Health Insurance Coverage and Its Impact on Maternal Health Care Utilization in Low- and Middle-Income Countries

Extended Abstract

With health insurance on the rise in low- and middle-income countries (LMICs), a growing body of research literature documents the impact of health insurance on access and use of general health care. However, there is limited empirical evidence on whether health insurance coverage has contributed to the improved use of maternal health services. Using nationally representative data from the Demographic and Health Surveys (DHS), this report assessed levels of health insurance coverage in 30 LMICs and examined the impact of health insurance status on use of maternal health care use in eight countries spanning sub-Saharan Africa (Burundi, Gabon, Ghana, Namibia, and Rwanda), West Asia (Albania), and South and Southeast Asia (Cambodia and Indonesia).

Data and Methods

The data used in this study come from Demographic and Health Surveys (DHS). We use data from DHS surveys that collected information on health insurance coverage of women and men. We focus on countries in Africa and Asia due to the lack of empirical data demonstrating the effects of health insurance on the use of healthcare services in these regions.

The study uses data on all interviewed women age 15-49 and men age 15-59[1] to describe levels of health insurance coverage for 30 countries based on the most recent survey. To ensure adequate sample size, only countries in which levels of health insurance coverage among women exceed 10 percent are analyzed for the effects of health insurance on use of maternal health care. Eight countries are included in the evaluation of the effects of health insurance, with surveys conducted between 2008 and 2012. Our target population for assessing the effects of health insurance is women who reported a live birth in the five years preceding the survey.

Use of maternal health services was measured by four indicators: making at least one antenatal care visit; making four or more antenatal care visits; initiating antenatal care within the first trimester; and giving birth in a health facility. The main independent variable of interest was a dichotomous measure of health insurance coverage.

We controlled for a host of background characteristics of women and their households that can have a confounding effect on the use of pregnancy-related care seeking behavior (Acharya et al. 2013; Mensah et al. 2010). These variables include maternal age at the most recent birth, marital status, and employment status; mother's education, education of household head, and household wealth; mother's exposure to mass media; child's birth order; and region and urban/rural residence

We applied a propensity scoring matching (PSM) approach to evaluate the effect of health insurance coverage on women's use of antenatal and delivery care. The propensity to seek health services is likely

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[1] In Albania, Cambodia, and Namibia, men age 15-49 were interviewed; in Indonesia, men age 15-54 were interviewed.

to be correlated with factors that influence the propensity to enroll in health insurance, thereby introducing bias both due to observed and unobserved heterogeneity. PSM methods address selection bias due to observed heterogeneity by matching a pool of treatment cases to control cases that are identical in their propensity to receive treatment whereby the set of observable characteristics X are independent of assignment to treatment.

In estimating propensity scores, our selection of variables was guided by theory and consensus within the literature (Caliendo and Kopeinig 2008; Rubin and Thomas 1996), as well as data available in the DHS. A variable was dropped only if it was not simultaneously correlated with both the treatment and outcome. Because the analytical sample differed by outcome, for every country the propensity score was estimated for two samples: all women who had a live birth in the last five years (ANC1 and FACBIRTH) and women who had at least one antenatal care visit (ANC4 and ANCMONTH). Propensity scores were generated using STATA's *pscore* command. We imposed the common support as it may improve the quality of the match (Heckman et al. 1997). Imposing the common support condition ensures that each treated unit (women with health insurance) is matched with a corresponding control unit (women with no health insurance).

Various methods of matching are available to create a comparison group that can be used to construct counterfactual outcomes for estimating treatment effects. No method is superior but each has a different tradeoff between quantity and quality of results (Becker and Ichino 2002) because of the different ways in which the method defines the neighborhood for matching and assigns weights (Caliendo and Kopeinig 2008). We used STATA's *teffects psmatch* command to estimate ATT using several different algorithms and selected the one that yielded the best match and reported its outcomes as well as the standardized bias, pseudo-R^2, likelihood ratio test for joint insignificance, and two-sample t-test. The following matching algorithms were tested: nearest neighbor with and without replacement and radius matching within various calipers.[2] The estimation of the variance of treatment effects includes variation due to the estimation of the propensity score and imputation of the common support (Aggarwal 2010).

