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A Microsimulation Model of Fertility, Childbearing, and Child Well-Being
APPENDIX

Adam Thomas   Quentin Karpilow   Kate Welti   Jennifer Manlove   Elizabeth Cook

A PARAMETER-ESTIMATION REGRESSIONS

The tables below report results for each of the regressions used to estimate FamilyScape's parameters pertaining to annual sexual activity, within-month coital frequency, initial contraceptive assignment, contraceptive switching, pregnancy outcomes, and birth outcomes.[1] We would note that, due to small sample sizes and/or limited variation in our data, we are occasionally unable to estimate models that contain a full set of covariates. For instance, only eleven married women in our NSFG data are initially assigned to the "LARC & Condom" contraceptive category. As a result, we are unable to include all of our demographic controls in the initial contraceptive assignment regression that models married women's probability of falling into this category. We therefore control only for age in this regression specification (see Table A.4). In all such cases, our goal was to extract as much information as possible from our data while still allowing for reliable estimation of our regression models.[2]

Table A.1: Logistic regression results for annual sexual activity, by marital status.

	Inactive		**Highly Active**	
	Unmarried Women	Married Women	Unmarried Women	Married Women
Age: 25-29	-1.021*** (.125)	0.470 (.655)	0.549*** (.111)	-0.344 (.210)
Age: 30-44	-0.447*** (.093)	1.003* (.553)	0.546*** (.100)	-0.055 (.190)
Education: High School Degree	-0.978*** (.101)	-1.334*** (.484)	0.013 (.113)	0.577*** (.208)
Education: More than High School	-0.752*** (.088)	-0.379 (.398)	-0.026 (.108)	0.353* (.190)
Race: Black	-0.434*** (.092)	0.054 (.484)	-0.165* (.099)	-0.140 (.180)
Race: Hispanic	-0.219** (.104)	-0.332 (.471)	0.021 (.117)	0.271 (.186)
Race: Other	0.332** (.164)	0.498 (.681)	0.046 (.207)	-0.385* (.225)
High SES	0.309*** (.105)	-0.637 (.414)	-0.119 (.110)	0.256* (.151)
Pseudo R-Squared	.07	.03	.02	.01
N	7,989	3,675	5,431	3,588

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level.

Table A.2: Logistic regression results for within-month coital frequency, by marital status.

	Low		**High**	
	Unmarried Women	Married Women	Unmarried Women	Married Women
Age: 25-29	0.058 (.129)	0.415* (.215)	-0.127 (.180)	-0.339 (.273)
Age: 30-44	0.031 (.121)	0.828*** (.197)	-0.280 (.184)	-0.277 (.247)
Education: High School Degree	0.130 (.135)	-0.230 (.182)	-0.124 (.201)	0.077 (.288)
Education: More than High School	-0.109 (.123)	-0.353** (.171)	-0.474*** (.183)	-0.021 (.277)
Race: Black	0.564*** (.116)	-0.265 (.163)	-0.080 (.183)	0.248 (.255)
Race: Hispanic	-0.020 (.138)	-0.172 (.152)	-0.030 (.189)	0.251 (.243)
Race: Other	-0.010 (.241)	0.311 (.221)	-0.020 (.385)	-0.441 (.493)
High SES	-0.359*** (.133)	0.140 (.143)	0.195 (.185)	-0.318 (.235)
Annual Sexual Activity Fixed Effects?	Y	Y	Y	Y
Pseudo R-Squared	.05	.03	.02	.02
N	3,920	3,235	1,997	1,830

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. Each regression includes a set of annual sexual activity fixed effects dummies that measure the number of sexually active months over the course of the focal year.

Table A.3: Logistic regression results for initial contraceptive assignment, among unmarried women.

	No Method	Condom Only	PPR Only	PPR & Condom	LARC Only	LARC & Condom	Male Sterilization
Age: 25-29	-1.953*** (.386)	-1.085*** (.185)	-0.285* (.172)	-0.775*** (.206)	0.180 (.201)	-0.473 (.616)	0.786 (.707)
Age: 30-44	-3.222*** (.353)	-2.188*** (.171)	-0.508*** (.176)	-1.108*** (.219)	-0.660*** (.241)	-1.345** (.628)	2.462*** (.493)
Education: High School Degree	0.082 (.285)	0.076 (.187)	0.626*** (.209)	0.563** (.242)	-0.077 (.228)	-0.010 (.406)	1.360** (.583)
Education: More than High School	0.584* (.314)	0.954*** (.181)	1.089*** (.192)	1.084*** (.205)	-0.606*** (.212)	-0.504 (.393)	1.003* (.550)
Race: Black	0.465 (.283)	-0.280 (.173)	-1.349*** (.170)	-0.727*** (.203)	0.607*** (.229)	0.865** (.392)	-3.595*** (.747)
Race: Hispanic	0.635* (.337)	0.059 (.195)	-0.251 (.189)	-0.541** (.264)	0.718*** (.229)	0.245 (.557)	-0.573 (.622)
Race: Other	0.811 (.777)	-0.144 (.363)	0.006 (.296)	-0.827** (.356)	-0.355 (.396)	0.205 (1.137)	-1.221 (1.028)
High SES	0.164 (.276)	0.261 (.170)	0.274 (.186)	0.500* (.267)	-0.379* (.212)	0.240 (.438)	0.405 (.576)
Sexual Behavior Fixed Effects?	Y	Y	Y	Y	Y	Y	Y
Pseudo R-Squared	.23	.21	.13	.10	.07	.06	.20
N	989	2,247	2,969	3,439	3,732	3,812	3,885

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth. Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. Each regression includes a set of sexual behaviour fixed effects dummies that reflect interactions between annual sexual activity type and within-month coital frequency type.

Table A.4: Logistic regression results for initial contraceptive assignment, among married women.

