PP+HCP variables reduces the Brier score by 0.46%, 0.89%, and 1.21%.

References

1. Brier, GW. "Verification of forecasts expressed in terms of probability." *Monthly weather review* 78.1 (1950): 1-3.
2. Wood, SN. "Generalized Additive Models: An Introduction with R, Second Edition." 2017. Chapman and Hall/CRC.

Table S1. Laboratory Test Names, Abbreviations, and LOINC Codes. Shown are the 272 laboratory tests used in this study.

Abbreviation	Code	Test Name
25VITD	1989-3	Calcidiol [Mass/volume] in Serum or Plasma
Abs Bands Manual	763-3	Band form neutrophils [# /volume] in Blood by Manual count
Abs Basos	26444-0	Basophils [# /volume] in Blood
Abs Basos Auto	704-7	Basophils [# /volume] in Blood by Automated count
Abs Eos	26449-9	Eosinophils [# /volume] in Blood
Abs Eos Auto	711-2	Eosinophils [# /volume] in Blood by Automated count
Abs Lymphs	26474-7	Lymphocytes [# /volume] in Blood
Abs Lymphs Auto	731-0	Lymphocytes [# /volume] in Blood by Automated count
Abs Monos	26484-6	Monocytes [# /volume] in Blood
Abs Monos Auto	742-7	Monocytes [# /volume] in Blood by Automated count
Abs Neuts	26499-4	Neutrophils [# /volume] in Blood
Abs Neuts Auto	752-6	Neutrophils [# /volume] in Blood by Automated count
Act Prot C Res Screen	13590-5	Activated protein C resistance [Time Ratio] in Platelet poor plasma by Coagulation assay
ALB	1751-7	Albumin [Mass/volume] in Serum or Plasma
ALC Toxic Screen	5639-0	Ethanol [Presence] in Blood
ALKP	6768-6	Alkaline phosphatase [Enzymatic activity/volume] in Serum or Plasma
Alpha-Fetoprotein	1834-1	Alpha-1-Fetoprotein [Mass/volume] in Serum or Plasma
ALT	1742-6	Alanine aminotransferase [Enzymatic activity/volume] in Serum or Plasma
AMY	1798-8	Amylase [Enzymatic activity/volume] in Serum or Plasma
ANA HEP2 Titer	5048-4	Nuclear Ab [Titer] in Serum by Immunofluorescence
Anion	10466-1	Anion gap 3 in Serum or Plasma
Anti-dsDNA Ab	5130-0	DNA double strand Ab [Units/volume] in Serum
Anti-RNP Ab	5301-7	Ribonucleoprotein extractable nuclear Ab [Presence] in Serum by Immunoassay
Anti-RNP Ab Cnt	29374-6	Ribonucleoprotein extractable nuclear Ab [Units/volume] in Serum
Anti-Sm Ab	5356-1	Smith extractable nuclear Ab [Presence] in Serum by Immunoassay
Anti-Sm Ab Cnt	11090-8	Smith extractable nuclear Ab [Units/volume] in Serum
Anticardiolipin IgG	3181-5	Cardiolipin IgG Ab [Units/volume] in Serum by Immunoassay
Anticardiolipin IgM	3182-3	Cardiolipin IgM Ab [Units/volume] in Serum by Immunoassay
AST	1920-8	Aspartate aminotransferase [Enzymatic activity/volume] in Serum or Plasma
AT III Functional	3177-3	Antithrombin Ag [Moles/volume] in Platelet poor plasma by Immunologic method
Atypical Lymphs	735-1	Variant lymphocytes/100 leukocytes in Blood by Manual count
B12	2170-9	Cobalamin [Mass/volume] in Serum
Bands Manual	764-1	Band form neutrophils/100 leukocytes in Blood by Manual count
Base Excess	11555-0	Base excess in Blood by calculation
Base Excess Arterial	1925-7	Base excess in Arterial blood by calculation
Basos	30180-4	Basophils/100 leukocytes in Blood
Basos Auto	706-2	Basophils/100 leukocytes in Blood by Automated count
Basos Manual	707-0	Basophils/100 leukocytes in Blood by Manual count
Bili Conj	15152-2	Bilirubin.conjugated [Mass/volume] in Serum or Plasma
Bili Indir	15153-0	Indirect bilirubin [Mass/volume] in Serum or Plasma
BNP	30934-4	Natriuretic peptide B [Mass/volume] in Serum or Plasma
BUN	3094-0	Urea nitrogen [Mass/volume] in Serum or Plasma

Abbreviation	Code	Test Name
C3	4485-9	Complement C3 [Mass/volume] in Serum or Plasma
C4	4498-2	Complement C4 [Mass/volume] in Serum or Plasma
CA	2000-8	Calcium [Moles/volume] in Serum or Plasma
CA125	2006-5	Cancer Ag 125 [Presence] in Serum or Plasma
CA125 Cnt	10334-1	Cancer Ag 125 [Units/volume] in Serum or Plasma
CA15-3	6875-9	Cancer Ag 15-3 [Units/volume] in Serum or Plasma
CA19-9	2009-9	Cancer Ag 19-9 [Presence] in Serum or Plasma
Calcitriol	1649-3	Calcitriol [Mass/volume] in Serum or Plasma
Cardiolipin	8062-2	Cardiolipin Ab [Units/volume] in Serum
CD16+CD56	8112-5	CD3-CD16+CD56+ (Natural killer) cells/100 cells in Blood
CD19	8117-4	CD19 cells/100 cells in Blood
CEA	2039-6	Carcinoembryonic Ag [Mass/volume] in Serum or Plasma
CH50	4532-8	Complement total hemolytic CH50 [Units/volume] in Serum or Plasma
CHOL	2093-3	Cholesterol [Mass/volume] in Serum or Plasma
CK-MB	2158-4	Creatine kinase.total/Creatine kinase.MB [Enzymatic activity ratio] in Serum or Plasma
CL	2075-0	Chloride [Moles/volume] in Serum or Plasma
CO2	2028-9	Carbon dioxide, total [Moles/volume] in Serum or Plasma
Cortisol	2143-6	Cortisol [Mass/volume] in Serum or Plasma
CPK	2157-6	Creatine kinase [Enzymatic activity/volume] in Serum or Plasma
CPK-MB	6773-6	Creatine kinase.MB
CRE	2160-0	Creatinine [Mass/volume] in Serum or Plasma
CRP	11039-5	C reactive protein [Presence] in Serum or Plasma
CRP High Sens	30522-7	C reactive protein [Mass/volume] in Serum or Plasma by High sensitivity method
CSF Bands	12278-8	Band form neutrophils/100 leukocytes in Cerebral spinal fluid by Manual count
CSF Basos	13519-4	Basophils/100 leukocytes in Cerebral spinal fluid by Manual count
CSF Eos	12208-5	Eosinophils/100 leukocytes in Cerebral spinal fluid by Manual count
CSF Glucose	2342-4	Glucose [Mass/volume] in Cerebral spinal fluid
CSF Lymphs	10328-3	Lymphocytes/100 leukocytes in Cerebral spinal fluid by Manual count
CSF Monos	10329-1	Monocytes/100 leukocytes in Cerebral spinal fluid by Manual count
CSF Neuts	13516-0	Neutrophils/100 leukocytes in Cerebral spinal fluid by Manual count
CSF Non-Hematic	13525-1	Nonhematic cells/100 leukocytes in Cerebral spinal fluid by Manual count
CSF NRBC	13529-3	Nucleated erythrocytes [# /volume] in Cerebral spinal fluid by Manual count
CSF Other Hematic	13523-6	Leukocytes other/100 leukocytes in Cerebral spinal fluid by Manual count
CSF RBC	792-2	Erythrocytes [# /volume] in Cerebral spinal fluid by Manual count
CSF Reactive Lymphs	13517-8	Variant lymphocytes/100 leukocytes in Cerebral spinal fluid by Manual count
CSF Total Protein	2880-3	Protein [Mass/volume] in Cerebral spinal fluid
CSF Unidentified	13527-7	Unidentified cells/100 leukocytes in Cerebral spinal fluid by Manual count
CSF WBC	806-0	Leukocytes [# /volume] in Cerebral spinal fluid by Manual count
CSF/F Atyps	13518-6	Variant lymphocytes/100 leukocytes in Body fluid by Manual count

Abbreviation	Code	Test Name
CSF/F Bands	13354-6	Band form neutrophils/100 leukocytes in Body fluid by Manual count
CSF/F Basos	13520-2	Basophils/100 leukocytes in Body fluid by Manual count
CSF/F Eos	12209-3	Eosinophils/100 leukocytes in Body fluid by Manual count
CSF/F Lymphs	11031-2	Lymphocytes/100 leukocytes in Body fluid
CSF/F Monos	10330-9	Monocytes/100 leukocytes in Body fluid by Manual count
CSF/F Nonhematics	13526-9	Nonhematic cells/100 leukocytes in Body fluid by Manual count
CSF/F Other Hematics	13524-4	Leukocytes other/100 leukocytes in Body fluid by Manual count
CSF/F Polys	12238-2	Neutrophils/100 leukocytes in Body fluid by Manual count
CSF/F RBC	6741-3	Erythrocytes [# /volume] in Body fluid by Manual count
CSF/F Unident	13528-5	Unidentified cells/100 leukocytes in Body fluid by Manual count
CSF/F WBC	6743-9	Leukocytes [# /volume] in Body fluid by Manual count
DBILI	1968-7	Bilirubin.direct [Mass/volume] in Serum or Plasma
DHEA Sulfate	2191-5	Dehydroepiandrosterone sulfate (DHEA-S) [Mass/volume] in Serum or Plasma
Digoxin	10535-3	Digoxin [Mass/volume] in Serum or Plasma
Dilantin	3968-5	Phenytoin [Mass/volume] in Serum or Plasma
Duration Post Ejac	10572-6	Duration^post ejaculation
Eos	26450-7	Eosinophils/100 leukocytes in Blood
Eos Auto	713-8	Eosinophils/100 leukocytes in Blood by Automated count
Eos Manual	714-6	Eosinophils/100 leukocytes in Blood by Manual count
ESR	4537-7	Erythrocyte sedimentation rate by Westergren method
Estradiol	2243-4	Estradiol (E2) [Mass/volume] in Serum or Plasma
Ethanol	5640-8	Ethanol [Mass/volume] in Blood
Factor VIII	3209-4	Coagulation factor VIII activity actual/normal in Platelet poor plasma by Coagulation assay
FE	2498-4	Iron [Mass/volume] in Serum or Plasma
Ferritin	2276-4	Ferritin [Mass/volume] in Serum or Plasma
Fibrin D-dimer EIA	15129-0	Fibrin D-dimer EIA
Fibrin D-dimer IA	3246-6	Fibrin D-dimer [Units/volume] in Platelet poor plasma by Immunoassay
Fibrinogen	3255-7	Fibrinogen [Mass/volume] in Platelet poor plasma by Coagulation assay
FIO2	3151-8	Inhaled oxygen flow rate
Fluid Blast	13522-8	Blasts/100 leukocytes in Body fluid by Manual count
Fluid Glucose	2344-0	Glucose [Mass/volume] in Body fluid
Fluid LDH	2529-6	Lactate dehydrogenase [Enzymatic activity/volume] in Body fluid
Fluid Macros	12230-9	Macrophages/100 leukocytes in Body fluid by Manual count
Fluid NRBC	13530-1	Nucleated erythrocytes [# /volume] in Body fluid by Manual count
Fluid pH	2748-2	pH of Body fluid
Fluid Tot Prot	2881-1	Protein [Mass/volume] in Body fluid
Folate	2284-8	Folate [Mass/volume] in Serum or Plasma
Free T4	3024-7	Thyroxine (T4) free [Mass/volume] in Serum or Plasma
Free Testost	2991-8	Testosterone Free [Mass/volume] in Serum or Plasma
FSH	2286-3	Follitropin [Moles/volume] in Serum or Plasma
GGT	2324-2	Gamma glutamyl transferase [Enzymatic activity/volume] in Serum or Plasma
GLOB	2336-6	Globulin [Mass/volume] in Serum
GLU	6777-7	Glucose [Mass/volume] in Serum or Plasma
Glucose Blood	2339-0	Glucose [Mass/volume] in Blood
Haptoglobin	4542-7	Haptoglobin [Mass/volume] in Serum or Plasma
HCG Qual	2118-8	Choriogonadotropin (pregnancy test) [Presence] in Serum or Plasma

Abbreviation	Code	Test Name
HCG Quant	2119-6	Choriogonadotropin [Moles/volume] in Serum or Plasma
HCO3	1959-6	Bicarbonate [Moles/volume] in Blood
HCT	4544-3	Hematocrit [Volume Fraction] of Blood by Automated count
HDL	2086-7	Cholesterol.in HDL [Mass/volume] in Serum or Plasma
HGB	718-7	Hemoglobin [Mass/volume] in Blood
Hgb A	4546-8	Hemoglobin A/Hemoglobin.total in Blood
Hgb A1	4547-6	Hemoglobin A1/Hemoglobin.total in Blood
Hgb A1c	4548-4	Hemoglobin A1c/Hemoglobin.total in Blood
Hgb A2	4552-6	Hemoglobin A2/Hemoglobin.total in Blood by Electrophoresis
Hgb A2 Prime	35127-0	Hemoglobin A2.prime/Hemoglobin.total in Blood
Hgb Barts	31156-3	Hemoglobin Barts/Hemoglobin.total in Blood
Hgb C	4563-3	Hemoglobin C/Hemoglobin.total in Blood
Hgb D	4569-0	Hemoglobin D/Hemoglobin.total in Blood
Hgb E	4575-7	Hemoglobin E/Hemoglobin.total in Blood
Hgb F	4576-5	Hemoglobin F/Hemoglobin.total in Blood
Hgb G Cough	33593-5	Hemoglobin G - Coughatta/Hemoglobin.total in Blood
Hgb Lepore	35125-4	Hemoglobin Lepore/Hemoglobin.total in Blood
Hgb O	35126-2	Hemoglobin O - Arab/Hemoglobin.total in Blood
Hgb Other	24469-9	Hemoglobin XXX/Hemoglobin.total in Blood by Electrophoresis
Hgb S	4625-0	Hemoglobin S/Hemoglobin.total in Blood
IgA	2458-8	IgA [Mass/volume] in Serum or Plasma
IgE	2462-0	IgE [Mass/volume] in Serum
IGF-I	2484-4	Insulin-like growth factor-I [Mass/volume] in Serum or Plasma
IgG	2465-3	IgG [Mass/volume] in Serum or Plasma
IgM	2472-9	IgM [Mass/volume] in Serum or Plasma
Insulin	20448-7	Insulin [Units/volume] in Serum or Plasma
Ionized Ca	1994-3	Calcium.ionized [Moles/volume] in Blood
Ionized Ca Serum	1995-0	Calcium.ionized [Moles/volume] in Serum or Plasma
K	2823-3	Potassium [Moles/volume] in Serum or Plasma
K Blood	6298-4	Potassium [Moles/volume] in Blood
Lactate	2524-7	Lactate [Moles/volume] in Serum or Plasma
LDH	2532-0	Lactate dehydrogenase [Enzymatic activity/volume] in Serum or Plasma
LDL	2090-9	Cholesterol.in LDL [Mass/volume] in Serum or Plasma
LDL Calc	14815-5	Lipoprotein.beta [Moles/volume] in Serum or Plasma by calculation
LH	2579-1	Lutropin [Moles/volume] in Serum or Plasma
LIPS	3040-3	Lipase [Enzymatic activity/volume] in Serum or Plasma
Lithium	3719-2	Lithium [Mass/volume] in Serum or Plasma
Lp(a)	10835-7	Lipoprotein a [Mass/volume] in Serum or Plasma
Lyme	11006-4	Borrelia burgdorferi Ab [Presence] in Serum
Lymphs	26478-8	Lymphocytes/100 leukocytes in Blood
Lymphs Auto	736-9	Lymphocytes/100 leukocytes in Blood by Automated count
Lymphs Manual	737-7	Lymphocytes/100 leukocytes in Blood by Manual count
MCH	785-6	Erythrocyte mean corpuscular hemoglobin [Entitic mass] by Automated count
MCHC	786-4	Erythrocyte mean corpuscular hemoglobin concentration [Mass/volume] by Automated count
MCV	787-2	Erythrocyte mean corpuscular volume [Entitic volume] by Automated count
Metamyelos Manual	740-1	Metamyelocytes/100 leukocytes in Blood by Manual count
MG	11554-3	Magnesium [Molecules/volume] in Serum or Plasma
MHCT	4545-0	Hematocrit [Volume Fraction] of Blood by Centrifugation

Abbreviation	Code	Test Name
Monos	26485-3	Monocytes/100 leukocytes in Blood
Monos Auto	5905-5	Monocytes/100 leukocytes in Blood by Automated count
Monos Manual	744-3	Monocytes/100 leukocytes in Blood by Manual count
Myelos Manual	749-2	Myelocytes/100 leukocytes in Blood by Manual count
NA	2951-2	Sodium [Moles/volume] in Serum or Plasma
NA Blood	2947-0	Sodium [Moles/volume] in Blood
Neuts	26511-6	Neutrophils/100 leukocytes in Blood
Neuts Auto	770-8	Neutrophils/100 leukocytes in Blood by Automated count
Neuts Manual	769-0	Segmented neutrophils/100 leukocytes in Blood by Manual count
NH3	1839-0	Ammonia [Moles/volume] in Blood
NT-proBNP	33762-6	Natriuretic peptide.B prohormone N-Terminal [Mass/volume] in Serum or Plasma
Nuc RBC	772-4	Nucleated erythrocytes [# /volume] in Blood by Manual count
O2 Sat	2713-6	Oxygen saturation Calculated from oxygen partial pressure in Blood
OSM	2692-2	Osmolality of Serum or Plasma
pCO2 Arterial	2019-8	Carbon dioxide [Partial pressure] in Arterial blood
pCO2 Blood	11557-6	Carbon dioxide [Partial pressure] in Blood
pCO2 Venous	2021-4	Carbon dioxide [Partial pressure] in Venous blood
pH Arterial	2744-1	pH of Arterial blood
pH Blood	11558-4	pH of Blood
pH Serum	2753-2	pH of Serum or Plasma
pH Venous	2746-6	pH of Venous blood
PHOS	2777-1	Phosphate [Mass/volume] in Serum or Plasma
PLT	777-3	Platelets [# /volume] in Blood by Automated count
pO2 Arterial	2703-7	Oxygen [Partial pressure] in Arterial blood
pO2 Blood	11556-8	Oxygen [Partial pressure] in Blood
pO2 Venous	2705-2	Oxygen [Partial pressure] in Venous blood
Progesterone	2839-9	Progesterone [Mass/volume] in Serum or Plasma
Prolactin	2842-3	Prolactin [Mass/volume] in Serum or Plasma
Promyelos Manual	783-1	Promyelocytes/100 leukocytes in Blood by Manual count
Protein	2885-2	Protein [Mass/volume] in Serum or Plasma
Protein C Functional	6007-9	Protein C [Units/volume] in Platelet poor plasma by Coagulation assay
PSA	2857-1	Prostate specific Ag [Mass/volume] in Serum or Plasma
PSA Free	10886-0	Prostate Specific Ag Free [Mass/volume] in Serum or Plasma
PSA PCT Free	12841-3	Prostate Specific Ag Free/Prostate specific Ag.total in Serum or Plasma
PT	5902-2	Prothrombin time (PT)
PT-INR	6301-6	INR in Platelet poor plasma by Coagulation assay
PTH	2731-8	Parathyrin.intact [Mass/volume] in Serum or Plasma
PTT	5898-2	Activated partial thromboplastin time (aPTT) in Blood by Coagulation assay
PTT Blood	3173-2	aPTT in Blood by Coagulation assay
RBC	789-8	Erythrocytes [# /volume] in Blood by Automated count
RDW	788-0	Erythrocyte distribution width [Ratio] by Automated count
Retics	4679-7	Reticulocytes/100 erythrocytes in Blood
RF	11572-5	Rheumatoid factor [Units/volume] in Serum or Plasma
RF Neph	15205-8	Rheumatoid factor [Units/volume] in Serum by Nephelometry
SHBG	13967-5	Sex hormone binding globulin [Moles/volume] in Serum or Plasma
SS-A/Ro Ab	5351-2	Sjogrens syndrome-A extractable nuclear Ab [Presence] in Serum by Immunoassay

Abbreviation	Code	Test Name
SS-B/La Ab	5353-8	Sjogrens syndrome-B extractable nuclear Ab [Presence] in Serum by Immunoassay
T3	3053-6	Triiodothyronine (T3) [Mass/volume] in Serum or Plasma
T3 Uptake	3050-2	Triiodothyronine resin uptake (T3RU) in Serum or Plasma
T4	3026-2	Thyroxine (T4) [Mass/volume] in Serum or Plasma
TBILI	1975-2	Bilirubin.total [Mass/volume] in Serum or Plasma
Temp	8310-5	Body temperature
Testosterone	2993-4	Testosterone [Mass/volume] in Serum or Plasma
Thyroglobulin	3013-0	Thyroglobulin [Mass/volume] in Serum or Plasma
TIBC	2500-7	Iron binding capacity [Mass/volume] in Serum or Plasma
Total Cells Counted	11282-1	Cells Counted Total [#] in Blood
TPO	8099-4	Thyroperoxidase Ab [Units/volume] in Serum or Plasma
TRIG	2571-8	Triglyceride [Mass/volume] in Serum or Plasma
Troponin-I	10839-9	Troponin I.cardiac [Mass/volume] in Serum or Plasma
Troponin-T	6598-7	Troponin T.cardiac [Mass/volume] in Serum or Plasma
TSH	3016-3	Thyrotropin [Units/volume] in Serum or Plasma
UCG	2106-3	Choriogonadotropin (pregnancy test) [Presence] in Urine
Urate	3084-1	Urate [Mass/volume] in Serum or Plasma
Urine ALB	1754-1	Albumin [Mass/volume] in Urine
Urine ALB Pres	1753-3	Albumin [Presence] in Urine
Urine ALB/CRE	9318-7	Albumin/Creatinine [Mass Ratio] in Urine
Urine BILI	5770-3	Bilirubin.total [Presence] in Urine by Test strip
Urine CA	2004-0	Calcium [Moles/volume] in Urine
Urine Casts	5796-8	Hyaline casts [# /area] in Urine sediment by Microscopy low power field
Urine CL	2078-4	Chloride [Moles/volume] in Urine
Urine Coll Dur	13362-9	Collection duration of Urine
Urine CRE	2161-8	Creatinine [Mass/volume] in Urine
Urine CRE Timed	2162-6	Creatinine [Mass/time] in 24 hour Urine
Urine GLU	5792-7	Glucose [Mass/volume] in Urine by Test strip
Urine Hgb	5794-3	Hemoglobin [Presence] in Urine by Test strip
Urine K	2828-2	Potassium [Moles/volume] in Urine
Urine KET	5797-6	Ketones [Mass/volume] in Urine by Test strip
Urine MALB/CRE	14959-1	Microalbumin/Creatinine [Mass Ratio] in Urine
Urine NA	2955-3	Sodium [Moles/volume] in Urine
Urine NIT	5802-4	Nitrite [Presence] in Urine by Test strip
Urine OSM	2695-5	Osmolality of Urine
Urine pH	5803-2	pH of Urine by Test strip
Urine Prot	5804-0	Protein [Mass/volume] in Urine by Test strip
Urine Prot Timed	2889-4	Protein [Mass/time] in 24 hour Urine
Urine RBC	5808-1	Erythrocytes [# /volume] in Urine sediment by Microscopy high power field
Urine SpGr	5811-5	Specific gravity of Urine by Test strip
Urine Tot Prot	2888-6	Protein [Mass/volume] in Urine
Urine Tot Vol	3167-4	Volume of 24 hour Urine
Urine Urea Nit	3095-7	Urea nitrogen [Mass/volume] in Urine
Urine WBC Screen	5799-2	Leukocyte esterase [Presence] in Urine by Test strip
Urine WBC Sed	5821-4	Leukocytes [# /area] in Urine sediment by Microscopy high power field
Urobilinogen	5818-0	Urobilinogen [Presence] in Urine by Test strip
Vancomycin	20578-1	Vancomycin [Mass/volume] in Serum or Plasma
Vancomycin Random	4091-5	Vancomycin [Mass/volume] in Serum or Plasma --random
Vancomycin Trough	4092-3	Vancomycin [Mass/volume] in Serum or Plasma --trough

Abbreviation	Code	Test Name
VLDL	2092-5	Cholesterol.in VLDL [Mass/volume] in Serum or Plasma
WBC	6690-2	Leukocytes [# /volume] in Blood by Automated count

Table S2. Demographic Distributions of the Patient Cohorts. The age, sex, and race distributions are shown, along with the 3-year survival rate and 30-day readmission rates for each category.

	Full Study Cohort (669,452 Patients)		Patients with Inpatient Visits (42,965 Patients)	
Category	Fraction of Patients	3-Year Survival Rate	Fraction of Patients	30-Day Readmission Rate
All Patients	1.0000	0.9495	1.0000	0.0420
Age (Years)				
0-9	0.0831	0.9984	0.2006	0.0042
10-19	0.0601	0.9969	0.0121	0.0328
20-29	0.1163	0.9947	0.0856	0.0326
30-39	0.1532	0.9920	0.1713	0.0303
40-49	0.1690	0.9782	0.1075	0.0491
50-59	0.1679	0.9553	0.1298	0.0583
60-69	0.1229	0.9155	0.1214	0.0679
70-79	0.0844	0.8350	0.1090	0.0715
80-89	0.0431	0.7026	0.0627	0.0624
Sex				
F	0.5889	0.9607	0.6134	0.0383
M	0.4111	0.9335	0.3866	0.0479
Race				
Asian	0.0309	0.9835	0.0348	0.0261
Black	0.0653	0.9683	0.1131	0.0449
Hispanic	0.0898	0.9901	0.0863	0.0262
NatAmPI	0.0012	0.9669	0.0011	0.0426
White	0.6982	0.9404	0.6874	0.0458
Other	0.1146	0.9535	0.0773	0.0292

Relative Predictive Value of HCP Over PP

Odds Ratio of 3 Year Mortality

Legend:

- Other Tests
- Basic Metabolic Panel
- Blood Differential
- Blood Gases
- Complete Blood Count
- General Chemistries
- Urinalysis

Tests and Approximate Coordinates (Odds Ratio, Relative Predictive Value):

Test	Odds Ratio	Relative Predictive Value	Category
VLDL	0.5	100	Other Tests
Urine KET	1.5	100	Urinalysis
Urine Hgb	2.5	100	Urinalysis
CD19	5	100	Other Tests
Glucose Blood	10	100	Other Tests
Urine OSM	20	100	Other Tests
NH3	15	100	General Chemistries
Metamyllos Manual	25	100	Other Tests
Urine SpGr	3	30	Urinalysis
Folate	5	20	Other Tests
Urine pH	3	15	Urinalysis
Dilantin	10	12	Other Tests
K	2	15	Basic Metabolic Panel
TSH	0.8	12	Other Tests
MCV	2.5	8	Complete Blood Count
ALT	2	6	Other Tests
Hgb A1c	1.5	5	Other Tests
AST	2.5	5	Other Tests
Anion	3	5	Basic Metabolic Panel
Ionized Ca Serum	5	6	Other Tests
MG	8	5	General Chemistries
FIO2	10	4	Blood Gases
PTT	5	3	Other Tests
PT	8	2.5	General Chemistries
Eos Manual	15	3	Other Tests
Urate	1.5	4	General Chemistries
GLU	2.5	3.5	Basic Metabolic Panel
CL	2	3	Other Tests
25VITD	1.5	2.5	General Chemistries
CO2	2.5	2.5	General Chemistries
IgM	3	2.5	Other Tests
DBILI	5	2	General Chemistries
LIPS	8	2	Other Tests
FE	5	1.5	General Chemistries
AMY	8	1.5	General Chemistries
CA19-9	15	1.5	Other Tests
Vancomycin Trough	10	1.2	Other Tests
Cortisol	12	1.1	Other Tests
PSA	0.5	1.1	Other Tests
LDL	0.8	1.1	Other Tests
HDL	1	0.9	Other Tests
CHOL	1.2	0.8	Other Tests
ESR	1.5	0.7	Other Tests
CA15-3	2.5	0.6	Other Tests
CA125	3	0.5	Other Tests
ALB	2.5	0.4	Other Tests
T3	1.5	0.3	Other Tests
TIBC	2.5	0.3	Other Tests
GGT	5	0.3	Other Tests
MHCT	8	0.2	Complete Blood Count
Urine WBC Sed	2.5	0.2	Urinalysis
Troponin-T	3	0.2	Other Tests
pH Serum	5	0.2	Blood Gases
Total Cells Counted	10	0.2	Other Tests
Fibrinogen	15	0.2	Other Tests
CSF/F Other Hematics	10	0.15	Other Tests
O2 Sat	12	0.15	Blood Gases
pCO2 Arterial	10	0.15	Blood Gases
pCO2 Blood	12	0.15	Blood Gases
pCO2 Arterial	15	0.15	Blood Gases
O2 Sat	18	0.15	Blood Gases
pCO2 Venous	20	0.15	Blood Gases
Lactate	15	0.1	General Chemistries
Fluid Tot Prot	25	0.1	Other Tests
CRP High Sens	0.5	0.1	Other Tests
Testosterone	1	0.1	Other Tests
CK-MB	2	0.1	Other Tests
Urine ALB/CRE	1.5	0.1	Urinalysis

Figure S2. Predicting 30-Day Readmission Rates Using WBC Value and HCP. Based on the last WBC test before the patient was discharged, the graphs show the number of patients (a, c, e) and 30-day readmission rate (b, d, f). The top graphs (a, b) are by test result, the middle (c, d) are by time of the day, and the bottom (e, f) are by day of the week.