Results

Levels of health insurance coverage

Figure 1 presents the percentage of interviewed women and men with any type of health insurance in 25 African countries. Most countries had fairly low levels of coverage. Women in 14 countries and men in 10 countries reported a coverage rate below 5 percent. In three countries—Rwanda, Gabon, and Ghana—over 30 percent of women and men had health insurance at the time of the survey. The highest level of coverage was found in Rwanda, at 71percent for women and 67 percent for men.

Figure 2 shows levels of coverage in five Asian countries for which the most recent DHS collected data on health insurance. Indonesia had the highest levels of health insurance coverage, at 37 percent for women and 41 percent for men in 2012. The Albania 2008-09 DHS showed a coverage rate of 22 percent for women and 29 percent for men. In Armenia and Azerbaijan the level of health insurance coverage was very low, especially among women.

[Figure 1 and 2 about here]

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[2] Kernel matching is not available in STATA's *teffects psmatch* package.

Types of health insurance coverage

Table 1 presents the percentage of women and men with specific types of health insurance in seven countries with relatively high levels of coverage. Gabon is not included in this table because the 2012 Gabon DHS did not collect data on types of insurance. Respondents could report more than one type of health insurance. Several major types of insurance schemes were observed in these countries. Social health insurance was the primary type of coverage in five countries (Albania, Cambodia, Ghana, Indonesia, and Namibia). Almost all Ghanaian women and men with health insurance were enrolled in the National Health Insurance Scheme (NHIS). In Indonesia about a fourth (26 percent) of women and men were covered by social security.

[Table 1 about here]

Community-based health insurance was reported in a few countries. In Rwanda the vast majority of people who reported health insurance coverage were covered by Mutual Health Insurance, a community-based health insurance scheme. Community-based health insurance was also reported in Burundi and Namibia, although at much lower levels compared with Rwanda.

Employer-based health insurance was rarely reported except in Namibia, where it was the most common type of insurance, reported by 9 percent of women and 11 percent of men in 2009. Private or commercially purchased health insurance was uncommon in the study countries. The highest level of private insurance coverage was observed in Namibia, at less than 5 percent for both women and men

Differentials in health insurance coverage

Table 2 and Table 3 report the percentage of women and men with any health insurance coverage at the time of the interview by background characteristics including respondents' age, marital status, education, employment status, household wealth status, and urban-rural residence.

Most study countries had fairly low levels of coverage—below 5 percent. In a few countries (Rwanda, Gabon, Ghana, and Indonesia), more than one-third of interviewed women and men reported coverage of health insurance, with the highest rate found in Rwanda, at 71 percent for women and 67 percent for men. In all 30 countries the gender gap in health insurance coverage favored men, with the exceptions of Cambodia, Gabon, Ghana, and Rwanda. The gender gap was small in magnitude given low coverage rates among both women and men.

[Table 2 and 3 about here]

In most countries educational attainment was associated with a greater likelihood of participating in health insurance even after adjusting for other covariates. Our results also indicated that the education of the head of the household matters, in addition to the individual's level of education. Household wealth status was another important determinant of participating in health insurance. Disparities in health insurance coverage that favor the rich were evident in five countries. In Cambodia and Gabon, however, poor women were more likely to be covered by health insurance than the rich, suggesting that policies targeting the poor have been effective.

Effects of health insurance on use of maternal health care

As discussed previously, we experimented with various propensity score matching algorithms. The final approach was chosen according to the quality of matching, which was assessed based on several model parameters including the mean and median of absolute biases of covariates, pseudo-R^2, and standard

Likelihood ratio test X^2. The pre- and post-matching comparisons on means and percent of absolute bias reduced for individual covariates were also taken into consideration in assessing the quality of matching.

Table 4 presents the results of the best quality matching method as well as quality measurements before and after matching for full and sub-samples in each country. Radius matching generally resulted in the best quality of matching in most countries with caliper width ranging from 0.01 to 0.05. It is expected that smaller calipers result in better quality of matching but also entail a greater possibility of losing treated cases that do not have a matched control (Grilli and Rampichini 2011). Therefore, to achieve a good-quality matching and maximize the use of data from treated cases, the choice of caliper was determined by two criteria: the quality of matching and the least number of unmatched treated cases. The nearest neighbor matching was chosen for both samples in Burundi for its best quality of matching over other algorithm.

