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Post-placental IUD insertion: what helps and hinders implementation?

Joanne Cull, Abigail Easter

Summary

Post-placental intrauterine device insertion (PPIUD) is safe, effective, and convenient for women. However, despite the support of influential national organisations, PPIUD is not yet widely offered in the United Kingdom (UK).

A systematic literature review was carried out to identify barriers and facilitators to PPIUD implementation. Data were thematically analysed. Twenty-one papers were included in the review. The overarching theme found was the complexity of implementing PPIUD services. We identified the sub-themes: planning; support from external organisations; staffing and workload challenges; the importance of implementation champions; and reflecting and monitoring.

Facilities wishing to implement PPIUD services should anticipate that this will be a complex and time-consuming process and prepare accordingly, seeking opportunities to collaborate with other organisations.

Background

A gap of at least 18–24 months is advised between birth and next pregnancy, as short pregnancy intervals are associated with a range of serious maternal and neonatal risk factors, including low birth weight, maternal anaemia and preterm labour (American College of Obstetricians & Gynecologists 2019). However, the postpartum period is a time when women are particularly at risk of unplanned pregnancy and may find it challenging to access contraceptive services due to the demands of their newborn (Heller et al 2016).

There has been widespread disruption of sexual and reproductive health care services as a result of COVID-19, making access even more difficult, and fear of infection has decreased uptake of these services, disproportionately affecting vulnerable women (Bateson et al 2020).

PPIUD involves insertion of an intrauterine device (copper coil) or intrauterine system (Mirena or Jaydess coil) immediately after either vaginal or caesarean birth,

and has been shown to be safe, effective, convenient for women and compatible with breastfeeding (Lopez et al 2015). A report by the Royal College of Obstetricians & Gynaecologists (RCOG) stated:

'Post-pregnancy contraception should be a key part of the maternity pathway ... NHS England, NHS Scotland, NHS Wales and Health and Social Care Northern Ireland must embed immediate post-pregnancy contraception maternity pathways and support for all women.' (RCOG 2019:13).

However, PPIUD services are not yet widely offered in the UK. Therefore, a systematic review and metasynthesis of existing qualitative evidence was undertaken to answer the question: what are the barriers and facilitators to the implementation of immediate postpartum contraceptive services?

Methodology

This review was registered in Prospero (reference: CRD42019148030). We searched MEDLINE, CINAHL, Embase and Maternity and Infant Care (MIC) databases for papers which explored factors influencing the implementation of PPIUD services. Reference checking and citation tracking were carried out to locate additional relevant papers. Grey literature was searched using OpenGrey.

Primary studies using qualitative study designs, and mixed methods studies where the qualitative findings could be extracted from the results, were eligible for inclusion in the study. Studies which described implementation of PPIUD services and identified barriers and/or facilitators to successful implementation in any country were included. Further, as research showing that barriers which impact on implementation and sustainability of this service include staff resistance, studies which addressed health care practitioner's views of PPIUD were also included. Studies which concerned IUD insertion outside the immediate postpartum period were excluded.

Studies were screened against the inclusion criteria by the first reviewer (JC). Two reviewers (LJ and AJ) independently screened a 10 per cent sample of search results for eligibility, with differences of opinion about inclusion resolved through discussion with all authors. Data were mapped against the Consolidated Framework for Implementation Research (CFIR) (Damschroder et al 2009) constructs, and then

developed into broad themes. Thematic analysis was carried out using the method developed by Braun & Clarke (2006).

The quality of the qualitative papers was assessed by the first reviewer using the Critical Appraisal Skills Programme (CASP) quality assessment tool for qualitative studies (CASP 2020) or the JBI Critical Appraisal Checklist for Text and Expert Opinion Papers (Joanna Briggs Institute (JBI) 2017) for implementation description papers as appropriate. Two reviewers (AJ and LJ) then independently assessed the quality of a random sample of 20 per cent of the qualitative papers and 20 per cent of the implementation description papers. In line with Cochrane guidance (Cooper & Cameron 2018) studies which met the inclusion criteria were included irrespective of study quality.

