
Subject: Re: Child mortality

Posted by [Eman Dahab](#) on Mon, 17 Sep 2018 11:02:40 GMT

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Dear this is the stata code for your kind review

```
* Open DHS dataset - births recode file
use v005 v008 b3 b5 b7 using "IABR71FL.DTA", clear

* Create variables for time period limits - need to use variables as these change from case to case
gen t1 = .
gen t2 = .
* Initialize local variable lists used later
local vlist
local vlist2

* Loop through 5-year time periods
forvalues period = 0/4 {

* Calculate upper limit of time period
replace t2 = v008 - 60*`period'
* Calculate lower limit of time period
replace t1 = t2 - 60
* List age group lower limits
local agegroups 0 1 3 6 12 24 36 48 60
* Turn these into tokens to use for the upper limits of the age groups
tokenize `agegroups'
* Loop through the age groups
foreach age of numlist `agegroups' {
* Ignore the 60+ age group - this was just to set the upper limit for the last age group - see a2
if (`age' < 60) {
* Create local for lower limit of age group - use locals as these are constants
local a1 = `age'
* Create local for upper limit of age group = the lower limit of the next age group
local a2 = `2'

* Cohort A numerator
gen numA`age'`_period' = ((`a1' <= b7 & b7 < `a2') & (t1 - `a2' <= b3 & b3 < t1 - `a1'))
* Cohort B numerator
gen numB`age'`_period' = ((`a1' <= b7 & b7 < `a2') & (t1 - `a1' <= b3 & b3 < t2 - `a2'))
* Cohort C numerator
gen numC`age'`_period' = ((`a1' <= b7 & b7 < `a2') & (t2 - `a2' <= b3 & b3 < t2 - `a1'))
* Cohort A denominator
gen denA`age'`_period' = ( (b5 == 1 | `a1' <= b7) & (t1 - `a2' <= b3 & b3 < t1 - `a1'))
* Cohort B denominator
gen denB`age'`_period' = ( (b5 == 1 | `a1' <= b7) & (t1 - `a1' <= b3 & b3 < t2 - `a2'))
* Cohort C denominator
```

```
gen denC`age'`period' = ( (b5 == 1 | `a1' <= b7) & (t2 - `a2' <= b3 & b3 < t2 - `a1'))
```

* Count half for deaths for cohort C, except for the last period where all deaths are counted

```
local f = 0.5
```

```
if (`period' == 0) {
```

```
  local f = 1
```

```
}
```

* Sum numerators from cohorts A, B and C for this case

```
gen num`age'`period' = 0.5*numA`age'`period' + numB`age'`period' + numC`age'`period'*f
```

* Sum denominators from cohorts A, B and C for this case

```
gen den`age'`period' = 0.5*denA`age'`period' + denB`age'`period' + denC`age'`period'*0.5
```

* Generate list of numerator and denominator variables for period and age for collapse

command below

```
local vlist `vlist' num`age'`period' den`age'`period'
```

* Similarly generate list of numerator and denominator variables for period only for reshape

command below

```
if (`period' == 0) {
```

```
  local vlist2 `vlist2' num`age'`_ den`age'`_
```

```
}
```

```
}
```

* Shift the token list to the next age group

```
mac shift
```

```
}
```

```
}
```

* Sum all numerators and denominators - weighted sum

```
collapse (sum) `vlist' [pw=v005/1000000]
```

* Add a variable to act as ID for the reshape

```
gen x = 0
```

* Reshape long by age group

```
reshape long `vlist2', i(x) j(period)
```

* Drop the underscore (_) on the end of variable names

```
rename * _ *
```

* Reshape now for periods

```
reshape long num den, i(period) j(a1)
```

* Drop the x variable as we no longer need it

```
drop x
```

* Generate the upper bounds of the age groups

```
gen a2 = a1[_n+1]
```

```
replace a2 = 60 if a1 == 48
```

* Calculate the age group mortality probabilities

```
gen death = num / den
```

```

* Calculate the age group survival probabilities
gen surv = 1 - death

* Generate product of survival probabilities:
gen prodsurv = surv if a1 == 0
replace prodsurv = surv * prodsurv[_n-1] if a1 > 0
* Generate product of survival probabilities for child mortality rate, starting at 12 months
gen prodsurv2 = surv if a1 == 12
replace prodsurv2 = surv * prodsurv2[_n-1] if a1 > 12

* Neonatal mortality rate
gen nmr = 1000*(1-prodsurv) if a2 == 1
* Postneonatal mortality rate (calculated later)
gen pnmr = .
* Infant mortality rate
gen imr = 1000*(1-prodsurv) if a2 == 12
* Child mortality rate
gen cmr = 1000*(1-prodsurv2) if a2 == 60
* Under-five mortality rate
gen u5mr = 1000*(1-prodsurv) if a2 == 60

* Capture just the rates
collapse (min) nmr pnmr imr cmr u5mr, by(period)

* Postneonatal mortality rate = IMR - NMR
replace pnmr = imr - nmr

```