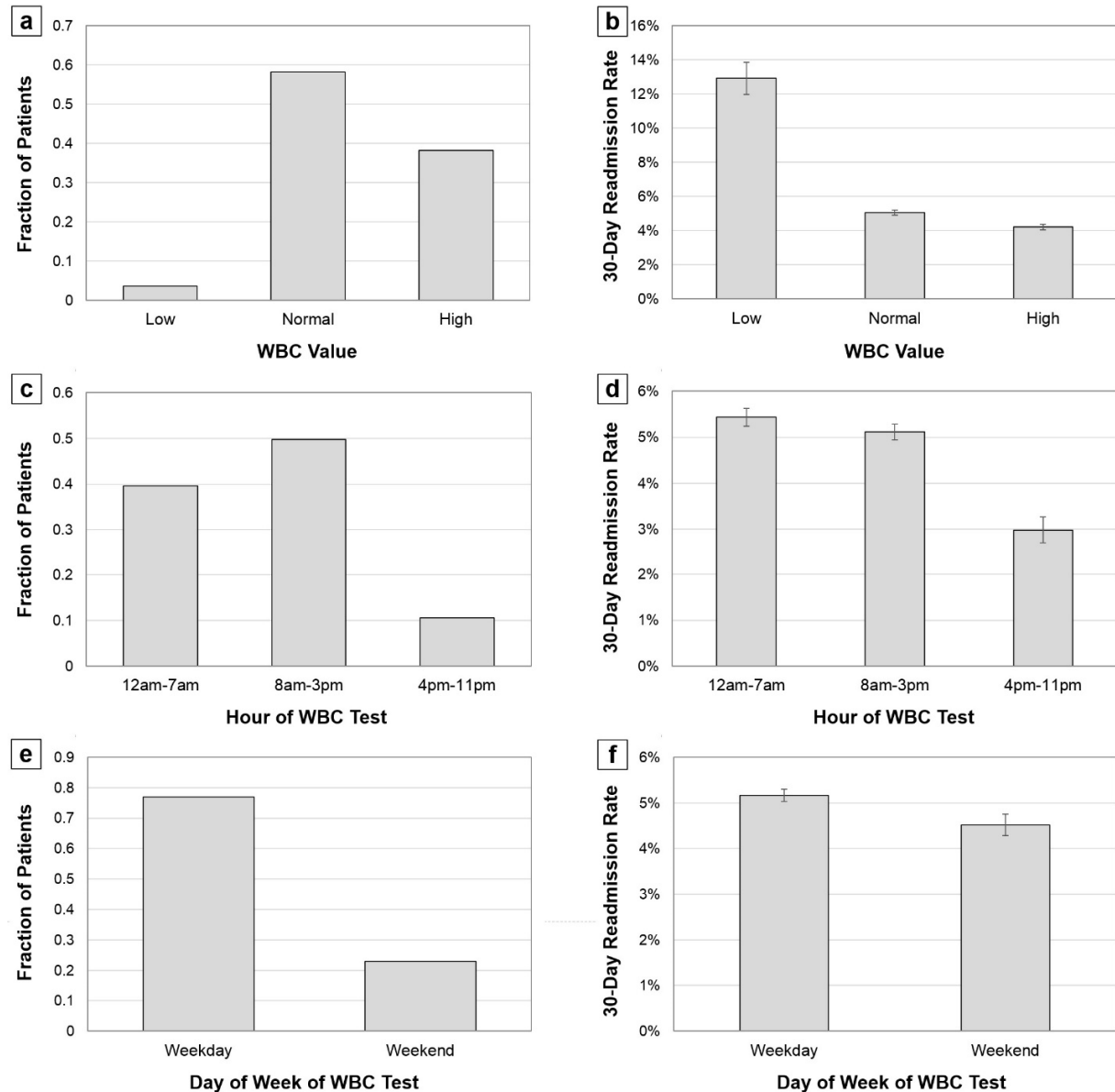


Table S3. Summary of Results for 30-Day Readmission Models. Columns correspond to models that use either a single laboratory test result or a pair of consecutive test result observations. Shown are the number (and percentage) of tests whose best predictive model was based on ASR alone, or included one or more pathophysiology (PP) variables (lab value and high-low flag) and/or healthcare process (HCP) variables (hour of day, day of week, and the time interval between the pair of tests).

	Single Test	Pair of Tests
Total Types of Tests	107 (100)	107 (100)
<i>Best Combined Model</i>		
ASR + PP + HCP	40 (37.4)	36 (33.6)
ASR + HCP	30 (28.0)	28 (26.2)
ASR + PP	14 (13.1)	6 (5.6)
ASR	23 (21.5)	37 (34.6)
<i>Best Single Model</i>		
ASR + Hour of Day	50 (46.7)	46 (43.0)
ASR + Day of Week	5 (4.7)	4 (3.7)
ASR + Time Interval	-	11 (10.3)
ASR + Lab Value	28 (26.2)	16 (15.0)
ASR + High Low Flag	13 (12.1)	8 (7.5)
ASR	11 (10.3)	22 (20.6)

Table S4. Predicting 30-Day Readmission Using the HCP and PP Dimensions of Laboratory Tests. Tests are grouped based on whether adding the HCP and/or PP variables of the laboratory test improve a model based only on age, sex, and race (ASR). Results are for models based on a pair of consecutive test result observations.

	HCP Model Better Than PP Model	PP Model Better Than HCP Model
Combined Model with Both HCP and PP Better than HCP or PP Alone	28 Tests: Abs Basos Auto; Abs Eos Auto; Abs Monos Auto; ALKP; Anion; AST; Bands Manual; Basos Auto; BUN; CHOL; CL; CO2; CRE; Eos Auto; GLU; HCT; HGB; MCH; MCHC; MG; Monos Manual; NA; PLT; PT; PT-INR; RBC; TBILL; WBC	8 Tests: Abs Lymphs Auto; DBILL; Hgb A1c; Lymphs Auto; Monos Auto; Neuts Auto; RDW; Urine pH
HCP or PP Alone Better Than Combined Model	28 Tests: Abs Neuts Auto; ALB; ALT; Atypical Lymphs; Basos Manual; BNP; CA; CRP; CSF/F Polys; Eos Manual; Ferritin; GLOB; K; Lactate; LDH; LDL Calc; Lymphs Manual; MCV; Metamyelos Manual; Neuts Manual; PHOS; Protein; PTT; TIBC; Urate; Urine RBC; Urine SpGr; Vancomycin	6 Tests: ALC Toxic Screen; Base Excess Arterial; CPK; CPK-MB; pH Serum; VLDL
Neither HCP nor PP Improve Age-Sex-Race Model	14 Tests: Base Excess; CSF/F Eos; CSF/F WBC; ESR; FE; Fibrin D-dimer IA; Glucose Blood; K Blood; Myelos Manual; OSM; pCO2 Blood; TRIG; TSH; Urine WBC Sed	23 Tests: AMY; B12; Cortisol; CSF/F Atyps; CSF/F Bands; CSF/F Basos; CSF/F Lymphs; CSF/F Monos; CSF/F RBC; Fibrinogen; Folate; HDL; Ionized Ca; Ionized Ca Serum; LIPS; NA Blood; Nuc RBC; O2 Sat; pH Blood; pO2 Arterial; Retics; Troponin-I; Urine K

Table S5. Demographics, 3-Year Survival and 30-Day Readmission Rates for All 272 Laboratory Tests. For each laboratory test, up to four types of experiments are shown: two model types (“3-Year” survival rate and “30-Day” readmission rate) and either a “Single” laboratory test or a “Pair” of tests. Experiments where the number of observations was too small are not shown. Note that although 3-year survival is calculated for all experiments, the 30-day readmission rate is only calculated for the 30-day readmission rate experiments. Mean age is listed in years.

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
25VITD	3-Year	Single	15986	0.9089	-	0.7412	0.7802	56.49
25VITD	3-Year	Pair	5855	0.9204	-	0.7780	0.7928	58.14
Abs Bands Manual	3-Year	Single	8951	0.7346	-	0.4618	0.7775	44.97
Abs Bands Manual	3-Year	Pair	3672	0.6141	-	0.4461	0.8069	50.91
Abs Basos	3-Year	Single	72438	0.8964	-	0.5346	0.7604	47.27
Abs Basos	3-Year	Pair	39320	0.8520	-	0.5398	0.7888	52.20
Abs Basos Auto	3-Year	Single	67418	0.9075	-	0.6504	0.6419	49.95
Abs Basos Auto	3-Year	Pair	42764	0.8904	-	0.6547	0.6515	52.26
Abs Basos Auto	30-Day	Single	17205	0.7629	0.0749	0.5558	0.7137	56.48
Abs Basos Auto	30-Day	Pair	14221	0.7389	0.0825	0.5536	0.7113	57.60
Abs Eos	3-Year	Single	72387	0.8964	-	0.5345	0.7606	47.28
Abs Eos	3-Year	Pair	39287	0.8516	-	0.5394	0.7885	52.21
Abs Eos Auto	3-Year	Single	67429	0.9075	-	0.6503	0.6419	49.95
Abs Eos Auto	3-Year	Pair	42730	0.8914	-	0.6558	0.6519	52.22
Abs Eos Auto	30-Day	Single	17205	0.7629	0.0749	0.5558	0.7137	56.48
Abs Eos Auto	30-Day	Pair	14222	0.7389	0.0825	0.5536	0.7113	57.60
Abs Lymphs	3-Year	Single	72405	0.8965	-	0.5345	0.7604	47.28
Abs Lymphs	3-Year	Pair	39415	0.8515	-	0.5390	0.7887	52.21
Abs Lymphs Auto	3-Year	Single	69989	0.9093	-	0.6442	0.6356	49.68
Abs Lymphs Auto	3-Year	Pair	44708	0.8927	-	0.6472	0.6430	51.87
Abs Lymphs Auto	30-Day	Single	17205	0.7629	0.0749	0.5558	0.7137	56.48
Abs Lymphs Auto	30-Day	Pair	14237	0.7392	0.0825	0.5540	0.7105	57.57
Abs Monos	3-Year	Single	72431	0.8964	-	0.5346	0.7607	47.28
Abs Monos	3-Year	Pair	39423	0.8518	-	0.5401	0.7875	52.18
Abs Monos Auto	3-Year	Single	68567	0.9087	-	0.6520	0.6357	49.78
Abs Monos Auto	3-Year	Pair	43656	0.8923	-	0.6600	0.6431	52.00
Abs Monos Auto	30-Day	Single	17205	0.7629	0.0749	0.5558	0.7137	56.48
Abs Monos Auto	30-Day	Pair	14238	0.7392	0.0825	0.5541	0.7106	57.57
Abs Neuts	3-Year	Single	72293	0.8965	-	0.5345	0.7606	47.27
Abs Neuts	3-Year	Pair	39334	0.8518	-	0.5400	0.7878	52.16
Abs Neuts Auto	3-Year	Single	67715	0.9082	-	0.6518	0.6349	49.86
Abs Neuts Auto	3-Year	Pair	43437	0.8919	-	0.6589	0.6432	52.05
Abs Neuts Auto	30-Day	Single	17205	0.7629	0.0749	0.5558	0.7137	56.48
Abs Neuts Auto	30-Day	Pair	14236	0.7392	0.0825	0.5541	0.7106	57.57
Act Prot C Res Screen	3-Year	Single	2455	0.8916	-	0.5829	0.8257	49.59
Act Prot C Res Screen	3-Year	Pair	269	0.9033	-	0.6654	0.8141	48.23
ALB	3-Year	Single	156271	0.9082	-	0.5494	0.7406	51.99
ALB	3-Year	Pair	104491	0.8934	-	0.5488	0.7604	55.20
ALB	30-Day	Single	14866	0.7240	0.0798	0.5330	0.7191	56.67
ALB	30-Day	Pair	11232	0.6798	0.0935	0.5357	0.7204	57.96
ALC Toxic Screen	3-Year	Single	2585	0.8406	-	0.4650	0.5683	46.84
ALC Toxic Screen	3-Year	Pair	390	0.8205	-	0.4179	0.4769	45.54
ALC Toxic Screen	30-Day	Single	1124	0.7847	0.0391	0.4084	0.6308	51.72
ALC Toxic Screen	30-Day	Pair	174	0.7471	0.0805	0.3218	0.4713	48.91
ALKP	3-Year	Single	154247	0.9081	-	0.5467	0.7401	51.99
ALKP	3-Year	Pair	102417	0.8947	-	0.5450	0.7594	55.22
ALKP	30-Day	Single	14585	0.7243	0.0795	0.5320	0.7183	56.58
ALKP	30-Day	Pair	10907	0.6814	0.0933	0.5355	0.7198	57.82

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
Alpha-Fetoprotein	3-Year	Single	4921	0.8789	-	0.5306	0.6009	44.66
Alpha-Fetoprotein	3-Year	Pair	2253	0.8802	-	0.4368	0.6272	47.79
ALT	3-Year	Single	166083	0.9138	-	0.5474	0.7307	51.87
ALT	3-Year	Pair	113410	0.9029	-	0.5454	0.7474	55.01
ALT	30-Day	Single	14802	0.7286	0.0789	0.5378	0.7150	56.16
ALT	30-Day	Pair	11163	0.6889	0.0924	0.5441	0.7157	57.27
AMY	3-Year	Single	33800	0.8359	-	0.5178	0.7195	49.91
AMY	3-Year	Pair	13215	0.7792	-	0.5037	0.7364	53.94
AMY	30-Day	Single	3705	0.7128	0.0731	0.5112	0.6772	55.41
AMY	30-Day	Pair	1572	0.6609	0.1018	0.5350	0.6342	55.98
ANA HEP2 Titer	3-Year	Single	2595	0.9418	-	0.6963	0.6185	48.38
ANA HEP2 Titer	3-Year	Pair	319	0.9467	-	0.7962	0.6395	48.91
Anion	3-Year	Single	69574	0.8973	-	0.5923	0.6428	52.48
Anion	3-Year	Pair	48771	0.8748	-	0.5808	0.6577	55.68
Anion	30-Day	Single	24577	0.7856	0.0652	0.5313	0.7427	55.60
Anion	30-Day	Pair	22419	0.7699	0.0690	0.5230	0.7483	57.03
Anticardiolipin IgG	3-Year	Single	2822	0.8937	-	0.6021	0.8051	48.63
Anticardiolipin IgG	3-Year	Pair	512	0.8945	-	0.5781	0.7852	48.62
Anticardiolipin IgM	3-Year	Single	2820	0.8929	-	0.6007	0.8039	48.61
Anticardiolipin IgM	3-Year	Pair	511	0.8787	-	0.5930	0.7945	48.70
Anti-dsDNA Ab	3-Year	Single	1458	0.9472	-	0.8628	0.6193	46.27
Anti-dsDNA Ab	3-Year	Pair	585	0.9590	-	0.9231	0.6735	46.08
Anti-RNP Ab	3-Year	Single	1215	0.9588	-	0.8535	0.6189	46.94
Anti-RNP Ab	3-Year	Pair	318	0.9623	-	0.9119	0.6509	46.52
Anti-RNP Ab Cnt	3-Year	Single	1885	0.9480	-	0.7618	0.7629	46.15
Anti-RNP Ab Cnt	3-Year	Pair	253	0.9684	-	0.8814	0.7510	42.81
Anti-Sm Ab	3-Year	Single	1263	0.9572	-	0.8440	0.6168	46.77
Anti-Sm Ab	3-Year	Pair	323	0.9628	-	0.9164	0.6409	46.81
Anti-Sm Ab Cnt	3-Year	Single	1885	0.9485	-	0.7629	0.7629	46.14
Anti-Sm Ab Cnt	3-Year	Pair	250	0.9680	-	0.8920	0.7760	43.25
AST	3-Year	Single	167550	0.9138	-	0.5457	0.7368	52.00
AST	3-Year	Pair	115186	0.9037	-	0.5421	0.7554	55.20
AST	30-Day	Single	14813	0.7285	0.0788	0.5378	0.7150	56.17
AST	30-Day	Pair	11177	0.6886	0.0921	0.5442	0.7152	57.28
AT III Functional	3-Year	Single	2903	0.8901	-	0.5990	0.7957	48.40
AT III Functional	3-Year	Pair	304	0.9112	-	0.6645	0.7961	47.67
Atypical Lymphs	3-Year	Single	21284	0.7680	-	0.5148	0.6804	44.02
Atypical Lymphs	3-Year	Pair	8876	0.6548	-	0.4984	0.7169	51.47
Atypical Lymphs	30-Day	Single	9182	0.7217	0.0768	0.5015	0.6907	43.04
Atypical Lymphs	30-Day	Pair	5015	0.5948	0.1097	0.4945	0.7296	52.89
B12	3-Year	Single	24294	0.8556	-	0.6198	0.7852	57.78
B12	3-Year	Pair	10034	0.8484	-	0.6506	0.8214	60.56
B12	30-Day	Single	1688	0.6197	0.0912	0.5231	0.6991	63.74
B12	30-Day	Pair	457	0.5514	0.1225	0.5667	0.6740	66.90
Bands Manual	3-Year	Single	24317	0.7613	-	0.5103	0.6960	44.69
Bands Manual	3-Year	Pair	10527	0.6474	-	0.4955	0.7298	51.65
Bands Manual	30-Day	Single	9222	0.7223	0.0766	0.5014	0.6907	42.98
Bands Manual	30-Day	Pair	5036	0.5949	0.1094	0.4940	0.7295	52.89
Base Excess	3-Year	Single	1205	0.8124	-	0.3718	0.8606	64.08
Base Excess	3-Year	Pair	803	0.8257	-	0.3674	0.8506	64.09
Base Excess	30-Day	Single	1147	0.8692	0.0427	0.3627	0.8675	65.08
Base Excess	30-Day	Pair	1095	0.8731	0.0402	0.3653	0.8667	65.32
Base Excess Arterial	3-Year	Single	4390	0.6907	-	0.4485	0.8027	61.31
Base Excess Arterial	3-Year	Pair	2298	0.6654	-	0.4256	0.8198	62.71
Base Excess Arterial	30-Day	Single	4809	0.6868	0.0688	0.4454	0.8122	62.06
Base Excess Arterial	30-Day	Pair	3838	0.6756	0.0709	0.4307	0.8150	62.45
Basos	3-Year	Single	69383	0.8924	-	0.5321	0.7782	47.86

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
Basos	3-Year	Pair	37797	0.8463	-	0.5356	0.8051	52.85
Basos Auto	3-Year	Single	66557	0.9070	-	0.6502	0.6411	50.03
Basos Auto	3-Year	Pair	42517	0.8907	-	0.6554	0.6512	52.26
Basos Auto	30-Day	Single	17204	0.7629	0.0749	0.5558	0.7137	56.48
Basos Auto	30-Day	Pair	14219	0.7388	0.0825	0.5536	0.7112	57.61
Basos Manual	3-Year	Single	20219	0.8175	-	0.5549	0.6045	43.56
Basos Manual	3-Year	Pair	8130	0.7092	-	0.5406	0.6440	51.02
Basos Manual	30-Day	Single	9160	0.7219	0.0769	0.5025	0.6910	43.05
Basos Manual	30-Day	Pair	4995	0.5956	0.1099	0.4963	0.7295	52.87
Bili Conj	3-Year	Single	6174	0.9705	-	0.5841	0.8550	55.43
Bili Conj	3-Year	Pair	3794	0.9673	-	0.5962	0.8677	58.19
Bili Indir	3-Year	Single	6176	0.9705	-	0.5842	0.8554	55.44
Bili Indir	3-Year	Pair	3811	0.9677	-	0.5959	0.8685	58.20
BNP	3-Year	Single	2767	0.6310	-	0.4872	0.7181	65.93
BNP	3-Year	Pair	841	0.5743	-	0.4839	0.6932	68.26
BNP	30-Day	Single	1468	0.5572	0.0913	0.4905	0.7119	67.19
BNP	30-Day	Pair	527	0.4459	0.1309	0.5066	0.6717	68.50
BUN	3-Year	Single	200317	0.9178	-	0.5510	0.7401	52.16
BUN	3-Year	Pair	146023	0.9018	-	0.5486	0.7596	55.66
BUN	30-Day	Single	24788	0.7838	0.0650	0.5338	0.7462	56.57
BUN	30-Day	Pair	22866	0.7701	0.0681	0.5273	0.7505	57.70
C3	3-Year	Single	2545	0.8876	-	0.6566	0.6974	46.05
C3	3-Year	Pair	625	0.9264	-	0.7648	0.6608	42.71
C4	3-Year	Single	2648	0.8935	-	0.6605	0.6892	46.17
C4	3-Year	Pair	640	0.9297	-	0.7672	0.6563	43.86
CA	3-Year	Single	186208	0.9148	-	0.5558	0.7382	52.37
CA	3-Year	Pair	133756	0.8981	-	0.5534	0.7591	56.00
CA	30-Day	Single	24903	0.7851	0.0645	0.5338	0.7467	56.31
CA	30-Day	Pair	22659	0.7686	0.0685	0.5259	0.7518	57.78
CA125	3-Year	Single	2664	0.8727	-	0.9850	0.8855	56.77
CA125	3-Year	Pair	1345	0.8401	-	1.0000	0.9108	58.21
CA125 Cnt	3-Year	Single	1008	0.8700	-	0.9702	0.7669	55.67
CA125 Cnt	3-Year	Pair	286	0.9161	-	0.9930	0.7972	55.77
CA15-3	3-Year	Single	1209	0.8511	-	0.9851	0.9098	59.87
CA15-3	3-Year	Pair	928	0.8610	-	0.9957	0.9203	60.39
CA19-9	3-Year	Single	1204	0.5208	-	0.5008	0.8422	62.28
CA19-9	3-Year	Pair	396	0.4848	-	0.4697	0.8788	62.10
Calcitriol	3-Year	Single	1447	0.7616	-	0.5771	0.7581	55.36
Calcitriol	3-Year	Pair	284	0.8310	-	0.6514	0.7887	54.85
Cardolipin	3-Year	Single	1466	0.9209	-	0.7817	0.6473	44.67
Cardolipin	3-Year	Pair	252	0.9325	-	0.8254	0.6587	43.84
CD16+CD56	3-Year	Single	1363	0.8562	-	0.3969	0.6244	49.60
CD16+CD56	3-Year	Pair	900	0.8800	-	0.4033	0.5833	49.38
CD19	3-Year	Single	1396	0.8574	-	0.4033	0.6311	49.65
CD19	3-Year	Pair	907	0.8743	-	0.4079	0.5921	49.55
CEA	3-Year	Single	4964	0.6930	-	0.5856	0.8751	62.56
CEA	3-Year	Pair	2417	0.7609	-	0.6281	0.9032	62.81
CH50	3-Year	Single	1042	0.9607	-	0.8023	0.6420	46.11
CH50	3-Year	Pair	420	0.9714	-	0.9071	0.6524	45.55
CHOL	3-Year	Single	128673	0.9525	-	0.5326	0.7300	53.15
CHOL	3-Year	Pair	93483	0.9567	-	0.5295	0.7485	56.21
CHOL	30-Day	Single	3650	0.8003	0.0477	0.4189	0.7140	63.50
CHOL	30-Day	Pair	1542	0.7970	0.0603	0.4274	0.6848	63.76
CK-MB	3-Year	Single	3586	0.7348	-	0.3349	0.8450	63.26
CK-MB	3-Year	Pair	1578	0.7079	-	0.3200	0.8460	64.66
CL	3-Year	Single	194034	0.9165	-	0.5505	0.7383	51.99
CL	3-Year	Pair	140105	0.8996	-	0.5481	0.7583	55.59

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
CL	30-Day	Single	25160	0.7870	0.0638	0.5300	0.7438	55.56
CL	30-Day	Pair	23046	0.7719	0.0674	0.5229	0.7495	56.96
CO2	3-Year	Single	193755	0.9164	-	0.5503	0.7386	52.02
CO2	3-Year	Pair	140017	0.8991	-	0.5481	0.7589	55.64
CO2	30-Day	Single	25176	0.7871	0.0638	0.5303	0.7437	55.55
CO2	30-Day	Pair	23070	0.7717	0.0674	0.5232	0.7494	56.96
Cortisol	3-Year	Single	5345	0.7036	-	0.5637	0.7766	54.58
Cortisol	3-Year	Pair	2050	0.6688	-	0.5546	0.8015	55.34
Cortisol	30-Day	Single	1012	0.5010	0.0840	0.5089	0.7381	61.29
Cortisol	30-Day	Pair	522	0.4559	0.0996	0.5192	0.7318	60.53
CPK	3-Year	Single	43657	0.8365	-	0.4499	0.7766	60.58
CPK	3-Year	Pair	26580	0.8160	-	0.4339	0.7954	63.66
CPK	30-Day	Single	9571	0.7324	0.0613	0.4458	0.7325	63.63
CPK	30-Day	Pair	7406	0.7187	0.0671	0.4514	0.7267	65.32
CPK-MB	3-Year	Single	29811	0.7705	-	0.4376	0.7585	61.32
CPK-MB	3-Year	Pair	16420	0.7215	-	0.4338	0.7674	64.89
CPK-MB	30-Day	Single	9454	0.7305	0.0615	0.4422	0.7351	64.16
CPK-MB	30-Day	Pair	7393	0.7136	0.0671	0.4480	0.7304	65.78
CRE	3-Year	Single	206169	0.9196	-	0.5515	0.7379	52.14
CRE	3-Year	Pair	151316	0.9046	-	0.5493	0.7570	55.58
CRE	30-Day	Single	24832	0.7839	0.0650	0.5343	0.7463	56.56
CRE	30-Day	Pair	22932	0.7704	0.0681	0.5279	0.7504	57.67
CRP	3-Year	Single	12012	0.8806	-	0.5910	0.7140	54.71
CRP	3-Year	Pair	5629	0.8959	-	0.6090	0.7522	56.28
CRP	30-Day	Single	2148	0.6187	0.0964	0.4767	0.7477	58.93
CRP	30-Day	Pair	966	0.5818	0.1046	0.4814	0.7474	59.07
CRP High Sens	3-Year	Single	9256	0.9524	-	0.4740	0.8589	55.19
CRP High Sens	3-Year	Pair	3222	0.9702	-	0.4348	0.8895	58.08
CSF Bands	3-Year	Single	1887	0.8214	-	0.4918	0.7281	43.48
CSF Bands	3-Year	Pair	909	0.8042	-	0.4939	0.7580	46.07
CSF Basos	3-Year	Single	1886	0.8208	-	0.4920	0.7291	43.49
CSF Basos	3-Year	Pair	906	0.7936	-	0.4857	0.7660	46.88
CSF Eos	3-Year	Single	1885	0.8212	-	0.4918	0.7279	43.47
CSF Eos	3-Year	Pair	912	0.8125	-	0.4923	0.7379	45.33
CSF Glucose	3-Year	Single	3190	0.8025	-	0.5235	0.6853	44.93
CSF Glucose	3-Year	Pair	558	0.7007	-	0.5000	0.7061	47.24
CSF Lymphs	3-Year	Single	1889	0.8205	-	0.4923	0.7284	43.47
CSF Lymphs	3-Year	Pair	892	0.8117	-	0.4821	0.7578	45.43
CSF Monos	3-Year	Single	1882	0.8199	-	0.4904	0.7285	43.49
CSF Monos	3-Year	Pair	862	0.8005	-	0.5081	0.7459	45.81
CSF Neuts	3-Year	Single	1887	0.8198	-	0.4918	0.7281	43.50
CSF Neuts	3-Year	Pair	887	0.7903	-	0.5141	0.7430	47.08
CSF Non-Hematic	3-Year	Single	1884	0.8201	-	0.4915	0.7282	43.49
CSF Non-Hematic	3-Year	Pair	898	0.7940	-	0.5045	0.7339	45.62
CSF NRBC	3-Year	Single	1888	0.8210	-	0.4931	0.7288	43.45
CSF NRBC	3-Year	Pair	885	0.8158	-	0.5107	0.7401	45.02
CSF Other Hematic	3-Year	Single	1887	0.8203	-	0.4918	0.7287	43.49
CSF Other Hematic	3-Year	Pair	899	0.8165	-	0.4983	0.7564	45.17
CSF RBC	3-Year	Single	1570	0.8153	-	0.4892	0.7287	44.23
CSF RBC	3-Year	Pair	626	0.7780	-	0.4824	0.7396	46.75
CSF Reactive Lymphs	3-Year	Single	1886	0.8213	-	0.4920	0.7285	43.46
CSF Reactive Lymphs	3-Year	Pair	902	0.8038	-	0.4834	0.7450	46.20
CSF Total Protein	3-Year	Single	3196	0.8035	-	0.5241	0.6846	44.90
CSF Total Protein	3-Year	Pair	559	0.6726	-	0.4902	0.7066	47.94
CSF Unidentified	3-Year	Single	1888	0.8210	-	0.4921	0.7288	43.51
CSF Unidentified	3-Year	Pair	885	0.8068	-	0.4927	0.7492	46.54
CSF WBC	3-Year	Single	1484	0.8315	-	0.4892	0.7271	42.60