In order to enhance the rigour of the review, the first author explicitly considered her own views about the benefits of PPIUD and barriers to implementation, and how they might influence the design and conduct of the study and interpretation of findings, informed by her role as a midwife. Involvement of the second author, who is not a midwife, helped minimise this bias within the review.

Results

We identified 2612 unique references, assessed 80 full-text articles, and included 21 papers in this systematic review and evidence synthesis (Figure 1). Eleven qualitative papers were included, of which nine used interviews to collect data and two used focus groups. The remaining 10 papers were narrative descriptions of implementation experiences. Studies were set in four continents and 36 countries or states of the United States of America (USA) and published between 2015 and 2020. The papers were broadly found to be methodologically strong or adequate. Characteristics of included studies can be found in Table 1.

Figure 1. PRISMA flow diagram

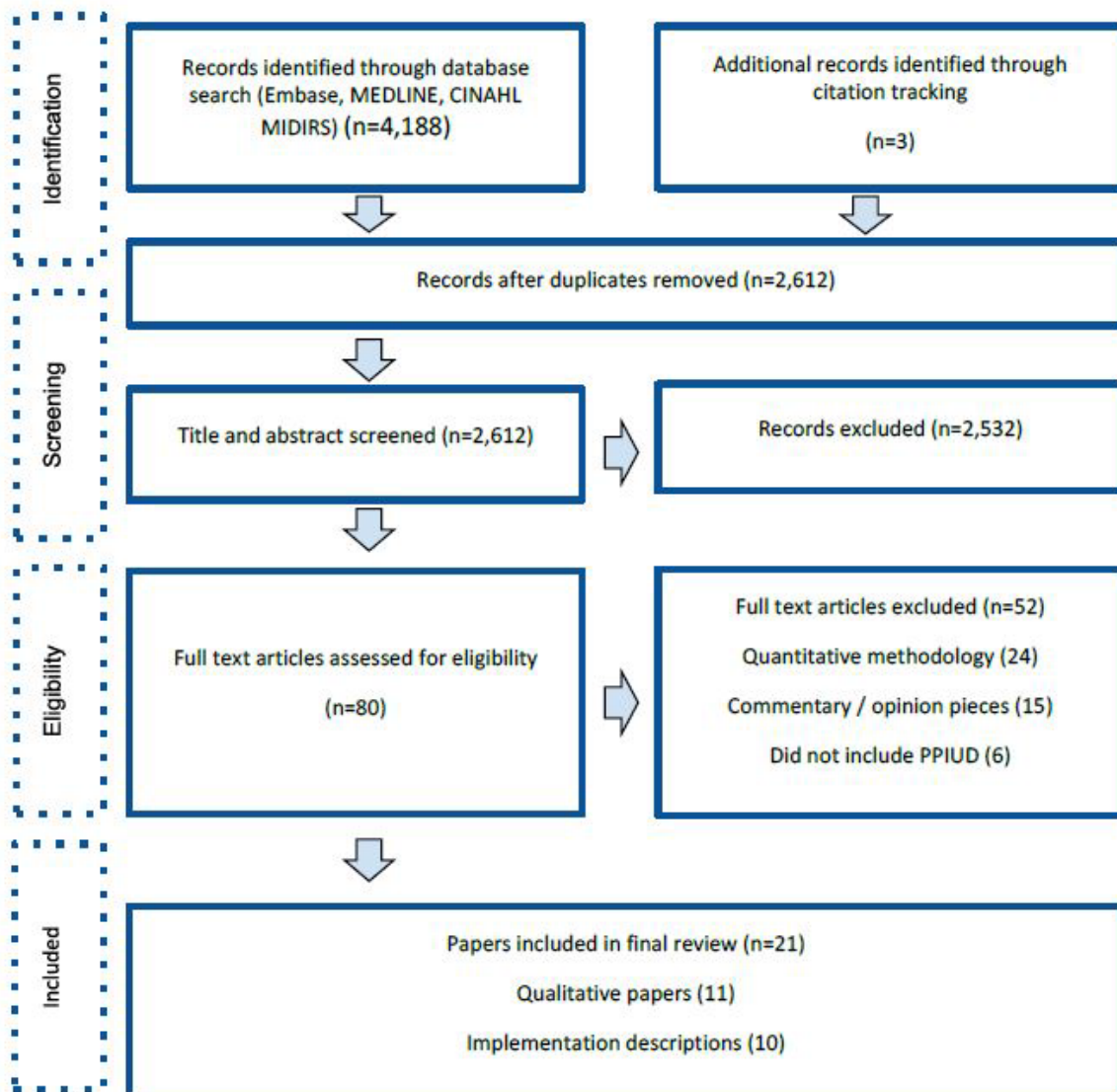


Table 1. Characteristics of included studies

Author, year of publication	Methodology (qualitative element only)	Setting
Brown et al 2020	Implementation description	Florida, USA
Cameron et al 2017	Health care providers' views. Focus groups with hospital midwives, community midwives and obstetricians (numbers not given)	Scotland, UK

Cooper & Cameron 2018	Implementation description	Scotland, UK
de Caestecker et al 2018	Implementation description	Sri Lanka, India, Nepal, Tanzania, Bangladesh, Kenya
DeSisto et al 2019	Health care providers' views. 16 semi-structured interviews with state health department staff members, Medicaid representatives, clinical staff and other LARC stakeholders*	Colorado, Georgia, Iowa, Massachusetts, New Mexico, South Carolina, Delaware, Indiana, Louisiana, Maryland, Montana, Oklahoma, and Texas, USA
DeSisto et al 2017	Health care providers' views. 16 semi-structured interviews with representatives from 13 US state teams involved in LARC implementation*	Colorado, Georgia, Iowa, Massachusetts, New Mexico, South Carolina, Delaware, Indiana, Louisiana, Maryland, Montana, Oklahoma, and Texas, USA
