

```

1 . set more off

2 . di c(filename)
   stcox1trans4mar2012master.dta

3 . pwd
   /Users/robertyaffee/Documents/data/research/chwk/phase3/survwk/docs/tex/stcox

4 . title "Proportional Hazard single transition model "

*****
> *
*****
> *
*****                                     ****
> *
*****                                     ****
> *
*****          Proportional Hazard single transition model          ****
> *
*****                                     ****
> *
*****                                     ****
> *
*****                                     ****
> *
*****          4 Mar 2012      20:12:48      ****
> *
*****
> *
*****
> *

5 . di c(current_date)
   4 Mar 2012

```

```

6 . cd /Users/robertyaffee/Documents/data/research/chwk/phase3/survwk/docs/tex/s
  > tcox
  /Users/robertyaffee/Documents/data/research/chwk/phase3/survwk/docs/tex/stcox

7 . use chsurvivltran2mar2012, clear

8 . set more off

9 . set linesize 79

10 . *****
    > *****
11 . *** //// ***** ///// ***** Reconfiguration for Nonparametric Level 25 Depr
    > ession Analysis //// *****//****/*****//*** *****
    > *****
    > *****
12 .
13 . ***** Right-censoring *****
    > *****
14 . *----- Right Censoring occurs when there
    > is no event prior to end of study in single transition studies *****
15 . * in this case, the destination state = origin state
16 . * so if 22 cases experience no failure event during study they are right-c
    > ensored and half of them are dropped from the risk set
17 . *-----
    > -----
18 . title Single transition study of time till Level 25 Depression in Ukraine K
    > iev and Zhitomyr Oblasts

*****
> *
*****
> *
***** *****
> *
***** Single *****
> *
***** transition *****
> *
***** study *****
> *
***** of *****
> *
***** time *****
> *
***** till *****

```

```

> *
*****
Level
*****
> *
*****
25
*****
> *
*****
Depression
*****
> *
*****
in
*****
> *
*****
Ukraine
*****
> *
*****
Kiev
*****
> *
*****
and
*****
> *
*****
Zhitomyr
*****
> *
*****
Oblasts
*****
> *
*****
4 Mar 2012 20:12:48 *****
> *
*****
> *
*****
> *

```

```

19 . subtitle "Depression level 25 analysis: Single transition"

```

```

Date and time: 4 Mar 2012 20:12:49
Working directory: /Users/robertyaffee
> /Documents/data/research/chwk/phase3/survwk/docs/tex/stcox
Stata data file: chsurvivltran2mar2012
> .dta

Stata version: 12.1
Operating system: MacOSX 10.6.8 on
> Macintosh (Intel 64-bit) with 4 processors
using 1.007e+08 bytes of memory

```

```

Depression level 25 analysis: Single transition

```

```

20 .
21 . di "{hline}"


---


22 . quietly {
    Configuration protocol
23 . di "{hline}"


---


24 .
25 .
26 .
27 . // designation of origin time
28 .
29 . cap gen date0dep25x = t00

30 . label var date0dep25x "Starting time of study"

31 .
32 .
33 . // end of study iyr
34 . // time in study - final time
35 .
36 . // let tf be time until the first onset of level 25dep
37 . cap drop tfin

38 .
39 . gen tfin = iyr

40 . label var tfin "end of study"

41 . cap drop tf

42 . gen tf = date1dep25x - t00
    (9548 missing values generated)

```

```

43 . label var tf "Time till first onset of level 25 depression"

44 .
45 .
46 . cap drop desdep25

47 .
48 . gen desdep25 = 1 if dateldep25x < iyr
    (9708 missing values generated)

49 . label var desdep25 "Destination event before end of study"

50 . replace desdep25 = 0 if datelptsdx == iyr    // these observations are censo
    > red
    (127 real changes made)

51 . replace desdep25 = 0 if mxndep25splnr==0    // those who experienced no ev
    > ent during study
    (9407 real changes made)

52 .
53 .
54 . cap drop dep25rc

55 . gen dep25rc = dateldep25x == iyr

56 . label var dep25rc "right-censoring of level 25 depression"

57 . sort id date

58 . xttab dateldep25x

```

datel~25x	Overall		Between		Within
	Freq.	Percent	Freq.	Percent	Percent
1980	682	5.52	22	5.58	100.00
1981	217	1.76	7	1.78	100.00
1982	186	1.51	6	1.52	100.00
1983	93	0.75	3	0.76	100.00
1984	217	1.76	7	1.78	100.00
1985	310	2.51	10	2.54	100.00
1986	3348	27.11	108	27.41	100.00
1987	527	4.27	17	4.31	100.00
1988	496	4.02	16	4.06	100.00
1989	434	3.51	14	3.55	100.00
1990	527	4.27	17	4.31	100.00
1991	248	2.01	8	2.03	100.00
1992	372	3.01	12	3.05	100.00
1993	341	2.76	11	2.79	100.00

1994	224	1.81	7	1.78	100.00
1995	416	3.37	13	3.30	100.00
1996	351	2.84	11	2.79	100.00
1997	224	1.81	7	1.78	100.00
1998	512	4.15	16	4.06	100.00
1999	256	2.07	8	2.03	100.00
2000	288	2.33	9	2.28	100.00
2001	224	1.81	7	1.78	100.00
2002	128	1.04	4	1.02	100.00
2003	192	1.55	6	1.52	100.00
2004	128	1.04	4	1.02	100.00
2005	192	1.55	6	1.52	100.00
2006	256	2.07	8	2.03	100.00
2007	192	1.55	6	1.52	100.00
2008	384	3.11	12	3.05	100.00
2009	320	2.59	10	2.54	100.00
2010	64	0.52	2	0.51	100.00
Total	12349	100.00	394	100.00	100.00

(n = 394)

```

59 . replace desdep25 = 0 if id==52 | id==184 | id==644      // these cases are ri
    > ght censored
    (96 real changes made)

60 . by id: replace desdep25 = 0 if mxndep25splnr==0      // these cases are right c
    > ensored
    (0 real changes made)

61 .
62 . cap drop _t _d _s _t0

63 . // configuration for a single transition analysis of dep25
64 . stset tf if tf < . & tf != tf[_n-1], failure(desdep25) exit(time .) id(id)

           id:  id
      failure event:  desdep25 != 0 & desdep25 < .
obs. time interval:  (tf[_n-1], tf]
  exit on or before:  time .
        if exp:  tf < . & tf != tf[_n-1]

```

```

21897 total obs.
21536 ignored at outset because of -if <exp>-
  21 obs. end on or before enter()

```

```

340 obs. remaining, representing
340 subjects
334 failures in single failure-per-subject data
4340 total analysis time at risk, at risk from t =      0
      earliest observed entry t =      0
      last observed exit t =      30

```

```

65 .
66 .
67 . *****
68 . > **
69 . // complex sample configuration
70 . // svyset [pweight=newacwtsurv], fpc(fpc1) singleunit(certainty)
71 . // svy:tab gender, count obs stubwidth(12) cellwidth(12) format(%12.0fc)
72 . *****
73 . > **
74 .
75 .
76 .
77 . stdes

```

```

      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
                      id:  id

```

Category	total	per subject			
		mean	min	median	max
no. of subjects	340				
no. of records	340	1	1	1	1
(first) entry time		0	0	0	0
(final) exit time		12.76471	1	10	30
subjects with gap	0				
time on gap if gap	0	.	.	.	.
time at risk	4340	12.76471	1	10	30
failures	334	.9823529	0	1	1

78 . stdes if gender==1

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
              id:  id

```

Category	total	per subject			
		mean	min	median	max
no. of subjects	154				
no. of records	154	1	1	1	1
(first) entry time		0	0	0	0
(final) exit time		12.85714	1	9.5	30
subjects with gap	0				
time on gap if gap	0	.	.	.	.
time at risk	1980	12.85714	1	9.5	30
failures	152	.987013	0	1	1

79 . stdes if gender==2

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
              id:  id

```

Category	total	per subject			
		mean	min	median	max
no. of subjects	186				
no. of records	186	1	1	1	1
(first) entry time		0	0	0	0
(final) exit time		12.68817	1	11	29
subjects with gap	0				
time on gap if gap	0	.	.	.	.
time at risk	2360	12.68817	1	11	29
failures	182	.9784946	0	1	1

80 . stsum

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
                id:  id

```

		incidence	no. of	Survival time		
	time at risk	rate	subjects	25%	50%	75
>						
> %						
> -						
total	4340	.0769585	340	6	10	1
> 8						

81 . stsum if gender==1

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
                id:  id

```

		incidence	no. of	Survival time		
	time at risk	rate	subjects	25%	50%	75
>						
> %						
> -						
total	1980	.0767677	154	6	9	1
> 9						

82 . stsum if gender==2

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
                id:  id

```

		incidence	no. of	Survival time		
	time at risk	rate	subjects	25%	50%	75
>						
> %						
> -						
total	2360	.0771186	186	6	11	1
> 8						

83 . sts test gender

```
      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
                id:  id
```

Log-rank test for equality of survivor functions

gender	Events observed	Events expected
1. male	152	155.75
2. female	182	178.25
Total	334	334.00

chi2(1) = **0.20**
Pr>chi2 = **0.6550**

84 . sts test agegrp3

```
      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
                id:  id
```

Log-rank test for equality of survivor functions

agegrp3	Events observed	Events expected
lower 1/3	93	120.54
middle 1/3	127	120.07
upper 1/3	114	93.39
Total	334	334.00

chi2(2) = **13.34**
Pr>chi2 = **0.0013**

```
85 . sts test gender agegrp3
```

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
              id:  id

```

Log-rank test for equality of survivor functions

gender, agegrp3	Events observed	Events expected
1. male, lower 1/3	50	65.61
1. male, middle 1/3	57	50.46
1. male, upper 1/3	45	39.68
2. female, lower 1/3	43	54.93
2. female, middle 1/3	70	69.60
2. female, upper 1/3	69	53.71
Total	334	334.00

chi2(5) = 14.50

Pr>chi2 = 0.0127

```
86 .
```

```
87 .
```

```
88 . stci, by(org desdep25)
```

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
              id:  id

```

org desdep25	no. of subjects	50%	Std. Err.	[95% Conf. Interval]	
2 0	6	.	.	.	.
2 1	162	15	1.097151	13	18
4 1	82	9	.9690649	7	11
6 1	42	7	.4398602	6	8
8 1	22	7	1.563472	6	11
10 1	14	6	1.122497	4	10
12 1	5	8	.8944272	1	.
14 1	4	2	1.666667	1	.
16 1	2	6	.	6	.
18 1	1	.	.	.	.

total	340	10	.7372445	9	12
-------	-----	----	----------	---	----

89 . stci if gender==1, by(org desdep25) emean

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
              id:  id

```

org desdep25	no. of subjects	extended mean
2 0	2	.
2 1	81	15.34568(*)
4 1	34	10.55882(*)
6 1	24	9.583333(*)
8 1	6	7.833333(*)
10 1	5	6.8(*)
14 1	2	4(*)
total	154	12.92673

(*) no extension needed

90 . cap noisily stci if gender==2, by(org desdep25) emean

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
              id:  id

```

org desdep25	no. of subjects	extended mean
2 0	4	.
2 1	81	15.90123(*)
4 1	48	10.91667(*)
6 1	18	8.666667(*)
8 1	16	9.5(*)
10 1	9	7.888889(*)
12 1	5	6.6(*)
14 1	2	3.5(*)
16 1	2	7(*)

variable __000009 not found

```
91 .
92 . title Single transition study of time till Level 25 Depression in Ukraine K
    > iev and Zhitomyr Oblasts
```

```
*****
> *
*****
> *
```

```
93 . subtitle "Depression level 25 analysis: Single transition"
```

```

                                Date and time:   4 Mar 2012    20:13:59
                                Working directory: /Users/robertyaffee
> /Documents/data/research/chwk/phase3/survwk/docs/tex/stcox
                                Stata data file:  chsurviv1tran2mar2012
> .dta
                                Stata version:   12.1
                                Operating system: MacOSX   10.6.8   on
> Macintosh (Intel 64-bit) with 4 processors
                                using 1.007e+08 bytes of memory
```

```
Depression level 25 analysis: Single transition
```

```
94 .
95 . di "{hline}"
```

```
96 . quietly {
    Configuration protocol
```

```
97 . di "{hline}"
```

```
98 .
99 . // designation of origin time
100 .
101 . cap gen date0dep25x = t00
```

```
102 . label var date0dep25x "Starting time of study"
```

```
103 .
```

```
104 . cap gen orig=0
```

```
105 .
```

```
106 . replace des = tfin==ti  
      (0 real changes made)
```

```
107 .
```

```
108 .
```

```
109 . cap gen tstart= y(1980)
```

```
110 .
```

```
111 . replace tf = tfin - tstart+1  
      (21897 real changes made)
```

```
112 .
```

```
113 . stset tf if tf < ., f(des)
```

```
      failure event:  des != 0 & des < .  
obs. time interval:  (0, tf]  
  exit on or before:  failure  
        if exp:       tf < .
```

```
      21897 total obs.
```

```
      0 exclusions
```

```
      21897 obs. remaining, representing
```

```
      21897 failures in single record/single failure data
```

```
      672671 total analysis time at risk, at risk from t = 0  
                                     earliest observed entry t = 0  
                                     last observed exit t = 32
```

```
114 . // end of study iyr
```

```
115 . // time in study - final time
```

```

116 . // configuration for first spell transition
117 . // let tf be time until the first onset of level 25dep
118 . cap gen org = 0

119 . cap gen tfin = iyr

120 . label var tfin "end of study"

121 . cap drop tf

122 . gen tf = date1dep25x - t00
      (9548 missing values generated)

123 . label var tf "Time till first onset of level 25 depression"

124 .
125 .
126 .
127 .
128 . cap drop tfin

129 . cap gen desdep = ti

130 . cap gen tfindep = desdep == ti

131 . * replace tf = tfin - t00 + 1
132 .
133 . sort id date

134 . cap drop _t _d _s _t0

135 . // configuration for a single transition analysis of dep25
136 . stset tf if tf < . & tf != tf[_n-1], failure(desdep25) exit(time .) id(id)

           id: id
      failure event: desdep25 != 0 & desdep25 < .
obs. time interval: (tf[_n-1], tf]
  exit on or before: time .
        if exp: tf < . & tf != tf[_n-1]

```

```

21897 total obs.
21536 ignored at outset because of -if <exp>-
21 obs. end on or before enter()

```

```

340 obs. remaining, representing
340 subjects
334 failures in single failure-per-subject data
4340 total analysis time at risk, at risk from t = 0
      earliest observed entry t = 0
      last observed exit t = 30

```

```

137 .
138 . *****
> ***
139 . ***** for multiple episodes a different configuration is required *****
> ***
140 .
141 . ***** Multiple episode configuration *****
142 . /*
> replace org = 1 + (2*mxndep25splnr - 1) // origin state
> replace desdep25 = org // destination state
> replace desdep25= org + 1 if tfin < ti
>
>
>
> cap drop desdep25
>
> cap gen desdep25 = 1 if date1dep25x < iyr
> label var desdep25 "Destination event before end of study"
> replace desdep25 = 0 if date1ptsdx == iyr // these observations are censo
> red
> replace desdep25 = 0 if mxndep25splnr==0 // those who experienced no ev
> ent during study
>
>
> cap drop dep25rc
> gen dep25rc = date1dep25x == iyr
> label var dep25rc "right-censoring of level 25 depression"
>
> xttab date1dep25x
> replace desdep25 = 0 if id==52 | id==184 | id==644 // these cases are ri
> ght censored
> by id: replace desdep25 = 0 if mxndep25splnr==0 // these cases are right c
> ensored
>
> sort id date
> cap drop _t _d _s _t0
> // configuration for a single transition analysis of dep25

```

```

> stset tf if tf < . & tf != tf[_n-1], failure(desdep25) exit(time .) id(id)
>
>
> // complex survey setup
> //label var gender "Respondnt gender"
> //label var newacwt "New area code weight"
> //svyset id [pweight=newacwtsurv], fpc(fpc1) singleunit(certainty)
>
> // 2 observations dropped said they lived in the exclusion zone
>
>
>
> */
143 . *----- Total population-based geographic
144 . /*
> svy: stcox Andrushevskiy-Baranovskiy Berdichevskiy-BiloTserkovskiy Boryspils
> kiy-Brovarskiy Fastivskiy-Korostenskiy ///
> KyevoSvyatoshenskiy-Lubarskiy Malinskiy Narodichevskiy-NovogradVolynskiy
> Olevskiy-PereyaslavKhmelnitskiy ///
> Popelnyanskiy-Radomischevskiy Skvirskiy Tarascheskiy VolodarVolynskiy Vol
> odarskiy Zhitomirskiy if gender==1
>
>
> svy: stcox Baranovskiy Berdichevskiy-BiloTserkovskiy Brovarskiy Irpenskiy-Ko
> rostenskiy ///
> KyevoSvyatoshenskiy-Lubarskiy Malinskiy NovogradVolynskiy Olevskiy-Pereya
> slavKhmelnitskiy ///
> Popelnyanskiy Skvirskiy VolodarVolynskiy Volodarskiy Zhitomirskiy if gen
> der==2
> */
145 . di "{hline}"

146 .
147 . forvalues p=.8(.5).9 {
    2. forvalues hr=2(5)90 {
    3.     forvalues s = .2(.1).5 {
    4.         set more off
    5. stpower cox, hratio(`hr') power(.90) alpha(.05) sd(`s') saving(powerstc,
> replace) table
    6. }
    7. }
    8. }

```

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	547	547	.693147	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	243	243	.693147	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	137	137	.693147	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	88	88	.693147	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	70	70	1.94591	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	31	31	1.94591	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	18	18	1.94591	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	12	12	1.94591	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	43	43	2.48491	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	19	19	2.48491	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	11	11	2.48491	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	7	7	2.48491	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	33	33	2.83321	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	15	15	2.83321	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	9	9	2.83321	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	6	6	2.83321	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	28	28	3.09104	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	13	13	3.09104	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	7	7	3.09104	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	5	5	3.09104	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	25	25	3.29584	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	11	11	3.29584	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	7	7	3.29584	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	3.29584	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	22	22	3.46574	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	10	10	3.46574	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	6	6	3.46574	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	3.46574	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	21	21	3.61092	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	9	9	3.61092	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	6	6	3.61092	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	3.61092	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	19	19	3.73767	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	9	9	3.73767	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	5	5	3.73767	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	3.73767	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	18	18	3.85015	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	8	8	3.85015	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	5	5	3.85015	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	3.85015	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	17	17	3.95124	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	8	8	3.95124	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	5	5	3.95124	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	3.95124	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	17	17	4.04305	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	8	8	4.04305	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	5	5	4.04305	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	4.04305	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	16	16	4.12713	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	7	7	4.12713	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	4.12713	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	4.12713	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	15	15	4.20469	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	7	7	4.20469	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	4.20469	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	4.20469	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	15	15	4.27667	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	7	7	4.27667	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	4.27667	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	4.27667	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	14	14	4.34381	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	7	7	4.34381	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	4.34381	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	4.34381	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	14	14	4.40672	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	7	7	4.40672	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	4.40672	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	4.40672	.5	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	14	14	4.46591	.2	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	6	6	4.46591	.3	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	4	4	4.46591	.4	.05

* two sided

Estimated sample size for Cox PH regression

Wald test, log-hazard metric

Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.9	3	3	4.46591	.5	.05

* two sided

```

148 .
149 .
150 . save tempfile, replace
    file tempfile.dta saved

151 . set more off

152 . stpower cox, power(.1(.05).90) n(100 200 300 400) sd(50) alpha(.05) ///
    > saving(mypowerstc2, replace)

```

Estimated coefficient for Cox PH regression
Wald test, log-hazard metric
Ho: [b1, b2, ..., bp] = [0, b2, ..., bp]

Power	N	E	B1	SD	Alpha*
.1	100	100	-.00136	50	.05
.1	200	200	-.00096	50	.05
.1	300	300	-.00078	50	.05
.1	400	400	-.00068	50	.05
.15	100	100	-.00185	50	.05
.15	200	200	-.00131	50	.05
.15	300	300	-.00107	50	.05
.15	400	400	-.00092	50	.05
.2	100	100	-.00224	50	.05
.2	200	200	-.00158	50	.05
.2	300	300	-.00129	50	.05
.2	400	400	-.00112	50	.05
.25	100	100	-.00257	50	.05
.25	200	200	-.00182	50	.05
.25	300	300	-.00148	50	.05
.25	400	400	-.00129	50	.05
.3	100	100	-.00287	50	.05
.3	200	200	-.00203	50	.05
.3	300	300	-.00166	50	.05
.3	400	400	-.00144	50	.05
.35	100	100	-.00315	50	.05
.35	200	200	-.00223	50	.05
.35	300	300	-.00182	50	.05
.35	400	400	-.00157	50	.05
.4	100	100	-.00341	50	.05
.4	200	200	-.00241	50	.05
.4	300	300	-.00197	50	.05
.4	400	400	-.00171	50	.05
.45	100	100	-.00367	50	.05
.45	200	200	-.00259	50	.05
.45	300	300	-.00212	50	.05
.45	400	400	-.00183	50	.05

.5	100	100	-.00392	50	.05
.5	200	200	-.00277	50	.05
.5	300	300	-.00226	50	.05
.5	400	400	-.00196	50	.05
.55	100	100	-.00417	50	.05
.55	200	200	-.00295	50	.05
.55	300	300	-.00241	50	.05
.55	400	400	-.00209	50	.05
.6	100	100	-.00443	50	.05
.6	200	200	-.00313	50	.05
.6	300	300	-.00256	50	.05
.6	400	400	-.00221	50	.05
.65	100	100	-.00469	50	.05
.65	200	200	-.00332	50	.05
.65	300	300	-.00271	50	.05
.65	400	400	-.00235	50	.05
.7	100	100	-.00497	50	.05
.7	200	200	-.00351	50	.05
.7	300	300	-.00287	50	.05
.7	400	400	-.00248	50	.05
.75	100	100	-.00527	50	.05
.75	200	200	-.00373	50	.05
.75	300	300	-.00304	50	.05
.75	400	400	-.00263	50	.05
.8	100	100	-.0056	50	.05
.8	200	200	-.00396	50	.05
.8	300	300	-.00323	50	.05
.8	400	400	-.0028	50	.05
.85	100	100	-.00599	50	.05
.85	200	200	-.00424	50	.05
.85	300	300	-.00346	50	.05
.85	400	400	-.003	50	.05
.9	100	100	-.00648	50	.05
.9	200	200	-.00458	50	.05
.9	300	300	-.00374	50	.05
.9	400	400	-.00324	50	.05

* two sided

```

153 . use mypowerstc2, clear

154 . line power n, title( Power for Cox regression)

155 . use tempfile, clear

156 .
157 . di "{hline}"

```

```

158 . ***** Geo-Socio-Demographic factors *****Chunk 1 *****
> *****
159 . di "{hline}"

```

```

160 . di "Note: Hazard ratios are exponentiated coefficients which are relative ha
> zards"
Note: Hazard ratios are exponentiated coefficients which are relative hazards

161 . di "Note: The nonexponentiated hazards are actually risk scores"
Note: The nonexponentiated hazards are actually risk scores

162 . set more off

163 . di as input "*** chunk 1 ***"
*** chunk 1 ***

164 . di as input " geo-socio-demographic models"
geo-socio-demographic models

165 . di as result "male design-based models"
male design-based models

166 .
167 .
168 . stcox Andrushevskiy - Zhitomirskiy if gender==1

        failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                        id:  id

```

note: Barishevskiy omitted because of collinearity
 note: Boguslavskiy omitted because of collinearity
 note: Borodyanskiy omitted because of collinearity
 note: Brusilovskiy omitted because of collinearity
 note: Chernyahovskiy omitted because of collinearity
 note: Chervonoarmiyskiy omitted because of collinearity
 note: Chudnivskiy omitted because of collinearity
 note: Emilchinskiy omitted because of collinearity
 note: Korostichevskiy omitted because of collinearity
 note: Luginskiy omitted because of collinearity
 note: Makarovskiy omitted because of collinearity
 note: Mironivskiy omitted because of collinearity
 note: Obukhovskiy omitted because of collinearity
 note: Polesskiy omitted because of collinearity
 note: Rakitnetskiy omitted because of collinearity
 note: Romanovskiy omitted because of collinearity
 note: Ruzhinskiy omitted because of collinearity
 note: Stavyschenskiy omitted because of collinearity
 note: Taraschenskiy omitted because of collinearity
 note: Tetievskiy omitted because of collinearity
 note: Vasilkivskiy omitted because of collinearity
 note: Vasilkovskiy omitted because of collinearity
 note: Vasylkovskiy omitted because of collinearity
 note: Vyshgorodskiy omitted because of collinearity
 note: Zhitomirskiy omitted because of collinearity
 Iteration 0: log likelihood = **-636.66339**
 Iteration 1: log likelihood = **-626.47376**
 Iteration 2: log likelihood = **-618.05641**
 Iteration 3: log likelihood = **-616.74176**
 Iteration 4: log likelihood = **-616.18781**
 Iteration 5: log likelihood = **-616.18754**
 Refining estimates:
 Iteration 0: log likelihood = **-616.18754**

Cox regression -- Breslow method for ties

No. of subjects =	154	Number of obs =	154
No. of failures =	152		
Time at risk =	1980		
		LR chi2(26) =	40.95
Log likelihood =	-616.18754	Prob > chi2 =	0.0314

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Andrushevs~y	2.412629	2.519908	0.84	0.399	.3114871	18.68707
Baranovskiy	2.166536	1.661341	1.01	0.313	.4820013	9.738309
Barishevskiy	1	(omitted)				
Berdichevs~y	2.652444	1.53244	1.69	0.091	.8548062	8.230472
BiloTserko~y	.34443	.3592267	-1.02	0.307	.0445997	2.659929
Boguslavskiy	1	(omitted)				
Borodyanskiy	1	(omitted)				
Boryspilskiy	.5045574	.2694464	-1.28	0.200	.1771525	1.437056
Brovarskiy	.4558494	.3484692	-1.03	0.304	.1018895	2.039451
Brusilovskiy	1	(omitted)				
Chernyahov~y	1	(omitted)				
Chervonoar~y	1	(omitted)				
Chudnivskiy	1	(omitted)				
Emilchinskiy	1	(omitted)				
Fastivskiy	.8015821	.5139507	-0.34	0.730	.2281302	2.816523
Irpenskiy	.5679191	.2518688	-1.28	0.202	.2381132	1.354533
Kagarlykskiy	.3002268	.3135524	-1.15	0.249	.0387674	2.325047
Korostenskiy	2.198515	1.675875	1.03	0.301	.4934903	9.79445
Korostiche~y	1	(omitted)				
KyevoSvyat~y	.7491133	.4808259	-0.45	0.653	.2129096	2.635723
Kyivskiy	.7755692	.2339072	-0.84	0.399	.4294407	1.400677
Lubarskiy	1.655936	1.725131	0.48	0.628	.2149186	12.7589
Luginskiy	1	(omitted)				
Makarovskiy	1	(omitted)				
Malinskiy	41.08687	47.69752	3.20	0.001	4.222287	399.8143
Mironivskiy	1	(omitted)				
Narodichev~y	23.10144	25.73043	2.82	0.005	2.603567	204.9789
NovogradVo~y	.6700337	.3846641	-0.70	0.485	.2174827	2.06428
Obukhovskiy	1	(omitted)				
Olevskiy	2.412629	2.519908	0.84	0.399	.3114871	18.68707
Ovruchskiy	.618919	.6432541	-0.46	0.644	.0807168	4.745735
Pereyaslav~y	.1955102	.2052309	-1.55	0.120	.0249831	1.530003
Polesskiy	1	(omitted)				
Popelnyans~y	41.08687	47.69752	3.20	0.001	4.222287	399.8143
Radomische~y	4.824246	3.138687	2.42	0.016	1.34782	17.2674
Rakitnetskiy	1	(omitted)				
Romanovskiy	1	(omitted)				
Ruzhinskiy	1	(omitted)				
Skvirskiy	.3002268	.3135524	-1.15	0.249	.0387674	2.325047
Stavyschen~y	1	(omitted)				
Taraschens~y	1	(omitted)				
Tarascheskiy	.2364823	.2474149	-1.38	0.168	.0304261	1.838024
Tetievskiy	1	(omitted)				
Vasilkivskiy	1	(omitted)				
Vasilkovskiy	1	(omitted)				
Vasyilkovskiy	1	(omitted)				

VolodarVol~y	.7162172	.7443543	-0.32	0.748	.0934121	5.491441
Volodarskiy	1.376635	1.432574	0.31	0.759	.1790724	10.583
Vyshgorods~y	1	(omitted)				
Yagotinskiy	.2951968	.2311253	-1.56	0.119	.0636298	1.369502
Zhitomirskiy	1	(omitted)				

169 . des Malinskiy Narodichevskiy Popelnyanskiy Radomischevskiy

variable name	storage type	display format	value label	variable label
Malinskiy	byte	%8.0g		ranown==76
Narodichevskiy	byte	%8.0g		ranown==78
Popelnyanskiy	byte	%8.0g		ranown==85
Radomischevskiy	byte	%8.0g		ranown==86

170 . str2d stcox Malinskiy Narodichevskiy Popelnyanskiy Radomischevskiy Kyivskiy
> if gender==1, nolog

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
10569	152	0.029676	0.026148	0.000691 0.098476	0.358	0.163

171 . cap gen mlr2dt = r(r2)

172 . stcox Malinskiy Narodichevskiy Popelnyanskiy Radomischevskiy Kyivskiy if gen
> der==1, nolog

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
              id:  id

```

Cox regression -- Breslow method for ties

No. of subjects =	154	Number of obs =	154
No. of failures =	152		
Time at risk =	1980		
Log likelihood =	-626.53116	LR chi2(5) =	20.26
		Prob > chi2 =	0.0011

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Malinskiy	51.91734	58.92277	3.48	0.001	5.613768	480.1427
Narodichev~y	29.15798	31.68662	3.10	0.002	3.465276	245.3449
Popelnyans~y	51.91734	58.92277	3.48	0.001	5.613768	480.1427
Radomische~y	6.266209	3.785423	3.04	0.002	1.917756	20.47465
Kyivskiy	1.14942	.1943558	0.82	0.410	.8251803	1.601064

173 . estat phtest

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	0.29	5	0.9979

174 . estat concordance

failure _d: **desdep25**
analysis time _t: **tf**
exit on or before: **time .**
id: **id**

Harrell's C concordance statistic

Number of subjects (N) = **154**
Number of comparison pairs (P) = **10789**
Number of orderings as expected (E) = **3553**
Number of tied predictions (T) = **5018**

Harrell's C = (E + T/2) / P = **.5619**
Somers' D = **.1237**

```

175 .          cap predict H0, basechazard

176 . di "pseudo-R2 = ", e(r2_p)
      pseudo-R2 = .01591458

177 .
178 .
179 . cap gen m1r2dt = r(r2)

180 . di "pseudo-R2d = ",m1r2dt
      pseudo-R2d = .02967568

181 . cap gen f1r2dt = m1r2dt

182 .
183 .
184 .
185 . line H0 _t, c(J) sort title(Baseline cumulative hazard)

186 .          cap gen H1Malin = H0*47.676

187 . line H1Malin H0 _t, c(J J) sort

188 .          cap gen H1Narod = H0*27.78

189 .          cap gen H1Radom = H0*5.75

190 .          cap gen H1Kyiv = H0*1.149

191 . line H1Narod H1Malin H1Radom H1Kyiv H0 _t, c(J J J J) sort title(Cumulative
      > Hazards of different raions) ///
      > subtitle(as evidence of geographical effects on males) ytitle(cumulative
      > hazard)

192 . graph save mgeo.gph, replace
      (file mgeo.gph saved)

```

```

193 . graph export mgeo.eps, replace
      (file mgeo.eps written in EPS format)

194 .
195 .
196 . // comparison of geo effects on women
197 . set more off

198 . stcox Malinskiy Kyivskiy if gender==2, nolog

```

```

      failure _d: desdep25
      analysis time _t: tf
      exit on or before: time .
      id: id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           186                Number of obs   =           186
No. of failures =           182
Time at risk    =           2360

Log likelihood   =   -796.58117                LR chi2(2)         =           2.89
                                                Prob > chi2        =           0.2359

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Malinskiy	1.763596	1.265432	0.79	0.429	.4321528	7.197157
Kyivskiy	.8013418	.1205782	-1.47	0.141	.5966741	1.076214

```

199 . estat phtest

```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	0.54	2	0.7638

```

200 .    cap predict Hf0, basechazard

201 . line Hf0 _t, c(J) sort title(Baseline cumulative hazard for women)

202 .    cap gen Hf1Malin = Hf0*1.76

203 .    cap gen Hf1Kyiv = Hf0*.801

204 . line Hf1Malin Hf1Kyiv Hf0 _t, c(J J J) sort title(Cumulative Hazards of diff
> erent raions) ///
>     subtitle(as evidence of geographical effects on females) ytitle(cumulat
> ive hazard)

205 . graph save fgeo.gph, replace
      (file fgeo.gph saved)

206 . graph export fgeo.eps, replace
      (file fgeo.eps written in EPS format)

207 .
208 .
209 . di "{hline}"

```

```

210 . *----2  male design-based geo-socio-demographic trimmed model wave 1
211 . set more off

212 . stcox  Kyivskiy Malinskiy Zhitomirskiy tvage  emplw13 ///
>     inclw2-inc4w2  if gender==1

           failure _d:  desdep25
           analysis time _t:  tf
           exit on or before:  time .
                           id:  id

Iteration 0:    log likelihood = -636.66339
Iteration 1:    log likelihood = -633.41814
Iteration 2:    log likelihood = -622.6408
Iteration 3:    log likelihood = -622.34274
Iteration 4:    log likelihood = -622.33694
Iteration 5:    log likelihood = -622.33694
Refining estimates:
Iteration 0:    log likelihood = -622.33694

Cox regression -- Breslow method for ties

```

```

No. of subjects =          154                Number of obs   =          154
No. of failures =          152
Time at risk    =          1980
Log likelihood   =    -622.33694
LR chi2(9)      =          28.65
Prob > chi2     =          0.0007

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Kyivskiy	1.450532	.3011604	1.79	0.073	.9656063	2.178985
Malinskiy	28.76348	32.21669	3.00	0.003	3.202203	258.3653
Zhitomirskiy	1.841395	.6101294	1.84	0.065	.9618535	3.525208
tvage	1.022487	.0079534	2.86	0.004	1.007016	1.038194
emplw13	1.747173	.5432576	1.79	0.073	.9498774	3.213694
inc1w2	.2410974	.1021518	-3.36	0.001	.1050854	.5531497
inc2w2	.2922535	.1068632	-3.36	0.001	.1427302	.5984167
inc3w2	.337205	.1308009	-2.80	0.005	.1576578	.7212281
inc4w2	.1127031	.0640196	-3.84	0.000	.0370187	.3431232

```
213 . estat phtest
```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	4.86	9	0.8461

```
214 . estat concordance
```

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

Harrell's C concordance statistic

```

Number of subjects (N)      =          154
Number of comparison pairs (P) =         10789
Number of orderings as expected (E) =         6899
Number of tied predictions (T) =           49

```

```

Harrell's C = (E + T/2) / P =         .6417
Somers' D =         .2834

```

```

215 . di "Male Pseudo-R2 = ", e(r2_p)
      Male Pseudo-R2 = .0225024

216 . cap drop m1r2ptb

217 . gen m1r2ptb = e(r2_p)

218 . di "m1r2ptb = ", m1r2ptb
      m1r2ptb = .0225024

219 .
220 . matrix define mgsocdemT1b = e(b)'

221 . matrix define mgsocdemT1v = e(V)

222 . cap drop m1r2pt

223 .
224 . gen m1r2pt = e(r2_p)

225 . str2d stcox   Kyivskiy Malinskiy Zhitomirskiy tvage   emplw13 ///
>
>   inclw2-inc4w2   if gender==1

R^2 (explained variation - D method): Cox model

      Obs      Events      R^2      Std. err.   95% conf. interval      D      SE
-----
  10569      152      0.133105      0.044849      0.055579      0.226478      0.802      0.156

226 . cap gen m1r2dt = r(r2)

227 . cap gen m1l1t = e(l1)

228 . cap gen m1dft = e(rank)

```



```

229 . local modtype1 geosociodemo

230 . stcox  Kyivskiy Malinskiy Zhitomirskiy tvage  emplw13 ///
>   inclw2-inc4w2  if gender==1

```

```

        failure _d:  desdep25
      analysis time _t:  tf
    exit on or before:  time .
                id:  id

```

```

Iteration 0:  log likelihood = -636.66339
Iteration 1:  log likelihood = -633.41814
Iteration 2:  log likelihood = -622.6408
Iteration 3:  log likelihood = -622.34274
Iteration 4:  log likelihood = -622.33694
Iteration 5:  log likelihood = -622.33694
Refining estimates:
Iteration 0:  log likelihood = -622.33694

```

Cox regression -- Breslow method for ties

```

No. of subjects =           154                Number of obs   =           154
No. of failures =           152
Time at risk    =           1980

                                      LR chi2(9)      =           28.65
Log likelihood   = -622.33694                Prob > chi2      =           0.0007

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Kyivskiy	1.450532	.3011604	1.79	0.073	.9656063	2.178985
Malinskiy	28.76348	32.21669	3.00	0.003	3.202203	258.3653
Zhitomirskiy	1.841395	.6101294	1.84	0.065	.9618535	3.525208
tvage	1.022487	.0079534	2.86	0.004	1.007016	1.038194
emplw13	1.747173	.5432576	1.79	0.073	.9498774	3.213694
inclw2	.2410974	.1021518	-3.36	0.001	.1050854	.5531497
inc2w2	.2922535	.1068632	-3.36	0.001	.1427302	.5984167
inc3w2	.337205	.1308009	-2.80	0.005	.1576578	.7212281
inc4w2	.1127031	.0640196	-3.84	0.000	.0370187	.3431232

```

231 . di "mlr2d = ",mlr2d
      mlr2d = .02967568

232 . cap gen flr2dt = mlr2dt

233 .