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
CSF WBC	3-Year	Pair	580	0.8224	-	0.5310	0.7500	45.27
CSF/F Atyps	3-Year	Single	4462	0.6986	-	0.5054	0.7389	54.59
CSF/F Atyps	3-Year	Pair	1398	0.6810	-	0.5021	0.7003	53.69
CSF/F Atyps	30-Day	Single	1445	0.6519	0.0893	0.4983	0.7225	52.49
CSF/F Atyps	30-Day	Pair	758	0.6623	0.0923	0.4868	0.7071	53.03
CSF/F Bands	3-Year	Single	4469	0.6975	-	0.5046	0.7398	54.63
CSF/F Bands	3-Year	Pair	1395	0.6717	-	0.5075	0.6996	54.06
CSF/F Bands	30-Day	Single	1445	0.6519	0.0893	0.4983	0.7225	52.49
CSF/F Bands	30-Day	Pair	758	0.6623	0.0923	0.4868	0.7071	53.03
CSF/F Basos	3-Year	Single	4464	0.6980	-	0.5049	0.7395	54.60
CSF/F Basos	3-Year	Pair	1380	0.6688	-	0.4986	0.6899	53.98
CSF/F Basos	30-Day	Single	1445	0.6519	0.0893	0.4983	0.7225	52.49
CSF/F Basos	30-Day	Pair	758	0.6623	0.0923	0.4868	0.7071	53.03
CSF/F Eos	3-Year	Single	4467	0.6982	-	0.5053	0.7396	54.58
CSF/F Eos	3-Year	Pair	1399	0.6841	-	0.5125	0.6912	53.97
CSF/F Eos	30-Day	Single	1445	0.6519	0.0893	0.4983	0.7225	52.49
CSF/F Eos	30-Day	Pair	758	0.6623	0.0923	0.4868	0.7071	53.03
CSF/F Lymphs	3-Year	Single	4466	0.6977	-	0.5052	0.7391	54.61
CSF/F Lymphs	3-Year	Pair	1429	0.6767	-	0.5129	0.7103	53.43
CSF/F Lymphs	30-Day	Single	1445	0.6519	0.0893	0.4983	0.7225	52.49
CSF/F Lymphs	30-Day	Pair	758	0.6623	0.0923	0.4868	0.7071	53.03
CSF/F Monos	3-Year	Single	4468	0.6983	-	0.5049	0.7395	54.62
CSF/F Monos	3-Year	Pair	1395	0.6695	-	0.5168	0.6925	53.73
CSF/F Monos	30-Day	Single	1445	0.6519	0.0893	0.4983	0.7225	52.49
CSF/F Monos	30-Day	Pair	758	0.6623	0.0923	0.4868	0.7071	53.03
CSF/F Nonhematics	3-Year	Single	1601	0.6640	-	0.4341	0.8332	57.67
CSF/F Nonhematics	3-Year	Pair	394	0.5787	-	0.4340	0.7944	57.06
CSF/F Other Hematics	3-Year	Single	2177	0.6684	-	0.4699	0.8112	57.60
CSF/F Other Hematics	3-Year	Pair	458	0.6026	-	0.4410	0.7795	57.11
CSF/F Polys	3-Year	Single	4467	0.6980	-	0.5046	0.7399	54.61
CSF/F Polys	3-Year	Pair	1410	0.6688	-	0.5071	0.6993	53.56
CSF/F Polys	30-Day	Single	1445	0.6519	0.0893	0.4983	0.7225	52.49
CSF/F Polys	30-Day	Pair	758	0.6623	0.0923	0.4868	0.7071	53.03
CSF/F RBC	3-Year	Single	2800	0.7032	-	0.5411	0.6961	53.40
CSF/F RBC	3-Year	Pair	894	0.6935	-	0.5235	0.6823	53.36
CSF/F RBC	30-Day	Single	1412	0.6480	0.0892	0.4950	0.7210	52.42
CSF/F RBC	30-Day	Pair	691	0.6440	0.0955	0.4863	0.7120	53.30
CSF/F Unident	3-Year	Single	1599	0.6635	-	0.4346	0.8324	57.67
CSF/F Unident	3-Year	Pair	362	0.5746	-	0.4199	0.7818	56.74
CSF/F WBC	3-Year	Single	4303	0.6960	-	0.5020	0.7437	54.78
CSF/F WBC	3-Year	Pair	1299	0.6582	-	0.5058	0.7036	54.36
CSF/F WBC	30-Day	Single	1416	0.6525	0.0876	0.4951	0.7218	52.49
CSF/F WBC	30-Day	Pair	700	0.6571	0.0914	0.4914	0.7100	52.99
DBILI	3-Year	Single	75155	0.8874	-	0.5095	0.7212	47.75
DBILI	3-Year	Pair	40577	0.8585	-	0.4982	0.7417	52.20
DBILI	30-Day	Single	7697	0.8093	0.0517	0.4767	0.6308	30.87
DBILI	30-Day	Pair	3959	0.7456	0.0647	0.4554	0.6646	35.62
DHEA Sulfate	3-Year	Single	1558	0.9865	-	0.9493	0.6560	32.91
DHEA Sulfate	3-Year	Pair	249	0.9920	-	0.9438	0.7149	33.96
Digoxin	3-Year	Single	3591	0.6065	-	0.4205	0.8669	70.92
Digoxin	3-Year	Pair	2238	0.5956	-	0.4361	0.8677	71.73
Dilantin	3-Year	Single	3529	0.7005	-	0.4497	0.7889	54.98
Dilantin	3-Year	Pair	2320	0.6974	-	0.4474	0.7841	55.12
Duration Post Ejac	3-Year	Single	1156	0.9074	-	0.7033	0.6436	47.64
Duration Post Ejac	3-Year	Pair	255	0.9137	-	0.7490	0.6980	46.21
Eos	3-Year	Single	69388	0.8924	-	0.5322	0.7780	47.86
Eos	3-Year	Pair	37762	0.8466	-	0.5367	0.8050	52.81

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
Eos Auto	3-Year	Single	66552	0.9070	-	0.6501	0.6412	50.03
Eos Auto	3-Year	Pair	42646	0.8911	-	0.6552	0.6506	52.25
Eos Auto	30-Day	Single	17204	0.7629	0.0749	0.5558	0.7137	56.48
Eos Auto	30-Day	Pair	14219	0.7388	0.0825	0.5536	0.7112	57.61
Eos Manual	3-Year	Single	20217	0.8175	-	0.5548	0.6046	43.56
Eos Manual	3-Year	Pair	8297	0.7121	-	0.5450	0.6410	51.16
Eos Manual	30-Day	Single	9160	0.7219	0.0769	0.5025	0.6910	43.05
Eos Manual	30-Day	Pair	4996	0.5955	0.1099	0.4960	0.7298	52.89
ESR	3-Year	Single	37006	0.9275	-	0.6179	0.7464	50.31
ESR	3-Year	Pair	15586	0.9246	-	0.6665	0.7704	54.26
ESR	30-Day	Single	1516	0.7803	0.0679	0.4941	0.6979	57.31
ESR	30-Day	Pair	485	0.8021	0.0619	0.5155	0.6784	57.81
Estradiol	3-Year	Single	4975	0.9938	-	0.9560	0.6850	37.46
Estradiol	3-Year	Pair	2181	0.9959	-	0.9890	0.6974	37.02
Ethanol	3-Year	Single	2116	0.9216	-	0.2358	0.7287	40.14
Ethanol	3-Year	Pair	556	0.8723	-	0.2050	0.7896	46.67
Factor VIII	3-Year	Single	1214	0.8567	-	0.5906	0.7644	41.84
Factor VIII	3-Year	Pair	214	0.9019	-	0.5981	0.7009	35.80
FE	3-Year	Single	24093	0.8444	-	0.6159	0.7245	53.89
FE	3-Year	Pair	10241	0.8296	-	0.6307	0.7256	56.82
FE	30-Day	Single	1938	0.6238	0.1017	0.5578	0.6615	60.78
FE	30-Day	Pair	691	0.5890	0.1505	0.5630	0.6151	60.95
Ferritin	3-Year	Single	22466	0.8329	-	0.6207	0.7139	53.24
Ferritin	3-Year	Pair	8845	0.8199	-	0.6262	0.7144	55.73
Ferritin	30-Day	Single	2188	0.6147	0.1060	0.5526	0.6645	60.50
Ferritin	30-Day	Pair	752	0.5691	0.1543	0.5532	0.6144	60.83
Fibrin D-dimer EIA	3-Year	Single	5242	0.7945	-	0.5248	0.7896	53.19
Fibrin D-dimer EIA	3-Year	Pair	888	0.6881	-	0.5113	0.7973	55.89
Fibrin D-dimer IA	3-Year	Single	3722	0.8092	-	0.6376	0.5645	51.98
Fibrin D-dimer IA	3-Year	Pair	642	0.7321	-	0.6916	0.4860	54.41
Fibrin D-dimer IA	30-Day	Single	1208	0.6871	0.0795	0.5422	0.6250	59.10
Fibrin D-dimer IA	30-Day	Pair	262	0.6069	0.1145	0.6069	0.5649	57.57
Fibrinogen	3-Year	Single	6765	0.7279	-	0.5322	0.7659	53.08
Fibrinogen	3-Year	Pair	1578	0.6267	-	0.5108	0.7402	52.09
Fibrinogen	30-Day	Single	2841	0.7385	0.0707	0.5333	0.7459	55.34
Fibrinogen	30-Day	Pair	923	0.6165	0.1073	0.5504	0.7183	53.85
FIO2	3-Year	Single	3738	0.6862	-	0.4018	0.8098	54.89
FIO2	3-Year	Pair	2160	0.6634	-	0.3727	0.8106	55.97
Fluid Blast	3-Year	Single	1612	0.6644	-	0.4305	0.8319	57.55
Fluid Blast	3-Year	Pair	362	0.5470	-	0.4088	0.7956	56.58
Fluid Glucose	3-Year	Single	1200	0.5175	-	0.4867	0.7883	58.69
Fluid Glucose	3-Year	Pair	184	0.3967	-	0.4022	0.7663	58.39
Fluid LDH	3-Year	Single	1108	0.4549	-	0.5036	0.8249	60.36
Fluid LDH	3-Year	Pair	171	0.3509	-	0.4152	0.8187	61.09
Fluid Macros	3-Year	Single	1633	0.6528	-	0.5260	0.7177	53.70
Fluid Macros	3-Year	Pair	377	0.6101	-	0.4828	0.7188	52.61
Fluid NRBC	3-Year	Single	1741	0.6617	-	0.4360	0.8185	56.48
Fluid NRBC	3-Year	Pair	380	0.5816	-	0.4316	0.7763	55.53
Fluid pH	3-Year	Single	1388	0.7601	-	0.2024	0.6628	47.26
Fluid pH	3-Year	Pair	268	0.8396	-	0.0896	0.5709	43.85
Fluid Tot Prot	3-Year	Single	1068	0.4850	-	0.4766	0.8193	59.44
Fluid Tot Prot	3-Year	Pair	183	0.3661	-	0.4262	0.7705	58.58
Folate	3-Year	Single	13230	0.8098	-	0.6005	0.7640	57.19
Folate	3-Year	Pair	3642	0.7858	-	0.6186	0.7867	59.58
Folate	30-Day	Single	1390	0.6252	0.0957	0.5129	0.6986	62.94
Folate	30-Day	Pair	233	0.5365	0.1288	0.5322	0.6652	65.34
Free T4	3-Year	Single	12549	0.9124	-	0.7135	0.7676	48.64

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
Free T4	3-Year	Pair	5196	0.9319	-	0.7290	0.7908	49.59
Free Testost	3-Year	Single	2198	0.9736	-	0.4732	0.7320	43.94
Free Testost	3-Year	Pair	434	0.9747	-	0.3018	0.7535	46.15
FSH	3-Year	Single	8609	0.9883	-	0.9118	0.6837	39.01
FSH	3-Year	Pair	2806	0.9886	-	0.9473	0.6957	40.49
GGT	3-Year	Single	2062	0.7556	-	0.5310	0.7580	51.95
GGT	3-Year	Pair	444	0.7883	-	0.5631	0.7275	50.86
GLOB	3-Year	Single	136949	0.8988	-	0.5394	0.7290	51.78
GLOB	3-Year	Pair	87427	0.8791	-	0.5344	0.7460	55.10
GLOB	30-Day	Single	14567	0.7242	0.0795	0.5322	0.7183	56.67
GLOB	30-Day	Pair	10851	0.6798	0.0938	0.5340	0.7195	57.92
GLU	3-Year	Single	213206	0.9240	-	0.5588	0.7282	51.13
GLU	3-Year	Pair	157374	0.9108	-	0.5596	0.7456	54.39
GLU	30-Day	Single	24518	0.7815	0.0655	0.5324	0.7484	56.96
GLU	30-Day	Pair	22587	0.7675	0.0688	0.5261	0.7530	58.12
Glucose Blood	3-Year	Single	3847	0.7198	-	0.4778	0.7681	56.05
Glucose Blood	3-Year	Pair	1605	0.6704	-	0.4617	0.7919	59.40
Glucose Blood	30-Day	Single	3213	0.7389	0.0685	0.4360	0.7989	58.30
Glucose Blood	30-Day	Pair	2018	0.7121	0.0793	0.4212	0.8191	61.33
Haptoglobin	3-Year	Single	2906	0.5902	-	0.4979	0.7619	58.40
Haptoglobin	3-Year	Pair	570	0.5228	-	0.4947	0.7526	57.83
HCG Qual	3-Year	Single	1102	0.9982	-	0.9982	0.3929	30.39
HCG Qual	3-Year	Pair	383	1.0000	-	1.0000	0.3655	30.34
HCG Quant	3-Year	Single	17993	0.9767	-	0.9951	0.6132	33.90
HCG Quant	3-Year	Pair	7080	0.9809	-	0.9976	0.6004	33.52
HCO3	3-Year	Single	2091	0.6389	-	0.3945	0.7312	41.74
HCO3	3-Year	Pair	867	0.6517	-	0.3622	0.6851	33.78
HCT	3-Year	Single	228592	0.9296	-	0.5979	0.7109	47.50
HCT	3-Year	Pair	165900	0.9158	-	0.6094	0.7279	50.73
HCT	30-Day	Single	34432	0.8439	0.0500	0.6289	0.6989	48.03
HCT	30-Day	Pair	30510	0.8268	0.0544	0.6316	0.7145	51.39
HDL	3-Year	Single	126315	0.9532	-	0.5315	0.7321	53.38
HDL	3-Year	Pair	91316	0.9574	-	0.5286	0.7507	56.42
HDL	30-Day	Single	3631	0.8003	0.0454	0.4167	0.7155	63.93
HDL	30-Day	Pair	1523	0.8011	0.0578	0.4215	0.6835	64.06
HGB	3-Year	Single	227576	0.9293	-	0.5978	0.7122	47.62
HGB	3-Year	Pair	164912	0.9153	-	0.6094	0.7308	50.88
HGB	30-Day	Single	34311	0.8434	0.0502	0.6292	0.6990	48.08
HGB	30-Day	Pair	30301	0.8257	0.0547	0.6322	0.7146	51.50
Hgb A	3-Year	Single	2533	0.9933	-	0.8563	0.3731	31.67
Hgb A	3-Year	Pair	164	1.0000	-	0.8963	0.3171	29.12
Hgb A1	3-Year	Single	1761	0.9824	-	0.8802	0.2300	31.93
Hgb A1	3-Year	Pair	120	0.9583	-	0.8250	0.1667	33.37
Hgb A1c	3-Year	Single	35684	0.8965	-	0.5189	0.6785	57.45
Hgb A1c	3-Year	Pair	20701	0.9056	-	0.5110	0.6605	59.72
Hgb A1c	30-Day	Single	3215	0.7537	0.0653	0.4420	0.7170	63.27
Hgb A1c	30-Day	Pair	1342	0.7683	0.0760	0.4486	0.7012	63.61
Hgb A2	3-Year	Single	4030	0.9913	-	0.8710	0.3171	31.61
Hgb A2	3-Year	Pair	264	0.9962	-	0.8826	0.2424	29.84
Hgb A2 Prime	3-Year	Single	2546	0.9933	-	0.8559	0.3739	31.66
Hgb A2 Prime	3-Year	Pair	121	1.0000	-	0.8678	0.3058	27.92
Hgb Barts	3-Year	Single	2547	0.9933	-	0.8563	0.3730	31.65
Hgb Barts	3-Year	Pair	115	1.0000	-	0.8696	0.3043	27.47
Hgb C	3-Year	Single	2560	0.9926	-	0.8566	0.3695	31.72
Hgb C	3-Year	Pair	119	0.9832	-	0.8487	0.2773	28.22
Hgb D	3-Year	Single	2552	0.9933	-	0.8562	0.3742	31.66
Hgb D	3-Year	Pair	118	1.0000	-	0.8644	0.2797	27.70

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
Hgb E	3-Year	Single	2546	0.9933	-	0.8555	0.3739	31.65
Hgb E	3-Year	Pair	111	1.0000	-	0.8649	0.2883	26.85
Hgb F	3-Year	Single	2614	0.9920	-	0.8508	0.3673	31.58
Hgb F	3-Year	Pair	192	0.9948	-	0.8333	0.2969	28.90
Hgb G Cough	3-Year	Single	2546	0.9933	-	0.8555	0.3747	31.69
Hgb G Cough	3-Year	Pair	117	1.0000	-	0.8547	0.2906	27.03
Hgb Lepore	3-Year	Single	2546	0.9933	-	0.8566	0.3731	31.68
Hgb Lepore	3-Year	Pair	111	1.0000	-	0.8559	0.2793	26.99
Hgb O	3-Year	Single	2548	0.9933	-	0.8564	0.3732	31.67
Hgb O	3-Year	Pair	116	1.0000	-	0.8621	0.3103	27.65
Hgb Other	3-Year	Single	2517	0.9932	-	0.8574	0.3723	31.72
Hgb Other	3-Year	Pair	113	1.0000	-	0.8584	0.2920	27.82
Hgb S	3-Year	Single	2645	0.9913	-	0.8507	0.3577	31.67
Hgb S	3-Year	Pair	157	0.9809	-	0.8025	0.2357	28.65
IgA	3-Year	Single	11608	0.8596	-	0.5464	0.8147	53.94
IgA	3-Year	Pair	3800	0.8137	-	0.5218	0.8550	61.41
IgE	3-Year	Single	2187	0.9570	-	0.6228	0.7298	37.79
IgE	3-Year	Pair	425	0.9459	-	0.6047	0.7929	35.97
IGF-I	3-Year	Single	1951	0.9759	-	0.6110	0.7919	38.25
IGF-I	3-Year	Pair	651	0.9831	-	0.5591	0.8571	38.57
IgG	3-Year	Single	11305	0.8419	-	0.5428	0.8184	57.18
IgG	3-Year	Pair	4198	0.8071	-	0.5145	0.8564	60.70
IgM	3-Year	Single	10638	0.8442	-	0.5461	0.8176	57.99
IgM	3-Year	Pair	3771	0.8096	-	0.5155	0.8552	62.21
Insulin	3-Year	Single	1991	0.9769	-	0.7373	0.7659	39.58
Insulin	3-Year	Pair	637	0.9843	-	0.7504	0.7943	40.52
Ionized Ca	3-Year	Single	8844	0.7240	-	0.4666	0.8227	56.55
Ionized Ca	3-Year	Pair	4919	0.6855	-	0.4208	0.8307	57.51
Ionized Ca	30-Day	Single	1014	0.8669	0.0375	0.3639	0.8669	64.36
Ionized Ca	30-Day	Pair	577	0.8510	0.0468	0.3258	0.8596	63.86
Ionized Ca Serum	3-Year	Single	5487	0.6674	-	0.4735	0.7962	61.49
Ionized Ca Serum	3-Year	Pair	3107	0.6176	-	0.4574	0.7995	62.17
Ionized Ca Serum	30-Day	Single	4212	0.6759	0.0736	0.4466	0.7987	61.91
Ionized Ca Serum	30-Day	Pair	3098	0.6511	0.0784	0.4277	0.8034	62.40
K	3-Year	Single	194345	0.9180	-	0.5501	0.7376	52.12
K	3-Year	Pair	140339	0.9022	-	0.5478	0.7576	55.72
K	30-Day	Single	25279	0.7877	0.0636	0.5307	0.7441	55.54
K	30-Day	Pair	23270	0.7737	0.0670	0.5235	0.7496	56.93
K Blood	3-Year	Single	3866	0.6655	-	0.4444	0.8021	61.80
K Blood	3-Year	Pair	1839	0.6427	-	0.4165	0.8059	62.17
K Blood	30-Day	Single	3542	0.7103	0.0683	0.4334	0.8125	62.42
K Blood	30-Day	Pair	2524	0.7163	0.0737	0.4101	0.8241	62.79
Lactate	3-Year	Single	4332	0.5759	-	0.4513	0.7645	57.24
Lactate	3-Year	Pair	1386	0.5014	-	0.4329	0.7489	57.64
Lactate	30-Day	Single	1113	0.4699	0.0791	0.4789	0.7170	61.65
Lactate	30-Day	Pair	485	0.3835	0.0680	0.4763	0.6969	61.88
LDH	3-Year	Single	13833	0.7424	-	0.5013	0.7977	55.19
LDH	3-Year	Pair	6402	0.7031	-	0.4791	0.8296	56.03
LDH	30-Day	Single	2188	0.6001	0.1184	0.4995	0.7267	55.51
LDH	30-Day	Pair	1171	0.5636	0.1383	0.4731	0.7558	54.22
LDL	3-Year	Single	79383	0.9524	-	0.5061	0.8028	54.26
LDL	3-Year	Pair	55928	0.9562	-	0.4983	0.8247	57.50
LDL Calc	3-Year	Single	37041	0.9543	-	0.5756	0.5939	53.52
LDL Calc	3-Year	Pair	23938	0.9604	-	0.5752	0.6096	56.74
LDL Calc	30-Day	Single	3199	0.8093	0.0456	0.4142	0.7168	64.23
LDL Calc	30-Day	Pair	1234	0.8079	0.0575	0.4214	0.6815	64.40
LH	3-Year	Single	5128	0.9840	-	0.7882	0.7065	38.90

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
LH	3-Year	Pair	1158	0.9793	-	0.8592	0.7383	37.87
LIPS	3-Year	Single	32615	0.8319	-	0.5218	0.7039	49.66
LIPS	3-Year	Pair	12361	0.7682	-	0.5043	0.7180	53.67
LIPS	30-Day	Single	4083	0.7183	0.0757	0.5168	0.6755	55.64
LIPS	30-Day	Pair	1748	0.6676	0.0984	0.5452	0.6281	56.26
Lithium	3-Year	Single	1125	0.9431	-	0.5538	0.8516	45.20
Lithium	3-Year	Pair	727	0.9491	-	0.5722	0.8762	46.84
Lp(a)	3-Year	Single	3205	0.8480	-	0.4003	0.8577	61.03
Lp(a)	3-Year	Pair	513	0.8460	-	0.3587	0.8928	62.67
Lyme	3-Year	Single	2031	0.9611	-	0.6696	0.7223	48.10
Lyme	3-Year	Pair	235	0.9745	-	0.7064	0.7830	52.07
Lymphs	3-Year	Single	69321	0.8924	-	0.5319	0.7782	47.86
Lymphs	3-Year	Pair	37904	0.8472	-	0.5373	0.8048	52.75
Lymphs Auto	3-Year	Single	67707	0.9082	-	0.6518	0.6349	49.86
Lymphs Auto	3-Year	Pair	43448	0.8921	-	0.6585	0.6443	52.06
Lymphs Auto	30-Day	Single	17204	0.7629	0.0749	0.5558	0.7137	56.48
Lymphs Auto	30-Day	Pair	14236	0.7391	0.0825	0.5540	0.7106	57.58
Lymphs Manual	3-Year	Single	20221	0.8175	-	0.5547	0.6046	43.57
Lymphs Manual	3-Year	Pair	8371	0.7172	-	0.5498	0.6395	50.99
Lymphs Manual	30-Day	Single	9160	0.7219	0.0769	0.5025	0.6910	43.05
Lymphs Manual	30-Day	Pair	4996	0.5955	0.1099	0.4960	0.7298	52.89
MCH	3-Year	Single	227235	0.9291	-	0.5978	0.7136	47.70
MCH	3-Year	Pair	164524	0.9154	-	0.6095	0.7314	50.97
MCH	30-Day	Single	34286	0.8433	0.0502	0.6291	0.6990	48.09
MCH	30-Day	Pair	30255	0.8259	0.0547	0.6322	0.7148	51.50
MCHC	3-Year	Single	227248	0.9291	-	0.5977	0.7135	47.71
MCHC	3-Year	Pair	164541	0.9150	-	0.6094	0.7320	51.01
MCHC	30-Day	Single	34286	0.8433	0.0502	0.6291	0.6990	48.09
MCHC	30-Day	Pair	30256	0.8259	0.0547	0.6321	0.7148	51.50
MCV	3-Year	Single	227209	0.9292	-	0.5979	0.7135	47.70
MCV	3-Year	Pair	164591	0.9155	-	0.6093	0.7324	50.98
MCV	30-Day	Single	34286	0.8433	0.0502	0.6291	0.6990	48.09
MCV	30-Day	Pair	30255	0.8259	0.0547	0.6322	0.7148	51.50
Metamyelos Manual	3-Year	Single	9025	0.6383	-	0.4889	0.7551	49.54
Metamyelos Manual	3-Year	Pair	3826	0.5285	-	0.4801	0.7820	53.82
Metamyelos Manual	30-Day	Single	3602	0.6266	0.0933	0.4972	0.7252	47.51
Metamyelos Manual	30-Day	Pair	1893	0.5098	0.1252	0.4908	0.7544	53.96
MG	3-Year	Single	66339	0.8226	-	0.5130	0.7642	54.08
MG	3-Year	Pair	40565	0.7555	-	0.4987	0.7850	58.44
MG	30-Day	Single	20224	0.7495	0.0720	0.5143	0.7562	58.47
MG	30-Day	Pair	17651	0.7240	0.0778	0.5070	0.7578	59.67
MHCT	3-Year	Single	6348	0.9488	-	0.4931	0.3089	14.37
MHCT	3-Year	Pair	3745	0.9714	-	0.5159	0.2144	9.54
Monos	3-Year	Single	69307	0.8924	-	0.5321	0.7782	47.85
Monos	3-Year	Pair	37715	0.8466	-	0.5355	0.8051	52.78
Monos Auto	3-Year	Single	67710	0.9083	-	0.6518	0.6349	49.86
Monos Auto	3-Year	Pair	43439	0.8912	-	0.6586	0.6440	52.07
Monos Auto	30-Day	Single	17204	0.7629	0.0749	0.5558	0.7137	56.48
Monos Auto	30-Day	Pair	14236	0.7391	0.0825	0.5540	0.7106	57.58
Monos Manual	3-Year	Single	20218	0.8174	-	0.5549	0.6046	43.56
Monos Manual	3-Year	Pair	8355	0.7206	-	0.5496	0.6377	50.82
Monos Manual	30-Day	Single	9160	0.7219	0.0769	0.5025	0.6910	43.05
Monos Manual	30-Day	Pair	4996	0.5955	0.1099	0.4960	0.7298	52.89
Myelos Manual	3-Year	Single	5832	0.5941	-	0.4841	0.7829	51.09
Myelos Manual	3-Year	Pair	2376	0.4992	-	0.4731	0.8085	53.37
Myelos Manual	30-Day	Single	2069	0.5790	0.1039	0.4925	0.7564	49.02
Myelos Manual	30-Day	Pair	1060	0.4915	0.1321	0.4802	0.7906	53.57

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
NA	3-Year	Single	194785	0.9168	-	0.5503	0.7386	51.98
NA	3-Year	Pair	140831	0.8997	-	0.5477	0.7585	55.59
NA	30-Day	Single	25164	0.7870	0.0638	0.5300	0.7438	55.55
NA	30-Day	Pair	23049	0.7720	0.0675	0.5230	0.7494	56.95
NA Blood	3-Year	Single	2180	0.6165	-	0.4583	0.7899	61.00
NA Blood	3-Year	Pair	760	0.5697	-	0.4237	0.7908	60.91
NA Blood	30-Day	Single	2075	0.6781	0.0814	0.4414	0.8043	62.05
NA Blood	30-Day	Pair	1059	0.6383	0.1001	0.4230	0.8083	62.07
Neuts	3-Year	Single	69322	0.8926	-	0.5322	0.7780	47.85
Neuts	3-Year	Pair	37865	0.8471	-	0.5363	0.8041	52.79
Neuts Auto	3-Year	Single	67710	0.9082	-	0.6518	0.6349	49.86
Neuts Auto	3-Year	Pair	43374	0.8925	-	0.6581	0.6438	52.08
Neuts Auto	30-Day	Single	17205	0.7629	0.0749	0.5558	0.7137	56.48
Neuts Auto	30-Day	Pair	14237	0.7391	0.0825	0.5540	0.7106	57.57
Neuts Manual	3-Year	Single	20214	0.8175	-	0.5548	0.6046	43.57
Neuts Manual	3-Year	Pair	8445	0.7162	-	0.5475	0.6362	50.87
Neuts Manual	30-Day	Single	9160	0.7219	0.0769	0.5025	0.6910	43.05
Neuts Manual	30-Day	Pair	4996	0.5955	0.1099	0.4960	0.7298	52.89
NH3	3-Year	Single	3008	0.5366	-	0.3926	0.8005	57.59
NH3	3-Year	Pair	961	0.4870	-	0.3424	0.8002	56.73
NT-proBNP	3-Year	Single	3831	0.6129	-	0.4380	0.8460	69.14
NT-proBNP	3-Year	Pair	981	0.4924	-	0.4322	0.8522	71.79
Nuc RBC	3-Year	Single	4302	0.7408	-	0.4872	0.6237	29.95
Nuc RBC	3-Year	Pair	1194	0.5335	-	0.4874	0.6759	45.30
Nuc RBC	30-Day	Single	3497	0.7790	0.0563	0.4747	0.6134	24.59
Nuc RBC	30-Day	Pair	1218	0.5714	0.1010	0.4836	0.6568	41.38
O2 Sat	3-Year	Single	7577	0.6013	-	0.4547	0.7924	60.98
O2 Sat	3-Year	Pair	4777	0.5711	-	0.4425	0.7976	61.83
O2 Sat	30-Day	Single	5554	0.6662	0.0699	0.4597	0.8039	61.84
O2 Sat	30-Day	Pair	4615	0.6555	0.0722	0.4509	0.8087	62.20
OSM	3-Year	Single	10186	0.6947	-	0.4572	0.8108	58.30
OSM	3-Year	Pair	4277	0.6404	-	0.4286	0.8064	58.60
OSM	30-Day	Single	2254	0.6433	0.0856	0.4814	0.7764	59.15
OSM	30-Day	Pair	1139	0.6146	0.0790	0.4820	0.7735	58.51
pCO2 Arterial	3-Year	Single	5328	0.6708	-	0.4159	0.7973	52.79
pCO2 Arterial	3-Year	Pair	2631	0.6100	-	0.3919	0.7932	54.04
pCO2 Blood	3-Year	Single	12840	0.6607	-	0.4402	0.8104	59.92
pCO2 Blood	3-Year	Pair	8431	0.6386	-	0.4239	0.8207	61.09
pCO2 Blood	30-Day	Single	5583	0.6667	0.0695	0.4598	0.8040	61.81
pCO2 Blood	30-Day	Pair	4643	0.6563	0.0719	0.4508	0.8087	62.17
pCO2 Venous	3-Year	Single	1566	0.6673	-	0.4189	0.7350	42.94
pCO2 Venous	3-Year	Pair	540	0.6519	-	0.3944	0.6778	37.47
pH Arterial	3-Year	Single	5332	0.6712	-	0.4158	0.7969	52.78
pH Arterial	3-Year	Pair	2581	0.6137	-	0.3971	0.7865	53.65
pH Blood	3-Year	Single	7103	0.6980	-	0.4039	0.8385	59.23
pH Blood	3-Year	Pair	4511	0.6763	-	0.3842	0.8466	60.52
pH Blood	30-Day	Single	1147	0.8657	0.0410	0.3609	0.8657	64.83
pH Blood	30-Day	Pair	1021	0.8678	0.0421	0.3418	0.8599	64.89
pH Serum	3-Year	Single	6812	0.6491	-	0.4630	0.7911	61.36
pH Serum	3-Year	Pair	4607	0.6249	-	0.4465	0.7977	62.12
pH Serum	30-Day	Single	5554	0.6662	0.0700	0.4597	0.8037	61.83
pH Serum	30-Day	Pair	4613	0.6558	0.0722	0.4509	0.8086	62.19
pH Venous	3-Year	Single	1582	0.6662	-	0.4197	0.7364	43.13
pH Venous	3-Year	Pair	558	0.6595	-	0.4014	0.6810	38.00
PHOS	3-Year	Single	59771	0.8402	-	0.5164	0.7720	53.14
PHOS	3-Year	Pair	33597	0.7858	-	0.5100	0.7975	57.20
PHOS	30-Day	Single	6191	0.6434	0.0935	0.4951	0.7309	57.99

