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Comparison of outcomes at 6 weeks following postpartum intrauterine contraceptive device insertions by doctors and nurses in India: a case–control study☆,☆☆

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Abstract

Objective: As part of a strategy to revitalize postpartum family planning services, Government of India revised its policy in 2013 to permit trained nurses and midwives to insert postpartum intrauterine contraceptive devices (PPIUCDs). This study compares two key outcomes of PPIUCD insertions — expulsion and infection — for physicians and nurses/midwives to generate evidence for task sharing.
Study design: We analyzed secondary data from the PPIUCD program in seven states using a case–control study design. We included facilities where both doctors and nurses/midwives performed PPIUCD insertions and where five or more cases of expulsion and/or infection were reported during the study period (January–December 2013). For each case of expulsion and infection, we identified a time-matched control who received a PPIUCD at the same facility and had no complaints. We performed a multiple logistic regression analysis focusing on provider cadre while controlling for potential confounding factors.
Results: In 137 facilities, 792 expulsion and 382 infection cases were matched with 1041 controls. Provider type was not significantly associated with either expulsion [odds ratio (OR) 1.84; 95% confidence interval (CI): 0.82–4.12] or infection (OR 0.73; 95% CI: 0.39–1.37). Compared with centralized training, odds of expulsion were higher for onsite (OR 2.32, 95% CI: 1.86–2.89) and on-the-job training (OR 1.23, 95% CI: 1.11–1.36), but odds of infection were lower for onsite (OR 0.45, 95% CI: 0.27–0.75) and on-the-job training (OR 0.31, 95% CI: 0.25–0.37).
Conclusion: Trained nurses and midwives who conduct deliveries at public health facilities can perform PPIUCD insertions as safely as physicians.
Implications: Institutional deliveries are increasing in India, but most normal vaginal deliveries at public health facilities are attended by nurses and midwives due to a shortage of physicians. Task sharing with nurses and midwives can increase women's access to and the acceptability of quality PPIUCD services.

Keywords: Task sharing; Postpartum family planning; Postpartum intrauterine contraceptive device; Nurses; Midwives

1. Introduction

Using family planning (FP) to space births at least 36 months apart can avert 30% of maternal deaths and 10% of child deaths [1,2]. In India, however, only 26% of postpartum women are using contraceptives [3] and more than 60% of births follow an interval of less than 36 months [4]. Sixty-five percent of postpartum women in India have an unmet need for contraception to delay or limit future pregnancies [3].This is similar to the levels of unmet need across 27 countries [5]. Sterilization has remained the

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leading method of contraception in India, accounting for 40% of FP users [6,4], but it does not address women's needs for healthy birth spacing. The postpartum intrauterine contraceptive device (PPIUCD) — a long-acting, reversible contraceptive — offers a safe, effective and convenient alternative [7]. It has also been found to be acceptable among Indian women [8,9].

In the last decade, more and more women chose to give birth in health institutions. Proportion of deliveries taking place at health facilities increased from 41% in 2005–2006 [4] to 86.9% [10]. This preference has emerged due to the government's flagship program — Janani Suraksha Yojana, a conditional cash transfer scheme for promoting institutional deliveries. It is a part of government's efforts to reduce maternal and neonatal mortality under the National Health Mission [11].

Given high unmet need for birth spacing and the rise in institutional deliveries, the Government of India, with technical support from Jhpiego, has been working to reinvigorate and scale up the use of postpartum FP, with a focused effort on expanding the capacity to provide PPIUCD services. Appropriate provision of postpartum FP services includes antenatal counseling, peripartum support for initiating a method and postpartum guidance to successfully continue use. Institutional deliveries create a unique opportunity to offer a long-acting yet reversible method of contraception to women immediately following their childbirth. Delaying insertions until later is less effective because most clients tend not to return to facilities for FP services [12]. Cost is not a barrier for women because FP services in India, including PPIUCDs, are provided free of charge at government health facilities. Limited availability of skilled human resources — which are essential to ensure the quality of PPIUCD services — poses a challenge for increasing access to this safe and highly effective method. A 2012 Bottleneck Analysis identified the shortage of skilled providers as a key barrier to implementing effective interventions for improved maternal and newborn health in India [13]. Task sharing, which is a globally accepted solution for accelerating access to health services, was identified as a viable strategy to expand the provider base and make postpartum FP services available to all women delivering at health facilities. Task sharing refers to *giving additional training to existing cadres of providers and then allowing them to take activities they have not undertaken before* [14]. Nurses and midwives (auxiliary nurse midwife and general nurse midwife) attend the majority of normal vaginal births at health facilities in India [15], but provision of PPIUCD services was initially limited to doctors. Evidence from several countries supports task sharing in the delivery of FP services [16,17], and studies have found that provision of interval intrauterine contraceptive devices (IUCDs) by nurse-midwives is effective and feasible in low-resource settings [18,19,20]. World Health Organization has also recommended the option of insertion of IUCDs by nurses and midwives [14].

In order to rapidly scale up PPIUCD services in India, the government changed policy in 2013 to allow trained nurses and midwives to insert PPIUCDs [21] and initiated capacity building of nursing staff to provide PPIUCD services. Enhanced focus on PPIUCD has increased the uptake of PPIUCD services; with 120,000 insertions in 2012–2013 to approximately 300,000 insertions in 2013–2014 [22]. The objective of this paper is to generate country-level evidence on the safety and effectiveness of task sharing for PPIUCD insertions based on this experience. Our analysis compares the outcomes of insertions performed by physicians with those performed by nurses and midwives.

2. Materials and methods

This study is a retrospective analysis of secondary data on two outcomes of PPIUCD insertion — expulsion and infection using a case–control study design. The data were collected as part of routine monitoring of postpartum FP programs implemented by the Government of India, with technical support from Jhpiego, in high priority states that lag behind on key health indicators. These seven high-focus states are Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan, Chhattisgarh, Uttarakhand and Jharkhand. The program includes training doctors, nurses and midwives who provide maternity services at public health facilities with a purpose to expand access to PPIUCD. The maternity service providers are trained using a 3-day standardized curriculum that, along with theoretical knowledge, focuses on insertion competency: first on an anatomical model and then graduating to an actual client. In the program, three training approaches are deployed for provider trainings: (a) centralized, (b) onsite and (c) on-the-job. In centralized trainings, select providers undergo training led by recognized trainers at established state or divisional training sites — which are usually tertiary-level care facilities with high caseloads. Onsite trainings are conducted at the actual workplace of the providers by Jhpiego training team with support from existing trained providers, recognized as champions, who have successfully implemented the program at their respective facility after centralized trainings. On-the-job approach refers to an informal, peer-to-peer instruction, in which a trained PPIUCD provider trains colleagues and subordinates in a particular facility at their own determined pace but ensuring competency of skills as per the standardized checklist.

Service data come from public health facilities, including primary health centers, community health centers, district and subdistrict hospitals and medical colleges. We included facilities in the study if (1) both doctors and nurses (or midwives) performed PPIUCD insertions and (2) the facility reported at least five cases of expulsion and/or infection in the 6 weeks following PPIUCD insertions during the calendar year 2013. We chose five as the threshold as it was the median number of expulsions and/or infections