	No Method	Condom Only	PPR Only	PPR & Condom	LARC Only	LARC & Condom	Male Sterilization
Age: 25-29	-0.770* (.454)	-0.777*** (.272)	-0.664*** (.232)	0.146 (.422)	-0.140 (.310)	-0.566 (1.255)	1.639*** (.602)
Age: 30-44	-2.038*** (.426)	-1.444*** (.245)	-1.334*** (.215)	-0.136 (.408)	-0.353 (.284)	-0.789 (1.196)	3.326*** (.550)
Education: High School Degree	0.648** (.289)	0.182 (.246)	0.059 (.252)	0.293 (.607)	0.046 (.295)	--	1.039*** (.383)
Education: More than High School	1.251*** (.259)	0.887*** (.226)	1.170*** (.223)	1.176* (.522)	-0.086 (.260)	--	0.862** (.365)
Race: Black	0.035 (.238)	-0.553** (.242)	-0.425* (.234)	-0.550 (.454)	0.578* (.298)	--	-1.712*** (.385)
Race: Hispanic	0.112 (.245)	0.322* (.195)	-0.077 (.184)	-0.086 (.358)	0.329 (.232)	--	-0.412 (.266)
Race: Other	0.788** (.400)	0.870*** (.294)	-1.348*** (.296)	0.044 (.384)	0.627* (.354)	--	-0.772* (.434)
High SES	0.105 (.219)	0.120 (.192)	0.166 (.183)	-0.377 (.295)	-0.122 (.232)	--	0.236 (.218)
Sexual Behavior Fixed Effects?	Y	Y	Y	Y	Y	Y	Y
Pseudo R-Squared	.11	.07	.09	.03	.02	.01	.10
N	1,189	1,833	2,483	2,612	2,858	2,869	3,205

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. Each regression includes a set of sexual behaviour fixed effects dummies that reflect interactions between annual sexual activity type and within-month coital frequency type.

Table A.5: Logistic hazard regression results for the probability of a first method switch, among unmarried women.

	Origin Contraceptive Type						
	No Method	Condom Only	PPR Only	PPR & Condom	LARC Only	LARC & Condom	Male Sterilization
Age: 25-29	-0.274* (.146)	-0.282*** (.106)	-0.253** (.117)	0.144 (.166)	-0.715*** (.183)	-0.711 (.471)	1.336 (.924)
Age: 30-44	-0.803*** (.155)	-0.299*** (.104)	-0.529*** (.136)	0.063 (.193)	-0.752*** (.236)	0.062 (.456)	1.263 (.983)
Education: High School Degree	0.227 (.146)	-0.098 (.105)	-0.428*** (.161)	-0.504*** (.191)	-0.618*** (.213)	-0.680* (.394)	-2.601** (1.111)
Education: More than High School	0.485*** (.155)	0.004 (.097)	0.364** (.148)	-0.958*** (.171)	-0.468** (.202)	-0.630* (.339)	-1.014 (.723)
Race: Black	-0.268* (.139)	-0.272*** (.095)	0.595*** (.126)	0.194 (.160)	0.049 (.208)	-0.896*** (.296)	1.487* (.803)
Race: Hispanic	0.132 (.156)	-0.074 (.104)	-0.104 (.158)	0.179 (.228)	0.511 (.239)	-0.358 (.427)	-0.033 (1.007)
Race: Other	-0.388 (.289)	-0.345* (.195)	-0.131 (.234)	0.405 (.341)	0.630* (.369)	0.013 (.674)	0.295 (1.116)
High SES	0.177 (.137)	-0.019 (.100)	-0.148 (.158)	0.061 (.206)	-0.039 (.206)	0.287 (.340)	-0.831 (.885)
Pregnant Last Month	2.138*** (.197)	2.38*** (.232)	2.775*** (.357)	2.96*** (.524)	3.69*** (.739)	--	--
Pseudo R-Squared	.08	.03	.03	.04	.06	.09	.09
N	13,625	34,117	24,711	12,347	7,406	1,959	2,185

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level.

Table A.6: Logistic hazard regression results for the probability of a first method switch, among married women.

	Origin Contraceptive Type					
	No Method	Condom Only	PPR Only	PPR & Condom	LARC Only	LARC & Condom
Age: 25-29	-0.341 (.208)	-0.254 (.205)	-0.009 (.147)	-0.062 (.300)	-0.559* (.316)	-0.346 (1.006)
Age: 30-44	-0.772*** (.181)	-0.441** (.187)	-0.359*** (.139)	-0.617** (.306)	-1.121*** (.321)	-3.254*** (.934)
Education: High School Degree	-0.249 (.234)	0.065 (.244)	-0.146 (.242)	-0.434 (.643)	-0.682** (.308)	--
Education: More than High School	0.090 (.217)	0.347* (.211)	-0.216 (.232)	-0.718 (.665)	-0.299 (.298)	--
Race: Black	-0.364* (.204)	-0.403* (.241)	-0.006 (.187)	-0.596 (.534)	-0.364 (.417)	--
Race: Hispanic	-0.047 (.197)	0.386** (.183)	-0.270 (.185)	-1.027 (.660)	0.164 (.350)	--
Race: Other	-0.564* (.305)	-0.951*** (.242)	0.278 (.238)	-1.450*** (.533)	0.170 (.421)	--
High SES	-0.032 (.178)	-0.018 (.177)	0.031 (.169)	-.333 (.521)	-0.226 (.341)	--
Pregnant Last Month	3.180*** (.200)	3.348*** (.390)	3.167*** (.432)	2.621*** (.720)	--	--
Pseudo R-Squared	.13	.06	.02	.10	.04	.27
N	17,420	20,182	21,830	3,749	7,949	220

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level.

Table A.7: Logistic hazard regression results for the probability of a higher-order method switch, by marital status.

	Unmarried Women	Married Women
Age: 25-29	-0.049 (.074)	-0.169 (.141)
Age: 30-44	0.029 (.086)	-0.194 (.138)
Education: High School Degree	-0.084 (.083)	0.127 (.210)
Education: More than High School	-0.171** (.079)	0.187 (.197)
Race: Black	-0.022 (.072)	0.040 (.183)
Race: Hispanic	0.049 (.087)	0.250 (.154)
Race: Other	-0.370** (.161)	0.028 (.214)
High SES	0.045 (.079)	0.045 (.137)
Pregnant Last Month	1.940*** (.177)	2.898*** (.214)
Number of Previous Switches	0.531*** (.038)	0.416*** (.077)
Origin Contraceptive Type Fixed Effects?	Y	Y
Most Recent Contraceptive Type Fixed Effects?	Y	Y
Pseudo R-Squared	.08	.12
N	21,405	9,559

Sources: All regressions were estimated using data taken from the 2006 – 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. Each regression includes a set of fixed effects dummies that control for origin contraceptive type and most recent contraceptive type.

Table A.8: Logistic regression results for method selection after a first method switch, among unmarried women.

