Disease and Gender Gaps in Human Capital Investment: Evidence from Niger's 1986 Meningitis Epidemic (Appendix) *

Belinda Archibong [†]
Barnard College

Francis Annan
Columbia University

A   Appendix

Table A1: Variable Means

	Total population			Males			Females		
	1992	1998	1992-1998	1992	1998	1992-1998	1992	1998	1992-1998
Population									
percent age 0-5 in 1986	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.23
percent age 6-12 in 1986	0.21	0.18	0.19	0.21	0.17	0.19	0.21	0.19	0.2
percent age 13-20 in 1986	0.16	0.18	0.17	0.15	0.16	0.15	0.18	0.20	0.19
Meningitis cases cohort exposure									
age 0-5 in 1986	2.47	2.54	2.5	2.51	2.67	2.58	2.43	2.42	2.43
age 6-12 in 1986	2	1.84	1.93	2.10	1.68	1.91	1.91	1.98	1.94
age 13-20 in 1986	1.52	1.99	1.73	1.36	1.77	1.54	1.67	2.19	1.91
Years of education									
Control Cohorts: age 0-5 in 1986	0.40	1.95	1.09	0.46	2.33	1.3	0.33	1.58	0.89
Treated Cohorts: age 6-12 in 1986	1.85	2.38	2.07	2.26	3.22	2.63	1.46	1.72	1.57
Treated Cohorts: age 13-20 in 1986	1.99	1.83	1.91	2.69	2.58	2.64	1.43	1.32	1.37

1

Table A2: Difference in Difference Estimates of the Differential Impact of Meningitis Exposure on Education (1986 Epidemic Year), Robustness Check
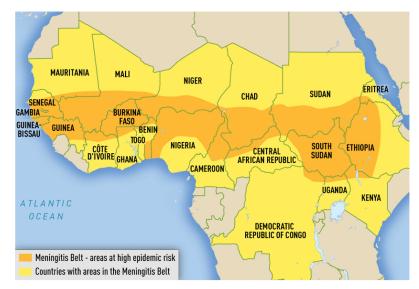
| | Dependent Variable: Years of Education | | | |
| | MENIN Cases | | MENIN Intensity | |
	(3a)	(3b)	(3c)	(3d)
Female	−0.644***	−0.536***	−0.645***	−0.547***
	(0.049)	(0.067)	(0.049)	(0.064)
Meningitis exposure at ages 0-4	0.005	0.005*	0.001	0.0005*
	(0.004)	(0.003)	(0.0004)	(0.0003)
x Female		0.0004		0.0001
		(0.005)		(0.001)
Meningitis exposure at ages 7-12	−0.024	−0.002	−0.002*	−0.0004
	(0.015)	(0.019)	(0.001)	(0.002)
x Female		−0.040***		−0.003***
		(0.012)		(0.001)
Meningitis exposure at ages 14-21	−0.044	−0.027	−0.004	−0.002
	(0.028)	(0.027)	(0.002)	(0.002)
x Female		−0.030***		0.003***
		(0.009)		(0.001
Constant	1.039***	0.982***	1.018***	0.967***
	(0.199)	(0.210)	(0.187)	(0.195)
District fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Year of birth fixed effects	Yes	Yes	Yes	Yes
Observations	47,697	47,697	47,697	47,697
R^2	0.208	0.210	0.208	0.209

Notes: Regressions estimated by OLS. Robust standard errors in parentheses clustered by district. Dependent variable is years of education across all specifications. MENIN cases is the meningitis exposure explanatory variable defined as average district level weekly case (per 100,000 population) exposure for cohort at specified ages during the 1986 epidemic year. MENIN intensity is the meningitis exposure explanatory variable measured as district level case exposure for cohort at specified ages during the 1986 meningitis epidemic year multiplied by number of months of exposure (with greater than zero cases). ***Significant at the 1 percent level, **Significant at the 5 percent level, *Significant at the 10 percent level.

