Online appendix

Table A.1
Determinants of maternal mortality in 1946

Dependent variable is maternal mortality ratio in 1946
(deaths per 1,000 live births).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Spleen rate 1947	0.066***		0.078***				0.076***	0.073***
	[0.009]		[0.011]				[0.012]	[0.011]
Male malaria death rate		0.635*	-0.368				-0.276	-0.091
		[0.334]	[0.228]				[0.261]	[0.290]
Percent population in urban areas					-0.008		0.008	0.005
					[0.025]		[0.015]	[0.014]
Percent males literate ages 20 to 24				-0.021				0.137
				[0.145]				[0.092]
Percent males literate ages 25 to 29				-0.231				-0.154*
				[0.180]				[0.085]
Percent males literate ages 30 to 34				0.242				0.042
				[0.146]				[0.080]
Mean percent male literate (ages 20-34)						0.032	0.015	
						[0.042]	[0.023]	
Observations	19	19	19	19	19	19	19	19
R-squared	0.75	0.18	0.79	0.17	0.01	0.03	0.80	0.85

There are 19 observations, one per district. The spleen rate is the percent of individuals who test positive for an enlarged spleen, which is an indicator malarial infection. District-level spleen rates are available only in 1947.

Table A.2
Effect of maternal mortality on age-specific mortality rates

Dependent variable: Age-specific death rate	Basic	Add nutritional diseases and malaria death rates
Age 0-4		
MMR*female	1.672	0.275
	[1.116]	[1.447]
Age 5-9		
MMR*female	0.322*	0.420***
	[0.174]	[0.124]
Age 10-14		
MMR*female	0.578**	0.176
	[0.223]	[0.343]
Age 15-19		
MMR*female	2.616***	2.491***
	[0.379]	[0.668]
Age 20-24		
MMR*female	5.391***	4.513***
	[0.987]	[0.560]
Age 25-29		
MMR*female	2.054***	2.537***
	[0.597]	[0.419]
Age 30-34		
MMR*female	2.322***	2.966***
	[0.554]	[0.483]
Age 35-39		
MMR*female	-0.829	0.227
	[1.016]	[0.809]
Age 40-44		
MMR*female	-0.915	0.35
	[0.846]	[0.644]
Age 45-49		
MMR*female	0.259	0.689
	[0.688]	[1.187]
Age 50-54		
MMR*female	0.625	-0.124
	[1.023]	[1.233]
Age 55-59		
MMR*female	-4.303	1.135
	[2.558]	[1.659]
Age 60-64		
MMR*female	-5.304**	0.248
	[2.274]	[2.506]
Age 65+		
MMR*female	-2.861	-3.347
	[2.797]	[2.344]

MMR is measured contemporaneously. All regressions include district-year, district-gender, and gender-year fixed effects. Nutritional diseases are helminths, anemia, diarrhea, and vitamin deficiencies. Standard errors (in brackets) are

clustered at the district-gender level. Each cell reports the coefficient from a separate regression. N=76 (19 districts, 2 genders, 2 years).
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A.3
Age-specific effects of maternal mortality on literacy

Dependent variable: <u>Percent literate by age</u>	(1) Basic	(2) Add nutritional diseases and malaria
Ages 5-9*		
(lagged MMR)*female	-0.478	-1.373
	[0.574]	[1.267]
Ages 10-14*		
(lagged MMR)*female	-0.796	-1.869
	[0.848]	[1.359]
Ages 15-19*		
(lagged MMR)*female	-1.363	-1.714
	[1.022]	[1.179]
Ages 20-24*		
(lagged MMR)*female	-1.598	-2.592***
	[0.995]	[0.937]
Ages 25-29*		
(lagged MMR)*female	-1.387*	0.022
	[0.793]	[0.754]
Ages 30-34*		
(lagged MMR)*female	-0.962	-0.382
	[0.856]	[1.232]
Ages 35-39*		
(lagged MMR)*female	0.008	0.044
	[0.918]	[0.797]
Ages 40-44*		
(lagged MMR)*female	1.738	1.407
	[1.098]	[1.010]
Ages 45-49*		
(lagged MMR)*female	1.368	0.658
	[1.166]	[1.134]
Ages 50-54*		
(lagged MMR)*female	0.419	-0.126
	[1.274]	[1.335]

MMR is lagged by 3 years. All regressions include all triple interactions between district, year, age group, and gender. Nutritional diseases are helminths, anemia, diarrhea, and vitamin deficiencies. The disease death rates in column 2 are district-, year-, and gender-specific, and they are interacted with a dummy for each age group. Standard errors, clustered by district-gender, are reported in brackets. Each observation is a district, gender, year, and 5-year age group (19 districts, 2 genders, 2 years, and 10 age groups). Coefficients are estimated in a single regression.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A.4
Basic specification dropping one district at a time

