National Institute for Health and Care Excellence

Draft for consultation

Termination of pregnancy

[P] Contraception after termination of pregnancy

NICE guideline <TBC>

Evidence reviews

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Draft for Consultation

These evidence reviews were developed by the National Guideline Alliance hosted by the Royal College of Obstetricians and Gynaecologists

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ISBN:

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Contraception after medical termination of pregnancy

This evidence report contains information on 3 reviews relating to cervical priming before surgical termination of pregnancy.

- What strategies are effective at facilitating access to contraception after termination of pregnancy?
- For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?
- For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

Strategies that facilitate access to contraception after termination of pregnancy

Review question

What strategies are effective at facilitating access to contraception after termination of pregnancy?

Introduction

The aim of this review is to determine the strategies that improve access to contraception following a termination of pregnancy.

PICO table

See Table 5 for a summary of the population, intervention, comparison and outcome (PICO) characteristics of this review.

Table 1: Summary of the protocol (PICO table)

Population	Termination of pregnancy services in OECD countries
Intervention	• Termination of pregnancy provider has necessary knowledge and skills to provide contraception • Immediate provision of contraception by termination of pregnancy provider • Full range of contraception options are available • Termination of pregnancy provider has funding to provide contraception
Comparison	• Termination of pregnancy provider has necessary knowledge and skills to provide contraception versus termination of pregnancy provider not skilled in contraception provision • Contraception provided by termination of pregnancy provider at the time of the termination or when the termination is determined to be complete versus contraception provided by termination of pregnancy provider at a later date • Contraception provided by termination of pregnancy provider at the time of the termination or when the termination is determined to be complete versus contraception provided by non-termination of pregnancy provider at a later date • Full range of contraceptive methods is available versus subset of contraceptive methods is available • Termination of pregnancy provider has funding to provide contraception versus termination of pregnancy provider has no specific funding for contraception
Outcome	**Critical outcomes** • Receipt of chosen method of contraception • Subsequent termination of pregnancy within 12 months • Continuation of contraception within 12 months **Important outcomes** • Patient satisfaction • Number who receive LARC rather than any contraception • Proportion who received contraception

LARC: Long-Acting Reversible Contraception; OECD: Organisation for Economic Co-operation and Development

Clinical evidence

Included studies

Only studies conducted from 2007 onwards were considered for this review question, as prior to this timeframe intra-uterine devices were not inserted in a medical termination setting, but rather by a contraceptive provider several weeks after the confirmed termination of pregnancy was complete. The committee wanted to focus on evidence where all contraceptive methods were available, especially long-acting reversible contraception of which intra-uterine devices are a subcategory.

Seventeen papers (n=9,076) were included in the review; 11 randomised controlled trials (RCTs; Bednarek 2011; Cowett 2018; Cremer 2011; Hognert 2016; Hohmann 2012; Korjamo 2017; Raymond 2016a; Raymond 2016b; Rocca 2018; Saav 2012; Shimoni 2011), 3 prospective cohort studies (Barros Pereira 2015; Madden 2011; Madden 2012), and 3 retrospective cohort studies (Cameron 2017; Fox 2011; Langston 2014).

One RCT and 1 retrospective cohort study compared services where termination of pregnancy (ToP) providers had the necessary knowledge and skills to provide contraception against services where ToP providers were not skilled in contraception provision (Cameron 2017; Rocca 2018); 10 RCTs, 1 prospective cohort study and 1 retrospective cohort study compared immediate provision (or as early as possible following medical ToP) of contraception from the ToP provider against contraception provided by the ToP provider at a later date (Barros Pereira 2015; Bednarek 2011; Cowett 2018; Cremer 2011; Fox 2011; Hognert 2016; Hohmann 2012; Korjamo 2017; Raymond 2016a; Raymond 2016b; Saav 2012; Shimoni 2011). Originally, non-randomised studies were only going to be included if there was insufficient RCT evidence. However, the 2 cohort studies (Barros Pereira 2015; Fox 2011) were included for this comparison, even though there was sufficient RCT evidence, for completeness, as they were the only additional non-randomised studies that met the inclusion criteria. Two prospective cohort studies compared immediate provision (or as early as possible following medical ToP) of contraception from the ToP provider against contraception from a different provider at a later date (Madden 2011; Madden 2012); 1 retrospective cohort study compared services where the full range of contraceptive options were available against services where only a subset of options were available (Langston 2014).

No studies compared services where the ToP provider has funding to provide contraception against services where there is no specific funding for contraception. None of the included studies reported subgroup data for any of the subgroups of interest.

The included studies are summarised in Table 2.

See the literature search strategy in appendix B and study selection flow chart in appendix C.

Excluded studies

Studies not included in this review with reasons for their exclusions are provided in appendix K.

Summary of clinical studies included in the evidence review

A summary of the studies that were included in this review are presented in Table 2.

Table 2: Summary of included studies

Study and setting	Population	Intervention/ comparison	Outcomes
Barros Pereira 2015 Prospective cohort study Portugal	n=119 Women having a medical termination of pregnancy up to 10 weeks' gestation opting for the etonogestrel implant	**Immediate:** Implant was inserted at the same appointment as mifepristone administration **Delayed:** Women were asked to arrange a family planning appointment for 4 weeks after the administration of mifepristone	• Receipt of chosen method of contraception • Continuation of contraception
Bednarek 2011 RCT USA	n=575 Women aged ≥18 years having uterine aspiration for induced or spontaneous abortion* between 5 and 12 weeks' gestation who wanted intrauterine contraception *Includes n=20 (3.5%) who were having uterine aspiration for spontaneous abortion; not considered indirect evidence due to the small percentage	**Immediate:** IUD was placed immediately after aspiration **Delayed:** IUD was placed at a follow-up visit 2-6 weeks after the aspiration	• Receipt of chosen method of contraception • Continuation of contraception
Cameron 2017 Retrospective cohort study UK	n=2,208 Inclusion criteria not formally reported. A review was undertaken of termination of pregnancy services at the Royal Infirmary of Edinburgh and a new specialist community sexual and reproductive health service between September 2012 and August 2013	**Hospital:** Some, but not all, clinicians working in the hospital services were trained in implant insertion **Community:** All clinicians working in the community service were trained in implant insertion	• Number who receive LARC rather than any contraception • Proportion who received contraception
Cowett 2018 RCT	n=148	**Immediate:** Etonogestrel implant was inserted	• Receipt of chosen method of contraception

Study and setting	Population	Intervention/ comparison	Outcomes
USA	Women having a termination of pregnancy between 14^{+0} and 23^{+5} weeks' gestation opting for the etonogestrel implant	immediately after D&E while the women was still sedated **Delayed:** Women were scheduled for an appointment to insert the etonogestrel implant at the clinic 2-4 weeks after the termination	• Continuation of contraception
Cremer 2011 RCT USA	n=215 Women aged ≥16 years having a surgical termination of pregnancy between 12 and 24 weeks' gestation opting for copper IUD	**Immediate:** IUD was placed within 15 minutes of the termination of pregnancy **Delayed:** IUD was placed at the postoperative visit, 2-4 weeks after the termination of pregnancy	• Receipt of chosen method of contraception • Continuation of contraception
Fox 2011 Retrospective cohort study USA	n=308 Women having surgical termination of pregnancy and opting for an IUD	**Immediate:** IUD was placed immediately after surgical termination of pregnancy. **Delayed:** IUD was placed at the post-surgical follow-up, 2-4 weeks after surgical termination of pregnancy.	• Receipt of chosen method of contraception • Continuation of contraception
Hognert 2016 RCT Sweden and Scotland	n=550 ≥18 years, opting for medical termination of pregnancy and the etonogestrel releasing implant; gestational age <64 days	**Immediate:** Etonogestrel-releasing implant inserted using local anaesthesia 1 hour after mifepristone **Delayed:** Etonogestrel-releasing implant inserted using local anaesthesia at the follow-up visit 2-3 weeks after mifepristone	• Receipt of chosen method of contraception • Subsequent termination of pregnancy • Continuation of contraception • Patient satisfaction
Hohmann 2012 RCT USA	n=88 Women aged at least 18 years old having D&E between 15^{+0} and 23^{+6} weeks opting for the LNG-IUS	**Immediate:** LNG-IUS was inserted immediately after D&E **Delayed:** LNG-IUS was inserted at the follow-up	• Receipt of chosen method of contraception • Continuation of contraception

Study and setting	Population	Intervention/ comparison	Outcomes
		appointment, 3-6 weeks after D&E	
Korjamo 2017 RCT Finland	n=267 Women aged ≥18 years requesting a medical termination of pregnancy and opting for the LNG-IUS	**Immediate:** LNG-IUS inserted after the medical termination of pregnancy, prior to leaving the hospital, for women 64-140 days gestation. **Early:** LNG-IUS inserted within 3 days of misoprostol, which was administered at home, for women ≤63 days gestation. **Delayed:** LNG-IUS inserted at the follow-up visit 2-4 weeks after medical termination of pregnancy.	• Receipt of chosen method of contraception • Subsequent termination of pregnancy • Continuation of contraception
Langston 2014 Retrospective cohort study USA	n=812 Women ≥18 years old having a vacuum aspiration for termination of pregnancy during the first trimester (up to 13^{+6} weeks' gestation)	**LARC immediately available:** Women could receive IUDs, implants, DMPA (occasionally unavailable due to popularity), oral contraceptives, condoms, the contraceptive patch or the vaginal ring on the same day as the termination, immediately following the procedure. **LARC not immediately available:** Women could receive oral contraceptives, condoms, the contraceptive patch or the vaginal ring on the same day as the termination, immediately following the procedure, but had to be referred to a family planning clinic for IUDs or DMPA; the implant was not available.	• Receipt of chosen method of contraception • Subsequent termination of pregnancy • Number who receive LARC rather than any contraception • Proportion who received contraception
Madden 2011	n=1,673	**Immediate:** Women who had a termination of	• Number who receive LARC rather than any contraception

Study and setting	Population	Intervention/ comparison	Outcomes
Prospective cohort study USA	Women aged 14-45 years old, who have been sexually active with a male partner in the last 6 months or anticipate sexual activity in the next 6 month, do not wish to become pregnant during the next year and interested in starting a new, reversible contraception method. Recent termination of pregnancy was not an inclusion criteria for the study but was for the current review.	pregnancy on the same day as they enrolled into CHOICE, or after enrolment into CHOICE, and received contraception on the same day as the termination **Delayed:** Women who received contraception the day after the termination of pregnancy or later	• Proportion who received contraception
Madden 2012 Prospective cohort study USA	n=243 Women aged 14-45 years old, who have been sexually active with a male partner in the last 6 months or anticipate sexual activity in the next 6 month, do not wish to become pregnant during the next year and interested in starting a new, reversible contraception method. Recent termination of pregnancy was not an inclusion criteria for the study but was for the current review.	**Immediate:** Women who had a termination of pregnancy on the same day as they enrolled into CHOICE, or after enrolment into CHOICE, and received contraception on the same day as the termination **Delayed:** Women who received contraception the day after the termination of pregnancy or later	• Continuation of contraception • Patient satisfaction
Raymond 2016a RCT USA and Mexico	n=476 Candidates for outpatient medical termination with mifepristone and misoprostol according to the study site standards opting for etonogestrel implant	**Quickstart:** implants containing 68mg etonogestrel inserted after mifepristone and before leaving the study site. **Afterstart:** implants containing 68mg etonogestrel inserted after termination of pregnancy was complete (specific timeframe not specified)	• Receipt of chosen method of contraception • Continuation of contraception • Patient satisfaction • Number who receive LARC rather than any contraception

Study and setting	Population	Intervention/ comparison	Outcomes
Raymond 2016b RCT USA and Mexico	n=461 Women who met sites criteria for outpatient medical termination with mifepristone and misoprostol and opting for DMPA	**Quickstart:** 150mg DMPA intramuscularly shortly after ingesting mifepristone **Afterstart:** 150mg DMPA intramuscularly after termination of pregnancy was complete (timeframe not specified)	• Receipt of chosen method of contraception • Continuation of contraception • Patient satisfaction • Number who receive LARC rather than any contraception
Rocca 2018 Cluster RCT USA	n=643 Women aged 18-25 years old who were sexually active, received contraceptive counselling and did not want to get pregnant within the next year	**Training intervention:** Staff completed a half-day training session including: the effectiveness of and eligibility for LARC, including same-day placement; patient-centred counselling skills and ethical issues specific to LARC; hands on IUD and implant training **Control:** Standard care - no further information reported	• Number who receive LARC rather than any contraception
Saav 2012 RCT Sweden	n=129 Women aged >18 years, requesting a medical termination of pregnancy ≤ 63 days gestation, opting for either the LNG-IUS or the Cu-IUD	**Early insertion:** LNG-IUS/Cu-IUD insertion occurred on day 5-9 after mifepristone treatment **Delayed insertion:** LNG-IUS/Cu-IUD insertion occurred on day 21-25 after mifepristone treatment	• Receipt of chosen method of contraception • Continuation of contraception
Shimoni 2011 RCT USA	n=156 Women requesting a medical termination of pregnancy ≤63 days gestation opting for copper IUD	**Early insertion:** Cu-IUD insertion occurred during the randomisation visit on day 7 after mifepristone treatment **Delayed insertion:** Cu-IUD insertion occurred on 4-6 weeks after mifepristone treatment	• Receipt of chosen method of contraception • Subsequent termination of pregnancy • Continuation of contraception

Cu-IUD: copper IUD; D&E: dilatation and evacuation; DMPA: depomedroxyprogesterone acetate; IUD: intrauterine device; LARC: long-acting reversible contraception; LNG-IUS: levonorgestrel-releasing intrauterine system; RCT: randomised controlled trial

See the full evidence tables in appendix D and the forest plots in appendix E.

Quality assessment of clinical studies included in the evidence review

See the clinical evidence profiles in appendix F.

Economic evidence

Included studies

A systematic review of the economic literature was conducted but no economic studies were identified which were applicable to this review question.

A single economic search was undertaken for all topics included in the scope of this guideline. Please see supplementary material 2 for details.

Excluded studies

No full-text copies of articles were requested for this review and so there is no excluded studies list.

Economic model

No economic modelling was undertaken for this review because the committee agreed that other topics were higher priorities for economic evaluation.

Evidence statements

Comparison 1. ToP provider has necessary knowledge and skills to provide contraception versus ToP provider not skilled in contraception provision

Critical outcomes

Receipt of chosen method of contraception

No evidence was identified to inform this outcome.

Subsequent termination of pregnancy within 12 months

No evidence was identified to inform this outcome.

Continuation of contraception within 12 months

No evidence was identified to inform this outcome.

Important outcomes

Patient satisfaction

No evidence was identified to inform this outcome.

Number who receive LARC rather than any contraception

RCT evidence did not detect a clinically important difference in the rate of women who received an implant or IUD between the ‘ToP provider has necessary knowledge and skills to provide contraception’ group and the ‘ToP provider not skilled in contraception provision’ group (1 RCT, n=643; RR=0.97 [95% CI 0.72, 1.31]; low

quality); however, there was uncertainty around the estimate. Non-RCT evidence showed a higher clinically important difference in the rate of women who received an implant, IUD, or DMPA in the 'ToP provider has necessary knowledge and skills to provide contraception' group compared with the 'ToP provider not skilled in contraception provision' group (1 observational study, n=2208; RR=1.28 [95% CI 1.16, 1.40]; very low quality).

Proportion who received contraception

Non-RCT evidence showed there was no clinically important difference between the rate of women who received contraception in the 'ToP provider has necessary knowledge and skills to provide contraception' group and the 'ToP provider not skilled in contraception provision' group (1 observational study, n=2,208; RR=1.14 [95% CI 1.10, 1.18]; very low quality).

Comparison 2. Contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete versus contraception provided by ToP provider at a later date

Critical outcomes

Receipt of chosen method of contraception – IUD after medical termination of pregnancy

RCT evidence showed there was no clinically important difference between the rate of women who wanted and received an IUD in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by ToP provider at a later date' group (3 RCTs, n=549; RR=1.16 [95% CI 1.09, 1.23]; high quality.

Receipt of chosen method of contraception – IUD after surgical termination of pregnancy

RCT evidence showed a higher clinically important difference in the rate of women who wanted and received an IUD in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (3 RCTs, n=822; low quality). The evidence was not pooled due to high heterogeneity (Bednarek 2011 RR 1.40 [95% CI 1.31, 1.50]; Cremer 2011 RR 3.05 [95% CI 2.19, 4.25]; Hohmann 2012 RR 2.17 [95% CI 1.57, 2.99]). Non-RCT evidence also showed there was a higher clinically important difference the rate of women who wanted and received an IUD the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (1 observational study, n=308; RR=4.17 [95% CI 2.84, 6.14]; very low quality).

Receipt of chosen method of contraception – implant after medical termination of pregnancy

RCT evidence showed there was either a higher clinically important difference or no clinically important difference in the rate of women who wanted and received an implant between, the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by ToP provider at a later date' (2 RCTs, n=1,014; very low quality). The evidence was not pooled due to high heterogeneity (Hognert 2016

RR=1.38 [95% CI 1.28, 1.49]; Raymond 2016a RR=1.13 [95% CI 1.03, 1.23]). Non-RCT evidence showed a higher clinically important difference in the rate of women who wanted and received an implant in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (1 observational study, n=119; RR=5.95 [95% CI 3.42, 10.34]; very low quality).

Receipt of chosen method of contraception – implant after surgical termination of pregnancy

RCT evidence showed a higher clinically important difference in the rate of women who wanted and received an implant in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (1 RCT, n=148; RR=2.32 [95% CI 1.79, 3.01]; high quality).

Receipt of chosen method of contraception – DMPA after medical termination of pregnancy

RCT evidence did not detect a clinically important difference in the rate of women who wanted and received DMPA between the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by ToP provider at a later date' group (1 RCT, n=461; RR=1.24 [95% CI 1.17, 1.33]; moderate quality); however, there was uncertainty around the estimate.

Subsequent termination of pregnancy within 12 months

RCT evidence showed a lower clinically important difference in the rate of women having a subsequent termination of pregnancy within 12 months in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (3 RCTs, n=958; RR=0.39 [95% CI 0.16, 0.95]; low quality).

Continuation of contraception within 12 months – medical termination of pregnancy

RCT evidence did not detect a clinically important difference in continuation of contraception within 12 months of termination of pregnancy between the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by ToP provider at a later date' group (6 RCTs, n=2,024; RR=1.21 [95% CI 1.13, 1.29]; low quality); however, there was uncertainty around the estimate.

Continuation of contraception within 12 months – surgical termination of pregnancy

RCT evidence showed there was either a higher clinically important difference or did not detect a clinically important difference in continuation of contraception within 12 months of termination of pregnancy between, the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by ToP provider at a later date' group (4 RCTs, n=1,024; very low quality). The evidence was not pooled due to high heterogeneity (Bednarek 2011 RR 1.24 [95% CI 1.09, 1.41]; Cowett 2018 RR 2.11 [95% CI 1.36, 3.27]; Cremer 2011 RR 2.48 [95% CI 1.68, 3.64]; Hohmann 2012 RR

1.35 [95% CI 0.85, 2.16]) and there was uncertainty around some of the estimates. Non-RCT evidence showed a higher clinically important difference in continuation of contraception within 12 months of termination of pregnancy in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (1 observational study, n=308; RR=1.65 [95% CI 1.09, 2.52]; very low quality).

Important outcomes

Patient satisfaction – preferred allocated time of insertion

RCT evidence showed a higher clinically important difference in the rate of women preferring their allocated insertion time in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (1 RCT, n=538; RR=3.33 [95% CI 2.56, 4.32]; moderate quality).

Patient satisfaction – with group assignment at enrolment

RCT evidence showed a higher clinically important difference in the rate of women who were 'pleased' (RR=1.55 [95% CI 1.40, 1.73]) with their assignment and there was a lower clinically important difference rates of women who were 'neutral' (RR=0.56 [95% CI 0.46, 0.69]) or 'disappointed' (RR=0.17 [95% CI 0.08, 0.33]) with their assignment in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (2 RCTs, n=937; high quality).

Patient satisfaction – with group assignment after termination completed

RCT evidence showed a lower clinically important difference in the rate of women who were 'neutral' (RR=0.34 [95% CI 0.26, 0.45]) or 'disappointed' (RR=0.07 [95% CI 0.02, 0.23]) with their assignment in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (2 RCTs, n=937; high quality). RCT evidence showed a higher clinically important difference in the rate of women who were 'pleased' with their assignment in the contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group compared with the 'contraception provided by ToP provider at a later date' group (2 RCTs, n=937; low quality). The evidence was not pooled due to high heterogeneity (Raymond 2016a RR 1.51 [95% CI 1.34, 1.70]; Raymond 2016b RR 1.94 [95% CI 1.64, 2.29]).

Patient satisfaction – with implant at 6 month follow-up

RCT evidence showed there was no clinically important difference between the rate of women who were 'very/fairly satisfied' (1 RCT, n=350; RR=1.06 [95% CI 0.93, 1.21]; moderate quality) in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by ToP provider at a later date' group. RCT evidence did not detect a clinically important difference in the rates of women who were 'neither satisfied or dissatisfied' (RR=0.85 [95% CI 0.46, 1.58]; very low quality) or 'fairly/very dissatisfied' (RR=0.86 [95% CI 0.55, 1.36]; very low quality) between the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by

ToP provider at a later date' group (1 RCT, n=350); however, there was uncertainty around the estimates.

Number who receive LARC rather than any contraception

RCT evidence showed there was no clinically important difference between the rate of women who received LARC in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by ToP provider at a later date' group (2 RCTs, n=936; RR=1.19 [95% CI 1.15, 1.24]; high quality).

Proportion who received contraception

No evidence was identified to inform this outcome.

Comparison 3. Contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete versus contraception provided by non-ToP provider at a later date

Critical outcomes

Receipt of chosen method of contraception

No evidence was identified to inform this outcome.

Subsequent termination of pregnancy

No evidence was identified to inform this outcome.

Continuation of contraception at 12 months

Non-RCT evidence showed there was no clinically important difference between continuation of contraception within 12 months of termination of pregnancy in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by non-ToP provider at a later date' group (1 observational study, n=243; RR=0.95 [95% CI 0.85, 1.06]; very low quality).

Important outcomes

Patient satisfaction

Non-RCT evidence showed there was no clinically important difference between the rate of women who were 'very satisfied' (1 observational study, n=243; RR=0.88 [95% CI 0.69, 1.11]; very low quality) in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by non-ToP provider at a later date' group (1 observational study, n=243; very low quality). Non-RCT evidence did not detect a clinically important difference between the rates of women who were 'somewhat satisfied' (RR=1.02 [95% CI 0.65, 1.62]), or 'not satisfied' (RR=1.31 [95% CI 0.82, 2.09]) between the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by non-ToP provider at a later date' group (1 observational study, n=243; very low quality); however, there was uncertainty around the estimates.

Number who receive LARC rather than any contraception

Non-RCT evidence showed there was no clinically important difference between the rate of women who received an IUD, implant or DMPA in the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by non-ToP provider at a later date' group (RR=1.18 [95% CI 1.13, 1.24]; very low quality).

Proportion who received contraception

Non-RCT evidence reported all women received contraception in both the 'contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete' group and the 'contraception provided by non-ToP provider at a later date' group; therefore differences between groups could not be estimated (1 observational study, n=1,673; very low quality).

Comparison 4. Full range of contraceptive methods is available versus subset of contraceptive methods is available

Critical outcomes

Receipt of chosen method of contraception – IUD

Non-RCT evidence showed a higher clinically important difference in the rate of women who wanted and received an implant in the 'full range of contraceptive methods is available' group compared with the 'subset of contraceptive methods is available' group (1 observational study; n=309; RR=2.67 [95% CI 2.09, 3.41]; very low quality).

Subsequent termination of pregnancy within 12 months

Non-RCT evidence showed a lower clinically important difference in the rate of women having a subsequent termination of pregnancy within 12 months in the 'full range of contraceptive methods is available' group compared with the 'subset of contraceptive methods is available' group (1 observational study, n=812; RR=0.57 [95% CI 0.40, 0.83]; very low quality).

Continuation of contraception within 12 months

No evidence was identified to inform this outcome.

Important outcomes

Patient satisfaction

No evidence was identified to inform this outcome.

Number who receive LARC rather than any contraception

Non-RCT evidence showed a higher clinically important difference in the rate of women who received an IUD, implant or DMPA in the 'full range of 'full range of contraceptive methods is available' group compared with the 'subset of contraceptive methods is available' group, both assuming that DMPA referrals received the injection (1 observational study, n=812; RR=2.31 [95% CI 1.89, 2.81]; very low quality) and did not receive the injection (1 observational study, n=812; RR=2.31 [95% CI 1.89, 2.81]; very low quality).

Proportion who received contraception

Non-RCT evidence showed a higher clinically important difference in the rate of women who received contraception in the 'full range of 'full range of contraceptive methods is available' group compared with the 'subset of contraceptive methods is available' group, both assuming that referrals received contraception (1 observational study, n=812; RR=1.33 [95% CI 1.23, 1.44]; very low quality) and did not receive contraception (1 observational study, n=812; RR=1.57 [95% CI 1.42, 1.73]; very low quality).

The committee's discussion of the evidence

Interpreting the evidence

The outcomes that matter most

This review question aimed to identify strategies that facilitate access to contraception following termination of pregnancy with the aim of improving sexual health and reducing subsequent unintended pregnancy and terminations. Therefore, critical outcomes were receipt of chosen method of contraception, subsequent termination of pregnancy within 12 months and continuation of contraception within 12 months. The committee prioritised receipt of chosen method of contraception due to the importance of women having a choice of contraceptive method. However, studies may not report whether the method of contraception received was the woman's preferred option so the committee agreed that the proportion of women who received any contraception should be included as an important outcome. The number of women who received long-acting reversible contraception was also included as an important outcome as these methods are more effective than other methods of contraception and, therefore, may be better at preventing future unintended pregnancies. Finally, patient satisfaction was selected as an important outcome as this may be affected by the availability and timing of contraception, and may impact continuation of contraception.

The quality of the evidence

The evidence in the pairwise comparisons was assessed using the GRADE methodology. Evidence for receipt of chosen method of contraception ranged from very low to high quality. The majority of the evidence for this outcome came from RCTs and the main reason this evidence was downgraded was due to inconsistency across studies and imprecision due to wide confidence intervals; however, there was also some evidence from observational studies. Evidence for subsequent termination of pregnancy within 12 months was very low or low quality due to wide confidence intervals caused by few events of interest, inadequate follow-up and, for one comparison, the observational nature of the studies. The evidence for continuation of contraception ranged from very low to low quality and the main reason evidence was downgraded was due to high rates of missing data; however, there was also some inconsistency across included studies, imprecision due to wide confidence intervals and evidence from observational studies. Evidence for patient satisfaction ranged from very low to high quality, but the majority of the evidence was moderate to high quality. The main reasons for downgrading evidence were high rates of missing data and wide confidence intervals; however, there was also some inconsistency across included studies and evidence from observational studies. The evidence for number of women who received long-acting reversible contraception ranged from very low to high quality but was mainly very low quality evidence from observational studies where cohorts were not comparable and/or representative of the wider population of women having a termination of pregnancy. Finally, evidence for the proportion of

women who received contraception was all of very low quality from observational studies where cohorts were not comparable and/or representative of the wider population of women having a termination of pregnancy.

Benefits and harms

There was evidence of higher rates of receipt of chosen method of contraception and greater continuation of contraception within 12 months when contraception was provided by the termination of pregnancy provider at the time of, or immediately after, surgical termination of pregnancy compared with at a later date. For medical termination of pregnancy, receipt of chosen method of contraception was either higher when contraception was provided at the time of termination of pregnancy, or as soon as possible after expulsion, compared with contraception provided at a later date, or rates were the same between arms, and there was no difference in continuation of contraception. There was evidence that rates of subsequent termination of pregnancy within 12 months were lower when contraception was provided immediately, or as soon as possible after termination of pregnancy and women were more satisfied, compared with when contraception was provided at a later date. There was some evidence that the following outcomes did not differ between women who received contraception from the termination provider on the day of the termination and women who received contraception at a later date from a different provider: continuation of contraception, rate of women receiving long-acting reversible contraception, or patient satisfaction. However, this was observational evidence collected from the contraceptive CHOICE project and all women received contraception irrespective of timing relative to the termination, which the committee agreed was not representative of the wider termination of pregnancy population. Therefore, based on the evidence reviewed, the committee agreed that contraception should be available as soon as possible following a termination of pregnancy. For women choosing an intrauterine method of contraception (IUD) this can be fitted at the same time as surgical termination of pregnancy, immediately after aspiration, or as soon as possible after the pregnancy has been expelled for medical termination of pregnancy; all other contraceptive methods can be provided on the same day as surgical termination of pregnancy or mifepristone administration for medical termination of pregnancy.

There was observational evidence that having termination of pregnancy providers skilled in contraception provision increased the number of women who received long-acting reversible contraception compared with services where providers were not skilled in contraception provision. RCT evidence showed no difference between skilled and non-skilled providers for this outcome; however, the study came from the USA and, whilst providers were skilled in contraception provision, services did not have appropriate funding to provide contraception. Therefore, the committee agreed that the observational evidence, which came from Scotland where contraception was available, was more applicable to the UK setting. Further, there was observational evidence that having the full range of contraceptive methods available, including long-acting reversible contraception, increased receipt of chosen method of contraception, long-acting reversible contraception, or any contraception and reduced the rate of subsequent termination of pregnancy within 12 months, compared with when long-acting reversible contraception was not available. Without skilled providers, who are needed to administer a number of long-acting methods of contraception, and the full range of contraceptive methods being available, it may not be possible for women to receive their preferred choice of contraception immediately. Given the strong evidence outlined above that immediate provision of contraception improved a number of outcomes, and the importance of providing women with a choice, the committee made a strong recommendation that skilled providers and the

full range of contraceptive methods are available, although the evidence for these comparisons was not strong.

There was no evidence available that compared services where specific funding was available for contraception provision with services where no specific funding was provided for contraception and NICE are not commissioned to specify how services should be funded. Therefore, the committee could not recommend that termination of pregnancy services receive funding for contraception provision. However, the committee noted that in the NHS, no specific funding is given for contraception; it is assumed that the provision of contraception is encompassed within the cost of providing a termination of pregnancy, if it is given at the time of termination but there is no financial provision for a follow-up point to provide contraception at a later date. In the independent sector, financial provision only covers the cost of the contraception, but not any costs associated with administering contraception of arranging a follow-up appointment. The committee agreed that the current funding arrangements can make it difficult to provide the contraceptive method of choice for all women, particularly if another appointment is needed, as is the case with women requesting an IUD after medical termination of pregnancy. This is supported by the evidence reviewed above that there is no difference in the rate of women receiving long-acting reversible contraception, or any contraception, if providers are skilled to administer contraception, compared with non-skilled providers, but do not receive specific funding for this purpose (Rocca 2018). Whilst not considered as part of the current review, the committee are aware that Public Health England (2014) outlined the commissioning responsibility for sexual health, reproductive health and HIV and agreed that it is the responsibility of clinical commissioning groups to ensure that termination of pregnancy services are commissioned that can deliver contraception provision as recommended in this guideline. The committee also noted that under current commissioning frameworks, some women choosing an IUD for contraception following termination of pregnancy need to obtain a prescription for an IUD from their GP, collect the IUD from a pharmacy before their termination, and bring the IUD to the appointment so that it can be fitted at the time of the termination. The committee agreed that recommending providers ensure IUDs are available to be inserted at the same time as surgical terminations and as soon as possible after medical terminations should shift the responsibility of sourcing contraception to the termination of pregnancy service, rather than the woman, and streamline the process.

As there was sufficient evidence to inform the recommendations, the committee decided to prioritise other areas addressed by the guideline for future research and therefore made no research recommendations regarding strategies that are effective at facilitating access to contraception after termination of pregnancy.

Cost effectiveness and resource use

A systematic review of the economic literature was conducted but no relevant studies were identified which were applicable to this review question.

The committee discussed the potential costs and saving of recommendations and agreed that there will be some increased costs associated with training providers to administer the full range of contraceptive options, but these would be at least partially offset by savings associated with streamlining services and providing contraception at the same time as the termination of pregnancy, as opposed to having to arrange separate follow-up appointments to provide contraception, and lower rates of subsequent termination of pregnancy. Overall the committee did not consider there were likely to be significant resource implications from making these recommendations, but there will be a change in who is funding contraception, with

reduced contraception being providing as part of local authorities commissioning after termination of pregnancy and greater provision by clinical commissioning groups as part of the termination of pregnancy process.

Simultaneous versus delayed insertion of contraceptive implant or depot injection

Review question

For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

Introduction

The aim of this review is to determine whether the efficacy of mifepristone is affected by the concomitant administration of a progestogen-only contraceptive implant or depot injection.

Summary of the protocol

See Table 5 for a summary of the population, intervention, comparison and outcome (PICO) characteristics of this review.

Table 3: Summary of the protocol (PICO table)

Population	Women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection
Intervention	Simultaneous administration of mifepristone + progestogen-only contraceptive implant / depot injection
Comparison	Administration of progestogen-only contraceptive implant / depot injection more than 24 hours after mifepristone administration
Outcome	**Critical outcomes:** • Ongoing pregnancy • Incomplete abortion with the need for surgical intervention • Patient acceptability/ satisfaction **Important outcomes:** • Complete abortion without the need for surgical intervention • Induction to abortion interval • Subsequent unintended pregnancy

For further details see the full review protocol in appendix A.

Clinical evidence

Included studies

Only studies conducted from 1985 onwards were considered for this review question, as mifepristone was made available in the UK in 1991 and evidence to support the use of mifepristone in practice is unlikely to be more than 5 years before its licensing in 1991.

Two RCTs compared simultaneous mifepristone and etonorgestrel implant administration to etonorgestrel implant administration more than 24 hours after mifepristone dosing (Hognert 2016; Raymond 2016a)

One RCT compared simultaneous mifepristone and medroxyprogesterone depot injection administration to medroxyprogesterone depot injection administration more than 24 hours after mifepristone dosing (Raymond 2016b)

The included studies are summarised in Table 4.

See the literature search strategy in appendix B and study selection flow chart in appendix C.

Excluded studies

Studies not included in this review with reasons for their exclusions are provided in appendix K.

Summary of clinical studies included in the evidence review

A summary of the studies that were included in this review are presented in Table 4.

Table 4: Summary of included studies

Study and setting	Population	Intervention/ comparison	Outcomes	Comments
Hognert 2016 RCT Sweden and Scotland	n=550 Age 18 years or above, opting for medical termination and post-termination contraception with the etonorgestrel releasing implant Gestational age <64 days	Mifepristone 200mg followed by misoprostol 800micrograms vaginally 24-48 hours later **Immediate administration of implant:** 1 hour after mifepristone ingested **Delayed administration of implant:** 2-3 weeks after mifepristone ingested	• Incomplete abortion with need for surgical intervention • Patient acceptability • Patient satisfaction • Complete abortion without the need for surgical intervention • Subsequent unintended pregnancy	
Raymond 2016a RCT Mexico and USA	n=476 Women who intended to take mifepristone on the day of study enrolment, did not have recognised nonviable pregnancies, desired etonorgestrel implants for post-termination contraception,	Mifepristone 200mg followed by misoprostol 800micrograms buccally 24-48 hours later **Immediate administration of implant:** 68mg etonorgestrel inserted after ingesting mifepristone and	• Ongoing pregnancy • Incomplete abortion with need for surgical intervention • Patient satisfaction • Complete abortion without the need for surgical intervention	See upper limit of gestational age in the population column

Study and setting	Population	Intervention/ comparison	Outcomes	Comments
	and did not plan to use hormonal contraceptives before implant insertion. No upper limit on gestational age, however 16.2% of population had a gestational age of 64 days or older	before leaving the study site **Delayed administration of implant:** 68mg etonorgestrel inserted after termination was complete (timeframe not specified)	• Subsequent unintended pregnancy	
Raymond 2016b RCT Mexico and USA	n=461 Women who met participating sites' criteria for outpatient medical termination with mifepristone and misoprostol and desired DMPA for contraception Upper limit of gestational age was 75 days in the immediate group and 73 days in the delayed group	Mifepristone 200mg followed by misoprostol 800mcg buccally 24-48 hours later **Immediate administration of depot injection:** 150mg DMPA intramuscularly shortly after ingesting mifepristone **Delayed administration of depot injection:** 150mg DMPA intramuscularly after termination was complete (timeframe not specified)	• Ongoing pregnancy • Incomplete abortion with need for surgical intervention • Patient satisfaction • Complete abortion without the need for surgical intervention • Subsequent unintended pregnancy	See upper limit of gestational age in the population column

DMPA: Depot medroxyprogesterone acetate; mcg: micrograms; RCT: randomised controlled trial

See the full evidence tables in appendix D and the forest plots in appendix E.

Quality assessment of clinical studies included in the evidence review

See the clinical evidence profiles in appendix F.

Economic evidence

Included studies

A systematic review of the economic literature was conducted but no economic studies were identified which were applicable to this review question.

A single economic search was undertaken for all topics included in the scope of this guideline. Please see supplementary material 2 for details.

Excluded studies

No full-text copies of articles were requested for this review and so there is no excluded studies list.

Economic model

Economic modelling which combined both review questions for 'Simultaneous versus delayed insertion' and 'Timing of intrauterine contraceptive device insertion' in this evidence report was undertaken. See economic analysis in appendix J.

Evidence statements

Comparison 1. Simultaneous administration of mifepristone and etonorgestrel implant versus administration of etonorgestrel implant more than 24 hours after mifepristone

Critical outcomes

Ongoing pregnancy

RCT evidence did not detect a clinically important difference in the rate of ongoing pregnancy between the simultaneous administration of mifepristone and the etonorgestrel implant group and the etonorgestrel implant administration more than 24 hours after mifepristone group (1 RCT, n=463; RR= 1.02 [95% CI 0.15, 7.19]; low quality); however, there was uncertainty around the estimate.

Incomplete abortion with the need for surgical intervention

RCT evidence did not detect a clinically important difference in the rate of incomplete abortion with the need for surgical intervention between the simultaneous administration of mifepristone and the etonorgestrel implant group and the etonorgestrel implant administration more than 24 hours after mifepristone group (2 RCTs, n=987; RR= 1.25 [95% CI 0.7, 2.25]; low quality); however, there was uncertainty around the estimate.

Patient acceptability/ satisfaction

Patient acceptability defined as "preferring the allocated time of insertion"

RCT evidence showed a higher clinically important difference in the rate of women "preferring the allocated time of insertion" in the simultaneous administration of mifepristone and the etonorgestrel implant group compared to the etonorgestrel implant administration more than 24 hours after mifepristone group (1 RCT, n=538; RR= 1.57 [95% CI 1.33, 1.86]; high quality).

Patient satisfaction with group allocation defined as "pleased" at enrolment

RCT evidence showed a higher clinically important difference in the rate of women "pleased" at enrolment in the simultaneous administration of mifepristone and the etonorgestrel implant group compared to the etonorgestrel implant administration more than 24 hours after mifepristone group (1 RCT, n=476; RR= 1.47 [95% CI 1.29, 1.69]; high quality).

Patient satisfaction with group allocation defined as “pleased” after termination determined to be complete

RCT evidence showed a higher clinically important difference in the rate of women “pleased” after the termination was determined to be complete in the simultaneous administration of mifepristone and the etonorgestrel implant group compared to the etonorgestrel implant administration more than 24 hours after mifepristone group (1 RCT, n=464; RR= 1.5 [95% CI 1.34, 1.68]; moderate quality).

Patient satisfaction with group allocation defined as “very satisfied/fairly satisfied” at 3-months post etonorgestrel implant insertion

RCT evidence did not detect a clinically important difference in the rate of women “very satisfied/fairly satisfied” 3 months after the etonorgestrel implant insertion between the simultaneous administration of mifepristone and the etonorgestrel implant group and the etonorgestrel implant administration more than 24 hours after mifepristone group (1 RCT, n=403; RR= 1.2 [95% CI 1.06, 1.37]; very low quality); however, there was uncertainty around the estimate.

Patient satisfaction with group allocation defined as “very satisfied/fairly satisfied” at 6-months post etonorgestrel implant insertion

RCT evidence showed there was no clinically important difference between the rate of women “very satisfied/fairly satisfied” 6 months after the etonorgestrel implant insertion in the simultaneous administration of mifepristone and the etonorgestrel implant group and the etonorgestrel implant administration more than 24 hours after mifepristone group (1 RCT, n=350; RR= 1.06 [95% CI 0.93, 1.21]; low quality).

Important outcomes

Complete abortion without the need for surgical intervention

RCT evidence did not detect a clinically important difference in the rate of complete abortion without the need for surgical intervention between the simultaneous administration of mifepristone and the etonorgestrel implant group and the etonorgestrel implant administration more than 24 hours after mifepristone group (2 RCTs, n=987; RR= 0.99 [95% CI 0.96, 1.02]; moderate quality); however, there was uncertainty around the estimate.

Induction to abortion interval

No evidence was identified to inform this outcome.