	Dependent Variable: New Contraceptive Type						
	Condom Only	PPR Only	PPR & Condom	LARC Only	LARC & Condom	Male Sterilization	Female Sterilization
Age: 25-29	-0.506** (.230)	-0.027 (.165)	-0.537*** (.174)	-0.020 (.231)	-0.164 (.350)	1.182** (.520)	1.516*** (.383)
Age: 30-44	-0.321 (.270)	-0.231 (.175)	-0.901*** (.223)	-0.188 (.267)	-0.401 (.312)	2.653*** (.406)	2.441*** (.333)
Education: High School Degree	0.303 (.264)	-0.118 (.179)	0.191 (.207)	-0.214 (.227)	-0.117 (.343)	0.904 (.552)	0.140 (.338)
Education: More than High School	0.907*** (.260)	0.143 (.169)	0.968*** (.188)	-0.189 (.238)	-0.399 (.323)	0.255 (.520)	-0.269 (.351)
Race: Black	-0.259 (.243)	-0.646*** (.158)	-0.567*** (.177)	0.073 (.200)	0.846*** (.273)	-2.218*** (.494)	-0.698** (.300)
Race: Hispanic	-0.036 (.253)	0.101 (.189)	-0.338* (.201)	0.072 (.254)	-0.147 (.447)	-0.694* (.388)	-0.185 (.365)
Race: Other	-0.321 (.422)	0.499* (.301)	-0.469 (.353)	-0.073 (.463)	0.352 (.505)	-0.562 (.920)	.043 (.556)
High SES	0.508** (.254)	0.381** (.180)	0.340* (.207)	-0.331 (.241)	0.043 (.326)	0.884** (.412)	-0.462 (.293)
Pregnant Last Month	-1.96*** (.556)	0.311 (.303)	-0.485 (.428)	1.268*** (,327)	-0.856 (.597)	--	1.244*** (.363)
Number of Months at Risk Of First Switch	-0.087 (.144)	0.074 (.102)	-0.051 (.106)	-0.015 (.126)	-0.156 (.176)	.0536 (.268)	0.019 (.201)
Number of Months at Risk Of First Switch Squared	0.006 (.011)	-0.006 (.008)	-0.004 (.008)	-0.001 (.001)	0.009 (.013)	-0.003 (.019)	0.000 (.016)
Origin Contraceptive Type Fixed Effects?	Y	Y	Y	Y	Y	Y	Y
Pseudo R-Squared	.11	.05	.14	.09	.12	.20	.20
N	1,140	2,361	3,056	3,735	4,016	3,978	4,399

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth. Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. Each regression includes a set of fixed effects dummies that that control for origin contraceptive type.

Table A.9: Logistic regression results for method selection after a first method switch, among married women.

	Dependent Variable: New Contraceptive Type						
	Condom Only	PPR Only	PPR & Condom	LARC Only	LARC & Condom	Male Sterilization	Female Sterilization
Age: 25-29	-0.878*** (.299)	-0.243 (.267)	-0.120 (.339)	-0.316 (.328)	-1.079 (1.036)	0.519 (.891)	0.489 (.430)
Age: 30-44	-0.341 (.286)	-0.606** (.266)	-0.129 (.327)	-0.040 (.303)	-1.171 (.953)	2.229*** (.851)	1.539*** (.359)
Education: High School Degree	0.876* (.450)	0.255 (.367)	1.249** (.612)	-1.184*** (.365)	-0.443 (1.145)	0.493 (.625)	-0.441 (.418)
Education: More than High School	0.669 (.418)	0.368 (.341)	1.225** (.554)	-0.958*** (.309)	-0.552 (1.241)	0.217 (.560)	-1.273*** (.428)
Race: Black	-0.524 (.467)	0.388 (.318)	-0.273 (.474)	-0.099 (.528)	0.036 (.947)	-0.876 (.648)	0.446 (.403)
Race: Hispanic	0.361 (.335)	-0.120 (.307)	-0.386 (.382)	0.435 (.286)	-1.154* (.692)	-0.185 (.396)	0.763** (.384)
Race: Other	-0.318 (.527)	-0.185 (.347)	-0.920** (.439)	0.144 (.486)	-1.394 (1.124)	-0.077 (.604)	0.663 (.475)
High SES	-0.411 (.298)	-0.256 (.280)	-0.323 (.326)	-0.017 (.283)	0.859 (.657)	0.462 (.402)	0.351 (.370)
Pregnant Last Month	-0.130 (.682)	-0.344 (.326)	-0.578 (.556)	0.116 (.352)	2.603*** (.877)	-2.954*** (.851)	0.754** (.361)
Number of Months at Risk Of First Switch	0.029 (.180)	-0.151 (.147)	0.015 (.194)	-0.012 (.188)	-0.513 (.490)	0.438* (.231)	-0.017 (.192)
Number of Months at Risk Of First Switch Squared	-0.003 (.014)	0.009 (.012)	-0.006 (.015)	0.001 (.015)	0.033 (.036)	-0.034** (.017)	0.008 (.014)
Origin Contraceptive Type Fixed Effects?	Y	Y	Y	Y	Y	Y	Y
Pseudo R-Squared	.06	.10	.05	.06	.23	.12	.14
N	754	1,000	1,584	1,710	1,880	1,999	2,144

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. Each regression includes a set of fixed effects dummies that that control for origin contraceptive type.

Table A.10: Logistic regression results for method selection after a higher-order method switch, among unmarried women.

	Dependent Variable: New Contraceptive Type						
	Condom Only	PPR Only	PPR & Condom	LARC Only	LARC & Condom	Male Sterilization	Female Sterilization
Age: 25-29	0.128 (.373)	0.002 (.198)	0.250 (.242)	0.349 (.269)	0.158 (.433)	1.142* (.640)	1.198** (.577)
Age: 30-44	-0.024 (.451)	0.117 (.256)	-0.336 (.276)	-0.167 (.293)	0.008 (.401)	2.74*** (.620)	1.536*** (.499)
Education: High School Degree	-0.962*** (.338)	0.163 (.238)	-0.071 (.277)	-0.289 (.331)	0.067 (.505)	-0.155 (.527)	-0.059 (.482)
Education: More than High School	-0.032 (.344)	0.193 (.234)	0.965*** (.239)	-0.916*** (.279)	-0.370 (.536)	-0.233 (.505)	-0.685 (.458)
Race: Black	-0.552* (.310)	-0.849*** (.202)	-0.742*** (.212)	-0.600 (.244)	0.732** (.315)	-2.101** (.850)	-0.213 (.604)
Race: Hispanic	-0.450 (.357)	-0.088 (.242)	-0.093 (.279)	0.012 (.300)	0.542 (.594)	-0.676 (.703)	-0.051 (.491)
High SES	0.150 (.329)	-0.061 (.225)	0.017 (.257)	-0.026 (.275)	0.236 (.448)	0.674 (.841)	0.216 (.483)
Pregnant Last Month	-1.338* (.789)	1.436*** (.300)	-0.732 (.559)	0.553 (.349)	0.713 (.703)	-2.212** (1.115)	1.242*** (.453)
Number of Previous Switches	-0.172 (.186)	0.143* (.082)	0.112 (.088)	-0.069 (.152)	-0.046 (.210)	-0.030 (.314)	-0.291 (.210)
Number of Months at Risk Of Higher-Order Switch	-0.076 (.230)	-0.066 (.159)	0.078 (.173)	0.133 (.209)	-0.016 (.377)	0.359 (.478)	0.600** (.286)
Number of Months at Risk Of Higher-Order Switch Squared	-0.001 (.019)	0.000 (.013)	-0.010 (.015)	-0.016 (.019)	0.011 (.036)	-0.028 (.037)	-0.046** (.022)
Most Recent Contraceptive Type Fixed Effects?	Y	Y	Y	Y	Y	Y	Y
Origin Contraceptive Type Fixed Effects?	Y	Y	Y	Y	Y	Y	Y
Pseudo R-Squared	.26	.23	.25	.25	.36	.27	.12
N	735	1,839	2,078	2,791	2,901	3,014	3,107