[Table 4 about here]

Overall, in all countries matching substantially reduced the mean and median biases between the insured and the uninsured with respect to the observed covariates included in the models. The mean absolute bias was less than 5 percent in the majority of models—the threshold for decent quality matches (Rosenbaum and Rubin 1983). In 9 of the 16 models, mean absolute bias was 2 percent or less. Despite a significant reduction in bias after matching, mean absolute bias was the highest in the models for Albania (approximately 7 percent), but statistically non-significant. Due to imposing the common support, some women (mostly from the uninsured group) were excluded from the analysis after the matching process.

Table 5 presents the differences in outcomes between the insured and uninsured before matching as well as the effects of health insurance (ATT) estimated based on the matched samples. After propensity score matching, health insurance status was significantly associated with an increased likelihood of making at least one antenatal care visit in Indonesia and Rwanda. Among women who reported at least one antenatal visit, the raw differences between insured and uninsured women in the prevalence of four or more antenatal care visits ranged from 4 to 21 percentage points and were statistically significant in all countries. However, after matching on covariates that could potentially introduce bias, the positive effect of health insurance coverage only remained in Ghana and Indonesia. Health insurance coverage contributed to an increase of 8 percentage points in access to four or more antenatal care visits in Ghana and an increase of 3 percentage points in Indonesia.

[Table 5 about here]

Concerning the timing of the first antenatal care visit, in the adjusted effect health insurance coverage was found to increase the use of antenatal care within the first trimester of pregnancy in Namibia, Burundi, and Indonesia by 15, 8, and 2 percentage points, respectively.

In all study countries at least one-half of women delivered their most recent birth in a healthcare facility. After matching, the effect of health insurance on delivery in a healthcare facility was positive and statistically significant in four of the eight countries—Cambodia, Ghana, Indonesia, and Rwanda. In these countries, health insurance coverage contributed to an increase of 5-11 percentage points in the receipt of facility-based delivery care. In Gabon, however, health insurance status had a significant negative effect on the use of facility-based delivery care.

In summary, our impact evaluation found statistically significant positive effects of health insurance coverage on at least one measure of maternal health care use in seven of the eight countries evaluated. Indonesia stands out for the most systematic effect of health insurance across all measures, followed by

Cambodia, Rwanda, and Ghana. The positive impact of health insurance appeared more consistent on the use of facility-based delivery than on antenatal care services.

Conclusions

Health insurance programs in LMICs are still in the early stages. Despite countries' efforts in targeting the poor by reducing or removing premiums of health insurance, disparities that favor the more affluent are evident in most countries studied. Health insurance schemes in Cambodia and Gabon are effective in increasing coverage among the poor. Overall, our results point to a significant increase in the uptake of recommended standards of adequate maternal health care attributable to health insurance coverage. The results contribute to the body of evidence available for health insurance policymaking, by using rigorous methods to demonstrate the impact of health insurance. By revealing the positive impact of health insurance on the use of antenatal care and facility-based delivery care, our findings suggest that in some contexts enrollment in health insurance can reduce inequality in access to maternal health care. Additional research is needed to identify what particular aspects of health insurance design can improve these impacts.

