

Supplemental materials for Impact evaluation of the free maternal healthcare policy on infant and neonatal mortality in four sub-Saharan Africa countries: Difference in Differences with Kernel based Propensity Score Matching Analysis.

S1 Table A: A summary of the trend of neonatal and infant mortality rates among the four comparison and intervention countries in the five years preceding each survey

	Intervention countries: Implemented free maternal healthcare policy						Comparison countries: No free maternal healthcare policy					
	Ghana			Burkina Faso			Nigeria			Zambia		
	2003 Ref period: 1999-2003	2008 Ref period: 2004-2008	2014 Ref period: 2010-2014	2003 Ref period: 1999- 2003	2010 Ref period: 2006- 2010	2014 Ref period: 2010-2014	2003 Ref period: 1999- 2003	2008 Ref period: 2004-2008	2014 Ref period: 2009-2013	2001/2002 Ref period: 1998-2002	2007 Ref period: 2003-2007	2013/2014 Ref period: 2009-2013
Number of live births in five years preceding the interview	3844	2992	5884	10645	15044	6841	6029	28647	31482	6877	6401	13457
Number of women age 15-49 interviewed	5691	4916	9396	12477	17087	8 111	7620	33385	38948	7658	7146	16411
Total number of women age 15-49 in the country at the time of the survey	4170068	4891557	5655156	2451363	3030545	3416421	25619994	28997441	32791677	2143989	2506625	3129094
Survey response rate for eligible women interviewed (%)	95.7	96.5	97.3	96.3	98.4	98.7	95.0	97.0	97.9	96.4	97.0	96.0
NMR per 1000 live births	43	30	29	31	28	27.3	48	40	37	37	34	24
IMR per 1000 live births	64	50	41	81	65	61.4	100	75	69	95	70	45
Cumulative incidence rate per 1000 person years at risk: Infant deaths	30 [24.2-37.7]	28.5 [22.5-36.8]	15.1 [11.9-19.4]	67.9 [61.9-74.6]	44.3 [40.5-48.5]	23.7 [21.3-26.4]	63.2 [55.6-72.1]	50.6 [47.7-53.7]	36.8 [34.3-39.6]	70.5 [63.8-78.2]	44.7 [39.1-51.4]	26.5 [23.2-30.5]

Abbreviations: IMR: Infant mortality rate, NMR: Neonatal mortality rate.

S1 Table B: Assessing the performance of the kernel matching: Balancing test based on standardized mean difference between the two groups (FMHCP and comparison group).

	Before Matching			After Matching		
	FMHCP Mean	No FMHCP Mean	Standardized Mean Difference	FMHCP Mean	No FMHCP Mean	Standardized Mean Difference
Sex						
Male	0.83	0.90	-0.19	0.83	0.81	0.06
Female	0.17	0.10	0.19	0.17	0.19	0.06
Wealth						
Poorest	0.23	0.23	-0.02	0.23	0.23	0.02
Poorer	0.21	0.23	-0.04	0.21	0.21	0.02
Middle	0.20	0.19	0.03	0.20	0.20	0.01
Richer	0.20	0.18	0.05	0.20	0.20	0.00
Richest	0.16	0.17	-0.02	0.16	0.16	0.01
Household size						
≤ 4	0.29	0.25	0.10	0.29	0.31	-0.03
5 - 7	0.40	0.42	-0.03	0.40	0.41	0.01
8+	0.31	0.33	-0.06	0.31	0.29	0.04
Household access to an improved water source						
Improved	0.90	0.78	0.34	0.90	0.90	0.00
Not improved	0.10	0.22	-0.34	0.10	0.10	0.00
Household access to improved toilet						
Improved, not shared	0.13	0.30	-0.44	0.13	0.12	0.01
Improved, shared	0.37	0.19	0.40	0.37	0.39	0.04
Not improved	0.50	0.50	0.00	0.50	0.49	0.03
Geographic location						
Urban	0.31	0.32	-0.03	0.31	0.32	0.02
Rural	0.69	0.68	0.03	0.69	0.68	0.02
Household owns a mosquito net						
No	0.20	0.52	-0.71	0.20	0.20	0.01
Yes	0.80	0.48	0.71	0.80	0.80	0.01
Mother's age at child's birth						
< 18	0.03	0.03	-0.05	0.03	0.02	0.00
18 - 34	0.72	0.71	0.00	0.72	0.73	0.03
35+	0.26	0.25	0.02	0.26	0.24	0.03
Educational attainment						
None	0.54	0.45	0.19	0.54	0.53	0.02
Primary	0.17	0.24	-0.17	0.17	0.18	0.00
Secondary	0.26	0.25	0.02	0.26	0.27	0.02
Tertiary	0.02	0.05	-0.18	0.02	0.02	0.01
Birth order						
First	0.29	0.19	0.22	0.29	0.29	0.00
Second	0.26	0.17	0.20	0.26	0.26	0.00
Third	0.15	0.15	-0.02	0.15	0.14	0.01
Fourth or higher	0.31	0.48	-0.35	0.31	0.31	0.00
Birth type						
Single birth	0.96	0.97	-0.04	0.96	0.95	0.03
Multiple birth	0.04	0.03	0.04	0.04	0.05	0.03

