. // NULL MODELS

.

. // count outcome

. glm dv, family(poisson) link(log) vce(cl mineid) exposure(hours) eform

Iteration 0: log pseudolikelihood = -63572.384

Iteration 1: log pseudolikelihood = -54993.406

Iteration 2: log pseudolikelihood = -54926.575

Iteration 3: log pseudolikelihood = -54926.539

Iteration 4: log pseudolikelihood = -54926.539

Generalized linear models No. of obs = 30,289

Optimization : ML Residual df = 30,288

Scale parameter = 1

Deviance = 61638.57081 (1/df) Deviance = 2.035082

Pearson = 1831859.433 (1/df) Pearson = 60.48136

Variance function: V(u) = u [Poisson]

Link function : g(u) = ln(u) [Log]

AIC = 3.626897

Log pseudolikelihood = -54926.53909 BIC = -250889.4

(Std. Err. adjusted for 1,582 clusters in mineid)

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

| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

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

\_cons | .0000549 1.57e-06 -343.76 0.000 .0000519 .0000581

ln(hours) | 1 (exposure)

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

.

. pause "next"

.

. quietly poisson dv, vce(cl mineid) exposure(hours) irr

. estat gof

Deviance goodness-of-fit = 61638.57

Prob > chi2(30288) = 0.0000

Pearson goodness-of-fit = 1831859

Prob > chi2(30288) = 0.0000

.

. pause "next"

.

. glm dv, family(nbinomial) link(log) vce(cl mineid) exposure(hours) eform

Iteration 0: log pseudolikelihood = -49508.312

Iteration 1: log pseudolikelihood = -49099.51

Iteration 2: log pseudolikelihood = -49098.995

Iteration 3: log pseudolikelihood = -49098.995

Generalized linear models No. of obs = 30,289

Optimization : ML Residual df = 30,288

Scale parameter = 1

Deviance = 25504.22212 (1/df) Deviance = .842057

Pearson = 1527905.229 (1/df) Pearson = 50.44589

Variance function: V(u) = u+(1)u^2 [Neg. Binomial]

Link function : g(u) = ln(u) [Log]

AIC = 3.242101

Log pseudolikelihood = -49098.99523 BIC = -287023.7

(Std. Err. adjusted for 1,582 clusters in mineid)

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

| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

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

\_cons | .0000641 1.36e-06 -455.65 0.000 .0000615 .0000668

ln(hours) | 1 (exposure)

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

.

. pause "next"

.

. nbreg dv, vce(cl mineid) exposure(hours) irr

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -54926.539

Iteration 1: log pseudolikelihood = -54926.539

Fitting constant-only model:

Iteration 0: log pseudolikelihood = -49276.929

Iteration 1: log pseudolikelihood = -48566.547

Iteration 2: log pseudolikelihood = -48537.42

Iteration 3: log pseudolikelihood = -48537.362

Iteration 4: log pseudolikelihood = -48537.362

Fitting full model:

Iteration 0: log pseudolikelihood = -48537.362

Iteration 1: log pseudolikelihood = -48537.362

Negative binomial regression Number of obs = 30,289

Wald chi2(0) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -48537.362 Pseudo R2 = 0.0000

(Std. Err. adjusted for 1,582 clusters in mineid)

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

| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

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

\_cons | .0000625 1.36e-06 -444.23 0.000 .0000599 .0000652

ln(hours) | 1 (exposure)

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

/lnalpha | -.6216966 .0594986 -.7383118 -.5050814

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

alpha | .5370325 .0319527 .4779201 .6034565

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

.

. pause "next"

.

. predict c\_null\_yhat

(option n assumed; predicted number of events)

. summ dv\_indicator c\_null\_yhat

Variable | Obs Mean Std. Dev. Min Max

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

dv\_indicator | 30,289 .5522797 .4972675 0 1

c\_null\_yhat | 30,289 2.478913 4.012299 .0000625 44.66251

.

. pause "complete: null model - count outcome"

.