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Figure1. Percentage of women and men covered by health insurance in Africa
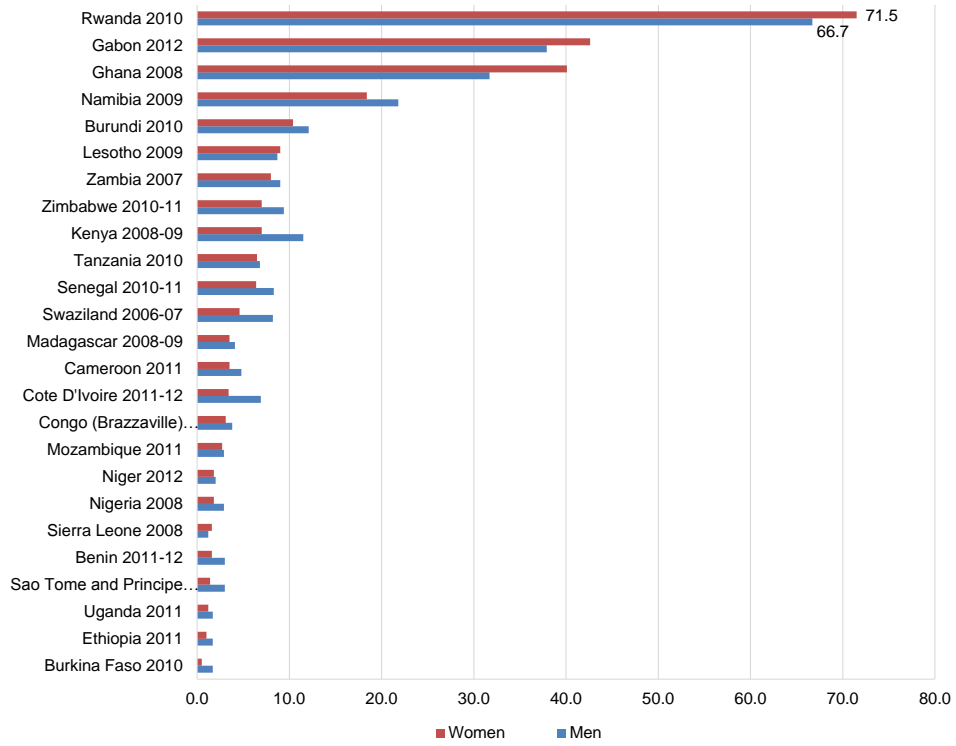
Figure2. Percentage of women and men covered by health insurance in Asia
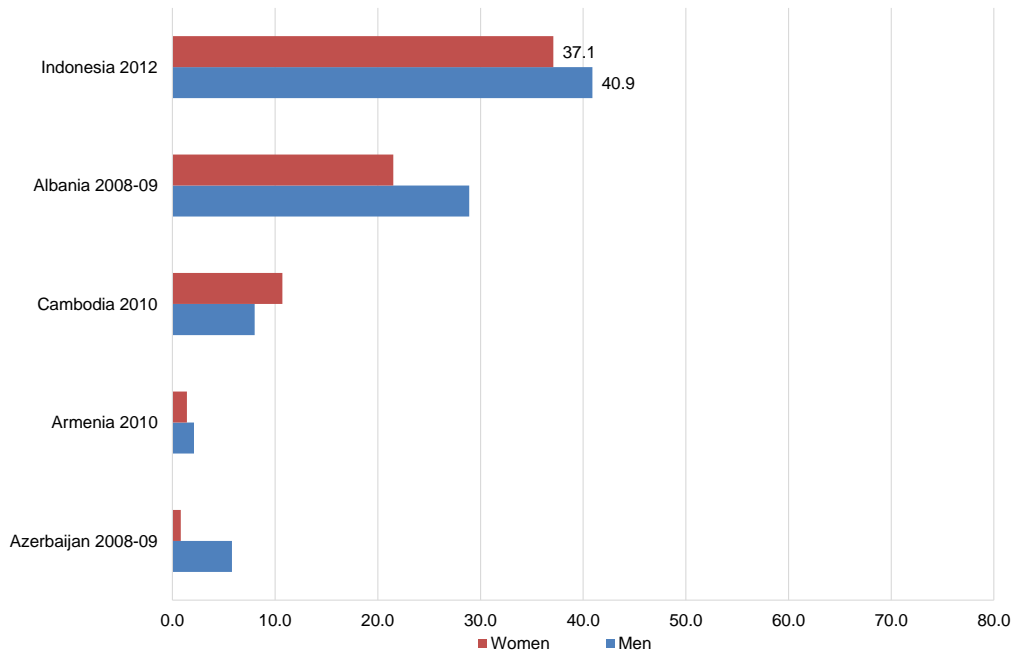
Table 1. Percentage of women and men covered by specific types of health insurance in selected countries

Country	Type of insurance	Women	Men
Albania	State health insurance	15.0	21.3
	State social insurance	10.9	12.6
	Private/commercial purchased	2.2	1.7
	Other	2.5	4.5
	Total	21.5	28.9
Burundi	Mutual/community organization	4.8	4.7
	Provided by employer	4.4	5.5
	Private/commercially purchased	0.9	0.0
	Other	0.4	2.0
	Total	10.4	12.1
Cambodia	Health equity fund	8.5	6.4
	Provided by employer	0.2	0.4
	Private	0.1	0.2
	Other	1.9	1.0
	Total	10.7	8.0
Ghana	National/ district (nhis)	38.8	29.7
	Provided by employer	0.1	0.2
	Private/commercially purchased	0.1	0.0
	Other	1.1	1.2
	Total	40.1	31.0
Indonesia	Social security	25.7	25.9
	Provided by employer	6.9	10.5
	Private/commercially purchased	2.9	3.9
	Other	2.6	2.5
	Total	37.1	40.9
Namibia	Provided by employer	8.9	11.4
	Social security	4.5	5.7
	Mutual/community organization	3.6	4.5
	Private	2.5	4.6
	Other	0.6	0.3
	Total	18.4	21.8
Rwanda	Mutual/community based health insurance	68.0	63.9
	Rama	2.1	1.8
	Privately purchased/commercial health	0.3	0.3
	other	0.9	0.7
	Total	71.4	66.7

