. logit MR\_indicator `part\_penalty\_point\_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 = -1521.8353

Iteration 2: log pseudolikelihood = -1517.8262

Iteration 3: log pseudolikelihood = -1517.7999

Iteration 4: log pseudolikelihood = -1517.7999

Logistic regression Number of obs = 3,315

Wald chi2(28) = .

Log pseudolikelihood = -1517.7999 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 | .9968221 .0024975 -1.27 0.204 .9919392 1.001729

p48\_pp | 1.001526 .0010168 1.50 0.133 .9995346 1.00352

p71\_pp | 1.003522 .0035939 0.98 0.326 .9965031 1.010591

p72\_pp | 1.001861 .0026619 0.70 0.484 .996657 1.007092

p75\_pp | 1.00005 .0000211 2.37 0.018 1.000009 1.000091

p77\_pp | 1.000466 .0003619 1.29 0.198 .9997572 1.001176

mine\_time | .9993946 .0146561 -0.04 0.967 .9710781 1.028537

onsite\_insp\_hours | 1.000545 .0001997 2.73 0.006 1.000154 1.000937

|

state |

1 | 1.621806 .7337228 1.07 0.285 .6681996 3.936333

2 | 3.983378 .5386083 10.22 0.000 3.056027 5.192134

3 | .6614442 .3406095 -0.80 0.422 .2410841 1.814755

4 | 2.332207 .6680523 2.96 0.003 1.330281 4.088751

5 | 1.012731 .3587059 0.04 0.972 .5058265 2.027621

6 | .8890575 .1129057 -0.93 0.354 .6931571 1.140323

7 | 1.346538 .3491819 1.15 0.251 .8100031 2.238467

8 | .5293401 .0975852 -3.45 0.001 .3688193 .7597243

9 | 1 (empty)

10 | .5314941 .2082648 -1.61 0.107 .2465795 1.145618

11 | .4867937 .2118511 -1.65 0.098 .2074459 1.142313

12 | 1.027471 .2430573 0.11 0.909 .6462641 1.633536

13 | 1.903588 1.06192 1.15 0.249 .6378649 5.680904

14 | .7798179 .3000996 -0.65 0.518 .3667945 1.65792

15 | .6109743 .0888828 -3.39 0.001 .4594017 .812556

17 | 1 (empty)

|

time |

2007 | 1.260625 .1963543 1.49 0.137 .9289731 1.710679

2009 | .5172288 .080877 -4.22 0.000 .3807007 .7027189

2010 | .7218228 .1204699 -1.95 0.051 .5204365 1.001137

2011 | .8660128 .131348 -0.95 0.343 .6433136 1.165805

2012 | .7653741 .1340155 -1.53 0.127 .5430377 1.078742

2013 | .5409706 .1027553 -3.23 0.001 .3728132 .7849756

2014 | .4530464 .0905637 -3.96 0.000 .3061878 .6703435

2015 | .6072115 .1167013 -2.60 0.009 .4166254 .8849817

|

\_cons | .0000109 1.69e-06 -73.54 0.000 8.02e-06 .0000148

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) = 3032.98

Prob > chi2 = 0.9992

. linktest

Iteration 0: log likelihood = -2282.022

Iteration 1: log likelihood = -1518.1402

Iteration 2: log likelihood = -1514.9343

Iteration 3: log likelihood = -1514.8974

Iteration 4: log likelihood = -1514.8974

Logistic regression Number of obs = 3,315

LR chi2(2) = 1534.25

Prob > chi2 = 0.0000

Log likelihood = -1514.8974 Pseudo R2 = 0.3362

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

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

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

\_hat | 1.091589 .041403 26.36 0.000 1.01044 1.172737

\_hatsq | -.0264884 .0200498 -1.32 0.186 -.0657853 .0128085

\_cons | .0265573 .0511891 0.52 0.604 -.0737715 .126886

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

. estat classification

Logistic model for MR\_indicator

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

Classified | D ~D | Total

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

+ | 1475 385 | 1860

- | 344 1111 | 1455

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

Total | 1819 1496 | 3315

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

True D defined as MR\_indicator != 0

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

Sensitivity Pr( +| D) 81.09%

Specificity Pr( -|~D) 74.26%

Positive predictive value Pr( D| +) 79.30%

Negative predictive value Pr(~D| -) 76.36%

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

False + rate for true ~D Pr( +|~D) 25.74%

False - rate for true D Pr( -| D) 18.91%

False + rate for classified + Pr(~D| +) 20.70%

False - rate for classified - Pr( D| -) 23.64%

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

Correctly classified 78.01%

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

. summ MR\_indicator pbpp1\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

pbpp1\_yhat | 6,226 .5062601 .286021 .000425 .9999501