Subsequent unintended pregnancy

Subsequent unintended pregnancy at 3-months follow-up

RCT evidence did not detect a clinically important difference in the rate of subsequent unintended pregnancy at 3 months between the simultaneous administration of mifepristone and the etonorgestrel implant group and the etonorgestrel implant administration more than 24 hours after mifepristone group (1 RCT, n=538; RR= 0.1 [95% CI 0.01, 1.94]; very low quality); however, there was uncertainty around the estimate.

Subsequent unintended pregnancy at 6-months follow-up

RCT evidence showed a lower clinically important difference in the rate of subsequent unintended pregnancy at 6 months in the simultaneous administration of

mifepristone and the etonorgestrel implant group compared to the etonorgestrel implant administration more than 24 hours after mifepristone group (2 RCTs, n=964; RR= 0.22 [95% CI 0.6, 0.78]; low quality).

Comparison 2. Simultaneous administration of mifepristone and medroxyprogesterone depot injection versus administration of medroxyprogesterone depot injection more than 24 hours after mifepristone

Critical outcomes

Ongoing pregnancy

RCT evidence did not detect a clinically important difference in the rate of ongoing pregnancy between the simultaneous administration of mifepristone and the medroxyprogesterone depot injection group and the medroxyprogesterone depot injection administration more than 24 hours after mifepristone group (1 RCT, n=446; RR= 4.11 [95% CI 0.88, 19.14]; moderate quality); however, there was uncertainty around the estimate.

Incomplete abortion with the need for surgical intervention

RCT evidence did not detect a clinically important difference in the rate of incomplete abortion with the need for surgical intervention between the simultaneous administration of mifepristone and the medroxyprogesterone depot injection group and the medroxyprogesterone depot injection administration more than 24 hours after mifepristone group (1 RCT, n=446; RR= 1.2 [95% CI 0.57, 2.53]; low quality); however, there was uncertainty around the estimate.

Patient acceptability/ satisfaction

Patient satisfaction with group allocation defined as “pleased” at enrolment

RCT evidence showed a higher clinically important difference in the rate of women “pleased” at enrolment in the simultaneous administration of mifepristone and the medroxyprogesterone depot injection group compared to the medroxyprogesterone depot injection administration more than 24 hours after mifepristone group (1 RCT, n=461; RR= 1.65 [95% CI 1.4, 1.95]; high quality).

Patient satisfaction with group allocation defined as “pleased” after termination determined to be complete

RCT evidence showed a higher clinically important difference in the rate of women “pleased” after the termination was determined to be complete in the simultaneous administration of mifepristone and the medroxyprogesterone depot injection group compared to the medroxyprogesterone depot injection administration more than 24 hours after mifepristone group (1 RCT, n=432; RR= 1.77 [95% CI 1.51, 2.08]; moderate quality).

Important outcomes

Complete abortion without the need for surgical intervention

RCT evidence did not detect a clinically important difference in the rate of complete abortion without the need for surgical intervention between the simultaneous administration of mifepristone and the medroxyprogesterone depot injection group and the medroxyprogesterone depot injection administration more than 24 hours

after mifepristone group (1 RCT, n=446; RR= 0.99 [95% CI 0.94, 1.04]; low quality); however, there was uncertainty around the estimate.

Induction to abortion interval

No evidence was identified to inform this outcome.

Subsequent unintended pregnancy

Subsequent unintended pregnancy at 6-months follow-up

RCT evidence did not detect a clinically important difference in the rate of subsequent unintended pregnancy at 6 months d between the simultaneous administration of mifepristone and the medroxyprogesterone depot injection group and the medroxyprogesterone depot injection administration more than 24 hours after mifepristone group (1 RCT, n=430; RR= 0.73 [95% CI 0.23, 2.26]; low quality); however, there was uncertainty around the estimate.

The committee's discussion of the evidence

Interpreting the evidence

The outcomes that matter most

The committee agreed that ongoing pregnancy, incomplete abortion with the need for surgical intervention, and patient acceptability/ satisfaction were the critical outcomes for decision making. In addition, the committee also agreed that ongoing pregnancy was of upmost importance, as the woman would need to re-make the decision to terminate the pregnancy in addition to undergoing further interventions seen with other outcomes.

Complete abortion without the need for surgical intervention, induction to abortion interval, and subsequent unintended pregnancy were considered important outcomes.

No evidence was found on the important outcome of induction to abortion interval.

The quality of the evidence

The evidence in the pairwise comparisons was assessed using the GRADE methodology. For the comparison of simultaneous administration of mifepristone and etonogestrel implant with delayed administration of etonogestrel implant the evidence ranged from very low to high quality across the outcomes of interest. For the comparison of simultaneous administration of mifepristone and depot medroxyprogesterone acetate intramuscular injection versus delayed administration of depot medroxyprogesterone acetate intramuscular injection the evidence ranged from low to high quality across the outcomes of interest.

The evidence was most often downgraded because of uncertainty around the risk estimate due to the low adverse event rate in termination of pregnancy. Additionally, for the subjective outcome of patient satisfaction the quality of evidence was downgraded due to the unblinded design of the studies included in this review.

For outcomes that required longer follow-up, the quality of evidence was often downgraded because of a high rate of attrition. The committee discussed that this is a common problem in termination of pregnancy studies as the intervention is acute in a cohort of a generally healthy population requiring minimal follow-up.

Only one study was included in this review on immediate versus delayed administration of depot medroxyprogesterone acetate intramuscular injection after ingestion of mifepristone. For ongoing pregnancy there was no clinically important difference between interventions; however, the committee were concerned that the study may have been underpowered to detect a difference as this is a rare event and was only based on one study. Based on their experience, the committee thought there may be a difference in effectiveness, with higher ongoing pregnancy with immediate compared with delayed administration, and, agreed that the potential difference could not be ignored because of the criticality of the outcome and impact on the woman.

Benefits and harms

In women undergoing medical termination of pregnancy, the committee agreed that for women who choose etonogestrel implant, immediate administration should be offered after mifepristone ingestion, whereas women choosing depot medroxyprogesterone acetate intramuscular injection should be considered for immediate administration after mifepristone after outlining the potential risk of ongoing pregnancy with the woman.

The evidence for etonogestrel implant showed that there were lower clinically important rates of subsequent unintended pregnancy at 6 months and higher rates of patient acceptability at the time of enrolment and after the termination was complete in women administered an etonogestrel implant immediately after mifepristone ingestion compared to delayed administration. It was unclear whether or not there were clinically important differences between the groups in the rates of ongoing pregnancy, incomplete abortion with the need for surgical intervention, complete abortion without the need for surgical intervention and subsequent unintended pregnancy at 3 months.The committee discussed that the absence of difference between the two groups in patient satisfaction at 6 months was most likely due to problematic implants being taken out by the longer follow-up time frame and further losses to follow-up at 6 months.

The evidence for depot medroxyprogesterone acetate intramuscular injection showed higher clinically important rates of patient satisfaction at enrolment and group allocation with immediate administration compared to delayed administration after mifepristone ingestion. Additionally, the evidence showed that it was unclear whether or not there were clinically important differences in the rate of incomplete abortion with the need for surgical intervention, complete abortion without the need for surgical intervention and subsequent unintended pregnancy between the two interventions. There was also uncertainty around the potentially higher rate of ongoing pregnancy with the immediate administration compared to delayed administration of depot medroxyprogesterone acetate intramuscular injection. The criticality of this outcome and the potential psychological impact on the woman of having to make the decision for a second time to undergo a termination of pregnancy was highlighted by the committee. In addition, the committee discussed that although the higher rate of ongoing pregnancy was only seen in one study, confined only to this outcome, and at the 90% CI and not the 95% CI that the risk difference of approximately 3% in absolute value between the two groups was an added concern. The committee agreed that a difference of 3% in ongoing pregnancy was deemed significant and although significant uncertainty surrounded the RR of the single study that the result could not be ignored in view of the criticality of the outcome. The committee therefore agreed that consideration of immediate administration of depot medroxyprogesterone acetate intramuscular injection should only be made after discussing the potential small risk of ongoing pregnancy with the woman.

The committee discussed the importance of recommending that depot medroxyprogesterone acetate injection was limited to the intra-muscular administration and did not extend to the sub-cutaneous preparation available in the UK as Syana Press®. Studies specifically investigating the sub-cutaneous preparation would need to be conducted to write recommendations on its immediate use after ingestion of mifepristone.

Despite the limited evidence, the committee decided to prioritise other areas addressed by the guideline for future research and therefore made no research recommendations regarding the timing of progestogen-only contraceptive implant or depot injection administration relative to mifepristone for women who are having a medical termination of pregnancy and plan to use such contraception.

Cost effectiveness and resource use

A systematic review of the economic literature was conducted but no relevant studies were identified which were applicable to this review question. Given the potential for a large resource impact from recommendations for this topic bespoke economic modelling was performed to assess cost effectiveness.

Based on NHS reference costs and assumptions on resource use made in NICE (2014) CG30: Long-acting reversible contraception, the model estimated that simultaneous administration of either etonogestrel implant or depot medroxyprogesterone acetate injection at the termination setting was less expensive per person than delayed administration at the person's GP. The amount saved per person was approximately £80, when only the costs of administration were considered. When the costs of clinical complications and subsequent pregnancies were considered this saving reduced to £71 and £61 for etonogestrel implant and depot medroxyprogesterone acetate injection respectively. This was a result of the higher rate of continued pregnancies and incomplete terminations in the base case. A secondary analysis included costs of implementation at termination settings which did not already provide contraception services. Given the relatively large number of people who would use this service a cost of implementation, greater than was considered feasible, was needed before simultaneous administration was no longer cost saving.

Whilst the model did not explicitly consider quality of life given the difficulties in incorporating QALYs in this clinical area it was noted that women's' preference strongly favoured simultaneous administration for both etonogestrel implant and depot medroxyprogesterone acetate injection. Based on this the committee concluded strongly that quality of life would be at least equal but most likely greater in the simultaneous administration group. It was therefore considered given the robust evidence around simultaneous administration being cost saving that it could be considered the dominant (cost saving and health improving) intervention.

Timing of intrauterine contraceptive device insertion

Review question

For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

Introduction

The aim of this review is to determine the optimal timing to safely insert an intrauterine contraceptive device in women who have had a medical termination of pregnancy.

Summary of the protocol

See Table 5 for a summary of the population, intervention, comparison and outcome (PICO) characteristics of this review.

Table 5: Summary of the protocol (PICO table)

Population	Women who are having medical termination of pregnancy and who have requested an intrauterine contraceptive device: • Levonorgestrel-releasing intrauterine system (LNG-IUS) • Copper intrauterine contraceptive device
Intervention	• Immediate insertion on day of termination of pregnancy • Early insertion (≤7 days since expulsion, but not inclusive of immediate expulsion) • Delayed insertion (>7 days since expulsions)
Comparison	Comparisons of any of the below timings of the insertion of an intrauterine contraceptive device: • Immediate insertion on day of termination of pregnancy • Early insertion (≤7 days since expulsion, but not inclusive of immediate expulsion) • Delayed insertion (>7 days since expulsions)
Outcome	**Critical outcomes:** • Expulsion of IUD/IUS • Continuation of IUD/IUS • Uterine perforation **Important outcomes:** • Uptake rate of IUD/IUS • Patient acceptability/ satisfaction • Infection within first month of the IUD/IUS insertion **Outcome of limited importance:** • • Subsequent pregnancy within 1 year of the IUD/IUS insertion

IUD: intrauterine device; IUS: intrauterine system; LNG/IUS: Levonorgestrel-releasing intrauterine system

For further details see the full review protocol in appendix A.

Clinical evidence

Included studies

Only studies conducted from 2007 onwards were considered for this review question, as prior to this timeframe intrauterine devices were not inserted in a medical termination setting, but rather by a contraceptive provider several weeks after the confirmed termination of pregnancy was complete.

Three RCTs published in 5 articles were included in this evidence review. The RCTs compared early/immediate insertion versus delayed insertion of levonorgestrel-releasing intrauterine system (LNG-IUS) after medical termination of pregnancy (Korjamo 2017a; Korjamo 2017b; Korjamo 2017c; Saav 2012) or early insertion versus delayed insertion of copper intrauterine device (IUD) (Saav 2012; Shimoni 2011) after medical termination of pregnancy.

The included studies are summarised in Table 6.

See the literature search strategy in appendix B and study selection flow chart in appendix C.

Excluded studies

Studies not included in this review with reasons for their exclusions are provided in appendix K.

Summary of clinical studies included in the evidence review

A summary of the studies that were included in this review are presented in Table 6.

Table 6: Summary of included studies

Study and setting	Population	Intervention/ comparison	Outcomes
Korjamo 2017a; Korjamo 2017b; Korjamo 2017c RCT Finland	n=264 Women aged ≥18 years requesting a medical termination of pregnancy and planning to use the LNG-IUS for contraception post-termination. Gestational age ≤ 140 days	**Medical termination procedure:** All terminations were carried out according to current Finnish national guidelines; details of procedures not reported. **Immediate insertion:** LNG-IUS inserted after the medical termination of pregnancy, prior to leaving the hospital, for women 64-140 days gestation. **Early insertion:** LNG-IUS inserted within 3 days of misoprostol, which was administered at home, for women ≤63 days gestation.	• Expulsion of IUD • Continuation of IUD (1 year) • Uterine perforation • Uptake rate of IUD • Infection within first month of the IUD insertion (reported within 3 months) • Subsequent pregnancy within 1 year of the IUD insertion

Study and setting	Population	Intervention/ comparison	Outcomes
		Delayed insertion: LNG-IUS inserted at the follow-up visit 2-4 weeks after the medical termination of pregnancy.	
Saav 2012 RCT Sweden	n=129 Women who were of general good health, proficient in Swedish, aged >18 years, requesting a medical termination of pregnancy ≤ 63 days gestation, planning to use either the LNG-IUS or the Cu-IUD for contraception post-termination, and not planning on having children within the next 12 months. A positive screen for bacterial vaginosis or Chlamydia infection did not preclude participation in the study, but was treated.	**Medical termination procedure**: Day 1: 200mg oral mifepristone at the clinic. 36-48 hours later: 800micrograms misoprostol vaginally, self-administered at the clinic or at home, depending on the woman's preference. **Early insertion:** LNG-IUS/Cu-IUD insertion on day 5-9 after mifepristone treatment. **Delayed insertion:** LNG-IUS/Cu-IUD insertion on day 21-25 after mifepristone treatment.	• Expulsion of IUD • Continuation of IUD (6 months) • Uterine perforation • Uptake rate of IUD • Infection within first month of the IUD insertion (pelvic) • Subsequent pregnancy within 1 year of the IUD insertion
Shimoni 2011 RCT USA	n=156 Healthy women with a working telephone number who had requested a medical termination of pregnancy up to 63 days gestation (based on the last menstrual period), were English- or Spanish-	**Medical termination procedure**: Day 1: 200mg oral mifepristone at the office. Twenty-four-48 hours later: 800mcg misoprostol in the buccal mucosa, self-administered at home. **Early insertion:** Cu-IUD insertion during the randomisation visit on day 7 after mifepristone treatment.	• Expulsion of IUD • Continuation of IUD (6 months) • Uterine perforation • Uptake rate of IUD • Infection within first month of the IUD insertion (serious) • Subsequent pregnancy within 1 year of the IUD insertion

Study and setting	Population	Intervention/ comparison	Outcomes
	speaking, planned to stay in the area for the following 6 months, and wanted a copper IUD for contraception for ≥ 6 months.	**Delayed insertion:** Cu-IUD insertion 4-6 weeks after mifepristone treatment.	

Cu-IUD: Copper intrauterine device; IUD: Intrauterine device, LNG-IUS: Levonorgestrel-releasing intrauterine system; mcg: micrograms; RCT: Randomised controlled trial;

See the full evidence tables in appendix D and the forest plots in appendix E.

Quality assessment of clinical studies included in the evidence review

See the clinical evidence profiles in appendix F.

Economic evidence

Included studies

A systematic review of the economic literature was conducted but no economic studies were identified which were applicable to this review question.

A single economic search was undertaken for all topics included in the scope of this guideline. Please see supplementary material 2 for details.

Excluded studies

No full-text copies of articles were requested for this review and so there is no excluded studies list.

Economic model

Economic modelling which combined both review questions for 'Simultaneous versus delayed insertion' and 'Timing of intrauterine contraceptive device insertion' in this evidence report was undertaken. See economic analysis in appendix J.

Evidence statements

Critical outcomes

IUD/IUS expulsion rate

RCT evidence did not detect a clinically important difference in the IUD/IUS expulsion rate at ≤ 9 weeks' gestation between early or delayed IUD/IUS insertion groups for the LNG-IUS (2 RCTs, n=169; RR= 1.25 [95% CI 0.56, 2.82]; very low quality) or the copper IUD (2 RCTs, n=189; RR= 1.3 [95% CI 0.53, 3.17]; very low quality); however, there was uncertainty around the estimate. At 9^{+1} to 12^{+0} weeks' gestation there was a higher clinically important difference in LNG-IUS expulsion rate in the immediate than in the delayed insertion group (1 RCT, n=101; RR= 2.78 [95% CI 1.19, 6.47]; moderate quality). At 12^{+1} to 20^{+0} weeks' gestation RCT evidence did not detect a clinically important difference in LNG-IUS expulsion rate between the

immediate and delayed insertion groups (1 RCT, n=55; RR= 5.19 [95% CI 0.65, 41.54]; low quality); however, there was uncertainty around the estimate.

Continuation of IUD/IUS use

RCT evidence did not detect a clinically important difference in continuation of the IUD/IUS use at ≤ 9 weeks' gestation between early or delayed IUD/IUS insertion groups for the LNG-IUS (2 RCTs, n=169; RR= 1.02 [95% CI 0.6, 1.73]; very low quality) or the copper IUD (2 RCTs, n=211; RR= 1.14 [95% CI 0.94, 1.37]; low quality); however, there was uncertainty around the estimate. At 9^{+1} to 12^{+0} weeks' gestation (1 RCT, n=101; RR= 1.63 [95% CI 1.12, 2.38]; moderate quality) and at 12^{+1} to 20^{+0} weeks' gestation (1 RCT, n=55; RR= 2.22 [95% CI 1.08, 4.59]; moderate quality) there was a higher clinically important difference in the LNG-IUS continuation rates in the immediate than in the delayed insertion group.

Uterine perforation

RCT evidence reported no events of uterine perforation in either the early or delayed IUD insertion groups at ≤ 9 weeks' gestation for the LNG-IUS (2 RCTs, n=169; low quality) or the copper IUD (2 RCTs, n=189; low quality), at 9^{+1} to 12^{+0} weeks' gestation for the LNG-IUS (1 RCT, n=101; moderate quality), or at 12^{+1} to 20^{+0} weeks' gestation for the LNG-IUS (1 RCT, n=55; moderate quality); therefore, differences between groups could not be estimated.

Important outcomes

Uptake of IUD/IUS

RCT evidence showed there were no clinically important differences in the uptake rate at ≤ 9 weeks' gestation between the early and delayed IUS insertion groups for the LNG-IUS (2 RCTs, n=237; RR= 1.07 [95% CI 0.99, 1.17]; high quality), whereas there was a higher clinically important difference in the uptake rates in the early compared with the delayed copper IUD insertion group (1 RCT, n=156; RR= 1.27 [95% CI 1.12, 1.44]; moderate quality). RCT evidence did not detect a clinically important difference in uptake rate of the LNG-IUS between the immediate and delayed insertion groups at 9^{+1} to 12^{+0} weeks' gestation (1 RCT, n=101; RR= 1.2 [95% CI 1.04, 1.37]; moderate quality) or 12^{+1} to 20^{+0} weeks' gestation (1 RCT, n=55; RR= 1.17 [95% CI 0.97, 1.41]; moderate quality); however, there was uncertainty around the estimates.

Patient acceptability/satisfaction

No evidence was identified to inform this outcome.

Infection within 1 month of IUD/IUS insertion

RCT evidence did not detect a clinically important difference in infection rates within 1 month of IUD/IUS insertion between the early/immediate and delayed insertion groups at ≤ 9 weeks' gestation for the LNG-IUS (2 RCTs, n=169; RR= 12.54 [95% CI 0.72, 217.16]; very low quality), at 9^{+1} to 12^{+0} weeks' gestation for the LNG-IUS (1 RCT, n=101; RR= 10.79 [95% CI 0.61, 190.12]; very low quality) or at 12^{+1} to 20^{+0} weeks' gestation for the LNG-IUS (1 RCT, n=55; RR= 13.46 [95% CI 0.8, 227.97]; low quality); however, there was uncertainty around the estimates. RCT evidence reported no infections within 1 month of copper IUD insertion at ≤ 9 weeks' gestation; therefore, differences between groups could not be estimated (2 RCTs, n=189; low quality).

Outcome of limited importance

Subsequent pregnancy within 1 year of IUD/IUS insertion

RCT evidence did not detect a clinically important difference in the subsequent pregnancy rates within 1 year of IUD/IUS insertion between the early/immediate and delayed insertion groups at ≤ 9 weeks' gestation for the LNG-IUS (2 RCTs, n=169; RR=0.64 [95% CI 0.19, 2.15]; very low quality) or for the copper IUD (2 RCTs, n=211; RR=0.13 [95% CI 0.01, 2.42]; very low quality), at 9^{+1} to 12^{+0} weeks' gestation for the LNG-IUS (1 RCT, n=101; RR= 0.16 [95% CI 0.02, 1.31]; low quality) or at 12^{+1} to 20^{+0} weeks' gestation for the LNG-IUS (1 RCT, n=55; RR= 0.26 [95% CI 0.03, 2.17]; low quality); however, there was uncertainty around the estimates.

The committee's discussion of the evidence

Interpreting the evidence

The outcomes that matter most

The aim of offering immediate insertion of the IUS/IUD is to increase the use of this method of contraception, but this has to be balanced against the potentially increased expulsion rate and adverse event rate at this time point, therefore the committee agreed that expulsion of IUS/IUD, uterine perforation and continuation of IUS/IUD as a proxy for other adverse events and general discomfort were the critical outcomes for decision making. The committee agreed that although uterine perforation is rare in women undergoing having an IUS/IUD inserted, it should be prioritised as a critical outcome given the seriousness of it.

The uptake rate of IUS/IUD and infection within 1 month of IUS/IUD insertion were considered important outcomes to allow a balance between benefits and harms of immediate insertion to be made as the likelihood of IUS/IUD uptake increases with immediate insertion, but so does the likelihood of infection within 1 month of IUS/IUD insertion. Patient acceptability/satisfaction was selected as an important outcome as the convenience of immediate/early IUS/IUD insertion may be more acceptable to some women even if it is associated with a higher rate of adverse events or expulsion. Subsequent pregnancy within 1 year of the IUS/IUD insertion was considered an outcome of limited importance because although it can be considered a measure of IUD/IUS effectiveness, it is a more indirect measure of it than the other prioritised outcomes.

The outcome of patient acceptability/satisfaction was not reported.

The quality of the evidence

The evidence in the pairwise comparisons was assessed using the GRADE methodology. The evidence was analysed separately for the LNG-IUS and the copper IUD and for different gestational bands: $\leq 9^{+0}$ weeks, 9^{+1} to 12^{+0} weeks, and 12^{+1} weeks to 20^{+0} weeks. The quality of the evidence across all outcomes ranged from high to very low quality and was most often downgraded because of the uncertainty around the risk estimate due to the low event rates. Additionally, when per-protocol analyses were undertaken, the evidence was subject to attrition bias that appeared to be selective in that the rates were higher in the delayed insertion groups compared to early/immediate insertion. This limitation resulted in downgrading for the outcomes of expulsion of IUS/IUD, continuation of IUS/IUD, uterine perforation, infection within 1 month of IUS/IUD insertion and subsequent pregnancy within 1 year, in the gestational band of $\leq 9^{+0}$ weeks.

One of the studies only reported infection within 3 months, rather than within 1 month, and the quality of the data from that study were therefore downgraded for indirectness for this outcome.

Benefits and harms

The evidence was unclear whether or not there were clinically important differences in the rate of uterine perforation, infection within 1 month and subsequent pregnancy within 1 year between early/immediate or delayed IUS/IUD insertion for any of the gestational bands or types of device (IUS and copper IUD). The evidence also showed there was either a higher clinically important difference or no clinically important difference in rates of continuation of IUS/IUD use and uptake of IUS/IUD in the early/immediate insertion subgroups compared to the delayed insertion subgroups.

However, the evidence showed there was a higher clinically important difference in IUS expulsion rate after early/immediate insertion in the gestational band of 9^{+1} to 12^{+0} weeks. The committee discussed that although there was moderate quality evidence of higher IUS expulsion rates after early/immediate insertion in the gestational band of 9^{+1} to 12^{+0} weeks, there was also moderate quality evidence from the same gestational band and the 12^{+1} to 20^{+0} weeks band, of higher IUS continuation rates in the early/immediate insertion group compared to the delayed insertion group. Therefore the committee applied less weight to these data when making recommendations. Patient acceptability/satisfaction was not reported, but the committee's experience was that women are likely to find early insertion more convenient than delayed insertion, and this is more likely to improve accessibility and uptake of long acting contraception.

The committee discussed that although it was unclear whether or not there was a clinically important effect of insertion timing on infection rates, all the infections reported in the included studies appeared to occur after immediate/early insertion. However, they agreed that the data for this outcome are confounded by the fact that infection can occur both as a result of medical termination and IUS/IUD insertion and that the included studies did not distinguish between these two causes of infection in the immediate/early insertion group, whereas they did in the delayed insertion group. The committee also noted that in the 12^{+1} to 20^{+0} weeks gestational band, the infection rate was above 20% after early/immediate IUS insertion, which they did not consider to be realistic based on their knowledge and experience and suggests that the data for the infection outcome also included suspected infections that were not actually confirmed. Therefore the committee applied less weight to the data on infection rates. Further, although it was unclear whether or not uterine perforation differed between groups, this was because the absolute risk is very small and no events occurred in either group.

Given the evidence the committee agreed that in women undergoing medical termination of pregnancy who choose intrauterine contraception, insertion of the intrauterine contraception should be offered as soon as possible after expulsion of the pregnancy.

The committee agreed not to make separate recommendations for each gestational band because the majority of the evidence showed no difference in harms across the gestational bands between early/immediate and delayed insertion. Moreover, the committee agreed that in terms of equalities, the recommendation for early insertion was likely to benefit vulnerable women who may experience more barriers to accessing IUS/IUDs. Therefore a universal offer of early insertion will benefit all women.

Despite the limited evidence, the committee decided to prioritise other areas addressed by the guideline for future research and therefore made no research recommendations regarding the timing of intrauterine contraceptive device insertion after a medical termination of pregnancy.

Cost effectiveness and resource use

No previously published economic evaluations were identified for this topic. Given the potential for a large resource impact from recommendations for this topic bespoke economic modelling was performed to assess cost effectiveness.

Based on NHS reference costs and assumptions on resource use made in CG30: Long-acting reversible contraception, the model estimated that insertion of an intrauterine contraceptive device as soon as possible after termination was less expensive per person than later administration at the woman's GP with savings of £7 and £18 for IUS and IUD respectively. When the costs of clinical complications and subsequent pregnancies were considered this was reduced in all groups for IUS with insertion as soon as possible becoming more expensive (£3 per person) in the 12^{+1} to 20^{+0} weeks group. This was a result of the higher rates of reinsertion following expulsion and infection in the 'as soon as possible' group. This was somewhat balanced out by the increased cost of the higher rate of subsequent pregnancies for later administration at the woman's GP.

The results were particularly sensitive to the cost of infection, reinsertion and subsequent pregnancies and around assumptions of the number of unplanned subsequent pregnancies leading to a subsequent termination. The results for IUD were more robust with the vast majority of iterations being less expensive for insertion as soon as possible.

The economic model did not explicitly consider quality of life given the difficulties in incorporating QALYs in this clinical area. Patient preference outcomes were also not identified in the clinical evidence review. Based on their own clinical experience and indirect evidence around preference of women for simultaneous administration of implants and contraceptive injections it was the committees belief that people would prefer insertion of IUS and IUD as soon as possible following a termination. This conclusion was weakly supported by a statistically significant increase in continued IUD use amongst the 'as soon as possible' group. It was therefore very plausible that quality of life would be higher amongst the 'as soon as possible' group and even under assumptions where insertion as soon as possible was more costly that it could still be cost effective under conventional NICE criteria (i.e. there would be a QALY increase alongside any increase in cost).

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Appendices

Appendix A – Review protocols

Review protocol for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

Field (based on PRISMA-P	Content
Review question in SCOPE	What strategies are effective at facilitating uptake of effective contraception after termination of pregnancy?
Review question in guideline	What strategies are effective at facilitating access to contraception after termination of pregnancy?
Type of review question	Intervention
Objective of the review	To determine the strategies that improve access to contraception following a termination of pregnancy
Eligibility criteria – population	ToP services in OECD countries Exclusions: - Studies with indirect populations will not be considered - Studies from OECD countries where termination is prohibited altogether or only done to save the woman's life (Chile, Ireland, Mexico, although not Mexico City)
Eligibility criteria – intervention(s)	• ToP provider has necessary knowledge and skills to provide contraception • Immediate provision of contraception by ToP provider • Full range of contraception options are available • ToP provider has funding to provide contraception Exclusions: - Contraception provisions that involves a cost to the women as contraception is provided free of charge in the UK
Eligibility criteria – comparator(s)	Comparisons: 1. ToP provider has necessary knowledge and skills to provide contraception versus ToP provider not skilled in contraception provision 2. Contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete versus contraception provided by ToP provider at a later date

Field (based on PRISMA-P	Content
	3. Contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete versus contraception provided by non-ToP provider at a later date 4. Full range of contraceptive methods is available versus subset of contraceptive methods is available 5. ToP provider has funding to provide contraception versus ToP provider has no specific funding for contraception
Outcomes and prioritisation	**Critical outcomes:** • Receipt of chosen method of contraception (broken down by method) • Subsequent termination of pregnancy within 12 months • Continuation of contraception within 12 months **Important outcomes:** • Patient satisfaction • Number who receive LARC rather than any contraception • Proportion who received contraception
Eligibility criteria – study design	- Systematic reviews of RCTs - RCTs - If insufficient RCTs: comparative prospective cohort studies (including before-after studies) n≥100 each arm - If insufficient prospective cohort studies: comparative retrospective cohort studies (including before-after studies) n≥100 each arm
Other inclusion exclusion criteria	Inclusion: - English-language - Studies conducted from 2007 (see below)
Proposed sensitivity/sub-group analysis, or meta-regression	Stratified analyses based on the following sub-groups of women, where possible: Medical conditions: Complex pre-existing medical conditions No complex pre-existing medical conditions Vulnerable women: - Vulnerable women (including sex workers and homeless, mental health problems, learning disabilities, girls/younger women, communication difficulties, low financial income, BME women) - Non-vulnerable women
Selection process – duplicate screening/selection/analysis	Dual weeding will be performed for this question

Field (based on PRISMA-P	Content
	Sifting, data extraction, appraisal of methodological quality and GRADE assessment will be performed by the systematic reviewer. Quality control will be performed by the senior systematic reviewer. Dual data extraction will not be performed for this question.
Data management (software)	Pairwise meta-analyses will be performed using Cochrane Review Manager (RevMan5). 'GRADEpro' will be used to assess the quality of evidence for each outcome. NGA STAR software will be used for study sifting, data extraction, recording quality assessment using checklists and generating bibliographies/citations,
Information sources – databases and dates	Sources to be searched: Medline, Medline In-Process, CCTR, CDSR, DARE, HTA, Embase Limits (e.g. date, study design): Apply standard animal/non-English language exclusion Dates: from 2007 Studies conducted from 2007 onwards will be considered for this review question, as prior to this timeframe intra-uterine devices were not inserted in a medical termination setting, but rather by a contraceptive provider several weeks after the confirmed termination of pregnancy was complete, and the committee wanted to focus on evidence where all contraceptive methods were available, especially long-acting reversible contraception of which intra-uterine devices are a subcategory.
Identify if an update	Not an update
Author contacts	For details please see the guideline in development web site.
Highlight if amendment to previous protocol	For details please see Section 4.5 of Developing NICE guidelines: the manual
Search strategy – for one database	For details please see appendix B.
Data collection process – forms/duplicate	A standardised evidence table format will be used, and published as appendix D (clinical evidence tables) or appendix H (economic evidence tables).
Data items – define all variables to be collected	For details please see evidence tables in appendix D (clinical evidence tables) or appendix H (economic evidence tables).
Methods for assessing bias at outcome/study level	Appraisal of methodological quality: The methodological quality of each study will be assessed using an appropriate checklist: • RoBIS for systematic reviews

Field (based on PRISMA-P	Content
	• Cochrane risk of bias tool for RCTs • Newcastle-Ottawa scale for non-randomised studies The risk of bias across all available evidence will be evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group http://www.gradeworkinggroup.org/
Criteria for quantitative synthesis (where suitable)	For details please see Section 6.4 of Developing NICE guidelines: the manual
Methods for analysis – combining studies and exploring (in)consistency	Synthesis of data: Pairwise meta-analysis will be conducted where appropriate for all other outcomes. When meta-analysing continuous data, change scores will be pooled in preference to final scores. For details regarding inconsistency, please see the methods chapter Minimally important differences: Default values will be used of: 0.8 and 1.25 for relative risks which will be calculated for all dichotomous outcomes; 0.5 times SD (for control group) for continuous outcomes.
Meta-bias assessment – publication bias, selective reporting bias	For details please see Section 6.2 of Developing NICE guidelines: the manual. If sufficient relevant RCT evidence is available, publication bias will be explored using RevMan software to examine funnel plots.
Assessment of confidence in cumulative evidence	For details please see Sections 6.4 and 9.1 of Developing NICE guidelines: the manual
Rationale/context – Current management	For details please see the introduction to the evidence review.
Describe contributions of authors and guarantor	A multidisciplinary committee developed the guideline. The committee was convened by The National Guideline Alliance and chaired by Profession Iain Cameron in line with section 3 of Developing NICE guidelines: the manual. Staff from The National Guideline Alliance will undertake systematic literature searches, appraise the evidence, conduct meta-analysis and cost-effectiveness analysis where appropriate, and draft the guideline in collaboration with the committee. For details please see the methods chapter.
Sources of funding/support	The National Guideline Alliance is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists

Field (based on PRISMA-P	Content
Name of sponsor	The National Guideline Alliance is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists
Roles of sponsor	NICE funds The National Guideline Alliance to develop guidelines for those working in the NHS, public health, and social care in England
PROSPERO registration number	Not registered

BME: black and minority ethnic; GRADE: Grading of Recommendations Assessment, Development and Evaluation; LARC: Long-Acting Reversible Contraception; NHS: National Health Service; NICE: National Institute for Health and Care Excellence; NGA: National Guideline Alliance; OECD: Organisation for Economic Co-operation and Development; RCT: randomised controlled trial; SD: standard deviation; ToP: termination of pregnancy

Review protocol for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

Field (based on PRISMA-P	Content
Review question in SCOPE	For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?
Review question in guideline	For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?
Type of review question	Intervention
Objective of the review	To determine whether the efficacy of mifepristone is affected by the concomitant administration of a progestogen-only contraceptive implant or depot injection.
Eligibility criteria – population	Women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection Exclusions: - Studies with indirect populations will not be considered
Eligibility criteria – intervention(s)	• Simultaneous administration of mifepristone + progestogen-only contraceptive implant / depot injection • Progestogen-only contraceptive implant: • Etonogestrel implant (brand names implanon, nexplanon) • Progestogen-only depot injection: • Medroxyprogesterone acetate (brand names: Depo-Provera, sayana press)

Field (based on PRISMA-P	Content
Eligibility criteria – comparator(s)	1. Administration of progestogen-only contraceptive implant / depot injection more than 24 hours after mifepristone administration 2. Progestogen-only contraceptive implant: 3. Etonogestrel implant (brand names implanon, nexplanon) 4. Progestogen-only depot injection: 5. Medroxyprogesterone acetate (brand names: Depo-Provera, sayana press)
Outcomes and prioritisation	**Critical outcomes:** • Ongoing pregnancy • Incomplete abortion with the need for surgical intervention • Patient acceptability/ satisfaction **Important outcomes:** • Complete abortion without the need for surgical intervention • Induction to abortion interval • Subsequent unintended pregnancy
Eligibility criteria – study design	- Systematic reviews of RCTs - RCTs - If insufficient RCTs: prospective cohort studies - If insufficient prospective cohort studies: retrospective cohort studies
Other inclusion exclusion criteria	Inclusion: - English-language - Studies conducted from 1985 (see below)
Proposed sensitivity/sub-group analysis, or meta-regression	Stratified analyses based on the following sub-groups of women, where possible: Medical conditions: - Complex pre-existing medical conditions - No complex pre-existing medical conditions Gestational age: - < 10 weeks - > 10 weeks
Selection process – duplicate screening/selection/analysis	Dual sifting will be undertaken for this question using NGA STAR software, with resolution of discrepancies in discussion with the senior reviewer if necessary. Sifting, data extraction, appraisal of methodological quality and GRADE assessment will be performed by the systematic reviewer. Quality control will be performed by the senior systematic reviewer. Dual data extraction will not be performed for this question.
Data management (software)	Pairwise meta-analyses will be performed using Cochrane Review Manager (RevMan5). 'GRADEpro' will be used to assess the quality of evidence for each outcome.

Field (based on PRISMA-P	Content
	NGA STAR software will be used for study sifting, data extraction, recording quality assessment using checklists and generating bibliographies/citations,
Information sources – databases and dates	Sources to be searched: Medline, Medline In-Process, CCTR, CDSR, DARE, HTA, Embase Limits (e.g. date, study design): Apply standard animal/non-English language exclusion Limit to RCTs and systematic reviews Dates: from 1985 Studies conducted from 1985 will be considered for this review question, as medical termination of pregnancy was introduced in the UK in 1991 and going back significantly further than 5 years would not provide evidence that would be applicable to the NHS setting in the UK
Identify if an update	Not an update
Author contacts	For details please see the guideline in development web site
Highlight if amendment to previous protocol	For details please see section 4.5 of Developing NICE guidelines: the manual
Search strategy – for one database	For details please see appendix B
Data collection process – forms/duplicate	A standardised evidence table format will be used, and published as appendix D (clinical evidence tables) or H (economic evidence tables).
Data items – define all variables to be collected	For details please see evidence tables in appendix D (clinical evidence tables) or H (economic evidence tables).
Methods for assessing bias at outcome/study level	Standard study checklists will be used to critically appraise individual studies. For details please see section 6.2 of Developing NICE guidelines: the manual The risk of bias across all available evidence will be evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group http://www.gradeworkinggroup.org/
Criteria for quantitative synthesis (where suitable)	For details please see section 6.4 of Developing NICE guidelines: the manual
Methods for analysis – combining studies and exploring (in)consistency	Appraisal of methodological quality: The methodological quality of each study will be assessed using an appropriate checklist: • RoBIS for systematic reviews • Cochrane risk of bias tool for RCTs The quality of the evidence for an outcome (i.e. across studies) will be assessed using GRADE. Synthesis of data: Pairwise meta-analysis will be conducted where appropriate for all other outcomes. When meta-analysing continuous data, change scores will be pooled in preference to final scores. For details regarding inconsistency, please see the methods chapter

Field (based on PRISMA-P	Content
	Minimally important differences: Complete abortion without need for surgical evacuation: 3 percentage points All other outcomes default values will be used of: 0.8 and 1.25 for dichotomous outcomes; 0.5 times SD for continuous outcomes
Meta-bias assessment – publication bias, selective reporting bias	For details please see section 6.2 of Developing NICE guidelines: the manual. If sufficient relevant RCT evidence is available, publication bias will be explored using RevMan software to examine funnel plots.
Assessment of confidence in cumulative evidence	For details please see sections 6.4 and 9.1 of Developing NICE guidelines: the manual
Rationale/context – Current management	For details please see the introduction to the evidence review.
Describe contributions of authors and guarantor	A multidisciplinary committee developed the guideline. The committee was convened by The National Guideline Alliance and chaired by Profession Iain Cameron in line with section 3 of Developing NICE guidelines: the manual. Staff from The National Guideline Alliance will undertake systematic literature searches, appraise the evidence, conduct meta-analysis and cost-effectiveness analysis where appropriate, and draft the guideline in collaboration with the committee. For details please see the methods chapter.
Sources of funding/support	The National Guideline Alliance is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists
Name of sponsor	The National Guideline Alliance is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists
Roles of sponsor	NICE funds The National Guideline Alliance to develop guidelines for those working in the NHS, public health, and social care in England
PROSPERO registration number	Not registered

GRADE: Grading of Recommendations Assessment, Development and Evaluation; NHS: National Health Service; NICE: National Institute for Health and Care Excellence; NGA: National Guideline Alliance; RCT: randomised controlled trial; RoBIS: risk of bias in systematic reviews; SD: standard deviation

Review protocol for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

Field (based on PRISMA-P	Content
Review question in SCOPE	For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?
Review question in guideline	For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?
Type of review question	Intervention
Objective of the review	To determine the optimal timing to safely insert an intrauterine contraceptive device in women who have had a medical termination of pregnancy.
Eligibility criteria – population	Women who are having medical termination of pregnancy and who have requested an intrauterine contraceptive device: • Levonorgestrel-releasing intrauterine system (LNG-IUS) • Copper intrauterine contraceptive device Exclusions: - Studies with indirect populations will not be considered
Eligibility criteria – intervention(s)	• Immediate insertion on day of termination of pregnancy • Early insertion (<7 days since expulsion, but not inclusive of immediate expulsion) • Delayed insertion (>7 days since expulsions)
Eligibility criteria – comparator(s)	Comparisons of any of the below timings of the insertion of an intrauterine contraceptive device: 1. Immediate insertion on day of termination of pregnancy 2. Early insertion (<7 days since expulsion, but not inclusive of immediate expulsion) 3. Delayed insertion (>7 days since expulsions)
Outcomes and prioritisation	**Critical outcomes:** • Expulsion of IUD/IUS • Continuation of IUD/IUS • Uterine perforation **Important outcomes:** • Uptake rate of IUD/IUS • Patient acceptability/ satisfaction • Infection within first month of the IUD/IUS insertion • Outcome of limited importance: • Subsequent pregnancy within 1 year of the IUD/IUS insertion
Eligibility criteria – study design	- Systematic reviews of RCTs - RCTs

Field (based on PRISMA-P	Content
	- If insufficient RCTs: comparative prospective cohort studies n≥100 each arm - If insufficient prospective cohort studies: comparative retrospective cohort studies n≥100 each arm
Other inclusion exclusion criteria	Inclusion: - English-language - Studies conducted from 2007 (see below)
Proposed sensitivity/sub-group analysis, or meta-regression	Stratified analyses based on the following sub-groups of women, where possible: Type of IUD: - Levonorgestrel-releasing intrauterine system (LNG-IUS) - Copper intrauterine contraceptive device Medical conditions: - Complex pre-existing medical conditions - No complex pre-existing medical conditions Gestational age: - < 10 weeks - 10+0 to 13+6 weeks - >14 weeks
Selection process – duplicate screening/selection/analysis	Dual weeding will not be performed for this question Sifting, data extraction, appraisal of methodological quality and GRADE assessment will be performed by the systematic reviewer. Quality control will be performed by the senior systematic reviewer. Dual data extraction will not be performed for this question.
Data management (software)	Pairwise meta-analyses will be performed using Cochrane Review Manager (RevMan5). 'GRADEpro' will be used to assess the quality of evidence for each outcome. NGA STAR software will be used for study sifting, data extraction, recording quality assessment using checklists and generating bibliographies/citations,
Information sources – databases and dates	Sources to be searched: Medline, Medline In-Process, CCTR, CDSR, DARE, HTA, Embase Limits (e.g. date, study design): Apply standard animal/non-English language exclusion Limit to RCTs and systematic reviews Dates: from 2007 Studies conducted from 2007 onwards will be considered for this review question, as prior to this timeframe intrauterine devices were not inserted in a medical termination setting, but rather by a contraceptive provider several weeks after the confirmed termination of pregnancy was complete.
Identify if an update	Not an update
Author contacts	For details please see the guideline in development web site.

