

**Intervention increased post-partum intrauterine device (PPIUD) counselling by 25 percentage points and PPIUD uptake by 4 percentage points. If all women were counselled, the uptake of PPIUD would have been 17 percentage points. Therefore, providing high quality counselling and insertion service generate higher demand for PPIUD services and could help Nepali women achieve their fertility desires.**

### BACKGROUND

Birth spacing is important for good reproductive health outcomes. World Health Organization (WHO) recommends at least two years before the next pregnancy to reduce the risk of adverse maternal, perinatal and infant outcomes. However, in Nepal, 25% of women become pregnant within 24 months postpartum. Fifty-four percent of women have an unmet need for family planning (women who want to space or limit pregnancy but not using any contraception) within the two years following a birth. Provision of family planning counselling during antenatal care and a long-acting and reversible contraceptive method at the time of birth in health facilities could improve access to post-partum family planning (PPFP) for women who want to space or limit their childbearing. Therefore, the Nepal Society of Obstetrics and Gynecologists (NESOG) in collaboration with International Federation of Gynecology and Obstetrics (FIGO) launched an intervention that introduced postpartum contraceptive counselling in antenatal care and PPIUD insertion services following institutional delivery in six selected hospitals with an intent to integrate PPIUD counselling and insertion services as part of routine maternity care.

### OBJECTIVES

This study examines the impact of the intervention on PPIUD counselling and

PPIUD uptake that NESOG/FIGO had implemented in six hospitals within Nepal.

### METHODOLOGY

This study took place in six large tertiary hospitals. All women who gave birth in these hospitals in the 18-month period between September 2015 and March 2017 were invited to participate, unless they typically resided outside of Nepal. A total of 75,587 eligible women (99.6%) consented to be interviewed while in postnatal ward after delivery and before discharge from hospital.

The study adopted a stepped-wedge cluster randomized design with randomization of the intervention timing at the hospital level. The baseline data collection began prior to the intervention in all hospitals and the intervention was introduced into the hospitals in two steps, with the first group of three hospitals (group 1) implementing the intervention three months after the baseline had begun, and the second group of three hospitals (group 2) implementing the intervention nine months after the baseline had begun. The overall effect of the intervention was measured using weighted linear regression with wild bootstrap to estimate valid standard errors given the cluster randomised design.

Ethical approval for this study was received from the Nepal Health Research Council.

## KEY RESULTS

### Before the intervention, main characteristics of women between Group 1 and Group 2 hospitals were similar

Except travel distance from home to hospital, characteristics of women during the pre-intervention period between the two groups of hospitals were similar (Table 1).

**Table 1: Proportion of women in the first three months baseline period, by background characteristics and hospital Group**

	Full Sample	First Three Months			
		Group 1	Group 2	Difference <sup>1</sup>	
				Baseline	
<b>Woman's Age</b>					
<20 years	0.14	0.14	0.15	0.014	0.581
20-24 years	0.45	0.47	0.45	-0.022	0.512
25-29 years	0.28	0.28	0.26	-0.015	0.561
>=30 years	0.13	0.11	0.14	0.023	0.620
<b>Woman's Schooling</b>					
No Schooling	0.09	0.10	0.10	-0.003	0.973
Some Primary	0.10	0.11	0.10	-0.007	0.864
Some Lower Secondary	0.46	0.44	0.46	0.019	0.447
Some Higher Secondary	0.22	0.21	0.21	0.003	0.938
Some College	0.13	0.14	0.13	-0.013	0.756
<b>Time taken to travel from home to hospital</b>					
<2 hours	0.52	0.61	0.48	-0.124	0.060
2-6 hours	0.37	0.33	0.40	0.072	0.145
>=6 hours	0.11	0.06	0.11	0.052	0.055
<b>Parity</b>					
1	0.58	0.58	0.59	0.015	0.359
2	0.32	0.32	0.31	-0.012	0.463
3 & +	0.10	0.10	0.10	-0.003	0.915
<b>Ethnicity</b>					
Hill Brahmin	0.22	0.24	0.18	-0.057	0.543
Chhetri	0.14	0.13	0.17	0.039	0.364
Janajaati	0.38	0.33	0.44	0.110	0.155
Madhesi	0.07	0.08	0.06	-0.022	0.799
Dalit	0.15	0.18	0.11	-0.075	0.157
Muslim	0.03	0.03	0.03	0.003	0.910
Others	0.02	0.02	0.02	0.002	0.838
<b>Received Any FP Counselling</b>					
Received PPIUD Counselling	0.29	0.08	0.08	0.001	0.971
PPIUD Uptake	0.02	0.00	0.00	0.000	0.338
<b>N</b>	75,566	6,533	7,366		