234 . di as input " -2 female design-based models"
      -2 female design-based models

235 . di as input "--geo-socio-demographic trimmed model"
      --geo-socio-demographic trimmed model

236 . des Irpenskiy Zhitomirskiy ///
      > age occ1w1-occ8w1 occ2w2-occ8w2 occ1w3-occ3w3 occ5w3-occ7w3

```

variable name	storage type	display format	value label	variable label
Irpenskiy	byte	%8.0g		ranown==67
Zhitomirskiy	byte	%8.0g		ranown==102
age	byte	%8.0g		* Respondent's age
occ1w1	byte	%15.0g	LABJ	profess executive administration in 1986
occ2w1	byte	%15.0g	LABJ	technical sales admin support in 1986
occ3w1	byte	%15.0g	LABJ	service occup protective services in 1986
occ4w1	byte	%15.0g	LABJ	precision prod mechan craft construction in 1986
occ5w1	byte	%15.0g	LABJ	factory laborer machinist transp cleaner in 1986
occ6w1	byte	%15.0g	LABJ	farming agricul forestry fishing trapping logging in 1986
occ7w1	byte	%15.0g	LABJ	homemaking or caregiving in 1986
occ8w1	byte	%15.0g	LABJ	student in 1986
occ2w2	byte	%15.0g	LABJ	technical sales admin support in 1996
occ3w2	byte	%15.0g	LABJ	service occup protective services in 1996
occ4w2	byte	%15.0g	LABJ	precision prod mechan craft construction in 1996
occ5w2	byte	%15.0g	LABJ	factory laborer machinist transp cleaner in 1996
occ6w2	byte	%15.0g	LABJ	farming agricul forestry fishing trapping logging in 1996
occ7w2	byte	%15.0g	LABJ	homemaking caregiving in 1996
occ8w2	byte	%15.0g	LABJ	student in 1996
occ1w3	byte	%15.0g	LABJ	professional executive administration now

```

occ2w3      byte    %15.0g    LABJ    technical sales admin support
                                         now
occ3w3      byte    %15.0g    LABJ    service occup protective
                                         services now
occ5w3      byte    %15.0g    LABJ    factory laborer machinist transp
                                         cleaner now
occ6w3      byte    %15.0g    LABJ    farming agricul forestry fishing
                                         trapping logging now
occ7w3      byte    %15.0g    LABJ    homemaking or caregiving now

```

```
237 . set more off
```

```
238 . stcox Irpenskiy Zhitomirskiy ///
```

```
> age occ1w1-occ8w1 occ2w2 occ1w3-occ3w3 occ5w3-occ7w3 if gender==2, nolog
```

```

        failure _d:  desdep25
      analysis time _t:  tf
    exit on or before:  time .
              id:  id

```

```
Cox regression -- Breslow method for ties
```

```

No. of subjects =          186                Number of obs   =          186
No. of failures =          182
Time at risk    =          2360
Log likelihood   =   -776.39392
LR chi2(18)      =          43.26
Prob > chi2      =          0.0007

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Irpenskiy	.3808437	.2075558	-1.77	0.077	.1308733	1.108262
Zhitomirskiy	2.005653	.5729949	2.44	0.015	1.145714	3.511038
age	1.01596	.009671	1.66	0.096	.9971805	1.035092
occ1w1	189.8265	231.3212	4.31	0.000	17.42164	2068.354
occ2w1	476.479	628.6976	4.67	0.000	35.88497	6326.665
occ3w1	169.0634	209.6638	4.14	0.000	14.87416	1921.616
occ4w1	47.25783	53.49484	3.41	0.001	5.139635	434.5256
occ5w1	198.6872	254.2804	4.13	0.000	16.17334	2440.843
occ6w1	263.9112	346.1259	4.25	0.000	20.1877	3450.078
occ7w1	121.8906	152.4571	3.84	0.000	10.50299	1414.579
occ8w1	151.1698	185.894	4.08	0.000	13.575	1683.412
occ2w2	.2729525	.1585684	-2.24	0.025	.0874162	.8522797
occ1w3	.0054704	.0066099	-4.31	0.000	.0005123	.0584148
occ2w3	.0062961	.0078852	-4.05	0.000	.0005408	.0733003
occ3w3	.0053138	.0064823	-4.29	0.000	.0004864	.0580478
occ5w3	.0070036	.0091984	-3.78	0.000	.0005338	.0918906
occ6w3	.0072184	.0096262	-3.70	0.000	.0005288	.0985313
occ7w3	.0071062	.0084545	-4.16	0.000	.0006902	.0731703

```

239 .
240 . matrix define fgsocdemT1b=e(b)'
241 . matrix define fgsocdemT1v=e(V)
242 . local modtype1 geosocidemog
243 . cap gen flr2pt = e(r2_p)
244 . cap gen fl1lt = e(l1)
245 . cap gen fldft = e(rank)
246 . str2d stcox Irpenskiy Zhitomirskiy ///
    > age occ1w1-occ8w1 occ2w2 occ1w3-occ3w3 occ5w3-occ7w3 if gender==2, nolog

```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
11328	182	0.153465	0.043677	0.075365 0.242666	0.871	0.146

```

247 . cap drop flr2dt
248 . gen flr2dt = r(r2)
249 . di "flr2dt = ",flr2dt
    flr2dt = .15346491
250 .
251 .
252 . str2d stcox Irpenskiy Zhitomirskiy ///
    > age occ1w1-occ8w1 occ2w2 occ1w3-occ3w3 occ5w3-occ7w3 if gender==2, nolog

```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
11328	182	0.153465	0.043677	0.075365 0.242666	0.871	0.146

```

253 . cap gen f2r2dt = r(r2)

254 . di "f2r2dt = ",f2r2dt
    f2r2dt = .15346491

255 . cap gen flr2dt = mlr2dt

256 . di "flr2dt = ", flr2dt
    flr2dt = .15346491

257 . * 2-----male trimmed model chunk 2 major negative life events
258 .
259 . set more off

260 . stcox accdw1 cataw1 deaw2 if gender==1, nolog

```

```

        failure _d:  desdep25
    analysis time _t:  tf
exit on or before:  time .
                id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           154                Number of obs   =           154
No. of failures =           152
Time at risk    =           1980

                                LR chi2(3)       =           20.11
Log likelihood   =    -626.60657                Prob > chi2       =           0.0002

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
accdw1	3.775052	1.655247	3.03	0.002	1.59844	8.915575
cataw1	1.786592	.339442	3.05	0.002	1.231125	2.592679
deaw2	1.558699	.211399	3.27	0.001	1.194862	2.033325

```
261 . estat phtest
```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	1.73	3	0.6295

```
262 .
```

```
263 . matrix define m2MNLET2b = e(b)'
```

```
264 . matrix define m2MNLET2v = e(V)
```

```
265 . local modtype2 Major_negative_life_events
```

```
266 . cap drop m2r2pt
```

```
267 . gen m2r2pt = e(r2_p)
```

```
268 . cap gen m2l1t= e(l1)
```

```
269 . cap gen m2dft = e(rank)
```

```
270 . cap drop m2l1r2dcha
```

```
271 .
```

```
272 .
```

```
273 . str2d stcox accdw1 cataw1 deaw2 if gender==1, nolog
```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
10569	152	0.108852	0.043170	0.037385 0.201231	0.715	0.159

```

274 . cap gen m2r2dt = r(r2)

275 . cap gen flr2dt = m1r2dt

276 . di "m2r2dt = ",m2r2dt
    m2r2dt = .10885216

277 . di "flr2dt = ",flr2dt
    flr2dt = .15346491

278 . di "m1r2dt = ",m1r2dt
    m1r2dt = .02967568

279 .
280 .
281 . quietly : {
    Difference between trimmed models
    *****
    Difference between level 2 and level 1 male trimmed models:
    Difference between Major_negative_life_events
    and geosocidemog models
    Pseudo R^2 change:
    m2r2d - m1r2d = .07917648
    *****

282 . di "m2r2dt = ",m2r2dt
    m2r2dt = .10885216

283 . cap gen m21r2dcha = m2r2d - m1r2dt

284 . di "m21r2ptcha = ",m21r2dcha
    m21r2ptcha = .07917648

285 .
286 .
287 .
288 .

```

```

289 .
290 . di as input "Chunk 2-----female trimmed model  chunk 2 major negative lif
    > e events -----"
    Chunk 2-----female trimmed model  chunk 2 major negative life events -----
    > -----

```

```

291 . //wave 1 2 & 3
292 . des deaw1 cataw1 accdw2 accdw3 cataw3

```

variable name	storage type	display format	value label	variable label
deaw1	byte	%8.0g		Total number of death experienced in time period 1986
cataw1	byte	%8.0g		Total number of disasters experienced in time period 1976-1986
accdw2	byte	%8.0g		Total number of accidents experienced in time period 1987-1996
accdw3	byte	%8.0g		Total number of accidents experienced in time period 1996-NOW
cataw3	byte	%8.0g		Total number of disasters experienced in time period 1996-NOW

```

293 . * female major negative life events Trimmed model
294 . set more off

```

```

295 . stcox deaw1 cataw1 accdw2 accdw3 cataw3 if gender==2, nolog

```

```

        failure _d: desdep25
    analysis time _t: tf
    exit on or before: time .
                id: id

```

Cox regression -- Breslow method for ties

No. of subjects =	186	Number of obs =	186
No. of failures =	182		
Time at risk =	2360		
Log likelihood =	-784.52046	LR chi2(5) =	27.01
		Prob > chi2 =	0.0001

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
deaw1	1.692344	.2263099	3.93	0.000	1.302151	2.199461
cataw1	1.810502	.3933043	2.73	0.006	1.182738	2.771467
accdw2	1.386542	.2780507	1.63	0.103	.9359163	2.054135
accdw3	1.650754	.3321571	2.49	0.013	1.112775	2.448822
cataw3	3.372636	2.434525	1.68	0.092	.8194696	13.88053

296 . estat phtest

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	7.82	5	0.1667

297 .

298 . matrix define f2MNLET2b = e(b)'

299 . matrix define f2MNLET2v = e(V)

300 . cap drop f2r2dt

301 . str2d stcox deaw1 cataw1 accdw2 accdw3 cataw3 if gender==2, nolog

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval		D	SE
11328	182	0.126001	0.041080	0.054845	0.211876	0.777	0.145

```

302 . cap gen f2r2dt = r(r2)

303 . cap gen f2l1t = e(l1)

304 . cap gen f2dft = e(rank)

305 . local modtype2 Major_negative_life_events

306 . di "f2r2dt = ",f2r2dt
    f2r2dt = .12600078

307 . di "f1r2dt = ",f1r2dt
    f1r2dt = .15346491

308 . cap gen f2l1r2dcha = f2r2dt - f1r2dt

309 .
310 . qui : {
    Difference between female trimmed models
    *****
    Difference between level 2 and level 1 female trimmed models:
    Difference between Major_negative_life_events
    and geosocidemog models
    f2r2dt = .12600078
    f1r2dt = .15346491
    Pseudo R^2 change:
    f2r2dt - f1r2dt = -.02746414
    *****

311 .
312 . qui: {
    f2r2dt = .12600078
    f2l1r2dcha = -.02746414

313 . di "{hline}"

```

```

314 . ***** Chunk 3 Stresses and hassles *****
    > ***
315 .
316 . di as input "Chunk 3 -----Male daily stresses and hassles trimmed model"
    Chunk 3 -----Male daily stresses and hassles trimmed model

317 . set more off

318 . cap gen inter = _t*shrelaw1

319 . cap gen inter3 = _t^3*shrelaw1

320 . stcox shrelaw1 if gender==1, iterate(10) nolog

        failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                        id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           154                Number of obs   =           154
No. of failures =           152
Time at risk    =           1980

                                LR chi2(1)       =           2.71
Log likelihood   =  -635.30891                  Prob > chi2       =           0.0998

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
shrelaw1	1.00367	.0022093	1.66	0.096	.9993496	1.00801

```

321 . estat phtest, detail

```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
shrelaw1	-0.16842	4.29	1	0.0383
global test		4.29	1	0.0383

```

322 . estat phtest, plot(shrelaw1)

323 . lowess shrelaw1 _t, title(Testing functional form)

324 . stphplot, by(gender) title(stratification by gender)

        failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                   id:  id

325 . stphplot, by(agegrp3) title(Stratification by age group)

        failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                   id:  id

326 . kdensity age, xline(48 66)

327 .
328 .
329 . // fractional polynomial adjustment
330 . fracpoly, compare: stcox shrelaw1
.....
-> gen double Ishre__1 = X^-2-7.85403859 if e(sample)
-> gen double Ishre__2 = X^-2*ln(X)+8.093696212 if e(sample)
    (where: X = (shrelaw1+1)/100)

        failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                   id:  id

Iteration 0:   log likelihood = -1662.1784
Iteration 1:   log likelihood = -1656.4864
Iteration 2:   log likelihood = -1656.3791
Iteration 3:   log likelihood = -1656.379
Refining estimates:
Iteration 0:   log likelihood = -1656.379

Cox regression -- Breslow method for ties

No. of subjects =           340                Number of obs   =           340
No. of failures =           334
Time at risk    =           4340

Log likelihood   =      -1656.379                LR chi2(2)       =           11.60
                                                Prob > chi2      =           0.0030

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Ishre__1	1.004816	.0028825	1.67	0.094	.9991825	1.010482
Ishre__2	1.00105	.0006227	1.69	0.092	.9998304	1.002271

Deviance: **3312.76**. Best powers of **shrelaw1** among **44** models fit: **-2 -2**.

Fractional polynomial model comparisons:

shrelaw1	df	Deviance	Dev. dif.	P (*)	Powers
Not in model	0	3324.357	11.599	0.021	
Linear	1	3321.644	8.886	0.031	1
m = 1	2	3315.371	2.612	0.271	-2
m = 2	4	3312.758	—	—	-2 -2

(*) P-value from deviance difference comparing reported model with m = 2 model

```
331 . stcox Ishre__2 if gender==1
```

```

      failure _d: desdep25
    analysis time _t: tf
    exit on or before: time .
              id: id
```

```

Iteration 0:  log likelihood = -636.66339
Iteration 1:  log likelihood = -634.64007
Iteration 2:  log likelihood = -634.63718
Refining estimates:
Iteration 0:  log likelihood = -634.63718
```

Cox regression -- Breslow method for ties

```

No. of subjects =           154                Number of obs   =           154
No. of failures =           152
Time at risk    =           1980

                                LR chi2(1)       =           4.05
Log likelihood   = -634.63718                   Prob > chi2      =           0.0441
```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Ishre__2	1.000007	3.79e-06	1.98	0.048	1	1.000015

```

332 . // Therefore we are using  $\ln([shrelaw1 + 1]/100) - 2 * \ln([shrelaw1 + 1]/100) +$ 
    > 8.0936
333 . estat phtest

```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	5.79	1	0.0161

```

334 . //kdensity age, xline(48 66)
335 . cap gen young=0

336 . replace young=1 if age <= 48
    (0 real changes made)

337 . cap gen middle = 0

338 . replace middle=1 if age > 48 & age < 66
    (0 real changes made)

339 . cap gen older = 0

340 . replace older=1 if age >= 66
    (0 real changes made)

341 . label var young "Under 49 years of age"

342 . label var middle "Between 48 and 65 yrs old"

343 . label var older "66 plus years old"

344 . // this does not work so we have to find a new solution
345 .

```

```

346 . // we examine a piecewise solution with a cutoff of shrelaw1 at 13
347 .
348 . kdensity shrelaw1 if gender==1, xline(13)

349 . gr save kdshrlw.gph, replace
      (file kdshrlw.gph saved)

350 . gr export kdshrlw.eps, replace
      (file kdshrlw.eps written in EPS format)

351 .
352 . // using a split file to construct a dataset with a cutoff function at shrel
      > aw1 = 13
353 . cap stsplrit shrlaw1cat, at(13)

354 . tab shrlaw1cat

```

shrlaw1cat	Freq.	Percent	Cum.
0	340	71.58	71.58
13	135	28.42	100.00
Total	475	100.00	

```

355 . cap drop shrelawold1

356 . cap gen shrelawold1 = shrelaw1*shrlaw1cat

357 . gr save shrelawm.gph,replace
      (file shrelawm.gph saved)

358 . gr export shrelawmtrans.eps, replace
      (file shrelawmtrans.eps written in EPS format)

359 .
360 .
361 . **** re-estimate spline function of the variable under consideration ****
      > ***

```

```

362 . // we model a piecewise solution with one function for shrelaw1 <= 13 and an
    > other for shrelaw1 > 13
363 . stcox shrelaw1 shrelawold1 if gender==1, nolog

```

```

        failure _d: desdep25
    analysis time _t: tf
    exit on or before: time .
                id: id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           154                Number of obs   =           154
No. of failures =           152
Time at risk    =           1980

                                LR chi2(2)       =           13.87
Log likelihood   =   -629.72854                Prob > chi2      =           0.0010

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
shrelaw1	1.006453	.0022907	2.83	0.005	1.001974	1.010953
shrelawold1	.9989192	.0003665	-2.95	0.003	.9982011	.9996378

```

364 . estat phtest           // this assumption is still violated

```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	13.19	2	0.0014

```

365 . stjoin // returns the data set to the proper structure for continued analys
    > is
    (option censored(0) assumed)
    (0 obs. eliminated)

```



```

366 .
367 . // We will try a spline or fractional polynomial transformation of shrelaw1
368 .
369 . str2d stcox shrelaw1 shrelawold1 if gender==1, nolog

```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval		D	SE
214	152	0.065684	0.030768	0.017866	0.135212	0.543	0.136

```

370 .
371 .
372 . matrix define m3shtb = e(b)'
373 . matrix define m3shtv = e(V)
374 . local modtype3 stress_and_hassles
375 . cap gen m3r2dt = r(r2)
376 . cap gen m3r2ptx = e(r2_p)
377 . di "m3r2ptx = ",m3r2ptx
    m3r2ptx = .00682757
378 . label var m3r2ptx "Piecewise Shrelaw1 for seniors"
379 . cap gen m3l1t = e(l1)
380 . cap gen m3dft = e(rank)
381 . cap gen m32r2dcha = m3r2dt - m2r2dt
382 . scalar m3r2dt = m3r2dt

```

```
383 . str2d stcox shrelaw1 shrelawold1 if gender==1, nolog
```

```
R^2 (explained variation - D method): Cox model
```

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
214	152	0.065684	0.030768	0.017866 0.135212	0.543	0.136

```
384 . cap gen m3r2dt = r(r2)
```

```
385 .
```

```
386 . qui : {
```

```
Difference between male trimmed models
```

```
*****
```

```
Difference between level 3 and level 2 male trimmed models:
```

```
Difference between stress_and_hassles
```

```
and Major_negative_life_events models
```

```
m3r2dt = .06568393
```

```
m2r2pt = .01579614
```

```
Pseudo R^2 change:
```

```
m3r2dt - m2r2dt = -.04316823
```

```
*****
```

```
387 .
```

```
388 .
```

```
389 . // displaying the pseudo-R^2
```

```
390 .
```

```
391 . di "m3r2ptd = ",m3r2dt
```

```
m3r2ptd = .06568393
```

```
392 . cap gen m32r2dcha = m3r2dt - m2r2dt
```

```
393 . qui: {
```

```
m21r2dcha = .07917648
```

```
m32r2dcha = -.04316823
```

```

394 . stjoin // re-structuring the dataset
      (option censored(0) assumed)
      (0 obs. eliminated)

395 .
396 . di as input "Chunk 3-----female trimmed model stressors and hassles -----
      > -----"
      Chunk 3-----female trimmed model stressors and hassles -----
      > -----

397 . di as input "female stresses and hassles"
      female stresses and hassles

398 . set more off

399 .
400 . des shjobw1 movew2 shhousw3

```

variable name	storage type	display format	value label	variable label
shjobw1	byte	%8.0g		Percentage of strains and hassles related to job in 1986
movew2	byte	%8.0g		Total number of moves experienced in time period 1987-1996
shhousw3	byte	%8.0g		Percentage of strains and hassles related to housing NOW

```

401 . stcox shjobw1 movew2 shhousw3 if gender==2, nolog

```

```

      failure _d: desdep25
      analysis time _t: tf
      exit on or before: time .
      id: id

```

Cox regression -- Breslow method for ties

No. of subjects =	186	Number of obs =	186
No. of failures =	182		
Time at risk =	2360		
		LR chi2(3) =	19.66
Log likelihood =	-788.19555	Prob > chi2 =	0.0002

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
shjobw1	1.005325	.0022979	2.32	0.020	1.000831	1.009839
movew2	1.4028	.2596858	1.83	0.067	.9759365	2.016368
shhousw3	1.005342	.0023097	2.32	0.020	1.000826	1.00988

402 . estat phtest, detail

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
shjobw1	-0.11635	2.72	1	0.0992
movew2	0.09612	1.71	1	0.1915
shhousw3	-0.07551	1.03	1	0.3090
global test		7.14	3	0.0676

403 .

404 .

405 . cap drop f3shbt

406 .

407 . str2d stcox shjobw1 movew2 shhousw3 if gender==2, nolog

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval		D	SE
11328	182	0.067146	0.029624	0.020299	0.133571	0.549	0.130

```

408 . matrix define f3shbt = e(b)'
409 . cap drop f3shvt
410 . matrix define f3shvt = e(V)
411 . cap drop f3r2pt
412 .
413 . cap gen f3r2dt = r(r2)
414 . di as input "f3r2dt = ", f3r2dt
    f3r2dt = .06714559
415 . cap gen f3l1t = e(l1)
416 . cap gen f3dft = e(rank)
417 . local modtype stresses_hassles
418 . cap drop f32r2dcha
419 . gen f32r2dcha = f3r2dt - f2r2dt
420 .
421 . qui : {
    Difference between female trimmed models
    *****
    Difference between level 3 and level 2 female trimmed models:
    Difference between stress_and_hassles
    and Major_negative_life_events models
    f3r2dt = .06714559
    f2r2dt = .12600078
    Pseudo R^2 change:
    f3r2dt - f2r2dt = -.05885519
    *****

```

```

422 .
423 . qui : {
    Between Major_negative_life_events and geosocidemog female trimmed models:
    f21r2dcha = -.02746414
    Between stress_and_hassles and Major_negative_life_events female trimmed model
    > s:
    f32r2dcha = -.05885519
424 .
425 . di "{hline}"

```

```

426 . ***** 4 Buffers and Supports *****
427 .
428 . di as input "-- Chunk 4 trimmed Buffers and supports models-----"
    -- Chunk 4 trimmed Buffers and supports models-----
429 . di as input "Male Buffers and supports trimmed model"
    Male Buffers and supports trimmed model
430 . set more off
431 . ** waves 1 2 and 3
432 . des sufamw2

```

variable name	storage type	display format	value label	variable label
sufamw2	byte	%8.0g		Level of support (in percent) from family in 1996

```

433 . set more off
434 . stcox sufamw3 if gender==1, nolog

```

```

    failure _d: desdep25
    analysis time _t: tf
    exit on or before: time .
    id: id

```

Cox regression -- Breslow method for ties

No. of subjects =	154	Number of obs =	154
No. of failures =	152		
Time at risk =	1980		
		LR chi2(1) =	8.09
Log likelihood =	-632.61767	Prob > chi2 =	0.0044

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
sufamw3	1.005586	.0019758	2.83	0.005	1.001721	1.009466

435 . estat phtest, detail

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
sufamw3	-0.08844	1.17	1	0.2794
global test		1.17	1	0.2794

436 . local modtype4 BuffersSupts

437 . matrix define m4bsbt = e(b)'

438 . matrix define m4bsvt = e(V)

439 . di "`modtype4'"

BuffersSupts

440 . cap drop m4rpt

441 . cap gen m4r2pt = e(r2_p)

442 . cap gen m4llt = e(ll)

443 . cap gen m4dft = e(rank)

444 .

```
445 . str2d stcox sufamw3 if gender==1, nolog
```

```
R^2 (explained variation - D method): Cox model
```

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
10538	152	0.049584	0.031690	0.006037 0.125559	0.467	0.157

```
446 . cap gen m4r2dt = r(r2)
```

```
447 . cap drop m43r2pcha
```

```
448 . cap gen m43r2dcha = m4r2dt - m3r2dt
```

```
449 .
```

```
450 . label var m43r2dcha "R square change betwn male trimmed models of `modtype4'
> and `modtype3'"
```

```
451 . qui : {
```

```
Difference between male trimmed models
```

```
*****
```

```
Difference between level 4 and level 3 male trimmed models:
```

```
Difference between BuffersSupts
```

```
and stress_and_hassles models
```

```
m4r2dt = .0495838
```

```
m3r2dt = .06568393
```

```
Pseudo R^2 change:
```

```
m4r2dt - m3r2dt = -.01610013
```

```
*****
```

```
452 .
```

```
453 . qui : {
```

```
Between Major_negative_life_events and geosocidemog male trimmed models:
```

```
m21r2dcha = .07917648
```

```
Between stress_and_hassles and Major_negative_life_events male trimmed models:
```

```
m32r2dcha = -.04316823
```

```
Between BuffersSupts and stress_and_hassles male trimmed models:
```

```
m43r2dcha = -.01610013
```



```

454 .
455 .
456 .
457 .
458 . di as input "Chunk 4-----Buffers and supports -----bs-----
> --"
    Chunk 4-----Buffers and supports -----bs-----

459 . di as input "Female Buffers and supports trimmed model"
    Female Buffers and supports trimmed model

460 . des suprtw2 sufamw2

```

variable name	storage type	display format	value label	variable label
suprtw2	byte	%8.0g		Level of support (in percent) from partner in 1996
sufamw2	byte	%8.0g		Level of support (in percent) from family in 1996

```

461 . set more off

462 . ** waves 1 2 and 3
463 . set more off

464 . stcox suprtw2 sufamw2 if gender==2, nolog

```

```

        failure _d: desdep25
    analysis time _t: tf
    exit on or before: time .
                id: id

```

Cox regression -- Breslow method for ties

No. of subjects =	186	Number of obs =	186
No. of failures =	182		
Time at risk =	2360		
		LR chi2(2) =	4.02
Log likelihood =	-796.01746	Prob > chi2 =	0.1342

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
suprtw2	1.004734	.0025141	1.89	0.059	.9998182	1.009673
sufamw2	.9956006	.0027218	-1.61	0.107	.9902803	1.00095

```
465 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
suprtw2	-0.00949	0.02	1	0.9017
sufamw2	0.00301	0.00	1	0.9691
global test		0.02	2	0.9906

```
466 .
```

```
467 . matrix define f4bsbt = e(b)'
```

```
468 . matrix define f4bsvt = e(V)
```

```
469 . local modtype4 buffers_and_supports
```

```
470 . str2d stcox suprtw2 sufamw2 if gender==2, nolog
```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
11328	182	0.009429	0.011080	0.000056 0.042619	0.200	0.118

```
471 . cap drop f4r2pt
```

```
472 . cap gen f4r2dt = r(r2)
```

```
473 . cap gen f4l1t = e(l1)
```

```
474 . cap gen f4dft = e(rank)
```

```

475 . cap drop f43r2dcha

476 . gen f43r2dcha = f4r2dt - f3r2dt

477 . label var f43r2dcha "R square change bet female trimmed models of `modtype4'
> and `modtype3'"
note: label truncated to 80 characters

478 . qui : {
Difference between female trimmed models
*****
Difference between level 4 and level 3 female trimmed models:
Difference between buffers_and_supports
and stress_and_hassles models
f4r2dt = .00942887
f3r2dt = .06714559
Pseudo R^2 change:
f4r2dt - f3r2dt = -.05771671
*****

479 .
480 . qui : {
Between Major_negative_life_events and geosocidemog for female trimmed models:
f21r2dcha = -.02746414
Between stress_and_hassles and Major_negative_life_events for female trimmed m
> odels:
f32r2dcha = -.05885519
Between buffers_and_supports and stress_and_hassles for female trimmed models:
f43r2dcha = -.05771671

481 .
482 . forvalues i = 1/10 {
2. forvalues j=1/3 {
3. label var nil`i'w`j' "Type of illness `i' self-rptd in wave `j'"
4. }
5. }

```

```

483 .
484 .   forvalues i = 1/10 {
      2.   label var nil`i'w1 "Type of illness `i' slf-rptd from 1977 to 1986"
      3.   }

485 .
486 .
487 .   forvalues i=1/10 {
      2.   label var nil`i'w2 "Type of illness `i' slf-rptd from 1987 thru 1996"
      3.   }

488 .
489 .
490 .   forvalues i=1/10 {
      2.   label var nil`i'w3 "Type of illness `i' slf-rptd from 1997 thru now"
      3.   }

491 .
492 .   label define ill862 1 "cancer" 2 "cardiovascular" 3 "dermatologic" ///
>      4 "endocrine/metabolic" 5 "gastrointestinal" 6 "genitourinary" /
> //
>      7 "hematological" 8 "infectious" 9 "musculoskeletal" ///
>      10 "neurological" 11 "psychiatric" 12 "peripheral vascular" ///
>      13 "respiratory" 14 "rheumatologic" 15 "tumors" 16 "visual or he
> aring prbs" ///
>      17 "substance use" 18 "surgery (any type)", modify

493 .
494 .
495 .
496 .   forvalues i=1/3 {
      2.   forvalues x = 1/10 {
      3.   label define illsr`x'w`i' 1 "cancer`x' w`i'" 2 "cardiovascular
> `x' w`i'" 3 "dermatologic`x' w`i'" ///
>      4 "endocrine/metabolic`x' w`i'" 5 "gastrointestinal`x' w`i'" 6 "g
> enitourinary`x' w`i'" ///
>      7 "hematological`x' w`i'" 8 "infectious`x' w`i'" 9 "musculoskel
> etal`x' w`i'" ///
>      10 "neurological`x' w`i'" 11 "psychiatric`x' w`i'" 12 "peripheral
> vascular`x' w`i'" ///
>      13 "respiratory`x' w`i'" 14 "rheumatologic`x' w`i'" 15 "tumors`x'
> w`i'" 16 "visual or hearing prbs`x' w`i'" ///
>      17 "substance use`x' w`i'" 18 "surgery(any type)`x' w`i'", modify
>
      4.   }
      5.   }

```

```

497 .
498 .     forvalues j=1/3 {
      2.         forvalues i=1/10 {
      3.             label values nil`i'w`j' illsr`i'w`j'
      4.             }
      5.         }

499 .     save stcox1trans4mar2012master, replace
      file stcox1trans4mar2012master.dta saved

500 .
501 .     forvalues i=1/10 {
      2.         forvalues j=1/3 {
      3.             cap    dummieslab nil`i'w`j'
      4.             }
      5.         }

502 .
503 .
504 . di "{hline}"

505 . di "Self-perceived health or illness"
      Self-perceived health or illness

506 . ***** Chunk 5 Self-Perceived Illnesses*****
      > *****
507 . di as input "Chunk 5----- Male self-perceived illness mspi -----"
      > -----"
      Chunk 5----- Male self-perceived illness mspi -----

508 . des mhlthw1-mhlthw3 phlthw1-phlthw3

```

variable name	storage type	display format	value label	variable label
mhlthw1	byte	%8.0g		level of general psychological/mental health in 1986
mhlthw2	byte	%8.0g		level of general psychological/mental health in 1996
mhlthw3	byte	%8.0g		level of general psychological/mental health now
phlthw1	byte	%8.0g		level of general physical health in 1986
phlthw2	byte	%8.0g		level of general physical health in 1996

phlthw3	byte	%8.0g	level of general physical health now
---------	------	-------	---

```
509 . summ mhlthw1 mhlthw2 mhlthw3 if gender==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
mhlthw1	10569	94.92979	12.55687	0	100
mhlthw2	10569	89.98269	16.66722	0	100
mhlthw3	10569	82.48434	21.78865	0	100

```
510 . summ phlthw1 phlthw2 phlthw3 if gender==1
```

Variable	Obs	Mean	Std. Dev.	Min	Max
phlthw1	10569	93.37156	13.87496	0	100
phlthw2	10569	84.601	17.66839	0	100
phlthw3	10569	71.83262	22.03171	0	100

```
511 . stcox cardiovascular1w1 respiratory1w1 mhlthw2 if gender==1, nolog //2 good
```

```

failure _d:  desdep25
analysis time _t:  tf
exit on or before:  time .
id:  id

```

Cox regression -- Breslow method for ties

No. of subjects =	40	Number of obs =	40
No. of failures =	39		
Time at risk =	413		
		LR chi2(3) =	10.05
Log likelihood =	-108.85728	Prob > chi2 =	0.0181

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
cardiova~lw1	2.46601	1.035718	2.15	0.032	1.08266	5.61691
respirat~lw1	17.40503	16.3103	3.05	0.002	2.773394	109.229
mhlthw2	1.006864	.0135753	0.51	0.612	.9806052	1.033826

```
512 . estat phtest
```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	0.06	3	0.9960

```
513 . cap stcox cardiovascular1w2-surgeryanytype1w2 if gender==1, nolog // nothin
> g
```

```
514 . cap stcox cardiovascular1w3-surgeryanytype1w3 if gender==1, nolog // nothin
> g
```

```
515 . cap stcox dermatologic2w2 gastrointestinal2w2 peripheralvascular2w2 if gende
> r==1, nolog // nothing
```

```
516 . cap stcox dermatologic2w3 gastrointestinal2w3 peripheralvascular2w3 if gende
> r==1, nolog // nothing
```

```
517 . cap stcox cardiovascular2w3-surgeryanytype3w3 if gender==1, nolog // nothin
> g
```

```
518 . cap stcox cardiovascular2w1 if gender==1, nolog // insufficient obs
```

```
519 . *stcox respiratory4w1-rheumatologic4w1 if gender==1, nolog // nothing
```

```
520 .
```

```
521 . *stcox gastrointestinal2w2 if gender==1, nolog // nothing
```

```
522 . *stcox respiratory4w1-rheumatologic4w1 if gender==1, nolog // nothing
```

```
523 . *stcox respiratory4w1-rheumatologic4w1 if gender==2, nolog // nothing
```

```
524 .
```

```
525 . *stcox cardiovascular2w3-surgeryanytype2w3 if gender==1, nolog // nothing
```

```
526 . stcox neurological2w3 peripheralvascular2w3 rheumatologic2w3 if gender==1,
> nolog // 2 good
```

```
failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id
```