Field (based on PRISMA-P	Content
Highlight if amendment to previous protocol	For details please see section 4.5 of Developing NICE guidelines: the manual
Search strategy – for one database	For details please see appendix B
Data collection process – forms/duplicate	A standardised evidence table format will be used, and published as appendix D (clinical evidence tables) or H (economic evidence tables).
Data items – define all variables to be collected	For details please see evidence tables in appendix D (clinical evidence tables) or H (economic evidence tables).
Methods for assessing bias at outcome/study level	Standard study checklists will be used to critically appraise individual studies. For details please see section 6.2 of Developing NICE guidelines: the manual The risk of bias across all available evidence will be evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group http://www.gradeworkinggroup.org/
Criteria for quantitative synthesis (where suitable)	For details please see section 6.4 of Developing NICE guidelines: the manual
Methods for analysis – combining studies and exploring (in)consistency	Appraisal of methodological quality: The methodological quality of each study will be assessed using an appropriate checklist: • RoBIS for systematic reviews • Cochrane risk of bias tool for RCTs The quality of the evidence for an outcome (i.e. across studies) will be assessed using GRADE. Synthesis of data: Pairwise meta-analysis will be conducted where appropriate for all other outcomes. When meta-analysing continuous data, change scores will be pooled in preference to final scores. For details regarding inconsistency, please see the methods chapter Minimally important differences: Default values will be used of: 0.8 and 1.25 for dichotomous outcomes; 0.5 times SD for continuous outcomes, unless more appropriate values are identified by the guideline committee or in the literature.
Meta-bias assessment – publication bias, selective reporting bias	For details please see section 6.2 of Developing NICE guidelines: the manual. If sufficient relevant RCT evidence is available, publication bias will be explored using RevMan software to examine funnel plots.
Assessment of confidence in cumulative evidence	For details please see sections 6.4 and 9.1 of Developing NICE guidelines: the manual
Rationale/context – Current management	For details please see the introduction to the evidence review.
Describe contributions of authors and guarantor	A multidisciplinary committee developed the guideline. The committee was convened by The National Guideline Alliance and chaired by Profession Iain

Field (based on PRISMA-P	Content
	Cameron in line with section 3 of Developing NICE guidelines: the manual. Staff from The National Guideline Alliance will undertake systematic literature searches, appraise the evidence, conduct meta-analysis and cost-effectiveness analysis where appropriate, and draft the guideline in collaboration with the committee. For details please see the methods chapter.
Sources of funding/support	The National Guideline Alliance is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists
Name of sponsor	The National Guideline Alliance is funded by NICE and hosted by the Royal College of Obstetricians and Gynaecologists
Roles of sponsor	NICE funds The National Guideline Alliance to develop guidelines for those working in the NHS, public health, and social care in England
PROSPERO registration number	Not registered

GRADE: Grading of Recommendations Assessment, Development and Evaluation; IUD: intrauterine device; IUS: intrauterine system: LNG-IUS: levonorgestrel-releasing intrauterine system; NHS: National Health Service; NICE: National Institute for Health and Care Excellence; NGA: National Guideline Alliance; RCT: randomised controlled trial; RoBIS: risk of bias in systematic reviews; SD: standard deviation

Appendix B – Literature search strategies

Literature search strategy for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

The search for this topic was last run on 10th September 2018. It was decided not to undertake a re-run for this topic in November 2018 as this is not a fast moving evidence base and there were unlikely to be any new studies published which would affect the recommendations.

Database: Medline & Embase (Multifile)

Last searched on **Embase Classic+Embase** 1947 to 2018 September 7, **Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R)** 1946 to September 7, 2018

Date of last search: 10th September 2018

#	Searches
1	exp abortion/ use emczd
2	exp pregnancy termination/ use emczd
3	exp Abortion, Induced/ use ppez
4	Abortion Applicants/ use ppez
5	exp Abortion, Spontaneous/ use ppez
6	exp Abortion, Criminal/ use ppez
7	Aborted fetus/ use ppez
8	fetus death/ use emczd
9	abortion.mp.
10	(abort$ or postabort$ or preabort$).mp.
11	((f?etal$ or f?etus$ or gestat$ or midtrimester$ or pregnan$ or prenatal$ or pre natal$ or trimester$) and terminat$).mp.
12	((f?etal$ or f?etus$) adj loss$).mp.
13	((gestat$ or midtrimester$ or pregnan$ or prenatal$ or pre natal$ or trimester$) adj3 loss$).mp.
14	(((elective$ or threaten$ or voluntar$) adj3 interrupt$) and pregnan$).mp.
15	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
16	exp Contraception/ use ppez
17	exp contraception/ use emczd
18	Contraceptive Agents, Female/ use ppez
19	contraceptive agent/ use emczd
20	Desogestrel/ use ppez
21	etonogestrel/ use emczd
22	(etonogestrel$ or implanon$ or nexplanon$).mp.
23	((progest$ or contracept$ or depo$) adj5 (inject$ or implant$)).mp.
24	exp Medroxyprogesterone/ use ppez
25	exp medroxyprogesterone/ use emczd
26	medroxyprogesterone acetate/ use emczd
27	(medroxyprogesteron$ adj5 acetat$).mp.
28	(DMPA or MPA).mp.
29	(depo$ adj5 (prover$ or medroxyprogesteron$)).mp.

#	Searches
30	(noristerat$ or norethisteron$ or norethindron$).mp.
31	sayana press.mp.
32	exp Intrauterine Device/ use ppez
33	exp intrauterine device/ use emczd
34	(IUD$ or IUCD$ or IUC$ or IUS$ or LNG-IUS$).mp.
35	((intrauterin$ or intra-uterin$) adj5 (device$ or system$ or contracept$)).mp.
36	(mirena$ or skyla$ or liletta$ or levosert$ or jaydess$).mp.
37	(contraception$ or contraceptive$).m_titl.
38	16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37
39	Time Factors/ use ppez
40	time factor/ use emczd
41	Time-to-Treatment/ use ppez
42	time to treatment/ use emczd
43	Contraception Behavior/ use ppez
44	contraception behavior/ use emczd
45	exp Counseling/ use ppez
46	exp counseling/ use emczd
47	((delay$ or fast-track$ or immediate$) adj3 (insert$ or placement$ or contracept$ or initiat$ or uptake$)).mp.
48	((increase$ or improve$ or enhance$ or contracept$ or LARC) adj3 (uptake$ or provision$)).mp.
49	((increas$ or choice$ or access$) adj3 contracept$).mp.
50	((contracept$ or family planning or preabortion or postabortion) adj counsel$).mp.
51	39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50
52	15 and 38 and 51
53	letter/
54	editorial/
55	news/
56	exp historical article/
57	Anecdotes as Topic/
58	comment/
59	case report/
60	(letter or comment*).ti.
61	53 or 54 or 55 or 56 or 57 or 58 or 59 or 60
62	randomized controlled trial/ or random*.ti,ab.
63	61 not 62
64	animals/ not humans/
65	exp Animals, Laboratory/
66	exp Animal Experimentation/
67	exp Models, Animal/
68	exp Rodentia/
69	(rat or rats or mouse or mice).ti.
70	63 or 64 or 65 or 66 or 67 or 68 or 69
71	letter.pt. or letter/
72	note.pt.

#	Searches
73	editorial.pt.
74	case report/ or case study/
75	(letter or comment*).ti.
76	71 or 72 or 73 or 74 or 75
77	randomized controlled trial/ or random*.ti,ab.
78	76 not 77
79	animal/ not human/
80	nonhuman/
81	exp Animal Experiment/
82	exp Experimental Animal/
83	animal model/
84	exp Rodent/
85	(rat or rats or mouse or mice).ti.
86	78 or 79 or 80 or 81 or 82 or 83 or 84 or 85
87	70 use ppez
88	86 use emczd
89	87 or 88
90	52 and 89
91	52 not 90
92	limit 91 to english language
93	limit 92 to yr="2006 -Current"
94	remove duplicates from 93

Database: Cochrane Library via Wiley Online

Date of last search: 10th September 2018

#	Searches
#1	MeSH descriptor: [Abortion, Induced] explode all trees
#2	MeSH descriptor: [Abortion Applicants] explode all trees
#3	MeSH descriptor: [Abortion, Spontaneous] explode all trees
#4	MeSH descriptor: [Abortion, Criminal] explode all trees
#5	MeSH descriptor: [Aborted Fetus] explode all trees
#6	"abortion":ti,ab,kw (Word variations have been searched)
#7	(abort* or postabort* or preabort*):ti,ab,kw (Word variations have been searched)
#8	((fetal* or fetus* or foetal* or foetus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*):ti,ab,kw (Word variations have been searched)
#9	((fetal* or fetus* or foetal* or foetus*) next loss*):ti,ab,kw (Word variations have been searched)
#10	((gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) near/3 loss*):ti,ab,kw (Word variations have been searched)
#11	(((elective* or threaten* or voluntar*) near/3 interrupt*) and pregnan*):ti,ab,kw (Word variations have been searched)
#12	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11
#13	MeSH descriptor: [Contraception] explode all trees
#14	MeSH descriptor: [Contraceptive Agents, Female] explode all trees
#15	MeSH descriptor: [Desogestrel] explode all trees
#16	(etonogestrel* or implanon* or nexplanon*):ti,ab,kw (Word variations have been searched)

#	Searches
#17	((progest* or contracept* or depo*) near/5 (inject* or implant*)):ti,ab,kw (Word variations have been searched)
#18	MeSH descriptor: [Medroxyprogesterone] explode all trees
#19	(medroxyprogesteron* near/5 acetat*):ti,ab,kw (Word variations have been searched)
#20	(DMPA or MPA):ti,ab,kw (Word variations have been searched)
#21	(depo* near/5 (prover* or medroxyprogesteron*)):ti,ab,kw (Word variations have been searched)
#22	(noristerat* or norethisteron* or norethindron*):ti,ab,kw (Word variations have been searched)
#23	sayana press:ti,ab,kw (Word variations have been searched)
#24	MeSH descriptor: [Intrauterine Devices] explode all trees
#25	(IUD* or IUCD* or IUC* or IUS* or LNG-IUS*):ti,ab,kw (Word variations have been searched)
#26	((intrauterin* or intra-uterin*) near/5 (device* or system* or contracept*)):ti,ab,kw (Word variations have been searched)
#27	(mirena* or skyla* or liletta* or levosert* or jaydess*):ti,ab,kw (Word variations have been searched)
#28	(contraception* or contraceptive*):ti (Word variations have been searched)
#29	#13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28
#30	MeSH descriptor: [Time Factors] explode all trees
#31	MeSH descriptor: [Time-to-Treatment] this term only
#32	MeSH descriptor: [Contraception Behavior] this term only
#33	MeSH descriptor: [Counseling] explode all trees
#34	((delay* or fast-track* or immediate*) near/3 (insert* or placement* or contracept* or initiat* or uptake*)):ti,ab,kw (Word variations have been searched)
#35	((increase* or improve* or enhance* or contracept* or LARC) near/3 (uptake* or provision*)):ti,ab,kw (Word variations have been searched)
#36	((increas* or choice* or access*) near/3 contracept*):ti,ab,kw (Word variations have been searched)
#37	((contracept* or family planning or preabortion or postabortion) next counsel*):ti,ab,kw (Word variations have been searched)
#38	#30 or #31 or #32 or #33 or #34 or #35 or #36 or #37
#39	#12 and #29
#40	#12 and #29 and #38

Database: Cinahl Plus

Date of last search: 10th September 2018

#	Searches
S30	S29 Limiters - Publication Year: 2006-2018; English Language;
S29	S26 AND S27 AND S28
S28	S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25
S27	S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18
S26	S1 OR S2 OR S3
S25	TI ((contracept* or family planning or preabortion or postabortion) NEXT counsel*) OR AB ((contracept* or family planning or preabortion or postabortion) NEXT counsel*)
S24	TI ((contracept* or family planning or preabortion or postabortion) NEXT counsel*) OR AB ((contracept* or family planning or preabortion or postabortion) NEXT counsel*)

#	Searches
S23	TI ((increas* or choice* or access*) N3 contracept*) OR AB ((increas* or choice* or access*) N3 contracept*)
S22	TI ((increase* or improve* or enhance* or contracept* or LARC) N3 (uptake* or provision*)) OR AB ((increase* or improve* or enhance* or contracept* or LARC) N3 (uptake* or provision*))
S21	TI ((delay* or fast-track* or immediate*) N3 (insert* or placement* or contracept* or initiat* or uptake*)) OR AB ((delay* or fast-track* or immediate*) N3 (insert* or placement* or contracept* or initiat* or uptake*))
S20	(MH "Counseling") OR (MH "Sexual Counseling")
S19	(MH "Time Factors")
S18	TI (contraception* or contraceptive*)
S17	TI (mirena* or skyla* or liletta* or levosert* or jaydess*) OR AB (mirena* or skyla* or liletta* or levosert* or jaydess*)
S16	TI ((intrauterin* or intra-uterin*) N5 (device* or system* or contracept*)) OR AB ((intrauterin* or intra-uterin*) N5 (device* or system* or contracept*))
S15	TI (IUD* or IUCD* or IUC* or IUS* or LNG-IUS*) OR AB (IUD* or IUCD* or IUC* or IUS* or LNG-IUS*)
S14	(MH "Intrauterine Devices")
S13	TI (sayana press) OR AB (sayana press)
S12	TI (noristerat* or norethisteron* or norethindron*) OR AB (noristerat* or norethisteron* or norethindron*)
S11	TI (depo* N5 (prover* or medroxyprogesteron*)) OR AB (depo* N5 (prover* or medroxyprogesteron*))
S10	TI (DMPA or MPA) OR AB (DMPA or MPA)
S9	TI (medroxyprogesteron* N5 acetat*) OR AB (medroxyprogesteron* N5 acetat*)
S8	(MH "Medroxyprogesterone+") OR (MH "Medroxyprogesterone Acetate")
S7	TI ((progest* or contracept* or depo*) N5 (inject* or implant*)) OR AB ((progest* or contracept* or depo*) N5 (inject* or implant*))
S6	TI (etonogestrel* or implanon* or nexplanon*) OR AB (etonogestrel* or implanon* or nexplanon*)
S5	(MH "Contraceptive Agents")
S4	(MH "Contraception+")
S3	TI ((f?etal* or f?etus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*) OR AB ((f?etal* or f?etus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*)
S2	TI (abort* or postabort* or preabort*) OR AB (abort* or postabort* or preabort*)
S1	(MH "Abortion, Habitual") OR (MH "Abortion, Criminal") OR (MH "Abortion, Spontaneous") OR (MH "Abortion, Incomplete")

Database: Web of Science Core Collection

Timespan=2006-2018. Date of last search: 10th September 2018

#	Searches
# 21	#20 AND #15 AND #3 Refined by: [excluding] DOCUMENT TYPES: (EDITORIAL MATERIAL OR BOOK REVIEW OR LETTER OR NEWS ITEM)
# 20	#19 OR #18 OR #17 OR #16
# 19	(TS=((contracept* or family planning or preabortion or postabortion) SAME counsel*)) AND LANGUAGE: (English)
# 18	(TS=((increas* or choice* or access*) SAME contracept*)) AND LANGUAGE: (English)

#	Searches
# 17	(TS=((increase* or improve* or enhance* or contracept* or LARC) SAME (uptake* or provision*))) AND LANGUAGE: (English)
# 16	(TS=((delay* or fast-track* or immediate*) SAME (insert* or placement* or contracept* or initiat* or uptake*))) AND LANGUAGE: (English)
# 15	#14 OR #13 OR #12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 OR #5 OR #4
# 14	(TI=(contraception* or contraceptive*)) AND LANGUAGE: (English)
# 13	(TS=(mirena* or skyla* or liletta* or levosert* or jaydess*)) AND LANGUAGE: (English)
# 12	(TS=((intrauterine* or intra-uterin*) SAME (device* or system* or contracept*))) AND LANGUAGE: (English)
# 11	(TS=(IUD* or IUCD* or IUC* or IUS* or LNG-IUS*)) AND LANGUAGE: (English)
# 10	(TS=(sayana press)) AND LANGUAGE: (English)
# 9	(TS=(noristerat* or norethisteron* or norethindron*)) AND LANGUAGE: (English)
# 8	(TS=(depo* SAME (prover* or medroxyprogesteron*))) AND LANGUAGE: (English)
# 7	(TS=(DMPA or MPA)) AND LANGUAGE: (English)
# 6	(TS=(medroxyprogesteron* SAME acetat*)) AND LANGUAGE: (English)
# 5	(TS=((progest* or contracept* or depo*) SAME (inject* or implant*))) AND LANGUAGE: (English)
# 4	(TS=(etonogestrel* or implanon* or nexplanon*)) AND LANGUAGE: (English)
# 3	#2 OR #1
# 2	(TI=((f?etal* or f?etus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*)) AND LANGUAGE: (English)
# 1	(TI=(abort* or postabort* or preabort*)) AND LANGUAGE: (English)

Literature search strategy for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

The search for this topic was last run on 19th November 2018 during the re-runs for this guideline.

Database: Medline & Embase (Multifile)

Last searched on **Embase Classic+Embase** 1947 to 2018 November 16, **Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R)** 1946 to November 16, 2018

Date of last search: 19th November 2018

#	Searches
1	exp abortion/ use emczd
2	exp pregnancy termination/ use emczd
3	exp Abortion, Induced/ use ppez
4	Abortion Applicants/ use ppez
5	exp Abortion, Spontaneous/ use ppez
6	exp Abortion, Criminal/ use ppez
7	Aborted fetus/ use ppez
8	fetus death/ use emczd
9	abortion.mp.
10	(abort$ or postabort$ or preabort$).mp.
11	((f?etal$ or f?etus$ or gestat$ or midtrimester$ or pregnan$ or prenatal$ or pre natal$ or trimester$) and terminat$).mp.
12	((f?etal$ or f?etus$) adj loss$).mp.
13	((gestat$ or midtrimester$ or pregnan$ or prenatal$ or pre natal$ or trimester$) adj3 loss$).mp.
14	(((elective$ or threaten$ or voluntar$) adj3 interrupt$) and pregnan$).mp.
15	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
16	Mifepristone/ use ppez
17	mifepristone/ use emczd
18	(mifepriston$ or mifeprex$ or mifegyn$ or ru-486$ or ru486$ or ru-38486$ or ru38486$).mp.
19	16 or 17 or 18
20	exp Contraception/ use ppez
21	exp contraception/ use emczd
22	Contraceptive Agents, Female/ use ppez
23	contraceptive agent/ use emczd
24	Desogestrel/ use ppez
25	etonogestrel/ use emczd
26	(etonogestrel$ or implanon$ or nexplanon$).mp.
27	((progest$ or contracept$ or depo$) adj5 (inject$ or implant$)).mp.
28	exp Medroxyprogesterone/ use ppez
29	exp medroxyprogesterone/ use emczd
30	medroxyprogesterone acetate/ use emczd
31	(medroxyprogesteron$ adj5 acetat$).mp.

#	Searches
32	(DMPA or MPA).mp.
33	(depo$ adj5 (prover$ or medroxyprogesteron$)).mp.
34	(noristerat$ or norethisteron$ or norethindron$).mp.
35	sayana press.mp.
36	20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35
37	15 and 19 and 36
38	remove duplicates from 37
39	limit 38 to english language [general exclusions filter applied]
40	letter/
41	editorial/
42	news/
43	exp historical article/
44	Anecdotes as Topic/
45	comment/
46	case report/
47	(letter or comment*).ti.
48	40 or 41 or 42 or 43 or 44 or 45 or 46 or 47
49	randomized controlled trial/ or random*.ti,ab.
50	48 not 49
51	animals/ not humans/
52	exp Animals, Laboratory/
53	exp Animal Experimentation/
54	exp Models, Animal/
55	exp Rodentia/
56	(rat or rats or mouse or mice).ti.
57	50 or 51 or 52 or 53 or 54 or 55 or 56
58	letter.pt. or letter/
59	note.pt.
60	editorial.pt.
61	case report/ or case study/
62	(letter or comment*).ti.
63	58 or 59 or 60 or 61 or 62
64	randomized controlled trial/ or random*.ti,ab.
65	63 not 64
66	animal/ not human/
67	nonhuman/
68	exp Animal Experiment/
69	exp Experimental Animal/
70	animal model/
71	exp Rodent/
72	(rat or rats or mouse or mice).ti.
73	65 or 66 or 67 or 68 or 69 or 70 or 71 or 72
74	57 use ppez
75	73 use emczd
76	74 or 75

#	Searches
77	39 and 76
78	39 not 77

Database: Cochrane Library via Wiley Online

Date of last search: 19th November 2018

#	Searches
#1	MeSH descriptor: [Abortion, Induced] explode all trees
#2	MeSH descriptor: [Abortion Applicants] explode all trees
#3	MeSH descriptor: [Abortion, Spontaneous] explode all trees
#4	MeSH descriptor: [Abortion, Criminal] explode all trees
#5	MeSH descriptor: [Aborted Fetus] explode all trees
#6	"abortion":ti,ab,kw (Word variations have been searched)
#7	(abort* or postabort* or preabort*):ti,ab,kw (Word variations have been searched)
#8	((fetal* or fetus* or foetal* or foetus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*):ti,ab,kw (Word variations have been searched)
#9	((fetal* or fetus* or foetal* or foetus*) next loss*):ti,ab,kw (Word variations have been searched)
#10	((gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) near/3 loss*):ti,ab,kw (Word variations have been searched)
#11	(((elective* or threaten* or voluntar*) near/3 interrupt*) and pregnan*):ti,ab,kw (Word variations have been searched)
#12	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11
#13	MeSH descriptor: [Mifepristone] explode all trees
#14	(mifepriston* or mifeprex* or mifegyn* or ru-486* or ru486* or ru-38486* or ru38486*):ti,ab,kw (Word variations have been searched)
#15	#13 or #14
#16	MeSH descriptor: [Contraception] explode all trees
#17	MeSH descriptor: [Contraceptive Agents, Female] explode all trees
#18	MeSH descriptor: [Desogestrel] explode all trees
#19	(etonogestrel* or implanon* or nexplanon*):ti,ab,kw (Word variations have been searched)
#20	((progest* or contracept* or depo*) near/5 (inject* or implant*)):ti,ab,kw (Word variations have been searched)
#21	MeSH descriptor: [Medroxyprogesterone] explode all trees
#22	(medroxyprogesteron* near/5 acetat*):ti,ab,kw (Word variations have been searched)
#23	(DMPA or MPA):ti,ab,kw (Word variations have been searched)
#24	(depo* near/5 (prover* or medroxyprogesteron*)):ti,ab,kw (Word variations have been searched)
#25	(noristerat* or norethisteron* or norethindron*):ti,ab,kw (Word variations have been searched)
#26	sayana press:ti,ab,kw (Word variations have been searched)
#27	#16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26
#28	#12 and #15 and #27

Database: Cinahl Plus

Date of last search: 19th November 2018

#	Searches
S12	S3 AND S11
S11	S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
S10	TI sayana press OR AB sayana press
S9	TI ((noristerat* or norethisteron* or norethindron*)) OR AB ((noristerat* or norethisteron* or norethindron*))
S8	TI ((depo* N5 (prover* or medroxyprogesteron*))) OR AB ((depo* N5 (prover* or medroxyprogesteron*)))
S7	TI ((DMPA or MPA)) OR AB ((DMPA or MPA))
S6	TI (medroxyprogesteron* N5 acetat*) OR AB (medroxyprogesteron* N5 acetat*)
S5	TI (((progest* or contracept* or depo*) N5 (inject* or implant*))) OR AB (((progest* or contracept* or depo*) N5 (inject* or implant*)))
S4	TI ((etonogestrel* or implanon* or nexplanon*)) OR AB ((etonogestrel* or implanon* or nexplanon*))
S3	S1 OR S2
S2	TI ((mifepriston* or mifeprex* or mifegyn* or ru-486* or ru486* or ru-38486* or ru38486*)) OR AB ((mifepriston* or mifeprex* or mifegyn* or ru-486* or ru486* or ru-38486* or ru38486*))
S1	(MH "Mifepristone")

Database: Web of Science Core Collection

Timespan=All years. Date of last search: 19th November 2018

#	Searches
# 15	#13 AND #5 Refined by: LANGUAGES: (ENGLISH) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 14	#13 AND #5 Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 13	#12 OR #11 OR #10 OR #9 OR #8 OR #7 OR #6 Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 12	TS=(sayana press) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 11	TS=(noristerat* or norethisteron* or norethindron*) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 10	TS=(depo* SAME (prover* or medroxyprogesteron*)) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 9	TS=(DMPA or MPA) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 8	TS=(medroxyprogesteron* SAME acetat*) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 7	TS=((progest* or contracept* or depo*) SAME (inject* or implant*)) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 6	TS=(etonogestrel* or implanon* or nexplanon*) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 5	#4 AND #3 Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 4	TS=(mifepristone* or mifeprex* or mifegyn* or ru-486* or ru486* or ru-38486* or ru38486*) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 3	#2 OR #1

#	Searches
	Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 2	TS=((f?etal* or f?etus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*) Indexes=SCI-EXPANDED, SSCI Timespan=All years
# 1	TS=(abort* or postabort* or preabort*) Indexes=SCI-EXPANDED, SSCI Timespan=All years

Literature search strategy for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

The search for this topic was last run on 19th November 2018 during the re-runs for this guideline.

Database: Medline & Embase (Multifile)

Last searched on **Embase Classic+Embase** 1947 to 2018 November 16, **Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R)** 1946 to November 16, 2018

Date of last search: 19th November 2018

#	Searches
1	exp abortion/ use emczd
2	exp pregnancy termination/ use emczd
3	exp Abortion, Induced/ use ppez
4	Abortion Applicants/ use ppez
5	exp Abortion, Spontaneous/ use ppez
6	exp Abortion, Criminal/ use ppez
7	Aborted fetus/ use ppez
8	fetus death/ use emczd
9	abortion.mp.
10	(abort$ or postabort$ or preabort$).mp.
11	((f?etal$ or f?etus$ or gestat$ or midtrimester$ or pregnan$ or prenatal$ or pre natal$ or trimester$) and terminat$).mp.
12	((f?etal$ or f?etus$) adj loss$).mp.
13	((gestat$ or midtrimester$ or pregnan$ or prenatal$ or pre natal$ or trimester$) adj3 loss$).mp.
14	(((elective$ or threaten$ or voluntar$) adj3 interrupt$) and pregnan$).mp.
15	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
16	exp Intrauterine Device/ use ppez
17	exp intrauterine device/ use emczd
18	exp Intrauterine Devices/ use psyh
19	(IUD$ or IUCD$ or IUC$ or IUS$ or LNG-IUS$).mp.
20	((intrauterin$ or intra-uterin$) adj5 (device$ or system$ or contracept$)).mp.
21	(mirena$ or skyla$ or liletta$ or levosert$ or jaydess$).mp.
22	16 or 17 or 18 or 19 or 20 or 21
23	15 and 22
24	letter/
25	editorial/

#	Searches
26	news/
27	exp historical article/
28	Anecdotes as Topic/
29	comment/
30	case report/
31	(letter or comment*).ti.
32	24 or 25 or 26 or 27 or 28 or 29 or 30 or 31
33	randomized controlled trial/ or random*.ti,ab.
34	32 not 33
35	animals/ not humans/
36	exp Animals, Laboratory/
37	exp Animal Experimentation/
38	exp Models, Animal/
39	exp Rodentia/
40	(rat or rats or mouse or mice).ti.
41	34 or 35 or 36 or 37 or 38 or 39 or 40
42	letter.pt. or letter/
43	note.pt.
44	editorial.pt.
45	case report/ or case study/
46	(letter or comment*).ti.
47	42 or 43 or 44 or 45 or 46
48	randomized controlled trial/ or random*.ti,ab.
49	47 not 48
50	animal/ not human/
51	nonhuman/
52	exp Animal Experiment/
53	exp Experimental Animal/
54	animal model/
55	exp Rodent/
56	(rat or rats or mouse or mice).ti.
57	49 or 50 or 51 or 52 or 53 or 54 or 55 or 56
58	41 use ppez
59	57 use emczd
60	58 or 59
61	23 and 60
62	23 not 61
63	remove duplicates from 62
64	limit 63 to english language
65	limit 64 to yr="2007 -Current"

Database: Cochrane Library via Wiley Online

Date of last search: 19th November 2018

#	Searches
#1	MeSH descriptor: [Abortion, Induced] explode all trees

#	Searches
#2	MeSH descriptor: [Abortion Applicants] explode all trees
#3	MeSH descriptor: [Abortion, Spontaneous] explode all trees
#4	MeSH descriptor: [Abortion, Criminal] explode all trees
#5	MeSH descriptor: [Aborted Fetus] explode all trees
#6	"abortion":ti,ab,kw (Word variations have been searched)
#7	(abort* or postabort* or preabort*):ti,ab,kw (Word variations have been searched)
#8	((fetal* or fetus* or foetal* or foetus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*):ti,ab,kw (Word variations have been searched)
#9	((fetal* or fetus* or foetal* or foetus*) next loss*):ti,ab,kw (Word variations have been searched)
#10	((gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) near/3 loss*):ti,ab,kw (Word variations have been searched)
#11	(((elective* or threaten* or voluntar*) near/3 interrupt*) and pregnan*):ti,ab,kw (Word variations have been searched)
#12	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11
#13	MeSH descriptor: [Intrauterine Devices] explode all trees
#14	(IUD* or IUCD* or IUC* or IUS* or LNG-IUS*):ti,ab,kw (Word variations have been searched)
#15	((intrauterin* or intra-uterin*) near/5 (device* or system* or contracept*)):ti,ab,kw (Word variations have been searched)
#16	(mirena* or skyla* or liletta* or levosert* or jaydess*):ti,ab,kw (Word variations have been searched)
#17	#13 or #14 or #15 or #16
#18	#12 and #17

Database: Cinahl Plus

Date of last search: 19th November 2018

#	Searches
S11	S10 Limiters - Publication Year: 2007-2018; English Language
S10	S4 AND S9
S9	S5 OR S6 OR S7 OR S8
S8	TI (mirena* or skyla* or liletta* or levosert* or jaydess*) OR AB (mirena* or skyla* or liletta* or levosert* or jaydess*)
S7	TI (IUD* or IUCD* or IUC* or IUS* or LNG-IUS*) OR AB (IUD* or IUCD* or IUC* or IUS* or LNG-IUS*)
S6	TI ((intrauterin* or intra-uterin*) N5 (device* or system* or contracept*)) OR AB ((intrauterin* or intra-uterin*) N5 (device* or system* or contracept*))
S5	(MH "Intrauterine Devices")
S4	S1 OR S2 OR S3
S3	TI ((f?etal* or f?etus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*) OR AB ((f?etal* or f?etus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*)
S2	TI (abort* or postabort* or preabort*) OR AB (abort* or postabort* or preabort*)
S1	(MH "Abortion, Habitual") OR (MH "Abortion, Criminal") OR (MH "Abortion, Spontaneous") OR (MH "Abortion, Incomplete")

Database: Web of Science Core Collection

Timespan=2007-2018. Date of last search: 19th November 2018

#	Searches
# 9	#8 Refined by: [excluding] DOCUMENT TYPES: (CORRECTION OR EDITORIAL MATERIAL OR LETTER) AND LANGUAGES: (ENGLISH) Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018
# 8	#7 AND #3 Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018
# 7	#4 OR #5 OR #6 Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018
# 6	TS=(mirena* or skyla* or liletta* or levosert* or jaydess*) Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018

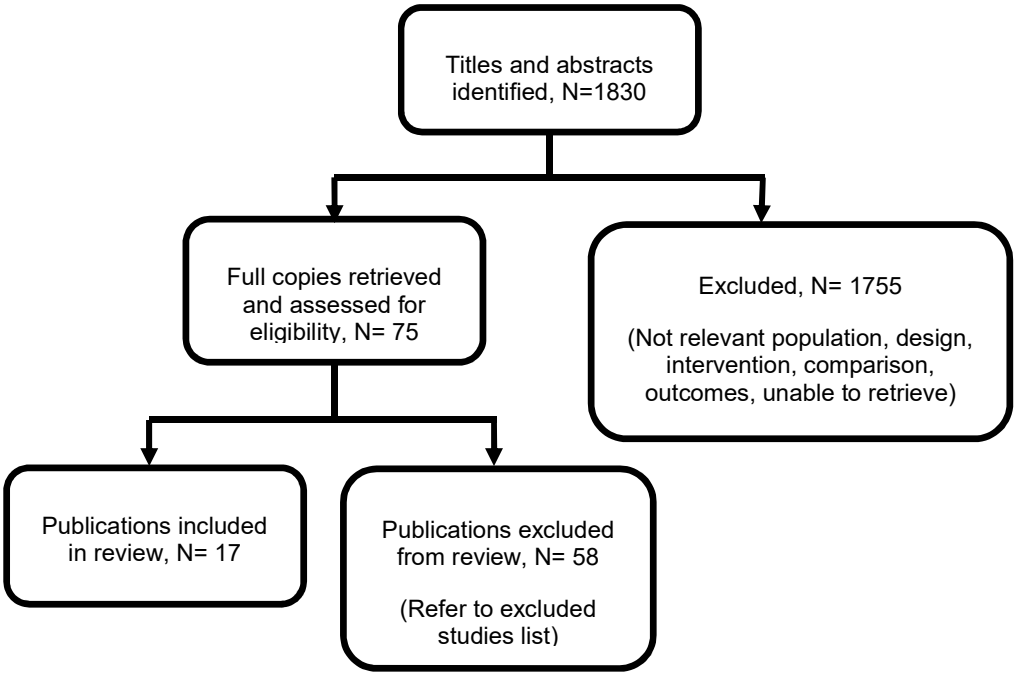
# 5	# TS=(IUD* or IUCD* or IUC* or IUS* or LNG-IUS*) 	
	Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018

# 4	TS=((intrauterine* or intra-uterin*) SAME (device* or system* or contracept*)) Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018
# 3	#2 OR #1 Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018
# 2	TS=((f?etal* or f?etus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*) Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018
# 1	TS=(abort* or postabort* or preabort*) Indexes=SCI-EXPANDED, SSCI Timespan=2007-2018

Appendix C – Clinical evidence study selection

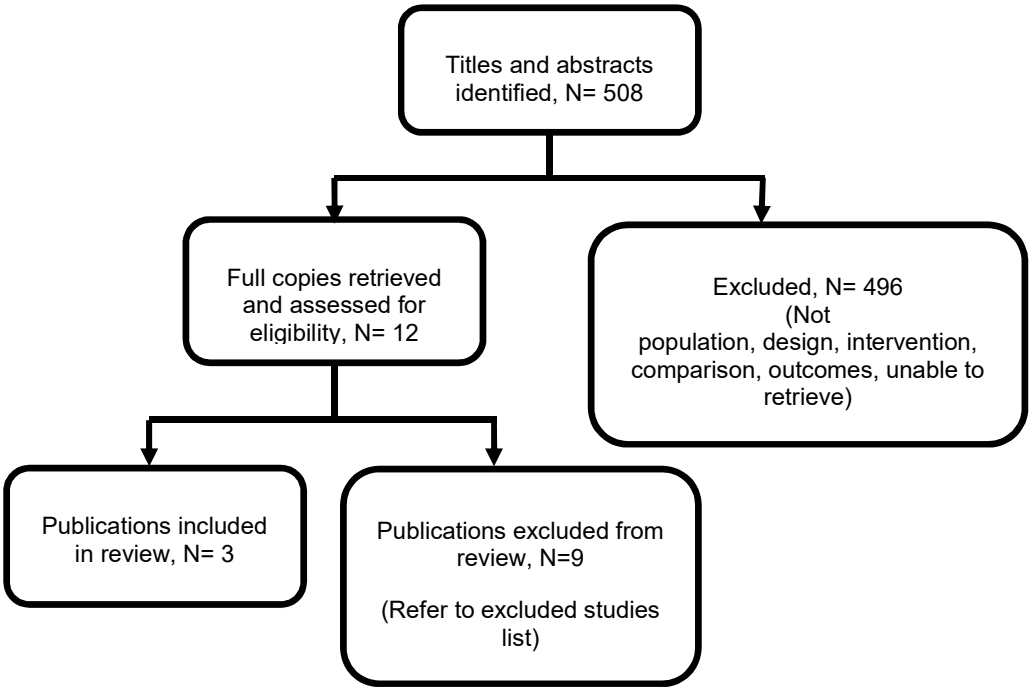
Clinical evidence study selection for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

Figure 1: Study selection flow chart



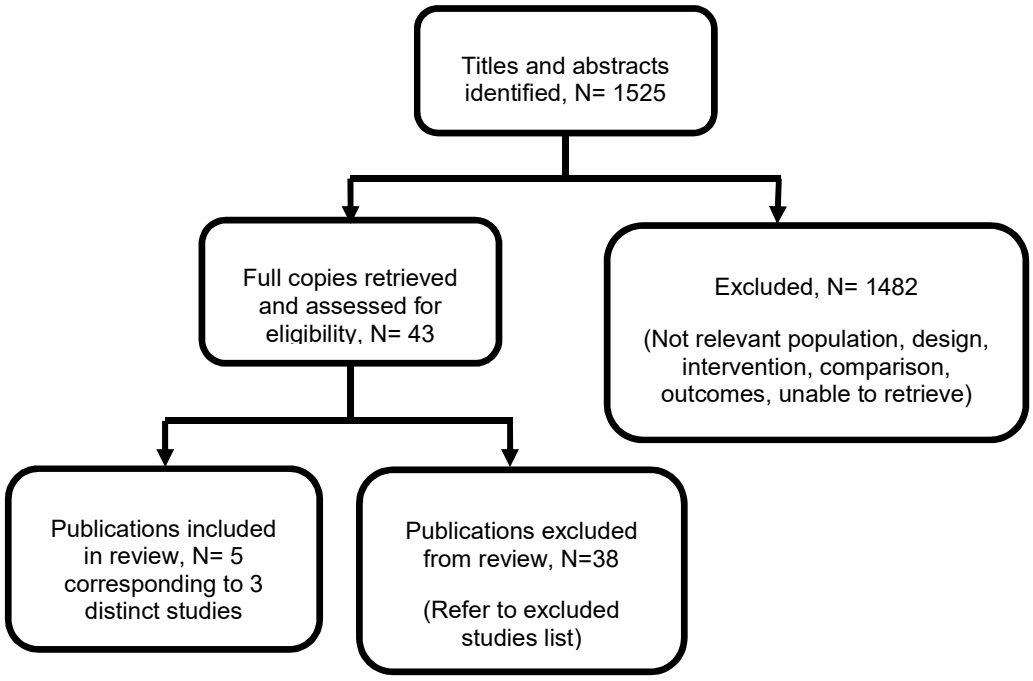
Clinical evidence study selection for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

