

**STEINHARDT SOCIAL RESEARCH INSTITUTE
AMERICAN JEWISH POPULATION ESTIMATES: 2012**

**Appendix E:
Cross-Survey Population Model Specification
and Parameter Estimates**

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September 2013

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```

model{
  for (i in 1:Ndm){
    curreljwt[i] ~ dbin(p.bound[i], 1)
    p.bound[i] <- max(0, min(1,p[i]))
    logit(p[i]) <- b.cons + b.racb*racb[i] + b.rach*rach[i] +
      b.raco*raco[i] + b.edu*educg[i] +
      b.age1*age1[i] + b.age2*age2[i] +
      b.age3*age3[i] + b.age5*age5[i] + b.age6*age6[i] +
      b.exa1*educg[i]*age1[i] + b.exa2*educg[i]*age2[i] +
      b.exa3*educg[i]*age3[i] + b.exa5*educg[i]*age5[i] +
      b.exa6*educg[i]*age6[i] + b.met*nmet[i] +
      b.state[states[i]] + b.surv[survs[i]]
  }

  b.cons ~ dnorm(-4.09,1)
  b.racb ~ dnorm(-2.14,1)
  b.rach ~ dnorm(-1.39,1)
  b.raco ~ dnorm(-1.13,1)
  b.age1 ~ dnorm(0.77,1)
  b.age2 ~ dnorm(0.05,1)
  b.age3 ~ dnorm(-0.06,1)
  b.age5 ~ dnorm(0.21,1)
  b.age6 ~ dnorm(0.55,1)
  b.edu ~ dnorm(1.37,1)
  b.met ~ dnorm(-1.36,1)
  b.exa1 ~ dnorm(-0.71,1)
  b.exa2 ~ dnorm(-0.34,1)
  b.exa3 ~ dnorm(-0.12,1)
  b.exa5 ~ dnorm(-0.03,1)
  b.exa6 ~ dnorm(-0.29,1)

  for (j in 1:n.state){
    b.state[j] ~ dnorm(0, tau.state)
  }

  tau.state<- pow(sigma.state, -2)
  sigma.state ~ dunif(0,10)