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. Each regression includes two sets of fixed effects dummies, one of which controls for origin contraceptive type and the other of which controls for most recent contraceptive type.

Table A.11: Logistic regression results for method selection after a higher-order method switch, among married women.

	Dependent Variable: New Contraceptive Type						
	Condom Only	PPR Only	PPR & Condom	LARC Only	LARC & Condom	Male Sterilization	Female Sterilization
Age: 25-29	-0.314 (.617)	-0.329 (.457)	-0.585 (.601)	-0.153 (.471)	-1.869* (.942)	--	1.603 (1.002)
Age: 30-44	0.598 (.653)	0.212 (.472)	-0.088 (.597)	-0.493 (.479)	-2.768*** (.584)	--	2.255** (.967)
Education: High School Degree	0.227 (.736)	0.606 (.568)	0.200 (.895)	-0.015 (.585)	2.493* (1.332)	--	1.415* (.778)
Education: More than High School	0.992 (.769)	0.317 (.529)	1.159 (.905)	-0.813 (.548)	3.021*** (1.082)	--	-0.408 (.748)
Race: Black	0.872 (.696)	-0.998* (.580)	0.921 (.635)	1.756*** (.490)	3.653*** (1.117)	--	1.016 (.692)
Race: Hispanic	1.192 (.905)	0.080 (.405)	0.280 (.695)	0.294 (.456)	-0.688 (.926)	--	-0.876 (.689)
High SES	1.122 (.778)	0.411 (.374)	-0.892 (.593)	-0.945** (.427)	-3.741*** (.835)	--	-0.511 (.735)
Pregnant Last Month	-0.133 (1.612)	-0.608 (.446)	0.688 (.660)	-0.224 (.485)	1.012 (1.322)	0.279 (.866)	0.580 (.584)
Number of Previous Switches	0.802 (.632)	0.331* (.198)	0.541* (.279)	-0.191 (.300)	1.451*** (.540)	-0.647 (.510)	-1.643* (.903)
Number of Months at Risk Of Higher-Order Switch	0.609 (.541)	0.119 (.272)	0.055 (.351)	-0.405 (.350)	1.695*** (.643)	0.005 (.461)	-0.256 (..528)
Number of Months at Risk Of Higher-Order Switch Squared	-0.079* (.042)	-0.027 (.024)	-0.017 (.031)	0.042 (.030)	-0.196*** (.069)	-0.003 (.038)	0.029 (.043)
Most Recent Contraceptive Type Fixed Effects?	Y	Y	Y	Y	Y	Y	Y
Origin Contraceptive Type Fixed Effects?	Y	Y	Y	Y	Y	Y	Y
Pseudo R-Squared	.37	.22	.28	.29	.46	.16	.29
N	167	582	648	846	867	914	950

Sources: All regressions were estimated using data taken from the 2006 - 2010 National Survey of Family Growth.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. Each regression includes two sets of fixed effects dummies, one of which controls for origin contraceptive type and the other of which controls for most recent contraceptive type.

Table A.12: Pregnancy outcome regression results, by marital status.

	Abortion		Live Birth	
	Unmarried Women	Married Women	Unmarried Women	Married Women
Age: 20-24	0.046*** (.001)	-0.125*** (.003)	-0.005*** (.001)	0.144*** (.002)
Age: 25-29	0.095*** (.001)	-0.169*** (.003)	-0.040*** (.001)	0.192*** (.002)
Age: 30-44	0.164*** (.001)	-0.187*** (.003)	-0.139*** (.001)	0.142*** (.002)
Race: Black	0.076*** (.001)	0.073*** (.001)	-0.078*** (.001)	-0.119*** (.000)
Race: Hispanic	-0.087*** (.001)	0.025*** (.001)	0.082*** (.001)	0.003*** (.000)
Race: Other	0.004*** (.001)	0.034*** (.001)	-0.003*** (.001)	-0.031*** (.000)
Constant	0.245*** (.001)	0.204*** (.003)	0.585*** (.001)	0.606*** (.002)
R-Squared	.97	.93	.98	.98
N	2,929	2,046	2,929	2,046

Sources: All regressions were estimated using data on members of FamilyScape's simulation population.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level. For each ordinary least squares regression, the dependent variable is the probability (ranging from 0 to 1) that a pregnancy will result in a given outcome. See the main text for more information on the data and methods that were used to parameterize FamilyScape's pregnancy-outcomes module.

Table A.13: Birth outcome regression results, by marital status.

