. // Model B.V.4

.

. eststo clear

. eststo: logit dv\_indicator `count\_lag\_all\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or

note: 17.state != 0 predicts success perfectly

17.state dropped and 11 obs not used

Iteration 0: log pseudolikelihood = -1977.2679

Iteration 1: log pseudolikelihood = -1769.8829

Iteration 2: log pseudolikelihood = -1729.9075

Iteration 3: log pseudolikelihood = -1728.0568

Iteration 4: log pseudolikelihood = -1728.0521

Iteration 5: log pseudolikelihood = -1728.0521

Logistic regression Number of obs = 6,242

Wald chi2(31) = .

Log pseudolikelihood = -1728.0521 Prob > chi2 = .

(Std. Err. adjusted for 1,237 clusters in mineid)

-----------------------------------------------------------------------------------

| Robust

dv\_indicator | Odds Ratio Std. Err. z P>|z| [95% Conf. Interval]

------------------+----------------------------------------------------------------

p48\_c\_lag\_all | 1.027889 .0126765 2.23 0.026 1.003342 1.053037

p75\_c\_lag\_all | 1.000091 .0001086 0.84 0.399 .9998787 1.000304

mine\_time | 1.002607 .0204598 0.13 0.898 .9632977 1.04352

onsite\_insp\_hours | 1.003642 .000388 9.40 0.000 1.002882 1.004403

|

state |

1 | 1.078896 .8208498 0.10 0.920 .2428653 4.792851

2 | .752389 .1081897 -1.98 0.048 .5676022 .9973345

3 | .9702679 .4517174 -0.06 0.948 .389589 2.416443

4 | 4.554071 3.468335 1.99 0.047 1.023607 20.26126

5 | .9261847 .4734562 -0.15 0.881 .3400729 2.522453

6 | .4644149 .0660606 -5.39 0.000 .3514204 .6137411

7 | 2.079931 1.921961 0.79 0.428 .3400136 12.72336

8 | .8065408 .1074747 -1.61 0.107 .6211557 1.047254

9 | .2068027 .0294347 -11.07 0.000 .1564597 .2733441

10 | .6835275 .278576 -0.93 0.351 .3074987 1.519388

11 | 3.016326 2.599751 1.28 0.200 .5569721 16.33515

12 | .5215509 .1103805 -3.08 0.002 .3444682 .7896673

13 | 1.879214 1.254581 0.94 0.345 .5078159 6.954184

14 | .4315122 .1874364 -1.93 0.053 .1841856 1.010952

15 | .6145334 .1059079 -2.83 0.005 .4383798 .8614706

17 | 1 (empty)

|

time |

2000 | 1.009843 .1903211 0.05 0.959 .6979608 1.461088

2002 | .6914115 .1333511 -1.91 0.056 .4737695 1.009035

2003 | .9103933 .2063705 -0.41 0.679 .5838164 1.419652

2004 | .5338581 .1149033 -2.92 0.004 .3501225 .8140136

2005 | .4888767 .101887 -3.43 0.001 .3249377 .735527

2006 | .5062226 .1096514 -3.14 0.002 .3311046 .7739588

2007 | .3305437 .0719506 -5.09 0.000 .2157471 .5064225

2008 | .2402691 .0528263 -6.49 0.000 .1561529 .3696968

2009 | .2811262 .0702372 -5.08 0.000 .1722801 .4587409

2010 | .2067191 .0505877 -6.44 0.000 .1279608 .3339523

2011 | .2515021 .0621632 -5.58 0.000 .1549359 .4082548

2012 | .1727621 .0425101 -7.14 0.000 .1066597 .2798314

2013 | .2607078 .0762514 -4.60 0.000 .1469589 .4625005

2014 | .1566005 .0455903 -6.37 0.000 .088509 .277076

2015 | .1093134 .0339036 -7.14 0.000 .0595214 .2007583

|

\_cons | .0001312 .0000239 -49.05 0.000 .0000918 .0001876

lnhours | 1 (offset)

-----------------------------------------------------------------------------------

Note: 0 failures and 46 successes completely determined.

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.V.4.csv"', replace plain wide p eform

(note: file C:\Users\jbodson\Dropbox (Stanford Law School)\R-code\Injury-Classification\PS Model Summaries 10-10\Estout\Model.PS.Y.P.B.V.4.csv not found)

(output written to C:\Users\jbodson\Dropbox (Stanford Law School)\R-code\Injury-Classification\PS Model Summaries 10-10\Estout\Model.PS.Y.P.B.V.4.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

Logistic model for dv\_indicator, goodness-of-fit test

number of observations = 6242

number of covariate patterns = 6227

Pearson chi2(6192) = 7427.28

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -2826.3083

Iteration 1: log likelihood = -1953.4486

Iteration 2: log likelihood = -1755.6865

Iteration 3: log likelihood = -1738.851

Iteration 4: log likelihood = -1728.2673

Iteration 5: log likelihood = -1716.5851

Iteration 6: log likelihood = -1716.3998

Iteration 7: log likelihood = -1716.3996

Iteration 8: log likelihood = -1716.3996

Logistic regression Number of obs = 6,242

LR chi2(2) = 2219.82

Prob > chi2 = 0.0000

Log likelihood = -1716.3996 Pseudo R2 = 0.3927

------------------------------------------------------------------------------

dv\_indicator | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

\_hat | .9678894 .0406864 23.79 0.000 .8881454 1.047633

\_hatsq | .0731459 .017191 4.25 0.000 .0394522 .1068397

\_cons | -.1472652 .0569902 -2.58 0.010 -.2589639 -.0355664

------------------------------------------------------------------------------

Note: 0 failures and 322 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

-------- True --------

Classified | D ~D | Total

-----------+--------------------------+-----------

+ | 5023 604 | 5627

- | 170 445 | 615

-----------+--------------------------+-----------

Total | 5193 1049 | 6242

Classified + if predicted Pr(D) >= .5

True D defined as dv\_indicator != 0

--------------------------------------------------

Sensitivity Pr( +| D) 96.73%

Specificity Pr( -|~D) 42.42%

Positive predictive value Pr( D| +) 89.27%

Negative predictive value Pr(~D| -) 72.36%

--------------------------------------------------

False + rate for true ~D Pr( +|~D) 57.58%

False - rate for true D Pr( -| D) 3.27%

False + rate for classified + Pr(~D| +) 10.73%

False - rate for classified - Pr( D| -) 27.64%

--------------------------------------------------

Correctly classified 87.60%

--------------------------------------------------

.

. pause "next"

.

. predict bv4\_yhat

(option pr assumed; Pr(dv\_indicator))

(11 missing values generated)

. gen bv4\_res = dv\_indicator - bv4\_yhat

(11 missing values generated)

.

. summ dv\_indicator bv4\_yhat

Variable | Obs Mean Std. Dev. Min Max

-------------+---------------------------------------------------------

dv\_indicator | 6,253 .8322405 .3736824 0 1

bv4\_yhat | 6,242 .8319449 .2244524 .0025314 1

. /\*

> pause "next"

>

> scatter dv\_indicator bv4\_yhat

>

> pause "next"

>

> scatter bv4\_res dv\_indicator

>

> pause "next"

>

> scatter bv4\_res bv4\_yhat

> \*/

. pause "complete: B.V.4"

.