. // 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

Iteration 0: log pseudolikelihood = -14562.224

Iteration 1: log pseudolikelihood = -13902.518

Iteration 2: log pseudolikelihood = -13867.442

Iteration 3: log pseudolikelihood = -13867.321

Iteration 4: log pseudolikelihood = -13867.321

Logistic regression Number of obs = 28,337

Wald chi2(81) = .

Log pseudolikelihood = -13867.321 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\_pp | 1.000977 .0010528 0.93 0.353 .998916 1.003043

p75\_pp | 1.000111 .0000316 3.51 0.000 1.000049 1.000173

mine\_time | 1.002366 .0023597 1.00 0.315 .9977516 1.007001

onsite\_insp\_hours | 1.003742 .0004966 7.55 0.000 1.002769 1.004716

|

state |

AL | 1.229338 .4316045 0.59 0.556 .6177679 2.446341

AR | 1.917793 .1269661 9.84 0.000 1.684413 2.183509

CO | 1.753334 .3024846 3.25 0.001 1.250304 2.458746

IL | 3.483565 1.037127 4.19 0.000 1.943589 6.243722

IN | 1.587678 .292064 2.51 0.012 1.107078 2.276914

MD | 1.55282 .3296017 2.07 0.038 1.024342 2.35395

MT | .4269308 .0275976 -13.17 0.000 .3761268 .4845969

NM | 2.233567 .1191343 15.07 0.000 2.011858 2.479707

OH | 1.376326 .2530911 1.74 0.082 .959831 1.973549

OK | 3.71443 1.443822 3.38 0.001 1.733903 7.957186

PA | 1.650137 .1762724 4.69 0.000 1.338419 2.034454

TN | 2.16721 .3839345 4.37 0.000 1.53146 3.066879

UT | .4912206 .1356075 -2.58 0.010 .2859511 .8438423

VA | 1.066189 .0764829 0.89 0.372 .9263461 1.227142

WV | 1.684971 .1123497 7.82 0.000 1.478552 1.920209

WY | 2.664466 .6172559 4.23 0.000 1.692073 4.19567

|

time |

2000 | .9191921 .1236359 -0.63 0.531 .7061801 1.196457

2000.25 | 1.317443 .1818972 2.00 0.046 1.005096 1.726855

2000.5 | 1.393934 .1891539 2.45 0.014 1.068405 1.818648

2000.75 | .7409316 .0941791 -2.36 0.018 .5775409 .9505469

2001 | .8138061 .1065791 -1.57 0.116 .6295705 1.051956

2001.5 | 1.046038 .1361504 0.35 0.729 .8105063 1.350014

2001.75 | .8577234 .1143722 -1.15 0.250 .6604573 1.113909

2002 | .8984014 .1277691 -0.75 0.451 .6798514 1.187208

2002.25 | .7186961 .1012854 -2.34 0.019 .5452377 .9473373

2002.5 | 1.035347 .1481709 0.24 0.808 .7821115 1.370577

2002.75 | .7301713 .1051375 -2.18 0.029 .5506303 .9682542

2003 | .7529262 .111537 -1.92 0.055 .5631927 1.006579

2003.25 | .8309963 .1277839 -1.20 0.229 .6147636 1.123285

2003.5 | 1.231428 .1895675 1.35 0.176 .9106971 1.665114

2003.75 | .638901 .095455 -3.00 0.003 .4767161 .8562634

2004 | .688722 .1016699 -2.53 0.012 .5156899 .9198126

2004.25 | .6523335 .0935862 -2.98 0.003 .4924398 .8641441

2004.5 | .7340313 .10749 -2.11 0.035 .5508919 .9780537

2004.75 | .5554364 .0792917 -4.12 0.000 .4198754 .7347646

2005 | .5723114 .0836773 -3.82 0.000 .4297132 .76223

2005.25 | .6149021 .0916016 -3.26 0.001 .4592011 .8233965

2005.5 | .6739853 .09664 -2.75 0.006 .5088622 .8926901

2005.75 | .4683933 .0677861 -5.24 0.000 .3527153 .6220095

2006 | .6211948 .0935688 -3.16 0.002 .4623957 .8345298

2006.25 | .547676 .080544 -4.09 0.000 .4105269 .7306439

2006.5 | .633379 .0923104 -3.13 0.002 .4760003 .8427914

2006.75 | .5544285 .0845128 -3.87 0.000 .4112396 .7474742

2007 | .4693123 .0693724 -5.12 0.000 .3512689 .627024

2007.25 | .4682964 .0693837 -5.12 0.000 .3502718 .6260895

2007.5 | .5274635 .079843 -4.23 0.000 .392053 .7096432

2007.75 | .3860236 .0581254 -6.32 0.000 .2873719 .5185412

2008 | .4179055 .0654579 -5.57 0.000 .3074337 .5680736

2008.25 | .4130462 .0647876 -5.64 0.000 .3037282 .5617101

2008.5 | .3786842 .0575071 -6.39 0.000 .2811988 .5099658

2008.75 | .3391026 .0514373 -7.13 0.000 .2518925 .4565065

2009 | .3806311 .0597516 -6.15 0.000 .2798224 .5177571

2009.25 | .3834663 .0631298 -5.82 0.000 .2777118 .5294928

2009.5 | .3685515 .0601599 -6.12 0.000 .2676417 .5075077

2009.75 | .3123132 .0508332 -7.15 0.000 .2270105 .4296699

2010 | .3603565 .0614081 -5.99 0.000 .2580357 .5032514