<sup>1</sup>Significance of difference tested using wild cluster bootstrap method

### Clear rise in the PPIUD counselling rates after the intervention

The intervention had a significant impact on increasing counselling rates. The monthly counselling rate during the intervention period varied from 29% to 67% across the six study hospitals. Likewise, counselling on any family planning method increased by 23 percentage points (pp) [Confidence interval - CI: 5.3-41.0 pp] following the intervention compared to the pre-intervention period.

### Not all women received counselling and FP leaflets

Among those counselled, around 39% of women received counselling in the antenatal period while 43% were counselled only after admission for delivery while 18% were counselled both before and after admission. Women aged 20-29 years of age and more educated women were more likely to receive PPIUD counselling. Madhesi and Muslim women were less likely to receive counselling, as were those who had long travel distances to the hospital. Counselling rates were higher among women with high parity, and among women who had previously had an abortion.

Among women who were counselled, 50% reported being given an opportunity to ask questions during counselling sessions, and 58% reported receiving the postpartum family planning information leaflet.

On average, the intervention increased the counselling rate by 25 percentage points (95% CI: 14-40 PP).

### Intervention increased PPIUD uptake, PPIUD uptake increased immediately after intervention but a downward trend during later stages

The intervention increased PPIUD uptake by 4.4% point (95% CI: 2.8-6.4PP). If all women had been counselled, the PPIUD uptake would have been 17% points (95% CI: 9.9-24.9PP). There was more PPIUD uptake after the training of providers and the start of the intervention. However, the uptake showed a downward trend during later stages of the intervention (Table 2 & 3).

**Table 2: Estimated proportion of women counselled and who had PPIUDs after the intervention compared to before, all women**

	Est.	95% CI	Est.	95% CI
<b>Panel A: Counsellled on PPIUD</b>				
<b>Post-treatment (Ref: Pre-treatment)</b>	0.251**	[0.136 - 0.402]	0.251**	[0.142 - 0.400]
Observations	75,566		74,523	
R-squared	0.219		0.237	
<b>Panel B: PPIUD uptake</b>				
<b>Post-treatment (Ref: Pre-treatment)</b>	0.044***	[0.027 - 0.064]	0.044***	[0.028 - 0.064]
Observations	75,566		74,523	
R-squared	0.017		0.025	
<b>Adjusted for:</b>				
Hospital and month fixed effects	Yes		Yes	
Additional covariates	No		Yes	

Note: Difference from null tested using wild cluster bootstrap method. Additional covariates include woman's age, schooling, parity, time taken to travel to hospital from woman's residence, ethnicity, region, abortion history and male child born.  
 \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 3: Estimated proportion of PPIUD uptake if all women were counselled by the program**

	Dependent variable: PPIUD uptake			
	Est.	95% CI	Est.	95% CI
<b>PPIUD Uptake</b>	0.173***	[0.098 - 0.246]	0.174***	[0.099 - 0.249]
Observations	75,566		74,525	
R-squared	0.053		0.058	
<b>Adjusted for:</b>				
Hospital and month fixed effects	Yes		Yes	
Additional covariates	No		Yes	

Note: Difference from null tested using wild cluster bootstrap method. Additional covariates include woman's age, schooling, parity, time taken to travel to hospital from woman's residence, ethnicity, region, abortion history and male child born.  
 \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

### PPIUD uptake varies by timing and quality of counselling

Women who were counselled in the hospital after admission for delivery were more likely to take up PPIUD.