Note: In all the countries except Rwanda, respondents were allowed to report multiple types of insurance; so the sum of the percentages may exceed the total prevalence.

Gabon is not included in this table due to unavailability of data on types of insurance.

Table 2. Percentage of women with health insurance coverage, according to background characteristics

	Albania		Burundi		Cambodia		Gabon		Ghana		Indonesia		Namibia		Rwanda	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Age																
15-19	11.6	1,478	7.5	2,359	10.0	3,734	35.9	1,784	38.5	1,025	32.8	6,927	10.4	2,245	64.4	2,945
20-24	12.6	976	8.9	1,832	10.2	3,155	37.1	1,637	34.7	878	34.5	6,305	11.6	1,854	73.1	2,683
25-29	26.0	848	11.8	1,608	11.1	3,262	37.4	1,485	41.6	832	33.9	6,959	18.7	1,622	75.3	2,494
30-34	22.3	866	14.1	1,064	10.7	2,167	47.2	1,211	43.0	644	36.8	6,876	22.1	1,416	75.0	1,822
35-39	25.3	1,097	11.5	1,067	10.3	2,044	46.9	986	42.5	638	42.1	6,882	24.1	1,045	73.2	1,447
40-44	27.5	1,232	13.2	745	12.2	2,300	56.8	746	45.0	470	39.3	6,252	29.9	928	70.2	1,168
45-49	28.3	1,088	10.6	714	10.6	2,093	57.8	574	39.4	429	41.4	5,407	29.6	688	70.2	1,112
Marital status																
Never married	17.2	2,357	8.2	3,121	8.6	5,783	39.5	3,047	37.3	1,593	36.3	9,919	14.0	5,671	68.1	5,285
Currently married	23.1	4,910	14.9	3,760	10.8	11,515	41.2	1,597	44.4	2,232	37.4	33,291	37.8	1,949	80.3	4,799
Living together	26.1	91	5.2	1,661	32.7	112	45.4	2,878	36.5	644	39.7	174	10.1	1,500	65.6	2,098
Widowed	34.2	116	11.6	411	20.6	564	46.3	131	30.3	101	42.5	935	15.2	250	66.5	743
Divorced/separated	27.1	109	5.8	436	14.3	781	47.1	769	35.2	345	31.4	1,288	18.5	425	58.7	746
Education																
None	0.0	26	5.4	4,211	17.4	2,973	19.0	373	32.6	1,042	31.6	1,500	3.7	650	66.2	2,119
Primary	9.2	3,813	10.8	4,042	12.6	9,265	47.0	1,786	31.2	988	31.8	15,125	6.1	2,433	70.5	9,337
Secondary and higher	34.2	3,745	27.5	1,136	4.9	6,516	42.8	6,263	45.9	2,886	40.2	28,982	24.2	6,716	80.1	2,216
Employment status																
Not currently employed	9.2	5,308	9.4	2,494	9.5	5,592	39.7	4,742	39.2	1,240	35.0	20,348	8.4	5,445	73.4	3,761
Currently employed	50.3	2,276	10.7	6,895	11.2	13,162	46.4	3,680	40.4	3,676	38.8	25,259	30.8	4,354	70.6	9,910
Wealth quintile																
Lowest	8.0	1,513	4.8	1,898	24.4	3,388	61.6	1,222	29.9	783	38.4	7,767	2.0	1,621	59.8	2,622
Second	11.6	1,486	4.8	1,910	15.0	3,516	39.0	1,621	32.4	900	34.6	8,784	3.9	1,667	68.8	2,661
Middle	16.0	1,533	6.3	1,854	8.9	3,594	35.9	1,784	38.5	979	31.7	9,243	8.9	1,882	73.4	2,736
Fourth	25.9	1,480	9.4	1,811	5.9	3,827	35.2	1,879	45.7	1,119	34.0	9,743	18.4	2,291	77.6	2,677
Highest	45.2	1,573	26.4	1,916	2.4	4,428	47.2	1,915	49.4	1,135	46.3	10,071	47.6	2,338	76.6	2,976
Residence																
Rural	11.5	4,204	8.3	8,387	12.2	14,818	59.7	957	36.9	2,533	32.3	21,802	8.3	5,028	71.4	11,614
Urban	34.0	3,380	27.7	1,002	5.2	3,936	40.4	7,465	43.6	2,383	41.5	23,805	29.0	4,771	71.4	2,057
Total	21.5	7,584	10.4	9,389	10.7	18,754	42.6	8,422	40.1	4,916	37.1	45,607	18.4	9,799	71.4	13,671