  for (j in 1:n.surv){
    b.surv[j] ~ dnorm(0, tau.surv)
  }

  tau.surv <- pow(sigma.surv, -2)
  sigma.surv ~ dunif(0,5)
}

```

Summary of parameter estimates 1,000 iterations post-convergence

n.sims =1251 iterations saved

	mu.vect	sd.vect	2.50%	25%	50%	75%	97.50%	Rhat	n.eff
b.age1	0.782	0.078	0.625	0.73	0.78	0.837	0.928	1	1300
b.age2	0.128	0.099	-0.075	0.061	0.128	0.195	0.311	1.004	460
b.age3	-0.097	0.088	-0.276	-0.159	-0.093	-0.041	0.074	1.003	590
b.age5	0.197	0.075	0.043	0.148	0.199	0.249	0.336	1	1300
b.age6	0.578	0.062	0.462	0.536	0.579	0.619	0.701	1.005	380
b.cons	-5.017	0.124	-5.257	-5.097	-5.019	-4.933	-4.78	1.01	240
b.edu	1.375	0.061	1.258	1.334	1.374	1.415	1.5	1.008	260
b.exa1	-0.723	0.13	-0.989	-0.812	-0.723	-0.636	-0.476	1.002	770
b.exa2	-0.348	0.115	-0.571	-0.426	-0.346	-0.271	-0.131	1.003	740
b.exa3	-0.066	0.103	-0.27	-0.134	-0.064	0.003	0.139	1.003	650
b.exa5	-0.004	0.084	-0.17	-0.063	-0.002	0.053	0.163	1.002	1200
b.exa6	-0.279	0.073	-0.425	-0.328	-0.276	-0.23	-0.135	1.009	220
b.met	-1.311	0.064	-1.435	-1.353	-1.31	-1.266	-1.192	1	1300
b.racb	-2.28	0.104	-2.485	-2.352	-2.279	-2.208	-2.086	1	1300

b.rach	-1.341	0.08	-1.502	-1.393	-1.339	-1.29	-1.18	1.001	1300
b.raco	-1.262	0.079	-1.426	-1.312	-1.261	-1.209	-1.109	1.001	1300
b.state[1]	-0.649	0.217	-1.073	-0.794	-0.639	-0.493	-0.243	1.001	1300
b.state[2]	0.356	0.148	0.07	0.25	0.355	0.459	0.631	1.003	590
b.state[3]	-0.689	0.264	-1.186	-0.869	-0.686	-0.504	-0.179	1.002	790
b.state[4]	0.929	0.12	0.694	0.852	0.928	1.015	1.158	1.005	500
b.state[5]	0.215	0.154	-0.071	0.107	0.213	0.32	0.516	1.007	330
b.state[6]	0.812	0.146	0.526	0.714	0.814	0.915	1.094	1.004	430
b.state[7]	0.738	0.227	0.271	0.589	0.74	0.892	1.179	1.009	270
b.state[8]	1.955	0.19	1.566	1.836	1.959	2.08	2.329	1.011	170
b.state[9]	1.309	0.121	1.077	1.227	1.309	1.388	1.542	1.006	340
b.state[10]	0.088	0.149	-0.198	-0.014	0.087	0.191	0.376	1.008	280
b.state[11]	-0.429	0.274	-0.985	-0.615	-0.427	-0.249	0.107	1.002	1200
b.state[12]	0.677	0.132	0.419	0.587	0.676	0.764	0.925	1.006	340
b.state[13]	-0.929	0.198	-1.334	-1.049	-0.924	-0.804	-0.54	1.006	320
b.state[14]	-0.733	0.252	-1.235	-0.894	-0.732	-0.569	-0.256	1.004	530
b.state[15]	-1.008	0.277	-1.555	-1.188	-1.014	-0.817	-0.484	1.008	400
b.state[16]	-0.884	0.242	-1.343	-1.047	-0.885	-0.716	-0.427	1.002	770
b.state[17]	-0.463	0.215	-0.877	-0.603	-0.462	-0.318	-0.05	1.011	180
b.state[18]	0.281	0.21	-0.114	0.142	0.282	0.419	0.669	1	1300
b.state[19]	1.349	0.135	1.091	1.257	1.348	1.44	1.618	1.008	260
b.state[20]	1.152	0.128	0.895	1.066	1.154	1.239	1.391	1.004	510
b.state[21]	0.029	0.139	-0.235	-0.064	0.032	0.122	0.297	1.002	870
b.state[22]	-0.187	0.166	-0.492	-0.302	-0.191	-0.075	0.127	1.005	470
b.state[23]	-0.845	0.339	-1.565	-1.055	-0.845	-0.61	-0.221	1.002	980
b.state[24]	-0.233	0.162	-0.544	-0.339	-0.231	-0.133	0.093	1.003	610
b.state[25]	-0.505	0.358	-1.246	-0.732	-0.481	-0.266	0.168	1.002	920
b.state[26]	-0.832	0.306	-1.462	-1.04	-0.814	-0.615	-0.269	1.002	780
b.state[27]	0.783	0.174	0.437	0.666	0.79	0.901	1.127	1.002	1300
b.state[28]	0.654	0.198	0.27	0.519	0.656	0.79	1.043	1	1300
b.state[29]	1.553	0.126	1.305	1.467	1.555	1.637	1.789	1.004	710
b.state[30]	0.640	0.196	0.26	0.502	0.642	0.777	1.009	1.005	440
b.state[31]	1.878	0.118	1.641	1.8	1.874	1.96	2.101	1.005	370
b.state[32]	-0.130	0.155	-0.431	-0.235	-0.128	-0.024	0.167	1.002	1300
b.state[33]	-1.040	0.504	-2.149	-1.363	-0.995	-0.7	-0.155	1.003	1300
b.state[34]	0.092	0.137	-0.171	-0.001	0.093	0.185	0.36	1.002	830
b.state[35]	-1.078	0.283	-1.66	-1.263	-1.061	-0.879	-0.573	1.001	1300
b.state[36]	-0.308	0.189	-0.689	-0.43	-0.312	-0.182	0.066	1.003	620
b.state[37]	0.661	0.127	0.409	0.578	0.66	0.748	0.905	1.005	380
b.state[38]	0.162	0.259	-0.363	-0.003	0.179	0.348	0.628	1	1300
b.state[39]	-0.487	0.199	-0.878	-0.626	-0.487	-0.352	-0.101	1.002	1100
b.state[40]	-1.400	0.523	-2.518	-1.72	-1.363	-1.032	-0.492	1.008	240
b.state[41]	-1.164	0.222	-1.618	-1.302	-1.163	-1.017	-0.734	1.004	430
b.state[42]	-0.286	0.143	-0.57	-0.374	-0.288	-0.195	-0.001	1.002	920
b.state[43]	-1.212	0.297	-1.845	-1.41	-1.197	-1.02	-0.648	1.003	1300
b.state[44]	0.790	0.248	0.275	0.631	0.796	0.956	1.267	1	1300