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
PHOS	30-Day	Pair	4104	0.5867	0.1087	0.4817	0.7320	58.59
PLT	3-Year	Single	227156	0.9292	-	0.5975	0.7136	47.70
PLT	3-Year	Pair	164388	0.9154	-	0.6091	0.7315	50.96
PLT	30-Day	Single	34301	0.8434	0.0501	0.6290	0.6990	48.08
PLT	30-Day	Pair	30281	0.8260	0.0547	0.6319	0.7147	51.47
pO2 Arterial	3-Year	Single	12066	0.6593	-	0.4429	0.7934	57.63
pO2 Arterial	3-Year	Pair	7157	0.6162	-	0.4295	0.7971	59.28
pO2 Arterial	30-Day	Single	6016	0.6900	0.0650	0.4608	0.7846	57.49
pO2 Arterial	30-Day	Pair	4802	0.6676	0.0698	0.4513	0.7959	59.95
pO2 Blood	3-Year	Single	6343	0.6793	-	0.4123	0.8353	58.50
pO2 Blood	3-Year	Pair	4100	0.6573	-	0.3866	0.8468	60.15
pO2 Venous	3-Year	Single	1496	0.6531	-	0.4131	0.7447	44.90
pO2 Venous	3-Year	Pair	541	0.6654	-	0.3789	0.6858	38.30
Progesterone	3-Year	Single	2591	0.9958	-	0.9900	0.6719	35.63
Progesterone	3-Year	Pair	1072	1.0000	-	0.9991	0.6735	36.54
Prolactin	3-Year	Single	8955	0.9821	-	0.7904	0.6679	38.94
Prolactin	3-Year	Pair	2855	0.9860	-	0.8333	0.6750	39.72
Promyelos Manual	3-Year	Single	1429	0.5248	-	0.4864	0.7999	50.05
Promyelos Manual	3-Year	Pair	453	0.4371	-	0.4879	0.8499	51.43
Protein	3-Year	Single	151563	0.9052	-	0.5431	0.7414	52.09
Protein	3-Year	Pair	99880	0.8899	-	0.5383	0.7613	55.34
Protein	30-Day	Single	14622	0.7242	0.0794	0.5325	0.7186	56.67
Protein	30-Day	Pair	10953	0.6802	0.0934	0.5342	0.7197	57.94
Protein C Functional	3-Year	Single	2848	0.8971	-	0.6092	0.7848	47.84
Protein C Functional	3-Year	Pair	287	0.9129	-	0.6725	0.7840	46.11
PSA	3-Year	Single	27387	0.9519	-	0.0022	0.7932	60.74
PSA	3-Year	Pair	19858	0.9582	-	0.0007	0.8155	62.27
PSA Free	3-Year	Single	2640	0.9447	-	0.0083	0.8205	63.68
PSA Free	3-Year	Pair	1029	0.9679	-	0.0000	0.8503	66.24
PSA PCT Free	3-Year	Single	1883	0.9432	-	0.0011	0.8178	64.38
PSA PCT Free	3-Year	Pair	726	0.9697	-	0.0000	0.8471	66.58
PT	3-Year	Single	75570	0.8297	-	0.5103	0.7684	55.44
PT	3-Year	Pair	43045	0.7737	-	0.4910	0.7915	59.41
PT	30-Day	Single	19983	0.7518	0.0725	0.5137	0.7510	58.30
PT	30-Day	Pair	17560	0.7294	0.0773	0.5038	0.7611	59.79
PTH	3-Year	Single	10969	0.8681	-	0.6373	0.7616	55.75
PTH	3-Year	Pair	4514	0.8547	-	0.6502	0.7612	58.48
PT-INR	3-Year	Single	65624	0.8118	-	0.5073	0.7650	56.55
PT-INR	3-Year	Pair	37575	0.7514	-	0.4843	0.7851	60.55
PT-INR	30-Day	Single	19982	0.7518	0.0725	0.5137	0.7510	58.30
PT-INR	30-Day	Pair	17507	0.7292	0.0773	0.5037	0.7615	59.82
PTT	3-Year	Single	69486	0.8232	-	0.5123	0.7649	55.26
PTT	3-Year	Pair	37639	0.7551	-	0.4910	0.7865	59.35
PTT	30-Day	Single	19394	0.7452	0.0740	0.5134	0.7481	58.24
PTT	30-Day	Pair	16910	0.7204	0.0795	0.5022	0.7582	59.77
PTT Blood	3-Year	Single	2250	0.9044	-	0.5951	0.8280	48.44
PTT Blood	3-Year	Pair	229	0.9258	-	0.7162	0.7991	46.53
RBC	3-Year	Single	227002	0.9292	-	0.5979	0.7135	47.71
RBC	3-Year	Pair	164084	0.9155	-	0.6098	0.7317	50.99
RBC	30-Day	Single	34286	0.8433	0.0502	0.6291	0.6990	48.09
RBC	30-Day	Pair	30255	0.8259	0.0547	0.6322	0.7148	51.50
RDW	3-Year	Single	227247	0.9291	-	0.5978	0.7136	47.71
RDW	3-Year	Pair	162015	0.9141	-	0.6097	0.7327	51.07
RDW	30-Day	Single	34287	0.8433	0.0502	0.6291	0.6990	48.09
RDW	30-Day	Pair	30252	0.8258	0.0547	0.6321	0.7148	51.50
Retics	3-Year	Single	9367	0.7524	-	0.5260	0.7270	53.72
Retics	3-Year	Pair	3274	0.6949	-	0.5079	0.7395	56.36

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
Retics	30-Day	Single	1613	0.7012	0.0744	0.5146	0.6534	46.06
Retics	30-Day	Pair	570	0.6789	0.0772	0.4895	0.6579	43.29
RF	3-Year	Single	2651	0.9589	-	0.7559	0.6213	50.51
RF	3-Year	Pair	468	0.9658	-	0.8355	0.6111	52.52
RF Neph	3-Year	Single	4281	0.9374	-	0.6914	0.7839	52.12
RF Neph	3-Year	Pair	718	0.9485	-	0.7591	0.8078	55.14
SHBG	3-Year	Single	1155	0.9887	-	0.4797	0.7290	39.24
SHBG	3-Year	Pair	227	0.9956	-	0.3216	0.7797	40.06
SS-A/Ro Ab	3-Year	Single	3399	0.9538	-	0.7982	0.7117	46.90
SS-A/Ro Ab	3-Year	Pair	612	0.9624	-	0.8987	0.7092	45.39
SS-B/La Ab	3-Year	Single	3385	0.9536	-	0.7976	0.7111	46.88
SS-B/La Ab	3-Year	Pair	612	0.9641	-	0.8889	0.7108	45.60
T3	3-Year	Single	8710	0.8963	-	0.7386	0.7318	50.94
T3	3-Year	Pair	3252	0.9197	-	0.7814	0.7408	51.69
T3 Uptake	3-Year	Single	3444	0.9004	-	0.7712	0.6797	50.48
T3 Uptake	3-Year	Pair	1494	0.9471	-	0.8233	0.6921	50.33
T4	3-Year	Single	10573	0.9049	-	0.7385	0.7281	50.15
T4	3-Year	Pair	4685	0.9296	-	0.7793	0.7513	51.93
TBILI	3-Year	Single	155469	0.9091	-	0.5406	0.7324	50.26
TBILI	3-Year	Pair	100612	0.8929	-	0.5376	0.7556	54.29
TBILI	30-Day	Single	18117	0.7770	0.0661	0.5217	0.6777	45.78
TBILI	30-Day	Pair	12409	0.7182	0.0838	0.5253	0.6970	51.06
Temp	3-Year	Single	7933	0.6914	-	0.4193	0.8249	56.44
Temp	3-Year	Pair	5246	0.6637	-	0.4022	0.8317	57.50
Testosterone	3-Year	Single	6186	0.9607	-	0.3295	0.7446	45.67
Testosterone	3-Year	Pair	2034	0.9562	-	0.2153	0.7955	48.22
Thyroglobulin	3-Year	Single	1943	0.9480	-	0.7324	0.8317	48.81
Thyroglobulin	3-Year	Pair	1054	0.9602	-	0.7306	0.8767	50.42
TIBC	3-Year	Single	23427	0.8419	-	0.6112	0.7286	54.06
TIBC	3-Year	Pair	9726	0.8269	-	0.6214	0.7301	57.13
TIBC	30-Day	Single	1952	0.6250	0.1009	0.5584	0.6568	60.57
TIBC	30-Day	Pair	631	0.5943	0.1569	0.5483	0.5880	61.01
Total Cells Counted	3-Year	Single	2740	0.7212	-	0.4865	0.7781	49.01
Total Cells Counted	3-Year	Pair	1260	0.7024	-	0.4817	0.7833	49.80
TPO	3-Year	Single	3293	0.9715	-	0.8181	0.7191	43.27
TPO	3-Year	Pair	535	0.9794	-	0.7981	0.7458	42.60
TRIG	3-Year	Single	121544	0.9483	-	0.5241	0.7354	53.86
TRIG	3-Year	Pair	85838	0.9524	-	0.5169	0.7583	57.01
TRIG	30-Day	Single	4381	0.7795	0.0591	0.4298	0.7131	59.98
TRIG	30-Day	Pair	2078	0.7551	0.0789	0.4398	0.6954	59.30
Troponin-I	3-Year	Single	10972	0.7499	-	0.4270	0.7876	61.93
Troponin-I	3-Year	Pair	3860	0.6531	-	0.4386	0.7873	66.42
Troponin-I	30-Day	Single	2427	0.6246	0.0647	0.4223	0.7421	65.53
Troponin-I	30-Day	Pair	1868	0.5980	0.0691	0.4251	0.7307	65.98
Troponin-T	3-Year	Single	13884	0.7565	-	0.4184	0.8192	62.82
Troponin-T	3-Year	Pair	7728	0.7057	-	0.4094	0.8298	66.01
TSH	3-Year	Single	100627	0.9394	-	0.7119	0.7394	50.55
TSH	3-Year	Pair	62940	0.9444	-	0.7580	0.7609	53.27
TSH	30-Day	Single	3560	0.6722	0.0826	0.5699	0.7219	62.18
TSH	30-Day	Pair	1521	0.6450	0.1098	0.6062	0.7002	63.31
UCG	3-Year	Single	5714	0.9814	-	0.9979	0.6363	32.08
UCG	3-Year	Pair	1139	0.9807	-	0.9991	0.5637	31.42
Urate	3-Year	Single	16698	0.9021	-	0.5099	0.7724	53.75
Urate	3-Year	Pair	8692	0.8962	-	0.4688	0.8048	56.58
Urate	30-Day	Single	1949	0.8179	0.0821	0.7568	0.6188	42.02
Urate	30-Day	Pair	1117	0.7941	0.1065	0.7708	0.6240	40.33
Urine ALB	3-Year	Single	13983	0.9372	-	0.5169	0.6312	57.29

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
Urine ALB	3-Year	Pair	8629	0.9397	-	0.5103	0.6205	59.13
Urine ALB Pres	3-Year	Single	3012	0.9137	-	0.5886	0.7188	44.92
Urine ALB Pres	3-Year	Pair	377	0.8886	-	0.6021	0.7294	49.34
Urine ALB/CRE	3-Year	Single	4098	0.9368	-	0.5756	0.4295	57.75
Urine ALB/CRE	3-Year	Pair	2240	0.9397	-	0.5826	0.3696	59.31
Urine BILI	3-Year	Single	7506	0.9795	-	0.6861	0.4526	37.09
Urine BILI	3-Year	Pair	3139	0.9783	-	0.7630	0.4202	38.37
Urine CA	3-Year	Single	1705	0.9056	-	0.5836	0.7853	47.97
Urine CA	3-Year	Pair	642	0.9470	-	0.6106	0.7726	47.59
Urine Casts	3-Year	Single	24135	0.8489	-	0.6464	0.7814	53.47
Urine Casts	3-Year	Pair	9306	0.7951	-	0.6513	0.8053	58.58
Urine CL	3-Year	Single	1758	0.5939	-	0.4357	0.8072	58.35
Urine CL	3-Year	Pair	346	0.5260	-	0.4480	0.7890	56.55
Urine Coll Dur	3-Year	Single	1169	0.9033	-	0.6989	0.6287	47.46
Urine Coll Dur	3-Year	Pair	265	0.9434	-	0.7736	0.6868	46.33
Urine CRE	3-Year	Single	16014	0.8772	-	0.4985	0.7410	55.13
Urine CRE	3-Year	Pair	9399	0.8878	-	0.4841	0.7300	57.09
Urine CRE Timed	3-Year	Single	2253	0.8837	-	0.5655	0.7577	47.70
Urine CRE Timed	3-Year	Pair	784	0.8903	-	0.5268	0.7781	47.43
Urine GLU	3-Year	Single	19186	0.9340	-	0.6124	0.6132	40.69
Urine GLU	3-Year	Pair	5173	0.9424	-	0.7060	0.5119	40.42
Urine Hgb	3-Year	Single	13226	0.9379	-	0.5623	0.6167	39.62
Urine Hgb	3-Year	Pair	2827	0.9420	-	0.6208	0.5419	40.04
Urine K	3-Year	Single	4035	0.5779	-	0.4511	0.7660	59.21
Urine K	3-Year	Pair	991	0.5116	-	0.4258	0.7447	57.21
Urine K	30-Day	Single	1270	0.5197	0.0850	0.4827	0.7457	61.24
Urine K	30-Day	Pair	375	0.4107	0.0853	0.4560	0.7493	60.74
Urine KET	3-Year	Single	15642	0.9329	-	0.6097	0.5960	41.80
Urine KET	3-Year	Pair	4124	0.9447	-	0.7061	0.4927	41.89
Urine MALB/CRE	3-Year	Single	13684	0.9369	-	0.5154	0.6281	57.48
Urine MALB/CRE	3-Year	Pair	8352	0.9362	-	0.5075	0.6183	59.49
Urine NA	3-Year	Single	3903	0.6451	-	0.4269	0.8140	58.68
Urine NA	3-Year	Pair	1249	0.5853	-	0.4139	0.8102	57.26
Urine NIT	3-Year	Single	19406	0.9336	-	0.5983	0.6114	40.99
Urine NIT	3-Year	Pair	5080	0.9433	-	0.6841	0.5026	40.89
Urine OSM	3-Year	Single	2383	0.6106	-	0.4494	0.8221	59.26
Urine OSM	3-Year	Pair	623	0.5666	-	0.4655	0.8266	57.71
Urine pH	3-Year	Single	104084	0.8932	-	0.6046	0.6791	48.65
Urine pH	3-Year	Pair	56947	0.8680	-	0.6241	0.6708	51.54
Urine pH	30-Day	Single	14210	0.7322	0.0816	0.5425	0.7253	57.67
Urine pH	30-Day	Pair	9478	0.6880	0.0970	0.5550	0.7189	59.00
Urine Prot	3-Year	Single	6498	0.9826	-	0.6797	0.4591	36.97
Urine Prot	3-Year	Pair	2396	0.9825	-	0.7629	0.4303	38.49
Urine Prot Timed	3-Year	Single	1137	0.8654	-	0.6042	0.7203	43.60
Urine Prot Timed	3-Year	Pair	324	0.8889	-	0.5772	0.7562	42.31
Urine RBC	3-Year	Single	39152	0.8664	-	0.6546	0.6171	50.29
Urine RBC	3-Year	Pair	18311	0.8387	-	0.6701	0.5877	52.34
Urine RBC	30-Day	Single	12925	0.7263	0.0846	0.5512	0.7209	57.98
Urine RBC	30-Day	Pair	8236	0.6807	0.1030	0.5635	0.7149	59.24
Urine SpGr	3-Year	Single	103807	0.8933	-	0.6046	0.6788	48.64
Urine SpGr	3-Year	Pair	56594	0.8680	-	0.6245	0.6700	51.49
Urine SpGr	30-Day	Single	14210	0.7322	0.0816	0.5425	0.7253	57.67
Urine SpGr	30-Day	Pair	9478	0.6880	0.0970	0.5550	0.7189	59.00
Urine Tot Prot	3-Year	Single	2818	0.8584	-	0.5259	0.7264	45.16
Urine Tot Prot	3-Year	Pair	1123	0.8825	-	0.5272	0.7204	43.05
Urine Tot Vol	3-Year	Single	5002	0.8754	-	0.6246	0.7171	47.84
Urine Tot Vol	3-Year	Pair	1625	0.8923	-	0.6098	0.7329	47.32

Laboratory Test	Model Type	# of Tests	# of Patients	3-Year Survival	30-Day Readmit	Fraction Female	Fraction White	Mean Age
Urine Urea Nit	3-Year	Single	1763	0.5547	-	0.4146	0.8134	61.93
Urine Urea Nit	3-Year	Pair	429	0.4452	-	0.3869	0.8089	61.20
Urine WBC Screen	3-Year	Single	15597	0.9315	-	0.5218	0.6130	40.29
Urine WBC Screen	3-Year	Pair	3161	0.9323	-	0.5384	0.5081	39.88
Urine WBC Sed	3-Year	Single	8497	0.8541	-	0.6030	0.6621	52.61
Urine WBC Sed	3-Year	Pair	680	0.7529	-	0.5191	0.7118	56.66
Urine WBC Sed	30-Day	Single	2919	0.7290	0.0856	0.4919	0.7324	58.67
Urine WBC Sed	30-Day	Pair	867	0.6851	0.1303	0.4764	0.7636	58.94
Urobilinogen	3-Year	Single	7229	0.9783	-	0.6836	0.4618	37.43
Urobilinogen	3-Year	Pair	2907	0.9797	-	0.7623	0.4352	39.01
Vancomycin	3-Year	Single	1652	0.4952	-	0.4274	0.7512	61.44
Vancomycin	3-Year	Pair	956	0.4331	-	0.4278	0.7469	62.17
Vancomycin	30-Day	Single	1225	0.5037	0.0963	0.4180	0.7388	61.24
Vancomycin	30-Day	Pair	878	0.4465	0.1082	0.4169	0.7267	62.75
Vancomycin Random	3-Year	Single	1575	0.4648	-	0.3683	0.8362	62.68
Vancomycin Random	3-Year	Pair	749	0.3752	-	0.3511	0.8264	63.80
Vancomycin Trough	3-Year	Single	1632	0.5987	-	0.3922	0.8229	57.66
Vancomycin Trough	3-Year	Pair	635	0.5528	-	0.3638	0.8315	58.43
VLDL	3-Year	Single	37919	0.9539	-	0.5720	0.5918	53.50
VLDL	3-Year	Pair	24845	0.9590	-	0.5701	0.6068	56.67
VLDL	30-Day	Single	3274	0.8109	0.0458	0.4111	0.7169	64.07
VLDL	30-Day	Pair	1270	0.8071	0.0591	0.4220	0.6850	64.33
WBC	3-Year	Single	227505	0.9290	-	0.5975	0.7135	47.69
WBC	3-Year	Pair	164672	0.9151	-	0.6091	0.7320	50.96
WBC	30-Day	Single	34300	0.8434	0.0501	0.6291	0.6990	48.09
WBC	30-Day	Pair	30270	0.8259	0.0547	0.6320	0.7147	51.49

Table S6. Odds Ratios of Death for All 272 Laboratory Tests. For each laboratory test, two types of experiments are shown: 3-Year survival with a “Single” laboratory test and 3-Year survival with a “Pair” of laboratory tests. The “Odds Ratio” column is the conditional odds ratio of death within three years after receiving the given test (regardless of the result of the test). The “O.R. P-Value” is the p-value of this odds ratio. The “Adjusted O.R.” is the age, sex, and race (ASR) adjusted conditional odds ratio of death, and the “Adj-O.R. P-Value” is the p-value of this ASR-adjusted odds ratio.

Laboratory Test	Model Type	# of Tests	Odds Ratio	O.R. P-Value	Adjusted O.R.	Adj-O.R. P-Value
25VITD	3-Year	Single	1.926	<0.00001	1.208	<0.00001
25VITD	3-Year	Pair	1.635	<0.00001	0.958	0.39914
Abs Bands Manual	3-Year	Single	7.236	<0.00001	7.504	<0.00001
Abs Bands Manual	3-Year	Pair	12.294	<0.00001	12.060	<0.00001
Abs Basos	3-Year	Single	2.509	<0.00001	2.074	<0.00001
Abs Basos	3-Year	Pair	3.740	<0.00001	2.567	<0.00001
Abs Basos Auto	3-Year	Single	2.125	<0.00001	1.855	<0.00001
Abs Basos Auto	3-Year	Pair	2.527	<0.00001	1.996	<0.00001
Abs Eos	3-Year	Single	2.509	<0.00001	2.074	<0.00001
Abs Eos	3-Year	Pair	3.752	<0.00001	2.577	<0.00001
Abs Eos Auto	3-Year	Single	2.124	<0.00001	1.854	<0.00001
Abs Eos Auto	3-Year	Pair	2.498	<0.00001	1.978	<0.00001
Abs Lymphs	3-Year	Single	2.505	<0.00001	2.070	<0.00001
Abs Lymphs	3-Year	Pair	3.757	<0.00001	2.574	<0.00001
Abs Lymphs Auto	3-Year	Single	2.079	<0.00001	1.851	<0.00001
Abs Lymphs Auto	3-Year	Pair	2.469	<0.00001	2.008	<0.00001
Abs Monos	3-Year	Single	2.510	<0.00001	2.074	<0.00001
Abs Monos	3-Year	Pair	3.746	<0.00001	2.573	<0.00001
Abs Monos Auto	3-Year	Single	2.092	<0.00001	1.842	<0.00001
Abs Monos Auto	3-Year	Pair	2.475	<0.00001	1.989	<0.00001
Abs Neuts	3-Year	Single	2.504	<0.00001	2.070	<0.00001
Abs Neuts	3-Year	Pair	3.747	<0.00001	2.576	<0.00001
Abs Neuts Auto	3-Year	Single	2.105	<0.00001	1.854	<0.00001
Abs Neuts Auto	3-Year	Pair	2.487	<0.00001	1.991	<0.00001
Act Prot C Res Screen	3-Year	Single	2.296	<0.00001	2.178	<0.00001
Act Prot C Res Screen	3-Year	Pair	2.013	0.00070	2.396	0.00008
ALB	3-Year	Single	2.568	<0.00001	1.693	<0.00001
ALB	3-Year	Pair	2.855	<0.00001	1.677	<0.00001
ALC Toxic Screen	3-Year	Single	3.598	<0.00001	4.275	<0.00001
ALC Toxic Screen	3-Year	Pair	4.121	<0.00001	6.977	<0.00001
ALKP	3-Year	Single	2.558	<0.00001	1.693	<0.00001
ALKP	3-Year	Pair	2.784	<0.00001	1.637	<0.00001
Alpha-Fetoprotein	3-Year	Single	2.621	<0.00001	3.820	<0.00001
Alpha-Fetoprotein	3-Year	Pair	2.574	<0.00001	3.271	<0.00001
ALT	3-Year	Single	2.346	<0.00001	1.547	<0.00001
ALT	3-Year	Pair	2.517	<0.00001	1.478	<0.00001
AMY	3-Year	Single	4.222	<0.00001	3.577	<0.00001
AMY	3-Year	Pair	5.740	<0.00001	4.263	<0.00001
ANA HEP2 Titer	3-Year	Single	1.163	0.07252	1.314	0.00213
ANA HEP2 Titer	3-Year	Pair	1.059	0.81848	1.276	0.35116
Anion	3-Year	Single	2.462	<0.00001	1.809	<0.00001
Anion	3-Year	Pair	3.066	<0.00001	1.966	<0.00001
Anticardiolipin IgG	3-Year	Single	2.249	<0.00001	2.276	<0.00001
Anticardiolipin IgG	3-Year	Pair	2.220	<0.00001	2.319	<0.00001
Anticardiolipin IgM	3-Year	Single	2.267	<0.00001	2.290	<0.00001
Anticardiolipin IgM	3-Year	Pair	2.600	<0.00001	2.723	<0.00001
Anti-dsDNA Ab	3-Year	Single	1.049	0.68372	1.561	0.00028
Anti-dsDNA Ab	3-Year	Pair	0.805	0.29706	1.354	0.15853

Anti-RNP Ab	3-Year	Single	0.807	0.13796	1.084	0.59121
Anti-RNP Ab	3-Year	Pair	0.738	0.30101	1.193	0.56178
Anti-RNP Ab Cnt	3-Year	Single	1.032	0.76416	1.221	0.06920
Anti-RNP Ab Cnt	3-Year	Pair	0.614	0.17468	0.976	0.94732
Anti-Sm Ab	3-Year	Single	0.840	0.21009	1.150	0.33308
Anti-Sm Ab	3-Year	Pair	0.726	0.27583	1.149	0.64617
Anti-Sm Ab Cnt	3-Year	Single	1.021	0.84565	1.210	0.08328
Anti-Sm Ab Cnt	3-Year	Pair	0.622	0.18595	0.933	0.85339
AST	3-Year	Single	2.355	<0.00001	1.522	<0.00001
AST	3-Year	Pair	2.497	<0.00001	1.426	<0.00001
AT III Functional	3-Year	Single	2.335	<0.00001	2.421	<0.00001
AT III Functional	3-Year	Pair	1.834	0.00263	2.206	0.00024
Atypical Lymphs	3-Year	Single	6.482	<0.00001	6.988	<0.00001
Atypical Lymphs	3-Year	Pair	10.806	<0.00001	10.145	<0.00001
B12	3-Year	Single	3.426	<0.00001	1.824	<0.00001
B12	3-Year	Pair	3.472	<0.00001	1.620	<0.00001
Bands Manual	3-Year	Single	6.913	<0.00001	7.172	<0.00001
Bands Manual	3-Year	Pair	11.387	<0.00001	10.688	<0.00001
Base Excess	3-Year	Single	4.365	<0.00001	1.631	<0.00001
Base Excess	3-Year	Pair	3.984	<0.00001	1.495	0.00004
Base Excess Arterial	3-Year	Single	8.736	<0.00001	4.569	<0.00001
Base Excess Arterial	3-Year	Pair	9.658	<0.00001	4.700	<0.00001
Basos	3-Year	Single	2.628	<0.00001	2.118	<0.00001
Basos	3-Year	Pair	3.918	<0.00001	2.627	<0.00001
Basos Auto	3-Year	Single	2.138	<0.00001	1.866	<0.00001
Basos Auto	3-Year	Pair	2.516	<0.00001	1.995	<0.00001
Basos Manual	3-Year	Single	4.591	<0.00001	5.013	<0.00001
Basos Manual	3-Year	Pair	8.217	<0.00001	7.707	<0.00001
Bili Conj	3-Year	Single	0.569	<0.00001	0.356	<0.00001
Bili Conj	3-Year	Pair	0.634	<0.00001	0.356	<0.00001
Bili Indir	3-Year	Single	0.569	<0.00001	0.355	<0.00001
Bili Indir	3-Year	Pair	0.626	<0.00001	0.351	<0.00001
BNP	3-Year	Single	11.311	<0.00001	4.694	<0.00001
BNP	3-Year	Pair	14.081	<0.00001	5.364	<0.00001
BUN	3-Year	Single	2.333	<0.00001	1.385	<0.00001
BUN	3-Year	Pair	2.820	<0.00001	1.453	<0.00001
C3	3-Year	Single	2.393	<0.00001	2.784	<0.00001
C3	3-Year	Pair	1.495	0.00870	2.392	<0.00001
C4	3-Year	Single	2.252	<0.00001	2.605	<0.00001
C4	3-Year	Pair	1.423	0.02254	2.127	0.00001
CA	3-Year	Single	2.419	<0.00001	1.459	<0.00001
CA	3-Year	Pair	2.900	<0.00001	1.514	<0.00001
CA125	3-Year	Single	2.760	<0.00001	2.422	<0.00001
CA125	3-Year	Pair	3.595	<0.00001	3.047	<0.00001
CA125 Cnt	3-Year	Single	2.817	<0.00001	2.657	<0.00001
CA125 Cnt	3-Year	Pair	1.724	0.01072	1.740	0.01180
CA15-3	3-Year	Single	3.303	<0.00001	2.461	<0.00001
CA15-3	3-Year	Pair	3.045	<0.00001	2.174	<0.00001
CA19-9	3-Year	Single	17.594	<0.00001	11.028	<0.00001
CA19-9	3-Year	Pair	20.101	<0.00001	13.004	<0.00001
Calcitriol	3-Year	Single	5.939	<0.00001	4.487	<0.00001
Calcitriol	3-Year	Pair	3.830	<0.00001	2.771	<0.00001
Cardolipin	3-Year	Single	1.618	<0.00001	2.500	<0.00001
Cardolipin	3-Year	Pair	1.361	0.21993	2.295	0.00203
CD16+CD56	3-Year	Single	3.172	<0.00001	3.638	<0.00001
CD16+CD56	3-Year	Pair	2.570	<0.00001	3.023	<0.00001
CD19	3-Year	Single	3.140	<0.00001	3.589	<0.00001
CD19	3-Year	Pair	2.710	<0.00001	3.177	<0.00001
CEA	3-Year	Single	8.680	<0.00001	4.677	<0.00001

