. // Model B.V.2

.

. eststo clear

. eststo: logit dv\_indicator `count\_lag\_1\_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 = -1771.0341

Iteration 2: log pseudolikelihood = -1733.2358

Iteration 3: log pseudolikelihood = -1732.2152

Iteration 4: log pseudolikelihood = -1732.213

Iteration 5: log pseudolikelihood = -1732.213

Logistic regression Number of obs = 6,242

Wald chi2(31) = .

Log pseudolikelihood = -1732.213 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\_1lag | 1.224222 .102897 2.41 0.016 1.038284 1.44346

p75\_1lag | 1.000642 .0020421 0.31 0.753 .9966479 1.004653

mine\_time | 1.020887 .0199171 1.06 0.289 .982587 1.06068

onsite\_insp\_hours | 1.003698 .0004931 7.51 0.000 1.002732 1.004665

|

state |

1 | 1.135382 .8612738 0.17 0.867 .2567089 5.021613

2 | .6697116 .0929464 -2.89 0.004 .510215 .8790678

3 | 1.384565 .6120437 0.74 0.462 .5821588 3.292949

4 | 4.70757 3.602472 2.02 0.043 1.050544 21.095

5 | .9511105 .4775622 -0.10 0.920 .3554955 2.544649

6 | .4840326 .0693254 -5.07 0.000 .3655624 .6408961

7 | 2.181003 2.212591 0.77 0.442 .2986253 15.9289

8 | .7790911 .1079691 -1.80 0.072 .5937805 1.022235

9 | .2177242 .0294748 -11.26 0.000 .1669836 .2838831

10 | .6916588 .2870673 -0.89 0.374 .3066251 1.560185

11 | 3.368744 2.909751 1.41 0.160 .619788 18.3102

12 | .5227596 .114539 -2.96 0.003 .3402513 .8031639

13 | 1.86906 1.252806 0.93 0.351 .5024284 6.953001

14 | .4252828 .177739 -2.05 0.041 .1874709 .9647652

15 | .6315264 .1089856 -2.66 0.008 .4502932 .8857019

17 | 1 (empty)

|

time |

2000 | 1.024601 .1942847 0.13 0.898 .7065614 1.485797

2002 | .6857142 .1328294 -1.95 0.051 .4690912 1.002372

2003 | .9167628 .2085889 -0.38 0.702 .5869283 1.431953

2004 | .5336894 .1152147 -2.91 0.004 .3495653 .8147959

2005 | .4846621 .1011139 -3.47 0.001 .3219993 .7294964

2006 | .4993612 .1089591 -3.18 0.001 .3256006 .7658512

2007 | .3260218 .0707932 -5.16 0.000 .2130171 .4989749

2008 | .2336317 .0513481 -6.62 0.000 .1518633 .3594271

2009 | .2707779 .067755 -5.22 0.000 .1658146 .4421848

2010 | .2038621 .0500867 -6.47 0.000 .1259521 .3299648

2011 | .2462042 .060794 -5.68 0.000 .1517442 .3994649

2012 | .1697455 .0418366 -7.20 0.000 .1047141 .2751637

2013 | .2548954 .0746959 -4.66 0.000 .143523 .4526916

2014 | .1590487 .0467244 -6.26 0.000 .0894271 .2828727

2015 | .1079259 .0337213 -7.13 0.000 .0585017 .1991052

|

\_cons | .0001215 .0000222 -49.32 0.000 .0000849 .0001739

lnhours | 1 (offset)

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

Note: 0 failures and 23 successes completely determined.

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.V.2.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.2.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.2.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 6242

number of covariate patterns = 6229

Pearson chi2(6194) = 8309.01

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -2826.3083

Iteration 1: log likelihood = -1952.4287

Iteration 2: log likelihood = -1759.0708

Iteration 3: log likelihood = -1744.6229

Iteration 4: log likelihood = -1735.3048

Iteration 5: log likelihood = -1720.785

Iteration 6: log likelihood = -1720.3651

Iteration 7: log likelihood = -1720.3647

Iteration 8: log likelihood = -1720.3647

Logistic regression Number of obs = 6,242

LR chi2(2) = 2211.89

Prob > chi2 = 0.0000

Log likelihood = -1720.3647 Pseudo R2 = 0.3913

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

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

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

\_hat | .9635617 .0406498 23.70 0.000 .8838895 1.043234

\_hatsq | .0742461 .0171733 4.32 0.000 .040587 .1079052

\_cons | -.1458621 .0568347 -2.57 0.010 -.257256 -.0344681

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

Note: 0 failures and 279 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 5032 612 | 5644

- | 161 437 | 598

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

Total | 5193 1049 | 6242

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 96.90%

Specificity Pr( -|~D) 41.66%

Positive predictive value Pr( D| +) 89.16%

Negative predictive value Pr(~D| -) 73.08%

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

False + rate for true ~D Pr( +|~D) 58.34%

False - rate for true D Pr( -| D) 3.10%

False + rate for classified + Pr(~D| +) 10.84%

False - rate for classified - Pr( D| -) 26.92%

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

Correctly classified 87.62%

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

.

. pause "next"

.

. predict bv2\_yhat

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

(11 missing values generated)

. gen bv2\_res = dv\_indicator - bv2\_yhat

(11 missing values generated)

.

. summ dv\_indicator bv2\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bv2\_yhat | 6,242 .8319449 .2241503 .0023371 1

. /\*

> pause "next"

>

> scatter dv\_indicator bv2\_yhat

>

> pause "next"

>

> scatter bv2\_res dv\_indicator

>

> pause "next"

>

> scatter bv2\_res bv2\_yhat

> \*/

. pause "complete: B.V.2"

.