	Child Poverty		Low Birth Weight		Maternal Smoking		Maternal Diabetes		Maternal Hypertension	
	Unmarried Women	Married Women	Unmarried Women	Married Women	Unmarried Women	Married Women	Unmarried Women	Married Women	Unmarried Women	Married Women
Age: 20-24	0.115 (.076)	-0.030 (.118)	-0.070*** (.009)	-0.179*** (.021)	0.597*** (.009)	0.054*** (.020)	0.616*** (.020)	0.599*** (.040)	-0.198*** (.014)	-0.110*** (.029)
Age: 25-29	0.074 (.081)	-0.076 (.116)	-0.032*** (.010)	-0.222*** (.020)	0.747*** (.010)	-0.295*** (.020)	1.190*** (.020)	1.057*** (.039)	-0.216*** (.015)	-0.157*** (.028)
Age: 30-44	0.113 (.083)	-0.082 (.116)	0.187*** (.010)	-0.050** (.020)	0.573*** (.011)	-0.744*** (.021)	1.801*** (.019)	1.547*** (.038)	-0.011 (.016)	-0.177*** (.028)
Education: High School Degree	-0.131** (.058)	-0.168*** (.048)	-0.059*** (.008)	0.040*** (.011)	-0.439*** (.008)	-0.444*** (.012)	0.000 (.013)	-0.039*** (.012)	0.164*** (.013)	0.262*** (.017)
Education: More than High School	-0.316*** (.059)	-0.293*** (.044)	-0.170*** (.009)	-0.072*** (.011)	-1.127*** (.009)	-1.814*** (.012)	-0.056*** (.013)	-0.327*** (.012)	0.278*** (.013)	0.284*** (.016)
Race: Black	0.143** (.058)	0.090** (.040)	0.560*** (.008)	0.625*** (.011)	-1.481*** (.009)	-0.902*** (.021)	-0.032** (.014)	0.218*** (.014)	0.093*** (.012)	0.120*** (.016)
Race: Hispanic	0.112* (.058)	0.073*** (.026)	-0.215*** (.009)	-0.036*** (.008)	-3.122*** (.011)	-2.833*** (.018)	-0.070*** (.012)	0.110*** (.009)	-0.411*** (.012)	-0.375*** (.012)
Race: Other	0.073 (.100)	0.032 (.024)	0.013 (.018)	0.175*** (.011)	-1.435*** (.017)	-1.870*** (.025)	0.192*** (.023)	0.405*** (.011)	-0.371*** (.029)	-0.680*** (.018)
Pseudo R-Squared	.09	.27	.01	.01	.19	.15	.04	.02	.01	.01
N	606	1,957	1,108,474	1,599,005	875,544	1,305,617	1,099,056	1,590,435	1,099,056	1,590,435

Sources: The child poverty regressions were estimated as linear probability models using data taken from the March 2009 Current Population Survey. All other regressions were estimated as logistic regression models using data taken from the 2008 National Vital Statistics System.
Notes: Standard errors are reported in parentheses beneath each parameter estimate. One asterisk (*) indicates that the estimate is statistically significant at or beyond the .1 level, two asterisks (**) indicate that the estimate is significant at or beyond the .05 level, and three asterisks (***) indicate that the estimate is significant at or beyond the .01 level.

B DESCRIPTION OF FAMILYSCAPE'S SIMULATION PROCESS

The FamilyScape simulation process consists of the following three steps, each of which is discussed further below:

I. Create a simulation population
II. Specify and execute FamilyScape simulations (i.e., baseline or policy-intervention)
III. Analyse FamilyScape simulation output

B.1 Create Simulation Population

Before FamilyScape simulations can be performed, a simulation population must be created by randomly sampling observations with replacement from the female respondent file of the 2006 – 2010 NSFG. A given simulation population can be replicated by using the same random seed number each time that a sample is extracted. Recall that FamilyScape incorporates randomness into its simulation of behaviours and outcomes (e.g., a woman who has sex becomes pregnant if a random draw from a uniform (0,1) distribution falls below some specified threshold that is based on her fecundity and the efficacy of the contraceptive methods used during intercourse). As such, simulated output (e.g., annual pregnancy rates) will vary from run to run. Users can increase the precision of FamilyScape estimates (i.e., reduce the influence of random variation of simulation results across runs) by augmenting the size of the simulation population.[3] An increase in precision might be desirable when simulating relatively small behavioural changes (e.g., a 5 percent increase in condom use) whose effects on (say) pregnancy rates are at risk of being drowned out by random variation across simulation runs. The trade-off here is that any increase in the size of the simulation population dataset will also increase (1) the runtime of FamilyScape simulations and (2) the required data storage capacity.

B.2 Specify and Execute FamilyScape Simulation

Once a simulation population has been created, simulations can be performed for that population. FamilyScape has the capacity to execute two types of simulations: (1) baseline (i.e., pre-intervention) simulations, and (2) simulations that change behaviours related to contraception, including contraceptive use, contraceptive switching, and contraceptive efficacy. FamilyScape is programmed such that it can easily accommodate a variety of contraceptive interventions for a plethora of demographic subgroups. Importantly, however, simulation data should only be analysed for days 1081 through 1446. This is because (1) time must pass before FamilyScape's simulated behaviours and outcomes (e.g., pregnancy rates) reach a steady state; and (2) members of the simulation population are only allowed to switch contraceptive methods starting on day 1081. Because FamilyScape's switching parameters are only able to model switching patterns over the course of a single year, the focal year spans from day 1081 to day 1446.

B.3 Analyse FamilyScape Output

After specifying and running a simulation with FamilyScape, the microdata produced by the simulation can be used to estimate the effects of a policy intervention on a given measure of interest. For example, suppose that the user is interested in estimating the effects of increasing LARC use on the pregnancy rate among unmarried women. To perform this analysis, she would:

A. Run a baseline specification of FamilyScape and compute a pre-intervention pregnancy rate for unmarried women using microdata produced by these runs;
B. Run an intervention specification of FamilyScape (e.g., one in which LARC use is increased by 10%) and compute a post-intervention pregnancy rate for unmarried women using the microdata produced by these runs; and
C. Compare simulated pre- and post-intervention pregnancy rates in order to estimate the effect of the intervention on nonmarital pregnancies.

Post-simulation analysis of FamilyScape output requires not only merging micro-level datasets across days in a simulation run (e.g., to compute a change in pregnancy counts across individual members of the simulation population), but also averaging estimates across multiple runs (e.g., averaging pregnancy rates across runs to generate a final nonmarital pregnancy rate).

The model keeps track of abortions, miscarriages, live births, and maternal and newborn child outcomes. Users can therefore perform the same set of calculations described above for (say) teenagers to compute pregnancy-outcome rates (e.g., teen birth rates, teen abortion rates, etc.). However, the reader may be wondering what analysis timeframe to use when tabulating pregnancy outcomes, since pregnancies take time to resolve into births, abortions, and miscarriages. In particular, many pregnancies that occur between days 1081 and 1446 will technically resolve in the subsequent year (i.e., beyond day 1446). For example, a pregnancy that occurs on day 1445 could result in a birth 9 months later. To circumvent this problem, FamilyScape determines the pregnancy outcome of each pregnancy (and, for simulated births, the corresponding maternal and child outcomes) on the day of the conception. Thus, if a woman becomes pregnant on day 1440, FamilyScape imputes to that pregnancy an outcome on day 1440, even though the resolution of the pregnancy will occur many days in the future. Consequently, FamilyScape is designed to count pregnancy and birth outcomes on the day of conception, rather than on the day of pregnancy resolution, thereby avoiding the timeframe complications outlined above.

