

SUPPLEMENTAL INFORMATION

Temporal analyses calculation. Since the contribution of a determinant to inequality is a product of the elasticity and the concentration index of that determinant, varying levels of contribution to inequality can be represented by varying this concentration index. Further, the sum of the contributions of all the covariates in the model represents the total explained contribution to inequality in child mortality. To quantify the difference in the total contribution which would occur if the exposures, water sources, and sanitation facilities were equally distributed across the population, we fixed the concentration index and consequently the contribution at zero and calculated a new value for the total contribution. The right-hand side of Equation (2) can then be written as:

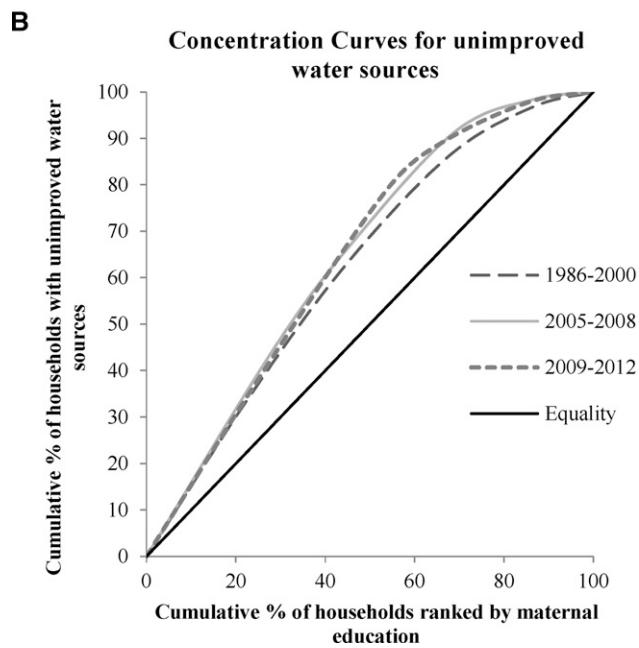
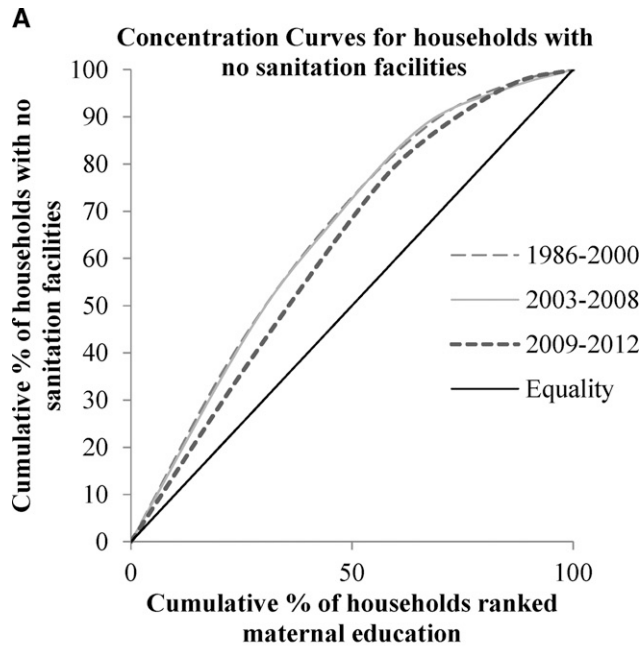
$$(\beta_{\text{water}} \cdot \bar{x}_{\text{water}}/\mu) \times 0 + \sum_m (\beta_m \cdot \bar{x}_m/\mu) C_m \quad (3)$$

where $\beta_{\text{water}} \cdot \bar{x}_{\text{water}}/\mu$ is the elasticity of water, and the second term represents the sum of the contributions of the

other m determinants of inequality. For the period 2011–2012, this can be written as, $0 \times (2.866) + (-2.061) + (-1.388) + (-0.02) + (-18.235) + (-3.506) + (-7.904) + (-0.042)$. The values for the contributions are taken from Table 3. This then sums up to -30.29 . The total model contribution from Table 3 is -32.24 . The percentage difference is -6.04 , which indicates that if unimproved water sources were equally distributed across the population in the period 2011–2012, the total contribution to education-related inequality in child mortality, as explained by the variables included in the regression model for this study, would have decreased by about 6%. Similarly, if we fix levels of inequality in water access at those of 1986–1992 across all periods, Equation (3) can be rewritten as:

$$(\beta_{\text{water}} \cdot \bar{x}_{\text{water}}/\mu) \times C_{\text{water}}^{1986-1992} + \sum_m (\beta_m \cdot \bar{x}_m/\mu) C_m \quad (4)$$

and the total contribution to inequality in 2011–2012 would have increased by 6.38%.



