. // Model B.V.2

.

. eststo clear

. eststo: logit dv\_indicator `count\_lag\_1\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) offset(lnhours) iter(50) or

Iteration 0: log pseudolikelihood = -13384.324

Iteration 1: log pseudolikelihood = -12716.309

Iteration 2: log pseudolikelihood = -12674.118

Iteration 3: log pseudolikelihood = -12673.888

Iteration 4: log pseudolikelihood = -12673.888

Logistic regression Number of obs = 26,110

Wald chi2(80) = .

Log pseudolikelihood = -12673.888 Prob > chi2 = .

(Std. Err. adjusted for 1,475 clusters in mineid)

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

| Robust

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

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

p48\_1lag | 1.125599 .0581462 2.29 0.022 1.017214 1.245532

p75\_1lag | 1.012023 .0017981 6.73 0.000 1.008505 1.015553

mine\_time | 1.001461 .0024123 0.61 0.544 .9967446 1.0062

onsite\_insp\_hours | 1.003224 .0004485 7.20 0.000 1.002345 1.004103

|

state |

AL | 1.192653 .4215058 0.50 0.618 .5966004 2.38421

AR | 2.280583 .1573628 11.95 0.000 1.992104 2.610837

CO | 1.613764 .2717663 2.84 0.004 1.160094 2.244847

IL | 3.572721 1.176277 3.87 0.000 1.873919 6.811573

IN | 1.551935 .3034018 2.25 0.025 1.057949 2.276579

MD | 1.597726 .3639828 2.06 0.040 1.022321 2.496992

MT | .4912567 .0316425 -11.04 0.000 .4329935 .5573597

NM | 2.442221 .1385433 15.74 0.000 2.185232 2.729432

OH | 1.400465 .2789007 1.69 0.091 .9478874 2.069131

OK | 3.825323 1.592517 3.22 0.001 1.691629 8.650299

PA | 1.782056 .1964277 5.24 0.000 1.435811 2.211797

TN | 2.216188 .4487715 3.93 0.000 1.490187 3.295887

UT | .472104 .1349052 -2.63 0.009 .2696524 .8265538

VA | 1.053821 .0777015 0.71 0.477 .9120217 1.217667

WV | 1.702249 .1176659 7.70 0.000 1.486568 1.949222

WY | 2.177416 .38606 4.39 0.000 1.538232 3.082202

|

time |

2000.25 | 1.376636 .2052098 2.14 0.032 1.02786 1.843761

2000.5 | 1.340012 .2048003 1.92 0.055 .9931517 1.808014

2000.75 | .7139619 .0978009 -2.46 0.014 .5458516 .9338465

2001 | .7965251 .1144367 -1.58 0.113 .6010456 1.055581

2001.25 | .950044 .130902 -0.37 0.710 .725205 1.244591

2001.75 | .8484952 .1155487 -1.21 0.228 .6497288 1.108069

2002 | .8444607 .1209295 -1.18 0.238 .6378001 1.118084

2002.25 | .692107 .0989697 -2.57 0.010 .5229419 .9159949

2002.5 | 1.056919 .1599573 0.37 0.715 .7856306 1.421887

2002.75 | .6955283 .1026468 -2.46 0.014 .5208271 .9288294

2003 | .7404885 .1139342 -1.95 0.051 .5477085 1.001122

2003.25 | .7827715 .1236271 -1.55 0.121 .5743814 1.066767

2003.5 | 1.253793 .2067372 1.37 0.170 .9075519 1.732128

2003.75 | .6433314 .0999524 -2.84 0.005 .4744454 .8723349

2004 | .6742692 .1015734 -2.62 0.009 .5018875 .9058582

2004.25 | .5833254 .0885545 -3.55 0.000 .4332017 .7854736

2004.5 | .7102968 .1080918 -2.25 0.025 .5271151 .9571374

2004.75 | .5272988 .0784353 -4.30 0.000 .3939501 .7057848

2005 | .5748994 .0875235 -3.64 0.000 .4265831 .7747828

2005.25 | .585041 .087145 -3.60 0.000 .4369134 .7833887

2005.5 | .6494133 .0968657 -2.89 0.004 .4847938 .8699321

2005.75 | .4416561 .0661968 -5.45 0.000 .329233 .5924682

2006 | .6078069 .0934667 -3.24 0.001 .4496457 .8216006

2006.25 | .5427214 .0832383 -3.98 0.000 .4018152 .7330398

2006.5 | .5967229 .0899279 -3.43 0.001 .4441136 .8017726

2006.75 | .5137714 .081581 -4.19 0.000 .3763647 .7013438

2007 | .4268606 .0655224 -5.55 0.000 .315957 .5766923

2007.25 | .4940315 .0763531 -4.56 0.000 .3649225 .6688192

2007.5 | .5434288 .0856122 -3.87 0.000 .399065 .7400169

2007.75 | .4001021 .0625115 -5.86 0.000 .2945642 .5434526

2008 | .4042771 .0646895 -5.66 0.000 .2954445 .5532002

2008.25 | .4058319 .0650504 -5.63 0.000 .2964203 .5556285

2008.5 | .3778681 .0591841 -6.21 0.000 .2779838 .5136424

2008.75 | .3433141 .0535575 -6.85 0.000 .2528732 .4661014

2009 | .4096353 .0668439 -5.47 0.000 .2975083 .5640215

2009.25 | .3640337 .0606586 -6.06 0.000 .2626073 .5046339

2009.5 | .3644907 .061413 -5.99 0.000 .2619797 .5071137

2009.75 | .3110836 .0522817 -6.95 0.000 .2237801 .4324468

2010 | .3643408 .062577 -5.88 0.000 .260202 .5101585

2010.25 | .3228677 .0548838 -6.65 0.000 .2313822 .4505253

2010.5 | .4840932 .0828643 -4.24 0.000 .3461189 .6770687