Figure 2: Study selection flow chart



Clinical evidence study selection for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

Figure 3: Study selection flow chart



Appendix D – Clinical evidence tables

Clinical evidence tables for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

Study details	Participants	Interventions	Outcomes and Results	Comments
Full citation Barros Pereira, I., Carvalho, R. M., Graca, L. M., Intra-abortion contraception with etonogestrel subdermal implant, European Journal of Obstetrics, Gynecology, & Reproductive BiologyEur J Obstet Gynecol Reprod Biol, 185, 33-5, 2015 **Ref Id** 713655 **Country/ies where the study was carried out** Portugal **Study type** Prospective cohort study **Aim of the study** To examine the acceptability and continuation of the subdermal etonogestrel implant when inserted at the time of mifepristone administration for medical termination of pregnancy.	**Sample size** n=129 eligible for study (n=10 declined participation) n=119 included in study **Characteristics** Age in years (mean): Immediate: 26.3 Delayed: 24.6 Race - Black (number; percentage in parentheses): Immediate: 19 (33.3) Delayed: 22 (35.5) Race - White (number; percentage in parentheses): Immediate: 33 (57.9) Delayed: 36 (58.1) Using contraception at time of conception (number; percentage in parentheses): Immediate: 45 (78.9) Delayed: 43 (69.4) Not using contraception at time of conception (number; percentage in parentheses): Immediate: 12 (21.1) Delayed: 19 (30.6)	**Medical termination regimen:** 200mg oral mifepristone followed by 800micrograms oral misoprostol 48 hours later. Completeness of termination was verified 14 days later using vaginal ultrasound and vacuum aspiration was used if there was an ongoing pregnancy or incomplete abortion. **Immediate:** Implant was inserted at the same appointment as mifepristone administration **Delayed:** Women were asked to arrange a family planning appointment for 4 weeks after the administration of mifepristone	**Outcome: Receipt of chosen method of contraception (implant)** Immediate: 57/57 Delayed: 10/62 (15 women chose a different method of contraception at family planning appointment) **Outcome: Continuation of contraception at 6 months** Immediate: 42/57 Delayed: Not reported	**Limitations** **Quality of study:** Risk of bias assessed using the Newcastle-Ottawa scale for cohort studies Selection 1) Representativeness of the exposed cohort b) somewhat representative of the average person obtaining medical ToP in the study setting during the time period; limited to those that chose the etonogestrel implant (one star) 2) Selection of the non-exposed cohort a) drawn from the same community as the exposed cohort (one star) 3) Ascertainment of exposure a) secure record (one star) 4) Demonstration that outcome of interest was not present at start of study a) yes (one star) Comparability

Study details	Participants	Interventions	Outcomes and Results	Comments
Study dates January 2008 to March 2013 **Source of funding** No sources of funding reported	Nulliparous (number; percentage in parentheses): Immediate: 24 (42.1) Delayed: 29 (46.8) Parous (number; percentage in parentheses): Immediate: 33 (57.9) Delayed: 33 (53.2) Prior termination (number; percentage in parentheses): Immediate: 20 (35.1) Delayed: 18 (29.0) No prior termination (number; percentage in parentheses): Immediate: 37 (64.9) Delayed: 44 (71) **Inclusion criteria** Women having a medical termination of pregnancy up to 10 weeks' gestation between January 2008 and March 2013 who opted to use the etonogestrel implant for contraception following the termination **Exclusion criteria** No additional criteria reported			1) Comparability of cohorts on the basis of the design or analysis controlled for confounders no - does not report if characteristics differed between groups and no mention of controlling for confounders Outcome 1) Assessment of outcome c) self-report 2) Was follow-up long enough for outcomes to occur a) yes - uptake and continuation at 6 months (one star) 3) Adequacy of follow-up cohorts a) complete follow up - all subjects accounted for (one star) Overall quality Moderate - no stars in comparability domain **Other information** None
Full citation Bednarek, P. H., Creinin, M. D., Reeves, M. F., Cwiak, C., Espey, E., Jensen, J. T., Immediate versus delayed IUD insertion after uterine	**Sample size** n=587 were eligible and gave consent (n=2 withdrew, n=3 did not meet gestational age criteria, n=3 acute cervicitis on	No cervical priming was used before uterine aspiration of IUD insertion; all women received prophylactic doxycycline at the time of aspiration. No	**Outcome: Receipt of chosen method of contraception (IUD)** Immediate: 258/258 Delayed: 226/317 (4 received IUD outside of the	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool

Study details	Participants	Interventions	Outcomes and Results	Comments
aspiration, New England Journal of Medicine, 364, 2208-2217, 2011 **Ref Id** 773109 **Country/ies where the study was carried out** USA **Study type** Randomised noninferiority trial **Aim of the study** To compare rates of IUD expulsion, continuation, removal and complications between immediate and delayed IUD insertion after first-trimester uterine aspiration **Study dates** May 2007 to December 2008 **Source of funding** Susan Thompson Buffett Foundation provided a grant for the study and Duramed Pharmaceuticals donated ParaGard (copper IUD)	examination, n=1 suspected ectopic pregnancy) n=578 were enrolled (n=3 were not randomised due to incomplete aspiration and were offered delayed insertion) n=575 randomised (n=258 immediate; n=317 delayed) **Characteristics** Age in years (mean; standard deviation in parentheses): Immediate: 27.5 (6.4) Delayed: 26.9 (6.3) Race/ethnicity - White (number; percentage in parentheses): Immediate: 163 (63.2) Delayed: 180 (56.8) Race/ethnicity - Black (number; percentage in parentheses): Immediate: 57 (22.1) Delayed: 77 (24.3) Race/ethnicity - Hispanic (number; percentage in parentheses): Immediate: 29 (11.2) Delayed: 33 (10.4) Gravidity - 1 (number; percentage in parentheses): Immediate: 53 (20.5) Delayed: 66 (20.8) Gravidity - 2 (number; percentage in parentheses): Immediate: 53 (20.5) Delayed: 64 (20.2)	further details provided about aspiration procedure. Women were randomised after the aspiration, once the investigator had determined that immediate IUD insertion was safe and feasible. **Immediate:** IUD was placed immediately after aspiration and randomisation (within 15 minutes); no further details reported **Delayed:** IUD was placed at a follow-up visit 2-6 weeks after the aspiration; no further details reported	study i.e., did not return for IUD insertion but reported IUD use at follow-up) **Outcome: Continuation of contraception at 6 months (for those that completed 6 month follow-up)** Immediate: 179/194 Delayed: 177/231 **Outcome: Continuation of contraception at 6 months (ITT; assuming that those who were not available for follow-up were not using)** Immediate: 179/258 Delayed: 177/317	Random sequence generation: low risk, computer-generated blocks of 5 or 6, stratified by study centre. Approximate ratio 5:6 (immediate:delayed) Allocation concealment: low risk, sequentially numbered, opaque envelopes Blinding of participants and personnel: no blinding, but blinding impractical; low risk Blinding of outcome assessment: no blinding, but blinding impractical; low risk Attrition: High risk, only 75.2% of immediate arm and 72.9% of delayed arm completed 6 month follow-up; reasons for drop out are not reported but those that received an IUD, were younger, had a lower income, or were Hispanic were less likely to complete the 6-month follow-up than others. **Other information** Includes a small number of women (n=20; 3.5%) who were having uterine aspiration for spontaneous abortion; not considered indirect evidence due to small number

Study details	Participants	Interventions	Outcomes and Results	Comments
	Gravidity - 3 (number; percentage in parentheses): Immediate: 55 (21.3) Delayed: 61 (19.2) Gravidity - ≥4 (number; percentage in parentheses): Immediate: 97 (37.6) Delayed: 126 (39.7) Parity - 0 (number; percentage in parentheses): Immediate: 91 (35.3) Delayed: 110 (34.7) Parity - 1 (number; percentage in parentheses): Immediate: 75 (29.1) Delayed: 90 (28.4) Parity - ≥2 (number; percentage in parentheses): Immediate: 92 (35.7) Delayed: 117 (36.9) Previous terminations - 0 (number; percentage in parentheses): Immediate: 134 (52.1) Delayed: 178 (56.2) Previous terminations - 1 (number; percentage in parentheses): Immediate: 85 (33.1) Delayed: 85 (26.8) Previous terminations - ≥2 (number; percentage in parentheses): Immediate: 39 (15.2) Delayed: 54 (17.0)			

Study details	Participants	Interventions	Outcomes and Results	Comments
	Induced termination (number; percentage in parentheses): Immediate: 253 (98.1) Delayed: 302 (95.3) Spontaneous abortion (number; percentage in parentheses): Immediate: 5 (1.9) Delayed: 15 (4.7) Gestational age in days - 36-49 (number; percentage in parentheses): Immediate: 73 (28.3) Delayed: 105 (33.1) Gestational age in days - 50-63 (number; percentage in parentheses): Immediate: 111 (43.0) Delayed: 128 (40.4) Gestational age in days - 64-84 (number; percentage in parentheses): Immediate: 73 (28.3) Delayed: 84 (26.5) IUD type chosen - LNG-IUS (number; percentage in parentheses): Immediate: 199 (77.1) Delayed: 249 (78.5) IUD type chosen - copper (number; percentage in parentheses): Immediate: 59 (22.9) Delayed: 68 (21.5) **Inclusion criteria**			

Study details	Participants	Interventions	Outcomes and Results	Comments
	Women aged ≥18 years having uterine aspiration for induced or spontaneous abortion between 5 and 12 weeks' gestation who wanted intrauterine contraception **Exclusion criteria** Cervicitis or pelvic inflammatory disease (current or within last 3 months); uterine anomaly or fibroid distorting the uterine cavity; known or suspected molar or ectopic pregnancy; sexually transmitted infection in previous 3 months.			
Full citation Cameron, S. T., Glasier, A., Johnstone, A., Comparison of uptake of long-acting reversible contraception after abortion from a hospital or a community sexual and reproductive healthcare setting: an observational study, Journal of family planning and reproductive health care, 43, 31-36, 2017 **Ref Id** 769939 **Country/ies where the study was carried out** UK (Scotland)	**Sample size** n=2,473 referred for termination of pregnancy (n=1,252 hospital; n=1,221 community) n=2,208 proceeded with termination of pregnancy (n=1,115 hospital [n=45 miscarried, n=1 ectopic pregnancy, n=6 not pregnant, n=85 reason not reported]; n=1,093 community [n=46 miscarried, n=6 ectopic, n=6 not pregnant, n=70 reason not reported]) **Characteristics** Age in years (median; range in parentheses): Hospital: 25 (14-47) Community: 25 (15-46)	Women were referred to both services using a centralised referral system that allocated appointments to each site based on the first available appointment; services were available at each site two days a week and both services had the same clinical lead and protocols. At both sites women received an ultrasound to confirm gestational age, received advice and information about contraception and were able to receive the same contraception methods, free of cost. Women who chose oral contraceptives, patches, vaginal ring or condoms	**Outcome: Number who receive LARC rather than any contraception (implant, IUD or DMPA)** Hospital: 438/1,115 Community: 549/1,093 **Outcome: Proportion who received contraception** Hospital: 893/1,115 Community: 994/1,093	**Limitations** **Quality of study:** Risk of bias assessed using the Newcastle-Ottawa scale for cohort studies Selection 1) Representativeness of the exposed cohort a) truly representative of the average women having a termination of pregnancy in Edinburgh as these were the only services available; women that were >20 weeks' gestation were referred to a specialist service for termination as this was not available, but this would have been the case for all women in Edinburgh (one star)

Study details	Participants	Interventions	Outcomes and Results	Comments
Study type Retrospective cohort study **Aim of the study** To compare post-termination of pregnancy uptake of LARC between a community sexual and reproductive health service and a hospital service **Study dates** September 2012 to August 2013 **Source of funding** Scottish Department of Sexual Health and Blood Borne Viruses	Previous birth (number; percentage in parentheses): Hospital: 569 (45.4) Community: 535 (43.8) Previous termination of pregnancy (number; percentage in parentheses): Hospital: 444 (35.4) Community: 370 (30.3) Previous miscarriage (number; percentage in parentheses): Hospital: 153 (12.2) Community: 133 (10.8) Previous ectopic pregnancy (number; percentage in parentheses): Hospital: 17 (1.3) Community: 21 (1.7) Gestational age in weeks - ≤9 (number; percentage in parentheses): Hospital: 898 (71.7) Community: 992 (81.2) Gestational age in weeks - 9+1 to 12+6 (number; percentage in parentheses): Hospital: 221 (17.6) Community: 119 (9.7) Gestational age in weeks - 13-20 (number; percentage in parentheses): Hospital: 68 (5.4) Community: 43 (3.5)	were given a 3 month supply upon discharge; women who chose DMPA or implant received this immediately after surgical termination of pregnancy, or on the day of misoprostol administration for medical termination of pregnancy; women choosing an IUD received this immediately following surgical termination of pregnancy and within 2 weeks (at a fast-track appointment) of medical termination of pregnancy. **Hospital:** Some, but not all, clinicians working in the hospital services were trained in implant insertion. Women received all treatment at the hospital site for all termination of pregnancy methods. **Community:** All clinicians working in the community service were trained in implant insertion. Women who wanted (and were eligible for) an outpatient EMA received all of their treatment from the community service. Women who wanted a surgical termination of pregnancy or		2) Selection of the non-exposed cohort a) drawn from the same community as the exposed cohort (one star) 3) Ascertainment of exposure a) secure record (one star) 4) Demonstration that outcome of interest was not present at start of study a) yes - contraception after termination of pregnancy (one star) Comparability 1) Comparability of cohorts on the basis of the design or analysis controlled for confounders No - the two cohorts differed in terms of gestational age and more women had outpatient, compared to hospital, early medical termination of pregnancy in the community setting and more women ≤13 weeks' gestation had surgical, as opposed to medical, termination of pregnancy at the hospital site; these differences were not controlled for in the analysis Outcome 1) Assessment of outcome b) record linkage (one star)

Study details	Participants	Interventions	Outcomes and Results	Comments
	Gestational age in weeks - 20+1 to 23+6 (number; percentage in parentheses): Hospital: 10 (0.7) Community: 9 (0.7) Gestational age in weeks - ≥24 (number; percentage in parentheses): Hospital: 3 (0.2) Community: 0 (0.0) **Inclusion criteria** Inclusion criteria not formally reported. A review was undertaken of termination of pregnancy services at the Royal Infirmary of Edinburgh and a new specialist community sexual and reproductive health service between September 2012 and August 2013; appears to include all women referred to the services during this time frame. **Exclusion criteria** No additional criteria reported	admission for medical termination of pregnancy were counselled and provided informed consent at the community service and received any medication, including contraception at the community site; a date was then arranged for hospital admission.		2) Was follow-up long enough for outcomes to occur a) yes - contraception provided at discharge from service (one star) 3) Adequacy of follow-up cohorts a) complete follow-up - all subjects accounted for (one star) Overall quality Moderate - no stars in comparability domain **Other information** None
Full citation Cowett, A. A., Ali, R., Cooper, M. A., Evans, M., Conzuelo, G., Cremer, M., Timing of Etonogestrel Implant Insertion After Dilation and Evacuation: A Randomized Controlled Trial, Obstetrics &	**Sample size** n=148 randomised (paper reports that 509 were approached about study and 421 declined - numbers do not add up) n=148 ITT analysis n=73 per protocol analysis (completed 6 month follow-up)	All women received preoperative counselling, ultrasound dating of pregnancy, cervical preparation with osmotic dilators and D&E under deep sedation. **Immediate:**	**Outcome: Receipt of chosen method of contraception (implant):** Immediate: 73/73 Delayed: 32/75 **Outcome: Continuation of contraception at 6 months (verified use; assuming**	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk, computer-generated blocks of 10

Study details	Participants	Interventions	Outcomes and Results	Comments
GynecologyObstet Gynecol, 131, 856-862, 2018 **Ref Id** 897654 **Country/ies where the study was carried out** USA **Study type** Randomised controlled trial **Aim of the study** To determine if placing the etonogestrel implant immediately after surgical termination of pregnancy compared with 2-4 weeks post-termination increases use at 6 months after the termination **Study dates** November 2015 to October 2016 **Source of funding** Merck Research Laboratories (funded study supplies, staff time and provided implants)	**Characteristics** Age in years (median; range in parentheses): Immediate: 25 (18-41) Delayed: 23 (18-40) Race - White (number; percentage in parentheses): Immediate: 28 (38.4) Delayed: 22 (29.3) Race - African American (number; percentage in parentheses): Immediate: 45 (61.6) Delayed: 52 (69.3) Race - Native American or Alaska Native (number; percentage in parentheses): Immediate: 0 (0.0) Delayed: 1 (1.3) Latina (number; percentage in parentheses): Immediate: 22 (30.1) Delayed: 20 (26.7) Previous pregnancies - total (median; range in parentheses): Immediate: 4 (1-12) Delayed: 4 (1-10) Previous pregnancies - term (median; range in parentheses): Immediate: 1 (0-8) Delayed: 1 (0-8) Previous pregnancies - preterm (median; range in parentheses):	Etonogestrel implant was inserted immediately after D&E while the women was still sedated **Delayed:** Women were scheduled for an appointment to insert the etonogestrel implant at the clinic 2-4 weeks after the termination. Women were offered contraception to use in the interim between the termination and insertion of the implant and received a message reminding them of the appointment.	**those who were not contacted were not using):** Immediate: 40/73 Delayed: 19/73	Allocation concealment: low risk, sequentially numbered, sealed, opaque envelopes prepared by staff not involved in recruitment Blinding of participants and personnel: no blinding, but blinding impractical; low risk Blinding of outcome assessment: no blinding, but blinding impractical; low risk Attrition: high risk; only 59% of the immediate arm and 40% of the delayed arm were included in the 6 month follow-up and reasons for drop-out not reported (however, same effect observed for both ITT and per protocol analyses) Selective reporting: low risk, all outcomes reported in sufficient detail for analysis **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
	Immediate: 0 (0-2) Delayed: 0 (0-1) Previous terminations (median; range in parentheses): Immediate: 1 (0-5) Delayed: 1 (0-4) Previous D&E (number; percentage in parentheses): Immediate: 36 (49.3)Delayed: 41 (54.7) **Inclusion criteria** Women having a termination of pregnancy between 14+0 and 23+5 weeks' gestation and opting for the etonogestrel implant for contraception following the termination **Exclusion criteria** Women <18 years old; unable to give informed consent in English; contraindications to etonogestrel use			
Full citation Cremer, M., Bullard, K. A., Mosley, R. M., Weiselberg, C., Molaei, M., Lerner, V., Alonzo, T. A., Immediate vs. delayed post-abortal copper T 380A IUD insertion in cases over 12 weeks of gestation, Contraception, 83, 522-7, 2011 **Ref Id**	**Sample size** n=215 randomised (n=104 immediate; n=111 delayed) n=159 available for 6 month follow-up (n=71 immediate; n=88 delayed)* *receipt of IUD and continuation at 6 months only reported for those who had 6 month data available	No details provided about termination procedure other than it was the same for both arms **Immediate:** IUD was placed within 15 minutes of the termination of pregnancy **Delayed:**	**Outcome: Receipt of chosen method of contraception (copper IUD)** Immediate: 64/71 Delayed: 26/88 **Outcome: Continuation of contraception at 6 months** Immediate: 58/71 Delayed: 25/88	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk, computer-generated Allocation concealment: low risk, sequentially number, opaque, sealed envelopes

Study details	Participants	Interventions	Outcomes and Results	Comments
769995 **Country/ies where the study was carried out** USA **Study type** Randomised controlled trial **Aim of the study** To compare the safety and continuation of copper T 380 IUD insertion either immediately or 2-4 weeks after second trimester surgical termination of pregnancy **Study dates** April 2007 to August 2009 **Source of funding** Berlex Foundation Grant funded the study; IUDs were donated by Duramed Research Incorporated	**Characteristics** Age in years (mean; range in parentheses): Immediate: 24.0 (16-41) Delayed: 23.4 (16-43) Gestational age in weeks (mean; range in parentheses): Immediate: 19.2 (12-24) Delayed: 18.8 (12-24) Ethnicity - Black (number; percentage in parentheses): Immediate: 48 (47.1) Delayed: 52 (47.7) Ethnicity - Hispanic or Latino (number; percentage in parentheses): Immediate: 43 (42.2) Delayed: 39 (35.8) Ethnicity - White (number; percentage in parentheses): Immediate: 4 (3.9) Delayed: 6 (5.5) Ethnicity - Asian or South Asian (number; percentage in parentheses): Immediate: 1 (1.0) Delayed: 4 (3.7) Number of terminations (mean; range in parentheses): Immediate: 1.3 (0-7) Delayed: 1.1 (0-10) Prior delivery (number; percentage in parentheses): Immediate: 84 (81.0)	IUD was placed at the postoperative visit, 2-4 weeks after the termination of pregnancy		Blinding of participants and personnel: no blinding, but blinding impractical; low risk Blinding of outcome assessment: no blinding, but blinding impractical; low risk Attrition: high risk; 31.7% of the immediate group and 20.7% of the delayed group were lost to follow-up; reasons not reported (but no difference in population characteristics of those who were and were not lost to follow-up) Selective reporting: low risk, all outcomes reported in sufficient detail for analysis except patient satisfaction which was not reported separately by arm **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
	Delayed: 76 (68.5) **Inclusion criteria** Women aged ≥16 years having a surgical termination of pregnancy between 12 and 24 weeks' gestation who wanted a copper IUD for contraception after the termination; had to agree to being randomised to receive the IUD immediately or at the post-operative visit 2-4 weeks later **Exclusion criteria** Unable to give informed consent; congenital or acquired uterine anomaly including fibroids that distort the uterine cavity; acute pelvic inflammatory disease; known or suspected cervical neoplasia; untreated acute cervicitis or vaginitis; confirmed chlamydia or gonorrhoea; infection within last 90 days; acute liver disease or tumour; hypersensitivity to any component of copper T380A IUD			
Full citation Fox, M. C., Oat-Judge, J., Severson, K., Jamshidi, R. M., Singh, R. H., McDonald-Mosley, R., Burke, A. E., Immediate placement of intrauterine devices after first and second trimester	**Sample size** n=964 had surgical termination of pregnancy during the study period n=308 chose to use IUD for contraception after termination and were eligible for study	Terminations were performed using IV conscious sedation and local anaesthesia. Osmotic dilators and/or misoprostol were used for cervical dilation dependent on physician preference and	**Outcome: Receipt of chosen method of contraception (IUD)** Immediate: 212/221 Delayed: 20/87	**Limitations** **Quality of study:** Risk of bias assessed using the Newcastle-Ottawa scale for cohort studies Selection

Study details	Participants	Interventions	Outcomes and Results	Comments
pregnancy termination, Contraception, 83, 34-40, 2011 **Ref Id** 770087 **Country/ies where the study was carried out** USA **Study type** Retrospective cohort study **Aim of the study** To determine the risks and benefits of immediate compared with delayed IUD insertion after surgical termination of pregnancy **Study dates** January 2004 to March 2009 **Source of funding** No financial support was received for the study	(n=221 immediate; n=87 delayed) **Characteristics** Age in years (mean; standard deviation in parentheses): Immediate: 24.0 (6.2) Delayed: 26.5 (7.2) Race - White (number; percentage in parentheses): Immediate: 31 (14.0) Delayed: 18 (20.7) Race - Black (number; percentage in parentheses): Immediate: 184 (83.3) Delayed: 65 (74.7) Race - Asian (number; percentage in parentheses): Immediate: 1 (0.5) Delayed: 2 (2.3) Race - Hispanic (number; percentage in parentheses): Immediate: 1 (0.5) Delayed: 2 (2.3) Gravidity (median; range in parentheses): Immediate: 3 (1-15) Delayed: 4 (1-12) Parity (median; range in parentheses): Immediate: 1 (0-7) Delayed: 1 (0-6) Prior terminations (median; range in parentheses):	gestational age; prophylactic doxycycline (100mg twice a day for 3-7 days) were used according to physician discretion. **Immediate:** IUD was placed immediately after surgical termination of pregnancy. **Delayed:** IUD was placed at the post-surgical follow-up, 2-4 weeks after surgical termination of pregnancy.	**Outcome: Continuation of contraception (median 4.5 months)** ITT (assuming those who did not have follow-up were not using IUD) Immediate: 84/221 Delayed: 20/87 Only those with follow-up available Immediate: 84/124 Delayed: 20/48	1) Representativeness of the exposed cohort b) somewhat representative of the average person obtaining medical ToP in the study setting during the time period; limited to those that chose the IUD (one star) 2) Selection of the non-exposed cohort a) drawn from the same community as the exposed cohort (one star) 3) Ascertainment of exposure a) secure record (one star) 4) Demonstration that outcome of interest was not present at start of study a) yes (one star) Comparability 1) Comparability of cohorts on the basis of the design or analysis controlled for confounders No - the delayed cohort were significantly older than the immediate cohort and were more likely to choose the levonorgestrel IUD and have private insurance. These differences were not controlled for Outcome 1) Assessment of outcome

Study details	Participants	Interventions	Outcomes and Results	Comments
	Immediate: 1 (0-7) Delayed: 1 (0-5) Gestational age in weeks (mean; standard deviation in parentheses): Immediate: 13.9 (3.9) Delayed: 14.1 (4.0) IUD type - Levonorgestrel (number; percentage in parentheses): Immediate: 147 (66.5) Delayed: 66 (75.9) IUD type - Copper-T380A (number; percentage in parentheses): Immediate: 72 (32.6) Delayed: 15 (17.2) **Inclusion criteria** Women having an elective termination of pregnancy between January 2004 and March 2009 who wanted an IUD and agreed to follow-up **Exclusion criteria** Women having a termination for fetal demise or fetal anomaly			b) record linkage for receipt of IUD (one star); c) self-report for continuation of IUD 2) Was follow-up long enough for outcomes to occur a) yes (one star) 3) Adequacy of follow-up cohorts c) follow up rate <60%; those who did and did not have follow-up data differed in terms of gestational age (direction of effect not reported) Overall quality Moderate quality for receipt of IUD (no stars in comparability domain); low quality for continuation of IUD (no stars in comparability domain and only one star in outcome domain) **Other information** None
Full citation Hognert, H., Kopp Kallner, H., Cameron, S., Nyrelli, C., Jawad, I., Heller, R., Aronsson, A., Lindh, I., Benson, L., Gemzell-Danielsson, K., Immediate	**Sample size** n= 550* randomised (n=282 immediate insertion; n=268 delayed insertion) n= 538 ITT (n=277 immediate insertion [n=2 did not receive medical termination; n=3	**Medical termination:** Mifepristone 200mg followed by misoprostol 800mcg 24-48 hours later. **Immediate insertion:**	**Outcome: Receipt of chosen method of contraception (implant)** Immediate: 274/277 (the 3 that did not receive implant changed their mind about this contraception method)	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool

Study details	Participants	Interventions	Outcomes and Results	Comments
versus delayed insertion of an etonogestrel releasing implant at medical abortion - A randomized controlled equivalence trial, Human Reproduction, 31, 2484-2490, 2016 **Ref Id** 602340 **Country/ies where the study was carried out** Sweden and Scotland **Study type** Randomised controlled equivalence trial **Aim of the study** To compare immediate (insertion 1 hour following mifepristone on day 1), versus delayed insertion (insertion at follow-up at 2-4 weeks after the mifepristone) of an etonogestrel releasing contraceptive subdermal implant on complete abortion rates with medical termination (without need for surgical evacuation **Study dates**	withdrew consent]; n=261 delayed insertion [n=2 did not receive medical termination; n=5 withdrew consent]) n=523 per protocol (n=274 immediate insertion [n=3 changed mind regarding contraception]; n=249 delayed insertion [n=2 received implant at same time as misoprostol; n=10 changed mind regarding contraception]) n=457 sensitivity analysis (n=242 immediate insertion [n=32 did not complete follow-up]; n=215 delayed insertion [n=34 did not complete follow-up]) *Authors report that 551 were randomised but the numbers in the flow chart add up to 550; an additional woman was enrolled in the study but had a miscarriage before randomisation **Characteristics** Age in years, median (range): Immediate= 25 (18-42); delayed= 25 (18-43) BMI kg/m2, median (range): Immediate= 23.1 (14.7-38.9); delayed= 23.1 (16.8-45.2) Parity, median (range): Immediate= 0 (0-5); delayed= 0 (0-6)	Etonogestrel-releasing implant using local anaesthesia 1 hour after mifepristone had been ingested **Delayed insertion:** Etonogestrel-releasing implant inserted by a nurse-midwife practitioner using local anaesthesia at the follow-up visit 2-3 weeks after mifepristone treatment.	Delayed: 187/261 (10 that did not receive implant changed their mind about this contraception method; note. 2 received implant at time of misoprostol rather than delayed) **Outcome: Subsequent termination of pregnancy at 6 months** Immediate: 2/277 Delayed: 10/261 **Outcome: Continuation of contraception at 6 months (verified continuation; missing data treated as discontinued)** Immediate: 199/277 Delayed: 151/261 **Outcome: Patient satisfaction** Acceptability defined as "preferring the allocated time of insertion" Immediate: 64.9%; delayed: 19.5% Satisfaction with the implant at 6 months post insertion Very satisfied/fairly satisfied: immediate= 147/199; delayed=105/151 Neither/nor: immediate= 19/199; delayed= 17/151	Random sequence generation: low risk, computer generated Allocation concealment: low risk, opaque, sealed envelopes opened in consecutive order Blinding of participants and personnel: Unblinded High risk for subjective outcomes, low risk for objective outcomes. Blinding of outcome assessment: Unblinded High risk for subjective outcomes, low risk for objective outcomes. Incomplete outcome data: High risk for follow-up at 3-months and 6-months due to the high attrition (>20%). At 3 months follow-up, 19.1% attrition from immediate group and 31.4% attrition from delayed group, drop-outs not explained other than lost to follow-up. At 6 months follow-up, 28.2% attrition from immediate group and 42.1% attrition from delayed group, drop-outs not explained other than lost to follow-up. Selective reporting: Low risk, those notes in the methods to be assessed were assessed Other bias: None reported

Study details	Participants	Interventions	Outcomes and Results	Comments
13 October 2013 - 17 October 2015 **Source of funding** Swedish research council (2012-2844), Stockholm city county and Karolinska Institutet (ALF). The contraceptive implants were provided by Merck and supplied by MSD Sweden.	Previous miscarriage, median (range): Immediate= 0 (0-2); delayed= 0 (0-3) Previous ectopic, median (range): Immediate= 0 (0-1); delayed= 0 (0-8) Previous termination, median (range): Immediate= 1 (0-4); delayed= 0 (0-8) Gestational age at mifepristone intake in days, median (range); Immediate= 46 (30-63); delayed= 46 (28-63) **Inclusion criteria** 18 years or above, opting for medical termination and posttermination contraception with the etonogestrel releasing implant, good understanding of Swedish or English language (as appropriate), gestational age <64 days, willing to participate and give written informed consent **Exclusion criteria** Contraindications to the implant (according to the summary of product characteristics, MSD/Merck) or any of the medical termination drugs; miscarriage or molar pregnancies		Fairly dissatisfied/very dissatisfied: immediate= 33/199; delayed= 29/151	**Other information** None
Full citation Hohmann, H. L., Reeves, M. F., Chen, B. A., Perriera,	**Sample size** n=93 enrolled (n=3 withdrew participation, n=2 met pre-	All women had an ultrasound to determine gestational age and most	**Outcome: Receipt of chosen method of contraception (LNG-IUS)**	**Limitations**

Study details	Participants	Interventions	Outcomes and Results	Comments
L. K., Hayes, J. L., Creinin, M. D., Immediate versus delayed insertion of the levonorgestrel-releasing intrauterine device following dilation and evacuation: a randomized controlled trial, Contraception, 85, 240-5, 2012 **Ref Id** 770179 **Country/ies where the study was carried out** USA **Study type** Randomised controlled trial **Aim of the study** To compare 6 month continuation rates for LNG-IUS inserted immediately after second trimester surgical termination of pregnancy or 3-6 weeks after the termination **Study dates** February 2007 to April 2009 **Source of funding** Anonymous foundation	randomisation exclusion criteria) n=88 randomised (n=44 immediate; n=44 delayed) **Characteristics** Age in years (mean; standard deviation in parentheses): Immediate: 26.1 (5.9) Delayed: 24.7 (4.7) Gestational age in weeks - 15 (number; percentage in parentheses): Immediate: 13 (14.8) Delayed: 14 (15.9) Gestational age in weeks - 18 (number; percentage in parentheses): Immediate: 19 (21.6) Delayed: 12 (13.6) Gestational age in weeks - 21-23 (number; percentage in parentheses): Immediate: 12 (13.6) Delayed: 18 (20.5) Parity - 0 (number; percentage in parentheses): Immediate: 7 (15.9) Delayed: 8 (18.1) Parity - 1 (number; percentage in parentheses): Immediate: 16 (36.4) Delayed: 10 (22.7) Parity - 2 (number; percentage in parentheses):	women would have received 200mg preoperative doxycycline for prophylaxis. D&E was performed under twilight sedation, local anaesthesia, oral diazepam or IV conscious sedation. **Immediate:** LNG-IUS was inserted immediately after D&E using the pre-packaged inserter under transabdominal ultrasound guidance. **Delayed:** LNG-IUS was inserted at the follow-up appointment, 3-6 weeks D&E using the pre-packaged inserter; ultrasound guidance was used at the discretion of the person performing the insertion.	Immediate: 44/44 Delayed: 20/44 **Outcome: Continuation of contraception at 6 months** Loss to follow-up censored Immediate: 23/27 Delayed: 17/27 Loss to follow-up counted at discontinued Immediate: 23/44 Delayed: 17/44 Loss to follow-up counted as continued use Immediate: 40/44 Delayed: 18/44	**Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk, computer-generated blocks of 2, 4 or 6 Allocation concealment: low risk, sequentially numbered, sealed, opaque envelopes Blinding of participants and personnel: no blinding, but blinding impractical; low risk Blinding of outcome assessment: no blinding, but blinding impractical; low risk Attrition: moderate risk; 39% lost to follow-up in each arm; reasons for drop-out not reported but those who were and were not loss to follow-up did not differ in terms of demographic variables, gestational age, prior D&E, whether pregnancy was planned, parity, or whether they lived with their partner Selective reporting: low risk, all outcome reported in sufficient detail for analysis **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
	Immediate: 11 (25.0) Delayed: 13 (29.6) Parity - ≥3 (number; percentage in parentheses): Immediate: 10 (22.7) Delayed: 13 (29.6) Race - Caucasian (number; percentage in parentheses): Immediate: 23 (52.2) Delayed: 20 (45.4) Race - African American (number; percentage in parentheses): Immediate: 18 (40.9) Delayed: 23 (52.3) Previous D&E (number; percentage in parentheses): Immediate: 8 (18.1) Delayed: 5 (11.4) Enrolment and D&E on same day (number; percentage in parentheses): Immediate: 6 (13.6) Delayed: 5 (11.4) **Inclusion criteria** Women aged at least 18 years old having D&E between 15+0 and 23+6 weeks' gestation wanting the LNG-IUS for contraception following the termination; able to provide informed consent in English **Exclusion criteria**			

Study details	Participants	Interventions	Outcomes and Results	Comments
	Pre-enrolment: Allergic to polyethylene or levonorgestrel; urgent need for termination due to bleeding or infection; exposed to or treated for gonorrhoea or chlamydia in the last 90 days; pelvic inflammatory disease in the last year; ≥1 leiomyomata >3cm in diameter; uterine anomaly (other than repaired septate uterus); participating in another intervention trial. Post-D&E, pre-randomisation: uterine perforation; haemorrhage requiring transfusion, blood loss >500ml, intrauterine placement of a foley catheter or ≥3 doses of uterotonic medications; evidence of infection (including temperature ≥38°C or mucopurulent discharge)			
Full citation Korjamo, R., Mentula, M., Heikinheimo, O., Immediate versus delayed initiation of the levonorgestrel-releasing intrauterine system following medical termination of pregnancy - 1 year continuation rates: a randomised controlled trial, British Journal of Obstetrics & Gynaecology, 124, 1957-1964, 2017c **Ref Id**	**Sample size** n=267 randomised (n=134 immediate/early insertion; n=133 delayed insertion) n=264 Intention-to-treat (n=133 immediate/early insertion [n=1 excluded for deciding to continue pregnancy]; n=131 delayed insertion [2=suspected cervical neoplasia]) n= 217 Per-protocol (n=116 immediate/early insertion [n=17 did not have study IUD insertion due failure to attend appointment (1), changed their	**Medical termination procedure:** All terminations were carried out according to current Finnish national guidelines; details of procedures not reported. **Immediate insertion:** For those randomised to immediate/early insertion, LNG-IUS inserted after the medical termination of pregnancy, prior to leaving	**Outcome: Receipt of chosen method of contraception (IUD) (ITT):** ≤9 weeks+0 gestational age: Early: 51/55; Delayed: 47/53 9 weeks+1 to 12 weeks+0 gestational age: Immediate: 50/51; Delayed: 41/50 12 weeks+1 to 20 weeks+0 gestational age: Immediate: 26/27; Delayed: 23/28	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: Low risk; computer-generated list; the person responsible for generating the randomisation list did not take part in enrolment Allocation concealment: Low risk; sequentially numbered

Study details	Participants	Interventions	Outcomes and Results	Comments
770253 **Country/ies where the study was carried out** Finland **Study type** Randomised controlled trial **Aim of the study** To compare immediate/early and delayed insertion of the levonorgestrel-releasing intrauterine system (LNG-IUS) in women after a medical termination of pregnancy up to 20 weeks of gestation. **Study dates** 30 January 2013 - 31 December 2014 **Source of funding** Hospital District of Helsinki and Uusimaa, The Finnish Cultural Foundation and Finnish-Norwegian Medical Foundation	mind (5), other insertion (10), or insertion failure (1)]; n=101 delayed insertion [n=30 did not have study IUD insertion due to insertion failure (1), failure to attend appointment (13), other insertion (10) or changed their mind (6)]) **Characteristics** Intention-to-treat: Median age in years (interquartile range): immediate/early=27.3 (23.1-32.3); delayed=27.1 (22.3-32.1) Gestational age: ≤63 days: early=55; delayed=53 64-84 days: immediate=51; delayed=50 85-140 days: immediate=27; delayed=28 Median BMI in kg/m2 (interquartile range): immediate/early=23.6 (21.7-26.5); delayed=23.3 (21.1-26.9) Previous pregnancy, no (%): immediate/early=89 (66.9); delayed=92 (70.2) Previous delivery, no (%): immediate/early=71 (53.4) delayed=68 (51.9) Previous termination, no (%): immediate/early=57 (42.9); delayed=63 (48.1) Smoker, no (%): immediate/early=69 (51.9); delayed=70 (53.4)	the hospital, for women 64-140 days gestation. **Early insertion:** For those randomised to immediate/early insertion, LNG-IUS inserted within 3 days of misoprostol, which was administered at home, for women ≤63 days gestation. **Delayed insertion:** For those randomised to delayed insertion, LNG-IUS inserted at the follow-up visit 2-4 weeks after the medical termination of pregnancy. **Follow-up:** 2-4 weeks, 3 months and 1 year (repeat contact was attempted for non-attenders to re-schedule follow-up visit)	**Outcome: Subsequent termination within 12 months (ITT)** Immediate: 4/133 Delayed: 5/131 **Outcome: Continuation of contraception at 12 months (ITT)** ≤9 weeks+0 gestational age: Best case scenario (LNG-IUS inserted and its use was verified or unknown at 1 year): Early: 44/55; Delayed: 38/53 Worst case scenario (LNG-IUS inserted and verified at 1 year): Early: 33/55; Delayed: 24/53 9 weeks+1 to 12 weeks+0 gestational age: Best case scenario (LNG-IUS inserted and its use was verified or unknown at 1 year): Immediate: 45/51; Delayed: 33/50 Worst case scenario (LNG-IUS inserted and verified at 1 year): Immediate: 35/51; Delayed: 21/50 12 weeks+1 to 20 weeks+0 gestational age: Best case scenario (LNG-IUS inserted and its use was verified or unknown at 1	opaque envelopes; the person responsible for sealing the envelopes did not take part in enrolment Blinding of participants and personnel: Unblinded; low risk as all reported outcomes are objective outcomes. Blinding of outcome assessment: Unblinded; low risk as all reported outcomes are objective outcomes. Attrition: High risk as higher rates of attrition in the delayed arm, although ITT analyses done for all outcomes. Selective reporting: Low risk **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
	Regular use of alcohol, no (%): immediate/early=88 (66.7); delayed=89 (67.9) The groups did not differ significantly in any of these characteristics **Inclusion criteria** Women aged ≥18 years requesting a medical termination of pregnancy and planning to use the LNG-IUS for contraception post-termination **Exclusion criteria** Structural uterine abnormality; submucosal fibroids; suspected uterine or cervical neoplasia; acute pelvic inflammatory disease		year): Immediate: 24/27; Delayed: 17/28 Worst case scenario (LNG-IUS inserted and verified at 1 year): Immediate: 15/27; Delayed: 7/28	
Full citation Langston, A. M., Joslin-Roher, S. L., Westhoff, C. L., Immediate postabortion access to IUDs, implants and DMPA reduces repeat pregnancy within 1 year in a New York City practice, Contraception, 89, 103-8, 2014 **Ref Id** 770277 **Country/ies where the study was carried out**	Sample size n=812 (n=405 LARC immediately available; n=407 LARC not immediately available) **Characteristics** Age in years (mean; standard deviation in parentheses): LARC immediately available: 26.0 (6.5) LARC not immediately available: 25.4 (6.0) Gravidity - 1 (number; percentage in parentheses):	All women received medical and sexual history, physical exam, ultrasound, counselling, and the termination of pregnancy during a single visit. **LARC immediately available:** Women could receive IUDs, implants, DMPA (occasionally unavailable due to popularity), oral contraceptives, condoms, the contraceptive patch or the vaginal ring on the same day as the termination,	**Outcome: Receipt of chosen method of contraception (IUD)*LARC immediately available: 155/174** LARC not immediately available: 45/135 **Outcome: Subsequent termination of pregnancy within 12 months** LARC immediately available: 40/405 LARC not immediately available: 70/407	**Limitations** **Quality of study:** Risk of bias assessed using the Newcastle-Ottawa scale for cohort studies Selection 1) Representativeness of the exposed cohort b) somewhat representative of the average woman having a first trimester surgical termination of pregnancy during the study time frame - limited to those who had Medicaid insurance but the