Table 3. Percentage of men with health insurance coverage, according to background characteristics

	Albania		Burundi		Cambodia		Gabon		Ghana		Indonesia		Namibia		Rwanda	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Age																
15-19	17.1	670	9.3	932	7.5	1,863	40.3	1,012	34.6	911	41.3	28	12.4	910	62.1	1,449
20-24	13.0	393	5.9	732	7.0	1,402	33.9	805	23.4	704	33.3	345	11.5	749	61.7	1,159
25-29	29.0	269	10.4	584	8.4	1,377	29.4	813	20.8	624	31.9	1,127	18.5	702	70.2	1038
30-34	35.5	273	15.0	442	8.6	1,014	35.2	776	36.0	533	37.8	1,674	28.8	586	73.5	710
35-39	33.4	372	17.2	388	9.1	835	36.1	715	32.4	528	42.4	1,775	32.2	398	67.3	490
40-44	37.3	501	15.2	349	8.0	956	40.6	534	31.7	394	46.8	1,693	40.1	331	70.3	430
45-49	41.0	536	15.0	331	8.2	792	44.5	453	30.0	364	45.4	1,371	40.0	235	67.0	412
50+	na	na	17.2	520	na	na	49.8	546	41.0	510	40.4	1,292	na	na	69.7	642
Marital status																
Never married	19.1	1,291	9.6	1,653	6.9	3,181	34.4	2,346	29.4	1,942	na	na	15.1	2,544	62.3	2,879
Currently married	36.0	1,671	16.4	1,945	8.5	4,815	37.2	1,423	35.0	2,163	41.0	9,286	44.9	705	76.1	2,433
Living together	51.2	32	5.4	604	9.0	37	44.8	1,469	19.8	241	15.5	20	27.4	498	59.6	854
Widowed	58.9	4	10.4	31	16.4	54	25.6	29	29.4	26	na	na	24.4	12	43.0	54
Divorced/separated	38.9	15	4.7	47	10.4	152	36.3	387	16.8	195	na	na	7.6	151	40.0	108
Education																
None	15.7	18	6.7	1,348	13.5	641	9.8	378	18.7	639	29.2	265	6.1	360	60.2	757
Primary	16.7	1,219	10.2	2,089	9.8	3,394	32.9	864	22.3	665	32.1	3,489	11.2	1,108	65.5	4,323
Secondary and higher	37.5	1,775	25.4	843	5.7	4,205	41.3	4,412	35.2	3,264	47.0	5,552	28.9	2,443	74.5	1,249
Employment status																
Not currently employed	14.5	1,026	14.2	540	7.3	1,556	41.4	1,748	33.6	928	37.2	155	10.3	1,471	65.6	593
Currently employed	36.4	1,987	11.8	3,740	8.1	6,683	36.3	3,906	30.3	3,640	41.0	9,151	28.7	2,441	66.8	5,736
Wealth quintile																
Lowest	14.5	475	5.0	686	16.4	1,454	48.3	830	17.6	809	41.3	1,596	1.8	560	53.9	937
Second	20.6	600	6.3	789	11.8	1,544	28.1	1,183	23.0	815	36.3	1,866	7.6	605	64.2	1,108
Middle	26.3	661	7.6	818	6.6	1,637	27.0	1,246	27.9	784	32.8	2,008	12.6	875	66.4	1,306
Fourth	32.5	625	11.8	907	4.4	1,696	36.0	1,204	37.7	1,079	38.7	1,962	24.9	963	73.0	1,391
Highest	46.3	652	24.3	1,080	2.8	1,908	53.5	1,191	42.6	1,081	56.3	1,875	49.2	909	70.6	1,586
Residence																
Rural	21.0	1,622	9.7	3,649	8.8	6,542	48.9	739	26.1	2,443	34.5	4,567	10.0	1,951	66.7	5,324
Urban	38.1	1,391	25.5	631	4.7	1,697	36.2	4,915	36.6	2,125	47.2	4,739	33.5	1,960	66.4	1,005
Total	28.9	3,013	12.1	4,280	8.0	8,239	37.9	5,654	31.0	4,568	40.9	9,306	21.8	3,911	66.7	6,329