Table A3: Difference in Difference Estimates of the Differential Impact of Meningitis Exposure on Education (1990 Non-Epidemic Year), Robustness Check

| | Dependent Variable: Years of Education | | | |
| | MENIN Cases | | MENIN Intensity | |
	(2a)	(2b)	(2c)	(2d)
Female	−0.644***	−0.651***	−0.643***	−0.653***
	(0.050)	(0.076)	(0.049)	(0.074)
Meningitis exposure at ages 0-5	−0.065	−0.122	−0.011	−0.016
	(0.091)	(0.112)	(0.011)	(0.014)
x Female		0.113**		0.011**
		(0.045)		(0.004)
Meningitis exposure at ages 6-12	−0.005	0.012	−0.002	−0.001
	(0.041)	(0.055)	(0.004)	(0.006)
x Female		−0.032		−0.002
		(0.039)		(0.004)
Meningitis exposure at ages 13-20	0.010	0.069	0.003	0.008
	(0.047)	(0.058)	(0.006)	(0.007)
x Female		−0.108***		−0.010***
		(0.037)		(0.003)
Constant	1.038***	1.042***	1.018***	1.024***
	(0.181)	(0.193)	(0.170)	(0.181)
District fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Year of birth fixed effects	Yes	Yes	Yes	Yes
Observations	47,697	47,697	47,697	47,697
R^2	0.205	0.207	0.206	0.207

Notes: Regressions estimated by OLS. Robust standard errors in parentheses clustered by district. Dependent variable is years of education across all specifications. MENIN cases is the meningitis exposure explanatory variable defined as average district level weekly case (per 100,000 population) exposure for cohort at specified ages during the 1990 non-epidemic year. MENIN intensity is the meningitis exposure explanatory variable measured as district level case exposure for cohort at specified ages during the 1990 non-epidemic year multiplied by number of months of exposure (with greater than zero cases). Mean level of education in the sample is 1.22, and the standard deviation is 2.7. Mean level of education for boys in the sample is 1.51 and the mean level of education for girls in the sample is 0.94. ***Significant at the 1 percent level, **Significant at the 5 percent level, *Significant at the 10 percent level.

Figure A1: Areas with Frequent Epidemics of Meningococcal Meningitis ('Meningitis Belt')
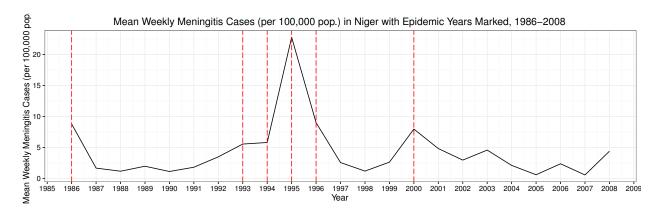
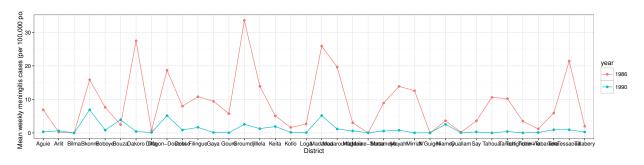Figure A2: Niger Meningitis Cases with Epidemic Years Marked, 1986-2008

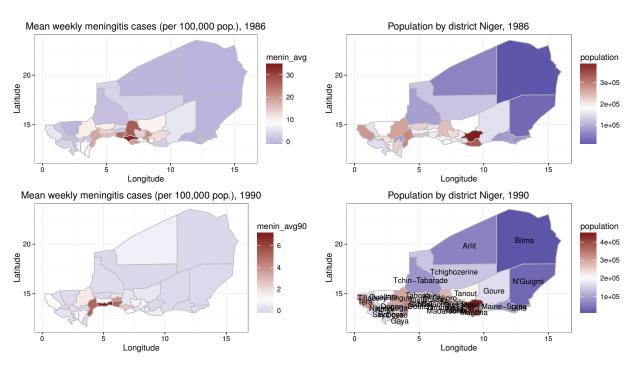Figure A3: Niger Meningitis Cases by District in Epidemic (1986) and Non-epidemic (1990) Years

Figure A4: Niger Meningitis Cases and Population by District in Epidemic (1986) and Non-epidemic (1990) Years