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

Iteration 1: log pseudolikelihood = -2923.4995

Iteration 2: log pseudolikelihood = -2912.0842

Iteration 3: log pseudolikelihood = -2911.9179

Iteration 4: log pseudolikelihood = -2911.9179

Logistic regression Number of obs = 6,242

Wald chi2(35) = .

Log pseudolikelihood = -2911.9179 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\_c\_lag\_all | .9778287 .0237627 -0.92 0.356 .9323465 1.02553

p48\_c\_lag\_all | 1.003935 .0060262 0.65 0.513 .9921927 1.015816

p71\_c\_lag\_all | 1.076504 .0391847 2.03 0.043 1.002379 1.15611

p72\_c\_lag\_all | .998288 .014477 -0.12 0.906 .9703131 1.027069

p75\_c\_lag\_all | 1.000007 .0000454 0.16 0.873 .9999182 1.000096

p77\_c\_lag\_all | 1.001792 .0023902 0.75 0.453 .9971179 1.006487

mine\_time | .9871589 .0150403 -0.85 0.396 .9581162 1.017082

onsite\_insp\_hours | 1.001238 .000173 7.16 0.000 1.000899 1.001577

|

state |

1 | 1.57945 .6341496 1.14 0.255 .7190318 3.469473

2 | 2.845036 .2863759 10.39 0.000 2.335648 3.465517

3 | .6013883 .2634117 -1.16 0.246 .2548728 1.419013

4 | 1.859045 .5519727 2.09 0.037 1.038862 3.326763

5 | .7839902 .2187534 -0.87 0.383 .4537362 1.354621

6 | .7174324 .0646325 -3.69 0.000 .6013086 .855982

7 | .9588738 .2648419 -0.15 0.879 .5580315 1.647647

8 | 1.327372 .1001904 3.75 0.000 1.144837 1.539011

9 | 2.292652 .2276718 8.36 0.000 1.887164 2.785266

10 | .5880255 .2225064 -1.40 0.161 .2800948 1.234489

11 | .66347 .1849816 -1.47 0.141 .3841478 1.145893

12 | .9352319 .1610863 -0.39 0.697 .6672777 1.310787

13 | 2.046801 .767153 1.91 0.056 .9818389 4.266885

14 | .6521618 .218904 -1.27 0.203 .3377862 1.259125

15 | .5910434 .0628915 -4.94 0.000 .4797832 .7281045

17 | 1 (empty)

|

time |

2000 | .9790384 .1353222 -0.15 0.878 .7467017 1.283667

2002 | .7317675 .1074718 -2.13 0.033 .5487323 .9758559

2003 | .7885696 .1309971 -1.43 0.153 .5694277 1.092047

2004 | .5226786 .0837114 -4.05 0.000 .381863 .7154211

2005 | .5333045 .0789127 -4.25 0.000 .3990465 .7127331

2006 | .5914446 .0897998 -3.46 0.001 .4392128 .7964401

2007 | .5904012 .0952634 -3.27 0.001 .4303311 .8100124

2008 | .4716433 .0765795 -4.63 0.000 .3430885 .6483673

2009 | .2376121 .0418331 -8.16 0.000 .168271 .3355273

2010 | .3191806 .0587542 -6.20 0.000 .2225096 .4578509

2011 | .3870708 .0700216 -5.25 0.000 .2715232 .5517901

2012 | .327754 .0631706 -5.79 0.000 .2246411 .478197

2013 | .2168723 .0451041 -7.35 0.000 .1442697 .3260116

2014 | .1743546 .0382318 -7.97 0.000 .113445 .2679671

2015 | .2268158 .0513915 -6.55 0.000 .1454822 .3536201

|

\_cons | .0000242 3.10e-06 -83.02 0.000 .0000188 .0000311

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) = 6245.40

Prob > chi2 = 0.3014

. linktest

Iteration 0: log likelihood = -4293.1367

Iteration 1: log likelihood = -2909.2831

Iteration 2: log likelihood = -2903.3186

Iteration 3: log likelihood = -2903.0551

Iteration 4: log likelihood = -2903.0546

Iteration 5: log likelihood = -2903.0546

Logistic regression Number of obs = 6,242

LR chi2(2) = 2780.16

Prob > chi2 = 0.0000

Log likelihood = -2903.0546 Pseudo R2 = 0.3238

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

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

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

\_hat | 1.124364 .0321293 35.00 0.000 1.061392 1.187336

\_hatsq | -.034881 .0150552 -2.32 0.021 -.0643887 -.0053733

\_cons | .0293478 .0361122 0.81 0.416 -.0414308 .1001264

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

. estat classification

Logistic model for MR\_indicator

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

Classified | D ~D | Total

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

+ | 2770 753 | 3523

- | 674 2045 | 2719

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

Total | 3444 2798 | 6242

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

True D defined as MR\_indicator != 0

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

Sensitivity Pr( +| D) 80.43%

Specificity Pr( -|~D) 73.09%

Positive predictive value Pr( D| +) 78.63%

Negative predictive value Pr(~D| -) 75.21%

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

False + rate for true ~D Pr( +|~D) 26.91%

False - rate for true D Pr( -| D) 19.57%

False + rate for classified + Pr(~D| +) 21.37%

False - rate for classified - Pr( D| -) 24.79%

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

Correctly classified 77.14%

. summ MR\_indicator pbv4\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

pbv4\_yhat | 6,242 .5517462 .2909416 .0003767 .9999949