. // Model B.PP.1

.

. eststo clear

. eststo: logit dv\_indicator `pp\_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 = -1770.2012

Iteration 2: log pseudolikelihood = -1732.3439

Iteration 3: log pseudolikelihood = -1731.3408

Iteration 4: log pseudolikelihood = -1731.3382

Iteration 5: log pseudolikelihood = -1731.3382

Logistic regression Number of obs = 6,242

Wald chi2(31) = .

Log pseudolikelihood = -1731.3382 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 | 1.004744 .0019582 2.43 0.015 1.000914 1.00859

p75\_pp | .9999563 .0000294 -1.48 0.138 .9998987 1.000014

mine\_time | 1.02017 .0198911 1.02 0.306 .9819192 1.05991

onsite\_insp\_hours | 1.00417 .00049 8.53 0.000 1.00321 1.00513

|

state |

1 | 1.131068 .8709448 0.16 0.873 .2500615 5.116003

2 | .6982412 .0965842 -2.60 0.009 .5324307 .9156888

3 | 1.422782 .6357501 0.79 0.430 .5926403 3.415748

4 | 4.623862 3.640951 1.94 0.052 .9879758 21.6403

5 | .9070752 .4611226 -0.19 0.848 .3349074 2.456755

6 | .4759197 .0682948 -5.17 0.000 .3592409 .6304949

7 | 2.227089 2.130554 0.84 0.403 .3415327 14.52255

8 | .7315808 .1004296 -2.28 0.023 .5589996 .9574434

9 | .2128563 .0289658 -11.37 0.000 .1630248 .2779197

10 | .6762548 .2884841 -0.92 0.359 .2930863 1.560361

11 | 3.490008 3.026271 1.44 0.149 .6378647 19.0952

12 | .4917154 .1071055 -3.26 0.001 .3208522 .7535681

13 | 1.862354 1.236433 0.94 0.349 .5069227 6.841992

14 | .4050096 .1718756 -2.13 0.033 .176294 .9304503

15 | .6381765 .1102499 -2.60 0.009 .454872 .8953491

17 | 1 (empty)

|

time |

2000 | 1.014055 .1925632 0.07 0.941 .6989135 1.471295

2002 | .6768887 .1316267 -2.01 0.045 .4623746 .9909246

2003 | .9003925 .2064189 -0.46 0.647 .5745003 1.411151

2004 | .5204964 .1129563 -3.01 0.003 .3401676 .7964206

2005 | .4678914 .0985748 -3.61 0.000 .30961 .7070908

2006 | .4871399 .1067287 -3.28 0.001 .3170748 .7484203

2007 | .3346048 .0725391 -5.05 0.000 .2187761 .5117577

2008 | .2375548 .0538892 -6.34 0.000 .1522892 .3705601

2009 | .2810191 .0704103 -5.07 0.000 .1719746 .4592059

2010 | .2122977 .0536202 -6.14 0.000 .1294067 .3482842

2011 | .2527823 .0632952 -5.49 0.000 .1547429 .4129356

2012 | .1717625 .042547 -7.11 0.000 .1057008 .2791119

2013 | .2514276 .0730082 -4.75 0.000 .1423134 .4442018

2014 | .1563755 .0454303 -6.39 0.000 .0884866 .2763505

2015 | .1029908 .0320345 -7.31 0.000 .0559807 .1894779

|

\_cons | .0001214 .0000223 -49.01 0.000 .0000847 .0001742

lnhours | 1 (offset)

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

Note: 0 failures and 27 successes completely determined.

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.PP.1.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.1.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.1.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) = 13510.59

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -2826.3083

Iteration 1: log likelihood = -1955.6989

Iteration 2: log likelihood = -1757.5219

Iteration 3: log likelihood = -1742.5384

Iteration 4: log likelihood = -1734.1573

Iteration 5: log likelihood = -1720.6973

Iteration 6: log likelihood = -1720.3408

Iteration 7: log likelihood = -1720.3406

Iteration 8: log likelihood = -1720.3406

Logistic regression Number of obs = 6,242

LR chi2(2) = 2211.94

Prob > chi2 = 0.0000

Log likelihood = -1720.3406 Pseudo R2 = 0.3913

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

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

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

\_hat | .966246 .040827 23.67 0.000 .8862265 1.046266

\_hatsq | .0707462 .017112 4.13 0.000 .0372073 .104285

\_cons | -.1409305 .0568256 -2.48 0.013 -.2523065 -.0295545

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

Note: 0 failures and 258 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 5028 611 | 5639

- | 165 438 | 603

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

Total | 5193 1049 | 6242

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 96.82%

Specificity Pr( -|~D) 41.75%

Positive predictive value Pr( D| +) 89.16%

Negative predictive value Pr(~D| -) 72.64%

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

False + rate for true ~D Pr( +|~D) 58.25%

False - rate for true D Pr( -| D) 3.18%

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

False - rate for classified - Pr( D| -) 27.36%

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

Correctly classified 87.57%

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

.

. pause "next"

.

. predict bpp1\_yhat

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

(11 missing values generated)

. gen bpp1\_res = dv\_indicator - bpp1\_yhat

(11 missing values generated)

.

. summ dv\_indicator bpp1\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bpp1\_yhat | 6,242 .8319449 .2244835 .0023054 1

. /\*

> pause "next"

>

> scatter dv\_indicator bpp1\_yhat

>

> pause "next"

>

> scatter bpp1\_res dv\_indicator

>

> pause "next"

>

> scatter bpp1\_res bpp1\_yhat

> \*/

. pause "complete: B.PP.1"