. // Model B.V.3

.

. eststo clear

. eststo: logit dv\_indicator `count\_lag\_4\_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 = -1769.8392

Iteration 2: log pseudolikelihood = -1732.2703

Iteration 3: log pseudolikelihood = -1731.2776

Iteration 4: log pseudolikelihood = -1731.2755

Iteration 5: log pseudolikelihood = -1731.2755

Logistic regression Number of obs = 6,242

Wald chi2(31) = .

Log pseudolikelihood = -1731.2755 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\_4lag | 1.082715 .0306773 2.80 0.005 1.024228 1.144543

p75\_c\_4lag | .9997671 .000496 -0.47 0.639 .9987954 1.00074

mine\_time | 1.020834 .0200038 1.05 0.293 .9823707 1.060803

onsite\_insp\_hours | 1.003856 .0004954 7.80 0.000 1.002886 1.004828

|

state |

1 | 1.150623 .8681667 0.19 0.852 .2622319 5.048713

2 | .6545842 .0913711 -3.04 0.002 .4979082 .8605611

3 | 1.381743 .6066717 0.74 0.461 .584382 3.267067

4 | 4.67586 3.600758 2.00 0.045 1.033649 21.15191

5 | .9429124 .4754665 -0.12 0.907 .3509541 2.533333

6 | .4858716 .069593 -5.04 0.000 .3669451 .6433419

7 | 2.222535 2.218741 0.80 0.424 .3141232 15.72524

8 | .8117621 .110335 -1.53 0.125 .621918 1.059557

9 | .2222199 .0305069 -10.96 0.000 .1697961 .2908292

10 | .6978904 .2926673 -0.86 0.391 .3067802 1.587622

11 | 3.447024 2.988169 1.43 0.153 .6303059 18.85112

12 | .5141054 .1120396 -3.05 0.002 .335389 .7880531

13 | 1.851158 1.240365 0.92 0.358 .4978487 6.883184

14 | .4288182 .1797544 -2.02 0.043 .1885653 .9751796

15 | .6380078 .1105095 -2.59 0.009 .4543485 .8959069

17 | 1 (empty)

|

time |

2000 | 1.015632 .1937873 0.08 0.935 .6987524 1.476215

2002 | .6822887 .1320724 -1.97 0.048 .4668731 .9970973

2003 | .9018618 .2055655 -0.45 0.650 .5769281 1.409802

2004 | .5272212 .1137544 -2.97 0.003 .3454107 .8047296

2005 | .4760977 .0993624 -3.56 0.000 .3162633 .7167098

2006 | .4925294 .1075091 -3.24 0.001 .3210941 .7554959

2007 | .326134 .0709509 -5.15 0.000 .2129198 .4995467

2008 | .2324838 .0513051 -6.61 0.000 .1508507 .3582927

2009 | .2699892 .0676024 -5.23 0.000 .1652778 .4410403

2010 | .2038039 .0499169 -6.49 0.000 .1261045 .3293776

2011 | .2462311 .0608376 -5.67 0.000 .1517163 .399626

2012 | .168443 .0415848 -7.21 0.000 .103827 .2732724

2013 | .2503405 .0733351 -4.73 0.000 .1409869 .444512

2014 | .1560723 .0458904 -6.32 0.000 .087709 .2777201

2015 | .1050053 .0327028 -7.24 0.000 .0570313 .1933343

|

\_cons | .0001227 .0000224 -49.42 0.000 .0000858 .0001753

lnhours | 1 (offset)

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

Note: 0 failures and 25 successes completely determined.

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.V.3.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.3.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.3.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 6242

number of covariate patterns = 6226

Pearson chi2(6191) = 9774.53

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -2826.3083

Iteration 1: log likelihood = -1952.1293

Iteration 2: log likelihood = -1757.8942

Iteration 3: log likelihood = -1743.32

Iteration 4: log likelihood = -1734.4473

Iteration 5: log likelihood = -1720.0521

Iteration 6: log likelihood = -1719.6305

Iteration 7: log likelihood = -1719.6301

Iteration 8: log likelihood = -1719.6301

Logistic regression Number of obs = 6,242

LR chi2(2) = 2213.36

Prob > chi2 = 0.0000

Log likelihood = -1719.6301 Pseudo R2 = 0.3916

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

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

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

\_hat | .9646016 .0407539 23.67 0.000 .8847254 1.044478

\_hatsq | .0732284 .0171552 4.27 0.000 .0396049 .106852

\_cons | -.144697 .0567802 -2.55 0.011 -.2559841 -.0334099

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

Note: 0 failures and 267 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 5031 609 | 5640

- | 162 440 | 602

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

Total | 5193 1049 | 6242

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 96.88%

Specificity Pr( -|~D) 41.94%

Positive predictive value Pr( D| +) 89.20%

Negative predictive value Pr(~D| -) 73.09%

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

False + rate for true ~D Pr( +|~D) 58.06%

False - rate for true D Pr( -| D) 3.12%

False + rate for classified + Pr(~D| +) 10.80%

False - rate for classified - Pr( D| -) 26.91%

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

Correctly classified 87.65%

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

.

. pause "next"

.

. predict bv3\_yhat

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

(11 missing values generated)

. gen bv3\_res = dv\_indicator - bv3\_yhat

(11 missing values generated)

.

. summ dv\_indicator bv3\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bv3\_yhat | 6,242 .8319449 .224249 .0023176 1

. /\*

> pause "next"

>

> scatter dv\_indicator bv3\_yhat

>

> pause "next"

>

> scatter bv3\_res dv\_indicator

>

> pause "next"

>

> scatter bv3\_res bv3\_yhat

> \*/

. pause "complete: B.V.3"

.