b.state[45]	0.164	0.141	-0.108	0.071	0.158	0.259	0.455	1.004	500
b.state[46]	-0.389	0.159	-0.694	-0.494	-0.394	-0.283	-0.09	1.003	550
b.state[47]	-0.618	0.284	-1.208	-0.812	-0.615	-0.419	-0.109	1	1300
b.state[48]	-0.774	0.189	-1.155	-0.901	-0.767	-0.648	-0.413	1.003	690
b.state[49]	-0.195	0.416	-1.037	-0.477	-0.183	0.096	0.537	1.002	970
b.surv[1]	-0.023	0.066	-0.176	-0.055	-0.017	0.015	0.1	1.005	380
b.surv[2]	0.007	0.058	-0.107	-0.026	0.006	0.039	0.129	1	1300
b.surv[3]	0.012	0.056	-0.099	-0.02	0.007	0.041	0.141	1.003	560
b.surv[4]	0.009	0.062	-0.117	-0.024	0.005	0.043	0.132	1.001	1300
b.surv[5]	0	0.063	-0.13	-0.035	0.001	0.036	0.132	1.002	1300
b.surv[6]	0.002	0.06	-0.134	-0.031	0	0.033	0.138	1	1300
b.surv[7]	-0.012	0.065	-0.156	-0.046	-0.005	0.023	0.116	1.003	1300
b.surv[8]	-0.026	0.065	-0.178	-0.058	-0.017	0.013	0.086	1.012	290
b.surv[9]	0.014	0.063	-0.109	-0.023	0.01	0.05	0.148	1.001	1300
b.surv[10]	0.026	0.069	-0.095	-0.014	0.014	0.059	0.188	1.004	1300
b.surv[11]	0.047	0.072	-0.067	0.001	0.035	0.087	0.223	1.01	320
b.surv[12]	-0.044	0.069	-0.208	-0.08	-0.031	0.002	0.065	1.007	310
b.surv[13]	0.019	0.066	-0.105	-0.02	0.011	0.055	0.169	1.004	1300
b.surv[14]	0.002	0.064	-0.134	-0.031	0.002	0.034	0.134	1.001	1300
b.surv[15]	-0.009	0.068	-0.154	-0.046	-0.006	0.027	0.134	1.005	470
b.surv[16]	0.033	0.07	-0.091	-0.01	0.021	0.07	0.196	1.002	1300
b.surv[17]	0.029	0.068	-0.089	-0.012	0.019	0.067	0.182	1	1300
b.surv[18]	0.013	0.066	-0.11	-0.022	0.005	0.045	0.16	1.009	330
b.surv[19]	0.031	0.07	-0.09	-0.009	0.022	0.067	0.197	1.004	920
b.surv[20]	0.011	0.067	-0.119	-0.025	0.005	0.046	0.156	1.002	790
b.surv[21]	-0.033	0.069	-0.189	-0.072	-0.022	0.011	0.087	1.001	1300
b.surv[22]	0.026	0.064	-0.092	-0.012	0.017	0.062	0.173	1.006	390
b.surv[23]	-0.015	0.065	-0.16	-0.049	-0.01	0.022	0.115	1.001	1300
b.surv[24]	-0.001	0.063	-0.139	-0.035	0	0.034	0.127	1.015	270
b.surv[25]	-0.056	0.075	-0.226	-0.096	-0.042	-0.004	0.063	1.01	270
b.surv[26]	0.017	0.066	-0.099	-0.02	0.009	0.049	0.171	1.005	610
b.surv[27]	0.015	0.063	-0.108	-0.02	0.013	0.052	0.143	1.006	720
b.surv[28]	0.036	0.067	-0.08	-0.005	0.027	0.071	0.182	1.005	840
b.surv[29]	-0.008	0.061	-0.144	-0.042	-0.003	0.027	0.107	1.002	1300
b.surv[30]	-0.017	0.064	-0.16	-0.053	-0.012	0.019	0.111	1.003	680
b.surv[31]	0.006	0.06	-0.123	-0.025	0.005	0.037	0.127	1.005	560
b.surv[32]	-0.021	0.066	-0.175	-0.056	-0.012	0.017	0.097	1.007	1200
b.surv[33]	0.001	0.062	-0.125	-0.034	0.001	0.036	0.131	1.001	1300
b.surv[34]	0.022	0.067	-0.11	-0.015	0.015	0.055	0.177	1.001	1300
b.surv[35]	-0.014	0.066	-0.16	-0.046	-0.009	0.023	0.114	1.004	650
b.surv[36]	-0.002	0.064	-0.14	-0.037	0	0.036	0.129	1.003	1300
b.surv[37]	0.01	0.067	-0.116	-0.028	0.004	0.045	0.164	1.002	1300
b.surv[38]	0.031	0.068	-0.089	-0.009	0.021	0.066	0.183	1	1300
b.surv[39]	-0.005	0.062	-0.14	-0.039	-0.003	0.03	0.127	1.005	1300
b.surv[40]	0.003	0.066	-0.136	-0.032	0.002	0.037	0.141	1.001	1300
b.surv[41]	-0.02	0.066	-0.167	-0.056	-0.014	0.017	0.103	1.001	1300

b.surv[42]	0.005	0.067	-0.137	-0.029	0.003	0.038	0.145	1.006	890
b.surv[43]	-0.006	0.059	-0.144	-0.034	-0.002	0.025	0.109	1.006	520
b.surv[44]	0.01	0.064	-0.112	-0.025	0.004	0.04	0.152	1.012	1300
b.surv[45]	0.031	0.065	-0.078	-0.008	0.022	0.065	0.182	1.012	450
b.surv[46]	-0.011	0.066	-0.155	-0.049	-0.005	0.025	0.116	1.002	1300
b.surv[47]	0.06	0.071	-0.048	0.008	0.05	0.1	0.227	1.005	880
b.surv[48]	0.022	0.067	-0.105	-0.014	0.016	0.058	0.165	1.004	1300
b.surv[49]	0.002	0.064	-0.13	-0.033	0	0.037	0.139	1.001	1300
b.surv[50]	-0.017	0.068	-0.171	-0.053	-0.01	0.022	0.111	1.002	1300
b.surv[51]	0.036	0.067	-0.077	-0.005	0.025	0.074	0.194	1.008	640
b.surv[52]	-0.018	0.065	-0.166	-0.052	-0.01	0.017	0.113	1.003	1300
b.surv[53]	-0.007	0.062	-0.143	-0.041	-0.002	0.028	0.112	1.012	410
b.surv[54]	-0.001	0.066	-0.145	-0.033	0	0.035	0.127	1.007	330
b.surv[55]	-0.001	0.06	-0.131	-0.031	0.002	0.034	0.12	1.001	1300
b.surv[56]	0.004	0.064	-0.131	-0.031	0.001	0.037	0.144	1.002	1000
b.surv[57]	-0.016	0.064	-0.158	-0.05	-0.01	0.019	0.103	1.004	1300
b.surv[58]	-0.002	0.066	-0.146	-0.036	-0.002	0.032	0.136	1.005	1300
b.surv[59]	0.032	0.062	-0.081	-0.006	0.023	0.069	0.17	1.002	1300