Abbreviation: FMHCP: Free maternal healthcare policy

S1 Table C: Assessing the performance of the kernel matching: Balancing test based on the ratio of variances between the two groups (FMNH and comparison group).

	Before matching			After matching		
	FMHCP Variance	No FMHCP Variance	Ratio	FMHCP Variance	No FMHCP Variance	Ratio
Sex						
Male	0.14	0.09	1.49	0.14	0.15	0.92
Female	0.14	0.09	1.49	0.14	0.15	0.92
Wealth						
Poorest	0.17	0.18	0.97	0.17	0.18	0.98
Poorer	0.17	0.18	0.95	0.17	0.16	1.03
Middle	0.16	0.16	1.05	0.16	0.16	1.02
Richer	0.16	0.15	1.08	0.16	0.16	1.00
Richest	0.13	0.14	0.96	0.13	0.14	0.98
Household size						
≤ 4	0.21	0.19	1.11	0.21	0.21	0.98
5 -7	0.24	0.24	0.99	0.24	0.24	1.00
8+	0.21	0.22	0.96	0.21	0.21	1.04
Household access to an improved water source						
Improved	0.09	0.17	0.51	0.09	0.09	0.99
Not improved	0.09	0.17	0.51	0.09	0.09	0.99
Household access to improved toilet						
Improved, not shared	0.11	0.21	0.53	0.11	0.11	1.02
Improved, shared	0.23	0.16	1.49	0.23	0.24	0.98
Not improved	0.25	0.25	1.00	0.25	0.25	1.00
Geographic location						
Urban	0.21	0.22	0.98	0.21	0.22	0.98
Rural	0.21	0.22	0.98	0.21	0.22	0.98
Household owns a mosquito net³						
No	0.16	0.25	0.64	0.16	0.16	0.98
Yes	0.16	0.25	0.64	0.16	0.16	0.98
Mother's age at child's birth						
< 18	0.02	0.03	0.74	0.02	0.02	1.02
18 - 34	0.20	0.20	1.00	0.20	0.20	1.04
35+	0.19	0.19	1.02	0.19	0.18	1.04
Educational attainment						
None	0.25	0.25	1.00	0.25	0.25	1.00
Primary	0.14	0.18	0.78	0.14	0.14	1.00
Secondary	0.19	0.19	1.02	0.19	0.20	0.98
Tertiary	0.02	0.05	0.39	0.02	0.02	0.92
Birth order						
First	0.21	0.16	1.31	0.20	0.21	1.00
Second	0.19	0.14	1.32	0.19	0.19	1.00
Third	0.12	0.13	0.96	0.12	0.12	1.02
Fourth or higher	0.21	0.25	0.86	0.21	0.21	1.00
Birth type						
Single birth	0.04	0.03	1.23	0.04	0.05	0.89
Multiple birth	0.04	0.03	1.23	0.04	0.05	0.89

Abbreviation: FMHCP: Free maternal healthcare policy