Cox regression -- Breslow method for ties

```

No. of subjects =          68          Number of obs   =          68
No. of failures =          68
Time at risk    =          808
Log likelihood   =    -224.57886
LR chi2(3)      =          7.71
Prob > chi2     =          0.0523

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
neurolog~2w3	2.202126	.9794686	1.77	0.076	.9209626	5.265532
peripher~2w3	1.731672	.8321355	1.14	0.253	.6751967	4.441206
rheumato~2w3	3.073246	1.347921	2.56	0.010	1.300953	7.25994

```
527 . estat phtest
```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	0.51	3	0.9163

```

528 . *stcox cardiovascular3w1-respiratory3w1 if gender==1, nolog // nothing
529 .
530 . str2d stcox neurological2w3 peripheralvascular2w3 rheumatologic2w3 if gende
> r==1, nolog

```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval		D	SE
3464	68	0.141553	0.082830	0.017880	0.314490	0.831	0.283


```

531 . cap drop m5r2dt

532 . gen m5r2dt = r(r2)

533 . di "m5r2dt = ",m5r2dt
    m5r2dt = .14155276

534 . cap gen m54r2dcha = m5r2dt - m4r2dt

535 . di "m54r2dcha = ", m54r2dcha
    m54r2dcha = .09196895

536 .
537 .
538 .
539 .
540 . di as input "Chunk 5-----Self-perceived illnesses -----spi-----
    > -----"
    Chunk 5-----Self-perceived illnesses -----spi-----

541 . di as input "male self-perceived illness-- trimmed"
    male self-perceived illness-- trimmed

542 . set more off

543 . ** waves 1 2 and 3
544 . set more off

545 . des mhlthw2 cardiovascular1w1 respiratory1w1

```

variable name	storage type	display format	value label	variable label
mhlthw2	byte	%8.0g		level of general psychological/mental health in 1996
cardiovascu~1w1	byte	%8.0g		nillw1==2
respiratory1w1	byte	%8.0g		nillw1==13

```

547 .
548 .
549 . stcox cardiovascular1w1 respiratory1w1  mhlthw2  if gender==1, nolog

        failure _d:  desdep25
        analysis time _t:  tf
exit on or before:  time .
                id:  id

```

No. of subjects =	40	Number of obs =	40
No. of failures =	39		
Time at risk =	413		
		LR chi2(3) =	10.05
Log likelihood =	-108.85728	Prob > chi2 =	0.0181

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
cardiova~lw1	2.46601	1.035718	2.15	0.032	1.08266	5.61691
respirat~lw1	17.40503	16.3103	3.05	0.002	2.773394	109.229
mhlthw2	1.006864	.0135753	0.51	0.612	.9806052	1.033826

Test of proportional-hazards assumption

	chi2	df	Prob>chi2
global test	0.06	3	0.9960

551 . estat concordance

failure _d: **desdep25**
analysis time _t: **tf**
exit on or before: **time .**
id: **id**

Harrell's C concordance statistic

Number of subjects (N) = **40**
Number of comparison pairs (P) = **709**
Number of orderings as expected (E) = **420**
Number of tied predictions (T) = **86**

Harrell's C = $(E + T/2) / P$ = **.653**
Somers' D = **.3061**

552 .

553 . matrix define m5bstb = e(b)'

554 . matrix define m5bstv = e(V)

555 . local modtype5 Self_perceived_illnesses

556 . str2d stcox cardiovascular1w1 respiratory1w1 mhlthw2 if gender==1, nolog

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
2210	39	0.156939	0.106906	0.008686 0.374090	0.883	0.357

557 . cap gen m5r2d = e(r2_p)

558 . cap gen m5llt = e(ll)

```

559 . cap gen m5dft = e(rank)

560 . cap gen m54r2dcha = m5r2d - m4r2d

561 . label var m54r2dcha "R sq. chnge bet female trimmed models of `modtype4' and
> `modtype3'"
note: label truncated to 80 characters

562 . qui : {
Difference between male trimmed models
*****
Difference between level 5 and level 4 female trimmed models:
Difference between Self_perceived_illnesses
and buffers_and_supports models
m5r2d = .04413959
m4r2d = .0495838
Pseudo R^2 change:
m5r2d - m4r2d = -.00544421
*****

563 .
564 . qui : {
Between Major_negative_life_events and geosocidemog for male full models:
m21r2dcha = .07917648
Between stress_and_hassles and Major_negative_life_events for male full models
> :
m32r2dcha = -.04316823
Between buffers_and_supports and stress_and_hassles for male full models:
m43r2dcha = -.01610013
Between Self_perceived_illnesses and buffers_and_supports for male full models
> :
m54r2dcha = .09196895

565 .
566 .
567 . des Zhitomirskiy age mar3w2 mar3w3 emplw23 occ2w2 occ4w2 deaw1 deaw2 ///
> accdw3 shhousw1 shhlw2 shfamw3 phlthw2

```

variable name	storage type	display format	value label	variable label
Zhitomirskiy	byte	%8.0g		ranown==102
age	byte	%8.0g		* Respondent's age
mar3w2	byte	%9.0g		married in 1996
mar3w3	byte	%9.0g		married at interview
emplw23	byte	%8.0g		emplw2==2. part time
occ2w2	byte	%15.0g	LABJ	technical sales admin support in 1996
occ4w2	byte	%15.0g	LABJ	precision prod mechan craft construction in 1996
deaw1	byte	%8.0g		Total number of death experienced in time period 1986
deaw2	byte	%8.0g		Total number of death experienced in time period 1996
accdw3	byte	%8.0g		Total number of accidents experienced in time period 1996-NOW
shhousw1	byte	%8.0g		Percentage of strains and hassles related to housing in 1986
shhlw2	byte	%8.0g		Percentage of strains and hassles related to health in 1996
shfamw3	byte	%8.0g		Percentage of strains and hassles related to family NOW
phlthw2	byte	%8.0g		level of general physical health in 1996

```
568 . stcox age phlthw2 if gender==1, nolog
```

```

      failure _d: desdep25
    analysis time _t: tf
  exit on or before: time .
              id: id

```

```
Cox regression -- Breslow method for ties
```

No. of subjects =	154	Number of obs =	154
No. of failures =	152		
Time at risk =	1980		
		LR chi2(2) =	9.81
Log likelihood =	-631.75629	Prob > chi2 =	0.0074

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
age	1.013453	.0072763	1.86	0.063	.9992917	1.027815
phlthw2	.990045	.0040106	-2.47	0.014	.9822154	.997937

```

569 .
570 .
571 .
572 .
573 .
574 . *----chunk five for the female respondents
575 .
576 . set more off

577 . cap stcox cardiovascular1w1-surgeryanytype1w1 if gender==2, nolog // general
    > scan

578 . stcox peripheralvascular1w1-rheumatologic1w1 if gender==2, nolog // 3 good

```

```

        failure _d: desdep25
    analysis time _t: tf
exit on or before: time .
                id: id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           56                      Number of obs   =           56
No. of failures =           54
Time at risk    =           648

Log likelihood   =   -170.13165                      LR chi2(3)      =           10.76
                                                Prob > chi2     =           0.0131

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
peripher~1w1	3.536546	1.946549	2.29	0.022	1.202458	10.40133
respirat~1w1	2.849314	1.249358	2.39	0.017	1.206447	6.729339
rheumato~1w1	3.469	1.778293	2.43	0.015	1.270158	9.474378

579 . estat phtest

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	0.38	3	0.9443

580 .

581 .

582 . *stcox cardiovascular2w2-surgeryanytype2w2 if gender==2, nolog // nothing

583 . *stcox cardiovascular2w3-surgeryanytype2w3 if gender==2, nolog

584 . stcox dermatologic2w3 respiratory2w3 if gender==2, nolog // 2 good

failure _d: **desdep25**
analysis time _t: **tf**
exit on or before: **time .**
id: **id**

Cox regression -- Breslow method for ties

No. of subjects =	122	Number of obs =	122
No. of failures =	121		
Time at risk =	1451		
		LR chi2(2) =	10.76
Log likelihood =	-471.45845	Prob > chi2 =	0.0046

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
dermatol~2w3	11.51334	8.83881	3.18	0.001	2.557008	51.84062
respirat~2w3	.4789706	.1781757	-1.98	0.048	.2310278	.9930096

585 . estat phtest

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	0.95	2	0.6222

586 . *stcox cardiovascular3w3-respiratory3w3 if gender==1, nolog // nothing
 587 . * stcox cardiovascular3w3-respiratory3w3 if gender==2, nolog // nothing
 588 . stcox peripheralvascular1w1-rheumatologic1w1 phlthw3 if gender==2, nolog

failure _d: **desdep25**
 analysis time _t: **tf**
 exit on or before: **time .**
 id: **id**

Cox regression -- Breslow method for ties

No. of subjects =	56	Number of obs =	56
No. of failures =	54		
Time at risk =	648		
		LR chi2(4) =	16.03
Log likelihood =	-167.49592	Prob > chi2 =	0.0030

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
peripher~1w1	3.258426	1.791191	2.15	0.032	1.109413	9.570227
respirat~1w1	2.884991	1.258535	2.43	0.015	1.226931	6.783733
rheumato~1w1	2.450852	1.294124	1.70	0.090	.8706763	6.89886
phlthw3	.9814799	.0079709	-2.30	0.021	.9659809	.9972276


```
589 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
peripher~lw1	0.00289	0.00	1	0.9832
respirat~lw1	0.06024	0.21	1	0.6453
rheumato~lw1	0.08398	0.38	1	0.5364
phlthw3	0.15631	1.26	1	0.2618
global test		1.61	4	0.8061

```
590 . estat concordance
```

```
      failure _d: desdep25
    analysis time _t: tf
exit on or before: time .
              id: id
```

Harrell's C concordance statistic

```
Number of subjects (N)           =      56
Number of comparison pairs (P)    =     1360
Number of orderings as expected (E) =     912
Number of tied predictions (T)    =     110
```

```
Harrell's C = (E + T/2) / P =     .711
Somers' D =     .4221
```

```
591 . matrix define f5bsbt = e(b)'
```

```
592 . matrix define f5bsvt = e(V)
```

```

593 . local modtype5 Self-Perceived Illnesses
594 .
595 . str2d stcox peripheralvascular1w1-rheumatologic1w1 phlthw3 if gender==2, nol
> og

```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval		D	SE
3489	54	0.189828	0.078103	0.055822	0.344501	0.991	0.252

```

596 .
597 . cap gen f5r2dt = r(r2)

598 . cap gen f5l1t = e(l1)

599 . cap gen f5dft = e(rank)

600 . cap gen f54r2dcha = f5r2dt - f4r2dt

601 . label var f43r2pfcha "R square change bet female trimmed models of `modtype5
> ' and `modtype4'"
note: label truncated to 80 characters

602 . qui : {
Difference between female trimmed models
*****
Difference between level 5 and level 4 female trimmed models:
Difference between Self-Perceived Illnesses
and buffers_and_supports models
f5r2dt = .1898281
f4r2dt = .00942887
Pseudo R^2 change:
f5r2dt - f4r2dt = .18039922
*****

```

```

603 .
604 . qui : {
    Between Major_negative_life_events and geosocidemog for female trimmed models:
        f21r2dcha = -.02746414
    Between stress_and_hassles and Major_negative_life_events for female trimmed m
> odels:
        f32r2dcha = -.05885519
    Between buffers_and_supports and stress_and_hassles for female trimmed models:
        f43r2dcha = -.05771671
    Between Self-Perceived Illnesses and buffers_and_supports for female trimmed m
> odels:
        f54r2dcha = .18039922

605 .
606 . qui : {
    Adding Major_negative_life_events to geosocidemog female trimmed models:
        f1r2pf = .05859507
        f2r2pf = .08105822
    Adding stress_and_hassles to Major_negative_life_events female trimmed models:
        f3r2pf = .0999422
    Adding buffers_and_supports to stress_and_hassles female trimmed models:
        f4r2dt = .00942887
    Adding Self-Perceived Illnesses to buffers_and_supports female trimmed models:
        f5r2dt = .1898281

607 .
608 .
609 .
610 . di "{hline}"


---



611 . ***** Medical diagnosis
612 .
613 . di as input "*--chunk ---6 ----- Male medical diagnosis -----mmd----
> -----"
    *--chunk ---6 ----- Male medical diagnosis -----mmd-----

```

```

614 . di as input "Trimmed model"
      Trimmed model

615 . set more off

616 . des icdx3nr9-icdx3nr10 ///
      >          icdx4nr9

```

variable name	storage type	display format	value label	variable label
icdx3nr9	byte	%8.0g		icdx3nr==gastritis/duodenitis
icdx3nr10	byte	%8.0g		icdx3nr==575.1 cholecystitis
icdx4nr9	byte	%8.0g		icdx4nr==434.91 crbrl art ocl nos w infarc

```

617 . stcox icdx3nr9-icdx3nr10 ///
      >          icdx4nr9 if gender==1, nolog

          failure _d: desdep25
          analysis time _t: tf
          exit on or before: time .
                          id: id

```

Cox regression -- Breslow method for ties

No. of subjects =	154	Number of obs =	154
No. of failures =	152		
Time at risk =	1980		
		LR chi2(3) =	10.58
Log likelihood =	-631.37264	Prob > chi2 =	0.0142

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
icdx3nr9	2.228061	.9335263	1.91	0.056	.9801345	5.064873
icdx3nr10	11.72413	12.17174	2.37	0.018	1.532432	89.69743
icdx4nr9	33.78582	37.10585	3.21	0.001	3.925435	290.7911

```
618 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
icdx3nr9	-0.06435	0.61	1	0.4345
icdx3nr10	0.01588	0.04	1	0.8454
icdx4nr9	0.00298	0.00	1	0.9707
global test		0.66	3	0.8826

```
619 .
```

```
620 . matrix define m6bmmdbt = e(b)'
```

```
621 . matrix define m6mmdvt = e(V)
```

```
622 . str2d stcox icdx3nr9-icdx3nr10 ///
> icdx4nr9 if gender==1, nolog
```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
10569	152	0.156664	0.083503	0.026213 0.327572	0.882	0.279

```
623 . local modtype6 Medical_Diag
```

```
624 . cap gen m6r2dt = r(r2)
```

```
625 . cap gen m6l1t = e(l1)
```

```
626 . cap gen m6dft = e(rank)
```

```

627 . cap gen m65r2dcha = m6r2dt - m5r2dt

628 .
629 . label var m65r2pfcha "R square chnge bet male trimmed models of `modtype6' a
    > nd `modtype5'"
    note: label truncated to 80 characters

630 . qui : {
    Difference between male trimmed models
    *****
    Difference between level 6 and level 5 male trimmed models:
    Difference between Medical_Diag
    and Self-Perceived Illnesses models
    mdt6r2dt = .15666422
    m5r2dt = .14155276
    Pseudo R^2 change:
    m6r2dt - m5r2dt = .01511146
    *****

631 . cap gen m65r2dcha = m6r2dt - m5r2dt

632 .
633 . qui : {
    Adtding Major_negative_life_events to geosocidemog male trimmed models:
    m1r2dt = .02967568
    m2r2dt = .10885216
    Adding stress_and_hassles to Major_negative_life_events male trimmed models:
    m3r2dt = .06568393
    Adding to stress_and_hassles male trimmed models:
    m4r2dt = .0495838
    Adding Self-Perceived Illnesses to buffers_and_supports male trimmed models:
    m5r2dt = .14155276
    Adding Medical_Diag to Self-Perceived Illnesses male trimmed models:
    m6r2dt = .15666422

634 .
635 .

```

```

636 . qui : {
    Between Major_negative_life_events and geosocidemog male full models:
    m1r2dt = .02967568
    m2r2dt = .10885216
    m21r2dcha = .07917648
    Between stress_and_hassles and Major_negative_life_events male full models:
    m32r2dcha = -.04316823
    Between buffers_and_supports and stress_and_hassles male full models:
    m43r2dcha = -.01610013
    Between Self-Perceived Illnesses and buffers_and_supports male full models:
    m54r2dcha = .09196895
    Between Medical_Diag and Self-Perceived Illnesses male full modtdtdtdtdtdtdtel
    > s:
    m65r2dcha = .01511146
    m6r2dt = .15666422

637 .
638 .
639 . di as input "Chunk 6 --- female trimmed medical diagnosis-----
    > -----"
    Chunk 6 --- female trimmed medical diagnosis-----

640 . des icdx3nr5 icdx3nr11 icdx4nr7 /// //icdx3nr5, icdx5nr5 = hypertension
    > icdx3nr11=chronic pancreatitis icdx4nr7=myocard infarc 5nr12=cholestisti
    > tis
    > icdx5nr5 icdx5nr12

```

variable name	storage type	display format	value label	variable label
icdx3nr5	byte	%8.0g		icdx3nr==hypertension
icdx3nr11	byte	%8.0g		icdx3nr==577.1 chronic pancreatitis
icdx4nr7	byte	%8.0g		icdx4nr==acute myocardial infarct
icdx5nr5	byte	%8.0g		icdx5nr==hypertension
icdx5nr12	byte	%8.0g		icdx5nr==575.1 cholecystitis

```

641 .          set more off

642 . // some items were dropped owing to collinearity -Andrushevskiy and some icd
    > x items
643 . stcox icdx3nr5 icdx3nr11 icdx4nr7 ///      //icdx3nr5, icdx5nr5 = hypertensi
    > on   icdx3nr11=chronic pancreatitis icdx4nr7=myocard infarc  5nr12=cholestis
    > titis
    >   icdx5nr5 icdx5nr12 if gender==2, nolog

```

```

        failure _d: desdep25
      analysis time _t: tf
    exit on or before: time .
              id: id

```

Cox regression -- Breslow method for ties

```

No. of subjects =          186                Number of obs   =          186
No. of failures =          182
Time at risk   =          2360

LR chi2(5)      =          19.23
Prob > chi2     =          0.0017

Log likelihood  =  -788.40871

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
icdx3nr5	2.081883	.6867055	2.22	0.026	1.090659	3.973962
icdx3nr11	3.363755	2.42621	1.68	0.093	.8182188	13.82864
icdx4nr7	55.56689	62.24548	3.59	0.000	6.184555	499.2564
icdx5nr5	3.363755	2.42621	1.68	0.093	.8182188	13.82864
icdx5nr12	5.248423	2.710823	3.21	0.001	1.907134	14.44363

```

644 . estat phtest, detail

```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
icdx3nr5	-0.00086	0.00	1	0.9908
icdx3nr11	0.00967	0.02	1	0.8963
icdx4nr7	-0.00067	0.00	1	0.9929
icdx5nr5	0.00967	0.02	1	0.8963
icdx5nr12	-0.02356	0.10	1	0.7530
global test		0.14	5	0.9996


```
645 . estat concordance
```

```
      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
                   id:  id
```

```
Harrell's C concordance statistic
```

```
Number of subjects (N)           =    186
Number of comparison pairs (P)    =    15940
Number of orderings as expected (E) =    2350
Number of tied predictions (T)    =    12999
```

```
Harrell's C = (E + T/2) / P =    .5552
Somers' D =    .1104
```

```
646 . matrix define f6bfmdbt = e(b)'
```

```
647 . matrix define f6fmdvt = e(V)
```

```
648 . str2d stcox icdx3nr5 icdx3nr11 icdx4nr7 ///      //icdx3nr5, icdx5nr5 = hype
> rtension icdx3nr11=chronic pancreatitis icdx4nr7=myocard infarc 5nr12=cho
> lestistitis
> icdx5nr5 icdx5nr12 if gender==2, nolog
```

```
R^2 (explained variation - D method): Cox model
```

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
11328	182	0.170333	0.063948	0.059790 0.299601	0.927	0.210

```
649 . local modtype6 Medical_Diag
```

```
650 . cap gen f6r2dt = r(r2)
```

```

651 . cap gen f6l1t = e(11)

652 . cap gen f6dft = e(rank)

653 . cap gen f65r2dcha = f6r2dt - f5r2dt

654 . replace f65r2dcha = f6r2dt - f5r2dt
    (0 real changes made)

655 .
656 . label var f65r2dcha "R square chnge bet female trimmed models of `modtype6'
    > and `modtype5'"
    note: label truncated to 80 characters

657 . qui : {
Difference between female trimmed models
*****
Difference between level 6 and level 5 male full models:
Difference between Medical_Diag
and Self-Perceived Illnesses models
f6r2dt = .17033306
f5r2dt = .11425582
Pseudo R^2 change:
f6r2dt - f5r2dt = -.01949504
*****

658 . local tr trimmed

659 . qui : {
Between Major_negative_life_events and geosocidemog female trimmed models:
f1r2dt = .15346491
f2r2dt = .15346491
f21r2dcha = -.02746414
Between stress_and_hassles and Major_negative_life_events female trimmed model
> s:
f3r2dt = .06714559
f32r2dcha = -.05885519
Between buffers_and_supports and stress_and_hassles female trimmed models:
f4r2pt = .00251654
f43r2ptcha = -.00980158
Between Self-Perceived Illnesses and buffers_and_supports female trimmed model
> s:
f5r2pt = .04814757
f43r2ptcha = -.05284315
Between Medical_Diag and Self-Perceived Illnesses female trimmed models:
f6r2pt = .26219413
f65r2pfcha = .14793831

```

```

660 . local tr trimmed

661 . qui : {
    Adding Major_negative_life_events to geosocidemog female trimmed models:
    f1r2pt = .0539759
    f2r2pt = .01692335
    Adding stress_and_hassles to Major_negative_life_events female trimmed models:
    f3r2pt = .01231812
    Adding buffers_and_supports to stress_and_hassles female trimmed models:
    f4r2pt = .00251654
    Adding Self-Perceived Illnesses to buffers_and_supports female trimmed models:
    f5r2pt = .04814757
    Adding Medical_Diag to Self-Perceived Illnesses female trimmed models:
    f6r2pt = .26219413

662 .
663 . di "{hline}"

```

```

664 . di as input "*--chunk ---7 ----- Male Health behaviors -----mhb-----
> -----"
    *--chunk ---7 ----- Male Health behaviors -----mhb-----

665 . di as input "The trimmed model"
    The trimmed model

666 . set more off

667 . * waves 1 2 and 3
668 . des contw3

```

variable name	storage type	display format	value label	variable label
contw3	byte	%15.0g	LABC	use of any contraception method in 1997-now

```
669 . stcox contw3 if gender==1, nolog
```

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
                id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           154                Number of obs   =           154
No. of failures =           152
Time at risk    =           1980

Log likelihood   =  -632.54994                LR chi2(1)         =           8.23
                                                Prob > chi2        =           0.0041

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
contw3	1.614892	.268431	2.88	0.004	1.165882	2.236825

```
670 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
contw3	-0.05168	0.41	1	0.5195
global test		0.41	1	0.5195

```
671 . estat concordance
```

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
                id:  id

```

Harrell's C concordance statistic

```

Number of subjects (N)           =           154
Number of comparison pairs (P)   =           10789
Number of orderings as expected (E) =           3672
Number of tied predictions (T)   =           5202

```

Harrell's C = (E + T/2) / P = .5814
 Somers' D = .1629

672 .
 673 . str2d stcox contw3 if gender==1, nolog

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
10569	152	0.057196	0.037580	0.006079 0.146631	0.504	0.176

```

674 . matrix define m6bhdbt = e(b)'
675 . matrix define m6mhbdvt = e(V)
676 . local modtypdte7 Health_Behaviors
677 . cap drop m7r2dt
678 . cap gen m7r2dt = r(r2)
679 . cap gen m7l1t = e(l1)
680 . cap gen m7dft = e(rank)
681 . cap gen m76r2dcha = m7r2dt - m6r2dt
682 . local tr trimmed
683 .
684 .
685 . label var m76r2dcha "R square chnge bet male `tr' models of `modtype7' and `
    > modtype6'"

686 . qui : {
Difference between male trimmed models
*****
Difference between level 7 and level 6 male trimmed models:
Difference between
and Medical_Diag models
m7r2dt = .0571961
m6r2dt = .15666422
Pseudo R^2 change:
m7r2dt - m6r2dt = -.09946812
*****

```

```

687 .
688 .
689 . qui : {
    Between Major_negative_life_events and geosocidemog male trimmed models:
    m1r2dt = .02967568
    m2r2dt = .10885216
    m21r2dcha = .07917648
    Between stress_and_hassles and Major_negative_life_events male trimmed models:
    m3r2dt = .06568393
    m32r2dcha = -.04316823
    Between buffers_and_supports and stress_and_hassles male trimmed models:
    m4r2dt = .0495838
    m43r2dcha = -.01610013
    Between Self-Perceived Illnesses and buffers_and_supports male trimmed models:
    m5r2dt = .14155276
    m54r2dcha = .09196895
    Between Medical_Diag and Self-Perceived Illnesses male trimmed models:
    m6r2dt = .15666422
    m65r2dcha = .01511146
    m7r2dt = .0571961
    m76r2dcha = -.09946813

690 .
691 . qui : {
    Adding Major_negative_life_events to geosocidemog male trimmed models:
        m1r2pt = .0225024
        m2r2pt = .01579614
    Adding stress_and_hassles to Major_negative_life_events male trimmed models:
        m3r2pt = .17381422
    Adding buffers_and_supports to stress_and_hassles male trimmed models:
        m4r2pt = .18195252
    Adding Self-Perceived Illnesses to buffers_and_supports male trimmed models:
        m5r2pt = .13856983
    Adding Medical_Diag to Self-Perceived Illnesses male trimmed models:
        m6r2pt = .1550981
    Adding to Medical_Diag male trimmed models:
        m7r2pt = .00646096

```

```

692 .
693 .
694 . di as input "*--chunk ---7 ----- Female Health behaviors -----fhb---
> -----"
*--chunk ---7 ----- Female Health behaviors -----fhb-----

695 .
696 . di as input "The female health behaviors trimmed model"
The female health behaviors trimmed model

697 .
698 . set more off

699 . stcox ncontw2 if gender==2, nolog // washed out

```

```

        failure _d: desdep25
      analysis time _t: tf
exit on or before: time .
              id: id

```

Cox regression -- Breslow method for ties

```

No. of subjects =          186                Number of obs   =          186
No. of failures =          182
Time at risk    =          2360

                                      LR chi2(1)      =          0.71
Log likelihood   = -797.66956                  Prob > chi2      =          0.3987

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
ncontw2	.8860257	.1267342	-0.85	0.398	.6694117	1.172734

```

700 . estat phtest, detail

```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
ncontw2	-0.06961	0.83	1	0.3623
global test		0.83	1	0.3623

```

701 .
702 . matrix define f7fbhdbt = e(b)'

703 . matrix define f7fhbdvt = e(V)

704 . local modtype7 Health_Behaviors

705 . str2d stcox ncontw2 if gender==2, nolog

R^2 (explained variation - D method): Cox model



| Obs   | Events | R^2      | Std. err. | 95% conf. interval | D     | SE    |
|-------|--------|----------|-----------|--------------------|-------|-------|
| 11328 | 182    | 0.003084 | 0.007675  | 0.000009 0.035518  | 0.114 | 0.142 |



706 . cap gen f7r2dt = r(r2)

707 . cap gen f7l1t= e(l1)

708 . cap gen f7dft = e(rank)

709 . gen f76r2dcha = f7r2dt - f6r2dt

710 . local tr trimmed

711 .
712 .
713 . label var m76r2ptcha "R square chnge bet female `tr' models of `modtype7' an
> d `modtype6'"

714 . qui : {
Difference between male trimmed models
*****
Difference between level 7 and level 6 male trimmed models:
Difference between Health_Behaviors
and Medical_Diag models
f7r2pt = .26283634
f6r2pt = .26219413
Pseudo R^2 change:
f7r2pt - f6r2pt = .00064221
*****

```



```

715 . local tr trimmed

716 .
717 . qui : {
    Between Major_negative_life_events and geosocidemog female trimmed models:
    f1r2pt = .0539759
    f2r2pt = .01692335
    f21r2ptcha = -.03705255
    Between stress_and_hassles and Major_negative_life_events female trimmed model
    > s:
    f3r2pt = .17381422
    f32r2ptcha = -.00460523
    Between buffers_and_supports and stress_and_hassles female trimmed models:
    f4r2pt = .00251654
    f43r2ptcha = -.00980158
    Between Self-Perceived Illnesses and buffers_and_supports female trimmed model
    > s:
    f5r2pt = .04814757
    f43r2ptcha = -.05284315
    Between Medical_Diag and Self-Perceived Illnesses female trimmed models:
    f6r2pt = .1550981
    f65r2ptcha = .01652826
    f7r2pt = .26283634
    f76r2ptcha = .00064221

718 .
719 . qui : {
    Adding Major_negative_life_events to geosocidemog female trimmed models:
        f1r2pt = .0539759
        f2r2pt = .01692335
    Adding stress_and_hassles to Major_negative_life_events female trimmed models:
        f3r2pt = .01231812
    Adding buffers_and_supports to stress_and_hassles female trimmed models:
        f4r2pt = .00251654
    Adding Self-Perceived Illnesses to buffers_and_supports female trimmed models:
        f5r2pt = .04814757
    Adding Medical_Diag to Self-Perceived Illnesses female trimmed models:
        f6r2pt = .26219413
    Adding Health_Behaviors to Medical_Diag female trimmed models:
        f7r2pt = .26283634

```

```

720 .
721 .
722 . di "{hline}"

```

```

723 . di as input "*=====Chunk 8    male model health scales=====" "
    *=====Chunk 8    male model health scales====="

724 .
725 .
726 . // working on the trimming of the male health scales
727 .
728 . di as input "*=====Chunk 8    full male model health scales=====" "
    *=====Chunk 8    full male model health scales====="

729 . di as input "*--chunk ---8 ----- Male Health scales -----mhs-----
    > -----"
    *--chunk ---8 ----- Male Health scales -----mhs-----

730 . di as input "Trimmed"
    Trimmed

731 . des CSavoid BSIposymp BSIips  MiPTSD

```

variable name	storage type	display format	value label	variable label
CSavoid	byte	%9.0g		Coping Avoidance subscale
BSIposymp	int	%9.0g		Brief Symptom inventory positive symptom total subscale
BSIips	byte	%9.0g		Basic symptom invenstory interpersonal sensitivity subscale
MiPTSD	byte	%9.0g		Mississippi post-traumatic stress disorder scale

```

732 . set more off

```

```

733 .      * waves 1 2 and 3
734 . stcox CSprbslv WHPel WHPer MiPTSD  if gender==1, nolog

```

```

      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
                   id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           153                Number of obs   =           153
No. of failures =           151
Time at risk    =           1978

LR chi2(4)      =           22.68
Log likelihood  =      -620.2684      Prob > chi2      =           0.0001

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
CSprbslv	1.049643	.0204408	2.49	0.013	1.010334	1.09048
WHPel	1.00781	.003101	2.53	0.011	1.00175	1.013906
WHPer	.9879022	.0064811	-1.86	0.064	.9752809	1.000687
MiPTSD	1.019473	.0076423	2.57	0.010	1.004604	1.034562

```

735 . estat phtest, detail

```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
CSprbslv	-0.06764	0.72	1	0.3947
WHPel	0.02024	0.07	1	0.7936
WHPer	-0.12547	2.43	1	0.1193
MiPTSD	0.06122	0.41	1	0.5217
global test		3.21	4	0.5233

```
736 . estat concordance
```

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
                id:  id

```

```
Harrell's C concordance statistic
```

```

Number of subjects (N)          =      153
Number of comparison pairs (P)   =     10639
Number of orderings as expected (E) =    6879
Number of tied predictions (T)   =       5

```

```

      Harrell's C = (E + T/2) / P =    .6468
          Somers' D =    .2936

```

```
737 .           // smoking aborw beer and liq pills items cause crashes
```

```
>
```

```
738 .
```

```
739 .
```

```
740 . matrix define m8mhsbt = e(b)'
```

```
741 . matrix define m8mhsdvt = e(V)
```

```
742 . local modtype Health_Scales
```

```
743 . str2d stcox CSprbslv WHPel WHPer MiPTSD if gender==1, nolog
```

```
R^2 (explained variation - D method): Cox model
```

Obs	Events	R^2	Std. err.	95% conf. interval		D	SE
10507	151	0.101358	0.037563	0.038503	0.181924	0.687	0.142

```
744 . cap gen m8r2dt = r(r2)
```

```

745 . cap gen m8l1t = e(l1)

746 . cap gen m8dft = e(rank)

747 . cap gen m87r2dcha = m8r2dt - m8r2dt

748 .
749 . label var m76r2dcha "R square chnge bet male full models of `modtype7' and `
    > modtype6'"

750 . qui : {
    Difference between male full models
    *****
    Difference between level 7 and level 6 male full models:
    Difference between Health_Behaviors
    and Medical_Diag models
    m8r2dt = .10135787
    m7r2dt = .0571961
    Pseudo R^2 change:
    m8r2dt - m7r2dt = .04416177
    *****

751 . local tr trimmed

752 .
753 . qui : {
    Between Major_negative_life_events and geosocidemog male trimmed models:
    m1r2dt = .02967568
    m2r2dt = .10885216
    m21r2dcha = .07917648
    Between stress_and_hassles and Major_negative_life_events male trimmed models:
    m3r2dt = .06568393
    m32r2dcha = -.04316823
    Between buffers_and_supports and stress_and_hassles male trimmed models:
    m4r2dt = .0495838
    m43r2dcha = -.01610013
    Between Self-Perceived Illnesses and buffers_and_supports male trimmed models:
    m5r2dt = .20506182
    m43r2dcha = .09196895
    Between Medical_Diag and Self-Perceived Illnesses male trimmed models:
    m6r2dt = .15666422
    m65r2dcha = .01511146
    m7r2dt = .29739588
    m76r2dcha = -.09946813
    m8r2dt = .29653504
    m87r2dcha = 0

```

```

754 .
755 . qui : {
    Adding Major_negative_life_events to geosocidemog male trimmed models:
    m1r2pf = .0464948
    m2r2pf = .1194814
    Adding stress_and_hassles to Major_negative_life_events male trimmed models:
    m3r2pf = .17696157
    Adding buffers_and_supports to stress_and_hassles male trimmed models:
    m4r2pt = .18195252
    Adding Self-Perceived Illnesses to buffers_and_supports male trimmed models:
    m5r2pf = .20506182
    Adding Medical_Diag to Self-Perceived Illnesses male trimmed models:
    m6r2pf = .24497625
    Adding Medical_Diag to Self-Perceived Illnesses male trimmed models:
    m6r2pf = .24497625
    Adding Health_Behaviors to Medical_Diag male trimmed models:
    m7r2pf = .29739588
    Adding to Health_Behaviors male trimmed models:
    m8r2pf = .29653504

756 .
757 . di as input "*--chunk ---8 ----- Female Health scales -----fhs-----
    > -----"
    *--chunk ---8 ----- Female Health scales -----fhs-----

758 .
759 . di as input " Chunk 8 Female trimmed health scales model"
    Chunk 8 Female trimmed health scales model

760 . cap drop ptsdXoc

761 . gen ptsdXoc = MiPTSD*BSIoc

762 . cap drop ptsdXanx

763 . gen ptsdXanx = MiPTSD*BSIanx