Table 4. Propensity score matching performance: results of the mean and median absolute bias, pseudo-R^2 and Likelihood ratio (LR) tests

Country	Matching approach		Sample	Mean	Median	Std. dev.	Pseudo-R^2	LR χ^2	$p > \chi^2$
Albania	Full sample	Radius matching (caliper=0.025)	Unmatched	36.9	22.1	34.6	0.312	420.24	0.000
			Matched	7.0	4.9	7.4	0.022	16.01	0.523
	Subsample	Radius matching (caliper=0.025)	Unmatched	42.4	22.4	36.3	0.305	411.28	0.000
			Matched	6.6	5.0	5.8	0.016	11.04	0.683
Burundi	Full sample	Nearest neighbor	Unmatched	33.3	17.1	32.2	0.271	1,080.66	0.000
			Matched	5.3	4.2	3.9	0.016	30.52	0.106
	Subsample	Nearest neighbor	Unmatched	37.8	33.6	34.9	0.255	1,016.15	0.000
			Matched	3.8	1.7	4.6	0.013	24.78	0.100
Cambodia	Full sample	Radius matching (caliper=0.01)	Unmatched	20.5	13.7	19.0	0.111	626.33	0.000
			Matched	1.2	1.1	0.6	0.001	2.39	1.000
	Subsample	Radius matching (caliper=0.01)	Unmatched	20.5	13.7	19.0	0.111	626.33	0.000
			Matched	1.6	1.4	1.1	0.001	3.15	1.000
Gabon	Full sample	Radius matching (caliper=0.01)	Unmatched	20.0	18.6	12.1	0.137	736.87	0.000
			Matched	2.1	1.4	1.8	0.003	16.13	0.950
	Subsample	Radius matching (caliper=0.05)	Unmatched	21.4	20.4	12.0	0.135	727.22	0.000
			Matched	2.0	1.5	1.9	0.002	11.57	0.984
Ghana	Full sample	Radius matching (caliper=0.012)	Unmatched	16.4	14.6	12.0	0.158	403.83	0.000
			Matched	1.8	1.7	1.2	0.002	4.47	1.000
	Subsample	Radius matching (caliper=0.011)	Unmatched	17.0	16.4	11.9	0.158	403.64	0.000
			Matched	2.0	1.7	1.2	0.002	4.33	1.000
Indonesia	Full sample	Radius matching (caliper=0.020)	Unmatched	8.4	7.3	5.7	0.038	756.85	0.000
			Matched	0.6	0.5	0.5	0.000	4.96	1.000
	Subsample	Radius matching (caliper=0.01)	Unmatched	8.9	8.1	5.7	0.038	756.66	0.000
			Matched	0.5	0.4	0.4	0.000	2.83	1.000
Namibia	Full sample	Radius matching (caliper=0.05)	Unmatched	36.0	28.1	32.9	0.383	1,082.65	0.000
			Matched	3.2	2.8	2.1	0.008	8.75	1.000
	Subsample	Radius matching (caliper=0.02)	Unmatched	36.8	28.1	33.5	0.366	1,033.89	0.000
			Matched	3.6	3.9	2.6	0.009	9.57	0.999

(Continued...)

