. logit MR\_indicator `part\_sigandsub\_lag\_4\_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 = -2915.7702

Iteration 2: log pseudolikelihood = -2905.0287

Iteration 3: log pseudolikelihood = -2904.946

Iteration 4: log pseudolikelihood = -2904.946

Logistic regression Number of obs = 6,242

Wald chi2(35) = .

Log pseudolikelihood = -2904.946 Prob > chi2 = .

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

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| Robust

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

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

p47\_ss\_c\_4lag | .8509692 .1572353 -0.87 0.382 .592428 1.22234

p48\_ss\_c\_4lag | 1.020622 .0400431 0.52 0.603 .9450806 1.102201

p71\_ss\_c\_4lag | 1.060803 .1816068 0.34 0.730 .7584227 1.483742

p72\_ss\_c\_4lag | 1.095294 .1200154 0.83 0.406 .8836117 1.357688

p75\_ss\_c\_4lag | 1.003001 .0008594 3.50 0.000 1.001318 1.004687

p77\_ss\_c\_4lag | 1.043161 .0214425 2.06 0.040 1.00197 1.086045

mine\_time | .9936684 .0138594 -0.46 0.649 .9668723 1.021207

onsite\_insp\_hours | 1.001029 .0001751 5.88 0.000 1.000686 1.001372

|

state |

1 | 1.534891 .5995648 1.10 0.273 .7138026 3.30048

2 | 2.504568 .2397892 9.59 0.000 2.076052 3.021534

3 | .7825016 .2653706 -0.72 0.470 .4025467 1.521087

4 | 1.914323 .5802436 2.14 0.032 1.056843 3.467527

5 | .8268889 .230106 -0.68 0.495 .4792647 1.426655

6 | .7097054 .0640039 -3.80 0.000 .5947214 .8469205

7 | .8573662 .259611 -0.51 0.611 .4736113 1.552068

8 | 1.417537 .1086748 4.55 0.000 1.219769 1.647371

9 | 2.551371 .2270488 10.53 0.000 2.143011 3.037546

10 | .5860595 .2206196 -1.42 0.156 .2802274 1.225668

11 | .6264475 .1743424 -1.68 0.093 .3630717 1.080879

12 | .9956008 .1723047 -0.03 0.980 .709204 1.397653

13 | 1.965748 .7112791 1.87 0.062 .9672357 3.995062

14 | .6487696 .2062264 -1.36 0.173 .3479497 1.209663

15 | .5688987 .060867 -5.27 0.000 .4612794 .7016263

17 | 1 (empty)

|

time |

2000 | 1.074136 .1519456 0.51 0.613 .8140468 1.417323

2002 | .7440779 .1108826 -1.98 0.047 .5556128 .9964708

2003 | .8086896 .1364488 -1.26 0.208 .5809786 1.125651

2004 | .5301772 .0858996 -3.92 0.000 .3859304 .7283383

2005 | .5393385 .0809014 -4.12 0.000 .4019575 .7236736

2006 | .589326 .0907085 -3.44 0.001 .4358523 .7968412

2007 | .5779432 .0944506 -3.35 0.001 .4195437 .7961468

2008 | .4704824 .0770997 -4.60 0.000 .3412353 .6486836

2009 | .2424716 .0427448 -8.04 0.000 .1716344 .3425449

2010 | .3256042 .0597066 -6.12 0.000 .2273022 .4664191

2011 | .3948465 .0714134 -5.14 0.000 .2769982 .5628332

2012 | .3483477 .0673523 -5.45 0.000 .2384706 .5088514

2013 | .245686 .0518863 -6.65 0.000 .1624111 .3716594

2014 | .1999602 .0445559 -7.22 0.000 .1292039 .309465

2015 | .2623772 .0586798 -5.98 0.000 .1692612 .4067191

|

\_cons | .0000222 2.82e-06 -84.12 0.000 .0000173 .0000284

lnhours | 1 (offset)

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

. lfit

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

number of observations = 6242

number of covariate patterns = 6226

Pearson chi2(6187) = 5927.03

Prob > chi2 = 0.9910

. linktest

Iteration 0: log likelihood = -4293.1367

Iteration 1: log likelihood = -2904.1557

Iteration 2: log likelihood = -2897.1231

Iteration 3: log likelihood = -2896.9991

Iteration 4: log likelihood = -2896.999

Logistic regression Number of obs = 6,242

LR chi2(2) = 2792.28

Prob > chi2 = 0.0000

Log likelihood = -2896.999 Pseudo R2 = 0.3252

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

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

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

\_hat | 1.11835 .0318374 35.13 0.000 1.05595 1.18075

\_hatsq | -.0306355 .0151406 -2.02 0.043 -.0603106 -.0009605

\_cons | .0259483 .0363155 0.71 0.475 -.0452288 .0971255

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

. estat classification

Logistic model for MR\_indicator

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

Classified | D ~D | Total

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

+ | 2768 746 | 3514

- | 676 2052 | 2728

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

Total | 3444 2798 | 6242

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

True D defined as MR\_indicator != 0

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

Sensitivity Pr( +| D) 80.37%

Specificity Pr( -|~D) 73.34%

Positive predictive value Pr( D| +) 78.77%

Negative predictive value Pr(~D| -) 75.22%

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

False + rate for true ~D Pr( +|~D) 26.66%

False - rate for true D Pr( -| D) 19.63%

False + rate for classified + Pr(~D| +) 21.23%

False - rate for classified - Pr( D| -) 24.78%

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

Correctly classified 77.22%

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. summ MR\_indicator pbssv3\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

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

pbssv3\_yhat | 6,242 .5517462 .2921125 .0003923 .9999582