. logit MR\_indicator `part\_penaltypoints\_lag\_4\_vars' `covariates' ib(freq).state ib(freq).time if sample\_pp, vce(cl mineid) offset(lnhours) iter(50) or

note: 9.state != 0 predicts success perfectly

9.state dropped and 9 obs not used

note: 17.state != 0 predicts success perfectly

17.state dropped and 9 obs not used

Iteration 0: log pseudolikelihood = -1600.2972

Iteration 1: log pseudolikelihood = -1524.7476

Iteration 2: log pseudolikelihood = -1521.0068

Iteration 3: log pseudolikelihood = -1520.9869

Iteration 4: log pseudolikelihood = -1520.9869

Logistic regression Number of obs = 3,315

Wald chi2(28) = .

Log pseudolikelihood = -1520.9869 Prob > chi2 = .

(Std. Err. adjusted for 725 clusters in mineid)

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

| Robust

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

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

p47\_pp\_c\_4lag | .9995611 .0007929 -0.55 0.580 .9980081 1.001116

p48\_pp\_c\_4lag | 1.000507 .0002952 1.72 0.086 .9999283 1.001085

p71\_pp\_c\_4lag | 1.000449 .0011737 0.38 0.702 .9981516 1.002753

p72\_pp\_c\_4lag | .999952 .0007783 -0.06 0.951 .9984277 1.001479

p75\_pp\_c\_4lag | 1.000007 5.43e-06 1.38 0.168 .9999968 1.000018

p77\_pp\_c\_4lag | 1.000144 .0001217 1.18 0.236 .9999057 1.000383

mine\_time | .9963934 .0148644 -0.24 0.809 .9676815 1.025957

onsite\_insp\_hours | 1.00069 .000204 3.38 0.001 1.00029 1.00109

|

state |

1 | 1.607327 .7329621 1.04 0.298 .6575751 3.92883

2 | 4.151548 .5654607 10.45 0.000 3.178866 5.421853

3 | .6520952 .3332204 -0.84 0.403 .239523 1.775312

4 | 2.320538 .6607719 2.96 0.003 1.328035 4.054785

5 | 1.019843 .3645186 0.05 0.956 .5061643 2.054826

6 | .8813321 .1115527 -1.00 0.318 .6877025 1.12948

7 | 1.383884 .337671 1.33 0.183 .8578365 2.232518

8 | .5202603 .1059702 -3.21 0.001 .3490134 .7755311

9 | 1 (empty)

10 | .5212425 .2049373 -1.66 0.097 .2411972 1.126438

11 | .5035973 .2143553 -1.61 0.107 .2186608 1.159834

12 | .9810635 .2345985 -0.08 0.936 .6139769 1.567625

13 | 1.919515 1.046472 1.20 0.232 .6593828 5.587857

14 | .7964562 .3205962 -0.57 0.572 .3618504 1.753052

15 | .6204821 .0903573 -3.28 0.001 .4664161 .8254388

17 | 1 (empty)

|

time |

2007 | 1.286816 .2024804 1.60 0.109 .9453228 1.751673

2009 | .5147839 .0806959 -4.24 0.000 .3786111 .6999333

2010 | .7056499 .1181227 -2.08 0.037 .5082787 .979663

2011 | .840017 .1267693 -1.16 0.248 .6249292 1.129133

2012 | .7286015 .1259786 -1.83 0.067 .5191745 1.022508

2013 | .5102204 .0966507 -3.55 0.000 .3519778 .739606

2014 | .4323737 .0859707 -4.22 0.000 .2928271 .6384211

2015 | .5697422 .109339 -2.93 0.003 .3911332 .8299122

|

\_cons | .0000114 1.77e-06 -73.59 0.000 8.43e-06 .0000155

lnhours | 1 (offset)

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

. lfit

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

number of observations = 3315

number of covariate patterns = 3315

Pearson chi2(3284) = 3061.49

Prob > chi2 = 0.9975

. linktest

Iteration 0: log likelihood = -2282.022

Iteration 1: log likelihood = -1521.2431

Iteration 2: log likelihood = -1518.1384

Iteration 3: log likelihood = -1518.1033

Iteration 4: log likelihood = -1518.1033

Logistic regression Number of obs = 3,315

LR chi2(2) = 1527.84

Prob > chi2 = 0.0000

Log likelihood = -1518.1033 Pseudo R2 = 0.3348

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

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

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

\_hat | 1.092257 .0414051 26.38 0.000 1.011104 1.173409

\_hatsq | -.0251608 .0202693 -1.24 0.214 -.0648879 .0145663

\_cons | .0242696 .0512106 0.47 0.636 -.0761012 .1246405

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

. estat classification

Logistic model for MR\_indicator

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

Classified | D ~D | Total

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

+ | 1478 394 | 1872

- | 341 1102 | 1443

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

Total | 1819 1496 | 3315

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

True D defined as MR\_indicator != 0

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

Sensitivity Pr( +| D) 81.25%

Specificity Pr( -|~D) 73.66%

Positive predictive value Pr( D| +) 78.95%

Negative predictive value Pr(~D| -) 76.37%

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

False + rate for true ~D Pr( +|~D) 26.34%

False - rate for true D Pr( -| D) 18.75%

False + rate for classified + Pr(~D| +) 21.05%

False - rate for classified - Pr( D| -) 23.63%

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

Correctly classified 77.83%

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

. summ MR\_indicator pbpp3\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

pbpp3\_yhat | 6,226 .5118017 .2856038 .0004198 .9999053