Dependent variable: Percent literate by age		Basic	Drop district 1	Drop district 2	Drop district 3	Drop district 4
Treated ages	(lagged MMR) *female	-0.879*	-0.459	-1.026**	-0.905*	-0.516
		[0.453]	[0.574]	[0.449]	[0.456]	[0.397]
Placebo ages	(lagged MMR) *female	-0.151	0.021	0.036	-0.126	-0.329
		[0.469]	[0.714]	[0.474]	[0.478]	[0.468]
		Drop district 5	**Drop district 6**	**Drop district 7**	**Drop district 8**	**Drop District 9**
Treated ages	(lagged MMR) *female	-1.048**	-0.967**	-0.861*	-0.930*	-0.868*
		[0.453]	[0.451]	[0.459]	[0.479]	[0.485]
Placebo ages	(lagged MMR) *female	-0.437	-0.337	-0.187	-0.154	-0.057
		[0.437]	[0.471]	[0.470]	[0.501]	[0.499]
		Drop district 10	**Drop district 11**	**Drop district 12**	**Drop district 13**	**Drop district 14**
Treated ages	(lagged MMR) *female	-1.010**	-0.973**	-0.840*	-0.880*	-0.827*
		[0.461]	[0.448]	[0.454]	[0.454]	[0.476]
Placebo ages	(lagged MMR) *female	-0.182	-0.025	-0.122	-0.15	-0.201
		[0.496]	[0.455]	[0.464]	[0.473]	[0.489]
		Drop district 15	**Drop district 16**	**Drop district 17**	**Drop district 18**	**Drop district 19**
Treated ages	(lagged MMR) *female	-0.715	-0.876*	-0.881*	-0.813*	-1.216**
		[0.484]	[0.453]	[0.482]	[0.456]	[0.458]
Placebo ages	(lagged MMR) *female	0.252	-0.155	-0.135	-0.131	-0.448
		[0.406]	[0.469]	[0.500]	[0.468]	[0.550]

Each coefficient is from a separate regression. MMR is lagged by 3 years. All regressions include district-year, district-ender, and gender-year fixed effects. The regressions also include age-district, age-year, and age-gender fixed effects. Nutritional diseases are helminths, anemia, diarrhea, and vitamin deficiencies. Standard errors clustered within a district-gender are reported in brackets. Each observation is a district-year-gender-5 age group (19 districts in the first regression, and 18 districts thereafter; 2 years, 2 genders; 3 age groups for the treated, and 4 age groups for the placebo).
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A.5
Gender differences in elasticity of literacy with respect to health – other diseases

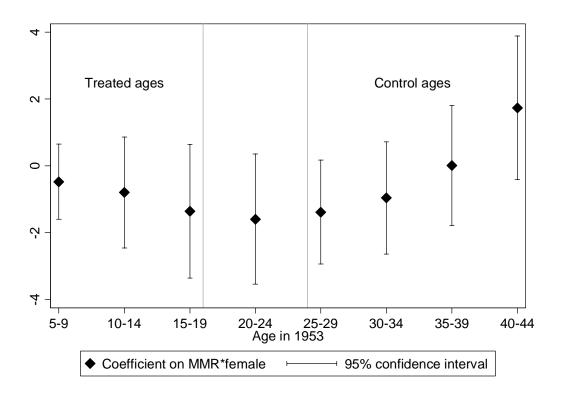|	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Malaria	Anemia	Diarrhea	Vitamin-related diseases	Helminths	Influenza	Dysentery
Mortality rate	-1.514	-21.078***	-3.239	4.231***	-3.48	-7.186***	-5.661
	[1.064]	[6.432]	[2.828]	[1.365]	[6.023]	[1.913]	[10.303]
Mortality rate*female	0.002	5.606	1.968	-0.631	-2.998	1.9588	5.907
	[1.505]	[9.096]	[4.000]	[1.931]	[8.517]	[2.706]	[14.570]
Average percent change in disease rate, 1946-53	-93%	-36%	-55%	-42%	-22%	-61%	-61%
Mortality rate in 1946 (per 1000)	1.64	0.36	0.98	1.51	0.68	0.28	0.22

The regressions also include MMR and MMR*female. There are 228 observations per regression.
The diseases are those used as control variables in the main tables (malaria, anemia, diarrhea, vitamin-related diseases, and helminths), plus the other 2 diseases for which a decline of over 50% was seen between 1946 and 1953, dysentery and influenza.
* significant at 10%; ** significant at 5%; *** significant at 1%

Figure A.1
Age-specific effects of MMR on literacy

Note: This figure plots coefficients and their confidence intervals for the regression reported in column (1) of Table A.3.