

Breastfeeding, Postpartum Timing, and Indicators of Difficult Insertion Among Women at Intrauterine Device Insertion

Anthony MS,¹ Getahun D,² Armstrong MA,³ Gatz JL,⁴ Asiimwe A,⁵ Saltus C,⁶ Reed SD,⁷ Shi JM,² Alabaster A,³ Merchant M,³ Fassett MJ,⁸ Peipert JF,⁹ Schoendorf J,¹⁰ Hunter S,¹ Wang J,¹ Chillemi G,³ Ritchey ME^{1*}

¹RTI Health Solutions, Research Triangle Park, NC, United States; ²Kaiser Permanente Southern California, Pasadena, CA, United States; ³Kaiser Permanente Northern California, Oakland, CA, United States; ⁴Regenstrief Institute, Indianapolis, IN, United States; ⁵Bayer AG, Berlin, Germany; ⁶RTI Health Solutions, Waltham, MA, United States; ⁷Kaiser Permanente Washington, University of Washington, Seattle, WA, United States; ⁸Kaiser Permanente Southern California, Los Angeles, CA, United States; ⁹Indiana University School of Medicine, Indianapolis, IN, United States; ¹⁰Bayer OY, Espoo, Finland
*Affiliated with RTI Health Solutions during the study period

RTI Health Solutions

Regenstrief Institute

KAISER PERMANENTE
Department of Research & Evaluation
Southern California

KAISER PERMANENTE
Kaiser Permanente Washington
Health Research Institute

KAISER PERMANENTE
DIVISION OF RESEARCH
Northern California



DISCLOSURES

RTI Health Solutions, Kaiser Permanente Northern California, Kaiser Permanente Southern California, Kaiser Permanente Washington, and Regenstrief Institute received funding from Bayer AG to conduct this research. The contracts between the research sites and Bayer AG include independent publication rights. The authors had the final decision on the content of this poster.

BACKGROUND

- United States obstetrics and gynecology professional organizations recommend that women consider long-acting reversible contraceptive methods, including the intrauterine device (IUD), postpartum to prevent unintended pregnancy.
- Little has been published about the potential for difficulties with IUD insertion at different postpartum time points or when women are breastfeeding at the time of IUD insertion.

OBJECTIVES

- To estimate the prevalence of difficult IUD insertion indicators across three postpartum time periods (≤ 6 weeks, > 6 to ≤ 14 weeks, > 14 to ≤ 52 weeks)
- To estimate the prevalence of difficult IUD insertion indicators among women who had an IUD insertion ≤ 52 weeks postpartum according to whether they were breastfeeding at the time of IUD insertion

