. // Model B.SSV.1

.

. eststo clear

. eststo: logit dv\_indicator `ss\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or

Iteration 0: log pseudolikelihood = -14562.224

Iteration 1: log pseudolikelihood = -13874.115

Iteration 2: log pseudolikelihood = -13834.757

Iteration 3: log pseudolikelihood = -13834.653

Iteration 4: log pseudolikelihood = -13834.653

Logistic regression Number of obs = 28,337

Wald chi2(81) = .

Log pseudolikelihood = -13834.653 Prob > chi2 = .

(Std. Err. adjusted for 1,544 clusters in mineid)

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

| Robust

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

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

p48\_ss | 1.088509 .0990879 0.93 0.352 .9106394 1.301121

p75\_ss | 1.029702 .0044507 6.77 0.000 1.021015 1.038462

mine\_time | 1.002867 .0023286 1.23 0.218 .9983138 1.007442

onsite\_insp\_hours | 1.003458 .0004609 7.52 0.000 1.002555 1.004362

|

state |

AL | 1.197254 .4157885 0.52 0.604 .606145 2.364808

AR | 1.87409 .1241948 9.48 0.000 1.645818 2.134023

CO | 1.815079 .3014022 3.59 0.000 1.31084 2.513283

IL | 3.723324 1.088557 4.50 0.000 2.099289 6.603733

IN | 1.675195 .31781 2.72 0.007 1.154994 2.429692

MD | 1.579779 .3369616 2.14 0.032 1.040011 2.399688

MT | .4771259 .0324526 -10.88 0.000 .4175773 .5451664

NM | 2.375589 .1309155 15.70 0.000 2.132371 2.646549

OH | 1.390013 .2559463 1.79 0.074 .9689141 1.994126

OK | 3.58174 1.435119 3.18 0.001 1.633194 7.855078

PA | 1.713001 .1814986 5.08 0.000 1.391777 2.108363

TN | 2.222147 .3956139 4.48 0.000 1.567587 3.150026

UT | .5006041 .1357912 -2.55 0.011 .2941725 .8518964

VA | 1.073842 .0767432 1.00 0.319 .9334876 1.2353

WV | 1.720463 .1145486 8.15 0.000 1.509984 1.960281

WY | 3.025958 .6779452 4.94 0.000 1.95055 4.694278

|

time |

2000 | .9348579 .1272748 -0.49 0.621 .7159127 1.220762

2000.25 | 1.345798 .1876756 2.13 0.033 1.023946 1.768815

2000.5 | 1.412648 .1938713 2.52 0.012 1.079482 1.848641

2000.75 | .7257623 .0933434 -2.49 0.013 .5640501 .933837

2001 | .8097814 .1070636 -1.60 0.111 .6249251 1.049319

2001.5 | 1.052516 .1389126 0.39 0.698 .8126165 1.363237

2001.75 | .8613697 .1164672 -1.10 0.270 .6608413 1.122747

2002 | .9075418 .1306382 -0.67 0.500 .6844449 1.203358

2002.25 | .738379 .1047906 -2.14 0.033 .5590839 .975173

2002.5 | 1.059783 .1535035 0.40 0.689 .7978572 1.407695

2002.75 | .7453084 .1087319 -2.01 0.044 .5599582 .992011

2003 | .7629272 .1142665 -1.81 0.071 .5688468 1.023224

2003.25 | .8562164 .1336644 -0.99 0.320 .6305245 1.162693

2003.5 | 1.250074 .1939607 1.44 0.150 .9222818 1.694367

2003.75 | .6408076 .0965833 -2.95 0.003 .4769069 .8610369

2004 | .6912155 .1027656 -2.48 0.013 .5164902 .9250492

2004.25 | .649108 .0942398 -2.98 0.003 .488356 .8627748

2004.5 | .7319362 .1080688 -2.11 0.035 .5480184 .9775777

2004.75 | .5543847 .079926 -4.09 0.000 .4179198 .7354098

2005 | .5730758 .0843188 -3.78 0.000 .4295083 .7646322

2005.25 | .6154255 .0924511 -3.23 0.001 .4584641 .8261248

2005.5 | .6826037 .0985594 -2.64 0.008 .5143583 .9058817

2005.75 | .4672802 .0684893 -5.19 0.000 .3506038 .622785

2006 | .6132694 .0929741 -3.23 0.001 .4556232 .8254615

2006.25 | .5314968 .0792389 -4.24 0.000 .3968242 .711874

2006.5 | .624129 .0920952 -3.19 0.001 .4673829 .8334431

2006.75 | .5436201 .0842508 -3.93 0.000 .4012134 .7365728

2007 | .4585499 .0687285 -5.20 0.000 .3418271 .6151296

2007.25 | .4914844 .0735996 -4.74 0.000 .3664735 .6591389

2007.5 | .5684807 .086136 -3.73 0.000 .4224176 .7650494

2007.75 | .4192859 .0634419 -5.74 0.000 .3116847 .5640336

2008 | .4581208 .0713553 -5.01 0.000 .337598 .6216703

2008.25 | .4526371 .0710964 -5.05 0.000 .3326982 .6158143

2008.5 | .4156162 .0626771 -5.82 0.000 .3092621 .558545

2008.75 | .3720045 .056671 -6.49 0.000 .2759794 .501441

2009 | .4224638 .065724 -5.54 0.000 .3114336 .5730776

2009.25 | .4294539 .0701325 -5.18 0.000 .3118244 .5914567

2009.5 | .4107326 .0672344 -5.44 0.000 .2980044 .5661032

2009.75 | .3444664 .0559898 -6.56 0.000 .2504909 .4736983

2010 | .3975936 .0675372 -5.43 0.000 .2850035 .5546622