Study details	Participants	Interventions	Outcomes and Results	Comments
USA **Study type** Retrospective study **Aim of the study** To determine if immediate provision of LARC after termination of pregnancy reduces repeat pregnancies compared with standard practice (where women are referred to a neighbouring clinic to receive LARC) **Study dates** October 2007 to June 2009 **Source of funding** Society of Family Planning	LARC immediately available: 55 (13.6) LARC not immediately available: 56 (13.6) Gravidity - 2 (number; percentage in parentheses): LARC immediately available: 80 (19.8) LARC not immediately available: 96 (23.6) Gravidity - 3 (number; percentage in parentheses): LARC immediately available: 98 (24.2) LARC not immediately available: 80 (19.7) Gravidity - ≥4 (number; percentage in parentheses): LARC immediately available: 172 (42.5) LARC not immediately available: 175 (43.0) Parity - 0 (number; percentage in parentheses): LARC immediately available: 120 (29.6) LARC not immediately available: 108 (26.5) Parity - 1 (number; percentage in parentheses): LARC immediately available: 131 (32.3) LARC not immediately available: 160 (39.3) Parity - 2 (number; percentage in parentheses):	immediately following the procedure. **LARC not immediately available:** Women could receive oral contraceptives, condoms, the contraceptive patch or the vaginal ring on the same day as the termination, immediately following the procedure, but had to be referred to a family planning clinic for IUDs or DMPA; the implant was not available.	**Outcome: Number who receive LARC rather than any contraception (IUD, implant or DPMA)** Assuming DMPA referrals received injection LARC immediately available: 218/405 LARC not immediately available: 95/407 Assuming DMPA referrals did not receive injection LARC immediately available: 205/405 LARC not immediately available: 46/407 **Outcome: Proportion who received contraception** Assuming referrals received contraception (where information is missing): LARC immediately available: 353/405 LARC not immediately available: 267/407 Assuming referrals did not receive contraception (where information is missing): LARC immediately available: 340/407 LARC not immediately available: 218/407 *Not extracted for other contraception types as: it is	authors note this was due to increased likelihood their follow-up would be within the New York Presbyterian Hospital system, rather than differences in contraceptive needs or repeat pregnancy risk in this group (one star) 2) Selection of the non-exposed cohort b) drawn from a different source - same practice as the exposed cohort but the timeframe was difference (exposed cohort October 2008 to June 2009; non-exposed cohort October 2007 to June 2008) 3) Ascertainment of exposure a) secure record (one star) 4) Demonstration that outcome of interest was not present at start of study a) yes (one star) Comparability 1) Comparability of cohorts on the basis of the design or analysis controlled for confounders n/a - no statistically significant differences between cohorts Outcome 1) Assessment of outcome b) record linkage (one star) 2) Was follow-up long enough for outcomes to occur

Study details	Participants	Interventions	Outcomes and Results	Comments
	LARC immediately available: 104 (25.7) LARC not immediately available: 90 (22.1) Parity - ≥3 (number; percentage in parentheses): LARC immediately available: 50 (12.3) LARC not immediately available: 49 (12.0) Previous termination of pregnancy (number; percentage in parentheses): LARC immediately available: 238 (58.8) LARC not immediately available: 235 (57.7) **Inclusion criteria** Women aged at least 18 years old having a vacuum aspiration for termination of pregnancy during the first trimester (defined as up to 13+6 weeks' gestation), with Medicaid insurance **Exclusion criteria** Commercial insurance; miscarriage; ectopic pregnancy		unclear what proportion of women who wanted DMPA actually received it; implant was only available in one arm and it is not reported if any women in the other arm would have preferred this method; receipt rates for short-acting methods are reported but it is unclear if they were the preferred method	a) Yes - follow-up corresponds to maximum follow-up period in review protocol (one star) 3) Adequacy of follow-up cohorts Unclear - follow-up was not routinely scheduled but electronic and paper records were reviewed to document follow-up visits and repeat pregnancies Overall quality Moderate - non-exposed cohort covered a different time frame than the exposed cohort but the two groups were comparable; adequacy of follow-up unclear **Other information** None
Full citation Madden, T., Secura, G. M., Allsworth, J. E., Peipert, J. F., Comparison of contraceptive method chosen by women with and	**Sample size** n=5,083 enrolled (n=937 immediate access post-termination; n=736 delayed access post-termination; n=3,410 no recent termination	No information available about the termination as this study was secondary analysis of the Contraceptive CHOICE Project. Women were	**Outcome: Number who receive LARC rather than any contraception (IUD, implant, DMPA)** Immediate: 862/937 Delayed: 572/736	**Limitations** **Quality of study:**

Study details	Participants	Interventions	Outcomes and Results	Comments
without a recent history of induced abortion, Contraception, 84, 571-7, 2011 **Ref Id** 770335 **Country/ies where the study was carried out** USA **Study type** Prospective cohort study **Aim of the study** To determine whether choice of contraception is affected by a recent termination of pregnancy and immediate access to contraception following termination **Study dates** August 2007 to December 2009 **Source of funding** Midcareer Investigator Award in Women's Health Research; Eunice Kennedy Shriver National Institute of Child Health & Human Development; National Center for Research	[not of interest for current review]) **Characteristics** Age in years (mean; standard deviation in parentheses): Immediate: 25.4 (5.7) Delayed: 25.5 (5.7) Race - Black (number; percentage in parentheses): Immediate: 558 (59.9) Delayed: 404 (55.1) Race - White (number ; percentage in parentheses): Immediate: 311 (33.4) Delayed: 278 (37.9) Hispanic (number; percentage in parentheses): Immediate: 43 (4.6) Delayed: 19 (2.6) Parity - 0 (number; percentage in parentheses): Immediate: 287 (30.6) Delayed: 303 (41.2) Parity - 1-2 (number; percentage in parentheses): Immediate: 477 (50.9) Delayed: 351 (47.7) Parity - ≥3 (number; percentage in parentheses): Immediate: 173 (18.5) Delayed: 82 (11.1)	defined as having a recent termination of pregnancy is they had a termination in the 90 days before, or 30 days after, enrolling in CHOICE. Reversible contraception of choice was provided free of charge. **Immediate:** Women who had a termination of pregnancy on the same day as they enrolled into CHOICE, or after enrolment into CHOICE, and received contraception on the same day as the termination. **Delayed:** Women who received contraception the day after the termination of pregnancy or later. All women who had a medical termination of pregnancy were included in this arm as they were not eligible for all contraceptive methods on the same day as the termination.	**Outcome: Proportion who received contraception** Immediate: 937/937 Delayed: 736/736	Risk of bias assessed using the Newcastle-Ottawa scale for cohort studies Selection 1) Representativeness of the exposed cohort c) Women self-selecting into CHOICE project - unclear if representative of the wider termination of pregnancy population 2) Selection of the non-exposed cohort a) drawn from the same community as the exposed cohort (one star) 3) Ascertainment of exposure c) self-report - the termination of pregnancy procedure (and therefore timing of contraception in relation to termination) was confirmed for all women in the immediate group but timing of termination was self-reported in the delayed group 4) Demonstration that outcome of interest was not present at start of study a) yes (one star) Comparability 1) Comparability of cohorts on the basis of the design or analysis controlled for confounders a) All significant covariates were included in the

Study details	Participants	Interventions	Outcomes and Results	Comments
Resources; anonymous foundation	Prior termination of pregnancy (number; percentage in parentheses): Immediate: 480 (50.9) Delayed: 736 (100.0) **Inclusion criteria** Women aged 14-45 years old, living in St Louis City or County, who have been sexually active with a male partner in the last 6 months or anticipate sexual activity in the next 6 months; have not had tubal sterilisation or hysterectomy; do not wish to become pregnant during the next year; interested in starting a new, reversible contraception method. **Exclusion criteria** No additional criteria reported			multivariable model (two stars; results did not differ significantly between univariate and multivariable models) Outcome 1) Assessment of outcome b) record linkage (one star) 2) Was follow-up long enough for outcomes to occur a) Yes - choice of contraception (one star) 3) Adequacy of follow-up cohorts a) complete follow-up - all subjects accounted for (one star) Overall quality Moderate - concerns regarding the representativeness of the population **Other information** Unclear what proportion of women in both arms received contraception and termination of pregnancy from the same provider but it is likely this was the case for at least some women in the immediate arm as they received contraception and termination on the same day and some of the included sites for the CHOICE project were

Study details	Participants	Interventions	Outcomes and Results	Comments
				termination of pregnancy clinics.
Full citation Madden, T., Eisenberg, D. L., Zhao, Q., Buckel, C., Secura, G. M., Peipert, J. F., Continuation of the etonogestrel implant in women undergoing immediate postabortion placement, Obstetrics and gynecology, 120, 1053-1059, 2012 **Ref Id** 897782 **Country/ies where the study was carried out** USA **Study type** Prospective cohort study **Aim of the study** To determine if 12 month implant continuation rates differ between people who had the implant inserted immediately after a termination of pregnancy compared with women who had not had a recent termination of pregnancy; however, results also reported for women who	**Sample size** n=7,472 women enrolled into the CHOICE project, had initiated baseline-method of contraception by 3 months and been in the study for at least 12 months n=1,178 who received implant (n=141 immediate access post-termination; n=102 delayed access post-termination; n=935 no recent termination [not of interest for current review]) **Characteristics** Age in years (mean; standard deviation in parentheses): Immediate: 23.1 (5.6) Delayed: 22.5 (4.9) Race - Black (number; percentage in parentheses): Immediate: 92 (65.2) Delayed: 63 (61.8) Race - White (number; percentage in parentheses): Immediate: 39 (27.7) Delayed: 32 (31.4) Hispanic ethnicity (number; percentage in parentheses): Immediate: 4 (2.9) Delayed: 3 (2.9) Nulliparous (number; percentage in parentheses):	No information available about the termination as this study was secondary analysis of the Contraceptive CHOICE Project. Women were defined as having a recent termination of pregnancy is they had a termination in the 90 days before, or 30 days after, enrolling in CHOICE. Reversible contraception of choice was provided free of charge. **Immediate:** Women who had a termination of pregnancy on the same day as they enrolled into CHOICE, or after enrolment into CHOICE, and received contraception on the same day as the termination. **Delayed:** Women who received contraception the day after the termination of pregnancy or later. All women who had a medical termination of pregnancy were included in this arm as they were not eligible for all contraceptive	**Outcome: Continuation of contraception at 12 months (implant)** Immediate: 115/141 Delayed: 88/102 **Outcome: Patient satisfaction** Very satisfied: Immediate: 69/141 Delayed: 57/102 Somewhat satisfied: Immediate: 34/141 Delayed: 24/102 Not satisfied: Immediate: 38/141 Delayed: 21/102	**Limitations** **Quality of study:** Risk of bias assessed using the Newcastle-Ottawa scale for cohort studies Selection 1) Representativeness of the exposed cohort c) Women self-selecting into CHOICE project - unclear if representative of the wider termination of pregnancy population 2) Selection of the non-exposed cohort a) drawn from the same community as the exposed cohort (one star) 3) Ascertainment of exposure c) self-report - the termination of pregnancy procedure (and therefore timing of contraception in relation to termination) was confirmed for all women in the immediate group but timing of termination was self-reported in the delayed group 4) Demonstration that outcome of interest was not present at start of study a) yes (one star) Comparability

Study details	Participants	Interventions	Outcomes and Results	Comments
had a delayed insertion after termination of pregnancy. **Study dates** August 2007 to November 2010 **Source of funding** Susan Thompson Buffett Foundation; Eunice Kennedy Shriver National Institute of Child Health & Human Development	Immediate: 61 (43.3) Delayed: 52 (51.0) Parous (number; percentage in parentheses): Immediate: 80 (56.7) Delayed: 50 (49.0) Previous termination (number; percentage in parentheses): Immediate: 62 (44.0) Delayed: 36 (35.6) **Inclusion criteria** Women aged 14-45 years old, living in St Louis City or County, who have been sexually active with a male partner in the last 6 months or anticipate sexual activity in the next 6 months; have not had tubal sterilisation or hysterectomy; do not wish to become pregnant during the next year; interested in starting a new, reversible contraception method. **Exclusion criteria** No additional criteria reported	methods on the same day as the termination.		1) Comparability of cohorts on the basis of the design or analysis controlled for confounders a) All significant covariates were included in the multivariable model (two stars; results did not differ significantly between univariate and multivariable models) Outcome 1) Assessment of outcome c) self-report 2) Was follow-up long enough for outcomes to occur a) Yes - follow-up corresponds to maximum follow-up period in review protocol (one star) 3) Adequacy of follow-up cohorts a) complete follow-up - all subjects accounted for (one star) Overall quality Low - concerns regarding the representativeness of the population and outcomes were self-reported **Other information** Unclear what proportion of women in both arms received contraception and termination of pregnancy from the same

Study details	Participants	Interventions	Outcomes and Results	Comments
				provider but it is likely this was the case for at least some women in the immediate arm as they received contraception and termination on the same day and some of the included sites for the CHOICE project were termination of pregnancy clinics.
Full citation Raymond, E. G., Weaver, M. A., Tan, Y. L., Louie, K. S., Bousieguez, M., Lugo-Hernandez, E. M., Arangure-Peraza, A. G., Sanhueza, P., Kaplan, C., Sonalkar, S., Goldberg, A. B., Culwell, K. R., Memmel, L., Jamshidi, R., Winikoff, B., Effect of Immediate Compared With Delayed Insertion of Etonogestrel Implants on Medical Abortion Efficacy and Repeat Pregnancy: A Randomized Controlled Trial, Obstetrics & GynecologyObstet Gynecol, 127, 306-12, 2016ba **Ref Id** 713895 **Country/ies where the study was carried out** USA and Mexico	**Sample size** n= 476 randomised (n=236 quickstart; n=240 afterstart) n= 463 termination failure analysis (n= 229 quickstart [n= 5 unknown termination outcome; n=2 declined implant at admission]; n= 234 afterstart [n= 4 unknown termination outcome; n=2 used or may have used hormonal contraceptive within 6 days after mifepristone ingestion]) n= 421 subsequent pregnancy analysis (n=213 quickstart [n=16 lost to follow-up]; n=208 afterstart [n=26 lost to follow-up]) **Characteristics** Age in years (%): 17 or younger: n=4 (1.7) quickstart; n=3 (1.3) afterstart 18-24: n=113 (47.9) quickstart; n= 121 (50.4) afterstart	**Medical termination:** 200mg mifepristone orally followed by misoprostol 800mcg bucally 1-2 days later. **Quickstart:** Implants containing 68mg etonogestrel inserted after ingesting mifepristone and before leaving the study site. **Afterstart:** Implants containing 68mg etonogestrel inserted after termination was complete (specific timeframe not specified)	**Outcome: Receipt of chosen method of contraception (implant)** Quickstart: 236/236 Afterstart: 200/240 **Outcome: Continuation of contraception at 6 months** Quickstart: 204/236 Afterstart: 184/240 **Outcome: Patient satisfaction** **Satisfaction with group assignment:** **At enrolment:** Pleased: quickstart - n= 187/236; afterstart - n= 129/240 Neutral: quickstart - n= 44/236; afterstart - n=81/240 Disappointed: quickstart - n= 5/236; afterstart - n=30/240 After termination determined to be complete:	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk, computer generated Allocation concealment: low risk, opaque, sealed envelopes opened in consecutive order Blinding of participants and personnel: Unblinded High risk for subjective outcomes, low risk for objective outcomes. Blinding of outcome assessment: Outcome assessor blinded to contraceptive regimen High risk for patient reported outcomes, low risk for all other outcomes Incomplete outcome data: High risk as 7% attrition from immediate group and 11%

Study details	Participants	Interventions	Outcomes and Results	Comments
Study type Randomised controlled trial **Aim of the study** Evaluate whether inserting etonogestrel implants on the same day as mifepristone rather than requiring women to delay would affect two primary outcomes: the risk of medical termination failure (surgery to complete the pregnancy termination) and the probability of repeat pregnancy during the subsequent 6 months **Study dates** 2013-2015 **Source of funding** The study was funded by an anonymous donor.	25 or older: n= 119 (50.4) quickstart; n=116 (48.3) afterstart Previous pregnancies (%): 0: n=44 (18.6) quickstart; n=39 (16.3) afterstart 1 or more: n=192 (81.4) quickstart; n= 201 (83.8) afterstart Previous terminations (%): 0: n=160 (67.8) quickstart; n=159 (66.3) afterstart 1 or more: n=76 (32.2) quickstart; n=81 (33.8) afterstart Gestational age in days (%): 49 or less: n=111 (47) quickstart; n=95 (39.6) afterstart 50-63: n=92 (39) quickstart; n=101 (42.1) afterstart 64 or greater: n=33 (14) quickstart; n=44 (18.3) afterstart Country (%): USA: n=24 (10.2) quickstart; n=27 (11.3) afterstart Mexico: n=212 (89.8) quickstart; n=213 (88.8) afterstart **Inclusion criteria** Candidates for outpatient medical termination with mifepristone and misoprostol according to the study site standards, without recognised nonviable pregnancies who requested etonogestrel implants for posttermination		Pleased: quickstart - n= 208/236; afterstart - n= 140/240 Neutral: quickstart - n= 21/236; afterstart - n= 79/240 Disappointed: quickstart - n= 2/236; afterstart - n= 14/240 Missing: quickstart - n= 5; afterstart - n= 7 **Outcome: Number who receive LARC rather than any contraception** Quickstart: 236/236 Afterstart: 202/240	attrition from delayed group, reasons for loss to follow up not explained Selective reporting: Low risk, those notes in the methods to be assessed were assessed Other bias: None reported **Other information** Anonymous donor funded RCT, however there were declarations that the party had no part in the conduct or write up of the RCT

Study details	Participants	Interventions	Outcomes and Results	Comments
	contraception, and did not plan to use hormonal contraceptives before implant insertion. **Exclusion criteria** **None reported**			
Full citation Raymond, E. G., Weaver, M. A., Louie, K. S., Tan, Y. L., Bousieguez, M., Arangure-Peraza, A. G., Lugo-Hernandez, E. M., Sanhueza, P., Goldberg, A. B., Culwell, K. R., Kaplan, C., Memmel, L., Sonalkar, S., Jamshidi, R., Winikoff, B., Effects of Depot Medroxyprogesterone Acetate Injection Timing on Medical Abortion Efficacy and Repeat Pregnancy: A Randomized Controlled Trial, Obstetrics & GynecologyObstet Gynecol, 128, 739-45, 2016b **Ref Id** 713893 **Country/ies where the study was carried out** USA and Mexico **Study type** Randomised controlled trial	**Sample size** n= 461 randomised (n=225 quickstart group; n=236 afterstart group) n= 446 termination outcome analysis (n= 220 quickstart group [n= 5 unknown termination outcome]; n= 226 afterstart group [n=7 unknown termination outcome; n= 3 may or may not have used hormonal contraceptive within 6 days after mifepristone ingestion]) n= 430 subsequent pregnancy analysis (n= 213 quickstart group [n=7 lost to follow-up]; n= 217 afterstart group [n=9 lost to follow-up]) **Characteristics** Age in years (%): 17 or younger: n=4 (1.8) quickstart; n=3 (1.3) afterstart 18-24: n=102 (45.3) quickstart; n= 100 (42.4) afterstart 25 or older: n= 119 (52.9) quickstart; n=133 (56.4) afterstart Previous pregnancies (%):	**Medical termination:** 200mg mifepristone orally followed 1-2 days later by 800mcg misoprostol bucally **Quickstart:** 150mg DMPA intramuscularly shortly after ingesting mifepristone **Afterstart:** 150mg DMPA intramuscularly after termination was complete (timeframe not specified)	**Outcome: Receipt of chosen method of contraception (DMPA):** Quickstart: 224/225 Afterstart: 189/236 **Outcome: Continuation of contraception at 6 months:** Quickstart: 109/225 Afterstart: 95/236 **Outcome: Patient satisfaction:** **Satisfaction with group assignment:** **At enrolment:** Pleased: quickstart - n= 164/225; afterstart - n= 104/236 Neutral: quickstart - n= 57/225; afterstart - n= 106/236 Disappointed: quickstart - n= 4/225; afterstart - n= 26/236 After termination determined to be complete: Pleased: quickstart - n= 179/225; afterstart - n= 97/236	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk, computer generated Allocation concealment: low risk, opaque, sealed envelopes opened in consecutive order Blinding of participants and personnel: Unblinded High risk for subjective outcomes, low risk for objective outcomes. Blinding of outcome assessment: Outcome assessor blinded to contraceptive regimen High risk for patient reported outcomes, low risk for all other outcomes Incomplete outcome data: Low risk as only 2% attrition from immediate group and 4% attrition from delayed group, all drop-outs fully explained in the text and a further 3.2%

Study details	Participants	Interventions	Outcomes and Results	Comments
Aim of the study Primary objectives were to evaluate whether initiating DMPA on the same day as mifepristone rather than requiring women to delay the injection until after the termination was complete would affect: 1) the risk of having surgery to complete termination and 2) the probability of pregnancy during the subsequent 6 months. **Study dates** 2013-2015 Source of funding Financial support provided by an anonymous donor. The funder had no role in the development of the study question or the study design or in the collection, storage, or analysis of data.	0: n=40 (17.8) quickstart; n=44 (18.6) afterstart 1 or more: n=185 (82.2) quickstart; n= 192 (81.4) afterstart Previous terminations (%): 0: n=143 (63.6) quickstart; n=134 (56.8) afterstart 1 or more: n=82 (36.4) quickstart; n=102 (43.2) afterstart Gestational age in days (%): 49 or less: n=107 (47.6) quickstart; n=112 (47.5) afterstart 50-63: n=89 (39.6) quickstart; n=94 (39.8) afterstart 64 or greater*: n=29 (12.9) quickstart; n=30 (12.7) afterstart Country (%): USA: n=50 (22.2) quickstart; n=61 (25.8) afterstart Mexico: n=175 (77.8) quickstart; n=175 (74.2) afterstart *max gestational age of enrolled women was 75 days in the quickstart group and 73 days in the afterstart group **Inclusion criteria** Women who met sites criteria for outpatient medical termination with mifepristone and misoprostol and desired DMPA for contraception were eligible.		Neutral: quickstart - n= 35/225; afterstart - n= 91/236 Disappointed: quickstart - n= 1/225; afterstart - n= 29/236 Missing: quickstart 10; afterstart 19 **Outcome: Number who receive LARC rather than any contraception** Quickstart: 224/224 Afterstart: 197/236	attrition from immediate group and 4% attrition for the delayed group, but loss to follow-up not explained, respectively. Selective reporting: Low risk, those notes in the methods to be assessed were assessed Other bias: None reported **Other information** Anonymous donor funded RCT, however there were declarations that the party had no part in the conduct or write up of the RCT

Study details	Participants	Interventions	Outcomes and Results	Comments
	Exclusion criteria None reported			
Full citation Rocca, C. H., Goodman, S., Grossman, D., Cadwallader, K., Thompson, K. M. J., Talmont, E., Speidel, J. J., Harper, C. C., Contraception after medication abortion in the United States: results from a cluster randomized trial, American Journal of Obstetrics & GynecologyAm J Obstet Gynecol, 218, 107.e1-107.e8, 2018 **Ref Id** 832858 **Country/ies where the study was carried out** USA **Study type** Cluster randomised controlled trial **Aim of the study** The aim of the study was to compare differences in choice and use of contraception following medical and surgical	**Sample size** n=648 enrolled (n=5 excluded due to missing information regarding termination type) n=643 included (n=319 training intervention; n=324 control) **Characteristics** Characteristics not presented separately based on intervention and control women; characteristics below for all women Age in years (mean; standard deviation in parentheses): 21.6 (2.2) Gestational age in weeks (mean; standard deviation in parentheses): 8.7 (2.4) Race/ethnicity - White (number; percentage in parentheses): 349 (54.3) Race/ethnicity - Black (number; percentage in parentheses): 131 (20.4) Race/ethnicity - Latina (number; percentage in parentheses): 178 (27.7) Parous (number; percentage in parentheses): 257 (40.4) **Inclusion criteria**	All women received contraceptive counselling, completed a self-administered questionnaire about contraceptive history, counselling received and method chosen. No details were provided regarding termination methods (26% had a medical ToP and 74% had a surgical ToP). Women completed questionnaires and pregnancy tests quarterly for a year following termination of pregnancy. **Training intervention:** Staff completed a half-day training session including: the effectiveness of and eligibility for LARC, including same-day placement; patient-centred counselling skills and ethical issues specific to LARC; hands on IUD and implant training. **Control:** Standard care - no further information reported.	**Outcome: Number who receive LARC rather than any contraception (implant or IUD)** Intervention: 68/319 Control: 71/324	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk; computer-generated schedule stratified by clinic size; prepared by independent statistician (information taken from Harper 2015) Allocation concealment: unclear; authors report that clinics were unaware of allocation until after the study started but how allocation was concealed is not reported Blinding of participants and personnel: no blinding, blinding impractical for personnel due to training but participants could have been blinded; unclear risk Blinding of outcome assessment: not reported; unclear risk Attrition: no attrition for outcome of interest (number who received LARC); other outcomes are not reported based on intervention

Study details	Participants	Interventions	Outcomes and Results	Comments
termination of pregnancy; however, results are also reported comparing contraception choices between women at intervention (staff training) and control clinics **Study dates** May 2011 to March 2012 **Source of funding** William and Flora Hewlett Foundation (study funding); Teva Pharmaceuticals Industries and Bayer HealthCare (provided IUDs for training); National Campaign to Prevent Teen and Unplanned Pregnancy (grant to produce patient education video); Eunice Kennedy Shriver National Institute of Child Health and Human Development,; Office of Research on Women's Health,; Bridging Interdisciplinary Research on Women's Health	Women aged 18-25 years old who were sexually active, received contraceptive counselling and did not want to get pregnant within the next year **Exclusion criteria** No additional criteria reported			Selective reporting: low risk; all outcomes reported in sufficient detail for primary aim of study **Other information** Limited results could be extracted as primary aim of the study was to compare outcomes between medical and surgical termination of pregnancy, not based on intervention which is the comparison of interest for current review.
Full citation Saav, I., Stephansson, O., Gemzell-Danielsson, K., Early versus delayed insertion of intrauterine contraception after medical abortion - a randomized	**Sample size** n=129 randomised (n=66 early insertion; n=63 delayed insertion) n=116 per protocol (n=62 early insertion [4 did not receive IUD due to mis-scheduling (2), endometriosis (1), or regrets	**Medical termination procedure:** Day 1: 200 mg oral mifepristone at the clinic. Thirty-six-48 hours later: Oral analgesics (100 mg diclofenac, 2 X 500 mg paracetamol, 10 mg	**Outcome: Receipt of chosen method of contraception (IUD; not reported separately for copper and LNG-IUS):** Early: 62/66 Delayed: 54/63	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Randomisation: Low risk, computer-generated randomisation list by nurse

Study details	Participants	Interventions	Outcomes and Results	Comments
controlled trial, 7, e48948, 2012 **Ref Id** 770557 **Country/ies where the study was carried out** Sweden **Study type** Randomised controlled trial **Aim of the study** "to compare early versus delayed (routine) IUC insertion post medical termination with regard to incidence of expulsion (primary outcome), proportion/rates of insertion and complications (pelvic infection, uterine perforation or heavy bleeding), including both the common types of modern IUC, the T shaped Cu-IUD and the LNG-IUS." (p. e48948) **Study dates** February 2007 to October 2010 **Source of funding**	about method (1)]; n=54 delayed insertion [9 did not receive IUD due to surgery for incomplete abortion with heavy bleeding or continuing pregnancy (1 each), or loss to follow up/regrets about method (7)]) **Characteristics** Per-protocol population Median age in years (range): early=31 (18-44); delayed=32.5 (18-43) Median parity no (range): early=2 (0-4); delayed=1.5 (0-4) Nulliparous no (%): early=21 (34); delayed=18 (33) Median gestational length in days (range): early=47.5 (27-63); delayed=44 (27-63) IUC type chosen no (%): Copper IUD: early=30 (48.4); delayed=25 (46.3) LNG-IUS: early=32 (51.6); delayed=29 (53.7) **Inclusion criteria** Women who were of general good health, proficient in Swedish, aged >18 years, requesting a medical termination of pregnancy ≤ 63 days gestation, planning to use either the LNG-IUS or the Cu-IUD for contraception post-	dihydrocodeine, and additional analgesics as needed) before 800 mcg misoprostol vaginally, self-administered at the clinic or at home, depending on the woman's preference. Women randomised to early or delayed insertion of the Cu-IUD or the LNG-IUS. Randomisation was stratified by the type of IUD. The women decided themselves which IUD they wanted. **Early insertion:** For those randomised to early insertion, LNG-IUS/Cu-IUD insertion occurred on day 5-9 after mifepristone treatment. **Delayed insertion:** For those randomised to delayed insertion, LNG-IUS/Cu-IUD insertion occurred on day 21-25 after mifepristone treatment. **Follow-up:** 4 weeks (visit) and 6 months (telephone) after insertion.	**Outcome: Continuation of contraception at 6 months*:** Copper IUD Early: 24/30 Delayed: 18/25 LNG-IUS Early: 18/32 Delayed: 21/29 *results reported for those who received contraception; changed to per-protocol in RevMan analyses for consistency with other studies	not directly involved in the study Allocation concealment: Low risk; sequentially numbered opaque envelopes by nurse not directly involved in the study; investigators did not have access to randomisation list Blinding of participants and personnel: Unblinded; low risk as all reported outcomes are objective outcomes. Blinding of outcome assessment: Unblinded; low risk as all reported outcomes are objective outcomes. Attrition: High risk as higher rates of attrition in the delayed arm (9/63) than in the early arm (4/66) Selective reporting: Low risk Other bias: None reported **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
Karolinska Institutet/Stockholm City County (ALF), the Swedish research council (K2010-54X-14212-09-3) and FAS. In addition to this, Bayer Pharma AG, Stockholm, Sweden, contributed Thirty LNG-IUS devises	termination, and not planning on having children within the next 12 months. A positive screen for bacterial vaginosis or Chlamydia infection did not preclude participation in the study, but was treated. **Exclusion criteria** Pathological pregnancies; abnormality of the uterus; continuing pregnancy; missed miscarriage on the day of insertion; any surgical intervention or genital infection after the termination.			
Full citation Shimoni, N., Davis, A., Ramos, M. E., Rosario, L., Westhoff, C., Timing of copper intrauterine device insertion after medical abortion: a randomized controlled trial, Obstetrics & GynecologyObstet Gynecol, 118, 623-8, 2011 **Ref Id** 770604 **Country/ies where the study was carried out** USA **Study type** Randomised controlled trial	**Sample size** n=156 randomised (n=71 early insertion; n=85 delayed insertion) n=134 per protocol (n=69 early insertion [2 did not receive IUD as they declined it]; n=65 delayed insertion [20 did not receive IUD as they declined it (16), or were lost to follow up (4)]) **Characteristics** ITT population: Mean age in years (SD): early=26.9 (6); delayed=26.4 (5.8) Mean gestational age in days (SD): early=49.3 (6.7); delayed=48.4 (7.3)	**Medical termination procedure: Day 1:** 200 mg oral mifepristone at the office. Twenty-four-48 hours later: 800 mcg misoprostol in the buccal mucosa, self-administered at home. Other medicines included promethazine, ibuprofen, and acetaminophen with codeine. All women were also given a prescription for infection prophylaxis (doxycycline; 100 mg orally twice daily for 1 week). Women randomised to early or delayed insertion of the Cu-IUD at visit 1 week after mifepristone.	**Outcome: Receipt of chosen method of contraception (IUD) (ITT)** Early: 69/71 Delayed: 65/85 **Outcome: Subsequent termination of pregnancy within 6 months** Early: 0/71 Delayed: 1/85 **Outcome: Continuation of contraception at 6 months (ITT)** Early: 49/71 Delayed: 51/85	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Randomisation: Low risk, random number table by staff member not involved with enrolment Allocation concealment: Low risk; sequentially numbered opaque envelopes; randomisation before ultrasound to ensure ultrasound findings did not affect participant selection Blinding of participants and personnel: Unblinded; low risk as all reported outcomes are objective outcomes.

Study details	Participants	Interventions	Outcomes and Results	Comments
Aim of the study "to compare "immediate" copper IUD insertion 1 week after medical termination to "delayed" copper IUD insertion 4–6 weeks later." (p. 624) **Study dates** July 2008 to October 2009 **Source of funding** Anonymous foundation; DuraMed donated the CuT380A intrauterine copper contraceptives	Non-Hispanic/Hispanic no (%): early=2 (3)/69 (97); delayed=4 (5)/81 (95) Past pregnancy yes/no, no (%): early=68 (96)/3 (4); delayed=78 (92)/7 (8) Past birth yes/no, no (%): early=61 (86)/10 (14); delayed=71 (84)/14 (16) Past birth control used yes/no, no (%): early=67 (94)/4 (6); delayed=85 [probably should be 80] (94)/5 (6) Past IUD use yes/no, no (%): early=5 (7)/66 (93); delayed=6 (7)/79 (93) **Inclusion criteria** Healthy women with a working telephone number who had requested a medical termination of pregnancy up to 63 days gestation (based on the last menstrual period), were English- or Spanish-speaking, planned to stay in the area for the following 6 months, and wanted a copper IUD for contraception for ≥ 6 months **Exclusion criteria** Contraindications to IUD use (including a documented cervical gonorrhoea or Chlamydia infection in the past 3 months, a known bleeding diathesis, serum	**Early insertion:** For those randomised to early insertion, Cu-IUD insertion occurred during the randomisation visit on day 7 after mifepristone treatment. 56, 8 and 5 women, respectively, had insertion ≤ 8 days, 9-14 days and > 14 days after mifepristone administration. **Delayed insertion:** For those randomised to delayed insertion, Cu-IUD insertion occurred on 4-6 weeks after mifepristone treatment. These women were also offered interim contraception and contacted for another appointment if they did not turn up for the insertion appointment. In the delayed group, 60 and 5 women, respectively, had insertion ≤ 42 days and > 42 days after mifepristone administration. Women with a retained sac without evidence of growth (managed by a repeat dose of misoprostol or vacuum aspiration, based on preference of the woman), continuing pregnancy (managed with vacuum aspiration) or endometrial stripes thicker		Blinding of outcome assessment: Unblinded; low risk as all reported outcomes are objective outcomes. Attrition: High risk as higher rates of attrition in the delayed arm (20/85) than in the early arm (2/71) Selective reporting: Unclear risk; patient satisfaction data collected, but not reported Other bias: None reported **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
	haemoglobin < 10 g/dL, or an untreated high-grade squamous intraepithelial lesion).	than 3 cm were not excluded from the study. Instead, they stayed in the study and had IUDs inserted after the terminations were complete. **Follow-up:** 6-8 weeks (visit), 3 months and 6 months (visit) after insertion.		