2010.75 | .2903058 .0493417 -7.28 0.000 .2080566 .4050698

2011 | .3414837 .0583919 -6.28 0.000 .2442412 .4774424

2011.25 | .3888477 .067899 -5.41 0.000 .2761507 .5475362

2011.5 | .4684378 .0774676 -4.59 0.000 .3387544 .6477671

2011.75 | .31575 .0532185 -6.84 0.000 .2269219 .4393496

2012 | .3327448 .0560684 -6.53 0.000 .2391561 .4629575

2012.25 | .3686651 .0629737 -5.84 0.000 .2637751 .5152646

2012.5 | .3217948 .0580292 -6.29 0.000 .2259863 .4582221

2012.75 | .1691453 .0311188 -9.66 0.000 .1179393 .2425835

2013 | .2849554 .0527077 -6.79 0.000 .1983041 .4094699

2013.25 | .2913545 .0533191 -6.74 0.000 .2035393 .4170568

2013.5 | .2954973 .0565919 -6.37 0.000 .2030188 .4301012

2013.75 | .1995725 .0395294 -8.14 0.000 .1353639 .2942379

2014 | .2298128 .0479604 -7.05 0.000 .1526631 .3459509

2014.25 | .2188059 .0430754 -7.72 0.000 .1487601 .3218335

2014.5 | .2541998 .0521723 -6.67 0.000 .1700096 .3800816

2014.75 | .2813359 .0573046 -6.23 0.000 .1887322 .4193768

2015 | .2283138 .0460364 -7.33 0.000 .1537796 .3389734

2015.25 | .1908855 .040052 -7.89 0.000 .1265238 .2879875

2015.5 | .3228767 .0665173 -5.49 0.000 .2156139 .4835

2015.75 | .2079879 .0448353 -7.28 0.000 .1363162 .317343

2016 | .1368805 .0329104 -8.27 0.000 .0854448 .2192791

|

\_cons | .0000813 9.14e-06 -83.81 0.000 .0000652 .0001013

lnhours | 1 (offset)

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

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.B.V.2.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.V.2.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.V.2.csv)

.

. pause "next"

.

. // diagnostics/assessment

. lfit

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

number of observations = 26110

number of covariate patterns = 26099

Pearson chi2(26015) = 77024.25

Prob > chi2 = 0.0000

.

. pause "next"

.

. linktest

Iteration 0: log likelihood = -17544.81

Iteration 1: log likelihood = -12957.951

Iteration 2: log likelihood = -12477.022

Iteration 3: log likelihood = -12429.135

Iteration 4: log likelihood = -12429.009

Iteration 5: log likelihood = -12429.009

Logistic regression Number of obs = 26,110

LR chi2(2) = 10231.60

Prob > chi2 = 0.0000

Log likelihood = -12429.009 Pseudo R2 = 0.2916

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

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

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

\_hat | .9852174 .0142031 69.37 0.000 .9573798 1.013055

\_hatsq | .1264912 .0048204 26.24 0.000 .1170433 .1359391

\_cons | -.1582416 .0170825 -9.26 0.000 -.1917226 -.1247606

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

Note: 0 failures and 29 successes completely determined.

.

. pause "next"

.

. estat classification

Logistic model for dv\_indicator

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

Classified | D ~D | Total

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

+ | 13246 3582 | 16828

- | 2487 6795 | 9282

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

Total | 15733 10377 | 26110

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

True D defined as dv\_indicator != 0

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

Sensitivity Pr( +| D) 84.19%

Specificity Pr( -|~D) 65.48%

Positive predictive value Pr( D| +) 78.71%

Negative predictive value Pr(~D| -) 73.21%

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

False + rate for true ~D Pr( +|~D) 34.52%

False - rate for true D Pr( -| D) 15.81%

False + rate for classified + Pr(~D| +) 21.29%

False - rate for classified - Pr( D| -) 26.79%

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

Correctly classified 76.76%

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

.

. pause "next"

.

. predict bv2\_yhat

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

(4179 missing values generated)

. gen bv2\_res = dv\_indicator - bv2\_yhat

(4,179 missing values generated)

.

. summ dv\_indicator bv2\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

bv2\_yhat | 26,110 .6025661 .2817068 .0001912 .9999982

. /\*

> pause "next"

>

> scatter dv\_indicator bv2\_yhat

>

> pause "next"

>

> scatter bv2\_res dv\_indicator

>

> pause "next"

>

> scatter bv2\_res bv2\_yhat

> \*/

. pause "complete: B.V.2"

.