Harper et al 2020	Implementation description	North Carolina, USA
Hill et al 2019	Health care providers' views. Interviews with 19 key hospital staff from 6 hospitals	Texas, USA
Hofler et al 2017	Healthcare providers' views. Interviews with 32 key hospital staff from 10 hospitals	Georgia, USA
Ingabire et al 2019	Implementation description	Rwanda
Kroelinger et al 2019	Health care providers' views. 16 semi-structured interviews with state team members from 13 US state teams involved in LARC implementation*	Colorado, Delaware, Georgia, Indiana, Iowa, Louisiana, Maryland, Massachusetts, Montana, New Mexico, Oklahoma, South Carolina, and Texas, USA
Lacy et al 2020	Implementation description	Tennessee, USA

Palm et al 2020	Healthcare providers' views. Semi-structured interviews with 20 key personnel from 7 hospitals planning to implement PPIUD	New Mexico, USA
Pfitzer et al 2015	Implementation description	Ethiopia, Guinea, India, Pakistan, Philippines, Rwanda
Pfitzer et al 2020	Health care providers' views. Semi-structured interviews with 82 healthcare providers and managers in 15 health facilities	Kenya and India
Pleah et al 2016	Implementation description	Benin, Chad, Côte d'Ivoire, Niger, Senegal
Puri et al 2018	Health care providers' views. In-depth interviews with 14 obstetricians / gynaecologists and nurses from 6 tertiary hospitals	Nepal
Robinson et al 2016	Women's and health care providers' views. Focus groups with 41 community members (pregnant, postpartum and reproductive age women, and men) and 7 health care workers	Ghana
Tang et al 2018	Implementation description	Malawi
Weerasekera et al 2018	Implementation description	Sri Lanka
Willcox et al 2019	Women's and health care providers' views. Semi-structured interviews with a total of 80 postpartum parents, antenatal parents, health care workers and village health teams	Uganda

* These papers relate to the same interview data

Metasynthesis

While IUD insertion is a straightforward procedure which is routinely offered in the community, an overarching theme of this metasynthesis was the complexity of implementing PPIUD services, which requires the coordination of multiple professional groups and departments. A thematic map can be found at Figure 2.