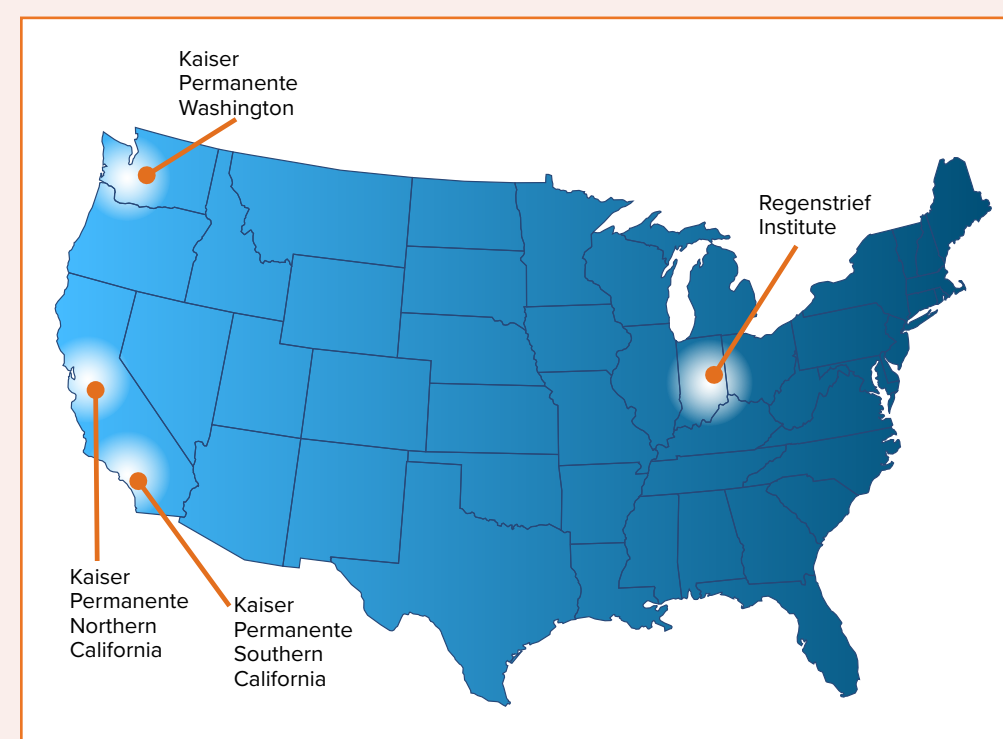
RESULTS

- Among 97,824 women with IUD insertions within 52 weeks postpartum, 21% were ≤ 6 weeks postpartum, 57% were > 6 to ≤ 14 weeks, and 22% were > 14 to ≤ 52 weeks; 66% were breastfeeding, 31% were not, and 3% had unknown breastfeeding status (Table 1).
- The proportion of women with any indicator of a difficult IUD insertion was 2.6% among those breastfeeding and 3.5% among those not breastfeeding (Figure 2).

METHODS

- The study was conducted using data from three health care systems with electronic health records (Kaiser Permanente Northern California, Kaiser Permanente Southern California, Kaiser Permanente Washington) and one research institute with access to electronic health records through a health information exchange, Regenstrief Institute (Figure 1).
- Women with an IUD insertion within 52 weeks postpartum were included in this analysis.

Figure 1. Study Population Catchment Areas



- Structured (National Drug Codes, International Classification of Diseases 9th and 10th Revisions—Clinical Modification [ICD-9-CM/ICD-10-CM], Current Procedural Terminology) and unstructured natural language processing (clinical notes) data were used to identify breastfeeding and postpartum status, as well as five difficult insertion indicators:
 - Mechanical cervical dilation
 - Ultrasound use
 - Paracervical block
 - Misoprostol use
 - Provider noted "difficult insertion"

- Study clinicians identified medications and procedures that could be used during a difficult insertion, refining a list suggested by the United States Food and Drug Administration. The five indicators chosen for this analysis were those that clinicians agreed were plausibly related to difficult insertions and were possible to assess in the data at each site.

- The proportion of women with these indicators was assessed by breastfeeding status (yes/no) and postpartum time period (≤ 6 weeks, > 6 to ≤ 14 weeks, > 14 to ≤ 52 weeks) at IUD insertion.

- The indicators were not mutually exclusive. Women could have had more than one of these indicators at the time of insertion.

- The proportion of women with any indicator of a difficult IUD insertion differed by time postpartum (Figure 2).
- The most common difficult insertion indicator was paracervical block (1.5% of insertions and 49% of all difficult insertion indicators) (Figure 3).
- Women > 14 to ≤ 52 weeks postpartum had the highest proportion of all five difficult insertion indicators relative to the two earlier postpartum time periods (Figure 3).

- Women who were not breastfeeding at IUD insertion had a higher proportion of all five difficult insertion indicators compared with those who were breastfeeding (Figure 3).
- Women with IUDs inserted > 14 to ≤ 52 weeks postpartum had the highest proportion of any indicator of a difficult IUD insertion regardless of breastfeeding status (Figure 4).
- In the two earlier postpartum time periods, there was little difference between those breastfeeding versus not breastfeeding in the proportion of women with an indicator of difficult IUD insertion (Figure 4).

Figure 2. Percentage of Women With Any Indicator of a Difficult IUD Insertion, Overall and by Postpartum Timing and Breastfeeding Status