```

```

764 . cap drop ptsdXer
765 . gen ptsdXer = MiPTSD*WHPer
766 . cap drop ptsdXsoma
767 . cap gen ptsdXsoma = MiPTSD*BSIsoma
768 . label var ptsdXsoma "Cross-product interaction of MiPTSD and BSIsoma"
769 . label var ptsdXanx "Cross-product interaction of MiPTSD and BSIanx"
770 . label var ptsdXer "Cross-product interaction of MiPTSD and BSier"
771 . des WHPer BSIanx MiPTSD ptsdXanx

```

variable name	storage type	display format	value label	variable label
WHPer	float	%9.0g		Wtd Health Profile Emotional reaction Pt 1 subscale
BSIanx	byte	%9.0g		Basic symptom inventory Anxiety subscale
MiPTSD	byte	%9.0g		Mississippi post-traumatic stress disorder scale
ptsdXanx	float	%9.0g		Cross-product interaction of MiPTSD and BSIanx

```

772 . set more off
773 . // some items were dropped owing to collinearity -Andrushevskiy and some icd
    > x items
774 . // sometimes ptsd alone will be significant
775 . stcox MiPTSD if gender==2, iterate(20) nolog

```

```

        failure _d: desdep25
    analysis time _t: tf
exit on or before: time .
            id: id

```

Cox regression -- Breslow method for ties

No. of subjects =	186	Number of obs =	186
No. of failures =	182		
Time at risk =	2360		
		LR chi2(1) =	10.95
Log likelihood =	-792.55087	Prob > chi2 =	0.0009

<u>_t</u>	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
MiPTSD	1.020699	.0061914	3.38	0.001	1.008636	1.032907

```
776 . di e(r2_p)
      .0068605
```

```
777 . // sometimes PTSD may be partly masked by the other variables or their inter
      > actions
```

```
778 . stcox MiPTSD BSIsoma if gender==2, iterate(20) nolog
```

```
      failure _d: desdep25
      analysis time _t: tf
      exit on or before: time .
      id: id
```

Cox regression -- Breslow method for ties

```
No. of subjects =          186                Number of obs   =          186
No. of failures =          182
Time at risk    =          2360
Log likelihood   =  -789.79253                LR chi2(2)          =          16.47
                                                Prob > chi2         =          0.0003
```

<u>_t</u>	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
MiPTSD	1.011624	.0071736	1.63	0.103	.9976608	1.025782
BSIsoma	1.039199	.0166401	2.40	0.016	1.007091	1.07233

```
779 . di e(r2_p)
      .01031696
```

```
780 . cap drop PTSDXoc
```



```

781 . gen ptsdXoc = MiPTSD*BSIoc
782 . cap drop ptsdXanx
783 . gen ptsdXanx = MiPTSD*BSIanx
784 . cap drop ptsdXer
785 . gen ptsdXer = MiPTSD*WHPer
786 . cap drop ptsdXpain
787 . gen ptsdXpain = MiPTSD*WHPpain
788 . pwcorr MiPTSD BSIoc BSIanx WHPpain ptsdXpain ptsdXoc ptsdXanx, sig

```

	MiPTSD	BSIoc	BSIanx	WHPpain	ptsdXp~n	ptsdXoc	ptsdXanx
MiPTSD	1.0000						
BSIoc	0.6330 0.0000	1.0000					
BSIanx	0.5500 0.0000	0.6433 0.0000	1.0000				
WHPpain	0.4125 0.0000	0.4707 0.0000	0.4502 0.0000	1.0000			
ptsdXpain	0.5630 0.0000	0.5352 0.0000	0.5203 0.0000	0.9607 0.0000	1.0000		
ptsdXoc	0.8389 0.0000	0.9309 0.0000	0.6567 0.0000	0.4777 0.0000	0.6030 0.0000	1.0000	
ptsdXanx	0.7983 0.0000	0.6931 0.0000	0.9190 0.0000	0.4797 0.0000	0.6138 0.0000	0.8134 0.0000	1.0000

```

789 . // sometimes PTSD may be fully cloaked or masked by the other variables
790 . stcox MiPTSD BSIoc ptsdXoc if gender==2, iterate(20) nolog

```

```

        failure _d:  desdep25
      analysis time _t:  tf
    exit on or before:  time .
                id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           186                Number of obs   =           186
No. of failures =           182
Time at risk    =           2360

                                      LR chi2(3)      =           20.99
Log likelihood   =  -787.53015                    Prob > chi2      =           0.0001

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
MiPTSD	1.016642	.0167145	1.00	0.315	.984404	1.049935
BSIoc	1.106309	.0796857	1.40	0.161	.960651	1.274052
ptsdXoc	.9993537	.0011996	-0.54	0.590	.9970053	1.001708

```

791 . //sometimes PTSD will be enhanced by the other variables and their interacti
    > on
792 . stcox MiPTSD BSIanx ptsdXanx if gender==2, iterate(20) nolog

```

```

        failure _d:  desdep25
      analysis time _t:  tf
    exit on or before:  time .
                id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           186                Number of obs   =           186
No. of failures =           182
Time at risk    =           2360

                                      LR chi2(3)      =           21.31
Log likelihood   =  -787.36898                    Prob > chi2      =           0.0001

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
MiPTSD	1.033518	.0183175	1.86	0.063	.998233	1.070051
BSIanx	1.215102	.105569	2.24	0.025	1.024848	1.440674
ptsdXanx	.9978934	.0014099	-1.49	0.136	.9951339	1.000661

```
793 . di e(r2_p)
      .01335388
```

```
794 . //sometimes PTSD will be enhanced by the other variables and their interacti
      > on
```

```
795 . stcox MiPTSD WHPpain ptsdXpain if gender==2, iterate(20) nolog
```

```
      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
      id:  id
```

Cox regression -- Breslow method for ties

```
No. of subjects =          186          Number of obs   =          186
No. of failures =          182
Time at risk    =          2360
Log likelihood   =  -789.78473
LR chi2(3)      =          16.48
Prob > chi2     =          0.0009
```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
MiPTSD	1.028712	.0108541	2.68	0.007	1.007656	1.050207
WHPpain	1.0353	.0176512	2.03	0.042	1.001276	1.07048
ptsdXpain	.9994739	.0003086	-1.70	0.088	.9988693	1.000079

```
796 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
MiPTSD	-0.13941	4.12	1	0.0423
WHPpain	-0.10334	2.09	1	0.1484
ptsdXpain	0.09645	1.88	1	0.1705
global test		5.84	3	0.1197

```
797 . estat concordance
```

```
      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
                   id:  id
```

```
Harrell's C concordance statistic
```

```
Number of subjects (N)           =    186
Number of comparison pairs (P)    =    15940
Number of orderings as expected (E) =    10043
Number of tied predictions (T)    =    66
```

```
Harrell's C = (E + T/2) / P =    .6321
Somers' D =    .2642
```

```
798 . // different flavors of the syndrome are available depending upon the types
      > of
799 . // conditions in which they arise and the other factors at play at the time
800 .
801 . ***** Note bene: *****
      > *****
802 . // Just because some combinations are more variance encompassing than others
      > does *
803 . // not mean that the less powerful cannot occur or will not occasionally occur
      > r.  *
804 . // the question may be which flavor of what syndrome will be characteristic
      > of  *
805 . // the phenomenon. What conditions are necessary and which conditions are
      >    *
806 . // sufficient for a particular interaction to emerge.
      >    *
807 . // some interactions will suppress the significance of the main effects
      >    *
808 . // others may reinforce the significance of the main effects
      >    *
```

```

809 . // others may reinforce one variable and supress the other
      >      *
810 . // Depending upon the circumstances, different scenarios are plausible and
      >      *
811 . // different interactions may emerge
      >      *
812 . // Certain conditions may be necessary to effect a particular interaction r
      > ather *
813 . // than another.
      >      *
814 . // Just because an interaction is possible does not mean that it is probabl
      > e      *
815 . // These questions remain to be explored before a definitive specification
      > of      *
816 . // the situation can be posed.
      >
      *
817 . *****
      > *****
818 . str2d stcox MiPTSD WHPpain ptsdXpain if gender==2, iterate(20) nolog

R^2 (explained variation - D method): Cox model

      Obs      Events      R^2      Std. err.  95% conf. interval      D      SE
-----
    11328      182    0.062416    0.028433    0.017942    0.126682    0.528    0.128

819 . matrix define f8fbhdbt = e(b)'
820 . matrix define f8fhbdvt = e(V)
821 . local modtype8 Health_scales
822 . cap drop f8r2dt
823 . gen f8r2dt = r(r2)

```

```

824 . di f8r2dt
      .06241624

825 . cap gen f8l1t= e(11)

826 . cap gen f8dft = e(rank)

827 . di f8r2dt
      .06241624

828 . cap gen f87r2dcha = f8r2dt - f7r2dt

829 . di f87r2dcha
      .05933208

830 . local tr trimmed

831 .
832 .
833 . label var m87r2ptcha "R square chnge bet female `tr' models of `modtype8' an
      > d `modtype7'"

834 . qui : {
      Difference between male trimmed models
      *****
      Difference between level 8 and level 7 male trimmed models:
      Difference between Health_scales
      and Health_Behaviors models
      f8r2dt = .06241624
      f7r2dt = .00308416
      Pseudo R^2 change:
      f8r2dt - f7r2dt = .05933208
      *****

835 .
836 .
837 . qui : {
      Between Major_negative_life_events and geosocidemog female trimmed models:
      f1r2dt = .15346491
      f2r2dt = .12600078
      f21r2dcha = -.02746414
      Between stress_and_hassles and Major_negative_life_events female trimmed model
      > s:
      f3r2dt = .06568393
      f32r2dcha = -.05885519
      Between buffers_and_supports and stress_and_hassles female trimmed models:
      f4r2dt = .00942887
      f43r2dcha = -.05771671
      Between Self-Perceived Illnesses and buffers_and_supports female trimmed model

```

```

> s:
  f5r2dt = .1898281
  f43r2dcha = .18039922
Between Medical_Diag and Self-Perceived Illnesses female trimmed models:
  f6r2dt = .15666422
  f65r2dcha = .01511146
  f7r2dt = .00308416
  f76r2dcha = -.1672489
  f8r2dt = .06241624
  f87r2dcha = .05933208

838 .
839 . qui : {
Adding Major_negative_life_events to geosocidemog female trimmed models:
      f1r2dt = .15346491
      f2r2dt = .12600078
Adding stress_and_hassles to Major_negative_life_events female trimmed models:
      f3r2dt = .06714559
Adding buffers_and_supports to stress_and_hassles female trimmed models:
      f4r2dt = .00942887
Adding Self-Perceived Illnesses to buffers_and_supports female trimmed models:
      f5r2dt = .1898281
Adding Medical_Diag to Self-Perceived Illnesses female trimmed models:
      f6r2dt = .17033306
Adding Health_Behaviors to Medical_Diag female trimmed models:
      f7r2dt = .00308416
Adding Health_scales to Health_Behaviors female trimmed models:
      f8r2dt = .06241624

840 .
841 . di "{hline}"

842 . *****-----chunk 9 ** Male risk awareness trimmed model*****
> *****
843 . di as input "RISK Awareness"
RISK Awareness

```

```

844 .
845 . di as input "*====Chunk 9   trimmed male gen risk radiation Chornobyl ====
    > == "
    *====Chunk 9   trimmed male gen risk radiation Chornobyl =====

846 . di as input "*--chunk ---9 ----- Male gen risk radiation -----mgrrc-
    > ---"
    *--chunk ---9 ----- Male gen risk radiation -----mgrrc----

847 . di as input "Trimmed set male model"
    Trimmed set male model

848 . set more off

849 .      * waves 1 2 and 3
850 . des defnw2 efradw2 ecprw3 polprw3 carcin trgovw1

```

variable name	storage type	display format	value label	variable label
defnw2	byte	%8.0g		* consider hazardous (in percent) - deficiencies in essential nutrition in 1996
efradw2	byte	%8.0g		consider hazardous (in percent) - effects of radiation in 1996
ecprw3	byte	%8.0g		consider hazardous (in percent) - economic problems, NOW
polprw3	byte	%8.0g		consider hazardous (in percent) - political problems NOW
carcin	byte	%8.0g		* a person exposed to carcinogen is likely to get cancer (% of agreement)
trgovw1	byte	%8.0g		level of trust in government reports about chornobyl in time period 1976-1986

```

851 .

```



```
852 . stcox defnw2 efradw2 ecprw3 polprw3 trgovw1 if gender==1, iterate(20) nolog
```

```

      failure _d:  desdep25
analysis time _t:  tf
exit on or before: time .
              id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           139                Number of obs   =           139
No. of failures =           137
Time at risk    =           1877

LR chi2(5)      =           13.34
Log likelihood  = -554.04914      Prob > chi2       =           0.0204

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
defnw2	.9816901	.0077102	-2.35	0.019	.9666941	.9969187
efradw2	1.014139	.0051729	2.75	0.006	1.004051	1.024329
ecprw3	1.018219	.008312	2.21	0.027	1.002057	1.034641
polprw3	.9896777	.0049962	-2.06	0.040	.9799336	.9995187
trgovw1	1.005287	.0022805	2.32	0.020	1.000828	1.009767

```
853 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
defnw2	-0.00827	0.02	1	0.9025
efradw2	0.06782	0.56	1	0.4527
ecprw3	0.01938	0.08	1	0.7769
polprw3	-0.07369	0.74	1	0.3904
trgovw1	-0.01562	0.03	1	0.8594
global test		0.94	5	0.9673

```

854 .
855 . cap drop m9r2dt

856 . matrix define m9mgrrcbt = e(b)'

857 . matrix define m9mgrrcvt = e(V)

858 . local modtype9 Gen_rad_risk

859 . str2d stcox defnw2 efradw2 ecprw3 polprw3 trgoww1 if gender==1, iterate(20)
    > nolog

```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
9545	137	0.076490	0.037768	0.018424 0.161327	0.589	0.157

```

860 . cap gen m9r2dt = r(r2)

861 . di m9r2dt
    .07649028

862 . di m9r2dt
    .07649028

863 . cap gen m9l1f = e(l1)

864 . cap gen m9dff = e(rank)

865 . cap drop m98r2dcha

866 . cap gen m98r2dcha = m9r2dt - m8r2dt

867 . di m98r2dcha
    -.02486759

```

```

868 . local tr trimmed

869 .
870 .
871 . label var m98r2dcha "R square chnge bet male trimmed models of `modtype9' an
    > d `modtype8'"

872 . qui : {
    Difference between male trimmed models
    *****
    Difference between level 9 and level 8 male trimmed models:
    Difference between Gen_rad_risk
    and Health_scales models
    m9r2dt = .07649028
    m8r2dt = .10135787
    Pseudo R^2 change:
    m9r2dt - m8r2dt = -.02486759
    *****

873 .
874 . qui : {
    Between Major_negative_life_events and geosocidemog male trimmed models:
    m1r2dt = .02967568
    m2r2dt = .10885216
    m21r2dcha = .07917648
    Between stress_and_hassles and Major_negative_life_events male trimmed models:
    m3r2dt = .06568393
    m32r2dcha = -.04316823
    Between buffers_and_supports and stress_and_hassles male trimmed models:
    m4r2dt = .0495838
    m43r2dcha = -.01610013
    Between Self-Perceived Illnesses and buffers_and_supports male trimmed models:
    m5r2dt = .14155276
    m43r2dcha = .09196895
    Between Medical_Diag and Self-Perceived Illnesses male trimmed models:
    m6r2dt = .15666422
    m65r2dcha = .01511146
    m7r2dt = .0571961
    m76r2dcha = -.09946813
    m8r2dt = .10135787
    m87r2dcha = 0
    m9r2dt = .07649028
    m98r2dcha = -.02486759

```

```

875 .
876 . qui : {
    Adding Major_negative_life_events to geosocidemog male trimmed models:
    m1r2dt = .02967568
    m2r2dt = .10885216
    Adding stress_and_hassles to Major_negative_life_events male trimmed models:
    m3r2dt = .06568393
    Adding buffers_and_supports to stress_and_hassles male trimmed models:
    m4r2dt = .0495838
    Adding Self-Perceived Illnesses to buffers_and_supports male trimmed models:
    m5r2dt = .14155276
    Adding Medical_Diag to Self-Perceived Illnesses male trimmed models:
    m6r2dt = .15666422
    Adding Medical_Diag to Self-Perceived Illnesses male trimmed models:
    m6r2dt = .15666422
    Adding Health_Behaviors to Medical_Diag male trimmed models:
    m7r2dt = .0571961
    Adding Health_scales to Health_Behaviors male trimmed models:
    m8r2dt = .10135787
    Adding Gen_rad_risk to Health_scales male trimmed models:
    m9r2dt = .07649028

877 .
878 .
879 .
880 . di as input "*--chunk ---10 -----female radiation issues -----frrrdd
    > -----"
    *--chunk ---10 -----female radiation issues -----frrrdd-----
    > ---

881 . di as input "General Model tests radiation issues "
    General Model tests radiation issues

882 .
883 .
884 .
885 . stcox radhlw2 radfmw2 woman if gender==2, iterate(20) nolog

        failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                        id:  id

Cox regression -- Breslow method for ties

```

```

No. of subjects =          186
No. of failures =          182
Time at risk    =          2360
Log likelihood   =    -790.62088

Number of obs    =          186
LR chi2(3)       =          14.81
Prob > chi2      =          0.0020

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
radhlw2	.9914244	.0033333	-2.56	0.010	.9849133	.9979785
radfmw2	1.009704	.0038623	2.52	0.012	1.002163	1.017302
woman	1.006174	.0028103	2.20	0.028	1.000681	1.011697

```
886 . estat phtest
```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	1.75	3	0.6253

```
887 . estat concordance
```

```

failure _d:  desdep25
analysis time _t:  tf
exit on or before: time .
id:  id

```

Harrell's C concordance statistic

```

Number of subjects (N)      =          186
Number of comparison pairs (P) =        15940
Number of orderings as expected (E) =        9279
Number of tied predictions (T) =          479

```

```

Harrell's C = (E + T/2) / P =        .5971
Somers' D =          .1943

```

```

888 .
889 .
890 . *****9. ***** General male risk awareness *****
    > *****
891 . di as input "Trimmed male model for generalrisk savvy -----
    > _"
    Trimmed male model for generalrisk savvy -----
892 . stcox defnw2 efradw2 polprw3 ecprw3 trgovw1 if gender==1, iterate(20) no
    > log

```

```

        failure _d: desdep25
      analysis time _t: tf
    exit on or before: time .
                id: id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           139                Number of obs   =           139
No. of failures =           137
Time at risk    =           1877
Log likelihood   =   -554.04914
LR chi2(5)       =           13.34
Prob > chi2      =           0.0204

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
defnw2	.9816901	.0077102	-2.35	0.019	.9666941	.9969187
efradw2	1.014139	.0051729	2.75	0.006	1.004051	1.024329
polprw3	.9896777	.0049962	-2.06	0.040	.9799336	.9995187
ecprw3	1.018219	.008312	2.21	0.027	1.002057	1.034641
trgovw1	1.005287	.0022805	2.32	0.020	1.000828	1.009767

```

893 .
894 . label var m98r2dcha "R square chnge bet female `tr' models of `modtype8' and
    > `modtype7'"

```

```

895 . qui : {
      Difference between male trimmed models
      *****
      Difference between level 9 and level 8 male trimmed models:
      Difference between Gen_rad_risk
      and Health_scales models
      m9r2dt = .07649028
      m8r2dt = .10135787
      Pseudo R^2 change:
      m9r2dt - m8r2dt = -.02486759
      *****

896 .
897 . di as input "Trimmed male model -----"
      Trimmed male model -----

898 . str2d stcox defnw1 defnw2 efradw3 ecprw3 trgoww1 if gender==1, iterate(
      > 20) nolog

      R^2 (explained variation - D method): Cox model

      Obs      Events      R^2      Std. err.  95% conf. interval      D      SE
      -----
      9545      137      0.052810      0.034749      0.005664      0.136076      0.483      0.168
      -----

899 . replace m9r2dt = r(r2)
      (21897 real changes made)

900 . label var m98r2dcha "R square chnge bet female `tr' models of `modtype8' and
      > `modtype7'"

901 . qui : {
      Difference between male trimmed models
      *****
      Difference between level 9 and level 8 male trimmed models:
      Difference between Gen_rad_risk
      and Health_scales models
      m9r2dt = .05281045
      m8r2dt = .10135787
      Pseudo R^2 change:
      m9r2dt - m8r2dt = -.04854742
      *****

```

```

902 .
903 .
904 . qui : {
    Between Major_negative_life_events and geosocidemog male trimmed models:
    m1r2dt = .02967568
    m2r2dt = .10885216
    m21r2dcha = .07917648
    Between stress_and_hassles and Major_negative_life_events male trimmed models:
    m3r2dt = .06568393
    m32r2dcha = -.04316823
    Between buffers_and_supports and stress_and_hassles female trimmed models:
    m4r2dt = .0495838
    m43r2dcha = -.01610013
    Between Self-Perceived Illnesses and buffers_and_supports female trimmed model
    > s:
    m5r2pt = .13856983
    m43r2ptcha = -.04338269
    Between Medical_Diag and Self-Perceived Illnesses female trimmed models:
    m6r2pt = .1550981
    m65r2ptcha = .01652826
    m7r2pt = .00646096
    m76r2ptcha = .13771795
    m8r2pt = .29292864
    m87r2ptcha = 0
    m8r2pt = .29292864
    m87r2ptcha = 0
    m9r2pt = .01189235
    m98r2ptcha = -.28103629

905 .
906 . qui : {
    Adding Major_negative_life_events to geosocidemog male trimmed models:
    m1r2pt = .0225024
    m2r2pt = .01579614
    Adding stress_and_hassles to Major_negative_life_events male trimmed models:
    m3r2pt = .17381422
    Adding buffers_and_supports to stress_and_hassles male trimmed models:
    m4r2pt = .18195252
    Adding Self-Perceived Illnesses to buffers_and_supports male trimmed models:
    m5r2pt = .13856983
    Adding Medical_Diag to Self-Perceived Illnesses male trimmed models:
    m6r2pt = .1550981
    Adding Health_Behaviors to Medical_Diag male trimmed models:
    m7r2pt = .00646096
    Adding Health_scales to Health_Behaviors male trimmed models:
    m8r2pt = .29292864
    Adding Gen_rad_risk to Health_scales male trimmed models:
    m9r2pt = .01189235

```



```

907 .
908 . ***** Chunk 9  general risk awareness for female trimmed models  "general ri
    > sk  awareness"
909 .
910 . di as input "Trimmed female model -----"
    Trimmed female model -----

911 . stcox woman polprw2 radw2 if gender==2 ,  iterate(20) nolog

        failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                        id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           186                Number of obs   =           186
No. of failures =           182
Time at risk    =           2360

                                LR chi2(3)        =           15.13
Log likelihood   =      -790.4608                Prob > chi2      =           0.0017

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
woman	1.006807	.0026148	2.61	0.009	1.001695	1.011945
polprw2	1.003977	.0019707	2.02	0.043	1.000122	1.007847
radw2	1.004335	.0022169	1.96	0.050	.999999	1.008689

```

912 . estat phtest

```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	3.97	3	0.2646

```

913 . cap drop f9r2pt
914 . matrix define f9mgrrcbt = e(b)'
915 . matrix define f9mgrrcvt = e(V)
916 . local modtype9 Gen_rad_risk
917 . str2d stcox woman polprw2 radw2 if gender==2 , iterate(20) nolog

```

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
11328	182	0.045651	0.023272	0.010746 0.099928	0.448	0.120

```

918 . cap gen f9r2dt = r(r2)
919 . di f9r2dt
      .04565085
920 . di f9r2dt
      .04565085
921 . cap gen f9llf = e(ll)
922 . cap gen f9dff = e(rank)
923 . cap drop f98r2dcha
924 . gen f98r2dcha = m9r2dt - m8r2dt
925 . di f98r2dcha
      -.04854742
926 . local tr trimmed

```

```

927 .
928 .
929 . label var f98r2dcha "R square chnge bet female trimmed models of `modtype9'
    > and `modtype8'"

930 . qui : {
    Difference between female trimmed models
    *****
    Difference between level 9 and level 8 female trimmed models:
    Difference between Gen_rad_risk
    and Health_scales models
    f9r2dt = .04565085
    f8r2dt = .06241624
    Pseudo R^2 change:
    f9r2dt - f8r2dt = -.01676539
    *****

931 .
932 . qui : {
    Between Major_negative_life_events and geosocidemog female trimmed models:
    f1r2dt = .15346491
    f2r2dt = .12600078
    f21r2dcha = -.02746414
    Between stress_and_hassles and Major_negative_life_events female trimmed model
    > s:
    f3r2dt = .06714559
    f32r2dcha = -.05885519
    Between buffers_and_supports and stress_and_hassles female trimmed models:
    f4r2dt = .00942887
    f43r2dcha = -.05771671
    Between Self-Perceived Illnesses and buffers_and_supports female trimmed model
    > s:
    f5r2dt = .1898281
    f43r2dcha = .18039922
    Between Medical_Diag and Self-Perceived Illnesses female trimmed models:
    f6r2dt = .17033306
    f65r2dcha = -.01949504
    f7r2dt = .00308416
    f76r2dcha = -.1672489
    f8r2dt = .06241624
    f87r2dcha = .05933208
    f9r2dt = .04565085
    f98r2dcha = -.04854742

```

```

933 .
934 . qui : {
    Adding Major_negative_life_events to geosocidemog female trimmed models:
    f1r2pt = .0539759
    f2r2pt = .01692335
    Adding stress_and_hassles to Major_negative_life_events female trimmed models:
    f3r2pt = .01231812
    Adding to stress_and_hassles female trimmed models:
    f4r2pt = .00251654
    Adding Self-Perceived Illnesses to buffers_and_supports female trimmed models:
    f5r2pt = .04814757
    Adding Medical_Diag to Self-Perceived Illnesses female trimmed models:
    f6r2pt = .26219413
    Adding Medical_Diag to Self-Perceived Illnesses female trimmed models:
    f6r2pt = .26219413
    Adding Health_Behaviors to Medical_Diag female trimmed models:
    f7r2pt = .26283634
    Adding Health_scales to Health_Behaviors female trimmed models:
    f8r2pt = .01032673
    Adding Gen_rad_risk to Health_scales female trimmed models:
    f9r2pt = .00947955

935 .
936 .
937 .
938 .
939 .
940 . *****
    > *****
941 . ***** chunk 10 Trimmmed Model for radiation and Chornobyl related
    > *
942 . ***** issues *****
    > *****
943 . di as input "-- Chunk 10 male radiation and Chornobyl risk model"
    -- Chunk 10 male radiation and Chornobyl risk model

944 .

```

```

945 . des goferw2 radchw3 radtlw1-radtlw3 radchw1-radchw3 radhlw1-radhlw3 radfmw1-
    > radfmw3

```

variable name	storage type	display format	value label	variable label
goferw2	byte	%8.0g		level of fear in percent from going outdoors in 1987-1996
radchw3	byte	%8.0g		believed % of polution related to chornobyl NOW
radtlw1	byte	%8.0g		believed % of cumulative radiation exposed to in a lifetime in 1986
radtlw2	byte	%8.0g		believed % of cumulative radiation exposed to in a lifetime in 1996
radtlw3	byte	%8.0g		believed % of cumulative radiation exposed to in a lifetime NOW
radchw1	byte	%8.0g		believed % of polution related to chornobyl in 1986
radchw2	byte	%8.0g		believed % of polution related to chornobyl in 1996
radchw3	byte	%8.0g		believed % of polution related to chornobyl NOW
radhlw1	byte	%8.0g		how much believed personal health is affected by radiation in 1986
radhlw2	byte	%8.0g		how much believed personal health is affected by radiation in 1996
radhlw3	byte	%8.0g		Observed
radfmw1	byte	%8.0g		how much believed family health is affected by radiation in 1986
radfmw2	byte	%8.0g		how much believed family health is affected by radiation in 1996
radfmw3	byte	%8.0g		how much believed family health is affected by radiation NOW

```
946 . stcox radw2 radchw2 radtlw3 if gender==1, iterate(20) nolog
```

```

      failure _d:  desdep25
analysis time _t:  tf
exit on or before: time .
              id:  id

```

Cox regression -- Breslow method for ties

```

No. of subjects =           149                Number of obs   =           149
No. of failures =           147
Time at risk    =           1905

Log likelihood   =   -601.23062                LR chi2(3)         =           19.36
                                                Prob > chi2        =           0.0002

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
radw2	1.009665	.0029245	3.32	0.001	1.003949	1.015413
radchw2	.9892434	.0032574	-3.28	0.001	.9828796	.9956483
radtlw3	1.007286	.0031668	2.31	0.021	1.001099	1.013512

```
947 .
```

```
948 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
radw2	0.02247	0.08	1	0.7804
radchw2	-0.01939	0.06	1	0.8056
radtlw3	-0.03564	0.20	1	0.6547
global test		0.73	3	0.8655

```

949 . cap drop m10r2pt
950 . gen m10r2pt = e(r2_p)
951 . matrix define m10bt = e(b)'
952 . matrix define m109vt = e(V)
953 . local modtype10 RadChRel
954 . str2d stcox radw2 radchw2 radtlw3 if gender==1, iterate(20) nolog

R^2 (explained variation - D method): Cox model



| Obs          | Events     | R^2             | Std. err.       | 95% conf. interval       | D            | SE           |
|--------------|------------|-----------------|-----------------|--------------------------|--------------|--------------|
| <b>10350</b> | <b>147</b> | <b>0.097227</b> | <b>0.039485</b> | <b>0.032576 0.182729</b> | <b>0.672</b> | <b>0.151</b> |



955 . di m10r2pt
.01584264

956 . cap gen m10r2dt = r(r2)

957 . di m9r2pt
.01189235

958 . cap gen m1011f = e(l1)

959 . cap gen m10dff = e(rank)

960 . cap drop m109r2ptcha

961 . cap gen m109r2dcha = m10r2dt - m9r2dt

962 . di m109r2dcha
.04441682

```

```

963 . local tr trimmed

964 . local tr trimmed

965 . label var m109r2dcha "R square chnge bet male `tr' models of `modtype10' and
    > `modtype9'"

966 . qui : {
    Difference between male trimmed models
    *****
    Difference between level 10 and level 9 male trimmed models:
    Difference between RadChRel
    and Gen_rad_risk models
    m10r2d = .09722728
    m10r2dt = .09722728
    m9r2dt = .05281045
    Pseudo R^2 change:
    m10r2dt - m9r2dt = .04441682
    *****

967 .
968 .
969 . qui : {
    Between Major_negative_life_events and geosocidemog male trimmed models:
    m1r2dt = .02967568
    m2r2dt = .10885216
    m21r2dcha = .07917648
    Between stress_and_hassles and Major_negative_life_events male trimmed models:
    m3r2dt = .06568393
    m32r2dcha = -.04316823
    Between buffers_and_supports and stress_and_hassles male trimmed models:
    m4r2dt = .0495838
    m43r2dcha = -.01610013
    Between Self-Perceived Illnesses and buffers_and_supports male trimmed models:
    m5r2dt = .14155276
    m43r2dcha = .09196895
    Between Medical_Diag and Self-Perceived Illnesses male trimmed models:
    m6r2dt = .15666422
    m65r2dcha = .01511146
    m7r2dt = .0571961
    m76r2dcha = -.09946813
    m8r2dt = .10135787
    m87r2dcha = 0
    m9r2dt = .05281045
    m98r2dcha = -.02486759
    m10r2dt = .09722728
    m109r2dcha = .04441682

```



```

970 .
971 . qui : {
    Adding Major_negative_life_events to geosocidemog male trimmed models:
        m1r2dt = .02967568
        m2r2dt = .10885216
    Adding stress_and_hassles to Major_negative_life_events male trimmed models:
        m3r2dt = .06568393
    Adding buffers_and_supports to stress_and_hassles male trimmed models:
        m4r2dt = .0495838
    Adding Self-Perceived Illnesses to buffers_and_supports male trimmed models:
        m5r2dt = .14155276
    Adding Medical_Diag to Self-Perceived Illnesses male trimmed models:
        m6r2dt = .15666422
    Adding Health_Behaviors to Medical_Diag male trimmed models:
        m7r2dt = .0571961
    Adding Health_scales to Health_Behaviors male trimmed models:
        m8r2dt = .10135787
    Adding Gen_rad_risk to Health_scales male trimmed models:
        m9r2dt = .05281045
    Adding RadChRel to Gen_rad_risk male trimmed models:
        m10r2dt = .09722728

972 .
973 .
974 . di as input "*-chunk 10 Female radiation and Chornobyl risk model"
    *-chunk 10 Female radiation and Chornobyl risk model

975 . di as input "The trimmed female model" // partial trimming to get it to run
    The trimmed female model

976 . set more off

977 .
978 . des goferw2 radchw3 radtlw1-radtlw3 radchw1-radchw3 toxic

```

variable name	storage type	display format	value label	variable label
goferw2	byte	%8.0g		level of fear in percent from going outdoors in 1987-1996
radchw3	byte	%8.0g		believed % of polution related to chornobyl NOW
radtlw1	byte	%8.0g		believed % of cumulative radiation exposed to in a lifetime in 1986
radtlw2	byte	%8.0g		believed % of cumulative radiation exposed to in a lifetime in 1996
radtlw3	byte	%8.0g		believed % of cumulative

radchw1	byte	%8.0g	radiation exposed to in a lifetime NOW believed % of polution related to chornobyl in 1986
radchw2	byte	%8.0g	believed % of polution related to chornobyl in 1996
radchw3	byte	%8.0g	believed % of polution related to chornobyl NOW
toxic	byte	%8.0g	all radioactive materials remain toxic for thousands of years (% of agreement)

```
979 . stcox toxic goferw2 radchw3 if gender==2, iterate(20)
```

```

      failure _d:  desdep25
analysis time _t:  tf
exit on or before: time .
              id:  id

```

```

Iteration 0:  log likelihood = -792.81677
Iteration 1:  log likelihood = -789.95721
Iteration 2:  log likelihood = -789.56805
Iteration 3:  log likelihood = -789.56575
Iteration 4:  log likelihood = -789.56575
Refining estimates:
Iteration 0:  log likelihood = -789.56575

```

Cox regression -- Breslow method for ties

No. of subjects =	185	Number of obs =	185
No. of failures =	181		
Time at risk =	2347		
		LR chi2(3) =	6.50
Log likelihood =	-789.56575	Prob > chi2 =	0.0896

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
toxic	.9985424	.0023031	-0.63	0.527	.9940385	1.003067
goferw2	1.009286	.0033927	2.75	0.006	1.002659	1.015958
radchw3	1.000491	.0023034	0.21	0.831	.9959861	1.005015

```
980 . estat phtest
```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	7.05	3	0.0702

```
981 . estat concordance
```

```
      failure _d: desdep25
    analysis time _t: tf
exit on or before: time .
              id: id
```

Harrell's C concordance statistic

```
Number of subjects (N)          =      185
Number of comparison pairs (P)   =     15758
Number of orderings as expected (E) =    9221
Number of tied predictions (T)   =     337
```

```
Harrell's C = (E + T/2) / P =    .5959
Somers' D =    .1917
```

```
982 . // some items were dropped owing to collinearity -Andrushevskiy and some icd
    > x items
```

```
983 .
```

```
984 .
```

```
985 . di as input "Fractional Polynomial Trimmed Female Adjustment"
    Fractional Polynomial Trimmed Female Adjustment
```

```
986 .
```

```
987 . stcox age goferw2 radchw3 if gender==2, iterate(20)
```

```
      failure _d: desdep25
    analysis time _t: tf
exit on or before: time .
              id: id
```

```

Iteration 0:  log likelihood = -792.81677
Iteration 1:  log likelihood = -784.8265
Iteration 2:  log likelihood = -784.61074
Iteration 3:  log likelihood = -784.61002
Refining estimates:
Iteration 0:  log likelihood = -784.61002

```

Cox regression -- Breslow method for ties

```

No. of subjects =           185                Number of obs   =           185
No. of failures =           181
Time at risk    =           2347

LR chi2(3)      =           16.41
Log likelihood  = -784.61002      Prob > chi2      =           0.0009

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
age	1.021543	.0068041	3.20	0.001	1.008293	1.034966
goferw2	1.012231	.0036199	3.40	0.001	1.005161	1.019351
radchw3	1.000104	.0022768	0.05	0.964	.9956514	1.004576

```
988 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
age	-0.19234	6.71	1	0.0096
goferw2	-0.20764	5.95	1	0.0147
radchw3	0.09465	1.58	1	0.2081
global test		11.51	3	0.0093

```

989 . fracpoly, compare :stcox age goferw2 radchw3 if gender==2, iterate(20)
-> gen double Igofe__1 = goferw2-8.065592635 if e(sample)
-> gen double Iradc__1 = radchw3-61.50048685 if e(sample)
.....
-> gen double Iage__1 = X^-2-.0380024006 if e(sample)
-> gen double Iage__2 = X^-2*ln(X)-.0621359381 if e(sample)
    (where: X = age/10)

```

```

        failure _d:  desdep25
    analysis time _t:  tf
exit on or before:  time .
                id:  id

```

```

Iteration 0:  log likelihood = -792.81677
Iteration 1:  log likelihood = -784.02286
Iteration 2:  log likelihood = -783.60054
Iteration 3:  log likelihood = -783.59687
Iteration 4:  log likelihood = -783.59687
Refining estimates:
Iteration 0:  log likelihood = -783.59687

```

Cox regression -- Breslow method for ties

```

No. of subjects =           185                Number of obs   =           185
No. of failures =           181
Time at risk    =           2347
Log likelihood   =  -783.59687
LR chi2(4)      =           18.44
Prob > chi2     =           0.0010

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Iage__1	1.01e-10	2.57e-09	-0.91	0.365	2.30e-32	4.46e+11
Iage__2	191192.1	5066165	0.46	0.646	5.33e-18	6.86e+27
Igofe__1	1.014054	.0039707	3.56	0.000	1.006301	1.021866
Iradc__1	1.000278	.0022782	0.12	0.903	.9958227	1.004753

Deviance: **1567.19**. Best powers of **age** among **44** models fit: **-2 -2**.

Fractional polynomial model comparisons:

age	df	Deviance	Dev. dif.	P (*)	Powers
Not in model	0	1579.526	12.332	0.015	
Linear	1	1569.220	2.026	0.567	1
m = 1	2	1567.407	0.213	0.899	-2
m = 2	4	1567.194	—	—	-2 -2

(*) P-value from deviance difference comparing reported model with m = 2 model

```
990 . stcox Igofe__1 Iradc__1 Iage__2 if gender==2, iterate(20)
```

```
      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
                   id:  id
```

```
Iteration 0:  log likelihood = -792.81677
Iteration 1:  log likelihood = -784.27342
Iteration 2:  log likelihood = -784.02055
Iteration 3:  log likelihood = -784.01991
Refining estimates:
Iteration 0:  log likelihood = -784.01991
```

Cox regression -- Breslow method for ties

```
No. of subjects =          185          Number of obs   =          185
No. of failures =          181
Time at risk    =          2347

Log likelihood   =  -784.01991          LR chi2(3)       =          17.59
                                          Prob > chi2      =          0.0005
```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Igofe__1	1.013131	.003763	3.51	0.000	1.005783	1.020533
Iradc__1	1.000124	.0022729	0.05	0.957	.9956789	1.004588
Iage__2	8.43e-06	.0000301	-3.27	0.001	7.69e-09	.0092492

991 . estat phtest, detail

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
Igofe__1	-0.19772	5.88	1	0.0153
Iradc__1	0.09697	1.66	1	0.1979
Iage__2	0.19809	7.41	1	0.0065
global test		11.65	3	0.0087

992 . estat concordance

failure _d: **desdep25**
analysis time _t: **tf**
exit on or before: **time .**
id: **id**

Harrell's C concordance statistic

Number of subjects (N) = **185**
Number of comparison pairs (P) = **15758**
Number of orderings as expected (E) = **10036**
Number of tied predictions (T) = **26**

Harrell's C = $(E + T/2) / P$ = **.6377**
Somers' D = **.2754**

993 . str2d stcox age goferw2 radchw3 if gender==2, iterate(20)

R^2 (explained variation - D method): Cox model

Obs	Events	R^2	Std. err.	95% conf. interval	D	SE
11297	181	0.061898	0.030340	0.015468 0.131080	0.526	0.137

```
994 . estat phtest, detail
```

Test of proportional-hazards assumption

Time: **Time**

	rho	chi2	df	Prob>chi2
age	-0.19234	6.71	1	0.0096
goferw2	-0.20764	5.95	1	0.0147
radchw3	0.09465	1.58	1	0.2081
global test		11.51	3	0.0093

```
995 . matrix define f10fhfdbt = e(b)'
```

```
996 . matrix define f10fhfdbvt = e(V)
```

```
997 . local modtype10 Gen_rad_risk
```

```
998 . cap gen f10r2dt = r(r2)
```

```
999 . di e(r2_p)
```

.01035138

```
1000 . di f10r2dt
```

.

