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Original research article

Six- and twelve-month documented removal rates among women electing postpartum inpatient compared to delayed or interval contraceptive implant insertions after Medicaid payment reform

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Abstract

Objective: This study aims to document 6- and 12-month removal rates for women receiving the contraceptive implant inpatient postpartum versus those receiving the same contraceptive method during an outpatient visit, in a setting where postpartum inpatient long-acting reversible contraceptive (LARC) services (devices plus provider insertion costs) are reimbursed by Medicaid.

Study design: We conducted a retrospective cohort study among Medicaid-enrolled women using medical record review for all women receiving the etonogestrel implant between July 1, 2007 and June 30, 2014. We compared the percentage of women with the implant removed at 6 and 12 months as well as reasons for early removal, for inpatient postpartum implant insertions vs. delayed postpartum or interval outpatient implant insertions.

Results: A total of 4% of women (34/776 insertions) had documented implant removal within 6 months post-insertion, with no difference between postpartum inpatient and outpatient (delayed postpartum or interval). A total of 12% (62/518 insertions) of women had documented implant removal within 12 months. A lower percentage of women with postpartum inpatient insertions had the implant removed at 12 months post-insertion, compared to outpatient insertions (7% vs. 14%, p=.04). After controlling for age, parity, race and body mass index, women with postpartum inpatient insertions were less likely to have the implant removed within 12 months (OR=0.44, 95% CI 0.20–0.97). The most commonly stated reason for removal was abnormal uterine bleeding, regardless of insertion timing.

Conclusion: In a setting with a Medicaid policy that covers postpartum inpatient LARC insertion, a low percentage of women who received an implant immediately postpartum had it removed within 1 year of insertion.

Implications: A Medicaid payment policy that removes institutional barriers to offering postpartum inpatient contraceptive implants to women free-of-charge may facilitate meeting women's desires and intentions to delay subsequent pregnancy, as evidenced by low removal rates up to 12 months post-insertion. Further research with women is needed to assess how these services meet their postpartum contraceptive needs and desires to postpone or prevent subsequent pregnancy.

Keywords: Medicaid; Postpartum contraception; Contraceptive implant; Nexplanon

1. Introduction

A growing literature shows that the inpatient postpartum period, prior to discharge from the hospital, can be a particularly favorable period to initiate a long-acting reversible contraceptive (LARC) and that leaving the hospital with one of these highly effective methods of birth control can reduce the risk of unintended pregnancy [1,2]. Practice guidelines endorse the safety and efficacy of inpatient postpartum contraceptive implant and intrauterine device (IUD) insertions [3–6]. Experience nationwide is showing that when women are highly motivated to avoid pregnancy, the contraceptive device is readily available in

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the hospital pharmacy, and health care providers responsible for insertion have adequate time, supplies and assistance to facilitate the procedure, offering LARCs inpatient postpartum is feasible and effective.

Because many implant side effects resemble physiologic changes experienced by women in the immediate postpartum period, some women may attribute normal postpartum changes to the implant and, therefore, be more likely to discontinue implant use early if they do not receive sufficient counseling about the possible side effects of the device. Limited evidence suggests that discontinuation is likely not higher among women with inpatient postpartum insertion of the etonogestrel implant compared to delayed postpartum and interval placement [7].

To date, 15 Medicaid agencies provide specific reimbursement for inpatient postpartum LARC insertion outside of the bundled diagnosis-related group (DRG) for delivery and nine others are considering adopting this policy [9]. The impact of such a policy on women's uptake and continuation of these methods and longer-term reproductive health outcomes have not been researched. Emerging literature on postpartum inpatient insertion of the etonogestrel implant suggests that it is cost effective compared to delayed postpartum insertions, primarily by preventing costs associated with unintended pregnancies [8]. These cost savings depend on high rates of patient continuation.

Given existing literature, our study had two main research questions: after a hospital begins offering inpatient postpartum implants because of a change in Medicaid reimbursement policy, do a higher percentage of women receiving implants inpatient postpartum have the device removed at 6 or 12 months, compared to women receiving implants at their outpatient postpartum visit or a regular family planning visit? Secondly, do women receiving an implant during inpatient postpartum provide different reasons for removal, compared to women who have the implant inserted in an outpatient setting?

2. Materials and methods

2.1. Study setting and population

We conducted a retrospective cohort study at Greenville Memorial Hospital, a large academic teaching hospital in Greenville, South Carolina. Our outpatient practice provides services primarily to Medicaid-eligible women, often receiving care under the state's Family Planning Waiver. The etonogestrel contraceptive implant has been offered to women in our outpatient obstetrics and gynecology practice since 2007; clinic providers routinely counsel patients about all available contraceptive options, including LARCs.

In 2012, the South Carolina Department of Health and Human Services became the first state Medicaid agency in the country to offer delivery hospitals reimbursement for inpatient postpartum LARC outside of the bundled DRG, allowing South Carolina hospitals and physicians to recover the cost of the device and to bill for the professional insertion fee. Our hospital was one of the early adopters of this new policy, which provided the opportunity for us to provide follow-up data on a large cohort of women.

In September 2013, we began to offer women the option of inpatient contraceptive implant insertions during the immediate postpartum period in our hospital prior to discharge. Nurse practitioners and residents in obstetrics and gynecology perform outpatient implant insertions in the outpatient clinic; residents in obstetrics and gynecology primarily perform inpatient postpartum implant insertions.

To identify patients for study inclusion, we queried inpatient and outpatient billing databases for all etonogestrel contraceptive implant insertions between July 2007 and June 2014. We initially divided patients into two groups for analysis: those with routine outpatient insertion (n=434, inserted July 2007–June 2014) and those with inpatient postpartum insertion (n=342, inserted September 2013–June 2014). Because of concerns about heterogeneity within the outpatient insertion group, we subdivided this group into a delayed postpartum cohort (with insertions within the first 8 weeks after delivery) and into an interval insertion cohort, including women with insertions >8 weeks after delivery and women without a prior pregnancy. For women in the delayed postpartum group, the mean number of days after delivery was 31. The majority of women in our interval insertion group were also parous and recently delivered. Of the interval insertion group, 60% were between 9 and 16 weeks postpartum, 9% were between 5 and 6 months postpartum, 8% were between 7 and 12 months postpartum, 11% were more than 1 year postpartum and 14% had no prior live births. Because these groups were so similar and because our primary research question related to the novel inpatient location and immediate postpartum timing of implant insertion, the delayed postpartum and interval insertion groups were combined for some analyses as the outpatient comparison group. All women receiving the contraceptive implant for the first time within our health system were included in the sample.

2.2. Data collection

Resident physicians in obstetrics and gynecology collected data by reviewing inpatient and outpatient medical records using a standardized data extraction form. They entered data into the Research Electronic Data Capture (REDCap), a secure Web application, hosted at Greenville Health System. In order to capture device removal, which could have happened outside of our practice, residents reviewed every patient encounter within our health care system (including the gynecology practice as well as the emergency room, primary care and other subspecialty visits) for each patient following device insertion to identify comments about the presence or absence of the etonogestrel contraceptive implant. We did not distinguish between women who had no patient encounters within 6–12 months