b.surv[60]	0.003	0.061	-0.122	-0.03	0.002	0.035	0.125	1.003	1300
b.surv[61]	0.018	0.064	-0.103	-0.018	0.012	0.051	0.156	1.005	1300
b.surv[62]	0.009	0.064	-0.116	-0.027	0.003	0.043	0.152	1.002	1300
b.surv[63]	-0.026	0.067	-0.177	-0.061	-0.017	0.015	0.088	1.002	1200
b.surv[64]	-0.003	0.064	-0.138	-0.038	0	0.033	0.127	1.002	1300
b.surv[65]	-0.031	0.064	-0.172	-0.067	-0.02	0.009	0.084	1.007	630
b.surv[66]	0.023	0.064	-0.096	-0.016	0.015	0.057	0.166	1.004	1300
b.surv[67]	0.017	0.062	-0.114	-0.016	0.011	0.048	0.158	1.002	1300
b.surv[68]	0.01	0.06	-0.112	-0.024	0.005	0.045	0.141	1.002	800
b.surv[69]	-0.002	0.062	-0.135	-0.036	-0.002	0.031	0.131	1.003	1300
b.surv[70]	0.033	0.066	-0.082	-0.007	0.022	0.068	0.199	1.003	560
b.surv[71]	0.016	0.058	-0.094	-0.017	0.01	0.049	0.141	1.01	1300
b.surv[72]	-0.02	0.062	-0.168	-0.053	-0.013	0.017	0.095	1.009	340
b.surv[73]	-0.014	0.06	-0.149	-0.05	-0.01	0.02	0.11	1.002	1100
b.surv[74]	-0.001	0.061	-0.124	-0.035	0	0.034	0.123	1.002	1300
b.surv[75]	0.013	0.065	-0.109	-0.025	0.008	0.046	0.166	1.001	1300
b.surv[76]	-0.032	0.068	-0.188	-0.067	-0.021	0.008	0.087	1.013	310
b.surv[77]	0.008	0.064	-0.125	-0.026	0.005	0.043	0.144	1.004	1300
b.surv[78]	-0.013	0.066	-0.154	-0.051	-0.008	0.022	0.123	1.001	1300
b.surv[79]	-0.005	0.059	-0.133	-0.036	-0.003	0.029	0.117	1.003	650
b.surv[80]	-0.005	0.062	-0.129	-0.038	-0.004	0.028	0.126	1.007	1200
b.surv[81]	0.004	0.065	-0.128	-0.031	0.002	0.038	0.142	1.011	290
b.surv[82]	-0.001	0.066	-0.138	-0.037	0	0.037	0.131	1	1300
b.surv[83]	-0.031	0.069	-0.196	-0.065	-0.02	0.01	0.092	1.001	1300
b.surv[84]	0.034	0.069	-0.08	-0.009	0.022	0.07	0.194	1.008	350
b.surv[85]	-0.029	0.068	-0.185	-0.066	-0.022	0.011	0.101	1.006	330
b.surv[86]	-0.005	0.068	-0.152	-0.039	-0.003	0.03	0.132	1.003	870
b.surv[87]	-0.002	0.063	-0.135	-0.035	-0.001	0.031	0.126	1.003	1300

b.surv[88]	-0.019	0.035	-0.092	-0.041	-0.016	0.005	0.043	1.007	320
b.surv[89]	-0.02	0.063	-0.158	-0.054	-0.015	0.014	0.101	1.002	1300
b.surv[90]	-0.01	0.065	-0.146	-0.043	-0.006	0.024	0.124	1.006	490
b.surv[91]	-0.006	0.063	-0.134	-0.041	-0.003	0.028	0.126	1	1300
b.surv[92]	0.019	0.068	-0.107	-0.017	0.011	0.053	0.181	1.005	1300
b.surv[93]	-0.016	0.068	-0.166	-0.053	-0.01	0.023	0.109	1.004	1300
b.surv[94]	-0.006	0.065	-0.14	-0.043	-0.004	0.031	0.124	1.005	1300
b.surv[95]	0.039	0.072	-0.077	-0.007	0.026	0.079	0.217	1	1300
b.surv[96]	-0.006	0.062	-0.137	-0.038	-0.003	0.026	0.122	1.005	730
b.surv[97]	-0.001	0.067	-0.139	-0.037	-0.001	0.034	0.156	1.005	470
b.surv[98]	-0.038	0.07	-0.2	-0.077	-0.029	0.005	0.088	1.006	330
b.surv[99]	0.018	0.066	-0.107	-0.022	0.009	0.056	0.166	1.006	460
b.surv[100]	0.000	0.064	-0.126	-0.036	-0.001	0.03	0.143	1.008	1300
b.surv[101]	0.006	0.063	-0.126	-0.029	0.002	0.042	0.148	1.008	550
b.surv[102]	0.021	0.067	-0.11	-0.018	0.015	0.058	0.169	1.003	1300
b.surv[103]	0.010	0.065	-0.119	-0.025	0.006	0.044	0.149	1.005	1300
b.surv[104]	0.011	0.066	-0.116	-0.025	0.006	0.048	0.152	1.003	950
b.surv[105]	0.012	0.067	-0.119	-0.024	0.006	0.047	0.163	1.007	1300
b.surv[106]	0.059	0.077	-0.064	0.003	0.046	0.102	0.242	1.01	190
b.surv[107]	-0.027	0.07	-0.196	-0.063	-0.015	0.015	0.099	1	1300
b.surv[108]	-0.007	0.066	-0.157	-0.044	-0.001	0.033	0.123	1.001	1300
b.surv[109]	-0.008	0.064	-0.148	-0.044	-0.004	0.028	0.121	1	1300
b.surv[110]	0.025	0.059	-0.082	-0.01	0.018	0.054	0.155	1.016	190
b.surv[111]	-0.018	0.069	-0.169	-0.056	-0.01	0.022	0.107	1.007	590
b.surv[112]	-0.012	0.06	-0.145	-0.045	-0.007	0.021	0.11	1.007	770
b.surv[113]	-0.006	0.065	-0.161	-0.038	-0.002	0.028	0.119	1.008	260
b.surv[114]	-0.017	0.065	-0.155	-0.052	-0.012	0.019	0.108	1.01	320
b.surv[115]	-0.004	0.065	-0.14	-0.039	-0.002	0.028	0.135	1.004	940
b.surv[116]	-0.034	0.067	-0.191	-0.07	-0.023	0.005	0.082	1.001	1300
b.surv[117]	0.015	0.067	-0.114	-0.021	0.01	0.047	0.168	1.001	1300
b.surv[118]	-0.008	0.059	-0.134	-0.041	-0.006	0.023	0.118	1.002	1300
b.surv[119]	-0.008	0.068	-0.15	-0.044	-0.004	0.029	0.13	1.011	980
b.surv[120]	0.004	0.062	-0.12	-0.029	0.002	0.036	0.133	1	1300
b.surv[121]	0.017	0.069	-0.114	-0.02	0.009	0.054	0.169	1	1300
b.surv[122]	-0.022	0.066	-0.166	-0.062	-0.015	0.016	0.099	1.011	680
b.surv[123]	-0.022	0.073	-0.199	-0.057	-0.011	0.018	0.107	1.001	1300