```
1001 . cap gen f10l1t = e(l1)
```

```
1002 . cap gen f10dft = e(rank)
```

```
1003 . di f9r2dt
```

.04565085

```
1004 . cap gen f109r2dcha = f10r2dt - f9r2dt
```



```

1005 . di f109r2dcha
      .

1006 . local tr trimmed

1007 .
1008 .
1009 . label var m109r2dcha "R square chnge bet female `tr' models of `modtype10' a
      > nd `modtype9'"

1010 . qui : {
      Difference between female trimmed models
      *****
      Difference between level 10 and level 9 female trimmed models:
      Difference between Gen_rad_risk
      and Gen_rad_risk models
      f10r2dt = .
      f9r2dt = .04565085
      Pseudo R^2 change:
      f10r2dt - f9r2dt = .
      *****

1011 .
1012 .
1013 . qui : {
      Between Major_negative_life_events and geosocidemog female trimmed models:
      f1r2dt = .15346491
      f2r2dt = .12600078
      f21r2dcha = -.02746414
      Between stress_and_hassles and Major_negative_life_events female trimmed model
      > s:
      f3r2dt = .06568393
      f32r2dcha = -.05885519
      Between buffers_and_supports and stress_and_hassles female trimmed models:
      f4r2dt = .00942887
      f43r2dcha = -.05771671
      Between Self-Perceived Illnesses and buffers_and_supports female trimmed model
      > s:
      f5r2dt = .1898281
      f43r2dcha = .18039922
      Between Medical_Diag and Self-Perceived Illnesses female trimmed models:
      f6r2dt = .15666422
      f65r2dcha = .01511146
      f7r2dt = .00308416
      f76r2dcha = -.1672489
      f8r2dt = .06241624
      f87r2dcha = .05933208
      f9r2dt = .04565085
      f98r2dcha = -.04854742

```

```

f10r2dt = .
f109r2dcha = .

1014 .
1015 . qui : {
    Adding Major_negative_life_events to geosocidemog female trimmed models:
        f1r2dt = .15346491
        f2r2dt = .12600078
    Adding stress_and_hassles to Major_negative_life_events female trimmed models:
        f3r2dt = .06714559
    Adding buffers_and_supports to stress_and_hassles female trimmed models:
        f4r2dt = .00942887
    Adding Self-Perceived Illnesses to buffers_and_supports female trimmed models:
        f5r2dt = .1898281
    Adding Medical_Diag to Self-Perceived Illnesses female trimmed models:
        f6r2dt = .17033306
    Adding Health_Behaviors to Medical_Diag female trimmed models:
        f7r2dt = .00308416
    Adding Health_scales to Health_Behaviors female trimmed models:
        f8r2dt = .06241624
    Adding Gen_rad_risk to Health_scales female trimmed models:
        f9r2dt = .04565085
    Adding Gen_rad_risk to Gen_rad_risk female trimmed models:
        f10r2dt = .

1016 .
1017 . forvalues i=1/10 {
    2. scalar f`i'r2dt = f`i'r2dt
    3. scalar m`i'r2dt = m`i'r2dt
    4. }

1018 .
1019 . scalar m1r2pf = m1r2pf

1020 . scalar m2r2pf = m2r2pf

1021 . scalar f7r2pf = f7r2pf

```

```

1022 . forvalues i=1/10 {
      2. scalar f`i'r2dt = f`i'r2dt
      3. scalar m`i'r2dt = m`i'r2dt
      4. }

1023 .
1024 .
1025 .
1026 . matrix define mr2dt = [ m1r2dt \ m2r2dt \ m3r2dt \ m4r2dt \ m5r2dt \ m6r2dt \
>   ///
>   m7r2dt \ m8r2dt \ m9r2dt \ m10r2dt ]

1027 .
1028 . matrix colnames mr2dt = r2p

1029 . matrix rownames mr2dt = geosociodem MajNegEvts StrsHasls BuffsSpts SlfPcdIll
> s   MedDx HlthBhv HlthScsls risksavy radissues

1030 . matlist mr2dt

```

	r2p
geosociodem	.0296757
MajNegEvts	.1088522
StrsHasls	.0656839
BuffsSpts	.0495838
SlfPcdIlls	.1415528
MedDx	.1566642
HlthBhv	.0571961
HlthScsls	.1013579
risksavy	.0528105
radissues	.0972273

```

1031 .
1032 .
1033 .
1034 .

```

```

1035 .
1036 . di f10r2dt
      .

1037 .
1038 . matrix define fr2dt = [ f1r2dt \ f2r2dt \ f3r2dt \ f4r2dt \ f5r2dt \ f6r2dt \
      >   ///
      >   f7r2dt \ f8r2dt \ f9r2dt \ f10r2dt ]

1039 . matrix colnames fr2dt = r2p

1040 . matrix rownames fr2dt = geosociodem MajNegEvts StrsHasls BuffsSpts SlfPcdIlls
      > s MedDx HlthBhv HlthScsls risksavy radissues

1041 . matlist fr2dt

```

	r2p
geosociodem	.1534649
MajNegEvts	.1260008
StrsHasls	.0671456
BuffsSpts	.0094289
SlfPcdIlls	.1898281
MedDx	.1703331
HlthBhv	.0030842
HlthScsls	.0624162
risksavy	.0456509
radissues	.

```

1042 .
1043 . preserve

1044 . mata
----- mata (type end to exit) -----
: MaleR2dt = J(10,1,.)

: MaleR2dt = st_matrix("mr2dt")

: FemmeR2dt = J(10,1,.)

: FemmeR2dt = st_matrix("fr2dt")

: colnamR2dt = "r2p"

: rn1 = "geosocidemog"

: rn2 = "MajNegLfEvts"

```

```

:   rn3 = "StrssHssles"

:   rn4 = "BufrrsSpts"

:   rn5 = "SlfPcdIlls"

:   rn6 = "MedDx"

:   rn7 = "HlthBhvrs"

:   rn8 = "HlthScles"

:   rn9 = "RiskSvy"

:   rn10 = "radissues"

: rnR2dt = ( rn1 \ rn2 \ rn3 \ rn4 \ rn5 \ rn6 \ rn7 \ rn8 \ rn9 \ rn10 )

: end

```

```

1045 .
1046 .
1047 . mata p1 = ( &colnamR2dt, &rnR2dt, &MaleR2dt )

1048 .
1049 . mata p2 = ( &colnamR2dt, &rnR2dt, &FemmeR2dt )

1050 .
1051 . // display the three matrix using the pointer p
1052 .
1053 . *p1[1]
1054 . *p1[2]
1055 . *p1[3]
1056 .
1057 . *p2[1]
1058 . *p2[2]

```

```

1059 . *p2[3]
1060 .
1061 . //print my_matrix[1, 2]
1062 . // mata printf("%s %s %9.0g\n", (*p1[1])[1],(*p1[2])[2], (*p1[3])[1, 2])
1063 .
1064 .
1065 .
1066 . cap gen risktime= _t - _t0

```

```

1067 .
1068 .
1069 . ///// / ***** Full models //***** */
> set more off

```

```

1070 . di as input "Chunk 12 male radiation and Chornobyl related model "
Chunk 12 male radiation and Chornobyl related model

```

```

1071 .
1072 . ***** Omnibus male model
1073 . des Korostenskiy ///
> Narodichevskiy ///
> Radomischevskiy Tarascheskiy Zhitomirskiy ///
> age mar3w1 mar5w1 occ5w3 ///
> dvcew2 cataw3 ///
> shfamw1 shrelaw1 ///
> shjobw2 shhlw2 ///
> shhousw3 ///
> suprtw1 suchrw1 ///
> mhlthw2 cardiovascular1w1 respiratory1w1 mhlthw3 ///
> icdx3nr6 ///
> ncontw1 ///
> MiPTSD ///
> defnw1 defnw2 efradw3 ecprw3 ///
> trgovw1

```

variable name	storage type	display format	value label	variable label
Korostenskiy	byte	%8.0g		ranown==69
Narodichevskiy	byte	%8.0g		ranown==78
Radomischevskiy	byte	%8.0g		ranown==86
Tarascheskiy	byte	%8.0g		ranown==93
Zhitomirskiy	byte	%8.0g		ranown==102
age	byte	%8.0g		* Respondent's age
mar3w1	byte	%9.0g		Married in 1986
mar5w1	byte	%9.0g		Divorced in wave 1
occ5w3	byte	%15.0g	LABJ	factory laborer machinist transp cleaner now
dvcew2	byte	%8.0g		Total number of divorces

				experienced in time period 1987-1996
cataw3	byte	%8.0g		Total number of disasters experienced in time period 1996-NOW
shfamw1	byte	%8.0g		Percentage of strains and hassles related to family in 1986
shrelaw1	byte	%8.0g		Percentage of strains and hassles related to relationships in 1986
shjobw2	byte	%8.0g		Percentage of strains and hassles related to job in 1996
shhlw2	byte	%8.0g		Percentage of strains and hassles related to health in 1996
shhousw3	byte	%8.0g		Percentage of strains and hassles related to housing NOW
suprtw1	byte	%8.0g		Level of support (in percent) from partner in 1986
suchrw1	byte	%8.0g		Level of support (in percent) from Chernobyl survivor benefits in 1986
mhlthw2	byte	%8.0g		level of general psychological/mental health in 1996
cardiovascu~lw1	byte	%8.0g		nillw1==2
respiratorylw1	byte	%8.0g		nillw1==13
mhlthw3	byte	%8.0g		level of general psychological/mental health now
icdx3nr6	byte	%8.0g		icdx3nr==acute myocardial infarct
ncontw1	byte	%15.0g	LABC	use of natural contraception in 1976-1986
MiPTSD	byte	%9.0g		Mississippi post-traumatic stress disorder scale
defnw1	byte	%8.0g		* consider hazardous (in percent) - deficiencies in essential nutrition in 1986
defnw2	byte	%8.0g		* consider hazardous (in percent) - deficiencies in essential nutrition in 1996
efradw3	byte	%8.0g		consider hazardous (in percent) - effects of radiation NOW
ecprw3	byte	%8.0g		consider hazardous (in percent) - economic problems, NOW
trgovw1	byte	%8.0g		level of trust in government reports about chornobyl in

time period 1976-1986

```

1074 .
1075 . ***** Cox Proportioal Hazards regression model for males
1076 . stcox Korostenskiy ///
> Narodichevskiy ///
> Radomischevskiy Tarascheskiy Zhitomirskiy ///
> age mar3w1 mar5w1 occ5w3 ///
> dvcew2 cataw3 ///
> shfamw1 shrelaw1 ///
> shjobw2 shhlw2 ///
> shhousw3 ///
> suprtw1 suchrw1 ///
> mhlthw2 mhlthw3 /// // cardiovascular1w1 same as the icdx3nr6
> icdx3nr6 ///
> ncontw1 ///
> MiPTSD ///
> defnw1 defnw2 efradw3 ecprw3 ///
> trgovw1 if gender==1, iterate(20) nolog

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

Cox regression -- Breslow method for ties

```

No. of subjects =          138                Number of obs   =          138
No. of failures =          136
Time at risk    =          1871

LR chi2(28)      =          94.69
Log likelihood   = -508.16552                Prob > chi2       =          0.0000

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	2547.232	3465.215	5.77	0.000	177.0546	36646.27
Narodichev~y	30.74272	40.66074	2.59	0.010	2.301079	410.7268
Radomische~y	28.50788	36.79579	2.60	0.009	2.271429	357.7921
Tarascheskiy	.0590859	.0650946	-2.57	0.010	.006819	.5119747
Zhitomirskiy	2.680468	.9326266	2.83	0.005	1.355341	5.301183
age	1.061576	.0187196	3.39	0.001	1.025514	1.098908
mar3w1	.3640617	.1359438	-2.71	0.007	.1751173	.7568694
mar5w1	.2753806	.1860833	-1.91	0.056	.0732402	1.035421
occ5w3	.2824997	.1235527	-2.89	0.004	.1198783	.6657258
dvcew2	4.986525	3.274371	2.45	0.014	1.376771	18.06068
cataw3	.0060443	.0076461	-4.04	0.000	.0005065	.072131
shfamw1	.9874573	.0039896	-3.12	0.002	.9796686	.9953078
shrelaw1	1.016219	.0044466	3.68	0.000	1.007541	1.024972

shjobw2	1.007412	.0038565	1.93	0.054	.9998821	1.014999
shhlw2	.9898465	.0041637	-2.43	0.015	.9817194	.998041
shhousw3	.9902823	.0036482	-2.65	0.008	.9831577	.9974585
suprtw1	1.032123	.0195893	1.67	0.096	.9944345	1.071241
suchrw1	.9710358	.0153686	-1.86	0.063	.9413763	1.00163
mhlthw2	.9679392	.0065782	-4.79	0.000	.9551317	.9809185
mhlthw3	1.021049	.0063609	3.34	0.001	1.008658	1.033592
icdx3nr6	.0013066	.0021522	-4.03	0.000	.0000518	.0329765
ncontw1	1.80818	.4561703	2.35	0.019	1.102806	2.964722
MiPTSD	1.0577	.0117622	5.04	0.000	1.034895	1.081006
defnw1	.9890603	.0048379	-2.25	0.025	.9796234	.998588
defnw2	.9846339	.0069572	-2.19	0.028	.971092	.9983645
efradw3	1.014134	.0040878	3.48	0.000	1.006153	1.022177
ecprw3	1.011382	.0071	1.61	0.107	.9975618	1.025394
trgovw1	1.012962	.003036	4.30	0.000	1.007029	1.01893

```
1077 . estat phtest          // ph assumption met
```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	23.99	28	0.6821

```
1078 . estat concordance    // good fit for males
```

```

      failure _d:  desdep25
analysis time _t:  tf
exit on or before: time .
              id:  id

```

Harrell's C concordance statistic

```

Number of subjects (N)          =      138
Number of comparison pairs (P)   =     8664
Number of orderings as expected (E) =    6793
Number of tied predictions (T)   =         0

```

```

Harrell's C = (E + T/2) / P =    .784
Somers' D =    .5681

```

```

1079 .
1080 .
1081 . cap drop m12r2pf

1082 . matrix define m12fbhdbf = e(b)'

1083 . matrix define m12fhbdvf = e(V)

1084 . local modtype12 FullMaleModel

1085 . cap gen m12r2pf = e(r2_p)

1086 . di m12r2pf
      .0852285

1087 . cap gen m12l1f= e(l1)

1088 . cap gen m12dff = e(rank)

1089 . di m12r2pf
      .0852285

1090 . cap drop m1110r2pfcha

1091 .
1092 .
1093 .
1094 .
1095 . // assessment of overall fit with Cox-Snell residuals
1096 . stcox Korostenskiy ///
      > Narodichevskiy ///
      > Radomischevskiy Tarascheskiy Zhitomirskiy ///
      > age mar3w1 mar5w1 occ5w3 ///
      > dvcew2 cataw3 ///
      > shfamw1 shrelaw1 ///
      > shjobw2 shhlw2 ///
      > shhousw3 ///
      > suprtw1 suchrw1 ///
      > mhlthw2 ///
      > mhlthw3 ///
      > icdx3nr6 ///
      > ncontw1 ///
      > MiPTSD ///
      > defnw1 defnw2 efradw3 ecprw3 ///
      > trgovw1 if gender==1, iterate(20) nolog

```

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

Cox regression -- Breslow method for ties

```

No. of subjects =          138                Number of obs   =          138
No. of failures =          136
Time at risk    =          1871
Log likelihood   =   -508.16552
LR chi2(28)      =          94.69
Prob > chi2      =          0.0000

```

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	2547.232	3465.215	5.77	0.000	177.0546	36646.27
Narodichev~y	30.74272	40.66074	2.59	0.010	2.301079	410.7268
Radomische~y	28.50788	36.79579	2.60	0.009	2.271429	357.7921
Tarascheskiy	.0590859	.0650946	-2.57	0.010	.006819	.5119747
Zhitomirskiy	2.680468	.9326266	2.83	0.005	1.355341	5.301183
age	1.061576	.0187196	3.39	0.001	1.025514	1.098908
mar3w1	.3640617	.1359438	-2.71	0.007	.1751173	.7568694
mar5w1	.2753806	.1860833	-1.91	0.056	.0732402	1.035421
occ5w3	.2824997	.1235527	-2.89	0.004	.1198783	.6657258
dvcew2	4.986525	3.274371	2.45	0.014	1.376771	18.06068
cataw3	.0060443	.0076461	-4.04	0.000	.0005065	.072131
shfamw1	.9874573	.0039896	-3.12	0.002	.9796686	.9953078
shrelaw1	1.016219	.0044466	3.68	0.000	1.007541	1.024972
shjobw2	1.007412	.0038565	1.93	0.054	.9998821	1.014999
shhlw2	.9898465	.0041637	-2.43	0.015	.9817194	.998041
shhousw3	.9902823	.0036482	-2.65	0.008	.9831577	.9974585
suprtw1	1.032123	.0195893	1.67	0.096	.9944345	1.071241
suchrw1	.9710358	.0153686	-1.86	0.063	.9413763	1.00163
mhlthw2	.9679392	.0065782	-4.79	0.000	.9551317	.9809185
mhlthw3	1.021049	.0063609	3.34	0.001	1.008658	1.033592
icdx3nr6	.0013066	.0021522	-4.03	0.000	.0000518	.0329765
ncontw1	1.80818	.4561703	2.35	0.019	1.102806	2.964722
MiPTSD	1.0577	.0117622	5.04	0.000	1.034895	1.081006
defnw1	.9890603	.0048379	-2.25	0.025	.9796234	.998588
defnw2	.9846339	.0069572	-2.19	0.028	.971092	.9983645
efradw3	1.014134	.0040878	3.48	0.000	1.006153	1.022177
ecprw3	1.011382	.0071	1.61	0.107	.9975618	1.025394
trgovw1	1.012962	.003036	4.30	0.000	1.007029	1.01893

```
1097 . estat phtest    // this fulfills the proportional hazards assumption
```

Test of proportional-hazards assumption

Time: **Time**

	chi2	df	Prob>chi2
global test	23.99	28	0.6821

```
1098 . estat concordance // but the fit could be better
```

```

      failure _d: desdep25
    analysis time _t: tf
exit on or before: time .
              id: id

```

Harrell's C concordance statistic

```

Number of subjects (N)          =    138
Number of comparison pairs (P)   =    8664
Number of orderings as expected (E) =    6793
Number of tied predictions (T)   =     0

```

```

      Harrell's C = (E + T/2) / P =    .784
              Somers' D =    .5681

```

```
1099 .
```

```
1100 . cap drop sc1
```

```
1101 . gen sc1 = -2*e(ll) + ln(e(N))*e(rank)
```

```
1102 . scalar sc1 = sc1
```

```

1103 . di "Schwartz criterion = ",sc1
      Schwartz criterion = 1154.2942

```

```

1104 . cap drop staic
1105 . gen staic = -2*e(l1) + 2*e(rank)
1106 . scalar staic = staic
1107 . di "staic= ", staic
    staic= 1072.3311
1108 . scalar typeMod = 1
1109 . cap label var typeMod 1 "male" 2 "female"
1110 .
1111 . replace sc1 = sc1
    (0 real changes made)
1112 . replace staic = staic
    (0 real changes made)
1113 . matrix define MaleModelCf = [staic, sc1]
1114 . matrix rownames MaleModelCf = stcox
1115 . matrix colnames MaleModelCf = aic sc
1116 . matlist MaleModelCf

```

	aic	sc
stcox	1072.331	1154.294

```

1117 . *****
    > *****
1118 . // flexible parametric version with restricted cubic splines is not as good
    > as Weibull model
1119 . *****
    > *****

```

```

1120 . *      running stpm2 requires downloading and installing into Stata the foll
      > owing package *****
1121 . * SJ-9-2  st0165  . Further dev. of flexible param. models for survival anal
      > ysis
1122 . *      . . . . . P. C. Lambert and P. Roy
      > ston
1123 . *      (help stpm2, stpm2_postestimation if installed)
1124 . *      Q2/09  SJ 9(2):265--290
1125 . *****
      > *****
1126 .
1127 .
1128 .
1129 . stpm2 Korostenskiy ///
      > Narodichevskiy ///
      > Radomischevskiy Tarascheskiy Zhitomirskiy ///
      > age mar3w1 mar5w1 occ5w3 ///
      > dvcew2 cataw3 ///
      > shfamw1 shrelaw1 ///
      > shjobw2 shhlw2 ///
      > shhousw3 ///
      > suprtw1 suchrw1 ///
      > mhlthw2 mhlthw3 /// // cardiovascular1w1 same as the icdx3nr6
      > icdx3nr6 ///
      > ncontw1 ///
      > MiPTSD ///
      > defnw1 defnw2 efradw3 ecprw3 ///
      > trgovw1 if gender==1, df(3) scale(odds) iterate(20) nolog

```

Log likelihood = **-93.358488**

Number of obs = **138**

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
xb						
Korostenskiy	10.23866	1.880951	5.44	0.000	6.552061	13.92525
Narodichev~y	4.7441	1.881183	2.52	0.012	1.057049	8.431151
Radomische~y	4.543148	1.978424	2.30	0.022	.6655095	8.420787
Tarascheskiy	-4.873246	1.638676	-2.97	0.003	-8.084993	-1.661499
Zhitomirskiy	1.353559	.6055235	2.24	0.025	.1667549	2.540363
age	.0891509	.0277486	3.21	0.001	.0347647	.1435371
mar3w1	-.7797144	.5666428	-1.38	0.169	-1.890314	.3308852
mar5w1	-2.039819	1.095558	-1.86	0.063	-4.187073	.1074341
occ5w3	-2.36812	.6752442	-3.51	0.000	-3.691574	-1.044666
dvcew2	1.944	.9573619	2.03	0.042	.0676056	3.820395
cataw3	-9.306471	1.938162	-4.80	0.000	-13.1052	-5.507742
shfamw1	-.0165647	.0063595	-2.60	0.009	-.0290291	-.0041003
shrelaw1	.0273005	.0077161	3.54	0.000	.0121773	.0424237
shjobw2	.0151838	.0062346	2.44	0.015	.0029643	.0274033

shhlw2	-.0113893	.006457	-1.76	0.078	-.0240447	.0012661
shhousw3	-.0142718	.0072406	-1.97	0.049	-.0284631	-.0000805
suprtw1	.0512331	.0290961	1.76	0.078	-.0057941	.1082604
suchrw1	-.0429447	.0237202	-1.81	0.070	-.0894354	.003546
mhlthw2	-.0364187	.0109718	-3.32	0.001	-.057923	-.0149144
mhlthw3	.0268481	.0107619	2.49	0.013	.0057551	.0479411
icdx3nr6	-9.129049	2.322314	-3.93	0.000	-13.6807	-4.577397
ncontw1	1.249684	.4230078	2.95	0.003	.4206043	2.078764
MiPTSD	.0755526	.0173099	4.36	0.000	.0416258	.1094794
defnw1	-.0200452	.0082226	-2.44	0.015	-.0361611	-.0039292
defnw2	-.0226845	.0113973	-1.99	0.047	-.0450227	-.0003463
efradw3	.0242455	.0066521	3.64	0.000	.0112076	.0372834
ecprw3	.010759	.0111781	0.96	0.336	-.0111496	.0326676
trgovw1	.0174225	.0049555	3.52	0.000	.0077099	.0271351
_rcs1	2.748285	.2187835	12.56	0.000	2.319478	3.177093
_rcs2	.2183368	.2591312	0.84	0.399	-.2895509	.7262245
_rcs3	-.2606144	.1070716	-2.43	0.015	-.4704708	-.0507579
_cons	-8.848297	2.075378	-4.26	0.000	-12.91596	-4.780631

```
1130 . di e(AIC)      // better than stcox but not better than Weibull
      250.71698
```

```
1131 . di e(BIC)
      343.92193
```

```
1132 .
1133 . cap drop sc2
```

```
1134 . gen sc2 = -2*e(ll) + (ln(e(N))*e(rank)-1)
```

```
1135 . replace sc2 = sc2
      (0 real changes made)
```

```
1136 . scalar sc2 = sc2
```

```
1137 . di "Schwartz criterion = ",sc2
      Schwartz criterion = 343.3891
```

```

1138 . cap drop staic2

1139 . gen staic2 = -2*e(ll) + 2*e(rank)

1140 . scalar staic2 = staic2

1141 . di "staic= ", staic2
      staic= 250.71698

1142 . scalar typeMod = 1

1143 . cap label var typeMod 1 "male" 2 "female"

1144 .
1145 . replace sc2 = sc2
      (0 real changes made)

1146 . replace staic2 = staic2
      (0 real changes made)

1147 . matrix define MaleModelCf = [staic, sc1\ staic2, sc2]

1148 . matrix rownames MaleModelCf = stcox stpm2

1149 . matrix colnames MaleModelCf = aic sc

1150 . matlist MaleModelCf


```

	aic	sc
stcox	1072.331	1154.294
stpm2	250.717	343.3891

```

1151 .
1152 .
1153 . di as input " Chunk 12 Full Female radiation and Chornobyl related model"
      Chunk 12 Full Female radiation and Chornobyl related model

```



```

1154 . des Irpenskiy Kyivskiy ///
>      age mar2w1 ///
>      occ5w1 occ4w2 occ5w2 ///
>      deaw1 cataw1 ///
>      icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 ///
>      injothr ///
>      contw2 ///
>      WHPer BSIoc BSIanx HP2work neiwl toxic ///
>      goferw2

```

variable name	storage type	display format	value label	variable label
Irpenskiy	byte	%8.0g		ranown==67
Kyivskiy	byte	%8.0g		ranown==72
age	byte	%8.0g		* Respondent's age
mar2w1	byte	%9.0g		cohabiting in 1986
occ5w1	byte	%15.0g	LABJ	factory laborer machinist transp cleaner in 1986
occ4w2	byte	%15.0g	LABJ	precision prod mechan craft construction in 1996
occ5w2	byte	%15.0g	LABJ	factory laborer machinist transp cleaner in 1996
deaw1	byte	%8.0g		Total number of death experienced in time period 1986
cataw1	byte	%8.0g		Total number of disasters experienced in time period 1976-1986
icdx3nr9	byte	%8.0g		icdx3nr==gastritis/duodenitis
icdx4nr7	byte	%8.0g		icdx4nr==acute myocardial infarct
icdx4nr9	byte	%8.0g		icdx4nr==434.91 crbrl art ocl nos w infarc
icdx5nr2	byte	%8.0g		icdx5nr==thyrotoxicosis
icdx5nr11	byte	%8.0g		icdx5nr==gastritis/duodenitis
injothr	byte	%9.0g	inj	Was anyone u know injured by Chornobyl accident?
contw2	byte	%15.0g	LABC	use of any contraception method in 1987-1996
WHPer	float	%9.0g		Wtd Health Profile Emotional reaction Pt 1 subscale
BSIoc	byte	%9.0g		Basic Symptom Inventory Obsessive compulsive subscale
BSIanx	byte	%9.0g		Basic symptom inventory Anxiety subscale
HP2work	byte	%9.0g	hp2fmt	Nottingham Health profile subscale Part2: paid employment

neiwl	byte	%8.0g	level of danger by neighbors (in percent) in 1986
toxic	byte	%8.0g	all radioactive materials remain toxic for thousands of years (% of agreement)
goferw2	byte	%8.0g	level of fear in percent from going outdoors in 1987-1996

```

1155 .
1156 .
1157 . // nb: icdx3nr9 = gastritis duodenitis
1158 . // nb: icdx4nr7 = myocad infarction
1159 . // nb: icdx4nr9 = cerebral artery occlusion w infarction
1160 . // nb: icdx5nr12 = choestitis
1161 . // nb: icdx5nr11 = gastritis duodenitis
1162 .
1163 .
1164 .
1165 . set more off

1166 . stcox Irpenskiy Kyivskiy ///
>     age mar2w1 ///
>     occ5w1 occ4w2 occ5w2 ///
>     deaw1 cataw1 ///
>     icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 /// // peripheralvas
> cular1w1-rheumatologic1w1
>
>         injothr ///
>         contw2 ///
>         WHPer BSIoc BSIanx HP2work neiwl toxic ///
>         if gender==2, iterate(10) nolog

        failure _d: desdep25
        analysis time _t: tf
        exit on or before: time .
        id: id

```

Cox regression -- Breslow method for ties

No. of subjects =	186	Number of obs =	186
No. of failures =	182		
Time at risk =	2360		
		LR chi2(22) =	114.66
Log likelihood =	-740.69403	Prob > chi2 =	0.0000

_t	Haz. Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Irpenskiy	.2099189	.1186485	-2.76	0.006	.0693335	.6355651
Kyivskiy	.5906375	.1095523	-2.84	0.005	.4106189	.8495776
age	1.015977	.0080362	2.00	0.045	1.000348	1.03185
mar2w1	8.298633	5.156921	3.41	0.001	2.455017	28.05166
occ5w1	.0190842	.0226222	-3.34	0.001	.0018693	.1948395
occ4w2	.4124851	.1618752	-2.26	0.024	.1911453	.890129
occ5w2	34.66535	37.33739	3.29	0.001	4.198389	286.2257
deaw1	1.675044	.2579252	3.35	0.001	1.238674	2.265141
cataw1	2.79702	.7162107	4.02	0.000	1.693304	4.620149
icdx3nr9	40.87909	66.55444	2.28	0.023	1.681422	993.8609
icdx4nr7	45.64662	55.05933	3.17	0.002	4.292224	485.4393
icdx4nr9	75.4339	92.86336	3.51	0.000	6.756001	842.2547
icdx5nr2	174.8943	273.7975	3.30	0.001	8.132371	3761.265
icdx5nr11	.0492925	.0526092	-2.82	0.005	.0060856	.3992601
injothr	1.620654	.4500906	1.74	0.082	.9403578	2.793105
contw2	2.072071	.3741065	4.04	0.000	1.454529	2.951798
WHPer	.9861731	.0053288	-2.58	0.010	.975784	.9966729
BSIoc	1.100168	.0274174	3.83	0.000	1.047722	1.15524
BSIanx	1.084312	.0293758	2.99	0.003	1.028239	1.143444
HP2work	.6461041	.1270554	-2.22	0.026	.4394556	.9499265
neiwl	1.004753	.0024777	1.92	0.054	.9999087	1.009621
toxic	.9936079	.0026478	-2.41	0.016	.9884318	.9988111

1167 .

1168 . estat phtest // Proportional hazards assumption met

Test of proportional-hazards assumption

Time: Time

	chi2	df	Prob>chi2
global test	9.83	22	0.9878