CEA	3-Year	Pair	5.998	<0.00001	3.123	<0.00001
CH50	3-Year	Single	0.770	0.10144	1.053	0.75503
CH50	3-Year	Pair	0.553	0.04313	0.907	0.74485
CHOL	3-Year	Single	0.924	<0.00001	0.567	<0.00001
CHOL	3-Year	Pair	0.830	<0.00001	0.452	<0.00001
CK-MB	3-Year	Single	6.956	<0.00001	2.737	<0.00001
CK-MB	3-Year	Pair	7.857	<0.00001	2.912	<0.00001
CL	3-Year	Single	2.369	<0.00001	1.434	<0.00001
CL	3-Year	Pair	2.885	<0.00001	1.507	<0.00001
CO2	3-Year	Single	2.373	<0.00001	1.435	<0.00001
CO2	3-Year	Pair	2.907	<0.00001	1.516	<0.00001
Cortisol	3-Year	Single	8.263	<0.00001	6.553	<0.00001
Cortisol	3-Year	Pair	9.487	<0.00001	7.787	<0.00001
CPK	3-Year	Single	4.393	<0.00001	1.949	<0.00001
CPK	3-Year	Pair	4.790	<0.00001	1.889	<0.00001
CPK-MB	3-Year	Single	6.770	<0.00001	3.084	<0.00001
CPK-MB	3-Year	Pair	8.241	<0.00001	3.282	<0.00001
CRE	3-Year	Single	2.265	<0.00001	1.341	<0.00001
CRE	3-Year	Pair	2.718	<0.00001	1.398	<0.00001
CRP	3-Year	Single	2.619	<0.00001	1.903	<0.00001
CRP	3-Year	Pair	2.207	<0.00001	1.469	<0.00001
CRP High Sens	3-Year	Single	0.940	0.20991	0.581	<0.00001
CRP High Sens	3-Year	Pair	0.576	<0.00001	0.321	<0.00001
CSF Bands	3-Year	Single	4.121	<0.00001	5.115	<0.00001
CSF Bands	3-Year	Pair	4.599	<0.00001	5.408	<0.00001
CSF Basos	3-Year	Single	4.139	<0.00001	5.127	<0.00001
CSF Basos	3-Year	Pair	4.914	<0.00001	5.585	<0.00001
CSF Eos	3-Year	Single	4.126	<0.00001	5.114	<0.00001
CSF Eos	3-Year	Pair	4.358	<0.00001	5.282	<0.00001
CSF Glucose	3-Year	Single	4.698	<0.00001	5.622	<0.00001
CSF Glucose	3-Year	Pair	8.069	<0.00001	10.359	<0.00001
CSF Lymphs	3-Year	Single	4.146	<0.00001	5.147	<0.00001
CSF Lymphs	3-Year	Pair	4.382	<0.00001	5.434	<0.00001
CSF Monos	3-Year	Single	4.164	<0.00001	5.178	<0.00001
CSF Monos	3-Year	Pair	4.708	<0.00001	5.715	<0.00001
CSF Neuts	3-Year	Single	4.166	<0.00001	5.176	<0.00001
CSF Neuts	3-Year	Pair	5.013	<0.00001	5.890	<0.00001
CSF Non-Hematic	3-Year	Single	4.159	<0.00001	5.167	<0.00001
CSF Non-Hematic	3-Year	Pair	4.902	<0.00001	6.181	<0.00001
CSF NRBC	3-Year	Single	4.133	<0.00001	5.141	<0.00001
CSF NRBC	3-Year	Pair	4.262	<0.00001	5.565	<0.00001
CSF Other Hematic	3-Year	Single	4.151	<0.00001	5.158	<0.00001
CSF Other Hematic	3-Year	Pair	4.244	<0.00001	5.165	<0.00001
CSF RBC	3-Year	Single	4.290	<0.00001	5.114	<0.00001
CSF RBC	3-Year	Pair	5.387	<0.00001	6.670	<0.00001
CSF Reactive Lymphs	3-Year	Single	4.124	<0.00001	5.118	<0.00001
CSF Reactive Lymphs	3-Year	Pair	4.611	<0.00001	5.251	<0.00001
CSF Total Protein	3-Year	Single	4.668	<0.00001	5.581	<0.00001
CSF Total Protein	3-Year	Pair	9.199	<0.00001	11.570	<0.00001
CSF Unidentified	3-Year	Single	4.133	<0.00001	5.115	<0.00001
CSF Unidentified	3-Year	Pair	4.523	<0.00001	5.105	<0.00001
CSF WBC	3-Year	Single	3.832	<0.00001	4.896	<0.00001
CSF WBC	3-Year	Pair	4.071	<0.00001	5.113	<0.00001
CSF/F Atyps	3-Year	Single	8.412	<0.00001	6.586	<0.00001
CSF/F Atyps	3-Year	Pair	8.917	<0.00001	8.293	<0.00001
CSF/F Bands	3-Year	Single	8.457	<0.00001	6.613	<0.00001
CSF/F Bands	3-Year	Pair	9.307	<0.00001	8.566	<0.00001
CSF/F Basos	3-Year	Single	8.434	<0.00001	6.604	<0.00001
CSF/F Basos	3-Year	Pair	9.427	<0.00001	8.750	<0.00001

CSF/F Eos	3-Year	Single	8.426	<0.00001	6.606	<0.00001
CSF/F Eos	3-Year	Pair	8.790	<0.00001	8.066	<0.00001
CSF/F Lymphs	3-Year	Single	8.447	<0.00001	6.613	<0.00001
CSF/F Lymphs	3-Year	Pair	9.098	<0.00001	8.688	<0.00001
CSF/F Monos	3-Year	Single	8.423	<0.00001	6.589	<0.00001
CSF/F Monos	3-Year	Pair	9.399	<0.00001	8.936	<0.00001
CSF/F Nonhematics	3-Year	Single	9.658	<0.00001	6.313	<0.00001
CSF/F Nonhematics	3-Year	Pair	13.758	<0.00001	11.213	<0.00001
CSF/F Other Hematics	3-Year	Single	9.516	<0.00001	6.456	<0.00001
CSF/F Other Hematics	3-Year	Pair	12.466	<0.00001	9.721	<0.00001
CSF/F Polys	3-Year	Single	8.435	<0.00001	6.597	<0.00001
CSF/F Polys	3-Year	Pair	9.432	<0.00001	9.057	<0.00001
CSF/F RBC	3-Year	Single	8.114	<0.00001	6.927	<0.00001
CSF/F RBC	3-Year	Pair	8.373	<0.00001	7.918	<0.00001
CSF/F Unident	3-Year	Single	9.676	<0.00001	6.332	<0.00001
CSF/F Unident	3-Year	Pair	13.986	<0.00001	11.483	<0.00001
CSF/F WBC	3-Year	Single	8.506	<0.00001	6.567	<0.00001
CSF/F WBC	3-Year	Pair	9.885	<0.00001	9.074	<0.00001
DBILI	3-Year	Single	2.848	<0.00001	2.337	<0.00001
DBILI	3-Year	Pair	3.530	<0.00001	2.508	<0.00001
DHEA Sulfate	3-Year	Single	0.257	<0.00001	0.968	0.88522
DHEA Sulfate	3-Year	Pair	0.152	0.00791	0.567	0.42871
Digoxin	3-Year	Single	12.692	<0.00001	3.612	<0.00001
Digoxin	3-Year	Pair	13.095	<0.00001	3.639	<0.00001
Dilantin	3-Year	Single	8.271	<0.00001	6.435	<0.00001
Dilantin	3-Year	Pair	8.313	<0.00001	6.573	<0.00001
Duration Post Ejac	3-Year	Single	1.922	<0.00001	2.080	<0.00001
Duration Post Ejac	3-Year	Pair	1.777	0.01000	2.418	0.00022
Eos	3-Year	Single	2.629	<0.00001	2.118	<0.00001
Eos	3-Year	Pair	3.905	<0.00001	2.616	<0.00001
Eos Auto	3-Year	Single	2.137	<0.00001	1.865	<0.00001
Eos Auto	3-Year	Pair	2.506	<0.00001	1.983	<0.00001
Eos Manual	3-Year	Single	4.592	<0.00001	5.014	<0.00001
Eos Manual	3-Year	Pair	8.109	<0.00001	7.619	<0.00001
ESR	3-Year	Single	1.510	<0.00001	1.112	<0.00001
ESR	3-Year	Pair	1.553	<0.00001	0.974	0.42033
Estradiol	3-Year	Single	0.117	<0.00001	0.430	<0.00001
Estradiol	3-Year	Pair	0.078	<0.00001	0.361	0.00239
Ethanol	3-Year	Single	1.604	<0.00001	2.974	<0.00001
Ethanol	3-Year	Pair	2.757	<0.00001	3.901	<0.00001
Factor VIII	3-Year	Single	3.158	<0.00001	3.851	<0.00001
Factor VIII	3-Year	Pair	2.047	0.00182	3.718	<0.00001
FE	3-Year	Single	3.773	<0.00001	2.567	<0.00001
FE	3-Year	Pair	4.019	<0.00001	2.423	<0.00001
Ferritin	3-Year	Single	4.120	<0.00001	3.018	<0.00001
Ferritin	3-Year	Pair	4.287	<0.00001	2.858	<0.00001
Fibrin D-dimer EIA	3-Year	Single	4.991	<0.00001	3.687	<0.00001
Fibrin D-dimer EIA	3-Year	Pair	8.590	<0.00001	6.065	<0.00001
Fibrin D-dimer IA	3-Year	Single	4.508	<0.00001	4.269	<0.00001
Fibrin D-dimer IA	3-Year	Pair	6.914	<0.00001	7.102	<0.00001
Fibrinogen	3-Year	Single	7.380	<0.00001	5.665	<0.00001
Fibrinogen	3-Year	Pair	11.384	<0.00001	11.748	<0.00001
FIO2	3-Year	Single	8.876	<0.00001	5.610	<0.00001
FIO2	3-Year	Pair	9.731	<0.00001	5.919	<0.00001
Fluid Blast	3-Year	Single	9.640	<0.00001	6.344	<0.00001
Fluid Blast	3-Year	Pair	15.651	<0.00001	13.622	<0.00001
Fluid Glucose	3-Year	Single	17.826	<0.00001	13.835	<0.00001
Fluid Glucose	3-Year	Pair	28.693	<0.00001	27.378	<0.00001
Fluid LDH	3-Year	Single	22.935	<0.00001	17.043	<0.00001

Fluid LDH	3-Year	Pair	34.911	<0.00001	28.052	<0.00001
Fluid Macros	3-Year	Single	10.159	<0.00001	9.058	<0.00001
Fluid Macros	3-Year	Pair	12.070	<0.00001	13.005	<0.00001
Fluid NRBC	3-Year	Single	9.770	<0.00001	6.680	<0.00001
Fluid NRBC	3-Year	Pair	13.593	<0.00001	11.987	<0.00001
Fluid pH	3-Year	Single	5.986	<0.00001	7.536	<0.00001
Fluid pH	3-Year	Pair	3.598	<0.00001	5.302	<0.00001
Fluid Tot Prot	3-Year	Single	20.286	<0.00001	15.416	<0.00001
Fluid Tot Prot	3-Year	Pair	32.676	<0.00001	31.428	<0.00001
Folate	3-Year	Single	4.695	<0.00001	2.742	<0.00001
Folate	3-Year	Pair	5.224	<0.00001	2.782	<0.00001
Free T4	3-Year	Single	1.833	<0.00001	1.597	<0.00001
Free T4	3-Year	Pair	1.379	<0.00001	1.150	0.01829
Free Testost	3-Year	Single	0.509	<0.00001	0.653	0.00179
Free Testost	3-Year	Pair	0.489	0.01911	0.512	0.03139
FSH	3-Year	Single	0.221	<0.00001	0.690	0.00027
FSH	3-Year	Pair	0.216	<0.00001	0.718	0.06520
GGT	3-Year	Single	6.162	<0.00001	5.272	<0.00001
GGT	3-Year	Pair	5.063	<0.00001	4.731	<0.00001
GLOB	3-Year	Single	2.893	<0.00001	1.976	<0.00001
GLOB	3-Year	Pair	3.308	<0.00001	2.008	<0.00001
GLU	3-Year	Single	2.050	<0.00001	1.321	<0.00001
GLU	3-Year	Pair	2.439	<0.00001	1.367	<0.00001
Glucose Blood	3-Year	Single	7.531	<0.00001	4.765	<0.00001
Glucose Blood	3-Year	Pair	9.379	<0.00001	5.617	<0.00001
Haptoglobin	3-Year	Single	13.504	<0.00001	9.582	<0.00001
Haptoglobin	3-Year	Pair	17.300	<0.00001	14.598	<0.00001
HCG Qual	3-Year	Single	0.034	<0.00001	0.306	0.09435
HCG Qual	3-Year	Pair	0.000	0.84529	0.000	0.97517
HCG Quant	3-Year	Single	0.443	<0.00001	2.630	<0.00001
HCG Quant	3-Year	Pair	0.363	<0.00001	2.360	<0.00001
HCO3	3-Year	Single	10.850	<0.00001	14.204	<0.00001
HCO3	3-Year	Pair	10.136	<0.00001	26.137	<0.00001
HCT	3-Year	Single	1.812	<0.00001	1.437	<0.00001
HCT	3-Year	Pair	2.246	<0.00001	1.527	<0.00001
HDL	3-Year	Single	0.906	<0.00001	0.553	<0.00001
HDL	3-Year	Pair	0.815	<0.00001	0.442	<0.00001
HGB	3-Year	Single	1.823	<0.00001	1.439	<0.00001
HGB	3-Year	Pair	2.264	<0.00001	1.530	<0.00001
Hgb A	3-Year	Single	0.127	<0.00001	0.432	0.00078
Hgb A	3-Year	Pair	0.000	0.87738	0.000	0.97782
Hgb A1	3-Year	Single	0.336	<0.00001	1.494	0.03651
Hgb A1	3-Year	Pair	0.818	0.65976	4.132	0.00318
Hgb A1c	3-Year	Single	2.315	<0.00001	1.244	<0.00001
Hgb A1c	3-Year	Pair	2.021	<0.00001	1.011	0.68572
Hgb A2	3-Year	Single	0.164	<0.00001	0.621	0.00676
Hgb A2	3-Year	Pair	0.071	0.00842	0.412	0.38062
Hgb A2 Prime	3-Year	Single	0.126	<0.00001	0.430	0.00075
Hgb A2 Prime	3-Year	Pair	0.000	0.83744	0.000	0.96981
Hgb Barts	3-Year	Single	0.126	<0.00001	0.431	0.00076
Hgb Barts	3-Year	Pair	0.000	0.84165	0.000	0.97106
Hgb C	3-Year	Single	0.140	<0.00001	0.481	0.00202
Hgb C	3-Year	Pair	0.322	0.11154	2.178	0.29085
Hgb D	3-Year	Single	0.126	<0.00001	0.430	0.00073
Hgb D	3-Year	Pair	0.000	0.83979	0.000	0.97092
Hgb E	3-Year	Single	0.126	<0.00001	0.430	0.00074
Hgb E	3-Year	Pair	0.000	0.84442	0.000	0.97223
Hgb F	3-Year	Single	0.152	<0.00001	0.528	0.00481
Hgb F	3-Year	Pair	0.098	0.02075	0.651	0.67083

Hgb G Cough	3-Year	Single	0.126	<0.00001	0.429	0.00072
Hgb G Cough	3-Year	Pair	0.000	0.84046	0.000	0.97055
Hgb Lepore	3-Year	Single	0.126	<0.00001	0.430	0.00074
Hgb Lepore	3-Year	Pair	0.000	0.84446	0.000	0.97206
Hgb O	3-Year	Single	0.126	<0.00001	0.430	0.00075
Hgb O	3-Year	Pair	0.000	0.84092	0.000	0.97089
Hgb Other	3-Year	Single	0.127	<0.00001	0.432	0.00079
Hgb Other	3-Year	Pair	0.000	0.84208	0.000	0.97099
Hgb S	3-Year	Single	0.164	<0.00001	0.572	0.01004
Hgb S	3-Year	Pair	0.366	0.08500	2.528	0.12245
IgA	3-Year	Single	3.178	<0.00001	1.903	<0.00001
IgA	3-Year	Pair	4.378	<0.00001	2.064	<0.00001
IgE	3-Year	Single	0.844	0.10911	1.275	0.02988
IgE	3-Year	Pair	1.076	0.73182	2.005	0.00242
IGF-I	3-Year	Single	0.464	<0.00001	0.778	0.09929
IGF-I	3-Year	Pair	0.323	0.00020	0.503	0.02655
IgG	3-Year	Single	3.673	<0.00001	2.067	<0.00001
IgG	3-Year	Pair	4.583	<0.00001	2.285	<0.00001
IgM	3-Year	Single	3.598	<0.00001	1.941	<0.00001
IgM	3-Year	Pair	4.498	<0.00001	2.069	<0.00001
Insulin	3-Year	Single	0.444	<0.00001	0.853	0.30151
Insulin	3-Year	Pair	0.300	0.00016	0.560	0.07415
Ionized Ca	3-Year	Single	7.651	<0.00001	4.442	<0.00001
Ionized Ca	3-Year	Pair	8.996	<0.00001	5.066	<0.00001
Ionized Ca Serum	3-Year	Single	9.852	<0.00001	5.241	<0.00001
Ionized Ca Serum	3-Year	Pair	12.033	<0.00001	6.457	<0.00001
K	3-Year	Single	2.287	<0.00001	1.370	<0.00001
K	3-Year	Pair	2.752	<0.00001	1.422	<0.00001
K Blood	3-Year	Single	9.789	<0.00001	5.068	<0.00001
K Blood	3-Year	Pair	10.643	<0.00001	5.449	<0.00001
Lactate	3-Year	Single	14.588	<0.00001	10.522	<0.00001
Lactate	3-Year	Pair	19.072	<0.00001	15.410	<0.00001
LDH	3-Year	Single	7.177	<0.00001	5.074	<0.00001
LDH	3-Year	Pair	8.359	<0.00001	6.082	<0.00001
LDL	3-Year	Single	0.933	0.00009	0.543	<0.00001
LDL	3-Year	Pair	0.851	<0.00001	0.433	<0.00001
LDL Calc	3-Year	Single	0.896	0.00002	0.643	<0.00001
LDL Calc	3-Year	Pair	0.768	<0.00001	0.487	<0.00001
LH	3-Year	Single	0.304	<0.00001	0.609	0.00002
LH	3-Year	Pair	0.398	0.00001	1.198	0.39539
LIPS	3-Year	Single	4.344	<0.00001	3.796	<0.00001
LIPS	3-Year	Pair	6.108	<0.00001	4.727	<0.00001
Lithium	3-Year	Single	1.135	0.32597	1.411	0.01112
Lithium	3-Year	Pair	1.009	0.95917	1.153	0.41826
Lp(a)	3-Year	Single	3.405	<0.00001	1.467	<0.00001
Lp(a)	3-Year	Pair	3.430	<0.00001	1.368	0.01543
Lyme	3-Year	Single	0.761	0.01730	0.798	0.05929
Lyme	3-Year	Pair	0.493	0.08686	0.439	0.05148
Lymphs	3-Year	Single	2.629	<0.00001	2.117	<0.00001
Lymphs	3-Year	Pair	3.887	<0.00001	2.615	<0.00001
Lymphs Auto	3-Year	Single	2.104	<0.00001	1.853	<0.00001
Lymphs Auto	3-Year	Pair	2.479	<0.00001	1.987	<0.00001
Lymphs Manual	3-Year	Single	4.593	<0.00001	5.013	<0.00001
Lymphs Manual	3-Year	Pair	7.899	<0.00001	7.398	<0.00001
MCH	3-Year	Single	1.832	<0.00001	1.441	<0.00001
MCH	3-Year	Pair	2.256	<0.00001	1.519	<0.00001
MCHC	3-Year	Single	1.832	<0.00001	1.440	<0.00001
MCHC	3-Year	Pair	2.273	<0.00001	1.528	<0.00001
MCV	3-Year	Single	1.825	<0.00001	1.435	<0.00001

MCV	3-Year	Pair	2.249	<0.00001	1.512	<0.00001
Metamyelos Manual	3-Year	Single	11.690	<0.00001	12.061	<0.00001
Metamyelos Manual	3-Year	Pair	17.672	<0.00001	18.350	<0.00001
MG	3-Year	Single	5.692	<0.00001	3.652	<0.00001
MG	3-Year	Pair	8.204	<0.00001	4.554	<0.00001
MHCT	3-Year	Single	1.015	0.79265	5.276	<0.00001
MHCT	3-Year	Pair	0.552	<0.00001	6.850	<0.00001
Monos	3-Year	Single	2.626	<0.00001	2.117	<0.00001
Monos	3-Year	Pair	3.905	<0.00001	2.624	<0.00001
Monos Auto	3-Year	Single	2.103	<0.00001	1.852	<0.00001
Monos Auto	3-Year	Pair	2.508	<0.00001	2.013	<0.00001
Monos Manual	3-Year	Single	4.593	<0.00001	5.016	<0.00001
Monos Manual	3-Year	Pair	7.759	<0.00001	7.297	<0.00001
Myelos Manual	3-Year	Single	13.742	<0.00001	14.312	<0.00001
Myelos Manual	3-Year	Pair	19.526	<0.00001	22.013	<0.00001
NA	3-Year	Single	2.361	<0.00001	1.427	<0.00001
NA	3-Year	Pair	2.883	<0.00001	1.502	<0.00001
NA Blood	3-Year	Single	11.972	<0.00001	6.944	<0.00001
NA Blood	3-Year	Pair	14.335	<0.00001	8.755	<0.00001
Neuts	3-Year	Single	2.619	<0.00001	2.109	<0.00001
Neuts	3-Year	Pair	3.891	<0.00001	2.608	<0.00001
Neuts Auto	3-Year	Single	2.104	<0.00001	1.853	<0.00001
Neuts Auto	3-Year	Pair	2.468	<0.00001	1.972	<0.00001
Neuts Manual	3-Year	Single	4.593	<0.00001	5.013	<0.00001
Neuts Manual	3-Year	Pair	7.948	<0.00001	7.498	<0.00001
NH3	3-Year	Single	16.902	<0.00001	12.630	<0.00001
NH3	3-Year	Pair	20.094	<0.00001	17.425	<0.00001
NT-proBNP	3-Year	Single	12.380	<0.00001	4.029	<0.00001
NT-proBNP	3-Year	Pair	19.670	<0.00001	5.981	<0.00001
Nuc RBC	3-Year	Single	6.771	<0.00001	17.258	<0.00001
Nuc RBC	3-Year	Pair	16.707	<0.00001	29.040	<0.00001
O2 Sat	3-Year	Single	13.599	<0.00001	7.801	<0.00001
O2 Sat	3-Year	Pair	14.976	<0.00001	8.447	<0.00001
OSM	3-Year	Single	9.004	<0.00001	5.248	<0.00001
OSM	3-Year	Pair	11.018	<0.00001	6.707	<0.00001
pCO2 Arterial	3-Year	Single	9.682	<0.00001	6.509	<0.00001
pCO2 Arterial	3-Year	Pair	12.370	<0.00001	8.504	<0.00001
pCO2 Blood	3-Year	Single	10.939	<0.00001	5.966	<0.00001
pCO2 Blood	3-Year	Pair	11.601	<0.00001	6.120	<0.00001
pCO2 Venous	3-Year	Single	9.509	<0.00001	11.502	<0.00001
pCO2 Venous	3-Year	Pair	10.097	<0.00001	20.339	<0.00001
pH Arterial	3-Year	Single	9.663	<0.00001	6.499	<0.00001
pH Arterial	3-Year	Pair	12.169	<0.00001	8.630	<0.00001
pH Blood	3-Year	Single	8.622	<0.00001	4.373	<0.00001
pH Blood	3-Year	Pair	9.363	<0.00001	4.614	<0.00001
pH Serum	3-Year	Single	10.864	<0.00001	5.921	<0.00001
pH Serum	3-Year	Pair	11.845	<0.00001	6.291	<0.00001
pH Venous	3-Year	Single	9.557	<0.00001	11.423	<0.00001
pH Venous	3-Year	Pair	9.761	<0.00001	17.740	<0.00001
PHOS	3-Year	Single	4.591	<0.00001	3.038	<0.00001
PHOS	3-Year	Pair	6.245	<0.00001	3.605	<0.00001
PLT	3-Year	Single	1.825	<0.00001	1.437	<0.00001
PLT	3-Year	Pair	2.254	<0.00001	1.520	<0.00001
pO2 Arterial	3-Year	Single	10.929	<0.00001	6.464	<0.00001
pO2 Arterial	3-Year	Pair	12.665	<0.00001	7.274	<0.00001
pO2 Blood	3-Year	Single	9.384	<0.00001	5.079	<0.00001
pO2 Blood	3-Year	Pair	10.189	<0.00001	5.182	<0.00001
pO2 Venous	3-Year	Single	10.133	<0.00001	11.397	<0.00001
pO2 Venous	3-Year	Pair	9.503	<0.00001	16.527	<0.00001

Progesterone	3-Year	Single	0.080	<0.00001	0.382	0.00159
Progesterone	3-Year	Pair	0.000	0.78722	0.000	0.96261
Prolactin	3-Year	Single	0.339	<0.00001	0.695	0.00001
Prolactin	3-Year	Pair	0.266	<0.00001	0.596	0.00157
Promyelos Manual	3-Year	Single	17.358	<0.00001	21.967	<0.00001
Promyelos Manual	3-Year	Pair	24.402	<0.00001	33.811	<0.00001
Protein	3-Year	Single	2.689	<0.00001	1.772	<0.00001
Protein	3-Year	Pair	2.967	<0.00001	1.737	<0.00001
Protein C Functional	3-Year	Single	2.167	<0.00001	2.357	<0.00001
Protein C Functional	3-Year	Pair	1.795	0.00519	2.524	0.00003
PSA	3-Year	Single	0.949	0.06931	0.356	<0.00001
PSA	3-Year	Pair	0.816	<0.00001	0.287	<0.00001
PSA Free	3-Year	Single	1.102	0.25677	0.388	<0.00001
PSA Free	3-Year	Pair	0.623	0.00749	0.190	<0.00001
PSA PCT Free	3-Year	Single	1.134	0.20814	0.388	<0.00001
PSA PCT Free	3-Year	Pair	0.588	0.01407	0.176	<0.00001
PT	3-Year	Single	5.622	<0.00001	3.338	<0.00001
PT	3-Year	Pair	7.325	<0.00001	3.789	<0.00001
PTH	3-Year	Single	2.942	<0.00001	1.953	<0.00001
PTH	3-Year	Pair	3.242	<0.00001	1.942	<0.00001
PT-INR	3-Year	Single	6.295	<0.00001	3.612	<0.00001
PT-INR	3-Year	Pair	8.219	<0.00001	4.102	<0.00001
PTT	3-Year	Single	5.777	<0.00001	3.542	<0.00001
PTT	3-Year	Pair	8.014	<0.00001	4.296	<0.00001
PTT Blood	3-Year	Single	1.994	<0.00001	1.978	<0.00001
PTT Blood	3-Year	Pair	1.509	0.10291	2.047	0.00733
RBC	3-Year	Single	1.828	<0.00001	1.438	<0.00001
RBC	3-Year	Pair	2.247	<0.00001	1.513	<0.00001
RDW	3-Year	Single	1.832	<0.00001	1.440	<0.00001
RDW	3-Year	Pair	2.304	<0.00001	1.545	<0.00001
Retics	3-Year	Single	6.572	<0.00001	4.228	<0.00001
Retics	3-Year	Pair	8.481	<0.00001	5.159	<0.00001
RF	3-Year	Single	0.806	0.02767	0.803	0.03070
RF	3-Year	Pair	0.666	0.10973	0.627	0.07438
RF Neph	3-Year	Single	1.258	0.00029	0.998	0.97833
RF Neph	3-Year	Pair	1.022	0.89736	0.737	0.08195
SHBG	3-Year	Single	0.214	<0.00001	0.316	0.00005
SHBG	3-Year	Pair	0.083	0.01307	0.109	0.02760
SS-A/Ro Ab	3-Year	Single	0.911	0.25240	1.096	0.28499
SS-A/Ro Ab	3-Year	Pair	0.734	0.14642	1.146	0.53657
SS-B/La Ab	3-Year	Single	0.914	0.27513	1.102	0.25837
SS-B/La Ab	3-Year	Pair	0.701	0.10221	1.031	0.89324
T3	3-Year	Single	2.208	<0.00001	1.890	<0.00001
T3	3-Year	Pair	1.646	<0.00001	1.409	<0.00001
T3 Uptake	3-Year	Single	2.092	<0.00001	1.930	<0.00001
T3 Uptake	3-Year	Pair	1.050	0.67151	0.995	0.96658
T4	3-Year	Single	2.008	<0.00001	1.786	<0.00001
T4	3-Year	Pair	1.430	<0.00001	1.194	0.00362
TBILI	3-Year	Single	2.516	<0.00001	1.749	<0.00001
TBILI	3-Year	Pair	2.844	<0.00001	1.713	<0.00001
Temp	3-Year	Single	8.973	<0.00001	5.160	<0.00001
Temp	3-Year	Pair	9.999	<0.00001	5.668	<0.00001
Testosterone	3-Year	Single	0.767	0.00006	0.639	<0.00001
Testosterone	3-Year	Pair	0.860	0.16586	0.610	0.00001
Thyroglobulin	3-Year	Single	1.031	0.76188	1.080	0.47281
Thyroglobulin	3-Year	Pair	0.780	0.11557	0.756	0.08566
TIBC	3-Year	Single	3.843	<0.00001	2.584	<0.00001
TIBC	3-Year	Pair	4.093	<0.00001	2.421	<0.00001
Total Cells Counted	3-Year	Single	7.418	<0.00001	7.661	<0.00001