C PSEUDOCODE

FamilyScape 3.0 was created using release 13 of the Stata statistical software package (StataCorp, 2013). The pseudocode below provides a general overview of the coding approach used to implement each of FamilyScape's modules.

C.1 Procedures for Simulating Sexual Behaviour

The *Assign Across Month Sexual Activity Type* and *Assign Within Month Coital Frequency Type* programs are executed at the beginning of the simulation. The probabilities of falling into sexual activity type and coital frequency type categories vary according to the characteristics enumerated in Table 9. The parameters used to assign these probabilities are listed in Tables A.1 and A.2 in Appendix A. The *Assign Sexually Active Months* program is executed at the beginning of each year of analysis time. The *Have Sex this Month* and *Assign Sexually Active Days* programs are executed at the beginning of each month of analysis time. Finally, the *Have Sex Today* program is executed at the beginning of each day of analysis time.

Algorithm C.1: Pseudocode for assigning across-month sexual activity type.

```
Program define Assign Across Month Sexual Activity Type
        Generate probability of falling into "inactive" (as opposed to "moderately active"
                or "highly active") sexual activity category
        Generate probability of falling into "highly active" (as opposed to
                "moderately active") sexual activity category
        Generate sexual activity type variable and initially assign all women to
                "moderately active" category
        Generate rTemp = runiform()
        Replace sexual activity type = "inactive" if rTemp < prob(inactive)
        Drop rTemp
        Generate rTemp = runiform()
        Replace sexual activity type = "highly active" if rTemp < prob(highly active) &
                sexual activity type != "inactive"
        Drop rTemp
```

```
End
```

Algorithm C.2: Pseudocode for assigning sexually active months.

```
Program define Assign Sexually Active Months
        Generate nSexMonths by randomly selecting an integer between one and eleven
                (inclusive)
        Replace nSexMonths = 0 if assigned to the "inactive" category
        Replace nSexMonths = 12 if assigned to the "highly active" category
        Generate willHaveSexThisMonth1-willHaveSexThisMonth12 dummies and
                initialize all 12 variables with values of zero
        Replace m randomly selected willHaveSexThisMonth variables with values of one,
                where m = nSexMonths
End
```

Algorithm C.3: Pseudocode for identifying sexually active months.

```
Program define Have Sex This Month
        Generate haveSexThisMonth = 1 if willHaveSexThisMonth(current month) = 1
End
```

Algorithm C.4: Pseudocode for assigning within-month sexual activity type.

```
Program define Assign Within Month Coital Frequency Type
        Generate probability of falling into "low frequency" (as opposed to
                "moderate frequency" or "high frequency") coital frequency category
        Generate probability of falling into "high frequency" (as opposed to
                "moderate frequency") coital frequency category
        Generate coital frequency type variable and initially assign all women to
                "moderate frequency" category if haveSexThisMonth = 1
        Generate rTemp = runiform()
        Replace coital frequency type = "low frequency" if
                rTemp < prob(low frequency) & haveSexThisMonth = 1
        Drop rTemp
        Generate rTemp = runiform()
        Replace coital frequency type = "high frequency" if
```

```
            rTemp < prob(high frequency) &
            coital frequency type != "low frequency" & haveSexThisMonth = 1
End
```

Algorithm C.5: Pseudocode for assigning sexually active days.

```
Program define Assign Sexually Active Days
    Generate nSexDays by randomly selecting an integer from a range of values
        that varies according to coital frequency type
    Replace nSexDays = 0 if haveSexThisMonth = 0
    Generate willHaveSexThisDay1-willHaveSexThisDay30 dummies and initialize
        all 30 variables with values of zero
    Replace n randomly selected willHaveSexThisDay variables with values of one,
        where n = nSexDays
End
```

Algorithm C.6: Pseudocode for identifying sexually active days.

```
Program define Have Sex Today
    Generate haveSexToday = 1 if willHaveSexThisDay(today) = 1
End
```

C.2 Procedures for Simulating Contraceptive Behaviour

The *Assign Initial Contraceptive Type* program is executed at the beginning of the simulation. The probabilities of falling into FamilyScape's contraceptive method categories vary according to the characteristics enumerated in Table 9. The parameters used to assign these probabilities are listed in Tables A.3 and A.4 in Appendix A. The *Method Switching* program is executed at the beginning of each month of analysis time after the first month in which the switching module is activated. First-time method switches and higher-order switches are simulated separately, but both processes follow the same basic procedures outlined below. The probabilities of first-time and higher-order switching, and the selection of methods after a contraceptive switch, vary according to characteristics that are again enumerated in Table 9. The parameters that govern switching behaviour are listed in Tables A.5 – A.11 in Appendix A. FamilyScape's contraceptive method category variable is coded as follows:

(0) Female Sterilized/No Male-Controlled Method
(1) Female Not Sterilized/Male Sterilized
(2) LARC/Condom
(3) LARC/No Male-Controlled Method
(4) PPR/Condom
(5) PPR/No Male-Controlled Method
(6) No Female-Controlled Method/Condom
(7) No Method

Algorithm C.7: Pseudocode for assigning initial contraceptive type.

```
Program define Assign Initial Contraceptive Type
        Generate probability of falling into method category 1 (as opposed to
                any other category)
        Generate probability of falling into method category 2 (among women not
                assigned to category 1)
        Generate probability of falling into method category 3 (among women not
                assigned to categories 1 or 2)
        Generate probability of falling into method category 4 (among women not
                assigned to categories 1-3)
        Generate probability of falling into method category 5 (among women not
                assigned to categories 1-4)
        Generate probability of falling into method category 6 (among women not
                assigned to categories 1-5)
        Generate probability of falling into method category 7 (among women not
                assigned to categories 1-6)
        Generate methodType = 0 if sexual activity type != "inactive"
        Forvalues j = 1/7{
                Generate rTemp = runiform()
                Replace methodType = `j' if rTemp < prob(method type `j') &
                        sexual activity type != "inactive"
                Drop rTemp
        }
End
```