```
1169 . estat concordance // good fit
```

```
      failure _d: desdep25  
      analysis time _t: tf  
      exit on or before: time .  
      id: id
```

```
Harrell's C concordance statistic
```

```
Number of subjects (N)          =      186  
Number of comparison pairs (P)   =     15940  
Number of orderings as expected (E) = 12091  
Number of tied predictions (T)   =       0
```

```
Harrell's C = (E + T/2) / P = .7585  
Somers' D = .5171
```

```
1170 .
```

```
1171 .
```

```
1172 .
```

```
1173 . cap drop f12r2pf
```

```
1174 . matrix define f12fbhdbf = e(b)'
```

```
1175 . matrix define f12fhbdvf = e(V)
```

```
1176 . local modtype12 FullModel
```

```
1177 . cap gen f12r2pf = e(r2_p)
```

```
1178 . di f12r2pf  
      .07184192
```

```
1179 . cap gen f12l1f= e(l1)
```

```
1180 . cap gen f12dff = e(rank)
```

```

1181 . di f12r2pf
      .07184192

1182 .
1183 .
1184 . // for later model comparison
1185 . cap drop sc3

1186 . gen sc3 = -2*e(ll) + ln(e(N))*e(df_m)

1187 . scalar sc3 = sc3

1188 . di sc3
      1596.3545

1189 . cap drop staic3

1190 . gen staic3 = -2*e(ll) + 2*e(df_m)

1191 . scalar staic3 = staic3

1192 . di "Staic = ", staic3
      Staic = 1525.3881

1193 .
1194 .
1195 .
1196 . matrix define FemaleModelCf = (staic3, sc3)

1197 . matrix rownames FemaleModelCf = stcox

1198 . matrix colnames FemaleModelCf = aic sc

1199 . matlist FemaleModelCf

```

	aic	sc
stcox	1525.388	1596.354

```

1200 .
1201 .
1202 .
1203 . set more off

1204 . xi: stpm2 Irpenskiy Kyivskiy ///
>       i.agegrp3 mar2w1 ///
>       occ5w1 occ4w2 occ5w2 ///
>       deaw1 cataw1 ///
>       icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 ///    // peripheralvas
> cular1w1-rheumatologic1w1
>
>               injothr    ///
>               contw2    ///
>               WHPer BSIoc BSIanx HP2work neiw1 toxic    ///
>               if gender==2, iterate(10) nolog df(3) scale(odds)
i.agegrp3      _Iagegrp3_1-3      (naturally coded; _Iagegrp3_1 omitted)

```

Log likelihood = **-128.38412** Number of obs = **186**

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
xb						
Irpenskiy	-2.003913	1.239839	-1.62	0.106	-4.433953	.4261262
Kyivskiy	-.533547	.3070309	-1.74	0.082	-1.135316	.0682224
_Iagegrp3_2	.4589715	.3549067	1.29	0.196	-.2366329	1.154576
_Iagegrp3_3	.9305772	.3935028	2.36	0.018	.1593259	1.701829
mar2w1	3.070223	.9096738	3.38	0.001	1.287295	4.853151
occ5w1	-4.198285	1.706058	-2.46	0.014	-7.542097	-.854473
occ4w2	-1.867703	.6295258	-2.97	0.003	-3.101551	-.6338551
occ5w2	3.393727	1.511015	2.25	0.025	.4321922	6.355262
deaw1	1.063931	.2962325	3.59	0.000	.4833264	1.644536
cataw1	1.540537	.4084936	3.77	0.000	.7399041	2.341169
icdx3nr9	4.183171	2.355111	1.78	0.076	-.4327612	8.799102
icdx4nr7	8.13443	2.082022	3.91	0.000	4.053742	12.21512
icdx4nr9	10.02645	2.109779	4.75	0.000	5.891356	14.16154
icdx5nr2	6.331484	2.233066	2.84	0.005	1.954755	10.70821
icdx5nr11	-5.519614	1.552021	-3.56	0.000	-8.561519	-2.477709
injothr	.9313346	.4814595	1.93	0.053	-.0123088	1.874978
contw2	.9677563	.3312947	2.92	0.003	.3184306	1.617082
WHPer	-.0214282	.0089519	-2.39	0.017	-.0389735	-.0038828
BSIoc	.1386611	.0410627	3.38	0.001	.0581796	.2191425
BSIanx	.132589	.0439182	3.02	0.003	.046511	.2186671
HP2work	-.6917033	.3231946	-2.14	0.032	-1.325153	-.0582536
neiw1	.0130005	.0042891	3.03	0.002	.004594	.0214069
toxic	-.0085278	.0042887	-1.99	0.047	-.0169335	-.0001222
_rcs1	2.707832	.1947467	13.90	0.000	2.326135	3.089528
_rcs2	.1603968	.1970379	0.81	0.416	-.2257905	.546584
_rcs3	-.2579362	.0908932	-2.84	0.005	-.4360836	-.0797887

_cons	-5.626732	.8679382	-6.48	0.000	-7.32786	-3.925604
--------------	------------------	-----------------	--------------	--------------	-----------------	------------------

```

1205 .
1206 . cap drop sc4

1207 . gen sc4 = -2*e(ll) + ln(e(N))*e(rank)

1208 . scalar sc4 = sc4

1209 . cap drop staic4

1210 . gen staic4= -2*e(ll) + e(rank)*2

1211 . scalar staic4=staic4

1212 .
1213 . matrix define FemaleModelCf = (staic3, sc3 \ staic4, sc4)

1214 . matrix rownames FemaleModelCf = stcox stpm2

1215 . matrix colnames FemaleModelCf = aic sc

1216 . matlist FemaleModelCf

```

	aic	sc
stcox	1525.388	1596.354
stpm2	310.7682	397.8634

```

1217 .
1218 . ***** Accelerated Failture time models *****
1219 . * for males
1220 . set more off

1221 . ***** parametric model selection through model comparison *****
1222 . * nb: gamma distribution model for males does not converge

```

```

1223 .
1224 .
1225 . foreach model in exponential weibull lognormal loglogistic {
      2. set more off
      3. title(AFT male full `x' model in the accelerated failure time metric)
      4. xi:streg Korostenskiy ///
      >   Narodichevskiy ///
      >   Radomischevskiy Tarascheskiy Zhitomirskiy ///
      >   i.agegrp3   mar5w1   occ5w3 ///
      >   dvcew2     cataw3   ///
      >   shfamw1     shrelaw1 ///
      >   shjobw2     shhlw2   ///
      >   shhousw3    ///
      >   suprtw1     suchrw1  ///
      >   mhlthw2     mhlthw3  /// // cardiovascular1w1   same as the icdx3nr6
      >   icdx3nr6    ///
      >   ncontw1     ///
      >   MiPTSD      ///
      >   defnw1 defnw2 efradw3 ///
      >   trgovw1 if gender==1, dist(`model') iterate(20) time nolog
      5.
1226 .   estimates store m`model'
      6.
1227 . capture confirm variable `x'sc
      7. if _rc !=0 {
      8.   cap gen `x'sc = -2*e(ll) + ln(e(N))*e(rank)
      9. }
     10. scalar `x'sc = `x'sc
     11. di "`x'sc = ",`x'sc
     12.
1228 .
1229 .
1230 .
1231 . }

```

```
*****
> *
*****
> *
*****
> *
*****
> *
*****
(AFT
> *
*****
male
> *
*****
full
*****
```



```

> *
*****                                model                                *****
> *
*****                                in                                *****
> *
*****                                the                                *****
> *
*****                                accelerated                        *****
> *
*****                                failure                        *****
> *
*****                                time                                *****
> *
*****                                metric)                        *****
> *
*****                                *****
> *
*****                                *****
> *
*****                                4 Mar 2012    20:15:03    *****
> *
*****
> *
*****
> *

```

```

i.agegrp3          _Iagegrp3_1-3          (naturally coded; _Iagegrp3_1 omitted)

```

```

      failure _d:  desdep25
    analysis time _t:  tf
    exit on or before:  time .
              id:  id

```

Exponential regression -- accelerated failure-time form

No. of subjects =	138	Number of obs =	138
No. of failures =	136		
Time at risk =	1871		
		LR chi2(27) =	31.81
Log likelihood =	-153.83859	Prob > chi2 =	0.2392


```

*****                                model                                *****
> *
*****                                in                                *****
> *
*****                                the                                *****
> *
*****                                accelerated                        *****
> *
*****                                failure                        *****
> *
*****                                time                            *****
> *
*****                                metric)                        *****
> *
*****                                *****
> *
*****                                *****
> *
*****                                4 Mar 2012    20:15:03    *****
> *
*****
> *
*****
> *

```

```

i.agegrp3      _Iagegrp3_1-3      (naturally coded; _Iagegrp3_1 omitted)

```

```

      failure _d:  desdep25
    analysis time _t:  tf
    exit on or before:  time .
                   id:  id

```

Weibull regression -- accelerated failure-time form

No. of subjects =	138	Number of obs =	138
No. of failures =	136		
Time at risk =	1871		
		LR chi2(27) =	106.76
Log likelihood =	-93.481912	Prob > chi2 =	0.0000

_t	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	-3.222631	.4625559	-6.97	0.000	-4.129224	-2.316038
Narodichev~y	-1.139051	.4937214	-2.31	0.021	-2.106727	-.1713747
Radomische~y	-.8834981	.450012	-1.96	0.050	-1.765505	-.0014908
Tarascheskiy	.9267874	.4360449	2.13	0.034	.0721551	1.78142
Zhitomirskiy	-.3444434	.1296739	-2.66	0.008	-.5985996	-.0902871
_Iagegrp3_2	-.2075432	.1094395	-1.90	0.058	-.4220406	.0069543
_Iagegrp3_3	-.2598133	.1275506	-2.04	0.042	-.5098079	-.0098187
mar5w1	.1848296	.2509861	0.74	0.461	-.307094	.6767533
occ5w3	.6114881	.1778148	3.44	0.001	.2629774	.9599988
dvcew2	-.6733914	.2615678	-2.57	0.010	-1.186055	-.1607279
cataw3	2.19357	.4816916	4.55	0.000	1.249472	3.137669
shfamw1	.0043426	.0015604	2.78	0.005	.0012843	.0074008
shrelaw1	-.0067526	.0017028	-3.97	0.000	-.0100901	-.0034151
shjobw2	-.0035695	.0017095	-2.09	0.037	-.0069201	-.0002188
shhlw2	.0054384	.0017259	3.15	0.002	.0020556	.0088212
shhousw3	.0038411	.0014256	2.69	0.007	.001047	.0066353
suprtw1	-.0070305	.0078008	-0.90	0.367	-.0223197	.0082587
suchrw1	.0110702	.006921	1.60	0.110	-.0024947	.024635
mhlthw2	.0120858	.0024154	5.00	0.000	.0073516	.0168199
mhlthw3	-.0080502	.0022989	-3.50	0.000	-.012556	-.0035444
icdx3nr6	2.517863	.6043694	4.17	0.000	1.333321	3.702406
ncontw1	-.2576819	.0994587	-2.59	0.010	-.4526173	-.0627465
MiPTSD	-.0259352	.0040946	-6.33	0.000	-.0339604	-.0179099
defnw1	.0045086	.0018516	2.43	0.015	.0008795	.0081376
defnw2	.0028913	.0013989	2.07	0.039	.0001496	.005633
efradw3	-.0067753	.0015015	-4.51	0.000	-.0097182	-.0038325
trgovw1	-.0058623	.0012673	-4.63	0.000	-.0083462	-.0033784
_cons	3.999459	.3812591	10.49	0.000	3.252205	4.746713
/ln_p	.9221928	.0692084	13.32	0.000	.7865468	1.057839
p	2.514799	.1740452			2.195801	2.880139
1/p	.3976461	.0275205			.3472054	.4554147

sc = 445.64029

No. of subjects = 138
 No. of failures = 136
 Time at risk = 1871

Number of obs = 138

Log likelihood = -103.69758

LR chi2(27) = 93.08

Prob > chi2 = 0.0000

_t	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	-2.850179	.5822249	-4.90	0.000	-3.991319	-1.709039
Narodichev~y	-.9863068	.6241906	-1.58	0.114	-2.209698	.2370844
Radomische~y	-.4351639	.5678478	-0.77	0.443	-1.548125	.6777973
Tarascheskiy	1.352245	.5538933	2.44	0.015	.2666342	2.437856
Zhitomirskiy	-.252227	.1739829	-1.45	0.147	-.5932272	.0887732
_Iagegrp3_2	-.4918749	.1268108	-3.88	0.000	-.7404195	-.2433303
_Iagegrp3_3	-.6259661	.1558823	-4.02	0.000	-.9314898	-.3204423
mar5w1	.5584147	.3257337	1.71	0.086	-.0800117	1.196841
occ5w3	.8300744	.2179709	3.81	0.000	.4028591	1.25729
dvcew2	-.63435	.3182293	-1.99	0.046	-1.258068	-.010632
cataw3	2.655854	.6019215	4.41	0.000	1.47611	3.835599
shfamw1	.0050793	.0018635	2.73	0.006	.0014268	.0087317
shrelaw1	-.0075585	.0021116	-3.58	0.000	-.0116972	-.0034199
shjobw2	-.0059802	.0019186	-3.12	0.002	-.0097405	-.0022199
shhlw2	.0048877	.0020277	2.41	0.016	.0009134	.008862
shhousw3	.0063047	.001984	3.18	0.001	.0024161	.0101932
suprtw1	-.0095203	.0081982	-1.16	0.246	-.0255884	.0065478
suchrw1	.007587	.0066435	1.14	0.253	-.005434	.0206081
mhlthw2	.0095502	.0033936	2.81	0.005	.002899	.0162015
mhlthw3	-.0087005	.0030645	-2.84	0.005	-.0147068	-.0026942
icdx3nr6	2.609115	.7737263	3.37	0.001	1.092639	4.12559
ncontw1	-.3061668	.1206177	-2.54	0.011	-.5425732	-.0697605
MiPTSD	-.0219041	.0048998	-4.47	0.000	-.0315076	-.0123006
defnw1	.0056708	.002343	2.42	0.016	.0010787	.010263
defnw2	.0031027	.0016656	1.86	0.062	-.0001617	.0063671
efradw3	-.0072286	.0018641	-3.88	0.000	-.0108822	-.003575
trgovw1	-.0063668	.0015018	-4.24	0.000	-.0093104	-.0034232
_cons	4.129085	.48731	8.47	0.000	3.173975	5.084196
/ln_sig	-.6706387	.0607709	-11.04	0.000	-.7897475	-.5515299
sigma	.5113818	.0310771			.4539594	.5760678

sc = 445.64029

No. of subjects = 138
 No. of failures = 136
 Time at risk = 1871

Number of obs = 138

Log likelihood = -95.854648

LR chi2(27) = 112.15

Prob > chi2 = 0.0000

_t	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	-2.893592	.4495557	-6.44	0.000	-3.774705	-2.012479
Narodichev~y	-1.04849	.4829686	-2.17	0.030	-1.995091	-.1018893
Radomische~y	-.4987425	.435792	-1.14	0.252	-1.352879	.3553941
Tarascheskiy	1.218869	.4262581	2.86	0.004	.3834189	2.05432
Zhitomirskiy	-.2990351	.1587342	-1.88	0.060	-.6101484	.0120782
_Iagegrp3_2	-.4168611	.1132184	-3.68	0.000	-.6387651	-.1949571
_Iagegrp3_3	-.5495865	.1431827	-3.84	0.000	-.8302194	-.2689536
mar5w1	.4970656	.2639146	1.88	0.060	-.0201976	1.014329
occ5w3	.7765487	.1750156	4.44	0.000	.4335244	1.119573
dvcew2	-.5779092	.2627011	-2.20	0.028	-1.092794	-.0630246
cataw3	2.510318	.4695186	5.35	0.000	1.590078	3.430558
shfamw1	.0045036	.0016512	2.73	0.006	.0012672	.00774
shrelaw1	-.0079932	.0019714	-4.05	0.000	-.011857	-.0041293
shjobw2	-.0053134	.0016484	-3.22	0.001	-.0085442	-.0020826
shhlw2	.0047661	.0017387	2.74	0.006	.0013583	.0081739
shhousw3	.0046804	.0019384	2.41	0.016	.0008812	.0084797
suprtw1	-.0110224	.0076483	-1.44	0.150	-.0260127	.0039679
suchrw1	.0099483	.0067379	1.48	0.140	-.0032578	.0231544
mhlthw2	.0100376	.0028001	3.58	0.000	.0045495	.0155256
mhlthw3	-.0089551	.0027105	-3.30	0.001	-.0142676	-.0036426
icdx3nr6	2.582443	.5833382	4.43	0.000	1.439121	3.725765
ncontw1	-.3679682	.1087398	-3.38	0.001	-.5810944	-.154842
MiPTSD	-.022985	.0042161	-5.45	0.000	-.0312485	-.0147216
defnw1	.0056021	.0020715	2.70	0.007	.0015421	.0096622
defnw2	.003719	.0014714	2.53	0.011	.0008351	.0066028
efradw3	-.0071355	.0016806	-4.25	0.000	-.0104294	-.0038415
trgovw1	-.0054483	.0013202	-4.13	0.000	-.0080359	-.0028608
_cons	4.245024	.4143453	10.25	0.000	3.432922	5.057125
/ln_gam	-1.331356	.0729159	-18.26	0.000	-1.474269	-1.188444
gamma	.2641188	.0192585			.228946	.304695

sc = 445.64029


```

1232 .
1233 . di "Male model comparison:
      Male model comparison:
1234 . estimates stats _all

```

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
<u>ffexponent~l</u>	186	-228.1075	-207.3755	18	450.7511	508.8145
<u>ffweibull</u>	186	-195.5575	-126.4254	19	290.8509	352.1401
<u>fflognormal</u>	186	-202.8786	-141.1965	19	320.393	381.6822
<u>ffloglogis~c</u>	186	-200.5616	-132.9925	19	303.9849	365.2741
<u>ffgamma</u>	186	-194.9136	-126.3458	20	292.6916	357.2065
<u>ftexponent~l</u>	186	-228.1075	-207.336	18	450.672	508.7354
<u>ftweibull</u>	186	-195.5575	-126.7005	19	291.401	352.6902
<u>ftlognormal</u>	186	-202.8786	-140.8154	19	319.6308	380.92
<u>ftloglogis~c</u>	186	-200.5616	-132.7448	19	303.4896	364.7788
<u>ftgamma</u>	186	-194.9136	-126.6969	20	293.3939	357.9088
<u>mexponential</u>	138	-169.7442	-153.8386	28	363.6772	445.6403
<u>mweibull</u>	138	-146.8617	-93.48191	29	244.9638	329.8542
<u>mlognormal</u>	138	-150.2378	-103.6976	29	265.3952	350.2855
<u>mloglogistic</u>	138	-151.9291	-95.85465	29	249.7093	334.5997

Note: N=Obs used in calculating BIC; see [\[R\] BIC note](#)

```

1235 .
1236 . scalar exponentialsc = exponentialsc

1237 . scalar weibullsc = weibullsc

1238 . scalar lognormalsc = lognormalsc

1239 . scalar loglogisticsc = loglogisticsc

1240 . matrix define SCmodCF = [exponentialsc \ weibullsc \ lognormalsc \ loglogis
      > ticsc ]

```

```

1241 . matrix rownames SCmodCF = exponential weibull lognormal loglogistic
1242 . matrix colnames SCmodCF = sc
1243 . di " "

```

```

1244 . qui: {
      Comparison by Schwartz Criterion
      Male models:

```

```

1245 . qui {

```

	sc
exponential	445.6403
weibull	329.8542
lognormal	350.2855
loglogistic	334.5996

```

1246 . // weibull model for males is optimal   frailty was infinitesimal and therefo
> re dropped

```

```

1247 . // theta = 6.38e-88 and theta ci were 1.12e-88 and 3.62e-07

```

```

1248 .

```

```

1249 . ***** Optimal model is the Weibull model for both men and women

```

```

1250 .

```

```

1251 . // tabular estimates of the risk spectrum for males and females

```

```

1252 . forvalues i = 10(10)90 {
      2. set more off
      3. stci, by(agegrp3) p(`i')
      4. }

```

```

      failure _d: desdep25
      analysis time _t: tf
      exit on or before: time .
      id: id

```

agegrp3	no. of subjects	10%	Std. Err.	[95% Conf. Interval]	
lower 1/	96	6	.249351	6	6
middle 1	130	6	.4349524	4	6
upper 1/	114	4	1.059626	1	5
total	340	6	.2664786	4	6

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

agegrp3	no. of subjects	20%	Std. Err.	[95% Conf. Interval]	
lower 1/	96	7	.4941659	6	8
middle 1	130	6	.1730456	6	6
upper 1/	114	6	.2805863	4	6
total	340	6	.1074687	6	6

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

agegrp3	no. of subjects	30%	Std. Err.	[95% Conf. Interval]	
lower 1/	96	9	1.21106	7	12
middle 1	130	6	.2899682	6	8
upper 1/	114	6	.1523183	6	6
total	340	6	.1794839	6	7

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

agegrp3	no. of subjects	40%	Std. Err.	[95% Conf. Interval]	
lower 1/	96	13	1.620185	9	15
middle 1	130	8	.8964614	6	10
upper 1/	114	6	.1523183	6	7
total	340	8	.621771	7	9

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

agegrp3	no. of subjects	50%	Std. Err.	[95% Conf. Interval]	
lower 1/	96	15	1.223681	12	17
middle 1	130	10	.8135431	9	12
upper 1/	114	7	.3479512	6	9
total	340	10	.7372445	9	12

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

agegrp3	no. of subjects	60%	Std. Err.	[95% Conf. Interval]	
lower 1/	96	17	.9582971	15	19
middle 1	130	12	.8688075	10	15
upper 1/	114	9	1.624325	7	14
total	340	13	.8592411	12	15

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

agegrp3	no. of subjects	70%	Std. Err.	[95% Conf. Interval]	
lower 1/	96	19	.8708234	17	23
middle 1	130	15	1.567482	12	18
upper 1/	114	14	2.442317	9	18
total	340	17	.7262454	15	18

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```



```

> *
*****                                cluster                                *****
> *
*****                                robust                                *****
> *
*****                                standard                                *****
> *
*****                                errors                                *****
> *
*****                                in                                *****
> *
*****                                the                                *****
> *
*****                                ph                                *****
> *
*****                                metric)                                *****
> *
*****                                *****
> *
*****                                *****
> *
*****                                *****
> *
*****                                4 Mar 2012    20:16:51    *****
> *
*****
> *
*****
> *

```

```

1256 . xi:streg Korostenskiy ///
>     Narodichevskiy ///
>     Radomischevskiy Tarascheskiy Zhitomirskiy ///
>     i.agegrp3 mar5w1 occ5w3 ///
>     dvcew2 cataw3 ///
>     shfamw1 shrelaw1 ///
>     shjobw2 shhlw2 ///
>     shhousw3 ///
>     suchrw1 ///
>     mhlthw2 mhlthw3 /// // cardiovascular1w1 same as the icdx3nr6
>     icdx3nr6 ///
>     ncontw1 ///
>     MiPTSD ///
>     defnw1 defnw2 efradw3 ///
>     trgovw1 if gender==1, dist(weibull) iterate(20) time vce(clu
> ster id) nolog
i.agegrp3      _Iagegrp3_1-3      (naturally coded; _Iagegrp3_1 omitted)

```

```

failure _d:  desdep25
analysis time _t:  tf
exit on or before:  time .
id:  id

```

Weibull regression -- accelerated failure-time form

```

No. of subjects      =          138          Number of obs      =          138
No. of failures      =          136
Time at risk        =          1871

Log pseudolikelihood =    -93.898227          Wald chi2(20)      =    2260.46
                                          Prob > chi2        =      0.0000

```

(Std. Err. adjusted for 138 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	-3.17356	.2166919	-14.65	0.000	-3.598268	-2.748852
Narodichev~y	-1.215731	.2867179	-4.24	0.000	-1.777688	-.6537743
Radomische~y	-.9009331	.221497	-4.07	0.000	-1.335059	-.4668069
Tarascheskiy	.8409987	.1408393	5.97	0.000	.5649588	1.117039
Zhitomirskiy	-.3504347	.1003906	-3.49	0.000	-.5471966	-.1536728
_Iagegrp3_2	-.2071715	.1141079	-1.82	0.069	-.4308188	.0164759
_Iagegrp3_3	-.2513432	.1449232	-1.73	0.083	-.5353874	.032701
mar5w1	.1923914	.1451708	1.33	0.185	-.092138	.4769209
occ5w3	.6114913	.1275284	4.79	0.000	.3615403	.8614423
dvcew2	-.6366733	.2363822	-2.69	0.007	-1.099974	-.1733726
cataw3	2.126682	.2810774	7.57	0.000	1.575781	2.677584
shfamw1	.003844	.0012799	3.00	0.003	.0013353	.0063526
shrelaw1	-.006487	.0017279	-3.75	0.000	-.0098735	-.0031005
shjobw2	-.0034972	.0014052	-2.49	0.013	-.0062514	-.000743
shhlw2	.0054587	.0013906	3.93	0.000	.0027331	.0081842
shhousw3	.0037509	.0016953	2.21	0.027	.0004281	.0070736
suchrw1	.0059198	.003673	1.61	0.107	-.0012792	.0131188
mhlthw2	.012213	.0017879	6.83	0.000	.0087087	.0157173
mhlthw3	-.0083313	.0020259	-4.11	0.000	-.0123021	-.0043605
icdx3nr6	2.474383	.2170497	11.40	0.000	2.048973	2.899792
ncontw1	-.2495329	.1005855	-2.48	0.013	-.446677	-.0523889
MiPTSD	-.0266719	.0034345	-7.77	0.000	-.0334034	-.0199404
defnw1	.0043464	.0018357	2.37	0.018	.0007486	.0079443
defnw2	.0029555	.001288	2.29	0.022	.000431	.0054799
efradw3	-.0067045	.0015022	-4.46	0.000	-.0096486	-.0037603
trgovw1	-.0056413	.0011851	-4.76	0.000	-.0079641	-.0033185
_cons	4.030417	.337542	11.94	0.000	3.368847	4.691987
/ln_p	.9208884	.0751875	12.25	0.000	.7735237	1.068253
p	2.511521	.188835			2.16739	2.910291

```
1257 .
1258 .
1259 .
1260 .  ***** Estimating a male baseline Weibull hazard model *****
      > ***
1261 .  set more off
1262 .  title(AFT male Basline weibull model with ordinary standard errors)
```




```

1263 . xi:streg i.agegrp if gender==1, nohr dist(weibull) iterate(20) time vce(clus
> ter id) nolog
      i.agegrp3      _Iagegrp3_1-3      (naturally coded; _Iagegrp3_1 omitted)

      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
      id:  id

```

Weibull regression -- accelerated failure-time form

```

No. of subjects      =      154      Number of obs      =      154
No. of failures      =      152
Time at risk        =      1980

                                Wald chi2(2)      =      7.37
Log pseudolikelihood =    -164.55337      Prob > chi2      =      0.0252

```

(Std. Err. adjusted for 154 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
_Iagegrp3_2	-.2693131	.1127615	-2.39	0.017	-.4903216	-.0483046
_Iagegrp3_3	-.2515251	.1236339	-2.03	0.042	-.493843	-.0092072
_cons	2.839837	.0707758	40.12	0.000	2.701119	2.978555
/ln_p	.4940428	.0462585	10.68	0.000	.4033779	.5847077
p	1.638929	.0758143			1.496872	1.794466
1/p	.6101547	.0282248			.5572687	.6680596

```

1264 . predict maleBL_lnmedtime, lntime // predicting the ln median survival time
(option log median time assumed; predicted median log time)
(21557 missing values generated)

```

```

1265 . predict mhazard, hazard
      (21557 missing values generated)

1266 . predict mBLsurv, surv
      (21557 missing values generated)

1267 . predict mBLcsurv, csurv
      (21743 missing values generated)

1268 . label var maleBL_lnmertime "predicted baseline ln of median survival time"

1269 . summarize maleBL_lnmertime, detail

```

predicted baseline ln of median survival time				
Percentiles		Smallest		
1%	2.346895	2.346895		
5%	2.346895	2.346895		
10%	2.346895	2.346895	Obs	340
25%	2.346895	2.346895	Sum of Wgt.	340
50%	2.364682		Mean	2.4289
		Largest	Std. Dev.	.1179025
75%	2.616208	2.616208		
90%	2.616208	2.616208	Variance	.013901
95%	2.616208	2.616208	Skewness	.9534831
99%	2.616208	2.616208	Kurtosis	1.928868

```

1270 . tabstat maleBL_lnmertime, stat(median mean )

```

variable	p50	mean
maleBL_lnm~e	2.364682	2.4289

```

1271 .
1272 . // gen h = p * t ^ (p-1) * exp(a)

```



```

*****                                errors)                                *****
> *
*****                                *****
> *
*****                                *****
> *
*****                                4 Mar 2012    20:16:53    *****
> *
*****
> *
*****
> *

```

```

1284 . xi:streg Korostenskiy ///
>     Narodichevskiy ///
>     Radomischevskiy Tarascheskiy Zhitomirskiy ///
>     i.agegrp3 mar5w1 occ5w3 ///
>     dvcew2 cataw3 ///
>     shfamw1 shrelaw1 ///
>     shjobw2 shhlw2 ///
>     shhousw3 ///
>     suchrw1 ///
>     mhlthw2 mhlthw3 /// // cardiovascular1w1 same as the icdx3nr6
>     icdx3nr6 ///
>     ncontw1 ///
>     MiPTSD ///
>     defnw1 defnw2 efradw3 ///
>     trgovw1 if gender==1, dist(weibull) iterate(20) time vce(clus
> ter id) nolog
i.agegrp3      _Iagegrp3_1-3      (naturally coded; _Iagegrp3_1 omitted)

      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
                        id:  id

```

Weibull regression -- accelerated failure-time form

No. of subjects	=	138	Number of obs	=	138
No. of failures	=	136			
Time at risk	=	1871			
Log pseudolikelihood	=	-93.898227	Wald chi2(20)	=	2260.46
			Prob > chi2	=	0.0000

(Std. Err. adjusted for 138 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	-3.17356	.2166919	-14.65	0.000	-3.598268	-2.748852
Narodichev~y	-1.215731	.2867179	-4.24	0.000	-1.777688	-.6537743
Radomische~y	-.9009331	.221497	-4.07	0.000	-1.335059	-.4668069
Tarascheskiy	.8409987	.1408393	5.97	0.000	.5649588	1.117039
Zhitomirskiy	-.3504347	.1003906	-3.49	0.000	-.5471966	-.1536728
_Iagegrp3_2	-.2071715	.1141079	-1.82	0.069	-.4308188	.0164759
_Iagegrp3_3	-.2513432	.1449232	-1.73	0.083	-.5353874	.032701
mar5w1	.1923914	.1451708	1.33	0.185	-.092138	.4769209
occ5w3	.6114913	.1275284	4.79	0.000	.3615403	.8614423
dvcew2	-.6366733	.2363822	-2.69	0.007	-1.099974	-.1733726
cataw3	2.126682	.2810774	7.57	0.000	1.575781	2.677584
shfamw1	.003844	.0012799	3.00	0.003	.0013353	.0063526
shrelaw1	-.006487	.0017279	-3.75	0.000	-.0098735	-.0031005
shjobw2	-.0034972	.0014052	-2.49	0.013	-.0062514	-.000743
shhlw2	.0054587	.0013906	3.93	0.000	.0027331	.0081842
shhousw3	.0037509	.0016953	2.21	0.027	.0004281	.0070736
suchrw1	.0059198	.003673	1.61	0.107	-.0012792	.0131188
mhlthw2	.012213	.0017879	6.83	0.000	.0087087	.0157173
mhlthw3	-.0083313	.0020259	-4.11	0.000	-.0123021	-.0043605
icdx3nr6	2.474383	.2170497	11.40	0.000	2.048973	2.899792
ncontw1	-.2495329	.1005855	-2.48	0.013	-.446677	-.0523889
MiPTSD	-.0266719	.0034345	-7.77	0.000	-.0334034	-.0199404
defnw1	.0043464	.0018357	2.37	0.018	.0007486	.0079443
defnw2	.0029555	.001288	2.29	0.022	.000431	.0054799
efradw3	-.0067045	.0015022	-4.46	0.000	-.0096486	-.0037603
trgovw1	-.0056413	.0011851	-4.76	0.000	-.0079641	-.0033185
_cons	4.030417	.337542	11.94	0.000	3.368847	4.691987
/ln_p	.9208884	.0751875	12.25	0.000	.7735237	1.068253
p	2.511521	.188835			2.16739	2.910291
1/p	.3981651	.029937			.3436082	.4613844

```
1286 . title(AFT male full weibull model with cluster robust standard errors)
```

4 Mar 2012 20:16:54 ****

```

1287 . xi:streg Korostenskiy ///
>     Narodichevskiy ///
>     Radomischevskiy Tarascheskiy Zhitomirskiy ///
>     i.agegrp3 mar5w1 occ5w3 ///
>     dvcew2 cataw3 ///
>     shfamw1 shrelaw1 ///
>     shjobw2 shhlw2 ///
>     shhousw3 ///
>     suchrw1 ///
>     mhlthw2 mhlthw3 /// // cardiovascular1w1 same as the icdx3nr6
>     icdx3nr6 ///
>     ncontw1 ///
>     MiPTSD ///
>     defnw1 defnw2 efradw3 ///
>     trgovw1 if gender==1, dist(weibull) iterate(20) time vce(clus
> ter id) nolog
i.agegrp3      _Iagegrp3_1-3      (naturally coded; _Iagegrp3_1 omitted)

      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
      id:  id

```

Weibull regression -- accelerated failure-time form

```

No. of subjects      =           138              Number of obs      =           138
No. of failures      =           136
Time at risk         =           1871

Log pseudolikelihood =      -93.898227           Wald chi2(20)      =      2260.46
                                                    Prob > chi2        =           0.0000

```

(Std. Err. adjusted for 138 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	-3.17356	.2166919	-14.65	0.000	-3.598268	-2.748852
Narodichev~y	-1.215731	.2867179	-4.24	0.000	-1.777688	-.6537743
Radomische~y	-.9009331	.221497	-4.07	0.000	-1.335059	-.4668069
Tarascheskiy	.8409987	.1408393	5.97	0.000	.5649588	1.117039
Zhitomirskiy	-.3504347	.1003906	-3.49	0.000	-.5471966	-.1536728
_Iagegrp3_2	-.2071715	.1141079	-1.82	0.069	-.4308188	.0164759
_Iagegrp3_3	-.2513432	.1449232	-1.73	0.083	-.5353874	.032701
mar5w1	.1923914	.1451708	1.33	0.185	-.092138	.4769209
occ5w3	.6114913	.1275284	4.79	0.000	.3615403	.8614423
dvcew2	-.6366733	.2363822	-2.69	0.007	-1.099974	-.1733726
cataw3	2.126682	.2810774	7.57	0.000	1.575781	2.677584
shfamw1	.003844	.0012799	3.00	0.003	.0013353	.0063526
shrelaw1	-.006487	.0017279	-3.75	0.000	-.0098735	-.0031005

shjobw2	-.0034972	.0014052	-2.49	0.013	-.0062514	-.000743
shhlw2	.0054587	.0013906	3.93	0.000	.0027331	.0081842
shhousw3	.0037509	.0016953	2.21	0.027	.0004281	.0070736
suchrw1	.0059198	.003673	1.61	0.107	-.0012792	.0131188
mhlthw2	.012213	.0017879	6.83	0.000	.0087087	.0157173
mhlthw3	-.0083313	.0020259	-4.11	0.000	-.0123021	-.0043605
icdx3nr6	2.474383	.2170497	11.40	0.000	2.048973	2.899792
ncontw1	-.2495329	.1005855	-2.48	0.013	-.446677	-.0523889
MiPTSD	-.0266719	.0034345	-7.77	0.000	-.0334034	-.0199404
defnw1	.0043464	.0018357	2.37	0.018	.0007486	.0079443
defnw2	.0029555	.001288	2.29	0.022	.000431	.0054799
efradw3	-.0067045	.0015022	-4.46	0.000	-.0096486	-.0037603
trgovw1	-.0056413	.0011851	-4.76	0.000	-.0079641	-.0033185
_cons	4.030417	.337542	11.94	0.000	3.368847	4.691987
/ln_p	.9208884	.0751875	12.25	0.000	.7735237	1.068253
p	2.511521	.188835			2.16739	2.910291
1/p	.3981651	.029937			.3436082	.4613844