2010.25 | .3382685 .0543913 -6.74 0.000 .2468278 .4635845

2010.5 | .481857 .080879 -4.35 0.000 .346773 .6695624

2010.75 | .2994226 .0497336 -7.26 0.000 .2162228 .4146366

2011 | .3305219 .0548326 -6.67 0.000 .2387748 .457522

2011.25 | .3896741 .0665956 -5.51 0.000 .27876 .5447191

2011.5 | .4666962 .0762483 -4.66 0.000 .3388176 .6428394

2011.75 | .3172323 .0525548 -6.93 0.000 .2292776 .4389279

2012 | .3250994 .0538633 -6.78 0.000 .2349561 .4498269

2012.25 | .3532575 .0579712 -6.34 0.000 .2560974 .4872788

2012.5 | .3151018 .0557692 -6.53 0.000 .2227402 .4457622

2012.75 | .1638559 .0290594 -10.20 0.000 .1157455 .2319638

2013 | .2719596 .0488401 -7.25 0.000 .1912673 .3866946

2013.25 | .2846844 .0510842 -7.00 0.000 .2002732 .4046733

2013.5 | .297204 .0560313 -6.44 0.000 .20539 .430061

2013.75 | .1985079 .0383006 -8.38 0.000 .1360018 .2897416

2014 | .2140861 .0431918 -7.64 0.000 .1441646 .3179203

2014.25 | .2077169 .0401112 -8.14 0.000 .1422658 .3032795

2014.5 | .2407421 .0475249 -7.21 0.000 .1634995 .3544766

2014.75 | .277597 .0554085 -6.42 0.000 .1877218 .4105017

2015 | .2324481 .0467233 -7.26 0.000 .1567581 .3446849

2015.25 | .1825485 .0367788 -8.44 0.000 .1229938 .2709401

2015.5 | .321986 .0657692 -5.55 0.000 .2157593 .4805122

2015.75 | .2058994 .0434883 -7.48 0.000 .1361043 .311486

2016 | .1348351 .0327215 -8.26 0.000 .0837982 .2169557

|

\_cons | .0000827 8.83e-06 -88.09 0.000 .0000671 .000102

lnhours | 1 (offset)

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

(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.Q.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.Q.P.B.PP.1.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 28337

number of covariate patterns = 28299

Pearson chi2(28214) = 101481.71

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -19264.887

Iteration 1: log likelihood = -14099.35

Iteration 2: log likelihood = -13610.031

Iteration 3: log likelihood = -13532.851

Iteration 4: log likelihood = -13529.484

Iteration 5: log likelihood = -13529.482

Iteration 6: log likelihood = -13529.482

Logistic regression Number of obs = 28,337

LR chi2(2) = 11470.81

Prob > chi2 = 0.0000

Log likelihood = -13529.482 Pseudo R2 = 0.2977

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

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

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

\_hat | 1.012621 .013771 73.53 0.000 .9856306 1.039612

\_hatsq | .1309027 .0042822 30.57 0.000 .1225097 .1392957

\_cons | -.1723374 .0162002 -10.64 0.000 -.2040893 -.1405855

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

Note: 0 failures and 40 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 13712 3771 | 17483

- | 2762 8092 | 10854

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

Total | 16474 11863 | 28337

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 83.23%

Specificity Pr( -|~D) 68.21%

Positive predictive value Pr( D| +) 78.43%

Negative predictive value Pr(~D| -) 74.55%

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

False + rate for true ~D Pr( +|~D) 31.79%

False - rate for true D Pr( -| D) 16.77%

False + rate for classified + Pr(~D| +) 21.57%

False - rate for classified - Pr( D| -) 25.45%

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

Correctly classified 76.95%

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

.

. pause "next"

.

. predict bpp1\_yhat

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

(1952 missing values generated)

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

(1,952 missing values generated)

.

. summ dv\_indicator bpp1\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bpp1\_yhat | 28,337 .5813601 .2874199 .0000931 .9999973

. /\*

> 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"