. logit MR\_indicator `part\_violation\_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 = -3080.1072

Iteration 1: log pseudolikelihood = -2912.2282

Iteration 2: log pseudolikelihood = -2900.3359

Iteration 3: log pseudolikelihood = -2900.2368

Iteration 4: log pseudolikelihood = -2900.2368

Logistic regression Number of obs = 6,242

Wald chi2(35) = .

Log pseudolikelihood = -2900.2368 Prob > chi2 = .

(Std. Err. adjusted for 1,237 clusters in mineid)

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

| Robust

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

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

p47 | .914201 .1256196 -0.65 0.514 .6983591 1.196753

p48 | 1.0605 .0443365 1.41 0.160 .9770665 1.151057

p71 | 1.353507 .2531728 1.62 0.106 .9380883 1.952888

p72 | 1.147523 .154904 1.02 0.308 .8807604 1.495082

p75 | 1.005617 .0014365 3.92 0.000 1.002805 1.008436

p77 | 1.032029 .01825 1.78 0.075 .9968728 1.068426

mine\_time | .9990617 .0139138 -0.07 0.946 .9721599 1.026708

onsite\_insp\_hours | 1.000696 .0001998 3.48 0.000 1.000304 1.001087

|

state |

1 | 1.558793 .626844 1.10 0.270 .7087467 3.428354

2 | 2.467107 .2362064 9.43 0.000 2.044994 2.97635

3 | .6313622 .229649 -1.26 0.206 .3095039 1.287926

4 | 1.918613 .5977403 2.09 0.036 1.041831 3.533277

5 | .8075245 .225762 -0.76 0.444 .4668558 1.396782

6 | .7208946 .0652001 -3.62 0.000 .6037905 .8607107

7 | .8127701 .2639831 -0.64 0.523 .4300335 1.536148

8 | 1.367186 .1141386 3.75 0.000 1.160822 1.610237

9 | 2.369822 .2257515 9.06 0.000 1.966208 2.856288

10 | .619917 .2323391 -1.28 0.202 .2973796 1.292278

11 | .6074972 .1586538 -1.91 0.056 .3641201 1.013547

12 | 1.062583 .1833522 0.35 0.725 .7576786 1.490186

13 | 2.023546 .7557626 1.89 0.059 .9732013 4.207493

14 | .6596133 .2038818 -1.35 0.178 .359906 1.208898

15 | .5618363 .0604339 -5.36 0.000 .4550408 .6936961

17 | 1 (empty)

|

time |

2000 | .9846934 .1377245 -0.11 0.912 .7485959 1.295253

2002 | .7522485 .1115106 -1.92 0.055 .5625774 1.005867

2003 | .8124958 .1363434 -1.24 0.216 .5847667 1.128911

2004 | .5372005 .0861975 -3.87 0.000 .3922431 .7357284

2005 | .5447438 .0816802 -4.05 0.000 .4060327 .730842

2006 | .5866802 .0895757 -3.49 0.000 .4349486 .7913433

2007 | .5566389 .0904865 -3.60 0.000 .4047653 .7654977

2008 | .4422753 .0717968 -5.03 0.000 .3217458 .6079566

2009 | .2192174 .0385369 -8.63 0.000 .1553244 .309393

2010 | .3082019 .0567334 -6.39 0.000 .2148559 .4421029

2011 | .3822947 .068453 -5.37 0.000 .2691434 .5430163

2012 | .3385769 .0649835 -5.64 0.000 .2324263 .4932072

2013 | .2366187 .0492904 -6.92 0.000 .1573019 .3559297

2014 | .1908965 .0421073 -7.51 0.000 .1238919 .2941395

2015 | .2565786 .0566455 -6.16 0.000 .1664556 .3954963

|

\_cons | .0000221 2.83e-06 -83.56 0.000 .0000172 .0000284

lnhours | 1 (offset)

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

. lfit

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

number of observations = 6242

number of covariate patterns = 6227

Pearson chi2(6188) = 5939.23

Prob > chi2 = 0.9881

. linktest

Iteration 0: log likelihood = -4293.1367

Iteration 1: log likelihood = -2899.5332

Iteration 2: log likelihood = -2892.2369

Iteration 3: log likelihood = -2892.0269

Iteration 4: log likelihood = -2892.0263

Iteration 5: log likelihood = -2892.0263

Logistic regression Number of obs = 6,242

LR chi2(2) = 2802.22

Prob > chi2 = 0.0000

Log likelihood = -2892.0263 Pseudo R2 = 0.3264

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

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

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

\_hat | 1.120695 .0319454 35.08 0.000 1.058083 1.183306

\_hatsq | -.0310072 .015103 -2.05 0.040 -.0606086 -.0014057

\_cons | .0265563 .0362784 0.73 0.464 -.0445481 .0976607

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

. estat classification

Logistic model for MR\_indicator

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

Classified | D ~D | Total

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

+ | 2763 744 | 3507

- | 681 2054 | 2735

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

Total | 3444 2798 | 6242

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

True D defined as MR\_indicator != 0

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

Sensitivity Pr( +| D) 80.23%

Specificity Pr( -|~D) 73.41%

Positive predictive value Pr( D| +) 78.79%

Negative predictive value Pr(~D| -) 75.10%

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

False + rate for true ~D Pr( +|~D) 26.59%

False - rate for true D Pr( -| D) 19.77%

False + rate for classified + Pr(~D| +) 21.21%

False - rate for classified - Pr( D| -) 24.90%

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

Correctly classified 77.17%

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

. summ MR\_indicator pbv1\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

MR\_indicator | 6,253 .5525348 .4972722 0 1

pbv1\_yhat | 6,242 .5517462 .2922812 .0003778 .9999937