Table 4. – *Continued*

Country	Matching approach		Sample	Mean	Median	Std. dev.	Pseudo-R^2	LR χ^2	$p > \chi^2$
Rwanda	Full sample	Radius matching (caliper=0.01)	Unmatched	11.1	9.2	8.9	0.066	472.45	0.000
			Matched	3.1	2.3	2.4	0.006	75.87	0.000
	Subsample	Radius matching (caliper=0.01)	Unmatched	11.1	9.2	8.9	0.066	472.45	0.000
			Matched	1.1	1.0	1.0	0.001	14.08	0.899

Table 5. The average treatment effect on the treated (ATT) of health insurance on utilization of selected maternal health services

Outcomes	Means before matching				Average treatment effect on the treated			Number of cases on support
	Insured	Uninsured	Difference	p-value	ATT	SE	p-value	
Albania								
ANC 1[1]	0.964	0.964	0.000	0.989				
ANC 4	0.830	0.624	0.207	0.000	0.064	0.056	0.247	1,265
First ANC visit in first 3 months	0.894	0.746	0.148	0.000	0.092	0.053	0.084	1,265
Facility delivery	0.985	0.956	0.029	0.023	0.014	0.022	0.519	1,317
Burundi								
ANC 1[1]	0.990	0.990	0.000	0.967				
ANC 4	0.402	0.332	0.070	0.000	-0.019	0.039	0.622	4,771
First ANC visit in first 3 months	0.348	0.196	0.153	0.000	**0.075**	**0.036**	**0.039**	4,771
Facility delivery	0.827	0.624	0.203	0.000	0.014	0.030	0.642	4,806
Cambodia								
ANC 1	0.824	0.884	-0.059	0.000	**0.0408**	**0.0176**	**0.020**	5,978
ANC 4	0.563	0.683	-0.119	0.000	-0.0104	0.0252	0.680	5,211
First ANC visit in first 3 months	0.595	0.686	-0.091	0.000	-0.0029	0.02618	0.913	5,211
Facility delivery	0.479	0.586	-0.107	0.000	**0.073**	**0.0226**	**0.001**	5,978
Gabon								
ANC 1	0.909	0.938	-0.030	0.000	-0.023	0.014	0.105	3,932
ANC 4	0.728	0.781	-0.053	0.000	-0.003	0.024	0.914	3,626
First ANC visit in first 3 months[1]	0.574	0.602	-0.028	0.086				
Facility delivery	0.818	0.882	-0.065	0.000	**-0.043**	**0.019**	**0.025**	3,932
Ghana								
ANC 1	0.986	0.946	0.039	0.000	-0.0036	0.0085	0.672	1,837
ANC 4	0.895	0.770	0.126	0.000	**0.0771**	**0.0257**	**0.003**	1,753
First ANC visit in first 3 months	0.619	0.545	0.074	0.000	0.0184	0.0365	0.614	1,753
Facility delivery	0.740	0.471	0.269	0.000	**0.1058**	**0.0319**	**0.001**	1,837
Indonesia								
ANC 1	0.975	0.945	0.030	0.000	**0.016**	**0.004**	**0.000**	14,954
ANC 4	0.911	0.870	0.041	0.000	**0.026**	**0.006**	**0.000**	14,318
First ANC visit in first 3 months	0.810	0.775	0.036	0.000	**0.017**	**0.008**	**0.033**	14,318
Facility delivery	0.625	0.529	0.096	0.000	**0.049**	**0.009**	**0.000**	14,954

(Continued...)

Table 5. – *Continued*

Outcomes	Means before matching				Average treatment effect on the treated			Number of cases on support
	Insured	Uninsured	Difference	p-value	ATT	SE	p-value	
Namibia								
ANC 1	0.986	0.957	0.029	0.000	-0.0012	0.0114	0.916	2,950
ANC 4	0.909	0.800	0.110	0.000	0.0209	0.03	0.486	3,005
First ANC visit in first 3 months	0.538	0.292	0.246	0.000	**0.1585**	**0.0509**	**0.002**	3,005
Facility delivery	0.969	0.798	0.171	0.000	0.0325	0.0206	0.115	2,950
Rwanda								
ANC 1	0.990	0.965	0.025	0.000	**0.0154**	**0.0056**	**0.006**	6,122
ANC 4	0.379	0.318	0.061	0.000	0.0195	0.0203	0.337	6,016
First ANC visit in first 3 months	0.411	0.332	0.080	0.000	0.017	0.0206	0.410	6,016
Facility delivery	0.765	0.613	0.152	0.000	**0.0745**	**0.0186**	**0.000**	6,122

[1] ATT was not estimated because the raw difference in the outcome between the insured and uninsured was statistically non-significant.