

Following is a response from DHS Research & Data Analysis Director, Tom Pullum:

There are several different ways to approach trends in neonatal mortality. This is easiest of the under-five rates to work with because the NNMR is not a compound rate. With a single survey, you could go into the BR file (e.g. NGBR7BFL.dta), to go back more than 5 years. (The KR file is limited to births in the past 5 years.) A potential issue is that as you go farther back in time, there may be increasing omission of children who died early.

Some Stata code is given below. It is different from FA88. The three surveys are put into one file. A logit regression is given that can be used to test for differences between the surveys and/or a trend over time. I do the logit regression (with a figure) for the 10 years before each survey, but when I tried it for 15 years or 5 years the results looked different. The term "c.b3##survey" allows different slopes and intercepts for the different surveys. You probably want similar terms for the different covariates.

You will have problems with 20 categorical covariates. There will be many empty combinations--empty in terms of the numerators, if not the denominators. Start with one covariate at a time, and only retain covariates that are significant (at least that's what I would do).

Linear terms for b3 (cmc of birth) may be too erratic. It might be better to use b2 (calendar year of birth). I included sampling weights but not a full svyset. If you use svyset you need to renumber the strata and clusters with "egen group"--you know how to do that.

The slope(s) with b2 or b3 will indicate the direction, and the test statistics and p values will give you significance. However, if the model gets too complicated, it will be harder to interpret and it will be harder to get significance. In a model with many coefficients, set a high standard, at least .01, for significance.

```
cd e:\DHS\DHS_data\scratch
```

```
use ".... NGBR53FL.DTA", clear  
gen survey=1  
save NG_temp.dta, replace
```

```
quietly append using ".... NGBR6AFL.DTA"  
replace survey=2 if survey==.  
save NG_temp.dta, replace
```

```
quietly append using ".... NGBR7BFL.DTA"  
replace survey=3 if survey==.  
save NG_temp.dta, replace
```

```
keep survey v0* b*
keep if v008-b3<12*15
```

```
gen nnd=0
replace nnd=1 if b7==0
```

```
logit nnd c.b3##survey if v008-b3<12*10 [pweight=v005]
predict nndhat
```

```
gen nndhat_1=nndhat if survey==1
gen nndhat_2=nndhat if survey==2
gen nndhat_3=nndhat if survey==3
```

```
sort survey b3
```

```
twoway (line nndhat_1 b3 if survey==1) (line nndhat_2 b3 if survey==2) (line nndhat_3 b3 if
survey==3), ylabel(0 .01 .02 .03 .04 .05 .06)
```