2010.25 | .362672 .0579529 -6.35 0.000 .2651531 .4960565

2010.5 | .5138936 .0865292 -3.95 0.000 .3694436 .7148225

2010.75 | .3224507 .0536028 -6.81 0.000 .2327894 .446646

2011 | .3639823 .0603215 -6.10 0.000 .2630351 .5036709

2011.25 | .4254962 .0726233 -5.01 0.000 .3045184 .5945358

2011.5 | .5094088 .0832149 -4.13 0.000 .3698432 .7016414

2011.75 | .3488069 .057879 -6.35 0.000 .2519658 .482868

2012 | .3620029 .0596655 -6.16 0.000 .2620695 .5000433

2012.25 | .3941368 .0644302 -5.70 0.000 .286088 .5429933

2012.5 | .352577 .062064 -5.92 0.000 .2496993 .4978409

2012.75 | .1880933 .0334215 -9.40 0.000 .1327782 .2664525

2013 | .3118438 .0560483 -6.48 0.000 .2192548 .4435322

2013.25 | .3246358 .0579317 -6.30 0.000 .2288223 .4605687

2013.5 | .3337683 .0627172 -5.84 0.000 .2309398 .4823823

2013.75 | .2245411 .0432624 -7.75 0.000 .1539199 .3275647

2014 | .2464397 .0495938 -6.96 0.000 .1661169 .3656012

2014.25 | .237893 .0461017 -7.41 0.000 .1627144 .3478064

2014.5 | .2728356 .0539611 -6.57 0.000 .1851618 .4020229

2014.75 | .3162331 .0628985 -5.79 0.000 .2141431 .4669932

2015 | .2652065 .0532484 -6.61 0.000 .1789283 .3930876

2015.25 | .2091442 .0420314 -7.79 0.000 .1410526 .3101062

2015.5 | .3640307 .0745637 -4.93 0.000 .2436622 .543861

2015.75 | .2361863 .0496646 -6.86 0.000 .1564106 .3566507

2016 | .1573895 .0378304 -7.69 0.000 .0982606 .2520993

|

\_cons | .0000748 8.05e-06 -88.26 0.000 .0000606 .0000924

lnhours | 1 (offset)

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

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.SSV.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.Q.P.B.SSV.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.Q.P.B.SSV.1.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 28337

number of covariate patterns = 28278

Pearson chi2(28193) = 100873.85

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -19264.887

Iteration 1: log likelihood = -14071.084

Iteration 2: log likelihood = -13590.779

Iteration 3: log likelihood = -13509.707

Iteration 4: log likelihood = -13504.563

Iteration 5: log likelihood = -13504.556

Iteration 6: log likelihood = -13504.556

Logistic regression Number of obs = 28,337

LR chi2(2) = 11520.66

Prob > chi2 = 0.0000

Log likelihood = -13504.556 Pseudo R2 = 0.2990

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

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

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

\_hat | 1.011098 .0137501 73.53 0.000 .9841488 1.038048

\_hatsq | .129967 .0043008 30.22 0.000 .1215377 .1383964

\_cons | -.1711302 .0162145 -10.55 0.000 -.2029102 -.1393503

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

Note: 0 failures and 26 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 13686 3753 | 17439

- | 2788 8110 | 10898

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

Total | 16474 11863 | 28337

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 83.08%

Specificity Pr( -|~D) 68.36%

Positive predictive value Pr( D| +) 78.48%

Negative predictive value Pr(~D| -) 74.42%

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

False + rate for true ~D Pr( +|~D) 31.64%

False - rate for true D Pr( -| D) 16.92%

False + rate for classified + Pr(~D| +) 21.52%

False - rate for classified - Pr( D| -) 25.58%

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

Correctly classified 76.92%

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

.

. pause "next"

.

. predict bssv1\_yhat

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

(1952 missing values generated)

. gen bssv1\_res = dv\_indicator - bssv1\_yhat

(1,952 missing values generated)

.

. summ dv\_indicator bssv1\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

dv\_indicator | 30,289 .5522797 .4972675 0 1

bssv1\_yhat | 28,337 .5813601 .2880723 .0000817 .9999921

. /\*

> pause "next"

>

> scatter dv\_indicator bssv1\_yhat

>

> pause "next"

>

> scatter bssv1\_res dv\_indicator

>

> pause "next"

>

> scatter bssv1\_res bssv1\_yhat

> \*/

. pause "complete: B.SSV.1"