

```

1
2  /*****
3  *
4  *  STRATIFIED MODELS
5  *  based on incremental deaths (not cumulative)
6  *
7  *
8  *
9  *****/
10
11
12
13
14
15
16
17  #delimit;
18  cls;
19  clear mata;
20  version 15.1;
21  clear;
22  clear matrix;
23
24  set matsize 10000;
25
26  capture log close;
27  capture set more off;
28  capture set logtype text;
29  timer clear;
30  set seed 0;
31
32
33
34  log using "yourdirectory/program 2 log", replace;
35
36
37  /*****
38  *
39  *
40  *
41  *****/
42
43
44  use "yourdirectory/data.dta", clear;
45
46  nbreg death1
47
48
49      i.NHblack_percent_catR
50      i.hispanic_percent_cat
51
52      if flag_missing == 0 ,
53
54      offset(logPOP) irr vce(cluster stateR);
55
56  margins i.NHblack_percent_catR, predict(xb nooffset);
57  margins i.hispanic_percent_cat, predict(xb nooffset);
58
59  nbreg death1
60
61
62      i.NHblack_percent_catR
63      i.hispanic_percent_cat
64
65      i.maleCat i.Qold
66      i.HCC_cat
67
68      i.urban_ruralClass
69      i.essentialWorker_percentCat
70      i.pubtransCat
71
72      i.roomOccupancy_cat
73      i.poverty_familyCat
74      i.uninsured_65_cat
75
76      i.primarycareDoctor10K_cat

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```

76     i.primarycareDoctor10K_cat
77     i.STgeneralHospitalbeds100K_cat
78     i.ICUbeds100K_cat
79     i.NH_SNF100K_cat
80
81
82     if flag_missing == 0 ,
83
84     offset(logPOP) irr vce(cluster stateR);
85
86
87
88 margins i.NHblack_percent_catR, predict(xb nooffset);
89 margins i.hispanic_percent_cat, predict(xb nooffset);
90 margins i.uninsured_65_cat, predict(xb nooffset);
91 margins i.essentialWorker_percentCat, predict(xb nooffset);
92
93
94
95 predict C;
96 sort C;
97 egen decile = cut(C), group(20);
98 tab decile;
99
100
101
102 sort decile;
103 by decile: egen expected = mean(C);
104 by decile: egen observed = mean(death1);
105
106 sort decile;
107 by decile: keep if _n == _N;
108
109 replace decile = decile +1;
110 gen decile1 = decile + 0.2;
111
112
113 twoway
114
115     (scatter observed decile , color(blue) msymbol(smcircle) )
116     (scatter expected decile1 , color(black) msymbol(smcircle) ),
117
118
119     title("") ytitle("Deaths")
120     xtitle("Ventile")
121     xlabel(1(1)20)
122
123     legend(order(1 "observed deaths" 2 "predicted deaths"))
124     saving("yourdirectory/graphINCR1.gph", replace);
125
126
127 keep decile observed expected;
128 rename observed score1;
129 rename expected score2;
130 rename decile ID;
131
132 reshape long score, i(ID) j(j);
133
134 icc score ID j, mixed absolute;
135
136
137 /*****
138 *
139 *
140 *
141 *****/
142
143
144 forvalues i = 2(1)8{;
145
146 use "yourdirectory/data.dta", clear;
147
148 local b = `i'-1;
149
150 drop if death `i' `b' <0;
151

```

```

151
152 nbreg death`i'`b'
153
154     i.NHblack_percent_catR
155     i.hispanic_percent_cat
156
157     if flag_missing == 0,
158
159     offset(logPOP) irr vce(cluster stateR);
160
161 margins i.NHblack_percent_catR, predict(xb nooffset);
162 margins i.hispanic_percent_cat, predict(xb nooffset);
163
164
165
166 nbreg death`i'`b'
167
168     i.NHblack_percent_catR
169     i.hispanic_percent_cat
170
171     i.maleCat i.Qold
172     i.HCC_cat
173
174     i.urban_ruralClass
175     i.essentialWorker_percentCat
176     i.pubtransCat
177
178     i.roomOccupancy_cat
179     i.poverty_familyCat
180     i.uninsured_65_cat
181
182     i.primarycareDoctor10K_cat
183     i.STgeneralHospitalbeds100K_cat
184     i.ICUbeds100K_cat
185     i.NH_SNF100K_cat
186
187     if flag_missing == 0,
188
189     offset(logPOP) irr vce(cluster stateR);
190
191
192
193 margins i.NHblack_percent_catR, predict(xb nooffset);
194 margins i.hispanic_percent_cat, predict(xb nooffset);
195 margins i.uninsured_65_cat, predict(xb nooffset);
196 margins i.essentialWorker_percentCat, predict(xb nooffset);
197
198
199 predict C;
200 sort C;
201 egen decile = cut(C), group(20);
202 tab decile;
203
204
205
206 sort decile;
207 by decile: egen expected = mean(C);
208 by decile: egen observed = mean(death`i'`b');
209
210 sort decile;
211 by decile: keep if _n == _N;
212
213 replace decile = decile + 1;
214 gen decile1 = decile + 0.2;
215
216
217 twoway
218
219     (scatter observed decile , color(blue) msymbol(smcircle) )
220     (scatter expected decile1 , color(black) msymbol(smcircle) ),
221
222
223     title("") ytitle("Deaths")
224     xtitle("Ventile")
225     xlabel(1(1)20)
226

```

```
226
227     legend(order(1 "observed deaths" 2 "predicted deaths"))
228     saving("yourdirectory/graphINCR`i`_`b`.gph", replace);
229
230     keep decile observed expected;
231     rename observed score1;
232     rename expected score2;
233     rename decile ID;
234
235     reshape long score, i(ID) j(j);
236
237     icc score ID j, mixed absolute;
238
239 };
240
241
242
243 log close;
244
245
246
247
248
```