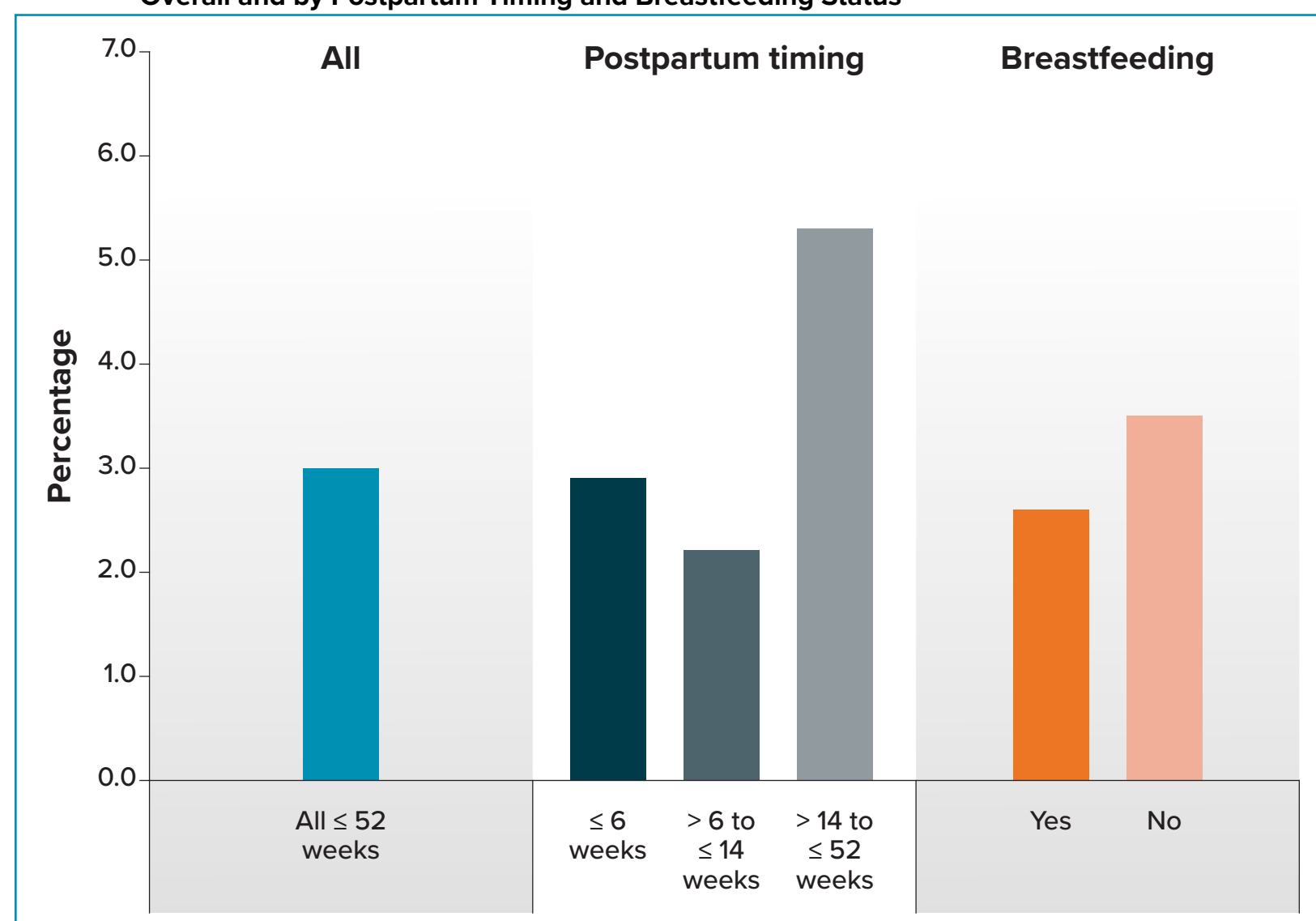


Table 1. Study Population ≤ 52 Weeks Postpartum at Time of IUD Insertion: Overall, by Postpartum Timing of IUD Insertion, and by Breastfeeding Status at IUD Insertion

Breastfeeding Status	Postpartum Timing of IUD Insertion			Total
	≤ 6 Weeks	> 6 to ≤ 14 Weeks	> 14 to ≤ 52 Weeks	
Breastfeeding	16,205	39,348	8,633	64,186 (65.6%)
Not breastfeeding	3,375	15,349	11,907	30,631 (31.3%)
Unknown	480	1,350	1,177	3,007 (3.1%)
Total	20,060 (20.5%)	56,047 (57.3%)	21,717 (22.2%)	97,824

Figure 3. Percentage of Women With at Least One of the Five Indicators of a Difficult IUD Insertion, Overall and by Postpartum Timing and Breastfeeding Status