Total Cells Counted	3-Year	Pair	8.049	<0.00001	8.560	<0.00001
TPO	3-Year	Single	0.551	<0.00001	0.782	0.02377
TPO	3-Year	Pair	0.395	0.00225	0.561	0.06507
TRIG	3-Year	Single	1.031	0.03372	0.616	<0.00001
TRIG	3-Year	Pair	0.933	0.00005	0.492	<0.00001
Troponin-I	3-Year	Single	6.739	<0.00001	3.046	<0.00001
Troponin-I	3-Year	Pair	10.362	<0.00001	3.985	<0.00001
Troponin-T	3-Year	Single	6.617	<0.00001	2.753	<0.00001
Troponin-T	3-Year	Pair	8.337	<0.00001	3.052	<0.00001
TSH	3-Year	Single	1.261	<0.00001	0.993	0.65080
TSH	3-Year	Pair	1.119	<0.00001	0.788	<0.00001
UCG	3-Year	Single	0.354	<0.00001	1.996	<0.00001
UCG	3-Year	Pair	0.370	<0.00001	2.614	0.00001
Urate	3-Year	Single	2.095	<0.00001	1.297	<0.00001
Urate	3-Year	Pair	2.210	<0.00001	1.189	<0.00001
Urine ALB	3-Year	Single	1.267	<0.00001	0.728	<0.00001
Urine ALB	3-Year	Pair	1.209	0.00003	0.643	<0.00001
Urine ALB Pres	3-Year	Single	1.783	<0.00001	1.678	<0.00001
Urine ALB Pres	3-Year	Pair	2.360	<0.00001	1.783	0.00141
Urine ALB/CRE	3-Year	Single	1.271	0.00020	0.831	0.00590
Urine ALB/CRE	3-Year	Pair	1.207	0.03429	0.750	0.00184
Urine BILI	3-Year	Single	0.391	<0.00001	0.529	<0.00001
Urine BILI	3-Year	Pair	0.415	<0.00001	0.527	<0.00001
Urine CA	3-Year	Single	1.966	<0.00001	1.644	<0.00001
Urine CA	3-Year	Pair	1.052	0.77393	0.945	0.75634
Urine Casts	3-Year	Single	3.631	<0.00001	2.359	<0.00001
Urine Casts	3-Year	Pair	5.078	<0.00001	2.759	<0.00001
Urine CL	3-Year	Single	13.121	<0.00001	7.904	<0.00001
Urine CL	3-Year	Pair	17.028	<0.00001	13.221	<0.00001
Urine Coll Dur	3-Year	Single	2.016	<0.00001	2.214	<0.00001
Urine Coll Dur	3-Year	Pair	1.129	0.64892	1.430	0.20130
Urine CRE	3-Year	Single	2.733	<0.00001	1.627	<0.00001
Urine CRE	3-Year	Pair	2.423	<0.00001	1.349	<0.00001
Urine CRE Timed	3-Year	Single	2.487	<0.00001	2.604	<0.00001
Urine CRE Timed	3-Year	Pair	2.321	<0.00001	2.480	<0.00001
Urine GLU	3-Year	Single	1.342	<0.00001	1.461	<0.00001
Urine GLU	3-Year	Pair	1.151	0.01883	1.291	0.00011
Urine Hgb	3-Year	Single	1.251	<0.00001	1.403	<0.00001
Urine Hgb	3-Year	Pair	1.159	0.06698	1.269	0.00685
Urine K	3-Year	Single	14.413	<0.00001	9.069	<0.00001
Urine K	3-Year	Pair	18.203	<0.00001	14.774	<0.00001
Urine KET	3-Year	Single	1.363	<0.00001	1.409	<0.00001
Urine KET	3-Year	Pair	1.101	0.15736	1.150	0.06059
Urine MALB/CRE	3-Year	Single	1.275	<0.00001	0.726	<0.00001
Urine MALB/CRE	3-Year	Pair	1.287	<0.00001	0.671	<0.00001
Urine NA	3-Year	Single	10.746	<0.00001	5.893	<0.00001
Urine NA	3-Year	Pair	13.521	<0.00001	9.023	<0.00001
Urine NIT	3-Year	Single	1.351	<0.00001	1.461	<0.00001
Urine NIT	3-Year	Pair	1.132	0.04240	1.241	0.00127
Urine OSM	3-Year	Single	12.308	<0.00001	6.979	<0.00001
Urine OSM	3-Year	Pair	14.495	<0.00001	9.952	<0.00001
Urine pH	3-Year	Single	2.863	<0.00001	2.330	<0.00001
Urine pH	3-Year	Pair	3.392	<0.00001	2.498	<0.00001
Urine Prot	3-Year	Single	0.331	<0.00001	0.456	<0.00001
Urine Prot	3-Year	Pair	0.335	<0.00001	0.432	<0.00001
Urine Prot Timed	3-Year	Single	2.934	<0.00001	4.286	<0.00001
Urine Prot Timed	3-Year	Pair	2.353	<0.00001	3.599	<0.00001
Urine RBC	3-Year	Single	3.249	<0.00001	2.846	<0.00001
Urine RBC	3-Year	Pair	3.869	<0.00001	3.285	<0.00001

Urine SpGr	3-Year	Single	2.855	<0.00001	2.323	<0.00001
Urine SpGr	3-Year	Pair	3.390	<0.00001	2.510	<0.00001
Urine Tot Prot	3-Year	Single	3.128	<0.00001	3.292	<0.00001
Urine Tot Prot	3-Year	Pair	2.511	<0.00001	3.019	<0.00001
Urine Tot Vol	3-Year	Single	2.708	<0.00001	2.922	<0.00001
Urine Tot Vol	3-Year	Pair	2.277	<0.00001	2.588	<0.00001
Urine Urea Nit	3-Year	Single	15.434	<0.00001	8.085	<0.00001
Urine Urea Nit	3-Year	Pair	23.598	<0.00001	15.201	<0.00001
Urine WBC Screen	3-Year	Single	1.395	<0.00001	1.590	<0.00001
Urine WBC Screen	3-Year	Pair	1.368	0.00001	1.612	<0.00001
Urine WBC Sed	3-Year	Single	3.298	<0.00001	2.460	<0.00001
Urine WBC Sed	3-Year	Pair	6.198	<0.00001	4.071	<0.00001
Urobilinogen	3-Year	Single	0.415	<0.00001	0.547	<0.00001
Urobilinogen	3-Year	Pair	0.389	<0.00001	0.462	<0.00001
Vancomycin	3-Year	Single	19.638	<0.00001	11.843	<0.00001
Vancomycin	3-Year	Pair	25.011	<0.00001	16.280	<0.00001
Vancomycin Random	3-Year	Single	22.191	<0.00001	12.467	<0.00001
Vancomycin Random	3-Year	Pair	31.754	<0.00001	19.114	<0.00001
Vancomycin Trough	3-Year	Single	12.840	<0.00001	7.948	<0.00001
Vancomycin Trough	3-Year	Pair	15.340	<0.00001	9.545	<0.00001
VLDL	3-Year	Single	0.904	0.00006	0.653	<0.00001
VLDL	3-Year	Pair	0.798	<0.00001	0.510	<0.00001
WBC	3-Year	Single	1.837	<0.00001	1.448	<0.00001
WBC	3-Year	Pair	2.271	<0.00001	1.533	<0.00001

Table S7. Predicting 3-Year Survival and 30-Day Readmission Rates for All 272

Laboratory Tests. For each laboratory test, up to four types of experiments are shown: two model types (“3-Year” survival rate and “30-Day” readmission rate) and either a “Single” laboratory test or a “Pair” of tests. Experiments where the number of observations was too small are not shown. The “ASR Brier Score” is the Brier score of the generalized additive models (GAMs) using only the age, sex, and race (ASR) of the patients who received the test. The “ASR + Single Variable Models” columns list the percent reduction in Brier score by adding a single variable to the ASR-only model. The “Combined Models” columns list the percent reduction in Brier score by adding either all the patient pathophysiology variables (PP = Lab Value + Hi/Lo Flag), all the healthcare system dynamics variables (HCP = Hour of Day + Day of Week + Time Interval), or both the PP and HCP variables (PP + HCP). The best single variable model is in bold, the best combined model is in bold, and the ASR Brier score is in bold if the ASR-only model is the best of all models tested. A negative percent reduction in Brier score, which is shown in red, means the model performed worse than the ASR-only model.

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
25VITD	3-Year	Single	.07451	2.05	0.72	4.83	1.76	-	2.18	5.32	6.56
25VITD	3-Year	Pair	.06801	1.45	0.93	3.00	0.47	0.09	1.44	3.05	3.67
Abs Bands Manual	3-Year	Single	.15350	0.08	-	0.66	-0.04	-	0.08	0.61	0.63
Abs Bands Manual	3-Year	Pair	.19193	0.07	-	0.25	-0.00	0.31	0.07	0.55	0.65
Abs Basos	3-Year	Single	.07968	1.52	0.03	1.45	0.12	-	1.58	1.48	2.67
Abs Basos	3-Year	Pair	.10945	2.14	0.01	2.51	0.14	6.55	2.21	7.19	8.00
Abs Basos Auto	3-Year	Single	.07384	2.48	-0.01	3.80	0.73	-	2.51	4.01	5.63
Abs Basos Auto	3-Year	Pair	.08635	3.90	-0.01	7.75	1.10	7.96	3.91	10.85	12.10
Abs Basos Auto	30-Day	Single	.06917	0.04	-0.01	0.20	0.00	-	0.04	0.21	0.23
Abs Basos Auto	30-Day	Pair	.07564	0.33	0.00	0.37	-0.01	0.08	0.32	0.41	0.64
Abs Eos	3-Year	Single	.07967	0.66	0.80	1.44	0.09	-	1.03	1.46	2.36
Abs Eos	3-Year	Pair	.10969	1.08	1.32	2.59	0.11	6.80	1.47	7.53	8.22
Abs Eos Auto	3-Year	Single	.07381	1.64	0.01	3.96	0.70	-	1.75	4.14	5.37
Abs Eos Auto	3-Year	Pair	.08586	2.33	-0.02	7.87	1.07	7.38	2.54	10.41	11.29
Abs Eos Auto	30-Day	Single	.06918	-0.00	-0.56	0.18	0.00	-	-0.05	0.19	0.16
Abs Eos Auto	30-Day	Pair	.07563	0.09	0.71	0.28	-0.01	0.07	0.03	0.34	0.36
Abs Lymphs	3-Year	Single	.07959	3.80	3.26	1.54	0.10	-	4.09	1.56	4.91
Abs Lymphs	3-Year	Pair	.10968	5.04	4.47	2.62	0.11	6.85	5.31	7.50	9.79
Abs Lymphs Auto	3-Year	Single	.07256	-0.02	4.88	4.14	1.00	-	4.86	4.47	7.95
Abs Lymphs Auto	3-Year	Pair	.08485	0.04	6.89	8.27	1.37	8.17	6.92	11.29	13.99
Abs Lymphs Auto	30-Day	Single	.06914	0.77	0.46	0.22	0.01	-	0.74	0.23	0.86
Abs Lymphs Auto	30-Day	Pair	.07577	0.75	0.51	0.31	-0.01	0.06	0.59	0.34	0.73
Abs Monos	3-Year	Single	.07970	0.84	0.67	1.39	0.12	-	1.15	1.42	2.37
Abs Monos	3-Year	Pair	.10975	1.40	0.93	2.49	0.14	6.57	1.56	7.29	7.75
Abs Monos Auto	3-Year	Single	.07292	2.63	2.05	3.71	0.74	-	2.82	3.95	5.45
Abs Monos Auto	3-Year	Pair	.08494	3.92	2.91	7.68	1.20	7.73	3.99	10.63	11.26
Abs Monos Auto	30-Day	Single	.06924	0.50	0.41	0.20	-0.00	-	0.47	0.20	0.55
Abs Monos Auto	30-Day	Pair	.07568	0.43	0.34	0.34	-0.01	0.08	0.27	0.39	0.42
Abs Neuts	3-Year	Single	.07959	2.32	1.82	1.52	0.08	-	2.43	1.53	3.48
Abs Neuts	3-Year	Pair	.10966	3.03	2.46	2.62	0.10	6.63	3.08	7.35	8.29
Abs Neuts Auto	3-Year	Single	.07332	4.06	2.97	4.49	0.90	-	4.21	4.76	7.21
Abs Neuts Auto	3-Year	Pair	.08532	5.64	4.45	8.63	1.36	7.96	5.67	11.46	13.00
Abs Neuts Auto	30-Day	Single	.06911	0.12	0.10	0.21	-0.01	-	0.10	0.21	0.25
Abs Neuts Auto	30-Day	Pair	.07565	0.10	0.09	0.28	-0.00	0.08	0.05	0.34	0.26
Act Prot C Res Screen	3-Year	Single	.08578	-0.18	-0.07	0.70	0.67	-	0.00	1.05	0.98
ALB	3-Year	Single	.07491	13.81	10.13	3.11	1.00	-	13.90	3.45	13.96
ALB	3-Year	Pair	.08695	17.53	13.96	6.56	1.37	10.57	17.65	11.86	18.43
ALB	30-Day	Single	.07343	0.40	0.34	0.38	0.00	-	0.38	0.38	0.63

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
ALB	30-Day	Pair	.08464	0.38	0.28	0.73	-0.01	0.05	0.25	0.65	0.53
ALC Toxic Screen	3-Year	Single	.10973	0.00	-	-0.09	-0.05	-	0.00	-0.15	-0.15
ALC Toxic Screen	3-Year	Pair	.12853	-1.26	-	-2.02	-0.73	0.80	-1.26	-2.80	-3.68
ALC Toxic Screen	30-Day	Single	.03765	0.00	-	-0.24	0.10	-	0.00	-0.11	-0.11
ALC Toxic Screen	30-Day	Pair	.07602	0.26	-	-10.86	-0.88	-1.02	0.26	-17.10	-20.36
ALKP	3-Year	Single	.07508	5.45	3.27	3.11	0.95	-	5.50	3.43	8.31
ALKP	3-Year	Pair	.08626	6.14	4.33	6.34	1.35	10.39	6.25	11.64	14.94
ALKP	30-Day	Single	.07309	0.21	0.09	0.24	0.00	-	0.17	0.24	0.38
ALKP	30-Day	Pair	.08480	0.11	0.05	0.47	-0.01	0.05	0.09	0.51	0.55
Alpha-Fetoprotein	3-Year	Single	.09204	1.55	3.28	2.14	1.86	-	3.98	3.13	7.18
Alpha-Fetoprotein	3-Year	Pair	.09795	5.28	4.63	2.13	1.79	6.09	6.49	7.90	10.60
ALT	3-Year	Single	.07105	0.67	1.08	3.05	1.06	-	1.31	3.44	4.28
ALT	3-Year	Pair	.08038	0.80	1.44	6.04	1.42	10.27	1.67	11.40	11.77
ALT	30-Day	Single	.07272	0.02	0.03	0.30	0.01	-	0.07	0.30	0.33
ALT	30-Day	Pair	.08371	0.01	0.00	0.52	0.01	0.05	0.02	0.51	0.48
AMY	3-Year	Single	.11580	1.60	0.18	0.61	0.12	-	1.87	0.68	2.35
AMY	3-Year	Pair	.15140	1.67	0.14	1.05	0.17	1.38	2.13	1.94	3.48
AMY	30-Day	Single	.06793	-0.58	-0.12	-0.00	-0.11	-	-0.37	-0.11	-0.50
AMY	30-Day	Pair	.09234	-0.15	-0.26	-0.30	-0.09	-0.24	-0.10	-0.44	-0.57
ANA HEP2 Titer	3-Year	Single	.05023	0.00	-	0.04	1.13	-	0.00	0.33	0.33
Anion	3-Year	Single	.08284	1.46	0.71	3.00	0.88	-	1.45	3.32	4.61
Anion	3-Year	Pair	.09968	1.89	0.98	6.34	1.07	7.59	1.86	10.07	11.80
Anion	30-Day	Single	.06082	0.07	0.00	0.22	0.00	-	0.05	0.21	0.31
Anion	30-Day	Pair	.06422	0.07	-0.04	0.62	0.01	0.07	0.03	0.70	0.72
Anticardiolipin IgG	3-Year	Single	.08333	-0.35	-0.08	0.55	0.20	-	-0.01	0.30	0.34
Anticardiolipin IgM	3-Year	Single	.08324	-0.75	-0.22	0.54	0.31	-	-0.82	0.54	-0.19
Anticardiolipin IgM	3-Year	Pair	.11631	-1.05	-0.60	0.25	-0.29	-1.68	-6.45	-3.08	-10.70
Anti-dsDNA Ab	3-Year	Single	.04600	-0.49	-0.02	3.49	1.44	-	-0.15	3.70	3.19
Anti-RNP Ab Cnt	3-Year	Single	.04335	-0.65	-	-0.37	-0.12	-	-0.65	-0.30	-1.05
Anti-Sm Ab Cnt	3-Year	Single	.04354	-0.55	-	1.19	0.23	-	-0.55	1.46	0.91
AST	3-Year	Single	.07115	1.37	1.65	3.02	1.03	-	2.18	3.37	4.76
AST	3-Year	Pair	.08000	1.67	2.22	6.28	1.40	10.53	2.72	11.72	12.11
AST	30-Day	Single	.07258	0.07	0.09	0.30	-0.00	-	0.15	0.29	0.44
AST	30-Day	Pair	.08349	0.10	0.11	0.59	-0.00	0.06	0.16	0.61	0.77
AT III Functional	3-Year	Single	.08473	3.86	3.39	0.73	0.51	-	3.93	0.96	4.30
Atypical Lymphs	3-Year	Single	.14297	0.24	0.00	3.42	0.13	-	0.30	3.42	3.60
Atypical Lymphs	3-Year	Pair	.19094	0.53	0.07	4.52	0.19	2.91	0.54	5.39	5.56
Atypical Lymphs	30-Day	Single	.07006	-0.04	-0.04	0.58	-0.02	-	-0.09	0.56	0.49
Atypical Lymphs	30-Day	Pair	.09727	-0.01	-0.05	0.51	-0.10	0.18	0.03	0.73	0.71
B12	3-Year	Single	.10954	1.41	0.55	4.53	1.81	-	1.50	5.08	6.43
B12	3-Year	Pair	.11469	1.28	0.55	6.38	2.01	1.77	1.64	7.30	8.38
B12	30-Day	Single	.08339	-0.07	-0.05	-0.38	-0.05	-	-0.10	-0.43	-0.54
B12	30-Day	Pair	.11190	-1.50	-1.44	-1.33	-0.54	-0.65	-1.84	-2.32	-4.58
Bands Manual	3-Year	Single	.14558	0.29	0.13	2.28	0.15	-	0.28	2.31	2.44
Bands Manual	3-Year	Pair	.19018	0.64	0.23	2.82	0.16	1.99	0.65	3.70	3.95
Bands Manual	30-Day	Single	.06979	-0.03	-0.08	0.54	-0.02	-	-0.09	0.52	0.41
Bands Manual	30-Day	Pair	.09692	-0.04	-0.06	0.46	-0.02	0.24	-0.04	0.76	0.78
Base Excess	3-Year	Single	.14801	1.85	-	3.11	1.30	-	1.85	3.21	3.06
Base Excess	3-Year	Pair	.14078	0.85	-	2.29	1.75	2.04	0.85	2.08	1.07
Base Excess	30-Day	Single	.04079	-0.59	-	-0.42	-0.75	-	-0.59	-1.18	-1.54
Base Excess	30-Day	Pair	.03805	-1.61	-	-1.70	-1.83	-0.07	-1.61	-1.61	-3.70
Base Excess Arterial	3-Year	Single	.20240	0.43	-	0.15	0.62	-	0.43	0.66	1.04
Base Excess Arterial	3-Year	Pair	.21497	1.17	-	0.00	0.80	0.41	1.17	0.98	2.12
Base Excess Arterial	30-Day	Single	.06423	0.26	-	-0.03	-0.04	-	0.26	-0.06	0.19
Base Excess Arterial	30-Day	Pair	.06556	0.17	-	-0.12	-0.04	-0.06	0.17	-0.22	-0.06

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
Basos	3-Year	Single	.08249	1.43	0.00	1.42	0.07	-	1.42	1.43	2.50
Basos	3-Year	Pair	.11297	1.98	0.03	2.54	0.07	6.67	1.97	7.43	7.99
Basos Auto	3-Year	Single	.07421	3.92	0.03	3.87	0.80	-	3.92	4.13	6.52
Basos Auto	3-Year	Pair	.08635	5.82	0.04	8.10	1.20	7.80	5.77	10.91	12.54
Basos Auto	30-Day	Single	.06915	-0.03	0.01	0.21	-0.01	-	-0.04	0.20	0.18
Basos Auto	30-Day	Pair	.07557	0.07	0.03	0.31	-0.01	0.09	0.09	0.36	0.45
Basos Manual	3-Year	Single	.12158	1.89	-0.03	6.75	0.96	-	2.13	6.96	7.73
Basos Manual	3-Year	Pair	.17225	2.58	0.02	9.26	0.83	6.27	2.90	10.65	11.04
Basos Manual	30-Day	Single	.07011	-0.05	-0.01	0.58	-0.01	-	-0.08	0.57	0.47
Basos Manual	30-Day	Pair	.09742	-0.08	-0.01	0.44	-0.03	0.32	-0.14	0.92	0.74
Bili Conj	3-Year	Single	.02619	-0.52	-0.01	0.35	0.00	-	-0.70	0.35	-1.45
Bili Conj	3-Year	Pair	.02926	0.43	-0.05	-0.37	0.00	0.29	-1.21	-0.31	-2.02
Bili Indir	3-Year	Single	.02622	0.04	-0.24	0.12	0.00	-	-0.08	0.12	-0.05
Bili Indir	3-Year	Pair	.02892	0.41	-0.46	-0.07	0.00	-0.33	-0.38	-0.50	-0.85
BNP	3-Year	Single	.21444	6.40	3.86	1.81	0.63	-	6.49	2.15	7.60
BNP	3-Year	Pair	.23236	8.12	4.45	4.15	0.28	3.78	7.19	6.77	10.10
BNP	30-Day	Single	.08287	0.47	-0.08	-0.41	-0.06	-	0.34	-0.47	-0.07
BNP	30-Day	Pair	.11454	-0.92	0.15	-0.53	-0.07	1.86	-1.49	0.66	0.59
BUN	3-Year	Single	.06824	4.04	1.71	2.57	0.96	-	4.11	2.88	6.30
BUN	3-Year	Pair	.08098	4.79	2.47	4.67	1.18	8.56	4.88	9.30	11.67
BUN	30-Day	Single	.06067	0.18	0.14	0.23	-0.00	-	0.23	0.22	0.44
BUN	30-Day	Pair	.06353	0.28	0.22	0.64	-0.00	0.13	0.29	0.73	0.86
C3	3-Year	Single	.08645	3.67	2.68	1.00	0.03	-	3.10	0.86	4.42
C4	3-Year	Single	.08238	0.78	0.45	1.04	-0.31	-	0.35	0.58	0.86
CA	3-Year	Single	.07048	3.85	2.84	2.85	1.01	-	3.86	3.17	4.96
CA	3-Year	Pair	.08380	5.18	4.16	5.29	1.26	9.06	5.20	9.97	10.30
CA	30-Day	Single	.06021	0.00	-0.01	0.19	0.00	-	-0.01	0.19	0.17
CA	30-Day	Pair	.06379	0.07	0.02	0.66	0.01	0.14	0.01	0.78	0.76
CA125	3-Year	Single	.10542	23.08	21.24	1.62	0.95	-	25.05	1.92	24.73
CA125	3-Year	Pair	.13025	28.50	28.55	-0.64	0.47	27.91	29.55	27.97	34.46
CA125 Cnt	3-Year	Single	.10140	10.86	19.41	4.67	3.05	-	18.82	4.84	22.69
CA15-3	3-Year	Single	.12477	21.65	12.39	0.80	-0.13	-	21.18	0.60	20.40
CA15-3	3-Year	Pair	.12129	23.73	16.46	0.08	0.10	26.53	22.93	26.58	26.62
CA19-9	3-Year	Single	.23553	6.02	12.50	-0.76	0.09	-	13.23	-0.63	12.86
CA19-9	3-Year	Pair	.24410	7.81	11.59	0.17	-0.30	17.69	9.21	15.74	16.95
Calcitriol	3-Year	Single	.16621	10.25	5.17	4.78	1.12	-	9.91	5.08	11.21
Cardiolipin	3-Year	Single	.06233	-0.01	0.70	1.99	0.36	-	0.01	1.61	2.60
CD16+CD56	3-Year	Single	.11872	0.09	0.03	1.98	-0.06	-	-0.99	1.86	0.64
CD16+CD56	3-Year	Pair	.10404	-0.01	0.33	-1.02	-0.32	3.52	0.66	1.45	0.46
CD19	3-Year	Single	.11811	0.12	0.30	0.82	-0.00	-	-1.60	0.77	-1.03
CD19	3-Year	Pair	.10609	-0.93	0.95	-2.59	-0.25	3.09	-0.34	1.43	-0.01
CEA	3-Year	Single	.20233	9.15	6.54	0.62	0.44	-	10.05	0.87	10.56
CEA	3-Year	Pair	.17708	12.82	9.54	0.90	-0.01	17.71	14.75	17.56	22.87
CHOL	3-Year	Single	.04130	4.35	0.68	2.82	0.91	-	4.37	2.97	5.75
CHOL	3-Year	Pair	.03839	3.51	0.41	2.44	0.48	1.13	3.52	2.89	5.04
CHOL	30-Day	Single	.04540	0.22	0.15	-0.13	-0.09	-	0.07	-0.22	-0.11
CHOL	30-Day	Pair	.05748	-0.04	0.44	0.08	-0.07	-0.21	-0.26	-0.19	0.01
CK-MB	3-Year	Single	.17592	0.98	-0.05	-0.38	0.15	-	0.93	-0.17	0.78
CK-MB	3-Year	Pair	.19164	2.23	-0.02	0.08	-0.05	-0.10	1.63	-0.38	1.30
CL	3-Year	Single	.06911	2.29	1.29	2.62	0.90	-	2.29	2.90	4.89
CL	3-Year	Pair	.08260	3.25	2.19	4.75	1.12	8.35	3.26	9.07	10.79
CL	30-Day	Single	.05971	0.12	0.03	0.22	0.00	-	0.14	0.22	0.37
CL	30-Day	Pair	.06287	0.10	0.02	0.60	0.00	0.10	0.10	0.68	0.72
CO2	3-Year	Single	.06918	3.27	1.55	2.82	0.87	-	3.27	3.07	5.42
CO2	3-Year	Pair	.08289	4.33	2.36	4.84	1.09	8.48	4.34	9.22	10.88

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
CO2	30-Day	Single	.05967	0.07	0.02	0.21	0.00	-	0.05	0.20	0.26
CO2	30-Day	Pair	.06287	0.12	0.01	0.54	0.01	0.08	0.08	0.62	0.70
Cortisol	3-Year	Single	.16793	4.10	2.05	2.21	1.25	-	4.35	3.11	6.58
Cortisol	3-Year	Pair	.17584	3.24	1.63	1.82	0.65	3.10	3.45	3.60	5.45
Cortisol	30-Day	Single	.07697	-0.02	-0.17	-0.14	-0.38	-	-0.55	-0.50	-1.00
Cortisol	30-Day	Pair	.08948	-2.60	-2.21	-0.84	0.08	-2.91	-4.34	-4.90	-8.50
CPK	3-Year	Single	.12422	0.25	2.64	2.08	1.20	-	2.85	2.72	5.05
CPK	3-Year	Pair	.13889	0.32	3.58	3.97	1.47	4.85	3.83	6.25	9.00
CPK	30-Day	Single	.05737	0.13	0.37	-0.01	-0.01	-	0.36	-0.02	0.29
CPK	30-Day	Pair	.06260	0.08	0.54	-0.02	-0.00	-0.08	0.48	-0.10	0.28
CPK-MB	3-Year	Single	.15840	0.06	0.01	0.14	0.04	-	0.07	0.17	0.26
CPK-MB	3-Year	Pair	.18430	0.13	0.02	0.07	0.00	0.32	0.14	0.39	0.54
CPK-MB	30-Day	Single	.05753	0.17	0.15	0.04	-0.02	-	0.15	0.03	0.16
CPK-MB	30-Day	Pair	.06246	0.10	0.15	0.03	0.01	0.02	0.07	-0.01	-0.05
CRE	3-Year	Single	.06692	2.84	2.57	2.51	0.88	-	3.89	2.80	6.27
CRE	3-Year	Pair	.07894	3.45	3.45	4.51	1.12	8.09	4.76	8.78	11.33
CRE	30-Day	Single	.06070	0.08	0.31	0.20	0.01	-	0.30	0.20	0.50
CRE	30-Day	Pair	.06350	0.18	0.39	0.63	0.01	0.16	0.40	0.76	1.06
CRP	3-Year	Single	.09411	17.07	5.39	14.04	2.23	-	17.29	14.60	21.67
CRP	3-Year	Pair	.08633	17.79	6.93	19.63	1.77	12.01	18.04	20.39	23.53
CRP	30-Day	Single	.08709	-0.23	-0.03	0.67	-0.01	-	-0.33	0.66	0.31
CRP	30-Day	Pair	.09479	-0.03	-0.28	1.17	-0.05	-0.44	-0.34	0.12	-0.46
CRP High Sens	3-Year	Single	.04242	6.24	-	1.08	0.85	-	6.24	1.30	6.53
CRP High Sens	3-Year	Pair	.02794	4.26	-	0.41	-0.10	-0.15	4.26	-0.98	2.47
CSF Bands	3-Year	Single	.12634	0.15	-0.08	0.38	-0.17	-	-0.08	0.26	0.16
CSF Bands	3-Year	Pair	.13888	-1.75	-0.56	0.18	0.33	-1.41	-2.49	-2.31	-4.41
CSF Basos	3-Year	Single	.12672	-0.23	-0.26	0.36	-0.08	-	-0.70	0.26	-0.49
CSF Basos	3-Year	Pair	.14563	-0.68	0.01	0.30	0.37	0.74	-1.30	0.08	-2.32
CSF Eos	3-Year	Single	.12638	0.18	-0.11	-0.11	-0.18	-	-0.38	-0.27	-0.62
CSF Eos	3-Year	Pair	.13473	-2.58	-0.87	-0.31	-0.14	1.38	-3.74	0.43	-2.20
CSF Glucose	3-Year	Single	.13344	1.39	2.40	0.34	-0.02	-	2.42	0.35	2.88
CSF Glucose	3-Year	Pair	.18923	-2.20	2.12	-1.20	-0.54	-1.18	2.06	-2.92	-1.30
CSF Lymphs	3-Year	Single	.12716	0.87	0.24	0.05	-0.10	-	0.97	-0.05	0.83
CSF Lymphs	3-Year	Pair	.13727	1.24	-0.25	-0.46	-0.27	-0.65	0.24	-2.31	-2.12
CSF Monos	3-Year	Single	.12804	0.08	-0.11	0.31	-0.05	-	-0.01	0.26	0.23
CSF Monos	3-Year	Pair	.14346	-1.48	-0.89	0.52	-0.18	-0.54	-0.56	-0.62	-0.98
CSF Neuts	3-Year	Single	.12747	0.15	-0.07	0.01	-0.19	-	0.10	-0.19	-0.15
CSF Neuts	3-Year	Pair	.14475	-2.33	-1.20	-0.05	-0.17	1.00	-2.06	0.37	-2.69
CSF Non-Hematic	3-Year	Single	.12722	-0.06	0.18	0.70	-0.11	-	0.85	0.61	1.46
CSF Non-Hematic	3-Year	Pair	.14247	-1.79	-0.03	0.72	-0.56	-1.78	-1.04	-1.67	-2.47
CSF NRBC	3-Year	Single	.12710	0.00	-	-0.22	-0.21	-	0.00	-0.40	-0.39
CSF NRBC	3-Year	Pair	.13428	0.00	-	-1.41	0.11	-1.87	0.00	-4.21	-4.21
CSF Other Hematic	3-Year	Single	.12736	0.34	0.17	0.04	-0.10	-	-0.05	-0.11	0.30
CSF Other Hematic	3-Year	Pair	.13108	0.89	1.34	-0.65	-0.26	-0.39	-0.44	-1.42	-1.23
CSF RBC	3-Year	Single	.13017	-1.14	-	0.14	-0.27	-	-1.14	-0.15	-1.07
CSF RBC	3-Year	Pair	.15197	-1.78	-	-0.34	-0.08	-0.09	-1.78	-0.44	-1.36
CSF Reactive Lymphs	3-Year	Single	.12628	-0.26	0.01	-0.03	-0.21	-	-0.19	-0.27	-0.42
CSF Reactive Lymphs	3-Year	Pair	.13911	-1.60	-0.45	0.61	-0.36	1.12	-1.40	0.58	-2.00
CSF Total Protein	3-Year	Single	.13286	0.45	1.09	0.24	-0.06	-	0.69	0.16	0.85
CSF Total Protein	3-Year	Pair	.20218	-0.88	1.29	-1.37	-0.35	-0.05	-1.11	-1.62	-2.78
CSF Unidentified	3-Year	Single	.12660	0.16	0.28	0.31	0.02	-	0.21	0.32	0.49
CSF Unidentified	3-Year	Pair	.14215	-0.30	-0.16	-0.00	-0.30	0.53	-1.24	-0.59	-1.93
CSF WBC	3-Year	Single	.11907	-0.07	0.30	-0.21	-0.40	-	0.06	-0.52	-0.66
CSF WBC	3-Year	Pair	.13787	-0.30	-1.11	0.82	-0.44	-0.18	-1.56	-0.35	-1.20
CSF/F Atyps	3-Year	Single	.18731	-0.02	-0.04	0.30	0.12	-	-0.07	0.39	0.30