We identified the sub-themes: planning; support from external organisations; staffing and workload challenges; the importance of implementation champions; and reflecting and monitoring.

Figure 2. Thematic map



Image credit: Slidesgo.com and Freepik.com

Overarching theme: anticipate complexity

Cooper & Cameron (2018) noted:

'Introducing PPIUD into clinical practice is complex for many reasons. The intervention does not exist in isolation as a delivery unit procedure, as there are pre-counselling and follow-up arrangements to consider. As such, a comprehensive PPUD service involves aspects of prenatal, intrapartum, and postnatal care, and includes both hospital and community providers. This presents challenges associated with communication, clinical pathways and referrals' (Cooper & Cameron 2018:57).

Hofler et al (2017:8) observed that: *'The complex implementation process involves many steps across several departments'*. For example, pharmacies must order devices and make them accessible on obstetric units, electronic health records need to be updated to support documentation, and patient counselling materials must be developed.

Planning

Papers describing implementations in Europe, North America, Asia and Africa described years of planning and piloting processes prior to full implementation (Cooper & Cameron 2018, de Caestecker et al 2018, Weerasekera et al 2018, Harper et al 2020).

Clear protocols are needed for high level issues such as billing, clinical guidelines and training plans, and also practicalities, such as where the devices will be stored and where counselling will take place.

In Scotland, staff training in postpartum contraception and routine antenatal contraceptive counselling was introduced two years before PPIUD service introduction, while research was carried out demonstrating demand and need for the service (Cooper & Cameron 2018). This provided justification for the introduction of the service and influenced the culture of the maternity unit towards providing contraceptive services. PPIUD was initially introduced at elective caesarean sections; vaginal PPIUD was then trialled at the smaller of two maternity hospitals, allowing the process to be tested before introduction on a larger scale (Cooper & Cameron 2018).

Support from external organisations

The introduction of PPIUD schemes was frequently driven by external policy and incentives, including support by governments (Pfitzer et al 2015, Puri et al 2018, Palm et al 2020, Pfitzer et al 2020), non-governmental organisations such as UNFPA (Pleah et al 2016, Robinson et al 2016, Puri et al 2018, Tang et al 2018, Willcox et al 2019, Pfitzer et al 2020), and national professional obstetrics bodies (de Caestecker et al 2018).

Multidisciplinary implementation teams, which often included Department of Health officials, professional obstetrics bodies, and — in the USA — Medicaid representatives, often played a critical role in implementation (Pfitzer et al 2015, Hofler et al 2017, Cooper & Cameron 2018, de Caestecker et al 2018, Tang et al 2018, DeSisto et al 2019, Hill et al 2019, Kroelinger et al 2019, Brown et al 2020, Harper et al 2020, Lacy et al 2020, Palm et al 2020).

These teams commonly provided practical support to hospitals to help them prepare for, and implement, PPIUD services, including providing toolkits of useful resources, such as a template policy and guideline, patient information leaflets and teaching materials.

DeSisto et al (2017) proposed that the multi-state postpartum long-acting reversible contraception learning community in the USA provided structure, accountability, validity and preparation for potential challenges, describing the collaborative as a '*meta-strategy for implementation*' (DeSisto et al 2017:7). The same authors noted that some teams aligned their postpartum contraception work with existing maternal and child health initiatives to improve efficiency.

Staffing and workload challenges

Two specific staffing challenges were noted: ensuring adequate counselling in the context of high staff workloads and maintaining sufficient numbers of staff trained in insertion (Pleah et al 2016, Cameron et al 2017, Tang et al 2018).

When setting up services, it is challenging to maintain provider skills and confidence during the lag between training and demand generation; in addition, frequent rotation of doctors out of labour and delivery areas mean that new providers need to be frequently trained. The ability to maintain PPIUD services after the initial rollout was impacted by staff turnover and leave, leading Cooper & Cameron (2018:60) to conclude: '*Ongoing investment in PPIUD training and education will be essential to ensure a sustainable service*'.