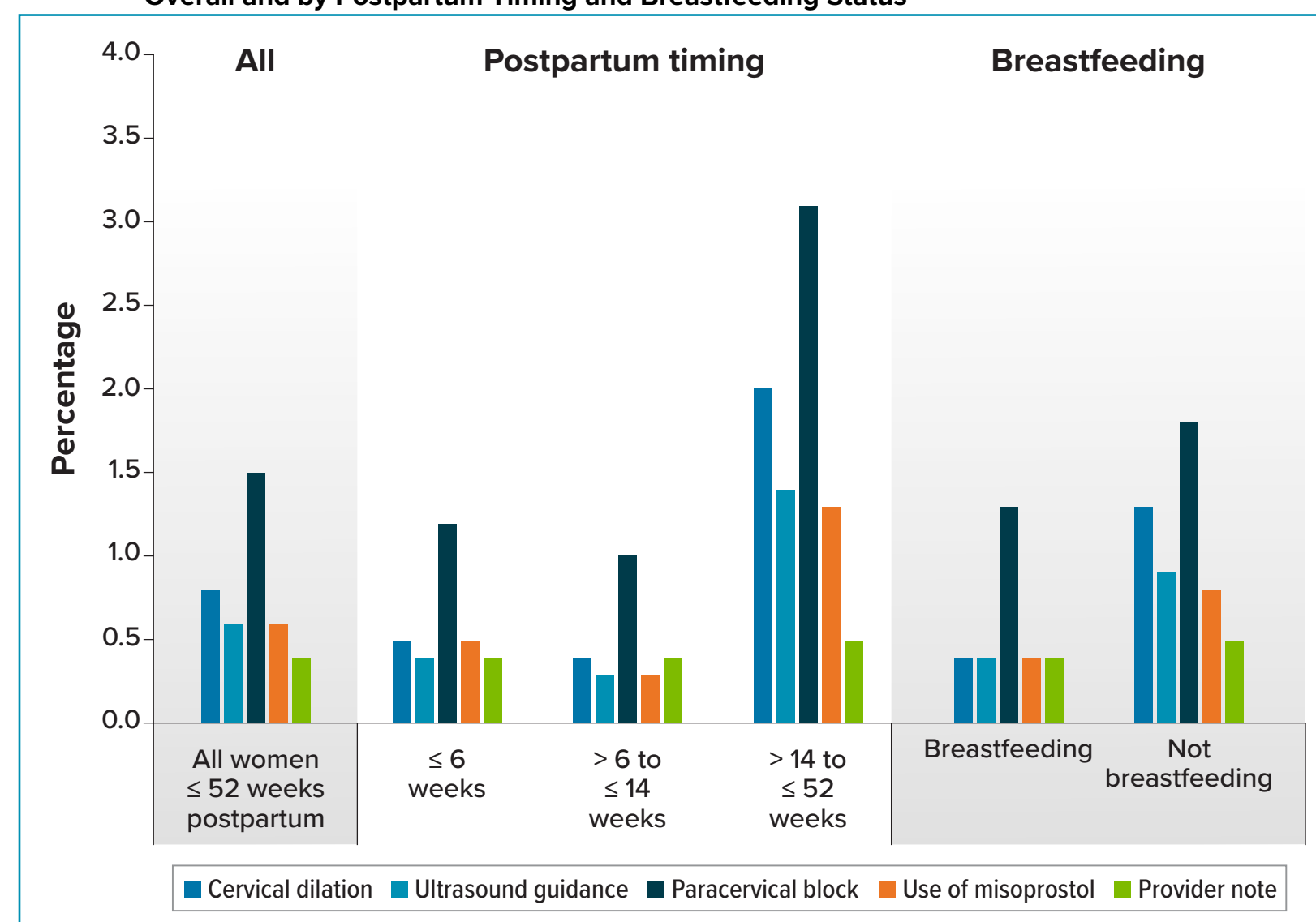
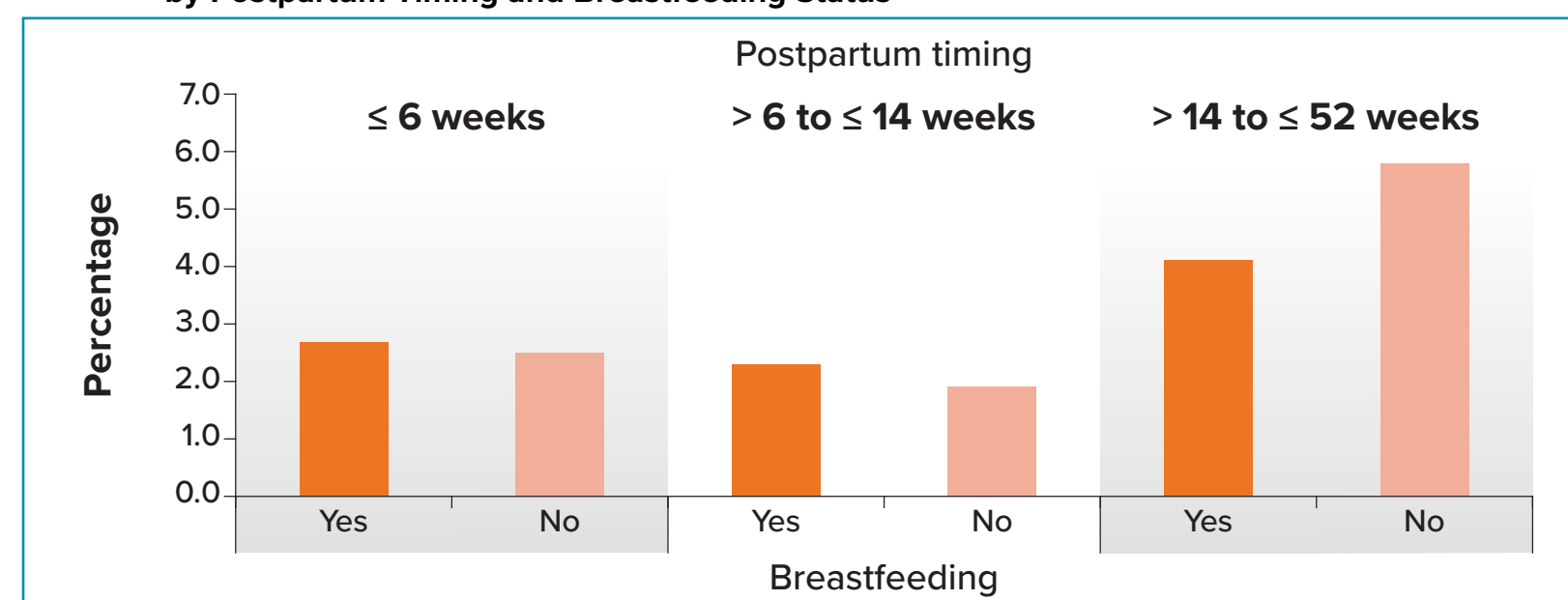


