. // Model B.V.1

.

. eststo clear

. eststo: logit dv\_indicator `count\_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 = -1770.6162

Iteration 2: log pseudolikelihood = -1733.014

Iteration 3: log pseudolikelihood = -1732.0074

Iteration 4: log pseudolikelihood = -1732.0052

Iteration 5: log pseudolikelihood = -1732.0052

Logistic regression Number of obs = 6,242

Wald chi2(31) = .

Log pseudolikelihood = -1732.0052 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 | 1.240739 .1070959 2.50 0.012 1.04763 1.469443

p75 | .9990789 .0020722 -0.44 0.657 .9950257 1.003149

mine\_time | 1.020092 .0198784 1.02 0.307 .9818653 1.059806

onsite\_insp\_hours | 1.003918 .0005334 7.36 0.000 1.002873 1.004964

|

state |

1 | 1.141599 .8641593 0.17 0.861 .2589268 5.033267

2 | .6843988 .0945843 -2.74 0.006 .5220026 .8973169

3 | 1.40528 .6270823 0.76 0.446 .5860418 3.369745

4 | 4.652848 3.593095 1.99 0.046 1.024214 21.13718

5 | .9347103 .4711762 -0.13 0.893 .3480138 2.510484

6 | .484185 .0693593 -5.06 0.000 .3656596 .6411293

7 | 2.220233 2.184252 0.81 0.418 .322843 15.26882

8 | .7637005 .1049968 -1.96 0.050 .5833057 .9998847

9 | .2221626 .0301525 -11.08 0.000 .1702721 .2898666

10 | .6857034 .2885864 -0.90 0.370 .3005371 1.564496

11 | 3.459796 2.998778 1.43 0.152 .6328075 18.916

12 | .5083678 .1115713 -3.08 0.002 .3306474 .7816115

13 | 1.86184 1.244363 0.93 0.352 .5023894 6.899921

14 | .4217289 .1764979 -2.06 0.039 .1856935 .9577893

15 | .6361504 .1097841 -2.62 0.009 .4535897 .8921882

17 | 1 (empty)

|

time |

2000 | 1.017647 .1924622 0.09 0.926 .7024477 1.474282

2002 | .6817898 .1323532 -1.97 0.048 .466026 .9974495

2003 | .9094765 .2076398 -0.42 0.678 .5813748 1.422744

2004 | .5299326 .1146396 -2.94 0.003 .3468018 .8097668

2005 | .4769348 .0997371 -3.54 0.000 .3165591 .7185603

2006 | .4965122 .1080066 -3.22 0.001 .3241661 .7604879

2007 | .3267232 .07057 -5.18 0.000 .2139569 .4989233

2008 | .231093 .0507809 -6.67 0.000 .1502249 .3554936

2009 | .271952 .0678053 -5.22 0.000 .1668259 .4433236

2010 | .2048644 .0503071 -6.46 0.000 .1266027 .3315051

2011 | .246345 .0609631 -5.66 0.000 .1516689 .4001206

2012 | .1687586 .0416254 -7.21 0.000 .1040667 .2736656

2013 | .250723 .0734821 -4.72 0.000 .1411638 .4453127

2014 | .155999 .045894 -6.32 0.000 .0876402 .2776773

2015 | .1044549 .0328242 -7.19 0.000 .0564215 .1933805

|

\_cons | .0001229 .0000224 -49.38 0.000 .000086 .0001757

lnhours | 1 (offset)

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

Note: 0 failures and 26 successes completely determined.

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.V.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.V.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.V.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) = 11440.74

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -2826.3083

Iteration 1: log likelihood = -1952.8292

Iteration 2: log likelihood = -1758.1209

Iteration 3: log likelihood = -1743.7855

Iteration 4: log likelihood = -1734.6815

Iteration 5: log likelihood = -1721.0809

Iteration 6: log likelihood = -1720.7174

Iteration 7: log likelihood = -1720.7171

Iteration 8: log likelihood = -1720.7171

Logistic regression Number of obs = 6,242

LR chi2(2) = 2211.18

Prob > chi2 = 0.0000

Log likelihood = -1720.7171 Pseudo R2 = 0.3912

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

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

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

\_hat | .9659032 .0408584 23.64 0.000 .8858222 1.045984

\_hatsq | .0718777 .0171681 4.19 0.000 .0382289 .1055266

\_cons | -.1428585 .0568017 -2.52 0.012 -.2541878 -.0315293

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

Note: 0 failures and 267 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 5029 611 | 5640

- | 164 438 | 602

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

Total | 5193 1049 | 6242

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 96.84%

Specificity Pr( -|~D) 41.75%

Positive predictive value Pr( D| +) 89.17%

Negative predictive value Pr(~D| -) 72.76%

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

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

False - rate for true D Pr( -| D) 3.16%

False + rate for classified + Pr(~D| +) 10.83%

False - rate for classified - Pr( D| -) 27.24%

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

Correctly classified 87.58%

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

.

. pause "next"

.

. predict bv1\_yhat

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

(11 missing values generated)

. gen bv1\_res = dv\_indicator - bv1\_yhat

(11 missing values generated)

.

. summ dv\_indicator bv1\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bv1\_yhat | 6,242 .8319449 .2242413 .0023225 1

. /\*

> pause "next"

>

> scatter dv\_indicator bv1\_yhat

>

> pause "next"

>

> scatter bv1\_res dv\_indicator

>

> pause "next"

>

> scatter bv1\_res bv1\_yhat

> \*/

. pause "complete: B.V.1"

.