```

1288 .
1289 .
1290 .   cap predict maleFM_medtime, median time

1291 .
1292 .
1293 .   cap  predict maleFM_lnmedtime, lntime

1294 .   label var maleFM_medtime "male Full model median survival time"

1295 .   label var maleFM_lnmedtime "male full model: ln(median survival time)"

1296 .   tabstat maleBL_lnmedtime maleFM_lnmedtime, stat(median mean)

```

stats	maleBL~e	maleFM..
p50	2.364682	2.441422
mean	2.4289	2.391357


```

1297 .   label var maleBL_lnmedtime "Pred. ln(median survival time)"

1298 .   sts test maleBL_lnmedtime maleFM_lnmedtime, wilcoxon // test for equalit
> y of ranks of survival functions

      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
                   id:  id

```

Wilcoxon (Breslow) test for equality of survivor functions

maleBL~e, maleFM~e	Events observed	Events expected	Sum of ranks
2.346895, -.3165197	1	0.80	-32
2.346895, -.2300425	1	0.80	-32
2.346895, -.0494774	1	0.34	166
2.346895, .5472145	1	0.03	260
2.346895, 1.278354	1	2.11	-211
2.346895, 1.347188	1	0.34	166
2.346895, 1.417721	1	0.65	5
2.346895, 1.499585	1	0.40	89
2.346895, 1.513149	1	0.34	166
2.346895, 1.533129	1	0.34	166
2.346895, 1.554618	0	2.11	-246
2.346895, 1.638972	1	0.34	166
2.346895, 1.644998	1	0.34	166
2.346895, 1.672789	1	0.73	-13
2.346895, 1.675245	1	2.82	-241
2.346895, 1.722345	1	0.53	44
2.346895, 1.78823	1	2.82	-241
2.346895, 1.793242	1	0.65	5
2.346895, 1.799352	1	0.47	65
2.346895, 1.818606	1	0.34	166
2.346895, 1.878533	1	0.34	166
2.346895, 1.88095	1	0.60	24
2.346895, 1.904655	1	0.34	166
2.346895, 1.924642	1	0.34	166
2.346895, 1.97552	1	0.34	166
2.346895, 1.981098	1	1.26	-117
2.346895, 2.012881	1	1.09	-97
2.346895, 2.027009	1	0.34	166
2.346895, 2.0547	1	0.60	24
2.346895, 2.082882	1	1.48	-153
2.346895, 2.088801	1	1.48	-153
2.346895, 2.095844	1	0.34	166

2.346895, 2.110237	1	0.73	-13
2.346895, 2.128723	1	0.93	-61
2.346895, 2.139643	1	0.34	166
2.346895, 2.143149	1	1.03	-81
2.346895, 2.154647	1	0.80	-32
2.346895, 2.212637	1	0.08	235
2.346895, 2.225953	1	0.60	24
2.346895, 2.231969	1	0.40	89
2.346895, 2.241345	1	0.34	166
2.346895, 2.260308	1	1.03	-81
2.346895, 2.262435	1	0.80	-32
2.346895, 2.302751	1	0.07	245
2.346895, 2.342478	1	0.34	166
2.346895, 2.349442	1	0.47	65
2.346895, 2.357381	1	0.02	269
2.346895, 2.379777	1	0.73	-13
2.346895, 2.407534	1	0.34	166
2.346895, 2.427984	1	0.40	89
2.346895, 2.461808	1	1.35	-138
2.346895, 2.468148	1	0.34	166
2.346895, 2.483814	1	0.40	89
2.346895, 2.513468	1	0.73	-13
2.346895, 2.514168	1	0.53	44
2.346895, 2.516866	1	3.37	-258
2.346895, 2.549983	1	0.60	24
2.346895, 2.550616	1	1.03	-81
2.346895, 2.556105	1	0.34	166
2.346895, 2.557366	1	1.26	-117
2.346895, 2.578231	1	0.40	89
2.346895, 2.627569	1	0.73	-13
2.346895, 2.647717	1	2.11	-211
2.346895, 2.664866	1	0.34	166
2.346895, 2.669089	1	2.11	-211
2.346895, 2.686763	1	0.34	166
2.346895, 2.688512	1	1.74	-183
2.346895, 2.693213	1	0.65	5
2.346895, 2.704593	1	0.60	24
2.346895, 2.706069	1	0.03	260
2.346895, 2.712304	1	1.26	-117
2.346895, 2.719682	1	0.60	24
2.346895, 2.7299	1	1.48	-153
2.346895, 2.732158	1	1.26	-117
2.346895, 2.73912	1	1.74	-183
2.346895, 2.739912	1	0.47	65
2.346895, 2.76183	1	0.34	166
2.346895, 2.764125	1	1.48	-153
2.346895, 2.783356	1	0.73	-13
2.346895, 2.785749	1	1.62	-175
2.346895, 2.786195	1	1.94	-200

2.346895, 2.789692	1	0.65	5
2.346895, 2.803003	1	0.53	44
2.346895, 2.814178	1	0.34	166
2.346895, 2.832151	1	1.26	-117
2.346895, 2.832931	1	0.04	254
2.346895, 2.85483	1	0.34	166
2.346895, 2.87577	1	1.35	-138
2.346895, 2.879646	1	1.81	-192
2.346895, 3.007915	1	0.34	166
2.346895, 3.023293	1	0.73	-13
2.346895, 3.045346	1	1.03	-81
2.346895, 3.047262	1	1.94	-200
2.346895, 3.062538	1	1.26	-117
2.346895, 3.070718	0	3.37	-269
2.346895, 3.096562	1	0.93	-61
2.346895, 3.114436	1	3.37	-258
2.346895, 3.159789	1	2.82	-241
2.346895, 3.162497	1	0.34	166
2.346895, 3.238328	1	0.73	-13
2.346895, 3.261819	1	0.93	-61
2.346895, 3.366629	1	0.80	-32
2.346895, 3.54306	1	1.58	-167
2.364682, -.8649958	1	1.03	-81
2.364682, .7737095	1	0.93	-61
2.364682, .9526796	2	0.09	508
2.364682, 1.318854	1	0.02	269
2.364682, 1.332998	1	1.94	-200
2.364682, 1.33878	1	0.47	65
2.364682, 1.413522	1	0.07	245
2.364682, 1.516936	1	1.94	-200
2.364682, 1.52021	1	0.07	245
2.364682, 1.60286	1	0.34	166
2.364682, 1.605948	1	0.02	269
2.364682, 1.689884	1	0.34	166
2.364682, 1.696707	1	0.53	44
2.364682, 1.707674	1	0.93	-61
2.364682, 1.748635	1	0.34	166
2.364682, 1.767792	1	0.34	166
2.364682, 1.788808	1	0.07	245
2.364682, 1.832193	1	0.40	89
2.364682, 1.853909	1	0.34	166
2.364682, 1.878449	1	3.37	-258
2.364682, 1.878903	1	0.34	166
2.364682, 1.884075	1	0.34	166
2.364682, 1.888208	1	0.93	-61
2.364682, 1.909088	1	0.34	166
2.364682, 1.912025	1	0.08	235
2.364682, 1.929941	1	0.84	-46
2.364682, 1.947335	1	0.34	166

2.364682, 1.960051	1	0.34	166
2.364682, 1.974162	1	0.47	65
2.364682, 2.007412	1	0.02	269
2.364682, 2.018297	1	0.34	166
2.364682, 2.021609	1	0.07	245
2.364682, 2.03004	1	0.60	24
2.364682, 2.063543	1	0.34	166
2.364682, 2.092568	1	0.47	65
2.364682, 2.126303	1	0.34	166
2.364682, 2.138273	1	0.53	44
2.364682, 2.151549	1	0.40	89
2.364682, 2.156652	1	0.60	24
2.364682, 2.162542	1	0.34	166
2.364682, 2.168602	1	1.35	-138
2.364682, 2.206223	1	0.34	166
2.364682, 2.251316	1	0.34	166
2.364682, 2.269282	1	0.34	166
2.364682, 2.283679	1	0.34	166
2.364682, 2.297041	1	1.26	-117
2.364682, 2.297258	1	0.07	245
2.364682, 2.318014	1	0.84	-46
2.364682, 2.326689	1	1.94	-200
2.364682, 2.343475	1	0.34	166
2.364682, 2.398475	1	0.47	65
2.364682, 2.431568	1	2.11	-211
2.364682, 2.431786	1	1.26	-117
2.364682, 2.440107	1	1.09	-97
2.364682, 2.468139	1	0.84	-46
2.364682, 2.478641	1	0.02	269
2.364682, 2.496458	1	0.53	44
2.364682, 2.500629	1	1.58	-167
2.364682, 2.523986	1	0.34	166
2.364682, 2.587136	1	0.34	166
2.364682, 2.703965	1	1.09	-97
2.364682, 2.735604	1	0.40	89
2.364682, 2.76041	1	1.03	-81
2.364682, 2.81568	1	0.34	166
2.364682, 2.853591	1	0.80	-32
2.364682, 2.854565	1	0.34	166
2.364682, 2.856796	1	1.26	-117
2.364682, 2.864683	1	2.82	-241
2.364682, 2.888398	1	0.34	166
2.364682, 2.904648	1	0.02	269
2.364682, 2.910735	1	2.82	-241
2.364682, 2.924933	1	2.82	-241
2.364682, 2.93224	1	2.32	-224
2.364682, 2.957353	1	3.37	-258
2.364682, 2.96941	1	2.32	-224
2.364682, 2.981863	1	0.47	65

2.364682, 3.022051	1	0.60	24
2.364682, 3.023512	1	0.34	166
2.364682, 3.030664	1	0.73	-13
2.364682, 3.098693	1	1.58	-167
2.364682, 3.111838	1	1.74	-183
2.364682, 3.112164	1	2.11	-211
2.364682, 3.148213	1	1.74	-183
2.364682, 3.155834	1	1.58	-167
2.364682, 3.177666	1	0.53	44
2.364682, 3.186272	1	2.82	-241
2.364682, 3.253457	1	0.03	260
2.364682, 3.263315	1	1.58	-167
2.364682, 4.537315	1	1.48	-153
2.616208, 1.317386	1	0.08	235
2.616208, 1.469685	1	1.35	-138
2.616208, 1.590163	1	0.60	24
2.616208, 1.676917	1	1.26	-117
2.616208, 1.835369	1	0.93	-61
2.616208, 1.911285	1	0.34	166
2.616208, 1.994758	1	0.34	166
2.616208, 2.005323	1	0.34	166
2.616208, 2.029274	1	0.40	89
2.616208, 2.035896	1	0.40	89
2.616208, 2.037598	1	0.47	65
2.616208, 2.055703	1	0.84	-46
2.616208, 2.147811	1	0.65	5
2.616208, 2.194039	1	0.93	-61
2.616208, 2.202769	1	0.34	166
2.616208, 2.233275	1	0.34	166
2.616208, 2.256885	1	0.53	44
2.616208, 2.271001	1	0.84	-46
2.616208, 2.274907	1	0.40	89
2.616208, 2.276052	1	0.47	65
2.616208, 2.282331	1	0.34	166
2.616208, 2.311877	1	2.82	-241
2.616208, 2.320136	1	0.34	166
2.616208, 2.320328	1	1.03	-81
2.616208, 2.320911	1	0.34	166
2.616208, 2.338825	1	0.80	-32
2.616208, 2.346224	1	0.73	-13
2.616208, 2.350458	1	1.03	-81
2.616208, 2.364892	1	0.80	-32
2.616208, 2.371863	1	1.03	-81
2.616208, 2.405618	1	0.34	166
2.616208, 2.425206	1	0.40	89
2.616208, 2.441422	1	0.80	-32
2.616208, 2.455262	1	1.26	-117
2.616208, 2.471657	1	0.60	24
2.616208, 2.49164	1	2.32	-224

2.616208, 2.517213	1	1.62	-175
2.616208, 2.525311	1	0.65	5
2.616208, 2.545291	1	0.65	5
2.616208, 2.556425	1	1.26	-117
2.616208, 2.58044	1	0.34	166
2.616208, 2.615502	1	0.53	44
2.616208, 2.619496	1	1.48	-153
2.616208, 2.626227	1	3.37	-258
2.616208, 2.640244	1	1.26	-117
2.616208, 2.64089	1	0.08	235
2.616208, 2.648412	1	1.09	-97
2.616208, 2.665481	1	0.47	65
2.616208, 2.669931	1	1.35	-138
2.616208, 2.682285	1	1.09	-97
2.616208, 2.682393	1	0.34	166
2.616208, 2.733924	1	0.34	166
2.616208, 2.741343	0	3.37	-269
2.616208, 2.768711	1	0.47	65
2.616208, 2.806995	1	1.58	-167
2.616208, 2.817242	1	0.34	166
2.616208, 2.871457	1	1.03	-81
2.616208, 2.873679	1	1.74	-183
2.616208, 2.875869	1	2.82	-241
2.616208, 2.883758	1	0.93	-61
2.616208, 2.888775	1	2.82	-241
2.616208, 2.907831	1	2.82	-241
2.616208, 2.915648	1	3.87	-268
2.616208, 2.947886	1	1.09	-97
2.616208, 2.974586	1	1.35	-138
2.616208, 3.008804	0	3.87	-270
2.616208, 3.020121	1	1.81	-192
2.616208, 3.03195	1	1.48	-153
2.616208, 3.0375	1	1.26	-117
2.616208, 3.040898	1	1.81	-192
2.616208, 3.074471	1	0.93	-61
2.616208, 3.083829	1	2.32	-224
2.616208, 3.106023	1	2.11	-211
2.616208, 3.190553	1	1.48	-153
2.616208, 3.27879	1	2.32	-224
2.616208, 3.366489	0	3.37	-269
2.616208, 3.405181	1	1.74	-183
2.616208, 3.439961	1	0.65	5
2.616208, 3.440683	1	1.35	-138
2.616208, 3.450873	1	3.37	-258
2.616208, 4.014441	1	2.32	-224
2.616208, 4.129042	1	0.34	166
Total	270	270.00	0

```

chi2(273) =      818.01
Pr>chi2 =       0.0000

1299 .   mlowess maleBL_lnmedtime _t   maleFM_lnmedtime _t , legend(rows(3))

        275 observations, R-sq = 0.0708

1300 .   gr save mlowMaleBLlnSurvtime.gph, replace
        (file mlowMaleBLlnSurvtime.gph saved)

1301 .   gr export mlowMaleBLlnSurvTime.eps, replace
        (file mlowMaleBLlnSurvTime.eps written in EPS format)

1302 .

1303 .   // Display of Differential hazard and cumulative hazard rates for different
        > age groups

1304 .   set more off

1305 . title(AFT male full weibull model with cluster robust standard errors)


*****
> *
*****
> *
*****
> *
*****          (AFT          *****
> *
*****          male          *****
> *
*****          full          *****
> *
*****          weibull       *****
> *
*****          model         *****
> *
*****          with          *****
> *
*****          cluster       *****
> *
*****          robust        *****
> *
*****          standard      *****
> *
*****          errors)       *****
> *

```

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*****
> *
*****
> *
*****
4 Mar 2012    20:17:13    ****
> *
*****
> *
*****
> *

```

```

1306 . streg Korostenskiy ///
>      Narodichevskiy ///
>      Radomischevskiy Tarascheskiy Zhitomirskiy ///
>      agegrp3 mar5w1 occ5w3 ///
>      dvcew2 cataw3 ///
>      shfamw1 shrelaw1 ///
>      shjobw2 shhlw2 ///
>      shhousw3 ///
>      suchrw1 ///
>      mhlthw2 mhlthw3 /// // cardiovascular1w1 same as the icdx3nr6
>      icdx3nr6 ///
>      ncontw1 ///
>      MiPTSD ///
>      defnw1 defnw2 efradw3 ///
>      trgovw1 if gender==1, dist(weibull) iterate(20) time vce(clus
> ter id) nolog

      failure _d: desdep25
      analysis time _t: tf
      exit on or before: time .
                      id: id

```

Weibull regression -- accelerated failure-time form

No. of subjects	=	138	Number of obs	=	138
No. of failures	=	136			
Time at risk	=	1871			
			Wald chi2(19)	=	2255.54
Log pseudolikelihood =	-94.267935		Prob > chi2	=	0.0000

(Std. Err. adjusted for 138 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	-3.137538	.2145801	-14.62	0.000	-3.558107	-2.716969
Narodichev~y	-1.193066	.2701538	-4.42	0.000	-1.722558	-.6635748
Radomische~y	-.9760222	.1963052	-4.97	0.000	-1.360773	-.591271
Tarascheskiy	.8721961	.1375354	6.34	0.000	.6026316	1.141761
Zhitomirskiy	-.3569086	.1023683	-3.49	0.000	-.5575469	-.1562703
agegrp3	-.1305388	.0714815	-1.83	0.068	-.27064	.0095624
mar5w1	.1678762	.1312057	1.28	0.201	-.0892822	.4250347
occ5w3	.5787532	.1220592	4.74	0.000	.3395215	.8179848
dvcew2	-.6421208	.2218088	-2.89	0.004	-1.076858	-.2073835
cataw3	2.135494	.2831708	7.54	0.000	1.58049	2.690499
shfamw1	.0036437	.0012237	2.98	0.003	.0012453	.0060421
shrelaw1	-.0065932	.0017508	-3.77	0.000	-.0100247	-.0031617
shjobw2	-.003087	.0013075	-2.36	0.018	-.0056497	-.0005243
shhlw2	.0050334	.0012493	4.03	0.000	.0025848	.007482
shhousw3	.0036757	.0016966	2.17	0.030	.0003505	.007001
suchrw1	.0060646	.0036262	1.67	0.094	-.0010426	.0131719
mhlthw2	.0123026	.001784	6.90	0.000	.008806	.0157992
mhlthw3	-.0081635	.0020172	-4.05	0.000	-.0121172	-.0042098
icdx3nr6	2.461494	.2153663	11.43	0.000	2.039384	2.883604
ncontw1	-.2618633	.0975413	-2.68	0.007	-.4530406	-.0706859
MiPTSD	-.0268803	.0033141	-8.11	0.000	-.0333758	-.0203848
defnw1	.0043906	.0018572	2.36	0.018	.0007506	.0080306
defnw2	.0030663	.0012686	2.42	0.016	.00058	.0055527
efradw3	-.0068498	.0014926	-4.59	0.000	-.0097752	-.0039245
trgovw1	-.0052119	.0010898	-4.78	0.000	-.007348	-.0030759
_cons	4.146304	.377181	10.99	0.000	3.407043	4.885565
/ln_p	.9200898	.075652	12.16	0.000	.7718147	1.068365
p	2.509516	.1898498			2.163689	2.910616
1/p	.3984833	.030146			.3435698	.4621736

```

1307 .
1308 .  stcurve, hazard at1(agegrp3 = 1) at2(agegrp3 = 2) at3(agegrp3 = 3) subtitle
> (for ln(time) till depression among males by age group) ///
>      caption(age group 1 is youngest and age group 3 is the oldest)

1309 .  stcurve, cumhaz at1(agegrp3 = 1) at2(agegrp3 = 2) at3(agegrp3 = 3) subtitle
> (for ln(time) till depression among males by age group) ///
>      caption(age group 1 is youngest and age group 3 is the oldest)

1310 .      gr save cumhazXagegp3.gph, replace
(file cumhazXagegp3.gph saved)

1311 .      gr export cumhazXagegp3.eps, replace
(file cumhazXagegp3.eps written in EPS format)

1312 .
1313 . // Potential heterogeneity by age group  for males
1314 . sts graph if gender==1, hazard by(agegrp3) kernel(gaussian)  subtitle(for ma
> le respondents)

          failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                   id:  id

1315 . stpower logrank .2  (.3 .4 .5 .6 .7 .8 .9), n(200 300) colwidth(7)

```

Estimated power for two-sample comparison of survivor functions
Log-rank test, Freedman method
Ho: $S_1(t) = S_2(t)$

Power	N	N1	N2	E	S1	S2	HR	Alpha*
.4227	200	100	100	150	.2	.3	.7481	.05
.58	300	150	150	225	.2	.3	.7481	.05
.901	200	100	100	140	.2	.4	.5693	.05
.9782	300	150	150	210	.2	.4	.5693	.05
.995	200	100	100	130	.2	.5	.4307	.05
.9998	300	150	150	195	.2	.5	.4307	.05
.9999	200	100	100	121	.2	.6	.3174	.05
1	300	150	150	181	.2	.6	.3174	.05
1	200	100	100	111	.2	.7	.2216	.05
1	300	150	150	165	.2	.7	.2216	.05
1	200	100	100	100	.2	.8	.1386	.05
1	300	150	150	150	.2	.8	.1386	.05
1	200	100	100	90	.2	.9	.0655	.05
1	300	150	150	135	.2	.9	.0655	.05

* two sided

1316 . sts test gender

failure _d: **desdep25**
analysis time _t: **tf**
exit on or before: **time .**
id: **id**

Log-rank test for equality of survivor functions

gender	Events observed	Events expected
1. male	152	155.75
2. female	182	178.25
Total	334	334.00

chi2(1) = **0.20**
Pr>chi2 = **0.6550**

1317 . sts test agegrp3

failure _d: **desdep25**
analysis time _t: **tf**
exit on or before: **time .**
id: **id**

Log-rank test for equality of survivor functions

agegrp3	Events observed	Events expected
lower 1/3	93	120.54
middle 1/3	127	120.07
upper 1/3	114	93.39
Total	334	334.00

chi2(2) = **13.34**
Pr>chi2 = **0.0013**


```

*****                                with                                *****
> *
*****                                cluster                                *****
> *
*****                                robust                                *****
> *
*****                                standard                                *****
> *
*****                                errors)                                *****
> *
*****                                *****
> *
*****                                *****
> *
*****                                4 Mar 2012    20:17:27    *****
> *
*****
> *
*****
> *

```

```
1322 . set more off
```

```

1323 . streg Korostenskiy ///
>     Narodichevskiy ///
>     Tarascheskiy Zhitomirskiy ///
>     agegrp3 mar5w1 occ5w3 ///
>     dvcew2 cataw3 ///
>     shfamw1 shrelaw1 ///
>     shjobw2 shhlw2 ///
>     shhousw3 ///
>     suchrw1 ///
>     mhlthw2 mhlthw3 /// // cardiovascular1w1 same as the icdx3nr6
>     icdx3nr6 ///
>     ncontw1 ///
>     MiPTSD ///
>     defnw1 defnw2 efradw3 ///
>     trgovw1 if gender==1, dist(weibull) iterate(20) time vce(cl
> uster id) nolog

        failure _d:  desdep25
        analysis time _t:  tf
        exit on or before:  time .
                        id:  id

```

```
Weibull regression -- accelerated failure-time form
```

No. of subjects = 138
 No. of failures = 136
 Time at risk = 1871

Number of obs = 138

Log pseudolikelihood = -95.692423

Wald chi2(19) = 536.38

Prob > chi2 = 0.0000

(Std. Err. adjusted for 138 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Korostenskiy	-3.1865	.2200709	-14.48	0.000	-3.617831	-2.755169
Narodichev~y	-1.215181	.2674557	-4.54	0.000	-1.739385	-.6909778
Tarascheskiy	.8924025	.1388364	6.43	0.000	.6202882	1.164517
Zhitomirskiy	-.3621661	.1043159	-3.47	0.001	-.5666215	-.1577107
agegrp3	-.1331507	.0717268	-1.86	0.063	-.2737327	.0074314
mar5w1	.1605982	.13133	1.22	0.221	-.0968039	.4180003
occ5w3	.5882384	.1204949	4.88	0.000	.3520727	.824404
dvcew2	-.6514966	.2174453	-3.00	0.003	-1.077682	-.2253116
cataw3	2.167814	.2845152	7.62	0.000	1.610175	2.725454
shfamw1	.0038563	.0012317	3.13	0.002	.0014422	.0062703
shrelaw1	-.0070767	.001803	-3.93	0.000	-.0106104	-.0035429
shjobw2	-.0031458	.0013177	-2.39	0.017	-.0057284	-.0005632
shhlw2	.005219	.0012746	4.09	0.000	.0027208	.0077173
shhousw3	.0039994	.00173	2.31	0.021	.0006087	.0073901
suchrw1	.006114	.0036727	1.66	0.096	-.0010844	.0133124
mhlthw2	.0124891	.001814	6.89	0.000	.0089338	.0160444
mhlthw3	-.0082174	.0020297	-4.05	0.000	-.0121955	-.0042394
icdx3nr6	2.529444	.2245522	11.26	0.000	2.089329	2.969558
ncontw1	-.274141	.0979438	-2.80	0.005	-.4661074	-.0821747
MiPTSD	-.0273033	.0033761	-8.09	0.000	-.0339204	-.0206863
defnw1	.0049113	.0019223	2.55	0.011	.0011437	.0086789
defnw2	.0027869	.0013158	2.12	0.034	.0002079	.0053658
efradw3	-.0070904	.0015213	-4.66	0.000	-.0100721	-.0041087
trgovw1	-.0054833	.0011176	-4.91	0.000	-.0076738	-.0032929
_cons	4.170439	.3775207	11.05	0.000	3.430512	4.910366
/ln_p	.9073294	.0746169	12.16	0.000	.7610829	1.053576
p	2.477697	.1848781			2.140593	2.867888
1/p	.4036007	.0301154			.3486886	.4671603

```

1324 .      predict mhaz, hazard
      (21622 missing values generated)

1325 .      predict msurv, surv
      (21622 missing values generated)

1326 .
1327 .      cap drop mweibxb

1328 .      cap drop mwxbstdp

1329 .      predict mweibxb, xb
      (21622 missing values generated)

1330 .      predict mwxbstdp, stdp
      (21622 missing values generated)

1331 . cap drop p5-p95

1332 . /*
      > centile mweibxb, centile(5 10 25 50 75 90 95)
      > foreach i in 5 10 25 50 75 90 95 {
      > cap drop p`i'l
      > cap drop p`i'u
      > }
      >
      > forvalues i=7(-1)1 {
      > cap gen p`i'l = mweibxb + r(lb_`i')*mwxbstdp
      > cap gen p`i'c = mweibxb + r(c_`i')*mwxbstdp
      > cap gen p`i'u = mweibxb + r(ub_`i')*mwxbstdp
      > }
      >
      > foreach i in 5 10 25 50 75 90 95 {
      > cap gen p`i'l = .
      > cap gen p`i'c = .
      > cap gen p`i'u = .
      > }
      >
      >
      > cap gen p5u = p7l
      > cap gen p5c = p7c
      > cap gen p5u = p7u
      >
      > cap gen p10l = p6l
      > cap gen p10c = p6c
      > cap gen p10u = p6u
      >
      > cap gen p25l = p5l
      > cap gen p25c = p5c

```

```

> cap gen p25u = p5u
>
> cap gen p50l = p4l
> cap gen p50c = p4c
> cap gen p50u = p4u
>
> cap gen p75l = p3l
> cap gen p75c = p3c
> cap gen p75u = p3u
>
> cap gen p90l = p2l
> cap gen p90c = p2c
> cap gen p90u = p2u
>
> cap gen p95l = p1l
> cap gen p95c = p1c
> cap gen p95u = p1u
>
>
>
>
> // computing mean survival and KM curves in each group
> forvalues x in 5 10 25 50 75 90 95 {
>     predict h`x' if p`x' == p`x', haz
>     sts gen km`x' = p`x' if p`x' == `x'
> }
>
> line s1 s2 s3 s4 s5 s6 s7 km5 km10 km25 km50 km75 km90 km95 _t,
>     sort connect(1 1 1 1 1 1 1 J J J J J J J)
>
> */
1333 . *****
>
1334 . ***** * for females      frailty was not significant
1335 . *****
1336 . streg Irpenskiy Kyivskiy ///
>     age mar2w1 ///
>     occ5w1  occ4w2 occ5w2  ///
>     deaw1 cataw1 ///
>     phlthw3 ///
>     icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 ///    // peripheralvas
> cular1w1-rheumatologic1w1
>
>             injothr    ///
>             contw2    ///
>             WHPer BSIoc BSIanx HP2work neiw1 toxic    ///
>             if gender==2, iterate(20) dist(weibull) time nolog v
> ce(cluster id)

```



```

failure _d:  desdep25
analysis time _t:  tf
exit on or before:  time .
id:  id

```

Weibull regression -- accelerated failure-time form

```

No. of subjects      =          186          Number of obs      =          186
No. of failures      =          182
Time at risk        =          2360

Log pseudolikelihood =      -126.40876      Wald chi2(17)      =      40245.66
                                          Prob > chi2        =          0.0000

```

(Std. Err. adjusted for 186 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Irpenskiy	.5764465	.220558	2.61	0.009	.1441608	1.008732
Kyivskiy	.2204954	.0742878	2.97	0.003	.0748939	.3660969
age	-.0073942	.0029024	-2.55	0.011	-.0130828	-.0017055
mar2w1	-1.06727	.0966097	-11.05	0.000	-1.256621	-.8779184
occ5w1	1.476405	.1802517	8.19	0.000	1.123118	1.829692
occ4w2	.3381476	.1000749	3.38	0.001	.1420044	.5342909
occ5w2	-1.356096	.1166729	-11.62	0.000	-1.584771	-1.127421
deaw1	-.1956933	.0741354	-2.64	0.008	-.3409961	-.0503906
cataw1	-.4832483	.0809348	-5.97	0.000	-.6418776	-.324619
phlthw3	.0010827	.0020213	0.54	0.592	-.0028791	.0050445
icdx3nr9	-1.512943	.2397	-6.31	0.000	-1.982747	-1.04314
icdx4nr7	-2.293817	.1643597	-13.96	0.000	-2.615956	-1.971678
icdx4nr9	-2.431266	.1697702	-14.32	0.000	-2.76401	-2.098523
icdx5nr2	-2.116805	.1833586	-11.54	0.000	-2.476182	-1.757429
icdx5nr11	1.1913	.0895918	13.30	0.000	1.015703	1.366897
injothr	-.1677046	.0955485	-1.76	0.079	-.3549762	.019567
contw2	-.2793225	.0741413	-3.77	0.000	-.4246367	-.1340083
WHPer	.0061179	.002199	2.78	0.005	.0018079	.010428
BSIoc	-.0380758	.0083571	-4.56	0.000	-.0544555	-.0216962
BSIanx	-.0404937	.0102162	-3.96	0.000	-.060517	-.0204703
HP2work	.192547	.0793038	2.43	0.015	.0371144	.3479796
neiwl	-.0020187	.0010069	-2.00	0.045	-.0039921	-.0000452
toxic	.0027951	.0009481	2.95	0.003	.0009369	.0046534
_cons	4.045232	.2967195	13.63	0.000	3.463672	4.626792
/ln_p	.916938	.0586524	15.63	0.000	.8019814	1.031895
p	2.501619	.146726			2.229955	2.806378
1/p	.3997412	.0234458			.3563312	.4484395

```

1337 .
1338 . capture confirm variable weibullfsc

1339 . if rc == 0 {
1340 . replace gammafsc = -2*e(ll) + 2*e(rank)
1341 . }

1342 . else if rc != 0 {
1343 . cap gen gammafsc = -2*e(ll) + 2*e(rank)
1344 . }

1345 .
1346 . replace weibullfsc = weibullfsc
      (0 real changes made)

1347 .
1348 .
1349 .
1350 . est clear

1351 .
1352 . // Weibull model is optimal for females as well
1353 . foreach model in exponential weibull lognormal loglogistic gamma {
      2. set more off
      3. title(AFT female full `model' model)
      4.
1354 .
1355 .
1356 . xi:streg Irpenskiy Kyivskiy ///
      > i.agegrp3 mar2w1 ///
      > occ5w1 occ4w2 occ5w2 ///
      > deaw1 cataw1 ///
      > icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 /// // peripheralvas
      > cular1w1-rheumatologic1w1
      > injothr ///
      > contw2 ///
      > WHPer BSIoc BSIanx HP2work neiw1 toxic ///
      > if gender==2, iterate(20) time dist(`model') nolog v
      > ce(cluster id)
      5.

```

```
1357 .      est store ff`model'
        6.
```

1358 .

1359 .

```
1360 . // ffsc refers to full female schwartz criterion
```

```
1361 . capture confirm variable `x'ffsc
```

```
7. if _rc !=0 {
```

```
8. cap gen `x'ffsc = -2*e(ll) + ln(e(N))*e(rank)
```

9. }

```
10. scalar `x'ffsc = `x'ffsc
```

```
11.  di "`x'ffsc = ",`x'ffsc
```

12.

1362 . }

> *

> *

> *

> *

***** (AFT *****

> *

***** female *****

> *

***** full *****

> *

```
***** exponential *****
```

> *

[illegible]

> *

> *

* * * * *

> *

***** 4 Mar 2012 20:17:28 *****

> *

> *

> *

i.agegrp3

_Iagegrp3_1-3

(naturally coded; `_Iagegrp3_1` omitted)

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

Exponential regression -- accelerated failure-time form

```

No. of subjects      =          186                Number of obs      =          186
No. of failures      =          182
Time at risk         =          2360

Log pseudolikelihood =      -207.37553           Wald chi2(17)      =          .
                                                    Prob > chi2        =          .

