. // Model B.PP.4

.

. eststo clear

. eststo: logit dv\_indicator `pp\_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 = -1772.2335

Iteration 2: log pseudolikelihood = -1731.9587

Iteration 3: log pseudolikelihood = -1730.1027

Iteration 4: log pseudolikelihood = -1730.097

Iteration 5: log pseudolikelihood = -1730.097

Logistic regression Number of obs = 6,242

Wald chi2(31) = .

Log pseudolikelihood = -1730.097 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\_pp\_c\_lag\_all | 1.000378 .0003563 1.06 0.289 .9996799 1.001077

p75\_pp\_c\_lag\_all | 1.000003 2.08e-06 1.35 0.178 .9999987 1.000007

mine\_time | 1.008467 .0198691 0.43 0.669 .9702664 1.048171

onsite\_insp\_hours | 1.003668 .0003891 9.44 0.000 1.002906 1.004431

|

state |

1 | 1.110667 .8400771 0.14 0.890 .2522079 4.891125

2 | .7286419 .1022414 -2.26 0.024 .5534462 .9592966

3 | 1.211727 .5490269 0.42 0.672 .4985743 2.944961

4 | 4.475136 3.381327 1.98 0.047 1.017782 19.67695

5 | .9471199 .4783976 -0.11 0.914 .3519302 2.548904

6 | .4675982 .0666245 -5.34 0.000 .3536646 .6182355

7 | 1.867931 1.569326 0.74 0.457 .3599409 9.693716

8 | .7838609 .1039592 -1.84 0.066 .6044339 1.016551

9 | .2056988 .0279285 -11.65 0.000 .157638 .2684124

10 | .6673026 .2689069 -1.00 0.315 .3029069 1.470065

11 | 3.186021 2.727849 1.35 0.176 .5949165 17.06245

12 | .5195417 .1105843 -3.08 0.002 .342328 .7884939

13 | 1.864441 1.257737 0.92 0.356 .4969755 6.994591

14 | .4285667 .1853173 -1.96 0.050 .1836322 1.000203

15 | .6198965 .1065528 -2.78 0.005 .4425964 .8682214

17 | 1 (empty)

|

time |

2000 | 1.002218 .1884596 0.01 0.991 .6932665 1.448853

2002 | .6911863 .1327807 -1.92 0.055 .4743234 1.0072

2003 | .9189308 .207979 -0.37 0.709 .5897022 1.431967

2004 | .5401289 .1157177 -2.88 0.004 .3549239 .8219769

2005 | .4957105 .1029999 -3.38 0.001 .3298857 .7448911

2006 | .513282 .1107428 -3.09 0.002 .3362835 .7834413

2007 | .3340812 .0722653 -5.07 0.000 .2186393 .5104766

2008 | .2376097 .0522318 -6.54 0.000 .1544371 .3655752

2009 | .2742348 .0686875 -5.17 0.000 .1678504 .448046

2010 | .2007637 .0498006 -6.47 0.000 .1234638 .3264604

2011 | .2418004 .0603679 -5.69 0.000 .1482333 .3944282

2012 | .1638545 .0403219 -7.35 0.000 .101156 .2654148

2013 | .2432995 .0710721 -4.84 0.000 .137243 .4313127

2014 | .1457013 .0429382 -6.54 0.000 .0817738 .2596049

2015 | .1016097 .031893 -7.29 0.000 .054924 .1879784

|

\_cons | .0001314 .0000238 -49.32 0.000 .0000921 .0001875

lnhours | 1 (offset)

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

Note: 0 failures and 50 successes completely determined.

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.PP.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.PP.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.PP.4.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) = 7728.19

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -2826.3083

Iteration 1: log likelihood = -1954.4538

Iteration 2: log likelihood = -1756.3726

Iteration 3: log likelihood = -1740.5867

Iteration 4: log likelihood = -1730.6172

Iteration 5: log likelihood = -1719.2022

Iteration 6: log likelihood = -1719.0295

Iteration 7: log likelihood = -1719.0294

Logistic regression Number of obs = 6,242

LR chi2(2) = 2214.56

Prob > chi2 = 0.0000

Log likelihood = -1719.0294 Pseudo R2 = 0.3918

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

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

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

\_hat | .9722337 .0411102 23.65 0.000 .8916592 1.052808

\_hatsq | .0706363 .0173131 4.08 0.000 .0367032 .1045694

\_cons | -.1451222 .0569886 -2.55 0.011 -.2568177 -.0334266

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

Note: 0 failures and 310 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 5027 601 | 5628

- | 166 448 | 614

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

Total | 5193 1049 | 6242

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 96.80%

Specificity Pr( -|~D) 42.71%

Positive predictive value Pr( D| +) 89.32%

Negative predictive value Pr(~D| -) 72.96%

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

False + rate for true ~D Pr( +|~D) 57.29%

False - rate for true D Pr( -| D) 3.20%

False + rate for classified + Pr(~D| +) 10.68%

False - rate for classified - Pr( D| -) 27.04%

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

Correctly classified 87.71%

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

.

. pause "next"

.

. predict bpp4\_yhat

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

(11 missing values generated)

. gen bpp4\_res = dv\_indicator - bpp4\_yhat

(11 missing values generated)

.

. summ dv\_indicator bpp4\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bpp4\_yhat | 6,242 .8319449 .2240825 .0023807 1

. /\*

> pause "next"

>

> scatter dv\_indicator bpp4\_yhat

>

> pause "next"

>

> scatter bpp4\_res dv\_indicator

>

> pause "next"

>

> scatter bpp4\_res bpp4\_yhat

> \*/

. pause "complete: B.PP.4"