Our measures of the quality of counselling, in the form of having the opportunity to ask questions during counselling, and being able to remember benefits and disadvantages of PPIUD are correlated

with a higher rate of PPIUD uptake. Being given a PPIUD information leaflet, however, did not seem to be related to uptake (Table 4). Women with secondary or higher education are less likely to take up PPIUD, and Muslim women were less likely to choose PPIUD compared to Hill Brahmin women. PPIUD uptake was higher among women with more children, and those who wanted to space or limit their future pregnancies

**Table 4: Determinants of PPIUD Uptake among women who were counselled**

	Dependent variable: PPIUD uptake	
	Est.	95% CI
<b>Woman given a leaflet during counselling</b>	-0.008	[-0.050 - 0.053]
<b>PPIUD knowledge (Ref: Women can't recall any benefits/disadvantages, or disadvantages only)</b>		
Recall benefit(s) only	0.054**	[0.026 - 0.080]
Recall both benefit(s) and disadvantage(s)	0.122***	[0.091 - 0.198]
<b>Women given opportunity to ask questions</b>	0.043**	[0.012 - 0.095]
<b>Timing of PPIUD counselling (Ref: Before admission, during ANC)</b>		
After admission only	0.144**	[0.096 - 0.237]
Both	0.093**	[0.055 - 0.187]
Observations	15,241	
R-squared	0.132	

Note: Difference from null tested using wild cluster bootstrap method. Regression adjusted for woman's age, schooling, parity, time taken to travel to hospital from woman's residence, ethnicity, region, abortion history, male child born, future fertility preferences, hospital fixed effects and month fixed effects.  
 \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

## DISCUSSION

The study findings suggest that intervention had a significant impact on increasing PPIUD counselling rates and PPIUD uptake among women in the six study hospitals. The impact of the intervention on PPIUD uptake was about four times greater in women who were counselled.

Quality of counselling was a major determinant for PPIUD uptake, as patients who were offered higher quality counselling (women counselled on both benefits and disadvantages of the method) were more likely to take up PPIUD as compared to women offered lower quality (women who only knew benefits or disadvantages).

Readiness of the health care system and capacity of health workers to provide quality counselling is another major determinant. Supply side barriers such as shortage of human resources, lack of supplies and lack of support from the hospital management could come across as an obstruction in improving counselling rates and providing PPIUD services.

Our study findings reveal higher PPIUD uptake among older women, women with high parity births, or history of abortion might mean that the intervention offer women greater contraceptive choice. This heterogeneity implies that these sub-populations might be prioritized by policy makers during scale-up to reach populations with the highest demand for postpartum contraception.

Our findings imply that expansion of PPIUD services to other health facilities may be useful. However, the implications on the costs and logistics required for such extension need to be weighed against the benefits of expanded reach to women who often have even more limited access to postpartum family planning. Such women might benefit more from a long-acting and reversible method given higher time, cost and distance barriers to seeking care from health facilities.

We conclude that integration of PPIUD services into routine maternity care is feasible. On the demand side too, there is greater demand for PPIUD services from women who may have greater need for spacing or limiting their births.

The intervention had a reasonable impact on PPIUD counselling rates. Likewise, there was also significant impact on PPIUD uptake, particularly among those who received high-quality counselling. On the other hand, we also cautions the need for extensive coverage and high quality of counselling services to ensure greater PPIUD uptake.

## CONCLUSIONS

The intervention designed and implemented by NESOG/FIGO had a significant impact on increasing PPIUD counselling rates and PPIUD uptake, especially those of high parity or older or those who

received high quality counselling, in the six study hospitals. If counselling covered all women who gave birth, the uptake of PPIUD would have been four times higher. Our results suggest that the program had significant impact but could be improved by:

- expanding the coverage of PPIUD counselling during antenatal care, and
- improving the quality of counselling

For this to happen, there is a need to increase human resources and a shift in emphasis to counselling during the antenatal period in health centres providing antenatal care and not just in hospital antenatal clinics.

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## REFERENCES

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