b.surv[124]	0.023	0.066	-0.097	-0.016	0.014	0.061	0.173	1.002	1300
b.surv[125]	0.018	0.07	-0.12	-0.018	0.011	0.053	0.168	1	1300
b.surv[126]	-0.015	0.066	-0.171	-0.049	-0.009	0.022	0.111	1.01	870
b.surv[127]	0.009	0.071	-0.134	-0.029	0.003	0.045	0.173	1.003	1300
b.surv[128]	0.030	0.072	-0.092	-0.012	0.018	0.068	0.192	1.006	430
b.surv[129]	-0.008	0.066	-0.154	-0.041	-0.003	0.028	0.127	1.001	1300
b.surv[130]	-0.009	0.06	-0.139	-0.042	-0.005	0.025	0.115	1.009	360
b.surv[131]	-0.002	0.068	-0.143	-0.037	0	0.036	0.131	1.002	1300
b.surv[132]	-0.030	0.065	-0.174	-0.066	-0.022	0.01	0.087	1.005	420
b.surv[133]	-0.003	0.067	-0.139	-0.039	-0.004	0.03	0.14	1.002	1200

b.surv[134]	0.046	0.075	-0.077	-0.002	0.031	0.084	0.222	1.003	900
b.surv[135]	-0.002	0.069	-0.155	-0.035	0	0.033	0.133	1.004	1300
b.surv[136]	0.005	0.064	-0.12	-0.029	0.003	0.038	0.147	1.001	1300
b.surv[137]	-0.016	0.066	-0.177	-0.045	-0.009	0.02	0.108	1	1300
b.surv[138]	-0.010	0.066	-0.161	-0.046	-0.005	0.027	0.122	1.004	1300
b.surv[139]	0.000	0.071	-0.152	-0.035	0.001	0.036	0.139	1.003	1300
b.surv[140]	-0.008	0.066	-0.161	-0.043	-0.004	0.028	0.129	1.004	440
b.surv[141]	0.024	0.07	-0.113	-0.016	0.016	0.065	0.174	1.003	1300
b.surv[142]	0.000	0.068	-0.136	-0.039	0.001	0.036	0.144	1.005	900
b.surv[143]	-0.007	0.063	-0.138	-0.04	-0.005	0.027	0.116	1.003	1100
b.surv[144]	-0.004	0.068	-0.149	-0.04	-0.002	0.032	0.136	1.005	1300
b.surv[145]	-0.019	0.069	-0.172	-0.056	-0.012	0.02	0.11	1.001	1300
b.surv[146]	0.030	0.069	-0.087	-0.011	0.018	0.064	0.19	1.001	1300
b.surv[147]	0.001	0.069	-0.148	-0.033	0.001	0.036	0.141	1	1300
b.surv[148]	0.001	0.066	-0.144	-0.034	0.001	0.035	0.137	1	1300
b.surv[149]	-0.026	0.07	-0.194	-0.063	-0.014	0.014	0.107	1.001	1200
b.surv[150]	0.001	0.068	-0.138	-0.038	0	0.036	0.146	1.005	1300
b.surv[151]	0.024	0.07	-0.105	-0.017	0.016	0.056	0.187	1.003	1300
b.surv[152]	0.005	0.067	-0.138	-0.029	0.003	0.039	0.145	1.006	1300
b.surv[153]	0.007	0.067	-0.128	-0.029	0.002	0.042	0.152	1.004	1300
b.surv[154]	0.009	0.067	-0.119	-0.029	0.004	0.044	0.151	1.002	1300
b.surv[155]	-0.024	0.067	-0.179	-0.055	-0.016	0.014	0.095	1.001	1300
b.surv[156]	-0.015	0.064	-0.163	-0.047	-0.009	0.02	0.11	1.003	650
b.surv[157]	0.019	0.067	-0.106	-0.018	0.013	0.051	0.164	1.002	1200
b.surv[158]	-0.010	0.068	-0.155	-0.047	-0.006	0.028	0.12	1.009	440
b.surv[159]	-0.006	0.069	-0.163	-0.041	-0.003	0.03	0.131	1.002	750
b.surv[160]	0.027	0.066	-0.081	-0.012	0.017	0.06	0.179	1.004	480
b.surv[161]	-0.020	0.063	-0.156	-0.052	-0.011	0.014	0.096	1.001	1200
b.surv[162]	-0.009	0.065	-0.152	-0.042	-0.007	0.028	0.114	1.003	1300
b.surv[163]	-0.028	0.069	-0.187	-0.062	-0.019	0.01	0.101	1.008	260
b.surv[164]	0.002	0.068	-0.133	-0.032	0.001	0.035	0.147	1	1300
b.surv[165]	0.032	0.071	-0.096	-0.008	0.021	0.064	0.201	1.004	1300
b.surv[166]	0.021	0.067	-0.103	-0.017	0.01	0.058	0.173	1.001	1300
b.surv[167]	0.025	0.065	-0.091	-0.013	0.016	0.06	0.169	1	1300
b.surv[168]	-0.012	0.067	-0.157	-0.044	-0.007	0.024	0.123	1.009	1300
b.surv[169]	-0.008	0.064	-0.146	-0.04	-0.003	0.027	0.119	1.002	1300
b.surv[170]	-0.014	0.064	-0.155	-0.048	-0.008	0.02	0.121	1.01	340
b.surv[171]	0.006	0.062	-0.113	-0.028	0.002	0.037	0.14	1.001	1300
b.surv[172]	0.035	0.065	-0.076	-0.006	0.027	0.071	0.186	1	1300
b.surv[173]	-0.025	0.067	-0.175	-0.064	-0.015	0.013	0.096	1.003	1300
b.surv[174]	-0.007	0.065	-0.14	-0.042	-0.004	0.028	0.133	1.004	1300
b.surv[175]	-0.004	0.066	-0.142	-0.037	-0.003	0.031	0.127	1.001	1300
b.surv[176]	-0.031	0.072	-0.196	-0.066	-0.018	0.01	0.093	1.01	290
b.surv[177]	0.022	0.065	-0.096	-0.017	0.013	0.054	0.164	1.001	1300
b.surv[178]	-0.020	0.068	-0.174	-0.057	-0.012	0.019	0.108	1.001	1300
b.surv[179]	-0.004	0.064	-0.14	-0.042	-0.002	0.031	0.13	1.002	1300

b.surv[180]	0.030	0.071	-0.089	-0.01	0.019	0.064	0.196	1.007	380
b.surv[181]	0.002	0.066	-0.139	-0.033	0.001	0.038	0.143	1.003	1200
b.surv[182]	0.009	0.068	-0.123	-0.029	0.004	0.045	0.158	1.006	1300
b.surv[183]	0.003	0.065	-0.141	-0.03	0.003	0.038	0.138	1.009	400
b.surv[184]	0.003	0.066	-0.134	-0.032	0.003	0.041	0.136	1.005	1300
b.surv[185]	0.003	0.067	-0.131	-0.033	0.002	0.041	0.15	1.003	1300
b.surv[186]	-0.007	0.068	-0.156	-0.041	-0.005	0.028	0.14	1.006	1200