BMI: body mass index; Cu-ID: copper intrauterine device; D&E: dilatation and evacuation; DMPA: Depomedroxyprogesterone acetate; EMA: early medical abortion; ITT: intention-to-treat; IUD: intrauterine device; LARC: long-acting reversible contraception; LNG-IUS: levonorgestrel-releasing intrauterine system; mcg: micrograms; MSD: Merck Sharp and Dohme; RCT: randomised controlled trial; ToP: termination of pregnancy

Clinical evidence tables for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination

Study details	Participants	Interventions	Outcomes and Results	Comments
Full citation Hognert, H., Kopp Kallner, H., Cameron, S., Nyrelli, C., Jawad, I., Heller, R., Aronsson, A., Lindh, I., Benson, L., Gemzell-Danielsson, K., Immediate versus delayed insertion of an etonogestrel releasing implant at medical abortion-a randomized controlled equivalence trial, Human Reproduction, 31, 2484-2490, 2016 **Ref Id** 713803 **Country/ies where the study was carried out** Sweden and Scotland Study type	**Sample size** n= 550* randomised (n=282 immediate insertion; n=268 delayed insertion) n= 538 ITT (n=277 immediate insertion [n=2 did not receive medical termination; n=3 withdrew consent]; n=261 delayed insertion [n=2 did not receive medical termination; n=5 withdrew consent]) n=523 per protocol (n=274 immediate insertion [n=3 changed mind regarding contraception]; n=249 delayed insertion [n=2 received implant at same time as misoprostol; n=10 changed mind regarding contraception]) n=457 sensitivity analysis (n=242 immediate insertion [n=32 did not complete follow-up]; n=215 delayed insertion [n=34 did not complete follow-up]) *Authors report that 551 were randomised but the numbers in the flow chart add up to 550; an additional woman was enrolled in the study but had a miscarriage before randomisation **Characteristics** Age in years, median (range): Immediate= 25 (18-42); delayed= 25 (18-43)	**Medical termination:** Mifepristone 200mg followed by misoprostol 800micrograms 24-48 hours later. **Immediate insertion:** Etonogestrel-releasing implant using local anaesthesia 1 hour after mifepristone had been ingested **Delayed insertion:** Etonogestrel-releasing implant inserted by a nurse-midwife practitioner using local anaesthesia at the follow-up visit 2-3 weeks after mifepristone treatment.	**Outcome: Incomplete abortion with the need for surgical intervention** Immediate: 16/275; delayed: 10/249 per protocol analysis Risk difference according to ITT was 1.8% (95% CI -0.4% to 4.1%), however full figures were not supplied **Outcome: Patient acceptability /satisfaction** If given choice, which insertion regimen would women choose Immediate: 180/277 prefer immediate insertion; 12/277 prefer delayed insertion; 85/277 missing data Delayed: 102/261 prefer immediate insertion; 51/261 prefer delayed insertion; 108/261 missing answers Acceptability defined as "preferring the allocated time of insertion" Immediate: 64.9%; delayed: 19.5%	**Limitations** **Quality of study**: Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk, computer generated Allocation concealment: low risk, opaque, sealed envelopes opened in consecutive order Blinding of participants and personnel: Unblinded High risk for subjective outcomes, low risk for objective outcomes. Blinding of outcome assessment: Unblinded High risk for subjective outcomes, low risk for objective outcomes. Incomplete outcome data: Low risk for follow-up for primary outcome (efficacy of abortifacient regimen) as only 3% attrition from immediate group and 4.5% attrition from delayed group, all drop-outs fully explained in the text, furthermore an ITT and per protocol analysis was

Study details	Participants	Interventions	Outcomes and Results	Comments
Randomised controlled equivalence trial **Aim of the study** To compare immediate (insertion 1 hour following mifepristone on day 1), versus delayed insertion (inserion at follow-up at 2-4 weeks after the mifepristone) of an etonorgestrel releasing contraceptive subdermal implant on complete termination rates with medical termination (without need for surgical evacuation) **Study dates** 13 October 2013 - 17 October 2015 **Source of funding** Swedish research council (2012-2844), Stockholm city county and Karolinska Institutet	BMI kg/m2, median (range): Immediate= 23.1 (14.7-38.9); delayed= 23.1 (16.8-45.2) Parity, median (range): Immediate= 0 (0-5); delayed= 0 (0-6) Previous miscarriage, median (range): Immediate= 0 (0-2); delayed= 0 (0-3) Previous ectopic, median (range): Immediate= 0 (0-1); delayed= 0 (0-8) Previous termination, median (range): Immediate= 1 (0-4); delayed= 0 (0-8) Gestational age at mifepristone intake in days, median (range); Immediate= 46 (30-63); delayed= 46 (28-63) **Inclusion criteria** 18 years or above, opting for medical termination and posttermination contraception with the etonorgestrel releasing implant, good understanding of Swedish or English language (as appropriate), gestational age <64 days, willing to participate and give written informed consent. **Exclusion criteria** Contraindications to the implant (according to the summary of product characteristics, MSD/Merck) or any of the medical termination drugs; miscarriage or molar pregnancies		**Outcome: Satisfaction with the implant at 3 months post insertion** Very satisfied/fairly satisfied: immediate= 173/224; delayed=115/179 Neither/nor: immediate= 24/224; delayed= 33/179 Fairly dissatisfied/very dissatisfied: immediate= 27/224; delayed=31/179 **Outcome: Satisfaction with the implant at 6 months post insertion** Very satisfied/fairly satisfied: immediate= 147/199; delayed=105/151 Neither/nor: immediate= 19/199; delayed= 17/151 Fairly dissatisfied/very dissatisfied: immediate= 33/199; delayed= 29/151 **Outcome: Complete abortion without the need for surgical intervention** Immediate: 259/275; delayed: 239/249 per protocol analysis **Outcome: Subsequent unintended pregnancy** Pregnancy at 3 months	performed showing no difference in the analysis methods. High risk for follow-up at 3-months and 6-months due to the high attrition (>20%). At 3 months follow-up, 19.1% attrition from immediate group and 31.4% attrition from delayed group, drop-outs not explained other than lost to follow-up. At 6 months follow-up, 28.2% attrition from immediate group and 42.1% attrition from delayed group, drop-outs not explained other than lost to follow-up. Selective reporting: Low risk, those notes in the methods to be assessed were assessed Other bias: None reported **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
(ALF). The contraceptive implants were provided by Merck and suplied by MSD Sweden.			Immediate: 0/277; delayed: 4/261 Pregnancy at 6 months Immediate: 2/277; delayed: 10/266	
Full citation Raymond, E. G., Weaver, M. A., Tan, Y. L., Louie, K. S., Bousieguez, M., Lugo-Hernandez, E. M., Arangure-Peraza, A. G., Sanhueza, P., Kaplan, C., Sonalkar, S., Goldberg, A. B., Culwell, K. R., Memmel, L., Jamshidi, R., Winikoff, B., Effect of Immediate Compared With Delayed Insertion of Etonogestrel Implants on Medical Abortion Efficacy and Repeat Pregnancy: A Randomized Controlled Trial, Obstetrics & GynecologyObstet Gynecol, 127, 306-12, 2016a	**Sample size** n= 476 randomised (n=236 quickstart; n=240 afterstart) n= 463 termination failure analysis (n= 229 quickstart [n= 5 unknown termination outcome; n=2 declined implant at admission]; n= 234 afterstart [n= 4 unknown termination outcome; n=2 used or may have used hormonal contraceptive within 6 days after mifepristone ingestion]) n= 421 subsequent pregnancy analysis (n=213 quickstart [n=16 lost to follow-up]; n=208 afterstart [n=26 lost to follow-up]) **Characteristics** Age in years (%): 17 or younger: n=4 (1.7) quickstart; n=3 (1.3) afterstart 18-24: n=113 (47.9) quickstart; n= 121 (50.4) afterstart 25 or older: n= 119 (50.4) quickstart; n=116 (48.3) afterstart Previous pregnancies (%): 0: n=44 (18.6) quickstart; n=39 (16.3) afterstart	**Medical termination:** 200mg mifepristone orally followed by misoprostol 800mcg bucally 1-2 days later. **Quickstart**: implants containing 68mg etonorgestrel inserted after ingesting mifepristone and before leaving the study site. **Afterstart:** implants containing 68mg etonorgestrel inserted after termination was complete (specific timeframe not specified)	**Outcome: Ongoing pregnancy** Quickstart: n=2/229; afterstart: n= 2/234 **Outcome: Incomplete abortion with the need for surgical intervention** Quickstart: n=9/229; afterstart: n= 9/234 **Outcome: Patient acceptability/satisfaction** Satisfaction with group assignment: At enrollment: Pleased: quickstart - n= 187/236; afterstart - n= 129/240 Neutral: quickstart - n= 44/236; afterstart - n=81/240 Disappointed: quickstart - n= 5/236; afterstart - n=30/240 After termination determined to be complete: Pleased: quickstart - n= 208/236; afterstart - n= 140/240	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk, computer generated Allocation concealment: low risk, opaque, sealed envelopes opened in consecutive order Blinding of participants and personnel: Unblinded High risk for subjective outcomes, low risk for objective outcomes. Blinding of outcome assessment: Outcome assessor blinded to contraceptive regimen High risk for patient reported outcomes, low risk for all other outcomes Incomplete outcome data: Low risk for follow-up for termination outcome analysis as only 3% attrition from immediate group and 2% attrition from delayed group, all

Study details	Participants	Interventions	Outcomes and Results	Comments
Ref Id 713895 **Country/ies where the study was carried out** USA and Mexico **Study type** Randomised controlled trial **Aim of the study** Evaluate whether inserting etonorgestrel implants on the same day as mifepristone rather than requiring women to delay would affect two primary outcomes: the risk of medical termination failure (surgery to complete the pregnancy termination) and the probability of repeat pregnancy during the subsequent 6 months. **Study dates** 2013-2015	1 or more: n=192 (81.4) quickstart; n= 201 (83.8) afterstart Previous terminations (%): 0: n=160 (67.8) quickstart; n=159 (66.3) afterstart 1 or more: n=76 (32.2) quickstart; n=81 (33.8) afterstart Gestational age in days (%): 49 or less: n=111 (47) quickstart; n=95 (39.6) afterstart 50-63: n=92 (39) quickstart; n=101 (42.1) afterstart 64 or greater: n=33 (14) quickstart; n=44 (18.3) afterstart Country (%): USA: n=24 (10.2) quickstart; n=27 (11.3) afterstart Mexico: n=212 (89.8) quickstart; n=213 (88.8) afterstart **Inclusion criteria** Candidates for outpatient medical termination with mifepristone and misoprostol according to the study site standards, without recognised nonviable pregnancies who requested etonorgestrel implants for posttermination contraception, and did not plan to use hormonal contraceptives before implant insertion. **Exclusion criteria** None reported		Neutral: quickstart - n= 21/236; afterstart - n= 79/240 Disappointed: quickstart - n= 2/236; afterstart - n= 14/240 Missing: quickstart - n= 5; afterstart - n= 7 **Outcome: Complete abortion without the need for surgical intervention** quickstart: n=220/229; afterstart n=225/234 **Outcome: Subsequent unintended pregnancy** Pregnancy at 6 months quickstart: n= 1/213; afterstart: n= 3/208	drop-outs fully explained in the text High risk for subsequent unintended pregnancy as 7% attrition from immediate group and 11% attrition from delayed group, reasons for loss to follow up not explained Selective reporting: Low risk, those notes in the methods to be assessed were assessed Other bias: None reported **Other information** Anonymous donor funded RCT, however there were declarations that the party had no part in the conduct or write up of the RCT

Study details	Participants	Interventions	Outcomes and Results	Comments
Source of funding The study was funded by an anonymous donor.				
Full citation Raymond, E. G., Weaver, M. A., Louie, K. S., Tan, Y. L., Bousieguez, M., Arangure-Peraza, A. G., Lugo-Hernandez, E. M., Sanhueza, P., Goldberg, A. B., Culwell, K. R., Kaplan, C., Memmel, L., Sonalkar, S., Jamshidi, R., Winikoff, B., Effects of Depot Medroxyprogesterone Acetate Injection Timing on Medical Abortion Efficacy and Repeat Pregnancy: A Randomized Controlled Trial, Obstetrics & GynecologyObstet Gynecol, 128, 739-45, 2016b **Ref Id**	**Sample size** n= 461 randomised (n=225 quickstart group; n=236 afterstart group) n= 446 termination outcome analysis (n= 220 quickstart group [n= 5 unknown termination outcome]; n= 226 afterstart group [n=7 unknown termination outcome; n= 3 may or may not have used hormonal contraceptive within 6 days after mifepristone ingestion]) n= 430 subsequent pregnancy analysis (n= 213 quickstart group [n=7 lost to follow-up]; n= 217 afterstart group [n=9 lost to follow-up]) **Characteristics** Age in years (%): 17 or younger: n=4 (1.8) quickstart; n=3 (1.3) afterstart 18-24: n=102 (45.3) quickstart; n= 100 (42.4) afterstart 25 or older: n= 119 (52.9) quickstart; n=133 (56.4) afterstart Previous pregnancies (%): 0: n=40 (17.8) quickstart; n=44 (18.6) afterstart 1 or more: n=185 (82.2) quickstart; n= 192 (81.4) afterstart Previous terminations (%):	**Medical termination:** 200mg mifepristone orally followed 1-2 days later by 800mcg misoprostol buccally **Quickstart:** 150mg DMPA intramuscularly shortly after ingesting mifepristone **Afterstart:** 150mg DMPA intramuscularly after termination was complete (timeframe not specified)	**Outcome: Ongoing pregnancy** quickstart: n= 8/220; afterstart: n= 2/226 **Outcome: Incomplete abortion requiring surgical intervention** quickstart: n= 14/220; afterstart: n=12/226 **Outcome: Patient acceptablilty/ satisfaction:** Satisfaction with group assignment: At enrollment: Pleased: quickstart - n= 164/225; afterstart - n= 104/236 Neutral: quickstart - n= 57/225; afterstart - n= 106/236 Disappointed: quickstart - n= 4/225; afterstart - n= 26/236 After termination determined to be complete: Pleased: quickstart - n= 179/225; afterstart - n= 97/236 Neutral: quickstart - n= 35/225; afterstart - n= 91/236	**Limitations** **Quality of study:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: low risk, computer generated Allocation concealment: low risk, opaque, sealed envelopes opened in consecutive order Blinding of participants and personnel: Unblinded High risk for subjective outcomes, low risk for objective outcomes. Blinding of outcome assessment: Outcome assessor blinded to contraceptive regimen High risk for patient reported outcomes, low risk for all other outcomes Incomplete outcome data: Low risk for follow-up for termination outcome analysis and subsequent pregnancy analysis as only 2% attrition from immediate group and 4% attrition from delayed group, all

Study details	Participants	Interventions	Outcomes and Results	Comments
713893 **Country/ies where the study was carried out** USA and Mexico **Study type** Randomised controlled trial **Aim of the study** Primary objectives were to evaluate whether initiating DMPA on the same day as mifepristone rather than requiring women to delay the injection until after the termination was complete would affect: 1) the risk of having surgery to complete termination and 2) the probability of pregnancy during the subsequent 6 months. **Study dates** 2013-2015	0: n=143 (63.6) quickstart; n=134 (56.8) afterstart 1 or more: n=82 (36.4) quickstart; n=102 (43.2) afterstart Gestational age in days (%): 49 or less: n=107 (47.6) quickstart; n=112 (47.5) afterstart 50-63: n=89 (39.6) quickstart; n=94 (39.8) afterstart 64 or greater*: n=29 (12.9) quickstart; n=30 (12.7) afterstart Country (%): USA: n=50 (22.2) quickstart; n=61 (25.8) afterstart Mexico: n=175 (77.8) quickstart; n=175 (74.2) afterstart *max gestational age of enrolled women was 75 days in the quickstart group and 73 days in the afterstart group **Inclusion criteria** Women who met sites criteria for outpatient medical termination with mifepristone and misoprostol and desired DMPA for contraception were eligible. **Exclusion criteria** None reported		Disappointed: quickstart - n= 1/225; afterstart - n= 29/236 Missing: quickstart 10; afterstart 19 **Outcome: Complete abortion without the need for surgical intervention** quickstart: n= 206/220; afterstart: n= 214/226 **Outcome: Subsequent unintended pregnancy** Pregnancy at 6 months quickstart: n= 5/213; afterstart: n= 7/217	drop-outs fully explained in the text and a further 3.2% attrition from immediate group and 4% attrition for the delayed group, but loss to follow-up not explained, respectively. Selective reporting: Low risk, those notes in the methods to be assessed were assessed Other bias: None reported **Other information** Anonymous donor funded RCT, however there were declarations that the party had no part in the conduct or write up of the RCT

Study details	Participants	Interventions	Outcomes and Results	Comments
Source of funding Financial support provided by an anonymous donor. The funder had no role in the development of the study question or the study design or in the collection, storage, or analysis of data.				

DMPA: depot medroxyprogesterone acetate; ITT: intention-to-treat; mcg: micrograms; RCT: randomised controlled trial

Clinical evidence tables for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

Study details	Participants	Interventions	Outcomes and Results	Comments
Full citation Korjamo, R., Mentula, M., Heikinheimo, O., Fast-track vs. delayed insertion of the levonorgestrel-releasing intrauterine system after early medical abortion - a randomized trial, Contraception, 96, 344-351, 2017a **Ref Id** 770251	Same study as Korjamo, R., Mentula, M., Heikinheimo, O., Immediate versus delayed initiation of the levonorgestrel-releasing intrauterine system following medical termination of pregnancy - 1 year continuation rates: a randomised controlled trial, 124, 1957-1964, 2017 See that entry for full details		**Outcome: Expulsion of IUD (ITT)** ≤9 weeks+0 gestational age: - 3 months: Early: Total/partial 1/6 of 55; Delayed: Total/partial 1/0 of 53 - 12 months: Early: Total/partial 1/7 of 55; Delayed: Total/partial 2/3 of 53 **Outcome: Uterine perforation (ITT)** ≤9 weeks+0 gestational age: Not reported, but no serious complications occurred during IUD insertion **Outcome: Uptake rate of IUD (ITT):** ≤9 weeks+0 gestational age: Early: 51/55; Delayed: 47/53	

Study details	Participants	Interventions	Outcomes and Results	Comments
			Outcome: Infection within first month of the IUD insertion: 3 month (ITT; downgrade for indirectness) ≤9 weeks+0 gestational age: Early: 6/55; Delayed: 0/53 (3 infections were diagnosed before IUD insertion, 2-4 weeks after ToP; all 9 infections were mild cervicitis or endometritis)	
Full citation Korjamo, R., Mentula, M., Heikinheimo, O., Expulsions and adverse events following immediate and later insertion of a levonorgestrel-releasing intrauterine system after medical termination of late first- and second-trimester pregnancy: a randomised controlled trial. British Journal of Obstetrics & Gynaecology 124, 1965-1972, 2017b **Ref Id** 770252	Same study as Korjamo, R., Mentula, M., Heikinheimo, O., Immediate versus delayed initiation of the levonorgestrel-releasing intrauterine system following medical termination of pregnancy - 1 year continuation rates: a randomised controlled trial, 124, 1957-1964, 2017 See that entry for full details		**Outcome: Expulsion of IUD (ITT)** 9 weeks+1 to 12 weeks+0 gestational age: - 3 months: Immediate: Total/partial 2/12 of 51; Delayed: Total/partial 1/1 of 50 - 12 months: Immediate: Total/partial 2/15 of 51; Delayed: Total/partial 1/5 of 50 12 weeks+1 to 20 weeks+0 gestational age: - 3 months: Immediate: Total/partial 0/5 of 27; Delayed: Total/partial 0/1 of 28 - 12 months: Immediate: Total/partial 0/5 of 27; Delayed: Total/partial 0/1 of 28 **Outcome: Uterine perforation (ITT)** 9 weeks+1 to 12 weeks+0 gestational age: Immediate: 0/51; Delayed: 0/50 12 weeks+1 to 20 weeks+0 gestational age: Immediate: 0/27; Delayed: 0/28 **Outcome: Uptake rate of IUD (ITT):** 9 weeks+1 to 12 weeks+0 gestational age: Immediate: 50/51; Delayed: 41/50 12 weeks+1 to 20 weeks+0 gestational age: Immediate: 26/27; Delayed: 23/28	

Study details	Participants	Interventions	Outcomes and Results	Comments
			Outcome: Infection within first month of the IUD insertion: 3 month (ITT; downgrade for indirectness) 9 weeks+1 to 12 weeks+0 gestational age: Immediate: 5/51; Delayed: 0/50 (4 infections diagnosed before IUD insertion, 2-4 weeks after ToP) 12 weeks+1 to 20 weeks+0 gestational age: Immediate: 6/27; Delayed: 0/28 (5 infections diagnosed before IUD insertion, 2-4 weeks after ToP)	
Full citation Korjamo, R., Mentula, M., Heikinheimo, O., Immediate versus delayed initiation of the levonorgestrel-releasing intrauterine system following medical termination of pregnancy - 1 year continuation rates: a randomised controlled trial. British Journal of Obstetrics & Gynaecology, 124, 1957-1964, 2017c **Ref Id** 770253	**Sample size** n=267 randomised (n=134 immediate/early insertion; n=133 delayed insertion) n=264 Intention-to-treat (n=133 immediate/early insertion [n=1 excluded for deciding to continue pregnancy]; n=131 delayed insertion [2=suspected cervical neoplasia]) n= 217 Per-protocol (n=116 immediate/early insertion [n=17 did not have study IUD insertion due failure to attend appointment (1), changed their mind (5), other insertion (10), or insertion failure (1)]; n=101 delayed insertion [n=30 did not have study IUD insertion due to insertion failure (1), failure to attend appointment (13), other	**Medical termination procedure:** All terminations were carried out according to current Finnish national guidelines; details of procedures not reported. Immediate insertion: For those randomised to immediate/early insertion, LNG-IUS inserted after the medical termination of pregnancy, prior to leaving the hospital, for women 64-140 days gestation. **Early insertion:** For those randomised to immediate/early insertion, LNG-IUS inserted within 3 days of misoprostol,	**Outcome: Continuation of IUD (ITT): 1 year** ≤9 weeks+0 gestational age: - Best case scenario (LNG-IUS inserted and its use was verified or unknown at 1 year): Early: 44/55; Delayed: 38/53 - Worst case scenario (LNG-IUS inserted and verified at 1 year): Early: 33/55; Delayed: 24/53 9 weeks+1 to 12 weeks+0 gestational age: - Best case scenario (LNG-IUS inserted and its use was verified or unknown at 1 year): Immediate: 45/51; Delayed: 33/50 - Worst case scenario (LNG-IUS inserted and verified at 1 year): Immediate: 35/51; Delayed: 21/50 12 weeks+1 to 20 weeks+0 gestational age:	**Limitations** **Quality assessment:** Risk of bias assessed using Cochrane risk of bias tool Random sequence generation: Low risk; computer-generated list; the person responsible for generating the randomisation list did not take part in enrolment Allocation concealment: Low risk; sequentially numbered opaque envelopes; the person responsible for sealing the envelopes did not take part in enrolment

Study details	Participants	Interventions	Outcomes and Results	Comments
Country/ies where the study was carried out Finland **Study type** Randomised controlled trial **Aim of the study** To compare immediate/early and delayed insertion of the levonorgestrel-releasing intrauterine system (LNG-IUS) in women after a medical termination of pregnancy up to 20 weeks of gestation. Study dates 30 January 2013 - 31 December 2014 **Source of funding** Hospital District of Helsinki and Uusimaa, The Finnish Cultural Foundation and Finnish-Norwegian Medical Foundation	insertion (10) or changed their mind (6)]) **Characteristics** Intention-to-treat: Median age in years (interquartile range): immediate/early=27.3 (23.1-32.3); delayed=27.1 (22.3-32.1) Gestational age: ≤63 days: early=55; delayed=53 64-84 days: immediate=51; delayed=50 85-140 days: immediate=27; delayed=28 Median BMI in kg/m2 (interquartile range): immediate/early=23.6 (21.7-26.5); delayed=23.3 (21.1-26.9) Previous pregnancy, no (%): immediate/early=89 (66.9); delayed=92 (70.2) Previous delivery, no (%): immediate/early=71 (53.4) delayed=68 (51.9) Previous termination, no (%): immediate/early=57 (42.9); delayed=63 (48.1) Smoker, no (%): immediate/early=69 (51.9); delayed=70 (53.4)	which was administered at home, for women ≤63 days' gestation. **Delayed insertion:** For those randomised to delayed insertion, LNG-IUS inserted at the follow-up visit 2-4 weeks after the medical termination of pregnancy. Follow-up: 2-4 weeks, 3 months and 1 year (repeat contact was attempted for non-attenders to re-schedule follow-up visit)	- Best case scenario (LNG-IUS inserted and its use was verified or unknown at 1 year): Immediate: 24/27; Delayed: 17/28 - Worst case scenario (LNG-IUS inserted and verified at 1 year): Immediate: 15/27; Delayed: 7/28 **Outcome: Subsequent pregnancy within 1 year of the IUD insertion (ITT)** ≤9 weeks+0 gestational age: Early: 4/55; Delayed: 6/53 9 weeks+1 to 12 weeks+0 gestational age: Immediate: 1/51; Delayed: 6/50 12 weeks+1 to 20 weeks+0 gestational age: Immediate: 1/27; Delayed: 4/28	Blinding of participants and personnel: Unblinded; low risk as all reported outcomes are objective outcomes. Blinding of outcome assessment: Unblinded; low risk as all reported outcomes are objective outcomes. Attrition: High risk as higher rates of attrition in the delayed arm, although ITT analyses done for all outcomes. Selective reporting: Low risk Other bias: None reported **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
	Regular use of alcohol, no (%): immediate/early=88 (66.7); delayed=89 (67.9) The groups did not differ significantly in any of these characteristics **Inclusion criteria** Women aged ≥18 years requesting a medical termination of pregnancy and planning to use the LNG-IUS for contraception post-termination **Exclusion criteria** Structural uterine abnormality; submucosal fibroids; suspected uterine or cervical neoplasia; acute pelvic inflammatory disease			
Full citation Saav, I., Stephansson, O., Gemzell-Danielsson, K., Early versus delayed insertion of intrauterine contraception after medical abortion - a randomized controlled trial, 7, e48948, 2012	**Sample size** n=129 randomised (n=66 early insertion; n=63 delayed insertion) n=116 per protocol (n=62 early insertion [4 did not receive IUD due to mis-scheduling (2), endometriosis (1), or regrets about method (1)]; n=54 delayed insertion [9 did not receive IUD due to surgery for incomplete abortion with heavy bleeding or continuing	**Medical termination procedure:** Day 1: 200 mg oral mifepristone at the clinic. 36-48 hours later: Oral analgesics (100 mg diclofenac, 2 X 500 mg paracetamol, 10 mg dihydrocodeine, and additional analgesics as needed) before 800 micrograms misoprostol vaginally, self-	**Outcome: Expulsion of IUD (6 months)** - Copper IUD: Early: 2/30; Delayed: 0/25 - LNG-IUS: Early: 4/32; Delayed: 4/29 **Outcome: Continuation of IUD (6 months)** - Copper IUD: Early: 24/30; Delayed: 18/25 - LNG-IUS: Early: 18/32; Delayed: 21/29 **Outcome: Uterine perforation** - Copper IUD: Early: 0/30; Delayed: 0/25	**Limitations** **Quality assessment:** Risk of bias assessed using Cochrane risk of bias tool Randomisation: Low risk, computer-generated randomisation list by nurse not directly involved in the study

Study details	Participants	Interventions	Outcomes and Results	Comments
Ref Id 770557 **Country/ies where the study was carried out** Sweden **Study type** Randomised controlled trial **Aim of the study** "to compare early versus delayed (routine) IUC insertion post medical termination with regard to incidence of expulsion (primary outcome), proportion/rates of insertion and complications (pelvic infection, uterine perforation or heavy bleeding), including both the common types of modern IUC, the T shaped Cu-IUD and	pregnancy (1 each), or loss to follow up/regrets about method (7)]) **Characteristics** Per-protocol population Median age in years (range): early=31 (18-44); delayed=32.5 (18-43) Median parity no (range): early=2 (0-4); delayed=1.5 (0-4) Nulliparous no (%): early=21 (34); delayed=18 (33) Median gestational length in days (range): early=47.5 (27-63); delayed=44 (27-63) Median endometrial thickness in mm (range): early=13 (6-32); delayed=11 (5-20) Median Hb prior to termination in g/l (range): early=129 (111-149); delayed=128 (87-146) Median S-hCG prior to termination in IU (range): early=56150 (1870-337000); delayed=45400 (1300-222000) Median Hb at IUS insertion in g/l (range): early=126 (98-148); delayed=129 (103-142) Median S-hCG at IUS insertion in IU (range): early=2000 (249-12600); delayed=30.5 (2-2230) IUC type chosen no (%):	administered at the clinic or at home, depending on the woman's preference. Women randomised to early or delayed insertion of the Cu-IUD or the LNG-IUS. Randomisation was stratified by the type of IUD. The women decided themselves which IUD they wanted. **Early insertion:** For those randomised to early insertion, LNG-IUS/Cu-IUD insertion occurred on day 5-9 after mifeprostone treatment. **Delayed insertion:** For those randomised to delayed insertion, LNG-IUS/Cu-IUD insertion occurred on day 21-25 after mifeprostone treatment. Follow-up: 4 weeks (visit) and 6 months (telephone) after insertion.	- LNG-IUS: Early: 0/32; Delayed: 0/29 **Outcome: Uptake rate of IUD (not reported separately for LNG-IUS and copper IUD):** Early: 62/66; Delayed: 54/63 (up-takers are here the PP population); if only counting women who did not turn up to the return visit and insertion of IUC, the uptake rate is: Early: 62/63; Delayed: 54/61 **Outcome: Infection within first month of the IUD insertion (pelvic)** - Copper IUD: Early: 0/30; Delayed: 0/25 - LNG-IUS: Early: 0/32; Delayed: 0/29 **Outcome: Subsequent pregnancy within 1 year of the IUD insertion** - Copper IUD: Early: 0/30; Delayed: 0/25 - LNG-IUS: Early: 0/32; Delayed: 0/29	Allocation concealment: Low risk; sequentially numbered opaque envelopes by nurse not directly involved in the study; investigators did not have access to randomisation list Blinding of participants and personnel: Unblinded; low risk as all reported outcomes are objective outcomes. Blinding of outcome assessment: Unblinded; low risk as all reported outcomes are objective outcomes. Attrition: High risk as higher rates of attrition in the delayed arm (9/63) than in the early arm (4/66) Selective reporting: Low risk Other bias: None reported **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
the LNG-IUS." (p. e48948) **Study dates** February 2007 to October 2010. **Source of funding** Karolinska Institutet/Stockholm City County (ALF), the Swedish research council (K2010-54X-14212-09-3) and FAS. In addition to this, Bayer Pharma AG, Stockholm, Sweden, contributed Thirty LNG-IUS devises.	- Copper IUD: early=30 (48.4); delayed=25 (46.3) - LNG-IUS: early=32 (51.6); delayed=29 (53.7) The endometrial thickness, Hb at IUC insertion and S-hCG at IUS insertion differed significantly between the groups. **Inclusion criteria** Women who were of general good health, proficient in Swedish, aged >18 years, requesting a medical termination of pregnancy ≤ 63 days gestation, planning to use either the LNG-IUS or the Cu-IUD for contraception post-termination, and not planning on having children within the next 12 months. A positive screen for bacterial vaginosis or Chlamydia infection did not preclude participation in the study, but was treated. **Exclusion criteria** Pathological pregnancies; abnormality of the uterus; continuing pregnancy; missed miscarriage on the day of insertion; any surgical intervention or genital infection after the termination.			

Study details	Participants	Interventions	Outcomes and Results	Comments
Full citation Shimoni, N., Davis, A., Ramos, M. E., Rosario, L., Westhoff, C., Timing of copper intrauterine device insertion after medical abortion: a randomized controlled trial, Obstetrics & GynecologyObstet Gynecol, 118, 623-8, 2011 **Ref Id** 770604 **Country/ies where the study was carried out** USA **Study type** Randomised controlled trial **Aim of the study** "to compare “immediate” copper IUD insertion 1 week after medical termination to “delayed” copper	**Sample size** n=156 randomised (n=71 early insertion; n=85 delayed insertion) n=134 per protocol (n=69 early insertion [2 did not receive IUD as they declined it]; n=65 delayed insertion [20 did not receive IUD as they declined it (16), or were lost to follow up (4)]) **Characteristics** ITT population: Mean age in years (SD): early=26.9 (6); delayed=26.4 (5.8) Mean gestational age in days (SD): early=49.3 (6.7); delayed=48.4 (7.3) Non-hispanic/hispanic no (%): early=2 (3)/69 (97); delayed=4 (5)/81 (95) Education: Less than high school/high school degree/bachelor degree or more, no (5): early=45 (63)/19 (27)/7 (10); delayed=54 (64)/24 (28)/7 (8) Past pregnancy yes/no, no (%): early=68 (96)/3 (4); delayed=78 (92)/7 (8) Past birth yes/no, no (%): early=61 (86)/10 (14); delayed=71 (84)/14 (16)	**Medical termination procedure:** Day 1: 200 mg oral mifepristone at the office. Twenty-four-48 hours later: 800 mcg misoprostol in the buccal mucosa, self-administered at home. Other medicines included promethazine, ibuprofen, and acetaminophen with codeine. All women were also given a prescription for infection prophylaxis (doxycycline; 100 mg orally twice daily for 1 week). Women randomised to early or delayed insertion of the Cu-IUD at visit 1 week after mifepristone. **Early insertion:** For those randomised to early insertion, Cu-IUD insertion occurred during the randomisation visit on day 7 after mifeprostone treatment. 56, 8 and 5 women, respectively, had insertion ≤ 8 days, 9-14 days and > 14 days	**Outcome: Expulsion of IUD (per-protocol; either at 6-8 weeks or 6 months):** Early: 8/69; Delayed: 7/65 **Outcome: Continuation of IUD: 6 months (ITT)** Early: 49/71; Delayed: 51/85 **Outcome: Uterine perforation (per-protocol)** Early: 0/69; Delayed: 0/65 **Outcome: Uptake rate of IUD (ITT):** Early: 69/71; Delayed: 65/85 (up-takers are here the per-protocol population) **Outcome: Infection within first month of the IUD insertion (serious; per-protocol)** Early: 0/69; Delayed: 0/65 **Outcome: Subsequent pregnancy within 1 year of the IUD insertion (ITT)** Early: 0/71; Delayed: 4/85	**Limitations** **Quality assessment:** Risk of bias assessed using Cochrane risk of bias tool Randomisation: Low risk, random number table by staff member not involved with enrolment Allocation concealment: Low risk; sequentially numbered opaque envelopes; randomisation before ultrasound to ensure ultrasound findings did not affect participant selection Blinding of participants and personnel: Unblinded; low risk as all reported outcomes are objective outcomes. Blinding of outcome assessment: Unblinded; low risk as all reported outcomes are objective outcomes. Attrition: High risk as higher rates of attrition in the delayed arm

Study details	Participants	Interventions	Outcomes and Results	Comments
IUD insertion 4–6 weeks later." (p. 624) **Study dates** July 2008 to October 2009 **Source of funding** Anonymous foundation; DuraMed donated the CuT380A intrauterine copper contraceptives	Past birth control used yes/no, no (%): early=67 (94)/4 (6); delayed=85 [probably should be 80] (94)/5 (6) Past IUD use yes/no, no (%): early=5 (7)/66 (93); delayed=6 (7)/79 (93) **Inclusion criteria** Healthy women with a working telephone number who had requested a medical termination of pregnancy up to 63 days gestation (based on the last menstrual period), were English- or Spanish-speaking, planned to stay in the area for the following 6 months, and wanted a copper IUD for contraception for ≥ 6 months. **Exclusion criteria** Contraindications to IUD use (including a documented cervical gonorrhea or Chlamydia infection in the past 3 months, a known bleeding diathesis, serum hemoglobin < 10 g/dL, or an untreated high-grade squamous intraepithelial lesion).	after mifepristone administration. **Delayed insertion:** For those randomised to delayed insertion, Cu-IUD insertion occurred on 4-6 weeks after mifeprostone treatment. These women were also offered interim contraception and contacted for another appointment if they did not turn up for the insertion appointment. In the delayed group, 60 and 5 women, respectively, had insertion ≤ 42 days and > 42 days after mifepristone administration. Women with a retained sac without evidence of growth (managed by a repeat dose of misoprostol or vacuum aspiration, based on the woman's preference), continuing pregnancy (managed with vacuum aspiration) or endometrial stripes thicker than 3 cm were not excluded from the study. Instead, they		(20/85) than in the early arm (2/71) Selective reporting: Unclear risk; patient satisfaction data collected, but not reported Other bias: None reported **Other information** None

Study details	Participants	Interventions	Outcomes and Results	Comments
		stayed in the study and had IUDs inserted after the terminations were complete. **Follow-up:** 6-8 weeks (visit), 3 months and 6 months (visit) after insertion.		

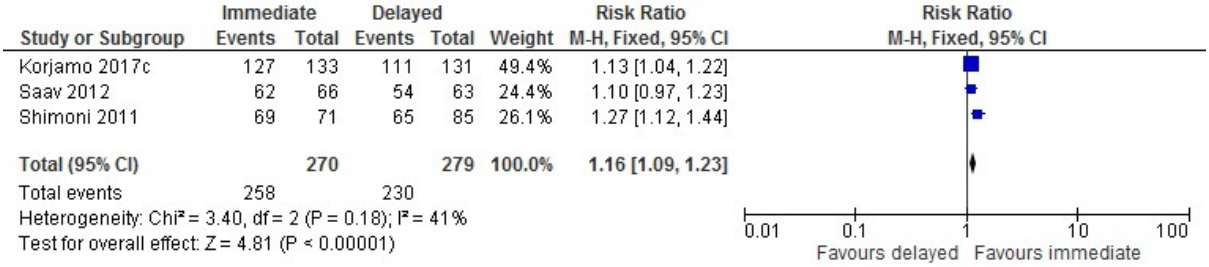
CU-IUD: copper intrauterine device; Hb: haemoglobin; hCG: human chorionic gonadoptropin; ITT: intention-to-treat; IUC: intrauterine contraception; IUD: intrauterine device; LNG-IUS: Levonorgestrel-releasing intrauterine system; mcg: micrograms; ToP: termination of pregnancy

Appendix E – Forest plots

Forest plots for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

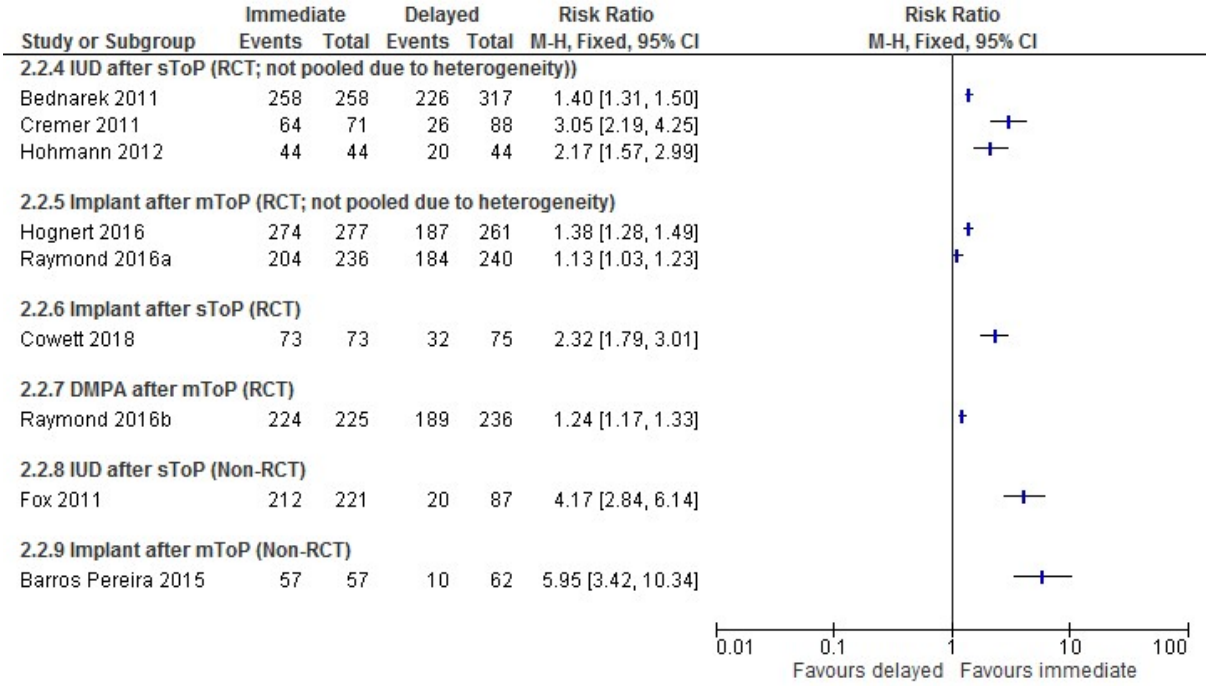
Comparison 2. Contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete versus contraception provided by ToP provider at a later date

Figure 4: Receipt of chosen method of contraception: IUD after mToP (RCT)



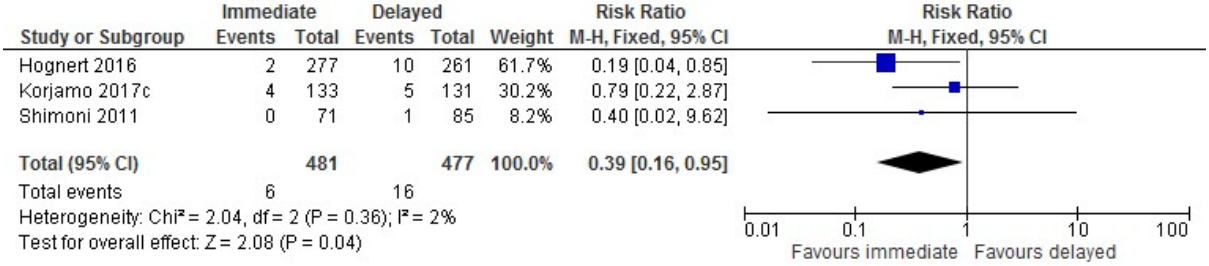
IUD: intrauterine device; mToP: medical termination of pregnancy; RCT: randomised controlled trial

Figure 5: Receipt of chosen method of contraception



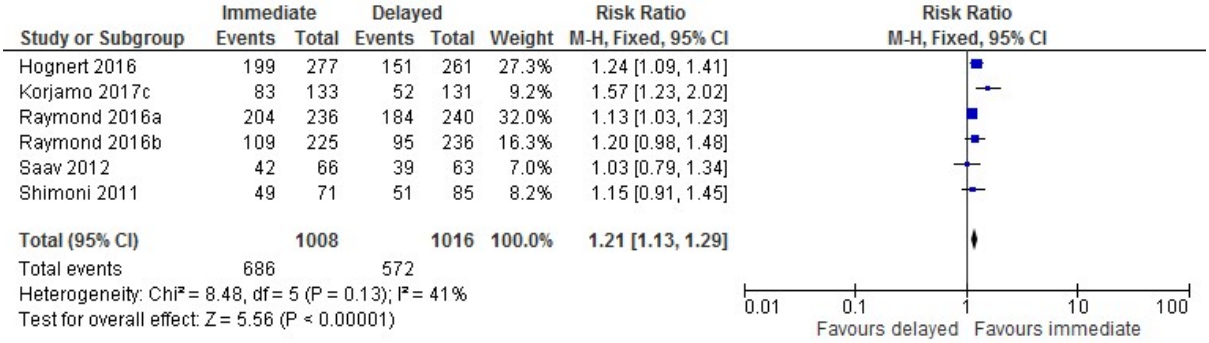
DMPA: Depomedroxyprogesterone acetate; IUD: intrauterine device; RCT: randomised controlled trial; mToP: medical termination of pregnancy; sToP: surgical termination of pregnancy

Figure 6: Subsequent termination of pregnancy within 12 months (RCT)



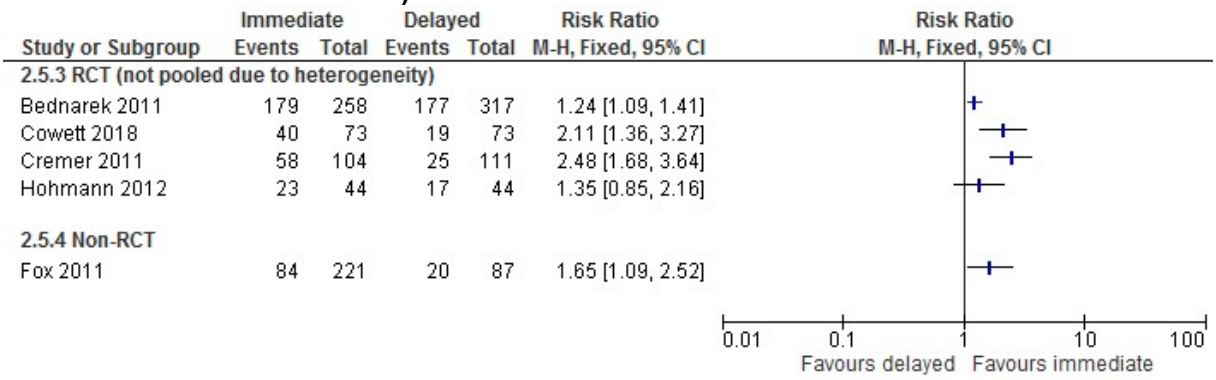
RCT; randomised controlled trial

Figure 7: Continuation of contraception within 12 months after mToP (RCT; ITT; assumed LTFU discontinued)