Strategies to ensure ongoing training included adopting a 'train the trainer' model, or partnering with academic institutions, non-profit organisations and device manufacturers to offer training (Pfitzer et al 2015, Cooper & Cameron 2018, de Caestecker et al 2018, DeSisto et al 2019, Kroelinger et al 2019).

The importance of implementation champions

Several studies described the contagious enthusiasm of some clinicians, who positively impacted implementations through their impact on colleagues, whether in a formal 'champion' role or not (Pleah et al 2016, Hofler et al 2017, Ingabire et al 2019, Puri et al 2018, DeSisto et al 2019, Hill et al 2019, Kroelinger et al 2019, Palm et al 2020, Pfitzer et al 2020).

Discussing PPIUD implementation in West and Central Africa, Pleah et al (2016:142) noted that respected teaching staff with high caseloads were invited to PPIUD training so they could become '*competent and influential trainers and ambassadors for the PPIUD (so-called 'champion' providers) who could change perceptions and practices in their countries and help expand the initiative.*' DeSisto et al (2019) described the importance of having not only clinical champions but also key staff in other job roles such as pharmacy and billing.

Reflecting and monitoring

Monitoring and evaluation are necessary to demonstrate the acceptability, safety, and cost-effectiveness of PPIUD, and to advocate for the continuation and expansion of the schemes (Pfitzer 2015, Pleah et al 2016, Cooper & Cameron 2018, de Caestecker et al 2018, Tang et al 2018, Weerasekera et al 2018, DeSisto et al 2019, Ingabire et al 2019, Kroelinger et al 2019, Harper et al 2020, Lacy et al 2020).

DeSisto et al (2019) and Kroelinger et al (2019), considering the experiences of 13 US state teams seeking to implement PPIUD, discussed the importance of developing a data strategy to measure uptake, create quality improvement metrics, and assess implementation progress. Continuous data monitoring helped in early identification and resolution of problems. The authors proposed collecting qualitative and quantitative data, which includes both process measures, such as number of providers trained, and outcome measures, such as number of IUDs placed.

Some states involved data analysts and/or partnered with academic institutions to carry out more sophisticated cost-benefit and effectiveness analyses, examining the impact of increased contraceptive use on maternal and child health outcomes such as birth spacing, unintended pregnancies, admissions to neonatal units, or preterm birth. Cost avoidance analysis, estimating the numbers of births which did not

happen as a result of the scheme, and the effect on government costs, such as welfare benefits, was also carried out.

Discussion

Implementation of PPIUD schemes is surprisingly challenging given the ubiquity of IUD provision in community settings. In many cases, years of planning were required prior to full implementation. It may be that facilities are unprepared for this, and more realistic expectations would aid scheme implementations and ensure they are sustained. External support, including by government bodies and implementation teams, appears to be critical to successful implementation. To date, this support has not been offered in the UK and, instead, trusts have been attempting to implement PPIUD on an ad hoc basis themselves, with varying levels of success and sustainability (Cooper et al 2020).

This is the first systematic review to apply an implementation science framework to identify factors influencing the implementation of PPIUD services, a key public health goal. The review includes studies from Europe, Asia, Africa and North America, in a range of health care settings, which increases the generalisability of the findings. However, the review has limitations. Papers in languages other than English were excluded, as were papers which had not been published in a peer-reviewed journal, meaning potentially useful papers may not have been included.

Conclusion

Facilities wishing to implement PPIUD services should anticipate that this will be a complex and time-consuming process and prepare accordingly, seeking opportunities to collaborate with other organisations. Implementation is most likely to be successful where it is supported by government policy and external organisations such as national obstetrics and gynaecology societies.

Ongoing staff training will be necessary to maintain a sufficient pool of staff who are able to counsel, insert devices, and help with complications. Whether in a formal 'champion' role or not, individual staff who are enthusiastic about PPIUD can have a significant positive impact on implementation.

Finally, data monitoring and analysis can be used to advocate for continuing and expanding PPIUD services.

Supplementary information

The following information is available from the first author by request:

- Full search strategies for each electronic database
- CFIR constructs tabulated by frequency of coding
- Influential factors identified in each study
- Assessment of methodological strengths and limitations.

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