b.surv[187]	0.036	0.072	-0.088	-0.007	0.024	0.076	0.21	1.004	470
b.surv[188]	-0.008	0.069	-0.171	-0.04	-0.004	0.029	0.123	1.001	1300
b.surv[189]	0.046	0.076	-0.078	-0.003	0.031	0.089	0.222	1.007	450
b.surv[190]	-0.009	0.067	-0.156	-0.041	-0.007	0.03	0.119	1.008	1300
b.surv[191]	-0.013	0.065	-0.162	-0.046	-0.007	0.022	0.116	1.009	740
b.surv[192]	0.014	0.067	-0.115	-0.023	0.009	0.049	0.155	1.02	130
b.surv[193]	-0.010	0.068	-0.169	-0.044	-0.005	0.027	0.121	1.003	760
b.surv[194]	0.010	0.063	-0.112	-0.025	0.006	0.045	0.143	1.009	300
b.surv[195]	0.004	0.067	-0.129	-0.031	0.001	0.037	0.149	1.005	680
b.surv[196]	0.027	0.067	-0.096	-0.012	0.019	0.062	0.194	1.003	1300
b.surv[197]	-0.013	0.067	-0.165	-0.047	-0.007	0.024	0.12	1.004	1300
b.surv[198]	-0.005	0.065	-0.145	-0.042	-0.005	0.027	0.133	1.004	1200
b.surv[199]	0.008	0.068	-0.121	-0.03	0.003	0.042	0.165	1.003	850
b.surv[200]	-0.007	0.066	-0.139	-0.041	-0.002	0.027	0.124	1.011	320
b.surv[201]	0.034	0.069	-0.086	-0.008	0.022	0.07	0.189	1.003	930
b.surv[202]	-0.017	0.067	-0.169	-0.054	-0.01	0.022	0.111	1.001	1300
b.surv[203]	0.023	0.068	-0.1	-0.016	0.014	0.058	0.177	1.003	1300
b.surv[204]	-0.029	0.069	-0.187	-0.064	-0.018	0.012	0.092	1.007	630
b.surv[205]	0.004	0.066	-0.132	-0.033	0.001	0.038	0.146	1.002	1100
b.surv[206]	0.016	0.064	-0.11	-0.02	0.011	0.049	0.164	1.002	1300
b.surv[207]	-0.003	0.071	-0.153	-0.041	-0.001	0.034	0.146	1.01	1300
b.surv[208]	0.005	0.065	-0.124	-0.029	0.002	0.037	0.144	1.01	720
b.surv[209]	-0.006	0.066	-0.147	-0.045	-0.003	0.036	0.125	1.004	590
b.surv[210]	0.000	0.066	-0.14	-0.034	-0.001	0.035	0.139	1.006	380
b.surv[211]	-0.017	0.071	-0.181	-0.051	-0.01	0.021	0.112	1.005	520
b.surv[212]	0.014	0.064	-0.116	-0.022	0.01	0.048	0.158	1.001	1300
b.surv[213]	-0.012	0.068	-0.16	-0.046	-0.007	0.026	0.127	1.007	1300
b.surv[214]	-0.014	0.068	-0.165	-0.049	-0.007	0.024	0.107	1.005	1300
b.surv[215]	0.016	0.068	-0.114	-0.023	0.008	0.052	0.173	1.01	510
b.surv[216]	0.003	0.064	-0.132	-0.031	0.002	0.04	0.144	1.003	710
b.surv[217]	0.007	0.066	-0.127	-0.03	0.003	0.044	0.15	1.004	1300
b.surv[218]	-0.040	0.071	-0.204	-0.078	-0.027	0.003	0.087	1.002	1000
b.surv[219]	0.013	0.065	-0.113	-0.022	0.007	0.046	0.156	1.006	510
b.surv[220]	-0.018	0.066	-0.172	-0.054	-0.011	0.018	0.113	1.004	900
b.surv[221]	-0.012	0.069	-0.163	-0.046	-0.006	0.023	0.122	1.011	1300
b.surv[222]	0.002	0.065	-0.13	-0.034	0.002	0.036	0.138	1.008	270
b.surv[223]	-0.009	0.072	-0.163	-0.042	-0.004	0.029	0.142	1.003	1300
b.surv[224]	-0.026	0.069	-0.191	-0.06	-0.016	0.014	0.098	1.005	560
b.surv[225]	0.011	0.065	-0.112	-0.025	0.007	0.046	0.152	1	1300

b.surv[226]	-0.030	0.067	-0.192	-0.066	-0.019	0.012	0.08	1.002	900
b.surv[227]	-0.013	0.068	-0.164	-0.046	-0.009	0.023	0.119	1.002	1300
b.surv[228]	-0.005	0.065	-0.149	-0.04	-0.003	0.03	0.12	1.002	1300
b.surv[229]	0.020	0.069	-0.118	-0.018	0.013	0.056	0.171	1.003	1200
b.surv[230]	0.009	0.068	-0.118	-0.03	0.005	0.044	0.159	1.002	1300
b.surv[231]	0.002	0.067	-0.135	-0.033	-0.001	0.037	0.146	1	1300
b.surv[232]	-0.009	0.064	-0.15	-0.045	-0.006	0.027	0.119	1.009	900
b.surv[233]	0.006	0.065	-0.125	-0.027	0.004	0.04	0.142	1.005	820
b.surv[234]	-0.023	0.067	-0.178	-0.059	-0.015	0.016	0.094	1.004	670
b.surv[235]	0.007	0.068	-0.138	-0.028	0.004	0.04	0.144	1.002	1300
b.surv[236]	-0.038	0.072	-0.194	-0.076	-0.026	0.006	0.079	1.006	400
b.surv[237]	0.029	0.074	-0.099	-0.012	0.017	0.063	0.219	1.006	430
b.surv[238]	-0.004	0.064	-0.135	-0.04	-0.002	0.03	0.123	1.005	1100
b.surv[239]	0.032	0.069	-0.083	-0.011	0.02	0.069	0.195	1.002	900
b.surv[240]	0.002	0.064	-0.138	-0.031	0.002	0.037	0.132	1.008	890
b.surv[241]	-0.008	0.068	-0.149	-0.045	-0.003	0.028	0.122	1.003	1300
b.surv[242]	-0.003	0.065	-0.139	-0.037	-0.003	0.033	0.129	1.003	1300
b.surv[243]	0.013	0.069	-0.125	-0.025	0.01	0.048	0.158	1.003	1200
b.surv[244]	-0.021	0.066	-0.179	-0.054	-0.012	0.017	0.098	1.002	1300
b.surv[245]	-0.021	0.07	-0.187	-0.056	-0.011	0.019	0.106	1.011	400
b.surv[246]	-0.014	0.063	-0.15	-0.047	-0.008	0.02	0.114	1.001	1300
b.surv[247]	-0.018	0.07	-0.178	-0.051	-0.008	0.023	0.106	1.001	1300
b.surv[248]	0.015	0.061	-0.098	-0.02	0.01	0.048	0.145	1.005	1300