Algorithm C.8: Pseudocode for simulating method switching.

```
Program define Method Switching
```

```
Generate p(method switch this month) = 0 if sexual activity type != “inactive”
Forvalues j = 1/7{
        Replace p(method switch this month) with probability that varies by
                method type if sexual activity type != “inactive
}
Generate switchThisMonth = 0
Generate rTemp = runiform()
Replace switchThisMonth = 1 if rTemp < p(method switch this month) &
        sexual activity type != “inactive” & (methodType != 0 & isMarried = 0) &
        (methodType != 0 & methodType != 1 & isMarried = 1)
Drop rTemp
Generate probability of switching into method category 0 (as opposed to any
        other category), among method switchers who had not previously been
        assigned to category 0
Generate probability of switching into method category 1 (as opposed to
        categories 2-7), among method switchers who had not previously been
        assigned to category 1
Generate probability of switching into method category 2 (as opposed to
        categories 3-7), among method switchers who had not previously been
        assigned to category 2
Generate probability of switching into method category 3 (as opposed to
        categories 4-7), among method switchers who had not previously been
        assigned to category 3
Generate probability of switching into method category 4 (as opposed to
        categories 5-7), among method switchers who had not previously been
        assigned to category 4
Generate probability of switching into method category 5 (as opposed to
        categories 6-7),        among method switchers who had not previously been
        assigned to category 5
Generate probability of switching into method category 6 (as opposed to
        category 7), among method switchers who had not previously been
        assigned to category 6
Forvalues j = 0/6{
        Replace probability of switching into category `j’ with a value of zero if
```

```
                    switchThisMonth = 1 & previous methodType = `j'
          }
          Replace methodType = . if switchThisMonth = 1
          Forvalues j = 0/6{
                    Generate rTemp = runiform()
                    Replace methodType = `j' if switchThisMonth = 1 &
                              rTemp < prob(switch into category `j') & methodType = .
                    Drop rTemp
          }
          Replace methodType = 7 if switchThisMonth = 1 & methodType = . &
                    sexual activity type != "inactive"
End
```

C.3 Procedures for Simulating the Occurrence of Pregnancy

All of the programs below are executed each time a woman has intercourse. The *Assign Fecundity* program models fecundity levels using an approach that is described in the main text. The *Assign Contraceptive Failure Rate* program incorporates a set of demographically specific contraceptive failure rates for each method category. The "infertileToday" term is a dummy variable set equal to one if a woman is in the midst of a period of post-pregnancy infertility (see the next section of this appendix for more information).

Algorithm C.9: Pseudocode for assigning fecundity level.

```
Program define Assign Fecundity
          Generate fecundity = (.48-.022*(age - 32)* exp(-(14-day in menstrual cycle)/1.47)
                    if day in menstrual cycle < 14
          Replace fecundity = (.48-.022*(age - 32)* exp(-(day in menstrual cycle-14)/.7)
                    if day in menstrual cycle <= 14
          Replace fecundity = 0 if day in menstrual cycle > 17
          Replace fecundity = 0 if day in menstrual cycle < 4
          Replace fecundity = 0.236*fecundity if age= 15
          Replace fecundity = 0.319*fecundity if age= 16
          Replace fecundity = 0.403*fecundity if age= 17
          Replace fecundity = 0.490*fecundity if age= 18
```

```
        Replace fecundity = 0.584*fecundity if age= 19
        Replace fecundity = 0.681*fecundity if age= 20
        Replace fecundity = 0.782*fecundity if age= 21
        Replace fecundity = 0.889*fecundity if age= 22
        Replace fecundity = 0.659*fecundity if age >= 35 & age <= 39
        Replace fecundity = 0.691*fecundity if age= 40
        Replace fecundity = 0.736*fecundity if age= 41
        Replace fecundity = 0.610*fecundity if age= 42
        Replace fecundity = 0.416*fecundity if age= 43
        Replace fecundity = 0.282*fecundity if age= 44
End
```

Algorithm C.10: Pseudocode for assigning contraceptive failure rates.

```
Program define Assign Contraceptive Failure Rate
        Generate contrFail = 0
        Replace contrFail = 0.000000000 if methodType = 0
        Replace contrFail = 0.000000000 if methodType = 1
        Replace contrFail = 0.026583821 if methodType = 2 & isMarried = 0
        Replace contrFail = 0.000000000 if methodType = 2 & isMarried = 1
        Replace contrFail = 0.017370762 if methodType = 3 & isMarried = 0
        Replace contrFail = 0.003953724 if methodType = 3 & isMarried = 1
        Replace contrFail = 0.017920108 if methodType = 4 & isMarried = 0 &
                age >= age <= 29
        Replace contrFail = 0.035313648 if methodType = 4 & isMarried = 0 &
                age >= 30 & age <= 44
        Replace contrFail = 0.073518209 if methodType = 4 & isMarried = 1 &
                age >= 15 & age <= 29
        Replace contrFail = 0.066653625 if methodType = 4 & isMarried = 1 &
                age >= 30 & age <= 44
        Replace contrFail = 0.039258413 if methodType = 5 & isMarried = 0 &
                age >= 15 & age <= 29
        Replace contrFail = 0.051365949 if methodType = 5 & isMarried = 0 &
                age >= 30 & age <= 44
        Replace contrFail = 0.031727753 if methodType = 5 & isMarried = 1 &
```

```
            age >= 15 & age <= 29
        Replace contrFail = 0.025884957 if methodType = 5 & isMarried = 1 &
            age >= 30 & age <= 44
        Replace contrFail = 0.109344133 if methodType = 6 & isMarried = 0 &
            age >= 15 & age <= 29
        Replace contrFail = 0.091920101 if methodType = 6 & isMarried = 0 &
            age >= 30 & age <= 44
        Replace contrFail = 0.069412047 if methodType = 6 & isMarried = 1 &
            age >= 15 & age <= 29
        Replace contrFail = 0.095860195 if methodType = 6 & isMarried = 1 &
            age >= 30 & age <= 44
        Replace contrFail = 0.584819389 if methodType = 7 & isMarried = 0 &
            age >= 15 & age <= 29
        Replace contrFail = 0.408904324 if methodType = 7 & isMarried = 0 &
            age >= 30 & age <= 44
        Replace contrFail = 0.477382969 if methodType = 7 & isMarried = 1 &
            age >= 15 & age <= 29
        Replace contrFail = 0.589450348 if methodType = 7 & isMarried = 1 &
            age >= 30 & age <= 44
End
```

Algorithm C.11: Pseudocode for assigning the occurrence of pregnancy.

```
Program define Got Pregnant Today
        Generate gotPregnantToday = 0
        Generate pregnancyProbability = contrFail*fecundity*(1-infertileToday)
        Generate rTemp = runiform()
        Replace gotPregnantToday = 1 if rTemp < pregnancyProbability
            & haveSexToday = 1
        Drop rTemp
End
```

C.4 Procedures for Simulating Pregnancy and Birth Outcomes

The *Assign Pregnancy Outcome Probabilities* and *Assign Birth Outcome Probabilities* programs are executed at the beginning of the simulation. The probabilities that a pregnancy will result in a given outcome, and that various outcomes will obtain for a given birth, vary according to the characteristics enumerated in Table 9. The parameters used to assign these probabilities are listed in Tables A.12 and A.13 in Appendix A. The *Assign Pregnancy Outcome* and *Assign Post Pregnancy Infertility Period* programs are executed each time that a pregnancy occurs. Post pregnancy infertility periods encompass both a pregnancy's gestation period and an interval of infertility that begins once the pregnancy has ended. Gestation periods and post pregnancy infertility intervals vary in length according to a pregnancy's outcome. FamilyScape models a variety of birth outcomes; the generic code below is a general representation of the routines used to model each outcome. Birth outcomes are simulated each time that a birth occurs.