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
CSF/F Atyps	3-Year	Pair	.19462	-0.27	-0.08	0.17	0.01	-0.20	-0.40	0.11	-0.37
CSF/F Atyps	30-Day	Single	.08253	-0.02	-	0.58	-0.10	-	-0.02	0.49	0.39
CSF/F Atyps	30-Day	Pair	.08510	-0.48	-	-0.44	-0.10	-1.61	-0.48	-2.35	-3.01
CSF/F Bands	3-Year	Single	.18786	0.16	0.02	0.11	0.32	-	0.12	0.36	0.49
CSF/F Bands	3-Year	Pair	.19968	-0.96	0.46	-0.25	0.51	-0.12	-0.81	0.15	-0.70
CSF/F Bands	30-Day	Single	.08227	-0.85	-	0.55	-0.10	-	-0.85	0.45	-0.33
CSF/F Bands	30-Day	Pair	.08470	-1.16	-	-0.31	-0.15	-1.84	-1.16	-2.15	-2.92
CSF/F Basos	3-Year	Single	.18782	-0.04	0.05	0.22	0.12	-	0.10	0.31	0.43
CSF/F Basos	3-Year	Pair	.20113	-0.40	-0.57	0.51	-0.12	0.07	-0.62	0.50	-0.10
CSF/F Basos	30-Day	Single	.08149	-0.12	-	0.65	0.03	-	-0.12	0.67	0.54
CSF/F Basos	30-Day	Pair	.08501	-0.56	-	-0.68	0.00	0.06	-0.56	-0.81	-1.43
CSF/F Eos	3-Year	Single	.18765	0.08	-0.01	0.23	0.04	-	-0.01	0.24	0.25
CSF/F Eos	3-Year	Pair	.19622	-0.61	-0.05	-0.26	-0.14	-0.05	-0.55	-0.40	-1.06
CSF/F Eos	30-Day	Single	.08071	-0.17	2.26	0.57	-0.06	-	-0.17	0.53	0.38
CSF/F Eos	30-Day	Pair	.08517	-2.24	-	-0.58	-0.06	-0.67	-2.21	-1.35	-3.02
CSF/F Lymphs	3-Year	Single	.18768	0.15	-0.06	0.19	0.08	-	0.09	0.22	0.32
CSF/F Lymphs	3-Year	Pair	.20019	0.68	0.71	-0.37	-0.20	-0.04	1.41	-0.68	1.29
CSF/F Lymphs	30-Day	Single	.08217	0.21	0.05	0.61	-0.00	-	0.26	0.62	1.21
CSF/F Lymphs	30-Day	Pair	.08347	-0.65	0.06	-0.49	-0.22	0.00	-0.67	-0.95	-1.97
CSF/F Monos	3-Year	Single	.18743	0.09	-0.13	0.26	0.16	-	-0.04	0.38	0.34
CSF/F Monos	3-Year	Pair	.19565	-0.14	0.26	-0.40	0.30	0.12	0.08	-0.15	0.27
CSF/F Monos	30-Day	Single	.08069	-0.42	0.04	0.69	-0.13	-	-0.39	0.55	0.21
CSF/F Monos	30-Day	Pair	.08630	-2.36	0.05	-0.80	-0.07	-2.60	-2.33	-3.16	-6.00
CSF/F Nonhematics	3-Year	Single	.20504	4.23	3.28	0.14	-0.20	-	4.43	-0.11	4.54
CSF/F Nonhematics	3-Year	Pair	.24083	7.97	6.49	-0.33	0.10	0.37	6.79	-0.22	8.43
CSF/F Other Hematics	3-Year	Single	.20541	0.55	0.16	0.60	0.21	-	0.67	0.74	1.38
CSF/F Other Hematics	3-Year	Pair	.23567	0.93	-0.40	-0.94	-0.32	1.61	0.78	0.18	0.01
CSF/F Polys	3-Year	Single	.18775	0.33	-0.13	0.17	0.15	-	0.18	0.27	0.52
CSF/F Polys	3-Year	Pair	.19614	-0.11	-0.12	-0.62	-0.08	0.14	-0.30	-0.58	-0.78
CSF/F Polys	30-Day	Single	.08129	-0.06	0.05	0.45	-0.04	-	0.04	0.44	0.36
CSF/F Polys	30-Day	Pair	.08540	-0.03	0.02	-0.33	-0.42	0.36	0.02	0.15	-0.64
CSF/F RBC	3-Year	Single	.18362	0.35	-	0.12	0.17	-	0.35	0.28	0.38
CSF/F RBC	3-Year	Pair	.19565	0.48	-	-0.23	-0.13	-0.40	0.48	-0.65	0.01
CSF/F RBC	30-Day	Single	.08208	-0.30	-	0.48	-0.16	-	-0.30	0.35	0.04
CSF/F RBC	30-Day	Pair	.08782	-0.32	-	-0.51	-0.15	-2.77	-0.32	-3.23	-2.76
CSF/F Unident	3-Year	Single	.20451	0.75	0.14	0.08	-0.13	-	0.63	-0.02	0.55
CSF/F Unident	3-Year	Pair	.23894	-0.01	-0.74	0.62	-0.18	1.19	-0.01	2.02	2.08
CSF/F WBC	3-Year	Single	.18823	1.33	-	0.34	0.02	-	1.33	0.33	1.71
CSF/F WBC	3-Year	Pair	.20316	0.34	-	-0.00	-0.09	0.12	0.34	-0.14	-0.64
CSF/F WBC	30-Day	Single	.07973	0.04	-	0.57	-0.08	-	0.04	0.51	0.48
CSF/F WBC	30-Day	Pair	.08354	-3.35	-	-0.72	0.03	-2.07	-3.35	-3.07	-4.00
DBILI	3-Year	Single	.08686	4.13	4.02	1.99	0.68	-	4.95	2.27	6.42
DBILI	3-Year	Pair	.10775	5.16	5.07	4.52	0.94	7.30	5.86	8.18	10.79
DBILI	30-Day	Single	.04805	0.07	0.22	-0.03	-0.02	-	0.33	-0.06	0.26
DBILI	30-Day	Pair	.05960	0.23	0.20	0.18	0.01	-0.14	0.42	0.17	0.54
Digoxin	3-Year	Single	.22668	0.64	0.54	1.63	0.40	-	0.61	1.85	2.54
Digoxin	3-Year	Pair	.22999	0.25	0.77	3.09	0.54	4.23	0.58	4.79	5.29
Dilantin	3-Year	Single	.18076	-0.09	0.27	0.92	0.07	-	0.23	0.88	1.03
Dilantin	3-Year	Pair	.18448	0.02	0.16	2.26	0.20	6.30	0.52	5.98	5.71
Duration Post Ejac	3-Year	Single	.07781	-0.25	-	-0.28	0.54	-	-0.25	0.18	-0.44
Eos	3-Year	Single	.08251	1.03	0.01	1.38	0.06	-	1.05	1.39	2.33
Eos	3-Year	Pair	.11302	1.74	0.01	2.57	0.08	6.84	1.75	7.53	8.37
Eos Auto	3-Year	Single	.07419	2.42	0.01	3.81	0.83	-	2.42	4.08	5.75
Eos Auto	3-Year	Pair	.08598	3.51	0.03	8.14	1.32	7.69	3.59	10.89	12.09
Eos Auto	30-Day	Single	.06926	-0.02	-0.02	0.21	-0.01	-	-0.03	0.21	0.19

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
Eos Auto	30-Day	Pair	.07566	-0.02	-0.04	0.36	0.00	0.09	-0.01	0.43	0.43
Eos Manual	3-Year	Single	.12144	1.80	0.03	7.08	1.00	-	1.87	7.31	7.96
Eos Manual	3-Year	Pair	.17188	3.20	0.06	9.06	0.96	6.67	3.44	10.63	10.96
Eos Manual	30-Day	Single	.07003	-0.02	0.21	0.56	-0.02	-	0.23	0.55	0.75
Eos Manual	30-Day	Pair	.09742	-0.09	0.09	0.45	-0.11	0.20	0.06	0.70	0.63
ESR	3-Year	Single	.05984	4.17	1.88	2.60	1.26	-	4.15	3.16	6.28
ESR	3-Year	Pair	.06318	3.63	1.56	2.51	0.68	0.26	3.57	2.65	5.39
ESR	30-Day	Single	.06304	-0.34	0.10	-0.22	-0.07	-	-0.10	-0.29	-0.40
ESR	30-Day	Pair	.05952	-3.05	-0.86	-1.30	-0.09	-1.09	-5.80	-5.72	-7.28
Ethanol	3-Year	Single	.06835	0.00	-	0.03	-0.20	-	0.00	-0.18	-0.24
Ethanol	3-Year	Pair	.11978	-1.04	-	-0.91	-0.37	-0.61	-1.04	-1.69	-3.88
Factor VIII	3-Year	Single	.09910	3.75	1.56	0.51	-0.23	-	3.56	0.22	3.38
FE	3-Year	Single	.11246	4.86	3.56	3.24	1.28	-	4.85	3.63	6.53
FE	3-Year	Pair	.12332	5.61	3.86	5.59	1.38	2.83	5.46	7.10	9.22
FE	30-Day	Single	.09195	-0.14	-0.24	-0.16	0.11	-	-0.27	-0.05	-0.34
FE	30-Day	Pair	.12659	-0.69	-1.89	-0.56	-0.05	-0.47	-2.13	-2.08	-3.41
Ferritin	3-Year	Single	.11780	7.74	5.97	3.27	1.15	-	8.12	3.62	9.93
Ferritin	3-Year	Pair	.12769	7.71	6.35	6.47	1.35	2.67	7.82	8.03	12.30
Ferritin	30-Day	Single	.09530	-0.42	0.21	-0.05	0.33	-	-0.14	0.28	0.18
Ferritin	30-Day	Pair	.13069	-1.15	-0.34	-0.18	-0.05	0.68	-1.42	0.18	-1.83
Fibrin D-dimer EIA	3-Year	Single	.13789	8.34	4.57	0.55	0.09	-	8.32	0.60	8.43
Fibrin D-dimer EIA	3-Year	Pair	.19151	8.15	6.05	0.05	-0.26	0.50	8.33	-0.35	8.27
Fibrin D-dimer IA	3-Year	Single	.13002	13.65	1.95	0.73	0.08	-	13.56	0.75	13.67
Fibrin D-dimer IA	3-Year	Pair	.16705	10.66	3.40	-0.32	-0.47	0.99	9.24	-0.62	8.54
Fibrin D-dimer IA	30-Day	Single	.07422	-0.09	0.13	-0.07	-0.06	-	-0.02	-0.12	-0.12
Fibrin D-dimer IA	30-Day	Pair	.10280	-9.53	-1.34	-0.79	-0.83	-2.51	-4.37	-3.40	-12.47
Fibrinogen	3-Year	Single	.17151	4.08	2.49	2.08	1.33	-	4.09	2.81	5.45
Fibrinogen	3-Year	Pair	.20475	3.15	1.63	0.46	0.19	-0.41	2.83	0.42	2.66
Fibrinogen	30-Day	Single	.06585	0.12	0.10	0.28	0.13	-	0.00	0.33	0.26
Fibrinogen	30-Day	Pair	.09587	0.22	-0.26	-0.94	-0.32	-0.51	-0.72	-1.59	-2.65
FIO2	3-Year	Single	.18753	0.18	-	1.37	1.18	-	0.18	2.24	2.34
FIO2	3-Year	Pair	.20054	0.89	-	2.24	1.17	-0.41	0.89	2.76	3.03
Fluid Blast	3-Year	Single	.20359	-0.03	-0.11	-0.26	-0.06	-	-0.33	-0.36	-0.59
Fluid Blast	3-Year	Pair	.23820	-0.98	0.61	-1.86	0.08	1.40	-0.98	-0.05	-1.11
Fluid Glucose	3-Year	Single	.22191	0.30	-	-0.14	-0.25	-	0.30	-0.40	-0.39
Fluid Glucose	3-Year	Pair	.22562	-3.55	-	-1.58	-1.39	-2.82	-3.55	-7.66	-11.95
Fluid LDH	3-Year	Single	.22015	-0.77	-	-0.15	0.10	-	-0.77	-0.08	-0.87
Fluid LDH	3-Year	Pair	.20881	-12.95	-	-6.51	-1.13	-1.49	-12.95	-8.66	-19.53
Fluid Macros	3-Year	Single	.19828	1.41	-	-0.18	0.44	-	1.41	0.27	1.58
Fluid Macros	3-Year	Pair	.21257	3.72	-	-2.69	-0.38	0.91	3.72	-2.54	0.57
Fluid NRBC	3-Year	Single	.20353	0.65	-	-0.10	-0.12	-	0.65	-0.20	0.46
Fluid NRBC	3-Year	Pair	.23921	-1.23	-	-2.47	-0.12	0.04	-1.23	-2.56	-3.58
Fluid pH	3-Year	Single	.10681	3.48	0.82	4.26	-0.02	-	3.83	3.97	3.74
Fluid Tot Prot	3-Year	Single	.22479	1.38	-	-0.33	-0.20	-	1.38	-0.54	1.06
Fluid Tot Prot	3-Year	Pair	.22340	1.80	-	-4.85	-1.57	-6.05	1.80	-13.77	-7.48
Folate	3-Year	Single	.13363	1.22	0.86	3.46	1.01	-	1.35	3.77	4.47
Folate	3-Year	Pair	.14742	0.38	0.33	5.48	1.85	2.13	0.35	6.93	6.72
Folate	30-Day	Single	.08791	-0.07	-0.72	-0.20	-0.04	-	-0.79	-0.23	-0.95
Folate	30-Day	Pair	.12653	-1.60	-7.03	-2.73	-0.71	-2.53	-1.03	-6.30	-8.74
Free T4	3-Year	Single	.06883	1.25	0.83	4.49	1.54	-	1.23	4.78	5.80
Free T4	3-Year	Pair	.05713	0.90	1.02	3.17	2.29	1.21	1.07	4.78	5.17
Free Testost	3-Year	Single	.02521	0.70	3.15	-0.28	0.29	-	3.32	-0.02	3.47
FSH	3-Year	Single	.01138	0.01	-	2.70	0.16	-	0.01	3.66	3.70
GGT	3-Year	Single	.15742	7.53	5.42	4.30	1.62	-	7.73	4.95	9.97
GGT	3-Year	Pair	.14512	8.75	6.71	4.28	0.84	2.98	8.89	5.16	11.18

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
GLOB	3-Year	Single	.08128	2.18	1.33	2.43	0.78	-	2.23	2.75	4.85
GLOB	3-Year	Pair	.09662	2.63	1.67	5.60	1.14	10.34	2.66	11.30	12.76
GLOB	30-Day	Single	.07309	0.09	0.06	0.27	0.01	-	0.08	0.28	0.35
GLOB	30-Day	Pair	.08510	0.05	-0.01	0.46	0.01	0.05	-0.12	0.44	0.32
GLU	3-Year	Single	.06323	1.93	1.50	2.54	0.98	-	2.01	2.89	4.17
GLU	3-Year	Pair	.07386	2.51	2.25	4.93	1.21	8.71	2.65	9.72	10.13
GLU	30-Day	Single	.06122	0.14	0.03	0.23	-0.01	-	0.13	0.22	0.33
GLU	30-Day	Pair	.06415	0.12	0.02	0.67	-0.00	0.12	0.10	0.75	0.76
Glucose Blood	3-Year	Single	.18342	0.72	0.84	0.25	0.18	-	0.96	0.39	1.24
Glucose Blood	3-Year	Pair	.21024	-0.39	0.19	-0.31	-0.17	1.32	-0.97	0.89	-0.25
Glucose Blood	30-Day	Single	.06352	-0.02	-0.02	0.01	-0.05	-	-0.15	-0.07	-0.19
Glucose Blood	30-Day	Pair	.07358	-0.59	0.03	-0.25	-0.16	-0.17	-0.63	-0.56	-1.08
Haptoglobin	3-Year	Single	.21643	0.18	0.34	-0.07	0.04	-	0.29	-0.04	0.24
Haptoglobin	3-Year	Pair	.23435	-1.51	-0.67	-1.26	-0.43	-0.81	-1.83	-2.78	-4.12
HCG Quant	3-Year	Single	.02109	0.24	0.04	0.36	0.06	-	0.19	0.44	0.72
HCG Quant	3-Year	Pair	.01740	0.62	-0.16	2.66	0.09	-0.33	0.39	2.12	3.08
HCO3	3-Year	Single	.15412	3.44	0.41	-0.19	-0.19	-	3.34	-0.38	3.01
HCO3	3-Year	Pair	.12685	0.54	-0.50	-2.91	-0.34	-0.92	-0.10	-3.65	-4.70
HCT	3-Year	Single	.05815	6.32	3.59	2.35	0.74	-	6.35	2.56	6.86
HCT	3-Year	Pair	.06908	7.40	5.01	4.20	0.87	7.22	7.46	7.96	9.72
HCT	30-Day	Single	.04717	0.29	0.18	0.11	0.01	-	0.29	0.12	0.39
HCT	30-Day	Pair	.05117	0.40	0.25	0.47	0.02	0.24	0.41	0.66	0.98
HDL	3-Year	Single	.04064	3.73	1.83	2.72	0.85	-	3.74	2.85	5.35
HDL	3-Year	Pair	.03776	2.55	1.24	2.32	0.44	0.90	2.59	2.64	4.39
HDL	30-Day	Single	.04318	0.31	0.23	-0.10	-0.02	-	0.18	-0.13	0.06
HDL	30-Day	Pair	.05471	0.31	0.01	-0.36	-0.25	-0.21	-0.44	-0.74	-1.38
HGB	3-Year	Single	.05837	7.60	5.23	2.38	0.88	-	7.60	2.70	8.19
HGB	3-Year	Pair	.06937	8.65	6.80	4.36	1.12	7.54	8.69	8.47	10.97
HGB	30-Day	Single	.04725	0.45	0.30	0.09	0.01	-	0.44	0.09	0.48
HGB	30-Day	Pair	.05140	0.71	0.46	0.61	0.01	0.29	0.71	0.85	1.38
Hgb A1c	3-Year	Single	.08378	0.34	0.01	2.67	0.84	-	0.50	2.93	3.43
Hgb A1c	3-Year	Pair	.07893	0.64	-0.05	2.91	0.69	0.67	0.61	3.23	3.58
Hgb A1c	30-Day	Single	.06130	-0.35	-0.21	0.03	-0.07	-	-0.25	-0.04	-0.27
Hgb A1c	30-Day	Pair	.06933	0.76	0.61	0.70	0.03	-0.28	0.68	0.56	1.12
IgA	3-Year	Single	.10981	2.52	1.24	1.41	1.20	-	2.56	2.04	4.41
IgA	3-Year	Pair	.14532	3.55	1.69	0.78	1.01	4.28	3.43	5.12	6.42
IgE	3-Year	Single	.04235	-1.83	-0.29	2.30	2.31	-	-1.55	2.73	0.98
IgG	3-Year	Single	.12360	2.85	1.58	1.10	0.80	-	2.74	1.46	4.01
IgG	3-Year	Pair	.15058	4.00	1.43	0.43	0.72	4.52	3.99	5.17	7.39
IgM	3-Year	Single	.12179	0.23	0.51	1.30	0.94	-	0.60	1.72	2.14
IgM	3-Year	Pair	.14871	1.46	1.57	0.47	0.73	3.90	1.94	4.06	4.96
Ionized Ca	3-Year	Single	.17629	0.65	0.18	1.18	1.13	-	0.59	1.98	2.43
Ionized Ca	3-Year	Pair	.19608	0.77	0.43	1.12	0.69	-0.11	0.51	1.48	1.95
Ionized Ca	30-Day	Single	.03728	0.01	0.22	-0.55	0.04	-	-0.17	-0.53	-0.86
Ionized Ca	30-Day	Pair	.04613	-1.43	-0.28	-4.24	-0.04	-1.57	-2.18	-5.78	-9.43
Ionized Ca Serum	3-Year	Single	.21194	0.91	0.29	1.83	0.84	-	0.80	2.19	2.93
Ionized Ca Serum	3-Year	Pair	.22744	0.55	0.12	1.52	0.85	-0.05	0.22	1.74	2.02
Ionized Ca Serum	30-Day	Single	.06844	-0.03	-0.09	0.05	-0.02	-	-0.12	0.02	-0.09
Ionized Ca Serum	30-Day	Pair	.07208	-0.11	-0.13	-0.44	-0.08	-0.07	-0.40	-0.64	-1.09
K	3-Year	Single	.06812	0.44	0.29	2.32	0.89	-	0.46	2.63	3.04
K	3-Year	Pair	.08085	0.58	0.47	4.50	1.16	8.09	0.60	8.97	9.23
K	30-Day	Single	.05950	0.07	0.03	0.20	0.01	-	0.02	0.21	0.23
K	30-Day	Pair	.06250	0.07	0.00	0.55	0.01	0.08	-0.07	0.64	0.56
K Blood	3-Year	Single	.21445	1.36	0.88	0.27	0.24	-	1.26	0.38	1.41
K Blood	3-Year	Pair	.22491	1.13	0.33	-0.93	0.07	0.10	0.68	-0.88	-0.06

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
K Blood	30-Day	Single	.06367	-0.03	-0.07	-0.06	-0.06	-	-0.15	-0.12	-0.26
K Blood	30-Day	Pair	.06851	-0.31	-0.51	-0.24	-0.11	-0.03	-0.60	-0.44	-1.51
Lactate	3-Year	Single	.20717	3.60	2.30	0.19	0.20	-	3.61	0.37	3.82
Lactate	3-Year	Pair	.20835	4.09	2.47	0.51	0.08	-0.00	4.09	0.32	4.14
Lactate	30-Day	Single	.07345	0.54	0.12	-0.46	-0.16	-	0.13	-0.61	-0.57
Lactate	30-Day	Pair	.06250	0.97	0.41	-0.42	-0.78	1.74	-1.28	1.52	-2.98
LDH	3-Year	Single	.17163	4.52	3.76	1.79	0.66	-	5.08	2.11	6.61
LDH	3-Year	Pair	.19234	5.56	5.77	2.49	0.74	6.99	6.56	6.93	10.19
LDH	30-Day	Single	.10466	0.15	-0.11	0.13	0.00	-	0.07	0.14	0.19
LDH	30-Day	Pair	.12116	0.04	-0.42	1.32	-0.32	0.12	-0.16	0.54	0.06
LDL	3-Year	Single	.04129	2.66	0.09	3.15	0.83	-	2.67	3.23	4.88
LDL	3-Year	Pair	.03879	1.77	0.05	2.10	0.33	0.79	1.78	2.33	3.60
LDL Calc	3-Year	Single	.03989	1.99	1.06	1.75	0.74	-	1.95	2.00	3.45
LDL Calc	3-Year	Pair	.03560	1.70	1.15	1.46	0.32	0.37	1.71	1.50	2.93
LDL Calc	30-Day	Single	.04362	0.18	0.03	-0.03	-0.03	-	0.07	-0.06	0.06
LDL Calc	30-Day	Pair	.05396	-1.20	-0.56	0.24	-0.08	-0.06	-1.97	0.16	-2.20
LH	3-Year	Single	.01603	1.21	-	1.55	0.37	-	1.21	3.34	3.33
LIPS	3-Year	Single	.11715	0.28	0.58	0.28	0.04	-	0.90	0.31	1.15
LIPS	3-Year	Pair	.15491	-0.02	0.77	0.72	0.09	0.93	0.76	1.42	1.84
LIPS	30-Day	Single	.06991	0.02	0.12	-0.18	-0.05	-	0.08	-0.23	-0.15
LIPS	30-Day	Pair	.08864	-0.42	-0.17	-0.80	-0.13	-0.32	-0.32	-1.03	-2.11
Lithium	3-Year	Single	.05983	-0.56	0.28	0.92	0.30	-	-0.74	0.78	0.27
Lp(a)	3-Year	Single	.11290	-0.24	-0.07	-0.07	0.36	-	-0.34	0.18	-0.24
Lp(a)	3-Year	Pair	.13231	-1.84	-0.64	0.27	0.16	-0.27	-3.48	-1.41	-4.14
Lyme	3-Year	Single	.03401	0.00	-	1.06	1.16	-	0.00	1.12	1.12
Lymphs	3-Year	Single	.08252	4.93	3.26	1.44	0.07	-	4.92	1.46	5.58
Lymphs	3-Year	Pair	.11283	6.25	4.73	2.49	0.09	6.28	6.23	7.04	9.77
Lymphs Auto	3-Year	Single	.07327	8.62	5.99	4.03	0.84	-	8.62	4.33	10.28
Lymphs Auto	3-Year	Pair	.08503	11.54	8.89	7.79	1.26	7.95	11.53	10.75	15.16
Lymphs Auto	30-Day	Single	.06917	0.37	0.23	0.24	-0.01	-	0.36	0.23	0.56
Lymphs Auto	30-Day	Pair	.07581	0.62	0.29	0.33	0.01	0.07	0.63	0.38	0.84
Lymphs Manual	3-Year	Single	.12155	6.39	3.52	6.99	0.93	-	6.38	7.20	10.36
Lymphs Manual	3-Year	Pair	.17133	7.86	4.74	9.36	0.95	6.34	7.82	10.65	13.06
Lymphs Manual	30-Day	Single	.07024	-0.02	-0.02	0.52	-0.02	-	-0.12	0.51	0.46
Lymphs Manual	30-Day	Pair	.09741	-0.02	-0.11	0.34	-0.04	0.25	-0.18	0.71	0.61
MCH	3-Year	Single	.05853	0.94	0.22	2.54	0.70	-	0.97	2.71	3.62
MCH	3-Year	Pair	.06929	1.06	0.33	4.59	0.80	7.49	1.13	8.34	8.99
MCH	30-Day	Single	.04732	0.11	0.04	0.10	0.01	-	0.10	0.10	0.19
MCH	30-Day	Pair	.05146	0.15	0.03	0.67	0.01	0.30	0.14	0.90	0.96
MCHC	3-Year	Single	.05851	3.04	1.09	2.39	0.77	-	3.04	2.61	5.80
MCHC	3-Year	Pair	.06950	3.48	1.32	4.38	0.92	7.52	3.49	8.30	11.30
MCHC	30-Day	Single	.04728	0.26	0.09	0.08	0.01	-	0.27	0.09	0.37
MCHC	30-Day	Pair	.05146	0.38	0.14	0.66	0.01	0.29	0.36	0.89	1.16
MCV	3-Year	Single	.05843	0.91	0.59	2.54	0.84	-	0.96	2.80	3.78
MCV	3-Year	Pair	.06923	1.10	0.78	4.51	1.01	7.50	1.16	8.30	9.25
MCV	30-Day	Single	.04726	-0.02	-0.01	0.10	0.01	-	-0.00	0.11	0.10
MCV	30-Day	Pair	.05144	0.00	-0.02	0.62	0.00	0.30	-0.03	0.85	0.78
Metamyelos Manual	3-Year	Single	.18634	0.18	-0.01	1.10	0.17	-	0.17	1.19	1.29
Metamyelos Manual	3-Year	Pair	.21215	-0.04	-0.11	0.63	0.24	0.09	-0.15	0.88	0.88
Metamyelos Manual	30-Day	Single	.08390	-0.29	-0.01	0.58	0.05	-	-0.29	0.55	0.26
Metamyelos Manual	30-Day	Pair	.10981	-0.43	-0.22	0.81	-0.16	-0.47	-0.71	0.16	-0.88
MG	3-Year	Single	.12856	0.57	0.34	0.71	0.06	-	0.68	0.74	1.45
MG	3-Year	Pair	.16686	0.49	0.31	1.11	0.03	1.71	0.62	2.49	2.99
MG	30-Day	Single	.06680	-0.01	-0.01	0.23	0.01	-	-0.02	0.23	0.22
MG	30-Day	Pair	.07177	0.06	0.08	0.52	0.03	0.08	0.07	0.62	0.68

