. // Model B.SSV.4

.

. eststo clear

. eststo: logit dv\_indicator `ss\_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 = -1772.6722

Iteration 2: log pseudolikelihood = -1732.8688

Iteration 3: log pseudolikelihood = -1731.2248

Iteration 4: log pseudolikelihood = -1731.2204

Iteration 5: log pseudolikelihood = -1731.2204

Logistic regression Number of obs = 6,242

Wald chi2(31) = .

Log pseudolikelihood = -1731.2204 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\_ss\_c\_lag\_all | 1.023817 .0271689 0.89 0.375 .9719282 1.078476

p75\_ss\_c\_lag\_all | 1.000452 .0003324 1.36 0.174 .9998005 1.001104

mine\_time | 1.004082 .0205589 0.20 0.842 .9645855 1.045197

onsite\_insp\_hours | 1.003645 .0003894 9.38 0.000 1.002882 1.004408

|

state |

1 | 1.080782 .8353895 0.10 0.920 .2375763 4.916698

2 | .7412941 .1072011 -2.07 0.038 .5583356 .9842053

3 | 1.227568 .5295008 0.48 0.635 .5270926 2.858933

4 | 4.520215 3.447948 1.98 0.048 1.013622 20.15775

5 | .9135889 .4635336 -0.18 0.859 .3379646 2.469622

6 | .4659246 .0661416 -5.38 0.000 .3527613 .6153898

7 | 1.959962 1.696152 0.78 0.437 .3594325 10.68754

8 | .8021137 .1076047 -1.64 0.100 .6166604 1.04334

9 | .2062046 .0280518 -11.61 0.000 .1579436 .269212

10 | .6673327 .271583 -0.99 0.320 .3005597 1.481679

11 | 3.013371 2.598842 1.28 0.201 .555834 16.33654

12 | .5189669 .1105477 -3.08 0.002 .3418386 .7878767

13 | 1.891257 1.250248 0.96 0.335 .5176652 6.909588

14 | .4296701 .1845193 -1.97 0.049 .185179 .9969621

15 | .6201863 .1067846 -2.77 0.006 .4425487 .869127

17 | 1 (empty)

|

time |

2000 | 1.01027 .1900921 0.05 0.957 .6986757 1.460829

2002 | .691112 .1333165 -1.92 0.055 .4735331 1.008664

2003 | .9152432 .2076306 -0.39 0.696 .5867246 1.427706

2004 | .5362715 .1153074 -2.90 0.004 .3518536 .8173489

2005 | .4919648 .1024102 -3.41 0.001 .3271472 .7398181

2006 | .5102974 .1106909 -3.10 0.002 .3335688 .7806588

2007 | .3329313 .0722166 -5.07 0.000 .2176303 .5093191

2008 | .2431288 .0533278 -6.45 0.000 .1581737 .3737134

2009 | .2853791 .0711122 -5.03 0.000 .1751118 .4650812

2010 | .2097595 .0513027 -6.39 0.000 .1298781 .3387721

2011 | .2551894 .0629443 -5.54 0.000 .1573648 .4138258

2012 | .1777755 .0438257 -7.01 0.000 .1096557 .2882122

2013 | .2644522 .076782 -4.58 0.000 .1496946 .4671843

2014 | .1628885 .0471758 -6.27 0.000 .0923348 .2873529

2015 | .1132042 .0348588 -7.07 0.000 .0619089 .2070007

|

\_cons | .0001303 .0000237 -49.28 0.000 .0000913 .000186

lnhours | 1 (offset)

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

Note: 0 failures and 47 successes completely determined.

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.SSV.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.SSV.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.SSV.4.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 6242

number of covariate patterns = 6225

Pearson chi2(6190) = 7513.00

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -2826.3083

Iteration 1: log likelihood = -1956.8853

Iteration 2: log likelihood = -1757.4251

Iteration 3: log likelihood = -1741.5364

Iteration 4: log likelihood = -1728.5043

Iteration 5: log likelihood = -1719.9675

Iteration 6: log likelihood = -1719.9105

Iteration 7: log likelihood = -1719.9105

Logistic regression Number of obs = 6,242

LR chi2(2) = 2212.80

Prob > chi2 = 0.0000

Log likelihood = -1719.9105 Pseudo R2 = 0.3915

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

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

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

\_hat | .9677944 .0408513 23.69 0.000 .8877272 1.047861

\_hatsq | .0721274 .0172478 4.18 0.000 .0383223 .1059325

\_cons | -.1447857 .0569489 -2.54 0.011 -.2564035 -.0331679

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

Note: 0 failures and 317 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 5023 605 | 5628

- | 170 444 | 614

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

Total | 5193 1049 | 6242

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 96.73%

Specificity Pr( -|~D) 42.33%

Positive predictive value Pr( D| +) 89.25%

Negative predictive value Pr(~D| -) 72.31%

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

False + rate for true ~D Pr( +|~D) 57.67%

False - rate for true D Pr( -| D) 3.27%

False + rate for classified + Pr(~D| +) 10.75%

False - rate for classified - Pr( D| -) 27.69%

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

Correctly classified 87.58%

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

.

. pause "next"

.

. predict bssv4\_yhat

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

(11 missing values generated)

. gen bssv4\_res = dv\_indicator - bssv4\_yhat

(11 missing values generated)

.

. summ dv\_indicator bssv4\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bssv4\_yhat | 6,242 .8319449 .2241962 .0025543 1

. /\*

> pause "next"

>

> scatter dv\_indicator bssv4\_yhat

>

> pause "next"

>

> scatter bssv4\_res dv\_indicator

>

> pause "next"

>

> scatter bssv4\_res bssv4\_yhat

> \*/

. pause "complete: B.SSV.4"

.