Algorithm C.12: Pseudocode for assigning pregnancy outcome probabilities.

```
Program define Assign Pregnancy Outcome Probabilities
        Generate probability that pregnancy will result in abortion (as opposed to a birth
                or a foetal loss)
        Generate probability that pregnancy will result in birth (as opposed to
                a foetal loss)
End
```

Algorithm C.13: Pseudocode for assigning pregnancy outcome.

```
Program define Assign Pregnancy Outcome
        Generate abortionToday = 0 if gotPregnantToday = 1
        Generate rTemp = runiform()
        Replace abortionToday = 1 if gotPregnantToday = 1 & rTemp < p(abortion)
        Drop rTemp
        Generate birthToday = 0 if gotPregnantToday = 1
        Generate rTemp = runiform()
        Replace birthToday = 1 if gotPregnantToday = 1 & rTemp < p(birth) &
                abortionToday != 1
        Drop rTemp
        Generate foetalLossToday = 0
        Replace foetalLossToday = 1 if gotPregnantToday = 1 & abortionToday != 1 &
```

```
        birthToday != 1
End
```

Algorithm C.14: Pseudocode for assigning post-pregnancy infertility period.

```
Program define Assign Post Pregnancy Infertility Period
    Generate daysInfertile = 0 if gotPregnantToday = 1
    Replace daysInfertile = 35 + int(runiform()*77) if abortionToday = 1
    Replace daysInfertile = 48 + int(runiform()*43) if foetalLossToday = 1
    Replace daysInfertile = 357 + int(runiform()*29) if birthToday = 1
    Replace daysInfertile = daysInfertile - 1 if daysInfertile > 0 & daysInfertile != . &
        gotPregnantToday = 0
    Generate infertileToday = 0
    Replace infertileToday = 1 if daysInfertile > 0 & daysInfertile != .
End
```

Algorithm C.15: Pseudocode for assigning birth outcome probabilities.

```
Program define Assign Generic Birth Outcome Probabilities
    Generate probability of birth outcome occurring
End
```

Algorithm C.16: Pseudocode for simulating birth outcomes.

```
Program define Assign Generic Birth Outcome
    Generate birthOutcome = 0 if birthToday = 1
    Generate rTemp = runiform()
    Replace birthOutcome = 1 if rTemp < p(birth outcome)
    Drop rTemp
End
```

NOTES

[1] Note that there is a wide range of sample sizes for our NSFG-based regressions. This is a function of the fact that the analysis sample for each regression is tailored to meet the requirements of the relevant specification. For instance, before estimating our regressions of sexual inactivity (see the first two columns of Table A.1), we first eliminated from the sample all women whose marital status changed during the year for which we have data on annual sexual activity. This sample restriction ensured that all women included in the "unmarried" regression were in fact unmarried throughout the focal year, and that all women included in the "married" regression were married throughout the focal year. The total number of observations in the female respondent file of the NSFG is 12,279, and we eliminated 615 observations when we imposed this sample restriction. This left us with 12,279 – 615 = 11,664 observations. A little more than two-thirds (about 68.5%) of these observations were unmarried; hence the fact that the sample size for the analysis of sexual inactivity among unmarried women is .685*11,664 ≈ 7,989. The remaining observations were married and were therefore included in the analysis of sexual inactivity among married women. We then modelled the probability of falling into the "Highly Active" category (as opposed to the "Moderately Active" category) among all women who were not identified as sexually inactive. This explains why the sample sizes for our "Highly Active" regressions (see the third and fourth columns of Table A.1) are smaller than the sample sizes for our regressions of the probability of being sexually inactive. Given that we only have data on within-month coital frequency among women who were sexually active in the month prior to the administration of the survey, the sample sizes for the regressions in Table A.2 are smaller than the sample sizes in Table A.1. As another example, our initial contraceptive assignment regressions model the choice of methods during the first month in which women were sexually active during the previous year. We therefore restricted our analysis sample for these regressions to women who had at least one month of sexual activity in the past year. Because these regressions control for within-month coital frequency, we further restricted our analysis sample to women who were sexually active in the past month (since, again, we only have data on within-month coital frequency for women who were sexually active in the previous month). We also restricted our sample to women whose marital status did not change during the focal year, as we did for our analyses of annual sexual activity. After imposing these restrictions on our sample of unmarried women, we were left with 3,885 observations. As is discussed in the main text – and as is also made clear in the pseudocode provided in Appendix C – we use an iterative process to assign women within the simulation to initial contraceptive categories: we first assign a subset of women in the simulation population to the "Male Sterilized" category; we then assign a subset of women not in the "Male Sterilized" category to the "LARC & Condom" category; we then assign a subset of women not in the "Male Sterilized" or "LARC & Condom" categories to the "LARC Only" category; and so forth. Our regressions are specified so as to accommodate this simulation process. In other words, the regression that models the use of male sterilization among unmarried women uses data on all of the aforementioned 3,885 women; the regression that models the simultaneous use of a LARC method and condoms uses data on all unmarried women who are not assigned to the "Male Sterilized" category; the regression that models the use of a LARC method alone uses data on all unmarried women who are assigned to neither the "Male Sterilized" nor the "LARC & Condom" categories; and so forth. Hence the fact that the sample sizes for our regressions fall as one moves from right to left in Tables A.3 and A.4. Finally, we would note that the unit of analysis for our hazard models of the probability of switching methods is the person-month, not the person. Thus, for example, we have data on 34,117 person-months whose origin contraceptive method was the male condom and who are at risk of switching methods (see the sample size for the second regression in Table A.5). The fact that these regressions are estimated using person-month data explains why their sample sizes sometimes exceed the total number of female NSFG respondents.

[2] In footnote 26 in the main text, we explain why the R-Squareds are so high for our pregnancy-outcome regressions (see Table A.12).

[3] Alternatively, users could increase the precision of FamilyScape's results by increasing the number of runs – e.g., by basing final pregnancy rates on 200 runs, rather than 100 runs. However, we have found that it is much more efficient to increase precision by augmenting the simulation population's size than by increasing the number of runs.