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
MHCT	3-Year	Single	.03315	12.39	6.80	3.11	0.99	-	12.28	3.64	11.84
MHCT	3-Year	Pair	.01906	15.79	12.25	5.82	0.77	6.78	16.46	5.74	14.40
Monos	3-Year	Single	.08243	1.37	0.95	1.58	0.07	-	1.35	1.59	2.79
Monos	3-Year	Pair	.11287	2.13	1.54	2.69	0.07	6.95	2.09	7.55	8.46
Monos Auto	3-Year	Single	.07326	1.93	1.29	3.88	0.89	-	1.92	4.18	5.39
Monos Auto	3-Year	Pair	.08586	3.11	2.39	7.87	1.32	7.94	3.07	10.92	11.85
Monos Auto	30-Day	Single	.06920	0.43	0.34	0.20	0.00	-	0.43	0.21	0.60
Monos Auto	30-Day	Pair	.07566	0.51	0.50	0.22	-0.03	0.08	0.55	0.25	0.64
Monos Manual	3-Year	Single	.12152	1.61	1.31	6.87	1.05	-	1.65	7.13	7.78
Monos Manual	3-Year	Pair	.17025	1.93	1.66	9.27	1.24	7.51	1.90	11.31	11.43
Monos Manual	30-Day	Single	.07009	0.20	-0.04	0.59	-0.04	-	0.09	0.55	0.58
Monos Manual	30-Day	Pair	.09742	0.29	-0.04	0.52	-0.04	0.27	0.18	0.91	1.14
Myelos Manual	3-Year	Single	.19828	0.04	-0.04	0.67	0.05	-	0.00	0.64	0.61
Myelos Manual	3-Year	Pair	.21158	-0.32	-0.28	0.11	-0.02	-0.07	-0.62	-0.03	-0.65
Myelos Manual	30-Day	Single	.09290	-0.22	-0.12	0.71	-0.10	-	-0.34	0.69	0.39
Myelos Manual	30-Day	Pair	.11436	-0.88	-0.54	-0.10	-0.32	0.10	-1.58	-0.21	-2.02
NA	3-Year	Single	.06895	2.53	1.66	2.54	0.92	-	2.67	2.83	4.87
NA	3-Year	Pair	.08244	3.50	2.52	4.61	1.16	8.37	3.77	9.22	10.58
NA	30-Day	Single	.05962	0.09	0.08	0.20	-0.00	-	0.09	0.19	0.27
NA	30-Day	Pair	.06287	0.08	0.11	0.58	-0.00	0.09	0.06	0.65	0.67
NA Blood	3-Year	Single	.22347	2.61	1.75	-0.19	0.14	-	2.35	-0.12	2.12
NA Blood	3-Year	Pair	.23831	1.84	2.62	-1.15	-0.25	-0.16	2.41	-1.24	0.65
NA Blood	30-Day	Single	.07499	-0.16	0.01	-0.09	-0.06	-	-0.13	-0.14	-0.30
NA Blood	30-Day	Pair	.09036	-0.34	-0.53	0.12	-0.11	-1.47	-0.56	-1.47	-2.61
Neuts	3-Year	Single	.08229	3.34	2.43	1.49	0.09	-	3.34	1.51	4.25
Neuts	3-Year	Pair	.11272	4.62	3.56	2.53	0.11	6.28	4.62	7.03	8.83
Neuts Auto	3-Year	Single	.07327	7.44	5.28	3.80	0.88	-	7.42	4.09	9.20
Neuts Auto	3-Year	Pair	.08491	10.46	8.45	7.88	1.38	7.90	10.45	11.02	14.94
Neuts Auto	30-Day	Single	.06920	0.27	0.05	0.21	-0.02	-	0.28	0.20	0.46
Neuts Auto	30-Day	Pair	.07569	0.56	0.10	0.33	-0.01	0.07	0.53	0.37	0.80
Neuts Manual	3-Year	Single	.12154	3.70	1.53	6.94	1.11	-	3.95	7.30	9.12
Neuts Manual	3-Year	Pair	.17022	3.66	1.81	9.37	1.20	6.42	4.21	10.77	11.77
Neuts Manual	30-Day	Single	.06999	-0.04	-0.03	0.60	-0.05	-	-0.18	0.56	0.45
Neuts Manual	30-Day	Pair	.09751	0.10	0.01	0.46	-0.04	0.09	-0.11	0.62	0.61
NH3	3-Year	Single	.21716	0.20	0.26	-0.07	0.09	-	0.26	0.00	0.25
NH3	3-Year	Pair	.22192	-0.32	-0.77	0.80	-0.03	0.32	-0.56	0.60	-0.13
NT-proBNP	3-Year	Single	.22126	8.66	5.92	1.01	0.32	-	8.66	1.17	8.92
NT-proBNP	3-Year	Pair	.23412	5.79	3.60	2.18	0.51	-0.07	5.64	2.27	6.25
Nuc RBC	3-Year	Single	.11876	0.13	-0.08	0.49	0.05	-	0.06	0.54	0.67
Nuc RBC	3-Year	Pair	.17555	-0.35	-0.66	-1.37	-0.28	0.43	-0.84	-1.23	-1.60
Nuc RBC	30-Day	Single	.05190	-0.81	0.02	0.53	-0.04	-	-0.90	0.49	-0.08
Nuc RBC	30-Day	Pair	.09041	-1.09	-	-0.30	-0.27	-0.71	-1.04	-1.32	-1.19
O2 Sat	3-Year	Single	.22163	1.38	1.16	0.09	0.33	-	1.68	0.38	1.85
O2 Sat	3-Year	Pair	.23077	1.69	1.39	0.04	0.15	0.33	1.77	0.52	2.09
O2 Sat	30-Day	Single	.06500	-0.07	0.00	-0.07	-0.10	-	-0.02	-0.17	-0.18
O2 Sat	30-Day	Pair	.06693	-0.27	-0.13	-0.13	-0.08	-0.47	-0.32	-0.68	-1.01
OSM	3-Year	Single	.19142	3.45	1.82	0.36	0.27	-	3.43	0.58	3.96
OSM	3-Year	Pair	.20736	4.63	2.84	1.58	0.02	0.65	4.45	1.81	6.08
OSM	30-Day	Single	.07882	0.15	0.18	-0.05	-0.03	-	0.36	-0.09	0.44
OSM	30-Day	Pair	.07252	-0.56	-0.67	-0.29	-0.35	-0.34	-1.10	-0.99	-2.13
pCO2 Arterial	3-Year	Single	.18288	3.10	0.97	0.96	0.35	-	2.99	1.21	3.76
pCO2 Arterial	3-Year	Pair	.19580	4.33	1.88	0.84	0.19	0.71	3.59	1.45	4.08
pCO2 Blood	3-Year	Single	.20518	2.50	1.69	0.26	0.65	-	2.48	0.81	3.14
pCO2 Blood	3-Year	Pair	.21607	2.69	2.02	0.34	0.57	0.91	2.66	1.69	4.09
pCO2 Blood	30-Day	Single	.06450	-0.07	-0.10	-0.03	-0.04	-	-0.11	-0.07	-0.19

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
pCO2 Blood	30-Day	Pair	.06659	-0.24	-0.15	-0.13	-0.04	-0.17	-0.33	-0.26	-0.63
pCO2 Venous	3-Year	Single	.15912	1.81	1.20	-0.13	-0.01	-	2.16	-0.13	2.14
pCO2 Venous	3-Year	Pair	.15617	3.13	3.60	-0.04	0.13	-2.94	1.31	-2.58	-3.38
pH Arterial	3-Year	Single	.18328	1.61	0.51	0.53	0.44	-	1.56	0.84	2.22
pH Arterial	3-Year	Pair	.19552	1.23	0.34	-0.51	0.07	0.02	0.84	-0.54	0.54
pH Blood	3-Year	Single	.19120	2.59	1.58	0.87	1.06	-	2.64	1.64	4.10
pH Blood	3-Year	Pair	.20386	2.68	1.94	0.82	0.91	1.97	2.72	3.63	5.88
pH Blood	30-Day	Single	.03964	-0.20	-0.01	-0.62	-0.59	-	-0.62	-1.22	-2.01
pH Blood	30-Day	Pair	.04146	-0.20	0.20	-2.35	-0.90	0.14	-0.12	-2.17	-5.70
pH Serum	3-Year	Single	.21500	1.78	0.50	-0.03	0.41	-	1.75	0.33	1.83
pH Serum	3-Year	Pair	.22444	2.16	0.48	0.14	0.27	0.07	2.08	0.46	2.42
pH Serum	30-Day	Single	.06491	0.40	0.19	-0.09	-0.04	-	0.34	-0.13	0.22
pH Serum	30-Day	Pair	.06642	0.39	0.15	-0.12	-0.02	-0.13	0.19	-0.33	-0.16
pH Venous	3-Year	Single	.15977	-0.17	-0.28	-0.34	-0.20	-	-1.24	-0.54	-1.77
pH Venous	3-Year	Pair	.15607	-1.25	-1.35	-2.18	-0.49	-1.03	-3.81	-3.52	-6.66
PHOS	3-Year	Single	.11769	2.37	1.36	2.28	0.38	-	2.42	2.40	4.47
PHOS	3-Year	Pair	.15081	2.64	1.73	3.73	0.39	4.78	2.72	5.89	7.44
PHOS	30-Day	Single	.08480	0.00	-0.03	0.22	0.00	-	-0.05	0.22	0.14
PHOS	30-Day	Pair	.09725	-0.17	-0.14	0.27	-0.05	-0.02	-0.34	0.23	-0.17
PLT	3-Year	Single	.05846	3.72	1.84	2.25	0.78	-	3.73	2.49	5.45
PLT	3-Year	Pair	.06935	3.96	2.29	4.29	0.94	7.35	3.95	8.13	9.98
PLT	30-Day	Single	.04727	0.39	0.19	0.10	0.00	-	0.42	0.10	0.53
PLT	30-Day	Pair	.05141	0.36	0.22	0.66	-0.00	0.29	0.39	0.86	1.10
pO2 Arterial	3-Year	Single	.20104	0.56	0.48	0.13	0.65	-	0.56	0.72	1.14
pO2 Arterial	3-Year	Pair	.21720	1.22	1.23	0.25	0.54	0.25	1.27	1.02	1.92
pO2 Arterial	30-Day	Single	.06039	0.00	0.06	-0.06	-0.00	-	0.02	-0.06	-0.03
pO2 Arterial	30-Day	Pair	.06467	-0.16	-0.01	-0.12	-0.06	-0.16	-0.32	-0.33	-0.65
pO2 Blood	3-Year	Single	.19405	1.31	0.67	0.43	0.53	-	1.27	0.85	1.72
pO2 Blood	3-Year	Pair	.20655	2.94	1.47	0.17	0.43	1.26	2.68	2.01	3.46
pO2 Venous	3-Year	Single	.16636	0.10	0.05	-0.63	-0.14	-	-0.30	-0.77	-1.03
pO2 Venous	3-Year	Pair	.15497	-1.18	-2.03	-1.75	-0.46	-1.14	-2.78	-3.32	-6.73
Prolactin	3-Year	Single	.01624	0.68	1.19	3.10	1.46	-	1.15	4.35	5.21
Promyelos Manual	3-Year	Single	.20010	-0.50	-0.36	-0.15	-0.05	-	-0.77	-0.13	-0.92
Promyelos Manual	3-Year	Pair	.20518	-1.59	-0.50	-2.30	-0.36	-2.66	-2.20	-4.97	-7.83
Protein	3-Year	Single	.07717	5.98	3.50	2.79	0.89	-	6.01	3.11	6.57
Protein	3-Year	Pair	.08958	8.90	5.32	6.19	1.27	10.66	8.95	11.73	12.97
Protein	30-Day	Single	.07299	0.10	0.03	0.26	-0.00	-	0.11	0.25	0.31
Protein	30-Day	Pair	.08463	0.00	0.04	0.50	0.01	0.03	0.03	0.51	0.40
Protein C Functional	3-Year	Single	.07924	3.71	1.84	0.68	0.27	-	3.21	0.73	3.33
PSA	3-Year	Single	.04319	1.26	0.04	1.55	0.75	-	1.25	1.85	2.84
PSA	3-Year	Pair	.03807	1.66	-0.00	1.22	0.33	0.10	1.29	1.42	2.20
PSA Free	3-Year	Single	.05024	-0.53	-	3.13	0.60	-	-0.53	3.65	4.14
PSA PCT Free	3-Year	Single	.05245	-0.12	-0.10	4.17	1.69	-	-0.34	5.49	4.74
PT	3-Year	Single	.12701	1.73	1.45	1.17	0.22	-	1.97	1.26	2.83
PT	3-Year	Pair	.16181	1.25	0.66	2.04	0.29	1.42	1.39	2.97	3.53
PT	30-Day	Single	.06721	0.06	-0.02	0.10	-0.01	-	0.04	0.08	0.11
PT	30-Day	Pair	.07138	0.06	-0.07	0.31	-0.01	0.02	0.01	0.33	0.35
PTH	3-Year	Single	.10086	5.74	3.27	4.19	2.45	-	6.37	5.32	10.03
PTH	3-Year	Pair	.11246	6.58	3.36	4.96	1.58	2.72	6.45	6.67	10.31
PT-INR	3-Year	Single	.13803	0.86	0.88	1.01	0.15	-	1.30	1.06	2.18
PT-INR	3-Year	Pair	.17430	1.01	0.53	1.68	0.17	0.86	1.31	2.27	3.04
PT-INR	30-Day	Single	.06717	-0.02	-0.02	0.09	0.00	-	0.05	0.08	0.12
PT-INR	30-Day	Pair	.07137	-0.07	-0.07	0.34	-0.01	0.04	-0.03	0.37	0.38
PTT	3-Year	Single	.12995	1.32	0.82	1.27	0.21	-	1.40	1.35	2.49
PTT	3-Year	Pair	.16969	0.92	0.64	1.85	0.20	2.19	0.94	3.28	3.64

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
PTT	30-Day	Single	.06851	-0.01	0.03	0.09	-0.00	-	-0.02	0.09	0.07
PTT	30-Day	Pair	.07318	0.04	0.00	0.36	0.00	0.03	-0.08	0.38	0.30
PTT Blood	3-Year	Single	.07716	-0.08	0.33	0.18	0.91	-	0.10	1.07	1.03
RBC	3-Year	Single	.05849	6.43	3.89	2.55	0.84	-	6.47	2.81	7.22
RBC	3-Year	Pair	.06921	7.34	5.18	4.55	1.01	7.36	7.40	8.34	10.25
RBC	30-Day	Single	.04730	0.25	0.14	0.09	0.01	-	0.23	0.09	0.31
RBC	30-Day	Pair	.05144	0.47	0.31	0.63	0.01	0.29	0.47	0.84	1.19
RDW	3-Year	Single	.05853	11.10	7.67	2.54	0.87	-	11.11	2.81	12.76
RDW	3-Year	Pair	.07029	12.66	9.77	4.53	1.03	7.59	12.65	8.47	16.33
RDW	30-Day	Single	.04728	0.93	0.88	0.10	0.01	-	0.98	0.10	1.15
RDW	30-Day	Pair	.05147	1.17	1.08	0.67	0.00	0.29	1.15	0.89	1.85
Retics	3-Year	Single	.16280	3.59	3.19	2.49	0.41	-	3.87	2.59	5.46
Retics	3-Year	Pair	.18656	2.58	2.54	5.31	0.58	2.33	2.96	5.77	7.05
Retics	30-Day	Single	.06881	0.03	-0.15	0.06	-0.17	-	-0.13	-0.10	-0.23
Retics	30-Day	Pair	.07337	-2.64	-1.66	-2.01	-0.09	-1.93	-4.49	-4.83	-9.64
RF	3-Year	Single	.03700	0.87	0.80	2.01	2.11	-	0.52	3.07	3.28
RF Neph	3-Year	Single	.05309	-0.38	0.03	1.31	2.96	-	-0.07	3.19	2.98
SS-A/Ro Ab	3-Year	Single	.03877	-0.27	-0.28	2.32	0.45	-	-0.40	2.50	2.11
SS-B/La Ab	3-Year	Single	.03891	-0.16	-0.17	2.03	0.95	-	-0.36	2.67	2.33
T3	3-Year	Single	.08025	11.92	5.87	4.65	1.32	-	11.88	4.83	13.45
T3	3-Year	Pair	.06716	13.13	8.73	6.27	1.51	3.10	14.04	7.44	16.15
T3 Uptake	3-Year	Single	.07793	10.05	7.62	7.79	0.23	-	9.99	7.62	13.08
T3 Uptake	3-Year	Pair	.05379	7.89	6.34	7.55	-0.31	-0.89	7.56	7.48	9.98
T4	3-Year	Single	.07489	5.65	4.21	5.59	1.34	-	5.61	5.94	9.87
T4	3-Year	Pair	.06036	5.06	3.28	5.74	0.53	2.03	5.13	5.81	8.85
TBILI	3-Year	Single	.07397	1.75	0.96	3.13	0.97	-	1.93	3.47	4.81
TBILI	3-Year	Pair	.08724	2.30	1.48	6.59	1.41	10.57	2.51	11.74	12.47
TBILI	30-Day	Single	.06115	0.40	-0.02	0.02	0.00	-	0.37	0.02	0.65
TBILI	30-Day	Pair	.07643	0.37	-0.00	0.39	-0.01	0.03	0.31	0.38	0.82
Temp	3-Year	Single	.18587	0.98	-	0.13	0.78	-	0.98	0.71	1.41
Temp	3-Year	Pair	.19872	2.31	-	0.21	0.91	0.84	2.31	1.88	3.41
Testosterone	3-Year	Single	.03515	6.21	3.57	1.72	0.32	-	5.94	1.72	6.77
Testosterone	3-Year	Pair	.03914	5.16	3.90	-0.67	-0.36	-0.01	2.76	-0.91	1.75
Thyroglobulin	3-Year	Single	.04538	1.00	3.69	3.08	1.21	-	4.47	3.68	6.73
TIBC	3-Year	Single	.11423	11.15	8.29	3.32	1.20	-	11.12	3.68	11.57
TIBC	3-Year	Pair	.12552	11.28	9.01	4.90	1.27	2.49	11.19	6.29	12.57
TIBC	30-Day	Single	.09158	-0.21	-0.12	-0.12	0.13	-	-0.36	0.02	-0.40
TIBC	30-Day	Pair	.13266	0.27	-0.60	-0.94	-0.24	1.07	-2.77	0.01	-3.35
Total Cells Counted	3-Year	Single	.17195	1.07	-	0.42	-0.10	-	1.07	0.34	0.93
Total Cells Counted	3-Year	Pair	.18860	3.94	-	0.56	-0.25	1.18	3.94	0.89	2.84
TPO	3-Year	Single	.02676	0.15	-0.00	2.28	0.92	-	-0.06	2.00	1.92
TRIG	3-Year	Single	.04488	-0.03	-0.03	3.15	0.93	-	-0.01	3.26	3.28
TRIG	3-Year	Pair	.04237	-0.02	-0.04	3.49	0.64	2.20	-0.03	4.57	4.56
TRIG	30-Day	Single	.05573	-0.02	-0.04	-0.03	-0.05	-	-0.07	-0.08	-0.13
TRIG	30-Day	Pair	.07289	-0.05	-0.31	-0.65	0.01	-0.03	-0.48	-0.30	-1.16
Troponin-I	3-Year	Single	.16498	0.07	1.58	0.34	-0.03	-	1.60	0.31	1.57
Troponin-I	3-Year	Pair	.20779	-0.10	1.87	0.55	-0.07	0.95	1.66	1.20	2.44
Troponin-I	30-Day	Single	.05988	0.11	-0.03	-0.11	-0.09	-	0.07	-0.20	-0.14
Troponin-I	30-Day	Pair	.06477	-0.18	-0.08	-0.17	0.01	-0.27	-0.29	-0.45	-0.72
Troponin-T	3-Year	Single	.16508	0.03	0.62	-0.01	0.03	-	0.90	0.02	0.93
Troponin-T	3-Year	Pair	.18944	-0.01	0.57	-0.03	-0.01	0.31	0.88	0.26	1.04
TSH	3-Year	Single	.05004	0.28	0.34	3.55	1.57	-	0.46	4.06	4.44
TSH	3-Year	Pair	.04669	0.45	0.26	4.20	1.36	2.11	0.45	5.65	5.68
TSH	30-Day	Single	.07618	-0.13	-0.09	-0.02	-0.11	-	-0.29	-0.13	-0.43
TSH	30-Day	Pair	.09722	-0.84	-0.23	-0.09	-0.14	-0.28	-0.89	-0.56	-1.55

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
UCG	3-Year	Single	.01758	0.00	-	0.18	-0.16	-	0.00	0.00	0.00
Urate	3-Year	Single	.08248	3.45	1.65	9.13	2.80	-	3.60	9.76	11.15
Urate	3-Year	Pair	.08888	4.96	2.73	14.54	3.56	16.87	5.03	18.92	19.65
Urate	30-Day	Single	.07479	1.86	0.15	1.27	-0.07	-	1.67	1.18	1.75
Urate	30-Day	Pair	.09452	0.72	-0.61	0.29	-0.11	-0.01	-0.15	0.10	0.09
Urine ALB	3-Year	Single	.05512	1.98	1.23	0.28	0.03	-	2.30	0.28	2.59
Urine ALB	3-Year	Pair	.05331	0.69	1.04	-0.04	-0.00	0.04	1.41	-0.00	1.20
Urine ALB Pres	3-Year	Single	.06700	0.00	-	-0.16	-0.13	-	0.00	-0.30	-0.30
Urine ALB/CRE	3-Year	Single	.05530	1.67	2.98	-0.15	0.35	-	3.78	0.17	3.57
Urine ALB/CRE	3-Year	Pair	.05415	2.51	2.26	-0.13	0.04	1.15	3.50	1.02	2.94
Urine BILI	3-Year	Single	.01760	0.00	-	0.42	0.00	-	0.00	0.42	0.42
Urine BILI	3-Year	Pair	.01851	0.00	-	-0.28	0.00	-0.46	0.00	-0.69	-0.69
Urine CA	3-Year	Single	.07786	2.91	-	0.45	1.13	-	2.91	1.27	3.25
Urine Casts	3-Year	Single	.10955	1.22	-	1.19	0.53	-	1.22	1.53	2.64
Urine Casts	3-Year	Pair	.14245	1.89	-	2.96	0.90	3.07	1.89	5.10	6.21
Urine CL	3-Year	Single	.21206	0.59	-	-0.16	0.01	-	0.59	-0.17	0.47
Urine CL	3-Year	Pair	.22583	-0.78	-	-3.02	-0.23	-0.58	-0.78	-3.80	-4.21
Urine Coll Dur	3-Year	Single	.07809	0.27	-	-0.32	0.75	-	0.27	0.18	0.16
Urine CRE	3-Year	Single	.09676	1.57	-	3.37	2.47	-	1.57	4.98	6.04
Urine CRE	3-Year	Pair	.09201	2.45	-	5.92	2.65	7.52	2.45	11.21	12.03
Urine CRE Timed	3-Year	Single	.09152	10.40	-	3.38	0.61	-	10.40	3.76	12.62
Urine CRE Timed	3-Year	Pair	.09060	11.48	-	4.62	-0.25	0.09	11.48	3.52	11.00
Urine GLU	3-Year	Single	.05047	0.00	-	0.30	0.10	-	0.00	0.32	0.32
Urine GLU	3-Year	Pair	.04551	0.00	-	-0.16	0.31	0.97	0.00	0.56	0.56
Urine Hgb	3-Year	Single	.04821	-0.02	-	0.97	-0.05	-	-0.02	0.93	0.91
Urine Hgb	3-Year	Pair	.04767	0.00	-	1.64	-0.14	0.64	0.00	1.45	1.46
Urine K	3-Year	Single	.21695	0.54	-	0.05	0.07	-	0.54	0.12	0.64
Urine K	3-Year	Pair	.22443	-0.14	-	2.15	0.34	0.10	-0.14	2.24	2.18
Urine K	30-Day	Single	.07748	-0.36	-	0.01	-0.29	-	-0.36	-0.29	-0.64
Urine K	30-Day	Pair	.07795	-0.82	-	-1.86	-0.46	0.05	-0.82	-2.27	-3.15
Urine KET	3-Year	Single	.05149	0.00	-	0.75	0.14	-	0.00	0.82	0.82
Urine KET	3-Year	Pair	.04416	0.00	-	0.73	-0.08	0.66	0.00	1.39	1.39
Urine MALB/CRE	3-Year	Single	.05535	3.05	1.92	0.34	0.04	-	3.28	0.31	3.64
Urine MALB/CRE	3-Year	Pair	.05611	1.47	1.52	-0.09	-0.03	-0.10	2.28	-0.23	2.05
Urine NA	3-Year	Single	.19918	1.64	-	-0.09	0.13	-	1.64	0.03	1.57
Urine NA	3-Year	Pair	.20669	2.88	-	-0.32	0.02	0.23	2.88	-0.19	2.69
Urine NIT	3-Year	Single	.05100	0.00	-	0.19	0.04	-	0.00	0.15	0.15
Urine NIT	3-Year	Pair	.04463	0.00	-	-0.85	0.46	-0.10	0.00	-0.72	-0.72
Urine OSM	3-Year	Single	.20946	1.05	-	-0.23	-0.13	-	1.05	-0.36	0.70
Urine OSM	3-Year	Pair	.22018	-1.53	-	1.09	-0.20	-0.39	-1.53	0.22	-1.04
Urine pH	3-Year	Single	.08262	0.37	0.05	1.22	0.54	-	0.37	1.53	1.84
Urine pH	3-Year	Pair	.09998	0.49	0.27	2.65	0.84	4.71	0.48	6.11	6.41
Urine pH	30-Day	Single	.07494	-0.08	0.11	0.00	-0.00	-	0.11	-0.00	0.11
Urine pH	30-Day	Pair	.08758	-0.13	0.09	-0.05	-0.04	0.20	0.08	0.06	0.13
Urine Prot	3-Year	Single	.01544	0.00	-	0.11	0.00	-	0.00	0.11	0.11
Urine Prot Timed	3-Year	Single	.09550	-2.17	-	4.58	1.14	-	-2.17	5.40	1.85
Urine RBC	3-Year	Single	.09948	0.82	0.01	0.80	0.55	-	0.81	1.17	1.69
Urine RBC	3-Year	Pair	.11681	1.28	0.40	2.06	0.77	4.25	1.44	5.34	5.54
Urine RBC	30-Day	Single	.07734	0.08	0.01	-0.02	-0.00	-	0.08	-0.03	0.05
Urine RBC	30-Day	Pair	.09230	-0.18	-0.03	-0.14	-0.03	0.32	-0.21	0.19	-0.00
Urine SpGr	3-Year	Single	.08254	0.13	0.15	1.32	0.60	-	0.15	1.67	1.74
Urine SpGr	3-Year	Pair	.10009	0.12	0.25	2.80	0.84	4.78	0.25	6.31	6.36
Urine SpGr	30-Day	Single	.07487	0.03	0.02	0.02	-0.01	-	0.02	0.01	0.04
Urine SpGr	30-Day	Pair	.08753	-0.19	-0.01	-0.07	-0.03	0.24	-0.24	0.16	-0.06
Urine Tot Prot	3-Year	Single	.10225	1.43	2.02	1.04	1.46	-	1.89	2.25	4.30

Laboratory Test	Model Type	# of Tests	ASR Brier Score	ASR + Single Variable Models					Combined Models		
				ASR + Lab Value	ASR + Hi/Lo Flag	ASR + Hour of Day	ASR + Day of Week	ASR + Time Interval	ASR + PP	ASR + HCP	ASR + PP + HCP
Urine Tot Prot	3-Year	Pair	.09368	0.43	-0.40	0.92	0.49	3.13	-0.35	2.11	0.49
Urine Tot Vol	3-Year	Single	.09651	1.08	-0.23	2.19	0.85	-	0.81	2.67	3.01
Urine Tot Vol	3-Year	Pair	.08952	-0.78	-	2.18	2.15	-0.14	-0.78	2.97	2.30
Urine Urea Nit	3-Year	Single	.21770	-0.28	-	-0.18	0.05	-	-0.28	-0.13	-0.40
Urine Urea Nit	3-Year	Pair	.21206	-1.53	-	-0.58	0.06	-1.04	-1.53	-1.58	-3.91
Urine WBC Screen	3-Year	Single	.05223	-0.11	-	0.53	-0.00	-	-0.11	0.48	0.37
Urine WBC Screen	3-Year	Pair	.05386	0.01	-	0.91	-0.20	1.23	0.01	1.54	1.52
Urine WBC Sed	3-Year	Single	.10907	0.98	0.00	1.28	0.44	-	0.98	1.52	2.44
Urine WBC Sed	3-Year	Pair	.16332	0.72	-	0.56	-0.28	-0.02	0.72	0.39	1.19
Urine WBC Sed	30-Day	Single	.07847	-0.07	-	0.04	-0.08	-	-0.07	-0.05	-0.11
Urine WBC Sed	30-Day	Pair	.11491	-0.17	-	0.27	-0.18	-0.18	-0.17	-0.08	-0.10
Urobilinogen	3-Year	Single	.01893	-0.55	-	0.07	-0.00	-	-0.55	0.07	-0.45
Urobilinogen	3-Year	Pair	.01858	-0.00	-	-1.49	0.00	-0.40	-0.00	-1.72	-1.72
Vancomycin	3-Year	Single	.22890	1.99	1.12	0.70	-0.03	-	2.20	0.68	2.90
Vancomycin	3-Year	Pair	.22735	1.32	0.73	-1.82	0.30	-0.54	1.02	-1.81	-0.72
Vancomycin	30-Day	Single	.08717	-0.16	-0.44	-0.03	0.10	-	-0.57	0.04	-0.47
Vancomycin	30-Day	Pair	.09560	-0.69	-1.08	1.38	0.16	-0.42	-0.21	1.20	0.97
Vancomycin Random	3-Year	Single	.22084	0.75	-0.02	0.04	-0.12	-	0.80	-0.06	0.68
Vancomycin Random	3-Year	Pair	.21319	-0.28	0.04	0.04	0.12	-0.91	-1.34	-0.81	-2.51
Vancomycin Trough	3-Year	Single	.20910	2.05	2.09	-0.37	-0.12	-	2.19	-0.49	1.93
Vancomycin Trough	3-Year	Pair	.22224	0.44	0.47	0.82	-0.09	-0.60	0.12	0.17	0.37
VLDL	3-Year	Single	.04025	-0.15	-	1.88	0.70	-	-0.15	2.06	1.93
VLDL	3-Year	Pair	.03678	-0.02	-	1.83	0.37	0.70	-0.02	1.90	1.90
VLDL	30-Day	Single	.04402	-0.29	-	-0.11	-0.10	-	-0.29	-0.22	-0.40
VLDL	30-Day	Pair	.05547	1.75	-	0.17	-0.03	0.20	1.75	0.36	1.68
WBC	3-Year	Single	.05859	2.33	2.22	2.50	0.83	-	2.93	2.76	4.94
WBC	3-Year	Pair	.06955	3.33	3.00	4.56	1.01	7.57	3.72	8.44	9.85
WBC	30-Day	Single	.04730	0.48	0.36	0.09	0.01	-	0.49	0.09	0.57
WBC	30-Day	Pair	.05144	0.46	0.39	0.67	0.00	0.30	0.46	0.89	1.21