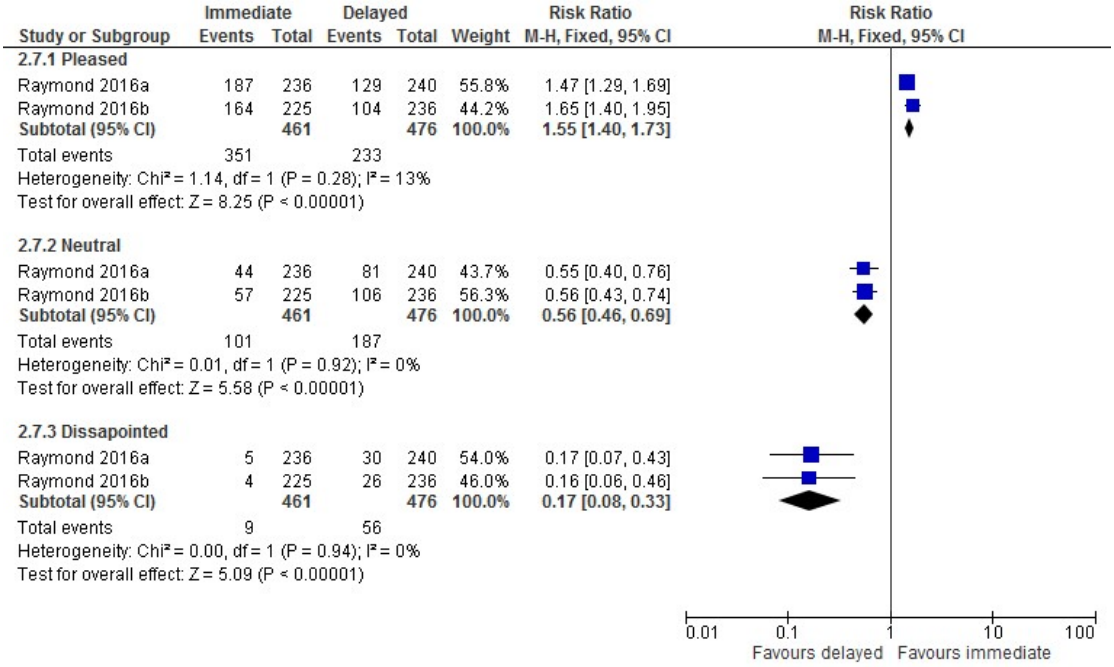
ITT: intention-to-treat; LTFU: loss to follow-up; mToP: medical termination of pregnancy; RCT: randomised controlled trial

Figure 8: Continuation of contraception within 12 months after sToP (ITT; assumed LTFU discontinued)



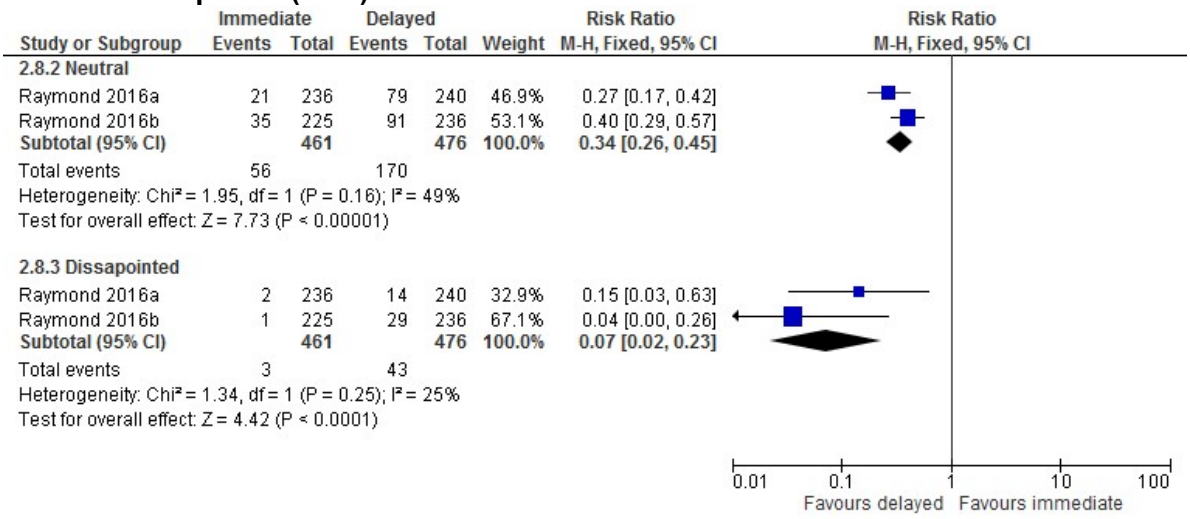
ITT: intention-to-treat; LTFU: loss to follow-up; RCT: randomised controlled trial; sToP: surgical termination of pregnancy

Figure 9: Patient satisfaction - with group assignment at enrolment (RCT)



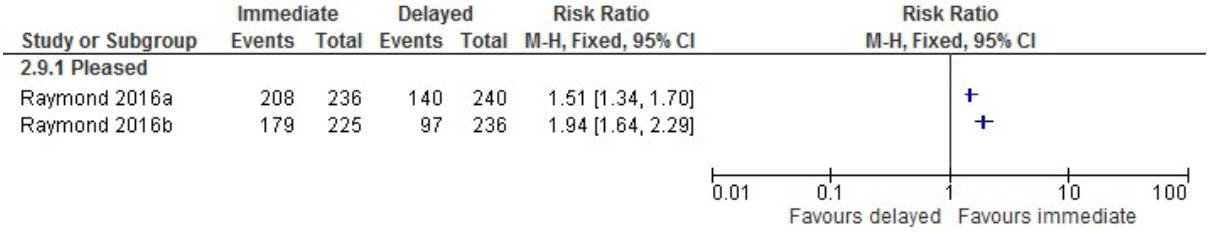
RCT: randmised controlled trial

Figure 10: Patient satisfaction - with group assignment after termination completed (RCT)



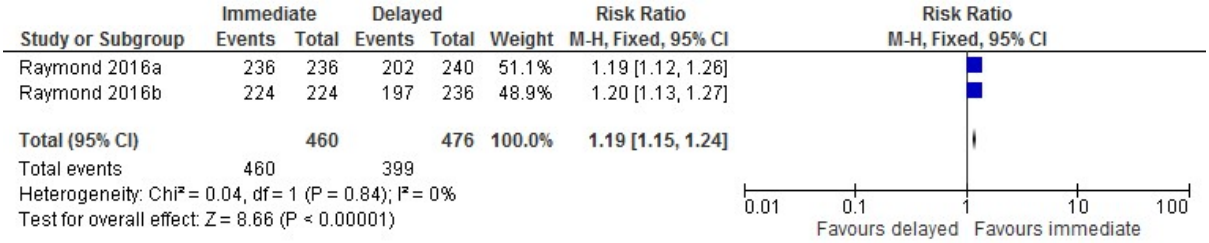
RCT: randomised controlled trial

Figure 11: Patient satisfaction - with group assignment after termination completed (RCT; not pooled due to heterogeneity)



RCT: randomised controlled trial

Figure 12: Number who receive LARC rather than any contraception (RCT)



LARC: long-acting reversible contraception; RCT: randomised controlled trial

Forest plots for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

Comparison 1. Simultaneous administration of mifepristone and etonorgestrel implant versus administration of etonorgestrel implant more than 24 hours after mifepristone

Figure 13: Incomplete abortion with need for further surgical intervention

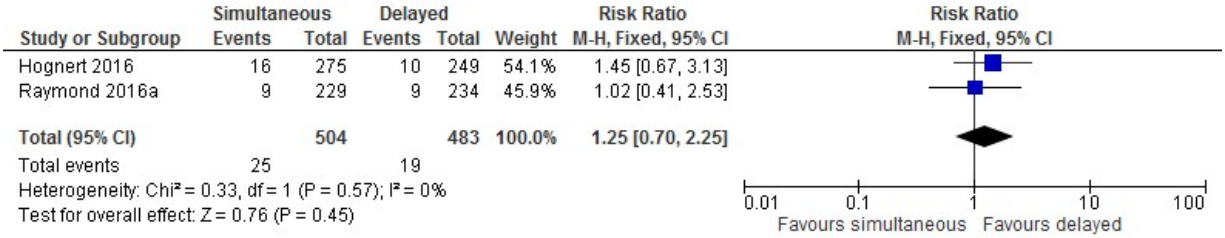
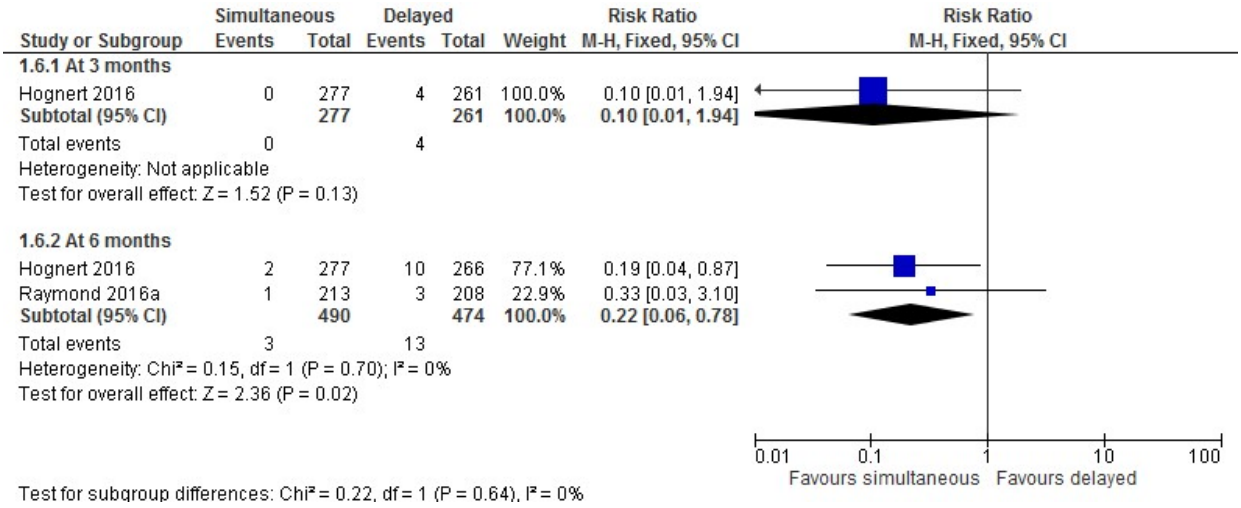


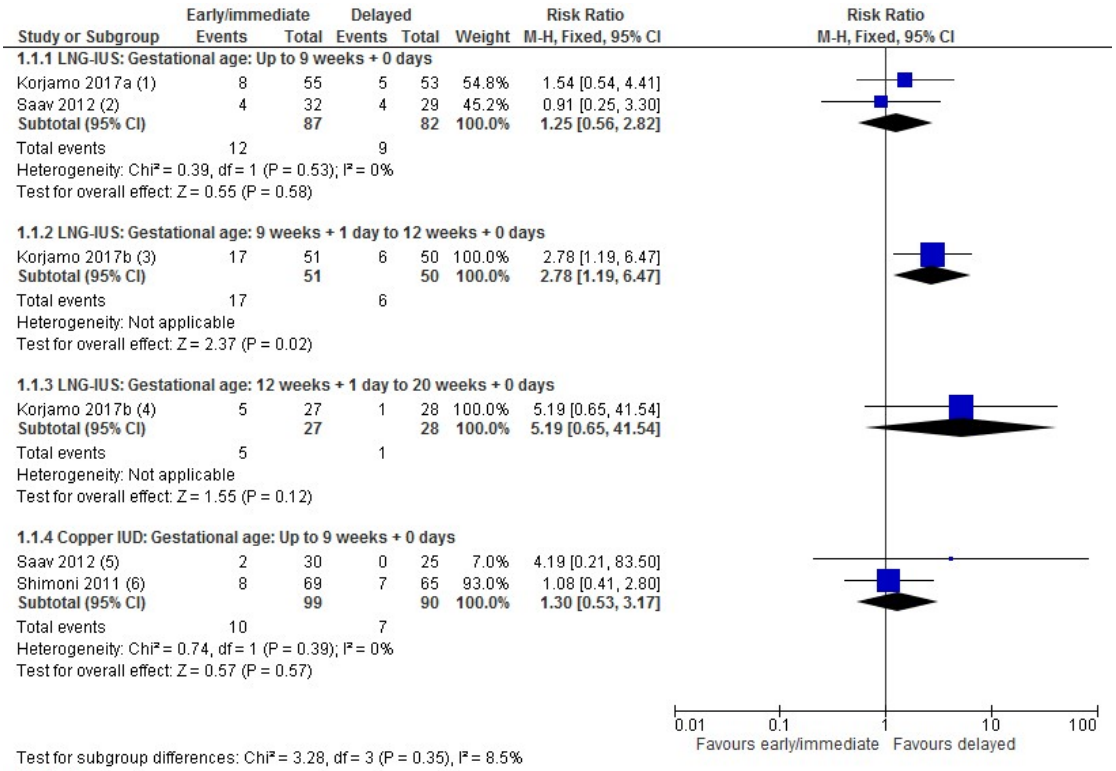
Figure 14: Complete abortion without the need for surgical intervention

Figure 15: Subsequent unintended pregnancy



Forest plots for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

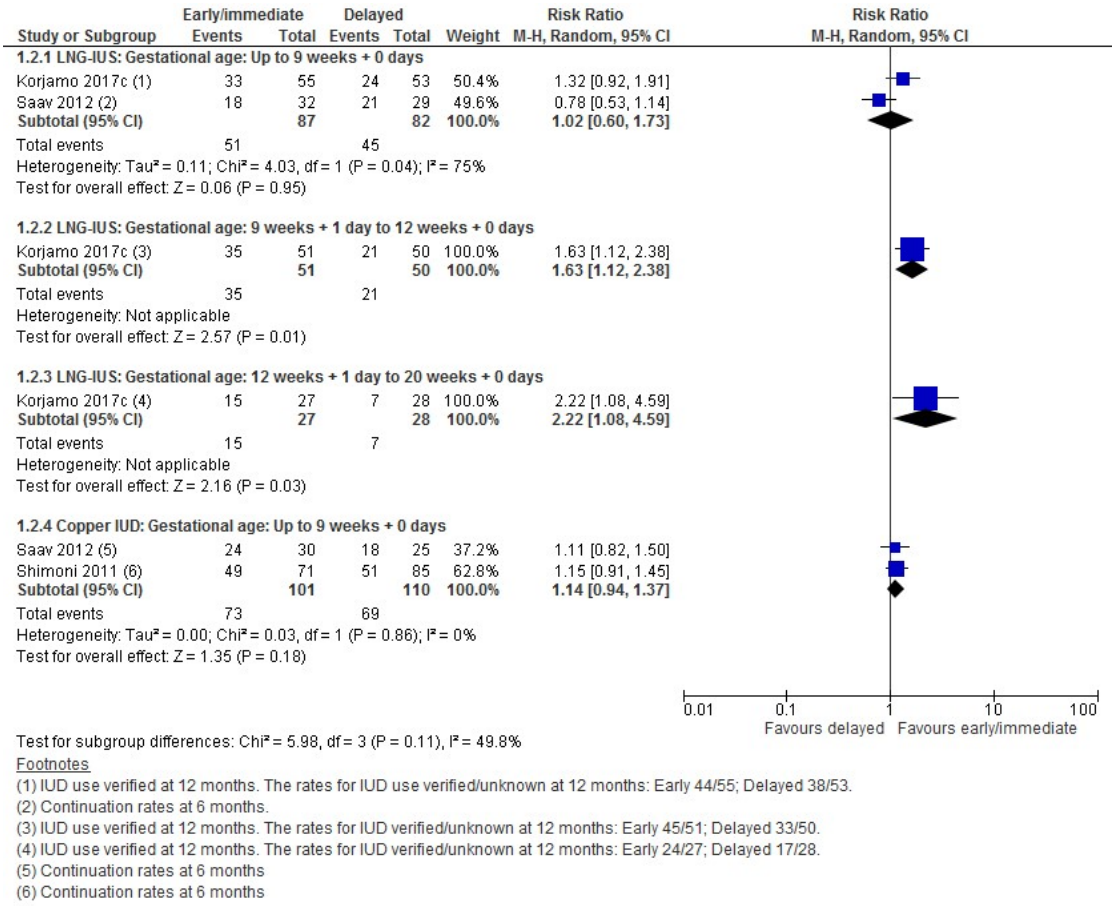
Figure 16: Expulsion of IUD after immediate/early insertion or delayed insertion



Footnotes

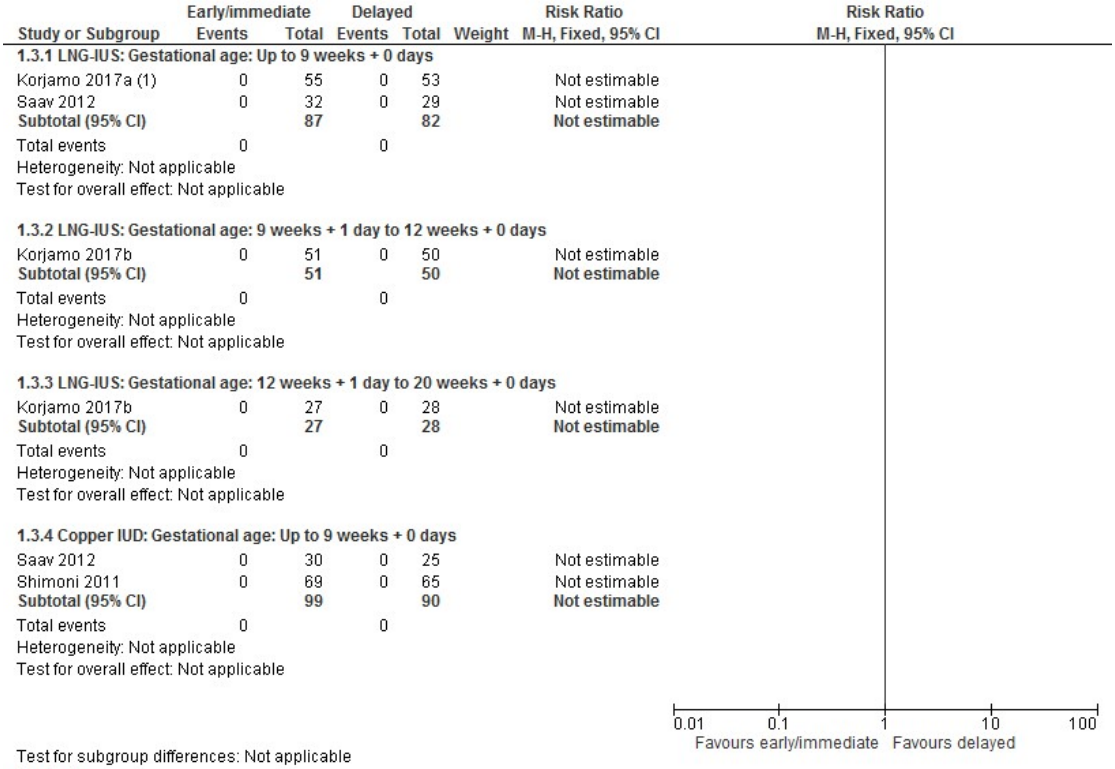
(1) Expulsion rates at 12 months. The corresponding rates at 3 months were: Early 7/55; Delayed 1/53.
(2) Expulsion rates at 6 months.
(3) Expulsion rates at 12 months. The corresponding rates at 3 months were: Early 14/51; Delayed 2/50.
(4) Expulsion rates at 12 months. The corresponding rates at 3 months were: Early 5/27; Delayed 1/28.
(5) Expulsion rates at 6 months
(6) Expulsion rates either at 6-8 weeks or 6 months

Figure 17: Continuation of IUD use after immediate/early insertion or delayed insertion



Please note that although all the subgroup analyses are using a random effect model, this did not change any of the estimates or their associated 95% CI calculated with data from only study or calculated with data from more than one study where there was no heterogeneity (copper-IUD).

Figure 18: Uterine perforation after immediate/early or delayed IUD insertion

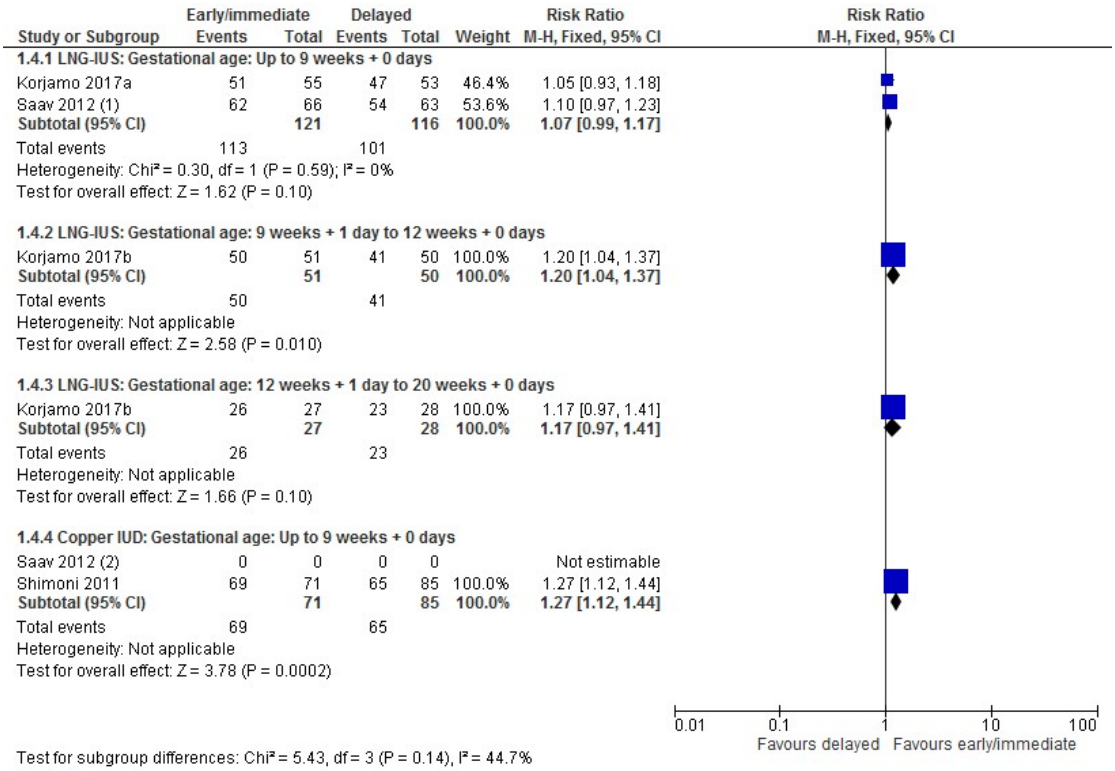


Test for subgroup differences: Not applicable

Footnotes

(1) Not reported, but no serious complications occurred during LNG-IUS insertion.

Figure 19: Uptake rate of IUD after immediate/early or delayed insertion



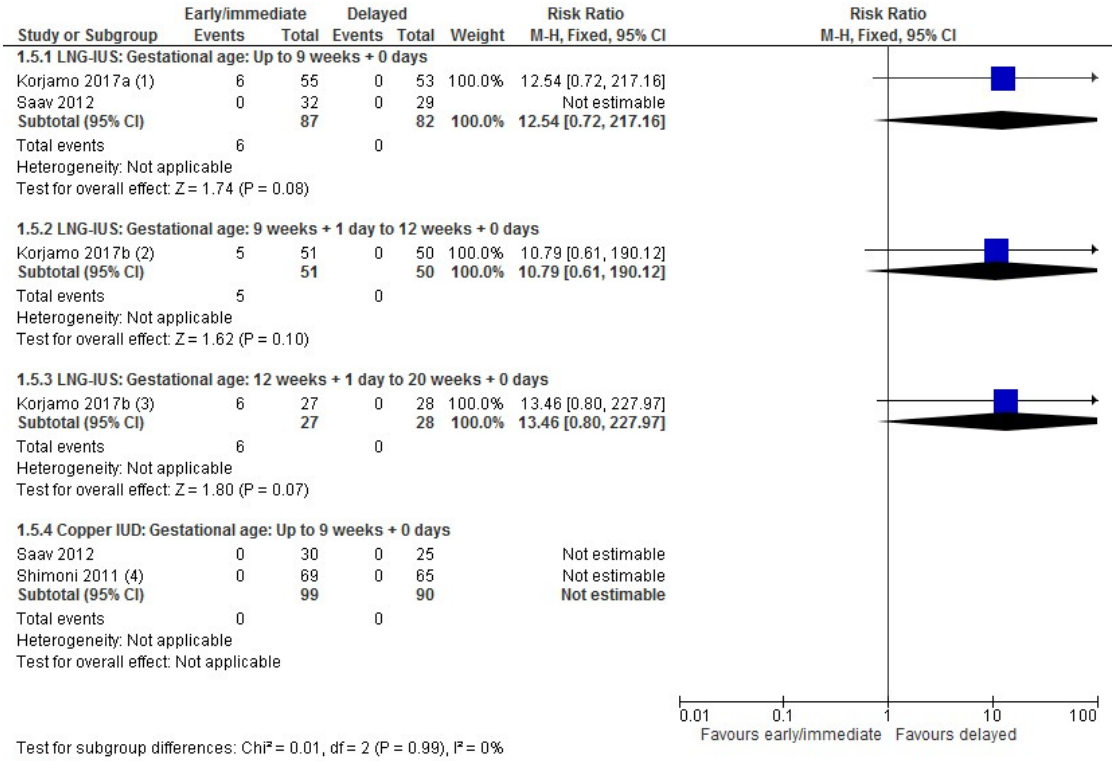
Test for subgroup differences: Chi² = 5.43, df = 3 (P = 0.14), I² = 44.7%

Footnotes

(1) Not reported separately for LNG-IUS and copper IUD, so this is the total uptake rate including both.

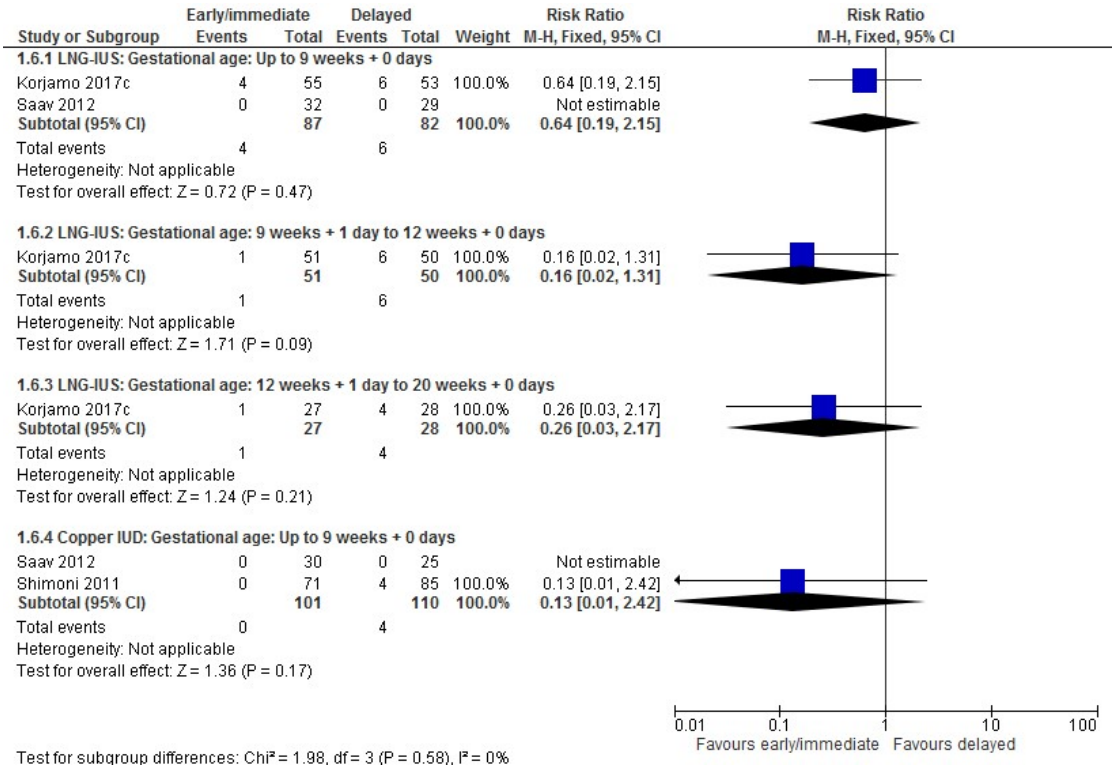
(2) Please see Saav 2012 entry above under "LNG-IUS: Gestational age: Up to 9 weeks + 0 days" subgroup

Figure 20: Infection within 1 month of immediate/early or delayed IUD insertion



Footnotes
(1) Infection within 3 months
(2) Infection within 3 months
(3) Infection within 3 months
(4) Serious infections

Figure 21: Subsequent pregnancy within 1 year of immediate/early or delayed IUD insertion



Appendix F – GRADE tables

GRADE tables for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

Table 7: Clinical evidence profile: Comparison 1. ToP provider has necessary knowledge and skills to provide contraception versus ToP provider not skilled in contraception provision

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Top provider has necessary knowledge and skills to provide contraception	Top provider not skilled in contraception provision	Relative (95% CI)	Absolute	Quality	Importance
Number who receive LARC rather than any contraception (implant, IUD or DMPA) - RCT (implant or IUD)												
1 (Rocca 2018)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious[1]	None	68/319 (21.3%)	71/324 (21.9%)	RR 0.97 (0.72 to 1.31)	7 fewer per 1000 (from 61 fewer to 68 more)	LOW	IMPORTANT
Number who receive LARC rather than any contraception (implant, IUD or DMPA) - Non-RCT (implant, IUD or DMPA)												
1 (Cameron 2017)	Observational studies	Serious [2]	No serious inconsistency	No serious indirectness	Serious	None	549/1093 (50.2%)	438/1115 (39.3%)	RR 1.28 (1.16 to 1.4)	110 more per 1000 (from 63 more to 157 more)	VERY LOW	IMPORTANT
Proportion who received contraception (Non-RCT)												
1 (Cameron 2017)	Observational studies	Serious [2]	No serious inconsistency	No serious indirectness	No serious imprecision	None	994/1093 (90.9%)	893/1115 (80.1%)	RR 1.14 (1.1 to 1.18)	112 more per 1000 (from 80 more to 144 more)	VERY LOW	IMPORTANT

CI: confidence interval; DMPA: depomedroxyprogesterone acetate; IUD: intrauterine device; LARC: long-acting reversible contraception; MID: minimally important difference; RCT: randomised controlled trial; RR: relative risk

[1] *The quality of evidence was downgraded by 1 level as the 95% confidence interval crossed 1 MID*
[2] *The quality of evidence was downgraded 1 level as differences between cohorts were not controlled for*

Table 8: Clinical evidence profile: Comparison 2. Contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete versus contraception provided by ToP provider at a later date

Quality assessment							No of patients		Effect			
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Contraception provided by top provider at the time of the termination or when the termination is determined to be complete**	**Contraception provided by top provider at a later date**	**Relative (95% CI)**	**Absolute**	**Quality**	**Importance**
Receipt of chosen method of contraception: IUD after mToP (RCT)												
3 (Korjamo 2017c; Saav 2012; Shimoni 2011)	Randomised trials	No serious risk of bias	No serious inconsistency [1]	No serious indirectness	No serious imprecision	None	258/270 (95.6%)	230/279 (82.4%)	RR 1.16 (1.09 to 1.23)	132 more per 1000 (from 74 more to 190 more)	HIGH	CRITICAL
Receipt of chosen method of contraception - IUD after sToP (RCT; not pooled due to heterogeneity)												
3 (Bednarek 2011; Cremer 2011; Hohmann 2012)	Randomised trials	No serious risk of bias	Very serious[2]	No serious indirectness [3]	No serious imprecision	None	366/373 (98.1%)	272/449 (60.6%)	Not pooled[2] Bednarek 2011 RR 1.40 (from 1.31 to 1.50)	Not applicable	LOW	CRITICAL

									Cremer 2011 RR 3.05 (from 2.19 to 4.25) Hohman n 2012 RR 2.17 (from 1.57 to 2.99)			
Receipt of chosen method of contraception - IUD after sToP (Non-RCT)												
1 (Fox 2011)	Observation al studies	Serious[7]	No serious inconsistency	No serious indirectness	No serious imprecision	None	212/221 (95.9%)	20/87 (23%)	RR 4.17 (2.84 to 6.14)	729 more per 1000 (from 423 more to 1000 more)	VERY LOW	CRITICAL
Receipt of chosen method of contraception - Implant after mToP (RCT; not pooled due to heterogeneity)												
2 (Hognert 2016; Raymond 2016a)	Randomised trials	No serious risk of bias	Very serious[4]	No serious indirectness	Serious[5]	None	478/513 (93.2%)	371/501 (74.1%)	Not pooled[4] Hognert 2016 RR 1.38 (from 1.28 to 1.49) Raymon d 2016b RR 1.13 (from 1.03 to 1.23)	Not applicabl e	VERY LOW	CRITICAL
Receipt of chosen method of contraception - Implant after mToP (Non-RCT)												

1 (Barros Pereira 2015)	Observational studies	Serious[8]	No serious inconsistency	No serious indirectness	No serious imprecision	None	57/57 (100%)	10/62 (16.1%)	RR 5.95 (3.42 to 10.34)	798 more per 1000 (from 390 more to 1000 more)	VERY LOW	CRITICAL
Receipt of chosen method of contraception - Implant after sToP (RCT)												
1 (Cowett 2018)	Randomised trials	No serious risk of bias	No serious inconsistency [6]	No serious indirectness	No serious imprecision	None	73/73 (100%)	32/75 (42.7%)	RR 2.32 (1.79 to 3.01)	563 more per 1000 (from 337 more to 858 more)	HIGH	CRITICAL
Receipt of chosen method of contraception - DMPA after mToP (RCT)												
1 (Raymond 2016b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[5]	None	224/225 (99.6%)	189/236 (80.1%)	RR 1.24 (1.17 to 1.33)	192 more per 1000 (from 136 more to 264 more)	MODERATE	CRITICAL
Subsequent termination of pregnancy within 12 months (RCT)												
3 (Hognert 2016; Korjamo 2017c; Shimoni 2011)	Randomised trials	Serious[9]	No serious inconsistency	No serious indirectness	Serious[5]	None	6/481 (1.2%)	16/477 (3.4%)	RR 0.39 (0.16 to 0.95)	20 fewer per 1000 (from 2 fewer to 28 fewer)	LOW	CRITICAL
Continuation of contraception within 12 months after mToP (RCT; ITT; assumed LTFU discontinued)												
6 (Hognert 2016; Korjamo 2017c; Raymond 2016a; Raymond 2016b; Saav 2012; Shimoni 2011)	Randomised trials	Serious[9]	No serious inconsistency [10]	No serious indirectness	Serious[5]	None	686/1008 (68.1%)	572/1016 (56.3%)	RR 1.21 (1.13 to 1.29)	118 more per 1000 (from 73 more to 163 more)	LOW	CRITICAL

Continuation of contraception within 12 months after sToP (ITT; assumed LTFU discontinued) - RCT (not pooled due to heterogeneity)												
4[11] (Bednarek 2011; Cowett 2018; Cremer 2011; Hohmann 2012)	Randomised trials	Serious[1][2]	Very serious[13]	No serious indirectness[3]	No serious imprecision	None	300/479 (62.6%)	238/545 (43.7%)	Not pooled[13] Bednarek 2011 RR 1.24 (from 1.09 to 1.41) Cowett 2018 RR 2.11 (from 1.36 to 3.27) Cremer 2011 RR 2.48 (from 1.68 to 3.64) Hohmann 2012 RR 1.35 (from 0.85 to 2.16)	Not applicable	VERY LOW	CRITICAL
Continuation of contraception within 12 months after sToP (ITT; assumed LTFU discontinued) - Non-RCT												
1 (Fox 2011)	Observational studies	Very serious[1][4]	No serious inconsistency	No serious indirectness	Serious[5]	None	84/221 (38%)	20/87 (23%)	RR 1.65 (1.09 to 2.52)	149 more per 1000 (from 21 more to	VERY LOW	CRITICAL

										349 more)		
Patient satisfaction - preferred allocated time of insertion (RCT)												
1 (Hognert 2016)	Randomised trials	Serious[1] [5]	No serious inconsistency	No serious indirectness	No serious imprecision	None	180/277 (65%)	51/261 (19.5%)	RR 3.33 (2.56 to 4.32)	455 more per 1000 (from 305 more to 649 more)	MODERATE	IMPORTANT
Patient satisfaction - with group assignment at enrolment (RCT) - Pleased												
2 (Raymond 2016a; Raymond 2016b)	Randomised trials	No serious risk of bias[16]	No serious inconsistency	No serious indirectness	No serious imprecision	None	351/461 (76.1%)	233/476 (48.9%)	RR 1.55 (1.4 to 1.73)	269 more per 1000 (from 196 more to 357 more)	HIGH	IMPORTANT
Patient satisfaction - with group assignment at enrolment (RCT) - Neutral												
2 (Raymond 2016a; Raymond 2016b)	Randomised trials	No serious risk of bias[16]	No serious inconsistency	No serious indirectness	No serious imprecision	None	101/461 (21.9%)	187/476 (39.3%)	RR 0.56 (0.46 to 0.69)	173 fewer per 1000 (from 122 fewer to 212 fewer)	HIGH	IMPORTANT
Patient satisfaction - with group assignment at enrolment (RCT) - Disappointed												
2 (Raymond 2016a; Raymond 2016b)	Randomised trials	No serious risk of bias[16]	No serious inconsistency	No serious indirectness	No serious imprecision	None	9/461 (2%)	56/476 (11.8%)	RR 0.17 (0.08 to 0.33)	98 fewer per 1000 (from 79 fewer to 108 fewer)	HIGH	IMPORTANT
Patient satisfaction - with group assignment after termination completed (RCT) - Neutral												
2 (Raymond 2016a; Raymond 2016b)	Randomised trials	No serious risk of bias[16]	No serious inconsistency	No serious indirectness	No serious imprecision	None	56/461 (12.1%)	170/476 (35.7%)	RR 0.34 (0.26 to 0.45)	236 fewer per 1000 (from 196 fewer to	HIGH	IMPORTANT

										264 fewer)		
Patient satisfaction - with group assignment after termination completed (RCT) - Disappointed												
2 (Raymond 2016a; Raymond 2016b)	Randomised trials	No serious risk of bias[16]	No serious inconsistency	No serious indirectness	No serious imprecision	None	3/461 (0.7%)	43/476 (9%)	RR 0.07 (0.02 to 0.23)	84 fewer per 1000 (from 70 fewer to 89 fewer)	HIGH	IMPORTANT
Patient satisfaction - with group assignment after termination completed (RCT; not pooled due to heterogeneity) - Pleased												
2 (Raymond 2016a; Raymond 2016b)	Randomised trials	No serious risk of bias[16]	Very serious[17]	No serious indirectness	No serious imprecision	None	387/461 (83.9%)	237/476 (49.8%)	Not pooled[17] Raymond 2016a RR 1.94 (from 1.64 to 2.29) Raymond 2016b RR 1.51 (from 1.34 to 1.70)	Not applicable	LOW	IMPORTANT
Patient satisfaction - satisfaction with implant at 6 month follow-up (RCT) - Very/fairly satisfied												
1 (Hognert 2016)	Randomised trials	Serious[15]	No serious inconsistency	No serious indirectness	No serious imprecision	None	147/199 (73.9%)	105/151 (69.5%)	RR 1.06 (0.93 to 1.21)	42 more per 1000 (from 49 fewer to 146 more)	MODERATE	IMPORTANT
Patient satisfaction - satisfaction with implant at 6 month follow-up (RCT) - Neither satisfied or dissatisfied												
1 (Hognert 2016)	Randomised trials	Serious[15]	No serious inconsistency	No serious indirectness	Very serious[18]	None	19/199 (9.5%)	17/151 (11.3%)	RR 0.85 (0.46 to 1.58)	17 fewer per 1000 (from 61 fewer to 65 more)	VERY LOW	IMPORTANT

Patient satisfaction - satisfaction with implant at 6 month follow-up (RCT) - Fairly/very dissatisfied												
1 (Hognert 2016)	Randomised trials	Serious[1] [5]	No serious inconsistency	No serious indirectness	Very serious[18]	None	33/199 (16.6%)	29/151 (19.2%)	RR 0.86 (0.55 to 1.36)	27 fewer per 1000 (from 86 fewer to 69 more)	VERY LOW	IMPORTANT
Number who receive LARC rather than any contraception (RCT)												
2 (Raymond 2016a; Raymond 2016b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	No serious imprecision	None	460/460 (100%)	399/476 (83.8%)	RR 1.19 (1.15 to 1.24)	159 more per 1000 (from 126 more to 201 more)	HIGH	IMPORTANT

CI: confidence interval; DMPA: depomedroxyprogesterone acetate; ITT: intention-to-treat; LARC: IUD: intrauterine device; long-acting reversible contraception; LTFU: loss to follow-up; MID: minimally important difference; mToP: medical termination of pregnancy; RCT: randomised controlled trial; RR: relative risk; sToP: surgical termination of pregnancy

[1] Results are presented separately for medical and surgical termination of pregnancy to explore significant heterogeneity that was present when analysed together (93%); termination of pregnancy type was not pre-specified as a subgroup of interest but timing of IUD insertion in the 'immediate' group differs between medical and surgical termination of pregnancy and there may be differences in focus of the study or follow-up patterns between mToP and sToP; no significant heterogeneity remained