```

(Std. Err. adjusted for 186 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Irpenskiy	.6063933	.2890887	2.10	0.036	.0397899	1.172997
Kyivskiy	.2261044	.0866855	2.61	0.009	.0562039	.3960048
_Iagegrp3_2	-.0999763	.098673	-1.01	0.311	-.2933718	.0934192
_Iagegrp3_3	-.2659525	.1016604	-2.62	0.009	-.4652032	-.0667017
mar2w1	-.9339912	.0853861	-10.94	0.000	-1.101345	-.7666376
occ5w1	1.407226	.2260048	6.23	0.000	.9642647	1.850187
occ4w2	.3356854	.1501699	2.24	0.025	.0413577	.630013
occ5w2	-1.199717	.140262	-8.55	0.000	-1.474626	-.9248088
deaw1	-.2533119	.0852532	-2.97	0.003	-.420405	-.0862188
cataw1	-.4871219	.0983708	-4.95	0.000	-.6799252	-.2943186
icdx3nr9	-1.324693	.2867307	-4.62	0.000	-1.886675	-.7627107
icdx4nr7	-1.986707	.1868391	-10.63	0.000	-2.352905	-1.620509
icdx4nr9	-2.337503	.1888878	-12.38	0.000	-2.707716	-1.967289
icdx5nr2	-2.109162	.2236943	-9.43	0.000	-2.547595	-1.670729
icdx5nr11	1.361711	.1150116	11.84	0.000	1.136293	1.58713
injothr	-.1712366	.1260122	-1.36	0.174	-.4182159	.0757428
contw2	-.3128966	.0898554	-3.48	0.000	-.4890098	-.1367833
WHPer	.0057728	.0023756	2.43	0.015	.0011167	.0104289
BSIoc	-.0415621	.0095705	-4.34	0.000	-.06032	-.0228043
BSIanx	-.0383903	.0102829	-3.73	0.000	-.0585444	-.0182363
HP2work	.2171589	.0932041	2.33	0.020	.0344822	.3998356
neiwl	-.0032263	.0011281	-2.86	0.004	-.0054374	-.0010153
toxic	.0027328	.0010583	2.58	0.010	.0006586	.004807
_cons	3.926527	.1893617	20.74	0.000	3.555385	4.297669

ffsc = 508.81451

(Std. Err. adjusted for 186 clusters in id)

_t	Robust		z	P>|z|	[95% Conf. Interval]	
	Coef.	Std. Err.				
Irpenskiy	.6078986	.228386	2.66	0.008	.1602703	1.055527
Kyivskiy	.2062128	.0735244	2.80	0.005	.0621077	.3503179
_Iagegrp3_2	-.0343436	.078595	-0.44	0.662	-.1883869	.1196998
_Iagegrp3_3	-.1977944	.0815661	-2.42	0.015	-.357661	-.0379279
mar2w1	-1.07211	.093842	-11.42	0.000	-1.256037	-.8881828
occ5w1	1.467279	.2058956	7.13	0.000	1.063731	1.870827
occ4w2	.3109256	.0960509	3.24	0.001	.1226693	.4991818
occ5w2	-1.31055	.1192567	-10.99	0.000	-1.544289	-1.076811
deaw1	-.1884801	.0747031	-2.52	0.012	-.3348955	-.0420647
cataw1	-.4797996	.080769	-5.94	0.000	-.6381039	-.3214953
icdx3nr9	-1.538708	.2510423	-6.13	0.000	-2.030742	-1.046674
icdx4nr7	-2.253275	.1720059	-13.10	0.000	-2.590401	-1.91615
icdx4nr9	-2.50696	.1552899	-16.14	0.000	-2.811323	-2.202598
icdx5nr2	-2.22353	.2072002	-10.73	0.000	-2.629635	-1.817425
icdx5nr11	1.265117	.0986323	12.83	0.000	1.071801	1.458432
injothr	-.1892317	.0915993	-2.07	0.039	-.368763	-.0097004
contw2	-.28725	.0731029	-3.93	0.000	-.4305291	-.1439709
WHPer	.0062821	.0020938	3.00	0.003	.0021784	.0103858
BSIoc	-.0389541	.0083344	-4.67	0.000	-.0552891	-.022619
BSIanx	-.0430619	.0097193	-4.43	0.000	-.0621114	-.0240123
HP2work	.1927075	.0789501	2.44	0.015	.0379681	.3474468
neiwl	-.0023066	.000904	-2.55	0.011	-.0040784	-.0005347
toxic	.0026883	.0009533	2.82	0.005	.0008199	.0045567
_cons	3.916176	.1540935	25.41	0.000	3.614158	4.218194
/ln_p	.9190876	.058543	15.70	0.000	.8043454	1.03383
p	2.507002	.1467673			2.235233	2.811814
1/p	.3988828	.0233518			.3556424	.4473807

ffsc = 508.81451

(Std. Err. adjusted for 186 clusters in id)

_t	Robust		z	P>|z|	[95% Conf. Interval]	
	Coef.	Std. Err.				
Irpenskiy	.5536012	.3010891	1.84	0.066	-.0365225	1.143725
Kyivskiy	.1783711	.0787348	2.27	0.023	.0240537	.3326886
_Iagegrp3_2	-.1560915	.1019425	-1.53	0.126	-.3558952	.0437122
_Iagegrp3_3	-.2882694	.1050208	-2.74	0.006	-.4941065	-.0824324
mar2w1	-.7626973	.1061749	-7.18	0.000	-.9707964	-.5545982
occ5w1	1.267914	.21104	6.01	0.000	.8542827	1.681544
occ4w2	.2366796	.3125831	0.76	0.449	-.3759719	.8493311
occ5w2	-1.00427	.1272917	-7.89	0.000	-1.253758	-.7547831
deaw1	-.313911	.0961901	-3.26	0.001	-.5024401	-.125382
cataw1	-.4593394	.1178108	-3.90	0.000	-.6902444	-.2284344
icdx3nr9	-.9764528	.381256	-2.56	0.010	-1.723701	-.2292047
icdx4nr7	-1.785812	.1995274	-8.95	0.000	-2.176879	-1.394746
icdx4nr9	-2.181425	.1953368	-11.17	0.000	-2.564278	-1.798572
icdx5nr2	-1.871335	.2066196	-9.06	0.000	-2.276302	-1.466369
icdx5nr11	1.419867	.1293305	10.98	0.000	1.166383	1.67335
injothr	-.1105136	.1417159	-0.78	0.435	-.3882716	.1672444
contw2	-.2857975	.097962	-2.92	0.004	-.4777996	-.0937954
WHPer	.0045102	.0026004	1.73	0.083	-.0005866	.0096069
BSIoc	-.0398009	.0115807	-3.44	0.001	-.0624986	-.0171032
BSIanx	-.0354988	.0108831	-3.26	0.001	-.0568293	-.0141683
HP2work	.2208919	.1011177	2.18	0.029	.0227049	.419079
neiwl	-.0033678	.0012334	-2.73	0.006	-.0057851	-.0009504
toxic	.0023507	.0012125	1.94	0.053	-.0000256	.0047271
_cons	3.783255	.205026	18.45	0.000	3.381412	4.185099
/ln_sig	-.6644189	.0835988	-7.95	0.000	-.8282696	-.5005682
sigma	.5145725	.0430177			.4368045	.6061861

ffsc = 508.81451

```
*****
> *
*****
> *
*****
> *
*****
> *
*****
> *
*****
> *
*****
> *
```

(AFT

female


```

*****                                full                                *****
> *
*****                                loglogistic                        *****
> *
*****                                model)                             *****
> *
*****                                *****
> *
*****                                *****
> *
*****                                4 Mar 2012    20:17:29    *****
> *
*****
> *
*****
> *

```

i.agegrp3 _Iagegrp3_1-3 (naturally coded; _Iagegrp3_1 omitted)

```

      failure _d:  desdep25
    analysis time _t:  tf
  exit on or before:  time .
              id:  id

```

Loglogistic regression -- accelerated failure-time form

```

No. of subjects      =           186                Number of obs      =           186
No. of failures      =           182
Time at risk         =           2360

Log pseudolikelihood =      -132.99245              Wald chi2(17).    =           .
                                                         Prob > chi2       =           .

```

(Std. Err. adjusted for 186 clusters in id)

_t	Robust		z	P>|z|	[95% Conf. Interval]	
	Coef.	Std. Err.				
Irpenskiy	.5097465	.5016027	1.02	0.310	-.4733767	1.49287
Kyivskiy	.1374739	.0810921	1.70	0.090	-.0214637	.2964116
_Iagegrp3_2	-.1222271	.1014432	-1.20	0.228	-.3210521	.0765979
_Iagegrp3_3	-.2734251	.1095586	-2.50	0.013	-.4881561	-.0586941
mar2w1	-.8102962	.090732	-8.93	0.000	-.9881276	-.6324647
occ5w1	1.220639	.2464103	4.95	0.000	.737684	1.703595
occ4w2	.455672	.1364615	3.34	0.001	.1882124	.7231316
occ5w2	-.995331	.1482487	-6.71	0.000	-1.285893	-.7047688
deaw1	-.2987283	.1066499	-2.80	0.005	-.5077583	-.0896982
cataw1	-.4212704	.1047434	-4.02	0.000	-.6265636	-.2159771
icdx3nr9	-1.218974	.3019264	-4.04	0.000	-1.810739	-.6272091


```

failure_d:  desdep25
analysis time_t: tf
exit on or before: time .
            id: id

```

No. of subjects	=	186	Number of obs	=	186
No. of failures	=	182			
Time at risk	=	2360			
			Wald chi2(17)	=	.
Log pseudolikelihood	=	-126.34578	Prob > chi2	=	.

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Irpenskiy	.602413	.2194193	2.75	0.006	.1723591	1.032467
Kyivskiy	.2108253	.0769882	2.74	0.006	.0599312	.3617194
_Iagegrp3_2	-.0257046	.086986	-0.30	0.768	-.196194	.1447848
_Iagegrp3_3	-.1914504	.0852363	-2.25	0.025	-.3585105	-.0243904
mar2w1	-1.095079	.1402887	-7.81	0.000	-1.37004	-.8201178
occ5w1	1.491081	.2354097	6.33	0.000	1.029686	1.952475
occ4w2	.2978505	.1218316	2.44	0.014	.0590649	.536636
occ5w2	-1.342485	.1924583	-6.98	0.000	-1.719697	-.9652741
deaw1	-.1776974	.0931787	-1.91	0.057	-.3603244	.0049295
cataw1	-.4876404	.0902996	-5.40	0.000	-.6646243	-.3106564
icdx3nr9	-1.576584	.2909792	-5.42	0.000	-2.146893	-1.006275
icdx4nr7	-2.301757	.2993571	-7.69	0.000	-2.888486	-1.715028
icdx4nr9	-2.537909	.2169907	-11.70	0.000	-2.963203	-2.112615
icdx5nr2	-2.262029	.2705668	-8.36	0.000	-2.79233	-1.731728
icdx5nr11	1.249514	.1168434	10.69	0.000	1.020505	1.478523
injothr	-.1884412	.0874512	-2.15	0.031	-.3598423	-.01704
contw2	-.2848115	.0719833	-3.96	0.000	-.4258962	-.1437268
WHPer	.0063306	.0020475	3.09	0.002	.0023176	.0103436
BSIoc	-.0387874	.0082672	-4.69	0.000	-.0549907	-.0225841
BSIanx	-.043586	.0101257	-4.30	0.000	-.063432	-.0237399
HP2work	.1943255	.0788716	2.46	0.014	.03974	.3489109
neiwl	-.0021868	.0010555	-2.07	0.038	-.0042555	-.000118
toxic	.0027033	.0009542	2.83	0.005	.0008332	.0045734
_cons	3.920313	.1489452	26.32	0.000	3.628386	4.21224
/ln_sig	-.9498015	.1386829	-6.85	0.000	-1.221615	-.6779881
/kappa	1.111717	.4535395	2.45	0.014	.2227961	2.000638

sigma	.3868178	.053645	.2947538	.5076373
-------	----------	---------	----------	----------

ffsc = 508.81451

```
1363 .
1364 . est stats _all
```

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
<u>ffexponent~l</u>	186	-228.1075	-207.3755	18	450.7511	508.8145
<u>ffweibull</u>	186	-195.5575	-126.4254	19	290.8509	352.1401
<u>fflognormal</u>	186	-202.8786	-141.1965	19	320.393	381.6822
<u>ffloglogis~c</u>	186	-200.5616	-132.9925	19	303.9849	365.2741
<u>ffgamma</u>	186	-194.9136	-126.3458	20	292.6916	357.2065

Note: N=Obs used in calculating BIC; see [\[R\] BIC note](#)

```
1365 .
1366 . foreach model in exponential weibull lognormal loglogistic gamma {
      2. title(AFT female trimmed `model' model)
      3.
1367 .   set more off
      4. streg Irpenskiy Kyivskiy ///
      >   agegrp3 mar2w1 ///
      >   occ5w1 occ4w2 occ5w2 ///
      >   deaw1 cataw1 ///
      >   phlthw3 ///
      >   icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 ///    // peripheralvas
      >   cular1w1-rheumatologic1w1
      >   injothr ///
      >   contw2 ///
      >   WHPer BSIoc BSIanx HP2work neiw1 toxic ///
      >   if gender==2, iterate(20) dist(`model') nolog vce(cluster id
      > ) time
      5.
```

```

1368 . est store ft`model'
      6.
1369 .
1370 . // ffsc refers to full female schwartz criterion
1371 . capture confirm variable `x'ftsc
      7. if _rc !=0 {
      8. cap gen `x'ftsc = -2*e(ll) + ln(e(N))*e(rank)
      9. }
     10. scalar `x'ftsc = `x'ftsc
     11. di "`x'ftsc = ",`x'ftsc
     12.
1372 . }

```

```

failure _d: desdep25
analysis time _t: tf
exit on or before: time .
id: id

```

Exponential regression -- accelerated failure-time form

```

No. of subjects      =          186          Number of obs      =          186
No. of failures      =          182
Time at risk        =          2360

Log pseudolikelihood =      -207.33598      Wald chi2(17)      =          .
                                          Prob > chi2        =          .

```

(Std. Err. adjusted for 186 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Irpenskiy	.5832859	.2814413	2.07	0.038	.0316711	1.134901
Kyivskiy	.229343	.0861877	2.66	0.008	.0604182	.3982678
agegrp3	-.1353887	.0510609	-2.65	0.008	-.2354663	-.0353112
mar2w1	-.9100993	.0939965	-9.68	0.000	-1.094329	-.7258695
occ5w1	1.442074	.2079539	6.93	0.000	1.034492	1.849656
occ4w2	.3580661	.1524911	2.35	0.019	.0591891	.6569431
occ5w2	-1.248198	.1436739	-8.69	0.000	-1.529793	-.9666021
deaw1	-.2552912	.0848275	-3.01	0.003	-.42155	-.0890324
cataw1	-.4860771	.0985206	-4.93	0.000	-.6791738	-.2929804
phlthw3	.0016924	.0023496	0.72	0.471	-.0029127	.0062975
icdx3nr9	-1.35035	.2862878	-4.72	0.000	-1.911464	-.7892366
icdx4nr7	-2.006098	.1814644	-11.06	0.000	-2.361761	-1.650434
icdx4nr9	-2.325401	.2031371	-11.45	0.000	-2.723543	-1.92726
icdx5nr2	-2.091794	.2159982	-9.68	0.000	-2.515143	-1.668446
icdx5nr11	1.346291	.1173845	11.47	0.000	1.116222	1.576361
injothr	-.1597377	.1345927	-1.19	0.235	-.4235346	.1040593
contw2	-.3099806	.0854001	-3.63	0.000	-.4773617	-.1425995
WHPer	.0057008	.0024106	2.36	0.018	.0009761	.0104255
BSIoc	-.040911	.0092088	-4.44	0.000	-.0589599	-.0228621
BSIanx	-.0350864	.0108099	-3.25	0.001	-.0562734	-.0138994
HP2work	.2193824	.0918468	2.39	0.017	.039366	.3993989
neiwl	-.0029976	.0012077	-2.48	0.013	-.0053647	-.0006305
toxic	.0026445	.001062	2.49	0.013	.000563	.004726
_cons	3.905703	.3419464	11.42	0.000	3.235501	4.575906

ftsc = 508.73538

(Std. Err. adjusted for 186 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Irpenskiy	.5729811	.2263521	2.53	0.011	.1293391	1.016623
Kyivskiy	.2089498	.0736828	2.84	0.005	.0645341	.3533655
agegrp3	-.1039064	.0415374	-2.50	0.012	-.1853181	-.0224947
mar2w1	-1.049632	.1016999	-10.32	0.000	-1.248961	-.8503043
occ5w1	1.492041	.1876865	7.95	0.000	1.124182	1.8599
occ4w2	.3310965	.0971523	3.41	0.001	.1406815	.5215115
occ5w2	-1.362859	.1189455	-11.46	0.000	-1.595987	-1.12973
deaw1	-.1929352	.0754592	-2.56	0.011	-.3408324	-.0450379
cataw1	-.4840949	.0817057	-5.92	0.000	-.6442353	-.3239546
phlthw3	.0013493	.0020194	0.67	0.504	-.0026087	.0053072
icdx3nr9	-1.539093	.2419448	-6.36	0.000	-2.013296	-1.06489
icdx4nr7	-2.272956	.1665247	-13.65	0.000	-2.599338	-1.946574
icdx4nr9	-2.51101	.1627369	-15.43	0.000	-2.829968	-2.192051
icdx5nr2	-2.183195	.1948359	-11.21	0.000	-2.565067	-1.801324
icdx5nr11	1.242952	.0959207	12.96	0.000	1.054951	1.430954
injothr	-.1867559	.0958328	-1.95	0.051	-.3745846	.0010729
contw2	-.2844865	.0734802	-3.87	0.000	-.4285051	-.140468
WHPer	.0060213	.002211	2.72	0.006	.0016878	.0103548
BSIoc	-.038573	.0083402	-4.62	0.000	-.0549195	-.0222265
BSIanx	-.0389161	.0104804	-3.71	0.000	-.0594573	-.0183749
HP2work	.1865375	.0786597	2.37	0.018	.0323674	.3407076
neiw1	-.001991	.0010034	-1.98	0.047	-.0039576	-.0000244
toxic	.0025757	.0009546	2.70	0.007	.0007046	.0044467
_cons	3.908165	.2815976	13.88	0.000	3.356244	4.460086
/ln_p	.914614	.058113	15.74	0.000	.8007146	1.028514
p	2.495812	.1450392			2.227132	2.796905
1/p	.4006712	.0232842			.357538	.449008

ftsc = 508.73538

(Std. Err. adjusted for 186 clusters in id)

_t	Robust		z	P>|z|	[95% Conf. Interval]	
	Coef.	Std. Err.				
Irpenskiy	.5527639	.2881716	1.92	0.055	-.0120421	1.11757
Kyivskiy	.1796505	.0788132	2.28	0.023	.0251794	.3341216
agegrp3	-.1439744	.0532833	-2.70	0.007	-.2484077	-.039541
mar2w1	-.7329188	.1093869	-6.70	0.000	-.9473131	-.5185244
occ5w1	1.286033	.1990205	6.46	0.000	.8959602	1.676106
occ4w2	.2574599	.314548	0.82	0.413	-.3590428	.8739626
occ5w2	-1.044503	.1313503	-7.95	0.000	-1.301945	-.7870614
deaw1	-.3145738	.0957852	-3.28	0.001	-.5023093	-.1268384
cataw1	-.4474331	.1133869	-3.95	0.000	-.6696674	-.2251988
phlthw3	.0021891	.0021173	1.03	0.301	-.0019608	.006339
icdx3nr9	-1.023506	.3865674	-2.65	0.008	-1.781164	-.2658481
icdx4nr7	-1.799181	.1996405	-9.01	0.000	-2.190469	-1.407893
icdx4nr9	-2.146324	.2137205	-10.04	0.000	-2.565209	-1.72744
icdx5nr2	-1.852122	.2061189	-8.99	0.000	-2.256108	-1.448137
icdx5nr11	1.410324	.1331171	10.59	0.000	1.14942	1.671229
injothr	-.0896041	.1490083	-0.60	0.548	-.381655	.2024469
contw2	-.2748369	.0893021	-3.08	0.002	-.4498657	-.099808
WHPer	.0046846	.0026113	1.79	0.073	-.0004334	.0098027
BSIoc	-.0378582	.010639	-3.56	0.000	-.0587102	-.0170062
BSIanx	-.0334661	.0109118	-3.07	0.002	-.0548529	-.0120793
HP2work	.2311068	.0994386	2.32	0.020	.0362107	.426003
neiwl	-.0031977	.0012395	-2.58	0.010	-.0056271	-.0007682
toxic	.0022802	.0012147	1.88	0.060	-.0001006	.0046609
_cons	3.692119	.3222301	11.46	0.000	3.060559	4.323678
/ln_sig	-.666633	.0837399	-7.96	0.000	-.8307601	-.5025058
sigma	.5134344	.0429949			.435718	.6050127

ftsc = 508.73538

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      failure _d:  desdep25
      analysis time _t:  tf
      exit on or before:  time .
                   id:  id

```

Loglogistic regression -- accelerated failure-time form

```

No. of subjects      =           186                Number of obs      =           186
No. of failures      =           182
Time at risk         =           2360

                                Wald chi2(17)    =           .
Log pseudolikelihood =    -132.74479            Prob > chi2      =           .

```

(Std. Err. adjusted for 186 clusters in id)

_t	Robust					[95% Conf. Interval]
	Coef.	Std. Err.	z	P>|z|		
Irpenskiy	.5072655	.493265	1.03	0.304	-.4595162	1.474047
Kyivskiy	.1440325	.081249	1.77	0.076	-.0152125	.3032776
agegrp3	-.1358927	.0553974	-2.45	0.014	-.2444697	-.0273156
mar2w1	-.7892855	.0940659	-8.39	0.000	-.9736513	-.6049197
occ5w1	1.260234	.2303259	5.47	0.000	.8088033	1.711664
occ4w2	.4755294	.1354064	3.51	0.000	.2101377	.740921
occ5w2	-1.038693	.1538089	-6.75	0.000	-1.340153	-.7372332
deaw1	-.2968699	.105621	-2.81	0.005	-.5038833	-.0898566
cataw1	-.4166671	.1037667	-4.02	0.000	-.620046	-.2132881
phlthw3	.0016314	.0022524	0.72	0.469	-.0027833	.006046
icdx3nr9	-1.25819	.309944	-4.06	0.000	-1.865669	-.6507105
icdx4nr7	-1.821645	.2143414	-8.50	0.000	-2.241747	-1.401544

icdx4nr9	-2.240592	.2069505	-10.83	0.000	-2.646207	-1.834976
icdx5nr2	-1.861849	.2235019	-8.33	0.000	-2.299904	-1.423793
icdx5nr11	1.391	.1251204	11.12	0.000	1.145768	1.636231
injothr	-.1800249	.1488565	-1.21	0.227	-.4717782	.1117284
contw2	-.2686203	.0970747	-2.77	0.006	-.4588832	-.0783574
WHPer	.0057668	.0027032	2.13	0.033	.0004685	.011065
BSIoc	-.0375091	.0103378	-3.63	0.000	-.0577708	-.0172474
BSIanx	-.0356648	.011595	-3.08	0.002	-.0583906	-.0129389
HP2work	.1916925	.0915362	2.09	0.036	.0122848	.3711002
neiwl	-.0033625	.0011922	-2.82	0.005	-.0056992	-.0010259
toxic	.002309	.0010961	2.11	0.035	.0001607	.0044573
_cons	3.829028	.3316047	11.55	0.000	3.179095	4.478961
/ln_gam	-1.297774	.0707992	-18.33	0.000	-1.436537	-1.15901
gamma	.2731392	.019338			.2377496	.3137968

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```

failure _d:  desdep25
analysis time _t:  tf
exit on or before:  time .
id:  id

```

Gamma regression -- accelerated failure-time form

```

No. of subjects      =          186          Number of obs      =          186
No. of failures      =          182
Time at risk        =          2360

Log pseudolikelihood =    -126.69693      Wald chi2(17)      =          .
                                          Prob > chi2         =          .

```

(Std. Err. adjusted for 186 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Irpenskiy	.5718922	.2256368	2.53	0.011	.1296521	1.014132
Kyivskiy	.2098365	.0775423	2.71	0.007	.0578563	.3618167
agegrp3	-.103339	.0436171	-2.37	0.018	-.188827	-.0178511
mar2w1	-1.054287	.1397568	-7.54	0.000	-1.328206	-.7803691
occ5w1	1.495865	.2054461	7.28	0.000	1.093198	1.898532
occ4w2	.3283855	.1207657	2.72	0.007	.0916891	.5650818
occ5w2	-1.369272	.1802037	-7.60	0.000	-1.722465	-1.01608
deaw1	-.1909248	.0902783	-2.11	0.034	-.367867	-.0139825
cataw1	-.4857414	.0902476	-5.38	0.000	-.6626235	-.3088594
phlthw3	.0013352	.0020367	0.66	0.512	-.0026567	.0053271
icdx3nr9	-1.545413	.2631969	-5.87	0.000	-2.06127	-1.029557
icdx4nr7	-2.282414	.269507	-8.47	0.000	-2.810638	-1.75419
icdx4nr9	-2.517634	.2190755	-11.49	0.000	-2.947014	-2.088254
icdx5nr2	-2.189347	.2275572	-9.62	0.000	-2.635351	-1.743343
icdx5nr11	1.239722	.1132052	10.95	0.000	1.017844	1.4616
injothr	-.1871711	.0952949	-1.96	0.050	-.3739457	-.0003964
contw2	-.2840288	.0740422	-3.84	0.000	-.4291488	-.1389088
WHPer	.0060278	.0022041	2.73	0.006	.0017079	.0103478
BSIoc	-.0385312	.0083938	-4.59	0.000	-.0549827	-.0220797
BSIanx	-.0390223	.0108085	-3.61	0.000	-.0602066	-.017838
HP2work	.1864814	.0783428	2.38	0.017	.0329324	.3400304
neiwl	-.0019638	.001139	-1.72	0.085	-.0041961	.0002686
toxic	.0025793	.0009608	2.68	0.007	.0006963	.0044624
_cons	3.910182	.2810697	13.91	0.000	3.359296	4.461068
/ln_sig	-.9202315	.1100596	-8.36	0.000	-1.135944	-.7045187
/kappa	1.021601	.3739096	2.73	0.006	.2887512	1.75445
sigma	.3984268	.0438507			.3211187	.4943465

ftsc = 508.73538

1373 . est stats _all

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
<u>ffexponent~l</u>	186	-228.1075	-207.3755	18	450.7511	508.8145
<u>ffweibull</u>	186	-195.5575	-126.4254	19	290.8509	352.1401
<u>fflognormal</u>	186	-202.8786	-141.1965	19	320.393	381.6822
<u>ffloglogis~c</u>	186	-200.5616	-132.9925	19	303.9849	365.2741
<u>ffgamma</u>	186	-194.9136	-126.3458	20	292.6916	357.2065
<u>ftexponent~l</u>	186	-228.1075	-207.336	18	450.672	508.7354
<u>ftweibull</u>	186	-195.5575	-126.7005	19	291.401	352.6902
<u>ftlognormal</u>	186	-202.8786	-140.8154	19	319.6308	380.92
<u>ftloglogis~c</u>	186	-200.5616	-132.7448	19	303.4896	364.7788
<u>ftgamma</u>	186	-194.9136	-126.6969	20	293.3939	357.9088

Note: N=Obs used in calculating BIC; see [\[R\] BIC note](#)

1374 .

1375 . ***** Estimating a Female Weibull baseline hazard model***
> *****'

1376 . set more off

1377 . xi:streg i.agegrp3 if gender==2, nohr iterate(20) dist(weibull) nolog vce(cl
> uster id) time

i.agegrp3 _Iagegrp3_1-3 (naturally coded; _Iagegrp3_1 omitted)

 failure _d: **desdep25**
 analysis time _t: **tf**
 exit on or before: **time .**
 id: **id**

Weibull regression -- accelerated failure-time form

No. of subjects	=	186	Number of obs	=	186
No. of failures	=	182			
Time at risk	=	2360			
Log pseudolikelihood	=	-191.8277	Wald chi2(2)	=	7.16
			Prob > chi2	=	0.0279

(Std. Err. adjusted for 186 clusters in id)

_t	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
_Iagegrp3_2	-.1480891	.1037151	-1.43	0.153	-.3513669	.0551888
_Iagegrp3_3	-.3031553	.1133303	-2.67	0.007	-.5252787	-.081032
_cons	2.828092	.0792769	35.67	0.000	2.672712	2.983472
/ln_p	.544165	.0472318	11.52	0.000	.4515924	.6367376
p	1.723169	.0813883			1.570812	1.890304
1/p	.5803262	.0274098			.5290155	.6366136

```

1378 . predict fBL_lnmedtime, lntime
      (option log median time assumed; predicted median log time)
      (21557 missing values generated)

1379 .
1380 . gen fbh = (1.723169*_t^(.723169))*exp(2.828092)
      (21557 missing values generated)

1381 .
1382 . label var fbh "female baseline weibull hazard function"

1383 . line fbh _t, c(1) sort ytitle(baseline hazard) title(Female Weibull baseline
      > hazard function)

1384 . graph save fbh.gph, replace
      (file fbh.gph saved)

1385 . graph export fbh.eps, replace
      (file fbh.eps written in EPS format)

1386 .
1387 .

```

```

1388 .
1389 . // we opt for the female Weibull model because the SC is more reliable tha
> n the AIC
1390 . // Therefore, we will use the weibull regression for both genders
>
1391 . foreach model in exponential gamma lognormal loglogistic weibull {
    2. title(AFT female trimmed `model' model)
    3.
1392 . set more off
    4. xi:streg Irpenskiy Kyivskiy ///
> i.agegrp3 mar2w1 ///
> occ5w1 occ4w2 occ5w2 ///
> deaw1 cataw1 ///
> phlthw3 ///
> icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 /// // peripheralvas
> cular1w1-rheumatologic1w1
> injothr ///
> contw2 ///
> WHPer BSIoc BSIanx HP2work neiw1 toxic ///
> if gender==2, iterate(20) dist(`model') nolog vce(cluster id
> ) time
    5.
1393 . predict fhaz, hazard
    6. predict fsurv, surv // conditional survival function
    7. predict fcsurv, csurv // unconditional survival function
    8. predict medtime, median time // median survival time
    9. predict meantime, mean time // mean survival time
    10. graph twoway scatter fsurv _t || lowess fsurv _t || lowess fcsurv _t, sor
> t c(1) title(Conditional and uncondition Survival Functions) ///
> subtitle(Female Weibull regression model with covariates) ytitle(Survi
> val probability)
    11. graph save fcsurfsurv.gph, replace
    12. graph export fcsurvfsurv.eps, replace
    13. ***** We compare baseline hazard with covariate accelerated hazard
1394 . line fhaz _t, sort c(1) || lowess fhaz _t, sort c(1) || lowess fbh _t, sort
> c(1) ///
> title(Comparison of female Weibull baseline hazard rate) ///
> subtitle(with female Weibull covariate accelerated hazard rate) ytitle(ha
> zard rate) ///
> ylabel(0(100)300)
    14. gr save fhazfbh.gph, replace
    15. gr export fhazfbh.eps, replace
    16.

```



```

1395 . est store ft`model'
      17.
1396 .
1397 . // ffsc refers to full female schwartz criterion
1398 . capture confirm variable `x'ftsc
      18. if _rc !=0 {
      19. cap gen `x'ftsc = -2*e(ll) + ln(e(N))*e(rank)
      20. }
      21. scalar `x'ftsc = `x'ftsc
      22. di "`x'ftsc = ",`x'ftsc
      23.
1399 .
1400 .
1401 . est stats _all
      24.
1402 . stcurve, hazard at1(agegrp3 = 1) at2(agegrp3 =2) at3(agegrp3 =3) subtitle(
> different hazard rates by age group for women) ///
> caption(agegrp 1 = youngest and agegrp3 = oldest)
      25. gr save fweibregxagegp.gph, replace
      26. gr export fGammaRegXagrp.eps, replace
      27.
1403 . stcurve, cumhaz at1(agegrp3 = 1) at2(agegrp3 =2) at3(agegrp3 =3) subtitle(di
> fferent cumulative hazard rates by age group for women) ///
> caption(agegrp 1 = youngest and agegrp3 = oldest)
      28. gr save fchweibregxagegp.gph, replace
      29. gr export fchweibRegXagrp.eps, replace
      30.
1404 . sts graph if gender==2, hazard by(agegrp3) subtitle(for time till level 25 d
> epression for females by age group) ytitle(smoothed hazard rate)
      31. gr save shazfemAgegrp.gph, replace
      32. gr export fshzXagrp.eps, replace
      33. // sharp rise in hazard at time of collapse of USSR and independence o
> f Ukraine
1405 .
1406 . graph combine cumhazXagegp3.gph fchweibregxagegp.gph, col(1)
      34.
1407 .

```

```

1408 . title(AFT female full Weibull model)
      35.
1409 .   set more off
      36. xi:streg Irpenskiy Kyivskiy ///
>       i.agegrp3 mar2w1 ///
>       occ5w1 occ4w2 occ5w2 ///
>       deaw1 cataw1 ///
>       phlthw3 ///
>       icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 ///    // peripheralvas
> cular1w1-rheumatologic1w1
>                               injothr    ///
>                               contw2    ///
>                               WHPer BSIoc BSIanx HP2work neiw1 toxic ///
>                               if gender==2, iterate(20) dist(weibull) nolog vce(cluster id
> ) time
      37.
1410 .   est store f`x'model
      38.       predict fthaz, hazard
      39.       predict ftsurv, surv
      40.       predict fFM_lnmedtime, lntime
      41. est stats _all
      42.
1411 . cap gen fbh = (1.723169* _t^(.723169))*exp(2.828092)
      43. cap gen lnfbh = ln(fbh)
      44. label var lnfbh "Ln of female baseline hazard"
      45. sts test fBL_lnmedtime fFM_lnmedtime, wilcoxon
      46. tabstat fbh fBL_lnmedtime fFM_lnmedtime, stat(median mean)
      47. sts test fBL_lnmedtime fFM_lnmedtime
      48. label var fBL_lnmedtime "Baseline Ln of median survival time "
      49. label var fFM_lnmedtime "Full model Ln of median survival time"
      50. str2d streg Irpenskiy Kyivskiy ///
>       agegrp mar2w1 ///
>       occ5w1 occ4w2 occ5w2 ///
>       deaw1 cataw1 ///
>       phlthw3 ///
>       icdx3nr9 icdx4nr7 icdx4nr9 icdx5nr2 icdx5nr11 ///    // peripheralvas
> cular1w1-rheumatologic1w1
>                               injothr    ///
>                               contw2    ///
>                               WHPer BSIoc BSIanx HP2work neiw1 toxic ///
>                               if gender==2
      51.

```

```

1412 . ***** graph of the female baseline v female full model ln median surviva
> 1 times *****
1413 . scatter fBL_lnmedtime _t || lowess fBL_lnmedtime _t || lowess fFM_lnmedtime
> _t, sort c(1) , legend(rows(3)) ///
> title(Weibull Female baseline and Female full model) subtitle( natural lo
> g of median survival times among females) ///
> ytitle(Ln of median survival time) xtitle(Study time in years)
52. gr save fBLFMcf.gph, replace
53. gr export fBLFMcf.eps, replace
54.
1414 . scalar exponentialfsc = exponentialfsc
55. scalar weibullfsc = weibullfsc
56. scalar lognormalfsc = lognormalfsc
57. scalar loglogisticfsc = loglogisticfsc
58. scalar gammafsc = gammafsc
59.
1415 . matrix define SCmodCF2 = (exponentialfsc \ weibullfsc \ lognormalfsc \ loglo
> gisticfsc \ gammafsc )
60. matrix rownames SCmodCF2 = expential weibull lognormal loglogistic gamm
> a
61. matrix colnames SCmodCF2 = sc
62. di " "
63. di "Comparison by Schwartz Criterion"
64. di "Female models:"
65.
1416 .
1417 .
1418 .
1419 .
1420 . matlist SCmodCF2
66. // for males the weibull model is optimal
1421 . // for females the gamma model is optimal
1422 .
1423 . save chsurviv1tran3mar2012, replace
67.
1424 .
1425 . // list of 10 categories

```

```

1426 . // 1 demosociogeo
1427 . // 2 major neg life events
1428 . // 3 stresses and hassles
1429 . // 4 buffers and support
1430 . // 5 slf perceived illls
1431 . // 6 med diag
1432 . // 7 hlth behaviors
1433 . // 8 hlth scales
1434 . // 9 riskawareness
1435 . // 10 radChornooby matters
1436 .
1437 . scalar m1r2pf = m1r2pf
      68. scalar m2r2pf = m2r2pf
      69. scalar f7r2pf = f7r2pf
      70. forvalues i=1/10 {
      71. scalar f`i'r2pt = f`i'r2pt
      72. scalar m`i'r2pt = m`i'r2pt
      73. }
      74.
1438 .
1439 . forvalues i=1/9 {
      75. local j = `i' + 1
      76. scalar f`i'r2pt = f`i'r2pt
      77. scalar f`j`i'r2ptcha = f`j`i'r2ptcha
      78. }
      79.
1440 . matrix define Mstgr2p = J(10,2,.)
      80. matrix define Fstgr2p = J(10,2,.)
      81.
1441 . *mata
1442 .
1443 . * mata fopen(fh,"rw")
1444 . * mata fputmatrix(fh,"FemmeR2pt")
1445 . * fputmatrix(fh,Fcn)
1446 . * fputmatrix(fh,Fstgr2p)
1447 . * fclose(fh)
1448 .
1449 .
1450 .
1451 . save chsurviv1tran28feb2012, replace

```