SUPPLEMENTAL FIGURE 1. Concentration curves for unimproved water sources and no sanitation facilities.

SUPPLEMENTAL TABLE 1
Concentration index of under-two mortality according to maternal education

	1986-1992	1996-2000	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Under-two mortality	-0.28 (-0.32, -0.24)	-0.19 (-0.22, -0.15)	-0.08 (-0.21, 0.05)	-0.15 (-0.32, -0.10)	-0.19 (-0.12, -0.52)	-0.13 (-0.19, -0.06)	-0.03 (3.11, -1.32)
Unimproved drinking water	-0.26 (-0.26, -0.25)	-0.23 (-0.23, -0.22)	No data	-0.23 (-0.24, -0.22)	-0.24 (-0.25, -0.23)	-0.23 (-0.23, -0.22)	-0.12 (-0.13, -0.12)
Basic sanitation (non-flush, pit type latrines)	0.05 (0.02, 0.07)	-0.05 (-0.06, -0.05)	-0.18 (-0.20, -0.18)	-0.18 (-0.19, -0.17)	-0.18 (-0.19, -0.18)	-0.18 (-0.19, -0.18)	-0.14 (-0.14, -0.13)
No sanitation	-0.18 (-0.19, -0.18)	-0.28 (-0.29, -0.29)	-0.31 (-0.32, -0.29)	-0.24 (-0.25, -0.23)	-0.22 (-0.23, -0.21)	-0.22 (-0.23, -0.22)	-0.14 (-0.15, -0.13)
Maternal age (< 20)	-0.01 (-0.02, 0.002)	0.0002 (-0.005, 0.005)	-0.01 (-0.03, 0.001)	-0.01 (-0.02, -0.002)	-0.03 (-0.04, -0.022)	-0.04 (-0.04, -0.03)	-0.04 (-0.05, -0.03)
Maternal age (> 35)	-0.24 (-0.26, -0.22)	-0.21 (-0.22, -0.19)	-0.16 (-0.20, -0.12)	-0.14 (-0.17, -0.12)	-0.12 (-0.14, -0.10)	-0.09 (-0.11, -0.08)	-0.01 (-0.02, 0.005)
Sex of the child	0.0004 (-0.001, 0.002)	-0.001 (-0.002, 0.000)	-0.002 (-0.005, 0.001)	0.0003 (-0.002, 0.003)	0.001 (-0.001, 0.003)	-0.002 (-0.003, -0.001)	-0.001 (-0.003, -0.0003)
Household poverty	-0.31 (-0.32, -0.31)	0.015 (0.01, 0.02)	-0.30 (-0.31, -0.29)	-0.28 (-0.29, -0.28)	-0.28 (-0.28, -0.27)	-0.26 (-0.27, -0.26)	-0.18 (-0.18, -0.17)
Urbanicity	0.21 (0.20, 0.21)	0.26 (0.25, 0.26)	0.30 (0.29, 0.31)	0.28 (0.27, 0.29)	0.24 (0.24, 0.25)	0.24 (0.23, 0.24)	0.14 (0.14, 0.15)

SUPPLEMENTAL TABLE 2
Child mortality risk due to unimproved water sources (alternate time periods)

	1986–2000	2003–2008	2009–2012
	RR (95% CI)	RR (95% CI)	RR (95% CI)
Source of drinking water	1.18 (1.03, 1.36)	1.50 (1.15, 1.96)	1.30 (1.01, 1.67)
Maternal age	1.35 (1.16, 1.57)	1.68 (1.28, 2.21)	1.36 (1.05, 1.77)
Maternal education	1.17 (0.99, 1.38)	1.03 (0.72, 1.49)	1.18 (0.87, 1.59)
Household wealth	0.92 (0.90, 0.94)	0.98 (0.94, 1.01)	0.97 (0.94, 1.00)
Poorer	0.89 (0.72, 1.11)	0.75 (0.55, 1.02)	1.02 (0.74, 1.41)
Middle	0.99 (0.81, 1.21)	0.58 (0.37, 0.92)	0.96 (0.66, 1.38)
Richer	0.96 (0.72, 1.06)	0.60 (0.36, 1.01)	0.80 (0.50, 1.28)
Richest	0.91 (0.71, 1.15)	0.52 (0.27, 0.98)	0.62 (0.38, 1.02)
Urban residence	0.77 (0.66, 0.91)	0.87 (0.60, 1.26)	0.91 (0.68, 1.21)
Male child	1.25 (1.11, 1.40)	1.18 (0.93, 1.51)	1.28 (1.02, 1.60)

CI = confidence interval; RR = risk ratio.