b.surv[249]	0.031	0.068	-0.088	-0.008	0.023	0.067	0.195	1.001	1200
b.surv[250]	-0.023	0.07	-0.176	-0.058	-0.016	0.016	0.109	1.004	1300
b.surv[251]	0.008	0.067	-0.129	-0.029	0.005	0.044	0.146	1.004	1300
b.surv[252]	-0.032	0.067	-0.185	-0.068	-0.022	0.009	0.078	1.002	1100
b.surv[253]	-0.025	0.065	-0.166	-0.06	-0.016	0.012	0.095	1	1300
b.surv[254]	-0.028	0.067	-0.188	-0.062	-0.02	0.011	0.091	1.003	1300
b.surv[255]	0.016	0.067	-0.11	-0.02	0.01	0.049	0.167	1	1300
b.surv[256]	-0.016	0.065	-0.152	-0.048	-0.009	0.02	0.11	1.004	530
b.surv[257]	-0.003	0.067	-0.143	-0.036	-0.003	0.032	0.136	1.006	1300
b.surv[258]	-0.005	0.064	-0.137	-0.041	-0.002	0.031	0.124	1.002	1300
b.surv[259]	0.015	0.071	-0.126	-0.023	0.009	0.052	0.178	1.005	1300
b.surv[260]	-0.005	0.064	-0.152	-0.038	-0.002	0.027	0.122	1.01	1100
b.surv[261]	-0.014	0.069	-0.174	-0.05	-0.006	0.024	0.115	1.001	1300
b.surv[262]	0.012	0.065	-0.11	-0.024	0.006	0.045	0.161	1.002	1300
b.surv[263]	-0.016	0.067	-0.165	-0.049	-0.009	0.021	0.118	1.002	1300
b.surv[264]	-0.026	0.072	-0.188	-0.064	-0.016	0.015	0.101	1	1300
b.surv[265]	0.013	0.069	-0.125	-0.025	0.009	0.049	0.165	1.003	590
b.surv[266]	0.034	0.071	-0.084	-0.007	0.022	0.07	0.191	1.006	340
b.surv[267]	0.032	0.069	-0.09	-0.01	0.021	0.07	0.179	1.01	420
b.surv[268]	-0.015	0.066	-0.163	-0.05	-0.009	0.022	0.109	1.006	1200
b.surv[269]	-0.014	0.064	-0.152	-0.049	-0.008	0.022	0.107	1.001	1300
b.surv[270]	-0.008	0.062	-0.146	-0.04	-0.004	0.029	0.118	1.006	630
b.surv[271]	-0.017	0.07	-0.178	-0.051	-0.008	0.019	0.121	1.005	1300

b.surv[272]		-0.023	0.065		-0.176	-0.056	-0.014	0.016	0.097	1.001	1300
b.surv[273]		0.000	0.067		-0.132	-0.035	0	0.033	0.147	1.006	1300
b.surv[274]		0.004	0.065		-0.121	-0.029	0.002	0.037	0.143	1.006	1200
b.surv[275]		0.028	0.072		-0.097	-0.014	0.017	0.063	0.197	1.013	240
b.surv[276]		-0.030	0.07		-0.192	-0.068	-0.019	0.012	0.097	1.004	550
b.surv[277]		0.026	0.071		-0.103	-0.014	0.015	0.061	0.195	1.002	1300
b.surv[278]		0.021	0.065		-0.105	-0.018	0.013	0.057	0.163	1.004	1200
b.surv[279]		0.015	0.067		-0.116	-0.022	0.009	0.052	0.169	1.008	420
b.surv[280]		0.013	0.068		-0.126	-0.022	0.007	0.046	0.165	1.005	410
b.surv[281]		0.016	0.069		-0.117	-0.021	0.01	0.053	0.174	1.006	900
b.surv[282]		-0.029	0.07		-0.189	-0.066	-0.018	0.012	0.092	1	1300
b.surv[283]		-0.007	0.067		-0.154	-0.045	-0.004	0.029	0.132	1.005	1300
b.surv[284]		-0.012	0.065		-0.156	-0.046	-0.007	0.023	0.116	1.002	910
b.surv[285]		-0.015	0.069		-0.176	-0.051	-0.008	0.023	0.113	1.005	1300
b.surv[286]		-0.018	0.066		-0.167	-0.053	-0.01	0.02	0.11	1.003	1300
b.surv[287]		-0.016	0.072		-0.18	-0.052	-0.007	0.025	0.121	1.003	1200
b.surv[288]		0.007	0.067		-0.136	-0.028	0.004	0.043	0.15	1.006	1300
b.surv[289]		0.007	0.068		-0.126	-0.032	0.003	0.041	0.166	1.005	670
b.surv[290]		-0.025	0.072		-0.191	-0.061	-0.017	0.016	0.101	1.006	470
b.surv[291]		0.016	0.064		-0.101	-0.021	0.009	0.049	0.164	1.004	1300
b.surv[292]		0.000	0.064		-0.139	-0.035	0	0.033	0.13	1.01	400
b.surv[293]		0.004	0.064		-0.119	-0.033	0	0.037	0.148	1.009	700
b.surv[294]		0.004	0.07		-0.14	-0.034	0.001	0.039	0.161	1.008	1100
b.surv[295]		-0.032	0.068		-0.189	-0.066	-0.021	0.01	0.084	1.002	900
b.surv[296]		-0.009	0.068		-0.151	-0.046	-0.005	0.028	0.134	1.002	860
b.surv[297]		0.017	0.066		-0.11	-0.019	0.009	0.05	0.163	1.001	1300
b.surv[298]		0.006	0.068		-0.138	-0.028	0.005	0.042	0.149	1.002	890
b.surv[299]		-0.018	0.066		-0.171	-0.053	-0.013	0.019	0.106	1.007	1200
b.surv[300]		-0.001	0.067		-0.148	-0.037	0	0.035	0.141	1	1300
b.surv[301]		0.021	0.067		-0.112	-0.017	0.014	0.056	0.174	1.003	740
b.surv[302]		0.006	0.066		-0.125	-0.03	0.002	0.04	0.148	1.004	650
b.surv[303]		-0.016	0.067		-0.169	-0.053	-0.009	0.022	0.107	1.003	1300
b.surv[304]		-0.016	0.07		-0.172	-0.048	-0.009	0.022	0.118	1.015	530
sigma.stat	e	0.900	0.102		0.731	0.826	0.893	0.965	1.121	1.004	500
sigma.surv		0.063	0.03		0.009	0.041	0.064	0.083	0.122	1.152	34
tau.state		1.282	0.283		0.795	1.075	1.254	1.467	1.872	1.004	500
tau.surv	2974.243	2	978.441	67.546	1	44.627	246.361	606.882	13114.82	1.152	34
deviance		56838.63	23.163	56790.422	568	24.028	56841.3	56855.06	56878.96	1.009	220

County Level Population Model & Summary of Parameter Estimates:

```

model{
  for (i in 1:Ndm){
    curreljw[i] ~ dbin(p.bound[i], 1)
    p.bound[i] <- max(0, min(1,p[i]))
    logit(p[i]) <- b.cons + b.racb*racb[i] + b.rach*rach[i] + b.raco*raco[i] +
      b.edu*educg[i] + b.age1*age1[i] + b.age2*age2[i] +
      b.age3*age3[i] + b.age5*age5[i] + b.age6*age6[i] +
      b.exa1*educg[i]*age1[i] +
      b.exa2*educg[i]*age2[i] + b.exa3*educg[i]*age3[i] +
      b.exa5*educg[i]*age5[i] + b.exa6*educg[i]*age6[i] +
      b.puma[pumas[i]] + b.state[states[i]] + b.surv[survs[i]]
  }

  b.cons ~ dnorm(-5.9,10)
  b.racb ~ dnorm(-2.5,1)
  b.rach ~ dnorm(-1.8,1)
  b.raco ~ dnorm(-1.3,1)
  b.edu ~ dnorm(1.2,1)
  b.age1 ~ dnorm(0.8,1)
  b.age2 ~ dnorm(0.08,1)
  b.age3 ~ dnorm(-0.02,1)
  b.age5 ~ dnorm(0.2,1)
  b.age6 ~ dnorm(0.5,1)
  b.exa1 ~ dnorm(-0.8,1)
  b.exa2 ~ dnorm(-0.4,1)
  b.exa3 ~ dnorm(-0.15,1)
  b.exa5 ~ dnorm(-0.003,1)
  b.exa6 ~ dnorm(-0.3,1)

  for (j in 1:n.puma){
    b.puma[j] ~ dnorm(0, tau.puma)
  }

  tau.puma <- pow(sigma.puma, -2)
  sigma.puma ~ dunif(0,10)

  for (j in 1:n.state){
    b.state[j] ~ dnorm(0, tau.state)
  }

  tau.state <- pow(sigma.state, -2)
  sigma.state ~ dunif(0,10)

  for (j in 1:n.surv){
    b.surv[j] ~ dnorm(0, tau.surv)
  }
  b.surv[j] ~ dnorm(0, tau.surv)
}

tau.surv <- pow(sigma.surv, -2)
sigma.surv ~ dunif(0,5)
}

```

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