Figure 4. Percentage of Women With Any Indicator of a Difficult IUD Insertion Stratified Simultaneously by Postpartum Timing and Breastfeeding Status



DISCUSSION

- The prevalence of indicators of difficult insertions was lower for women with IUDs inserted at earlier postpartum time periods.
- The prevalence of indicators of difficult IUD insertions was not consistently related to breastfeeding status.
- Any of the four procedures/medication could have been used prophylactically to make the insertion easier, but we are unable to determine whether the procedures/medications were used preventatively, as a result of encountered difficulty at the time of insertion, due to a history of difficult insertion, due to patient anxiety, or were part of routine practice for some providers.
- For immediate postpartum IUD insertions (up to 3 days postpartum), 2.9% of all insertions and 13.9% of insertions ≤ 6 weeks postpartum, indicators of difficult insertion suggestive of a closed cervix (cervical dilation, paracervical block, use of misoprostol), likely would not apply. Ultrasound use would be anticipated to be more common.

CONCLUSION

- Prevalence of indicators of a difficult IUD insertion were lower among women with IUDs inserted at earlier postpartum times, and prevalence was not much different by breastfeeding status in these earlier postpartum time periods.

CONTACT INFORMATION

Mary Anthony, PhD
Senior Director, Epidemiology

RTI Health Solutions
3040 Cornwallis Road
Research Triangle Park, NC

Phone: +1.919.485.5509
E-mail: manthony@rti.org