[2] Results are presented separately for medical and surgical termination of pregnancy to explore significant heterogeneity that was present when analysed together (93%); termination of pregnancy type was not pre-specified as a subgroup of interest but timing of IUD insertion in the 'immediate' group differs between medical and surgical termination of pregnancy and there may be differences in focus of the study or follow-up patterns between mToP and sToP; the quality of evidence was downgraded by 2 as there were still high rates of unexplained heterogeneity (94%)

[3] Bednarek 2011 contained a small number of women who were having uterine aspiration for spontaneous abortion; not downgraded for indirectness due to small numbers (n=20; 3.5%)

[4] Results are presented separately for medical and surgical termination of pregnancy to explore significant heterogeneity that was present when analysed together (94%); termination of pregnancy type was not pre-specified as a subgroup of interest but there may be differences in focus of the study or follow-up patterns between mToP and sToP; the quality of evidence was downgraded 2 levels as there were still high rates of unexplained heterogeneity (92%)

[5] The quality of evidence was downgraded by 1 level as the 95% confidence interval crossed 1 MID

[6] Results are presented separately for medical and surgical termination of pregnancy to explore significant heterogeneity that was present when analysed together (94%); termination of pregnancy type was not pre-specified as a subgroup of interest but there may be differences in focus of the study or follow-up patterns between mToP and sToP; heterogeneity no longer applicable as only 1 study

[7] The quality of evidence was downgraded 1 level as differences between cohorts were not controlled for

[8] The quality of evidence was downgraded 1 level as it was unclear whether the two cohorts were comparable and any differences, if present, were not controlled for

[9] The quality of evidence was downgraded 1 level due to risk of attrition bias as drop-out was higher in the delayed arm than the immediate arm for all studies and reasons for drop-out were not reported

[10] Results are presented separately for medical and surgical termination of pregnancy to explore significant heterogeneity that was present when analysed together (71%); termination of pregnancy type was not pre-specified as a subgroup of interest but timing of IUD insertion in the 'immediate' group differs between medical and surgical termination of pregnancy and there may be differences in focus of the study or follow-up patterns between mToP and sToP; no significant heterogeneity remained

[11] Verified continuation of contraception reported in Cremer 2011 was converted to ITT assuming LTFU discontinued contraception as this was reported by all other included studies and provides the most conservative estimate

[12] The quality of evidence was downgraded 1 level as there were high rates of attrition (>20% in all arms of all included studies) and reasons for drop-out were not reported

[13] Results are presented separately for medical and surgical termination of pregnancy to explore significant heterogeneity that was present when analysed together (71%); termination of pregnancy type was not pre-specified as a subgroup of interest but timing of IUD insertion in the 'immediate' group differs between medical and surgical termination of pregnancy and there may be differences in focus of the study or follow-up patterns between mToP and sToP; the quality of evidence was downgraded 2 levels as there were still high rates of unexplained heterogeneity (82%)
[14] The quality of evidence was downgraded 2 levels as differences between cohorts were not controlled for and there were high rates of attrition (<60% were included in follow-up and reasons for drop-out were not reported)
[15] The quality of evidence was downgraded 1 level due to high attrition (>25% drop-out and reasons not reported); evidence was not downgraded due to lack of blinding, despite the subjective nature of this outcome, as blinding was not practical
[16] Evidence was not downgraded due to lack of blinding, despite the subjective nature of this outcome, as blinding was not practical
[17] The quality of evidence was downgraded 2 levels as there were high rates of unexplained heterogeneity (83%)
[18] The quality of evidence was downgraded by 2 levels as the 95% confidence interval crossed 2 MIDs

Table 9: Clinical evidence profile: Comparison 3. Contraception provided by ToP provider at the time of the termination or when the termination is determined to be complete versus contraception provided by non-ToP provider at a later date

Quality assessment							No of patients		Effect			
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Contraception provided by top provider at the time of the termination or when the termination is determined to be complete**	**Contraception provided by non-top provider at a later date**	**Relative (95% CI)**	**Absolute**	**Quality**	**Importance**
Continuation of contraception at 12 months (Non-RCT; ITT with complete follow-up)												
1 (Madden 2012)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness[2]	No serious imprecision	None	115/141 (81.6%)	88/102 (86.3%)	RR 0.95 (0.85 to 1.06)	43 fewer per 1000 (from 129 fewer to 52 more)	VERY LOW	CRITICAL
Patient satisfaction (Non-RCT) - Very satisfied												
1 (Madden 2012)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness[2]	Serious[3]	None	69/141 (48.9%)	57/102 (55.9%)	RR 0.88 (0.69 to 1.11)	67 fewer per 1000 (from 173 fewer to 61 more)	VERY LOW	IMPORTANT
Patient satisfaction (Non-RCT) - Somewhat satisfied												

1 (Madden 2012)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness[2]	Very serious[4]	None	34/141 (24.1%)	24/102 (23.5%)	RR 1.02 (0.65 to 1.62)	5 more per 1000 (from 82 fewer to 146 more)	VERY LOW	IMPORTANT
Patient satisfaction (Non-RCT) - Not satisfied												
1 (Madden 2012)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness[2]	Serious[3]	None	38/141 (27%)	21/102 (20.6%)	RR 1.31 (0.82 to 2.09)	64 more per 1000 (from 37 fewer to 224 more)	VERY LOW	IMPORTANT
Number who receive LARC rather than any contraception (IUD, implant or DMPA; Non-RCT)												
1 (Madden 2011)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness[2]	No serious imprecision	None	862/937 (92%)	572/736 (77.7%)	RR 1.18 (1.13 to 1.24)	140 more per 1000 (from 101 more to 187 more)	VERY LOW	IMPORTANT
Proportion who received contraception (Non-RCT)												
1 (Madden 2011)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness[2]	No serious imprecision	None	937/937 (100%)	736/736 (100%)	Not estimable	Not estimable	VERY LOW	IMPORTANT

CI: confidence interval; DMPA: depomedroxyprogesterone acetate; ITT: intention-to-treat; IUD: intrauterine device; LARC: long-acting reversible contraception; MID: minimally important difference; RCT: randomised controlled trial; RR: relative risk; ToP: termination of pregnancy

[1] The quality of evidence was downgraded 1 level due to concerns with the representativeness of the population and self-reported outcomes

[2] It is unclear what proportion of women in both arms received contraception and termination of pregnancy from the same provider but it is likely this was the case for at least some women in the immediate arm; evidence was not downgraded due to uncertainty

[3] The quality of evidence was downgraded by 1 level as the 95% confidence interval crossed 1 MID

[4] The quality of evidence was downgraded by 2 level as the 95% confidence interval crossed 2 MIDs

Table 10: Clinical evidence profile: Comparison 4. Full range of contraceptive methods is available versus subset of contraceptive methods is available

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Full range of contraceptive methods is available	Subset of contraceptive methods is available	Relative (95% CI)	Absolute		
Receipt of chosen method of contraception (IUD; Non-RCT)												
1 (Langston 2014)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness	No serious imprecision	None	155/174 (89.1%)	45/135 (33.3%)	RR 2.67 (2.09 to 3.41)	557 more per 1000 (from 363 more to 803 more)	VERY LOW	CRITICAL
Subsequent termination of pregnancy within 12 months (Non-RCT)												
1 (Langston 2014)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness	Serious[2]	None	40/405 (9.9%)	70/407 (17.2%)	RR 0.57 (0.4 to 0.83)	74 fewer per 1000 (from 29 fewer to 103 fewer)	VERY LOW	CRITICAL
Number who receive LARC rather than any contraception (IUD, implant or DMPA; Non-RCT) - Assuming DMPA referrals received injection												
1 (Langston 2014)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness	No serious imprecision	None	218/405 (53.8%)	95/407 (23.3%)	RR 2.31 (1.89 to 2.81)	306 more per 1000 (from 208 more to 422 more)	VERY LOW	IMPORTANT
Number who receive LARC rather than any contraception (IUD, implant or DMPA; Non-RCT) - Assuming DMPA referrals did not receive injection												
1 (Langston 2014)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness	No serious imprecision	None	205/405 (50.6%)	46/407 (11.3%)	RR 4.48 (3.36 to 5.98)	393 more per 1000 (from 267 more to 563 more)	VERY LOW	IMPORTANT
Proportion who received contraception (Non-RCT) - Assuming referrals received contraception												
1 (Langston 2014)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness	Serious[2]	None	353/405 (87.2%)	267/407 (65.6%)	RR 1.33 (1.23 to 1.44)	216 more per 1000 (from 151 more	VERY LOW	IMPORTANT

										to 289 more)		
Proportion who received contraception (Non-RCT) - Assuming referrals did not receive contraception												
1 (Langston 2014)	Observational studies	Serious [1]	No serious inconsistency	No serious indirectness	No serious imprecision	None	340/405 (84.0%)	218/407 (53.6%)	RR 1.57 (1.42 to 1.73)	300 more per 1000 (from 220 more to 386 more)	VERY LOW	IMPORTANT

CI: confidence interval; DMPA: depomedroxyprogesterone acetate; IUD: intrauterine device; LARC: long-acting reversible contraception; MID: minimally important difference; RCT: randomised controlled trial; RR: relative risk

[1] The quality of evidence was downgraded 1 level as it was unclear if follow-up was adequate and the cohorts were from different timeframes

[2] The quality of evidence was downgraded by 1 level as the 95% confidence interval crossed 1 MID

GRADE tables for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

Table 11: Clinical evidence profile: Comparison 1. Simultaneous administration of mifepristone and etonorgestrel implant versus administration of etonorgestrel implant more than 24 hours after mifepristone

Quality assessment							No of patients		Effect			
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Simultaneous administration of mifepristone and etonorgestrel implant**	**Administration of etonorgestrel implant more than 24 hours after mifepristone**	**Relative (95% CI)**	**Absolute**	**Quality**	**Importance**
Ongoing pregnancy												
1 (Raymond 2016a)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious[1]	None	2/229 (0.87%)	2/234 (0.85%)	RR 1.02 (0.15 to 7.19)	0 more per 1000 (from 7 fewer to 53 more)	LOW	CRITICAL
Incomplete abortion with the need for surgical intervention												
2 (Hognert 2016;	Randomised trials	No serious	No serious inconsistency	No serious indirectness	Very serious[1]	None	25/504 (5%)	19/483 (3.9%)	RR 1.25 (0.7 to 2.25)	10 more per 1000 (from 12	LOW	CRITICAL

Raymond 2016a)		risk of bias								fewer to 49 more)		
Patient acceptability defined as "preferring the allocated time of insertion"												
1 (Hognert 2016)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	No serious imprecision	None	180/277 (65%)	108/261 (41.4%)	RR 1.57 (1.33 to 1.86)	236 more per 1000 (from 137 more to 356 more)	HIGH	CRITICAL
Patient satisfaction with group allocation defined as "pleased" - at enrolment												
1 (Raymond 2016a)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	No serious imprecision	None	187/236 (79.2%)	129/240 (53.8%)	RR 1.47 (1.29 to 1.69)	253 more per 1000 (from 156 more to 371 more)	HIGH	CRITICAL
Patient satisfaction with group assignment defined as "pleased" - After termination determined to be complete												
1 (Raymond 2016a)	Randomised trials	Serious [2]	No serious inconsistency	No serious indirectness	No serious imprecision	None	208/231 (90%)	140/233 (60.1%)	RR 1.5 (1.34 to 1.68)	300 more per 1000 (from 204 more to 409 more)	MODERATE	CRITICAL
Patient satisfaction with group assignment defined as "very satisfied/ fairly satisfied" - 3-months post-insertion												
1 (Hognert 2016)	Randomised trials	Very serious[3]	No serious inconsistency	No serious indirectness	Serious[4]	None	173/224 (77.2%)	115/179 (64.2%)	RR 1.2 (1.06 to 1.37)	128 more per 1000 (from 39 more to 238 more)	VERY LOW	CRITICAL
Patient satisfaction with group assignment defined as "very satisfied/ fairly satisfied" - 6-months post-insertion												
1 (Hognert 2016)	Randomised trials	Very serious[3]	No serious inconsistency	No serious indirectness	No serious imprecision	None	147/199 (73.9%)	105/151 (69.5%)	RR 1.06 (0.93 to 1.21)	42 more per 1000 (from 49 fewer to 146 more)	LOW	CRITICAL
Complete abortion without the need for surgical intervention												

2 (Hognert 2016; Raymond 2016a)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[5]	None	479/504 (95%)	464/483 (96.1%)	RR 0.99 (0.96 to 1.02)	10 fewer per 1000 (from 38 fewer to 19 more)	MODERATE	IMPORTANT
Subsequent unintended pregnancy - At 3 months												
1 (Hognert 2016)	Randomised trials	Serious[6]	No serious inconsistency	No serious indirectness	Very serious[1]	None	0/277 (0%)	4/261 (1.5%)	RR 0.1 (0.01 to 1.94)	14 fewer per 1000 (from 15 fewer to 14 more)	VERY LOW	IMPORTANT
Subsequent unintended pregnancy - At 6 months												
2 (Hognert 2016; Raymond 2016a)	Randomised trials	Serious[6]	No serious inconsistency	No serious indirectness	No serious imprecision	None	3/490 (0.61%)	13/474 (2.7%)	RR 0.22 (0.06 to 0.78)	21 fewer per 1000 (from 6 fewer to 26 fewer)	MODERATE	IMPORTANT

CI: confidence interval; MID: minimally important difference; RR: relative risk
[1] The quality of evidence was downgraded by 2 levels as the 95% confidence interval crossed 2 MIDs
[2] The quality of evidence was downgraded by 1 level as the patients were unblinded to the intervention allocated, only patient satisfaction assessments where etonorgestrel had been administered to women were downgraded, whereas patient satisfaction assessments prior to etonorgestrel were not downgraded.
[3] The quality of evidence was downgraded by 2 levels as there was a high rate of attrition (>20%) which was unexplained other than lost to follow-up and women were unblInded to the intervention allocated
[4] The quality of evidence was downgraded by 1 level as the 95% confidence interval crossed 1 MID
[5] The quality of evidence was downgraded by 1 level as the 95% confidence interval crossed 1 MID; imprecision ratings were undertaken on that basis by using the absolute effect estimates as the MID for this outcome is 3% (30 fewer or 30 more)
[6] The quality of evidence was downgraded by 1 levels as there was a high rate of attrition (>20%) which was unexplained other than lost to follow-up.

Table 12: Clinical evidence profile: Comparison 2. Simultaneous administration of mifepristone and medroxyprogesterone depot injection versus administration of medroxyprogesterone depot injection more than 24 hours after mifepristone

Quality assessment							No of patients		Effect			
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Simultaneous administration of mifepristone and medroxyprogesterone depot injection**	**Administration of medroxyprogesterone depot injection more than 24 hours after mifepristone**	**Relative (95% CI)**	**Absolute**	**Quality**	**Importance**
Ongoing pregnancy												

Quality assessment							No of patients		Effect			
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Simultaneous administration of mifepristone and medroxyprogesterone depot injection**	**Administration of medroxyprogesterone depot injection more than 24 hours after mifepristone**	**Relative (95% CI)**	**Absolute**	**Quality**	**Importance**
1 (Raymond 2016b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[1]	None	8/220 (3.6%)	2/226 (0.88%)	RR 4.11 (0.88 to 19.14)	28 more per 1000 (from 1 fewer to 161 more)	MODERATE	CRITICAL
Incomplete abortion with the need for surgical intervention												
1 (Raymond 2016b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious[2]	None	14/220 (6.4%)	12/226 (5.3%)	RR 1.2 (0.57 to 2.53)	11 more per 1000 (from 23 fewer to 81 more)	LOW	CRITICAL
Patient satisfaction with group assignment defined as "pleased" - At enrolment												
1 (Raymond 2016b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	No serious imprecision	None	164/225 (72.9%)	104/236 (44.1%)	RR 1.65 (1.4 to 1.95)	286 more per 1000 (from 176 more to 419 more)	HIGH	CRITICAL
Patient satisfaction with group assignment defined as "pleased"- After termination determined to be complete												
1 (Raymond 2016b)	Randomised trials	Serious[3]	No serious inconsistency	No serious indirectness	No serious imprecision	None	179/215 (83.3%)	97/217 (44.7%)	RR 1.77 (1.51 to 2.08)	344 more per 1000 (from 228 more to	MODERATE	CRITICAL

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Simultaneous administration of mifepristone and medroxyprogesterone depot injection	Administration of medroxyprogesterone depot injection more than 24 hours after mifepristone	Relative (95% CI)	Absolute	Quality	Importance
										483 more)		
Complete abortion without the need for surgical intervention												
1 (Raymond 2016b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious[4]	None	206/220 (93.6%)	214/226 (94.7%)	RR 0.99 (0.94 to 1.04)	9 fewer per 1000 (from 57 fewer to 38 more)	LOW	IMPORTANT
Subsequent unintended pregnancy - At 6 months												
1 (Raymond 2016b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious[2]	None	5/213 (2.3%)	7/217 (3.2%)	RR 0.73 (0.23 to 2.26)	9 fewer per 1000 (from 25 fewer to 41 more)	LOW	IMPORTANT

CI: confidence interval; MID: minimally important difference; RR: relative risk

[1] The quality of evidence was downgraded by 1 level as the 95% confidence interval crossed 1 MID

[2] The quality of evidence was downgraded by 2 levels as the 95% confidence interval crosses 2 MIDs

[3] The quality of evidence was downgraded by 1 level as the women were unblinded to the intervention allocation, only patient satisfaction assessments where medroxyprogesterone had been administered to women were downgraded, whereas patient satisfaction assessments prior to medroxyprogesterone were not downgraded.

[4] The quality of evidence was downgraded by 2 levels as the 95% confidence interval crossed 2 MIDs; imprecision ratings were undertaken on that basis by using the absolute effect estimates as the MID for this outcome is 3% (30 fewer or 30 more)

GRADE tables for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

Table 13: Clinical evidence profile: Early/immediate insertion versus delayed insertion of an IUD/IUS after medical termination

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Early/immediate	Delayed insertion of an IUD	Relative (95% CI)	Absolute	Quality	Importance
Expulsion of LNG-IUS - Gestational age: Up to 9 weeks + 0 days (follow-up 6-12 months)												
2 (Korjamo 2017a; Saav 2012)	Randomised trials	Serious [1]	No serious inconsistency	No serious indirectness	Very serious[2]	None	12/87 (13.8%)	9/82 (11%)	RR 1.25 (0.56 to 2.82)	27 more per 1000 (from 48 fewer to 200 more)	VERY LOW	CRITICAL
Expulsion of LNG-IUS - Gestational age: 9 weeks + 1 day to 12 weeks + 0 days (follow-up 12 months)												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[3]	None	17/51 (33.3%)[4]	6/50 (12%)	RR 2.78 (1.19 to 6.47)	214 more per 1000 (from 23 more to 656 more)	MODERATE	CRITICAL
Expulsion of LNG-IUS - Gestational age: 12 weeks + 1 day to 20 weeks + 0 days (follow-up 12 months)												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious[5]	None	5/27 (18.5%)[6]	1/28 (3.6%)	RR 5.19 (0.65 to 41.54)	150 more per 1000 (from 13 fewer to 1000 more)	LOW	CRITICAL
Expulsion of copper IUD - Gestational age: Up to 9 weeks + 0 days (follow-up 6 months)												
2 (Saav 2012; Shimoni 2011)	Randomised trials	Serious [7]	No serious inconsistency	No serious indirectness	Very serious[5]	None	10/99 (10.1%)	7/90 (7.8%)	RR 1.30 (0.53 to 3.17)	23 more per 1000 (from 37 fewer to 169 more)	VERY LOW	CRITICAL
Continuation of LNG-IUS - Gestational age: Up to 9 weeks + 0 days (follow-up 6-12 months)												
2 (Korjamo 2017a; Saav 2012)	Randomised trials	Serious [1]	Serious[8]	No serious indirectness	Serious[5]	None	51/87 (58.6%)[9]	45/82 (54.9%)	RR 1.02 (0.6 to 1.73)	11 more per 1000 (from 220 fewer to	VERY LOW	CRITICAL

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Early/immediate	Delayed insertion of an IUD	Relative (95% CI)	Absolute	Quality	Importance
										401 more)		
Continuation of LNG-IUS - Gestational age: 9 weeks + 1 day to 12 weeks + 0 days (follow-up 12 months)												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[3]	None	35/51 (68.6%)[10]	21/50 (42%)	RR 1.63 (1.12 to 2.38)	265 more per 1000 (from 50 more to 580 more)	MODERATE	CRITICAL
Continuation of LNG-IUS - Gestational age: 12 weeks + 1 day to 20 weeks + 0 days (follow-up 12 months)												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[3]	None	15/27 (55.6%)[11]	7/28 (25%)	RR 2.22 (1.08 to 4.59)	305 more per 1000 (from 20 more to 898 more)	MODERATE	CRITICAL
Continuation of copper IUD - Gestational age: Up to 9 weeks + 0 days (follow-up 6 months)												
2 (Saav 2012; Shimoni 2011)	Randomised trials	Serious[1]	No serious inconsistency	No serious indirectness	Serious[3]	None	73/101 (72.3%)	69/110 (62.7%)	RR 1.14 (0.94 to 1.37)	88 more per 1000 (from 38 fewer to 232 more)	LOW	CRITICAL
Uterine perforation: LNG-IUS - Gestational age: Up to 9 weeks + 0 days												
2[12] (Korjamo 2017a; Saav 2012)	Randomised trials	Serious[1]	No serious inconsistency	No serious indirectness	Serious[13]	None	0/87 (0%)	0/82 (0%)	Not estimable	Not estimable	LOW	CRITICAL
Uterine perforation: LNG-IUS - Gestational age: 9 weeks + 1 day to 12 weeks + 0 days												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[13]	None	0/51 (0%)	0/50 (0%)	Not estimable	Not estimable	MODERATE	CRITICAL
Uterine perforation: LNG-IUS - Gestational age: 12 weeks + 1 day to 20 weeks + 0 days												

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Early/immediate	Delayed insertion of an IUD	Relative (95% CI)	Absolute	Quality	Importance
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[13]	None	0/27 (0%)	0/28 (0%)	Not estimable	Not estimable	MODERATE	CRITICAL
Uterine perforation: Copper IUD - Gestational age: Up to 9 weeks + 0 days												
2 (Saav 2012; Shimoni 2011)	Randomised trials	Serious[7]	No serious inconsistency	No serious indirectness	Serious[13]	None	0/99 (0%)	0/90 (0%)	Not estimable	Not estimable	LOW	CRITICAL
Uptake rate of LNG-IUS - Gestational age: Up to 9 weeks + 0 days												
2[14] (Korjamo 2017a; Saav 2012)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	No serious imprecision	None	113/121 (93.4%)	101/116 (87.1%)	RR 1.07 (0.99 to 1.17)	61 more per 1000 (from 9 fewer to 148 more)	HIGH	IMPORTANT
Uptake rate of LNG-IUS - Gestational age: 9 weeks + 1 day to 12 weeks + 0 days												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[3]	None	50/51 (98%)	41/50 (82%)	RR 1.2 (1.04 to 1.37)	164 more per 1000 (from 33 more to 303 more)	MODERATE	IMPORTANT
Uptake rate of LNG-IUS - Gestational age: 12 weeks + 1 day to 20 weeks + 0 days												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[3]	None	26/27 (96.3%)	23/28 (82.1%)	RR 1.17 (0.97 to 1.41)	140 more per 1000 (from 25 fewer to 337 more)	MODERATE	IMPORTANT
Uptake rate of copper IUD - Gestational age: Up to 9 weeks + 0 days												
2[14] (Saav 2012; Shimoni 2011)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious[3]	None	69/71 (97.2%)	65/85 (76.5%)	RR 1.27 (1.12 to 1.44)	206 more per 1000 (from 92	MODERATE	IMPORTANT

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Early/immediate	Delayed insertion of an IUD	Relative (95% CI)	Absolute	Quality	Importance
										more to 336 more)		
Infection within first month of LNG-IUS insertion - Gestational age: Up to 9 weeks + 0 days (follow-up 1-3 months)												
2 (Korjamo 2017a; Saav 2012)	Randomised trials	Serious [1]	No serious inconsistency	Serious[15]	Very serious[5]	None	6/87 (6.9%)	0/82 (0%)	RR 12.54 (0.72 to 217.16)	Not estimable	VERY LOW	IMPORTANT
Infection within first month of LNG-IUS insertion - Gestational age: 9 weeks + 1 day to 12 weeks + 0 days (follow-up 3 months)												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	Serious[15]	Very serious5	None	5/51 (9.8%)	0/50 (0%)	RR 10.79 (0.61 to 190.12)	Not estimable	VERY LOW	IMPORTANT
Infection within first month of LNG-IUS insertion - Gestational age: 12 weeks + 1 day to 20 weeks + 0 days (follow-up 3 months)												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	Serious[15]	Serious[3]	None	6/27 (22.2%)	0/28 (0%)	RR 13.46 (0.8 to 227.97)	Not estimable	LOW	IMPORTANT
Infection within first month of copper IUD insertion - Gestational age: Up to 9 weeks + 0 days (follow-up 1 months)												
2 (Saav 2012; Shimoni 2011)	Randomised trials	Serious [7]	No serious inconsistency	No serious indirectness	Serious[13]	None	0/99 (0%)	0/90 (0%)	Not estimable	Not estimable	LOW	IMPORTANT
Subsequent pregnancy within 1 year of LNG-IUS insertion - Gestational age: Up to 9 weeks + 0 days												
2 (Korjamo 2017a; Saav 2012)	Randomised trials	Serious [1]	No serious inconsistency	No serious indirectness	Very serious[5]	None	4/87 (4.6%)	6/82 (7.3%)	RR 0.64 (0.19 to 2.15)	26 fewer per 1000 (from 59 fewer to 84 more)	VERY LOW	OF LIMITED IMPORTANCE
Subsequent pregnancy within 1 year of LNG-IUS insertion - Gestational age: 9 weeks + 1 day to 12 weeks + 0 days												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious[5]	None	1/51 (2%)	6/50 (12%)	RR 0.16 (0.02 to 1.31)	101 fewer per 1000 (from 118 fewer to 37 more)	LOW	OF LIMITED IMPORTANCE

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Early/immediate	Delayed insertion of an IUD	Relative (95% CI)	Absolute	Quality	Importance
Subsequent pregnancy within 1 year of LNG-IUS insertion - Gestational age: 12 weeks + 1 day to 20 weeks + 0 days												
1 (Korjamo 2017b)	Randomised trials	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious[5]	None	1/27 (3.7%)	4/28 (14.3%)	RR 0.26 (0.03 to 2.17)	106 fewer per 1000 (from 139 fewer to 167 more)	LOW	OF LIMITED IMPORTANCE
Subsequent pregnancy within 1 year of copper IUD insertion - Gestational age: Up to 9 weeks + 0 days												
2 (Saav 2012; Shimoni 2011)	Randomised trials	Serious [1]	No serious inconsistency	No serious indirectness	Very serious[5]	None	0/101 (0%)	4/110 (3.6%)	RR 0.13 (0.01 to 2.42)	32 fewer per 1000 (from 36 fewer to 52 more)	VERY LOW	OF LIMITED IMPORTANCE

LNG-IUS: Levonorgestrel-releasing intrauterine system; IUD: intrauterine device; MID: minimally important difference; RR: relative risk

[1] *In Saav 2012 the attrition rates were 4/66 in the early arm and 9/63 in the delayed arm (across both he LNG-IUS and copper IUD).*

[2] *Korjamo 2017 provided expulsion rates at 3 and 12 months. The 12-month rates are used in the analyses. The corresponding rates at 3 months were: Early 7/55; Delayed: 1/53.*

[3] *The 95% CI crosses the upper boundary for MID.*

[4] *Korjamo 2017 provided expulsion rates at 3 and 12 months. The 12-month rates are used in the analyses. The corresponding rates at 3 months were: Early 14/51; Delayed: 2/50.*

[5] *The 95% CI crosses both the upper and lower boundaries for MIDs.*

[6] *Korjamo 2017 provided expulsion rates at 3 and 12 months. The 12-month rates are used in the analyses. The corresponding rates at 3 months were: Early 5/27; Delayed: 1/28.*

[7] *Both studies had high attrition rates, esp in the delayed group (Saav 2012: Early: 4/66; Delayed: 9/63. Shimoni 2011: Early: 2/71; Delayed: 20/85)*

[8] *I^2 = 75%*

[9] *The rates reported for Korjamo 2017 were verified use of IUD at 12 months. The rates for IUD use verified/unknown at 12 months: Early 44/55; Delayed 38/53.*

[10] *The rates reported for Korjamo 2017 were verified use of IUD at 12 months. The rates for IUD use verified/unknown at 12 months: Early 45/51; Delayed 33/50.*

[11] *The rates reported for Korjamo 2017 were verified use of IUD at 12 months. The rates for IUD use verified/unknown at 12 months: Early 24/27; Delayed 17/28.*

[12] *Korjamo 2017 did not explicitly report this outcomes, but they did report that no serious complications occurred during LNG-IUS insertion.*

[13] *Small sample size. Not powered to detect this rare event.*

[14] *Saav 2012 did not report this outcome separately for LNG-IUS and copper IUD, so for this study the total uptake rates including both types of IUD have been included under the LNG-IUS subgroup.*

[15] *Korjamo 2017 reported infection within 3 months, not within 1 month.*

Appendix G – Economic evidence study selection

Economic evidence for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

No economic evidence was identified which was applicable to this review question.

Economic evidence for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

No economic evidence was identified which was applicable to this review question.

Economic evidence for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

No economic evidence was identified which was applicable to this review question.

Appendix H – Economic evidence tables

Economic evidence tables for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

No economic evidence was identified which was applicable to this review question.

Economic evidence tables for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

No economic evidence was identified which was applicable to this review question.

Economic evidence tables for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

No economic evidence was identified which was applicable to this review question

Appendix I – Economic evidence profiles

Economic evidence profiles for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

No economic evidence was identified which was applicable to this review question.

Economic evidence profiles for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

No economic evidence was identified which was applicable to this review question.

Economic evidence profiles for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

No economic evidence was identified which was applicable to this review question.

Appendix J – Economic analysis

Economic analysis for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

No economic analysis was conducted for this review question.

Economic analysis for review questions: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

Introduction

This analysis evaluates the cost effectiveness of the administration of long-acting reversible contraception (LARC) simultaneously with, or as soon as possible after, a medical termination of pregnancy. A comparison is made between progestogen-only contraceptive implant, depot injection and intrauterine devices.

Women undergoing a termination of pregnancy are a high risk group for subsequent unintended pregnancies. Long-acting reversible contraception has been shown to be effective in reducing unintended pregnancies and NICE has previously issued guidance (CG30 Long-acting reversible contraception) recommending its use immediately or any time thereafter for women who have received a first-or second-trimester termination of pregnancy. Immediate contraception, issued at the same time as the termination of pregnancy or as soon as clinically appropriate afterwards in the same setting may be convenient for women and will lead to a greater uptake than delayed administration at the woman's GP or other setting. It may also lead to improved quality of life and reduced costs by preventing future medical or surgical interventions for unintended pregnancies. However, immediate contraception could lead to increase in adverse events associated with termination of pregnancy and contraceptive use such as incomplete terminations and continuing pregnancies for progestogen based contraceptives and infection and expulsion for intrauterine devices (IUDs).

This economic evaluation considers the effectiveness and costs of receiving contraception at the same time as termination of pregnancy or as soon as clinically appropriate afterwards compared to at a later time from the woman's GP.

Methods

Model structure

The economic model was developed to estimate costs of providing contraceptive services following a termination of pregnancy. Costs for both process and those associated with adverse and other outcomes were estimated. All outcomes from the model were taken from the accompanying clinical evidence review. No estimation beyond this was undertaken by the model, given the limited time horizon, apart from for one sensitivity analysis around unintended pregnancies discussed below. Process costs were calculated by estimating the resource use in terms of the contraceptive devices or interventions, health care practitioners' time, disposables and any follow-up appointments and assigning a unit cost. Unit costs from adverse and other outcomes were estimated and these were weighted by the proportions

reported in the clinical evidence review to give a mean cost per woman in the population. Both process and outcome costs were combined to estimate an overall cost and were presented alongside the outcome estimates from the accompanying clinical evidence review.

Population

The population considered by the economic model was women who want to be administered LARC in the near or immediate future after undergoing a medical termination of pregnancy at an NHS or licenced clinic. Whilst the committee did not specify any particular subgroups for gestational age for the economic model, results were reported by this where the evidence was available to do so. Where the clinical evidence did not allow for stratification by gestational age, no attempt was made to estimate this, with the results considered generalisable to the entire population. Where results by subgroup were possible these were compared to a combined result to see if the generalisability assumption holds, although this will be in a limited number of examples and therefore strong conclusions about the validity of the assumption may not be formed.

Intervention and comparator

The economic model looked at the cost and effectiveness of administering contraception at the same time and in the same setting as the termination of pregnancy (immediate) compared to receiving contraception at least 24 hours later at the woman's GP (delayed). Full definitions of each intervention are:

- **Immediate contraception**: Contraception is administered on the same day or as soon as possible afterwards and in the same NHS setting as for a medical termination of pregnancy. All future contraceptive needs (reinsertion of device following expulsion, removal of device, repeat injections etc.) and follow-up appointments are dealt with by the woman's GP.
- **Delayed contraception**: Contraception is administered by the woman's GP at least 24 hours after the appointment for medical termination of pregnancy. As with immediate all future contraceptive needs and follow-up appointments are with the GP.

Whilst the model assumes the medical termination of pregnancy and contraception has been administered in a NHS setting, the majority of terminations are carried out in voluntary and third-party sector clinics funded, in the vast majority of cases, by the NHS. Whilst most clinics publish a price list the true cost of procedures and the price paid by the NHS are likely to be much different, commercially sensitive and vary by NHS trust. The costs of providing termination of pregnancy and contraception in a clinical setting are likely to be much lower where economies of scale allow for clinical space to be prepared consistently for identical or similar procedures.

The economic model assumes that clinical outcomes from either a NHS or other clinic setting (in absence of evidence to the contrary) would be identical and that the clinical outcomes are generalisable to both settings. The estimated costs from the model are likely to be higher than a clinic setting would experience although lower costs are explored during sensitivity analysis.

Types of long-acting reversible contraception considered

Immediate contraception and delayed contraception was compared for four different types of LARC in the analysis:

- **Implant**: Etonogestrel birth control implant-a device containing the contraceptive etonogestrel implanted under the skin with a useful life span of at least 3 years.

- **Injection**: Depot medroxyprogesterone acetate a hormonal birth control drug injected into the blood stream which typically lasts 13 weeks. For longer term use repeat injections are needed at the woman's GP or other contraceptive clinic.
- **Copper IUD:** A T-shaped plastic and copper IUD inserted into the uterus. The device has a useful lifespan of between 5 and 10 years.
- **LNG-IUS:** A T-Shaped plastic device inserted into the uterus which releases the hormone progestogen. The device has a useful lifespan of between 3 and 5 years.

The economic model only compares immediate contraception to delayed contraception in the context of each type of LARC. It does not attempt to or been designed to compare different types of LARC to each other and no conclusions, comparing different types of LARC, should be drawn from the model. Discussion of the effectiveness, cost effectiveness and NICE recommendations pertaining to LARC can be found in CG30: Long-acting reversible contraception.

Model parameters

Clinical inputs

All clinical inputs for the economic model were taken solely from the accompanying clinical evidence for the review question 'For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?' and review question 'For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?'. In summary 6 randomised controlled trials (RCTs) were identified across the two clinical reviews covering all 4 interventions:

- Implant (Hognert 2016, Raymond 2016a)
- Injection (Raymond 2016b)
- Copper IUD (Shimoni 2011)
- LNG-IUS (Saav 2012, Korjamo 2017a, Korjamo 2017b, Korjamo 2017c)

Where outcomes were reported by more than 1 trial the results were pooled in a meta-analysis and that outcome was used to inform the base-case of the model.

The initial terminations of pregnancy in all studies were carried out using 200mg of mifepristone followed by 800micrograms (mcg) misoprostol 24-48 hours later. In all trials at least 80% of women had a gestational age before 9^{+0} weeks' gestation or this sub-group was analysed separately in the report. The studies covered a range of national health services (Sweden, Scotland, Mexico, the USA and Finland). It was possible that national attitudes may differ towards contraception and this could subsequently impact on key clinical outcomes such as uptake and continued use and consequently subsequent pregnancies. It would be difficult to quantify how these attitudes may change the clinical outcomes and how these would best be adjusted to reflect the perspective of this economic evaluation. Therefore, no attempt was made to do so.

The outcomes reported in the clinical evidence reviews sufficiently covered the time horizon of the model and all clinical outcomes that the committee considered useful. Therefore, no extrapolation was performed to try and estimate clinical outcomes beyond those reported in the clinical evidence reviews. Clinical outcomes from the economic model, in the base-case, will therefore be identical to those reported in the clinical evidence review.

A full discussion of the clinical evidence, including quality assessment of the clinical outcomes is available in the Evidence statements section. Outcomes used in the economic model are summarised in Table 14.

All events were estimated in the model as a function of the risk ratio (RR) for immediate contraception versus delayed contraception and the baseline observed percentages from the clinical evidence reviews. This was true for all clinical outcomes of the model apart from for 'infection within one month' where no events were observed in the delayed arms of any of the trials. This outcome was estimated as the reported baseline from the clinical evidence review for immediate contraception and assumed to be zero for delayed contraception.

Subgroups

The clinical evidence did not allow for subgroup analysis for implant, injection or copper IUD. The clinical evidence allowed for the LNG-IUS results to be stratified by into three gestational ages:

- Before and including 9^{+0} weeks' gestation
- Between and including 9^{+1} and 12^{+0} weeks' gestation
- After and including 12^{+1} weeks' gestation

Table 14: Clinical outcomes from the clinical evidence reviews used to inform the economic model.

Parameter	Value
Implant	
RR ongoing pregnancy	1.02
Baseline percentage ongoing pregnancy (delayed contraception)	0.85%
RR incomplete termination	1.25
Baseline percentage incomplete termination (delayed contraception)	3.93%
RR unintended pregnancy at 6 months	0.22
Baseline percentage unintended pregnancy at 6 months (delayed contraception)	2.74%
Injection	
RR ongoing pregnancy	4.11
Baseline percentage ongoing pregnancy (delayed contraception)	0.88%
RR incomplete termination	1.20
Baseline percentage incomplete termination (delayed contraception)	5.31%
RR unintended pregnancy at 6 months	0.73
Baseline percentage unintended pregnancy at 6 months (delayed contraception)	3.23%
Copper IUD	
RR IUD Expulsion	1.30
Baseline percentage IUD expulsion	7.78%
RR infection within 1 month of termination	No events

Parameter	Value
Baseline percentage infection within 1 month of termination	No events
RR unintended pregnancy at 12 months	0.13
Baseline percentage unintended pregnancy at 12 months (delayed)	3.64%
LNG-IUS Gestational Age: (a) ≤9+0 weeks, (b) 9+1 weeks to 12+0 weeks, (c) ≥12+1 weeks	
RR IUD Expulsion	(a) 1.25 (b) 2.78 (c) 5.19
Baseline percentage IUD expulsion (delayed contraception)	(a) 7.78% (b) 12.00% (c) 3.57%
RR infection within 1 month of termination	No events in delayed group
Baseline percentage infection within 1 month of termination (immediate contraception)	(a) 6.90% (b) 9.80% (c) 22.22%
RR unintended pregnancy at 12 months	(a) 0.64 (b) 0.16 (c) 0.26
Baseline percentage unintended pregnancy at 12 months (delayed contraception)	(a) 7.32% (b) 12.00% (c) 14.29%

IUD: intrauterine device; LNG-IUS: levonorgestrel-releasing intrauterine system; RR: Risk ratio

Costs and resource use

Cost of termination of pregnancy

The cost of the initial medical termination of pregnancy were taken from NHS Reference Costs 2016/17. NHS Reference Costs only provide currency descriptions for medical terminations for women of less than 14 weeks' gestation and between 14 and 20 weeks' gestation. For the model people receiving a medical termination at less than 9^{+0} weeks and between 9^{+0} and 12^{+0} weeks' gestation the reference costs for medical terminations less than 14 weeks' gestation description were used and for the 12^{+0} to 20^{+0} weeks' gestation group the 14 to 20 weeks' gestation description was used.

Three costs were used for this parameter in the model, those for an elective inpatient basis, a day case basis or on an outpatient basis from gynaecology. A weighted mean cost, using the number of full consultant episodes (FCE), was calculated for the model. Whilst costs were reported for other bases (i.e. on a non-elective basis) they were either small in numbers or were unlikely to adequately represent people in the patient group.

Surgical intervention, following an incomplete or continuing pregnancy were costed in a similar way using the 'Vacuum Aspiration with Cannula' currency descriptions. As the currency descriptions were again split for less than 14 weeks and 14 to 20 weeks' gestation these were assigned to the patient groups in the model identically to above. Again the same assumption on bases were made as above apart from for surgical terminations between 14 and 20 weeks' gestation for which a cost for an outpatient basis was not reported. Investigation following either an incomplete or continuing pregnancy, which preceded all surgical terminations, was costed from NHS reference costs using the cost for a non-admitted face-to-face appointment in gynaecology.

Terminations following a subsequent unwanted pregnancy were assumed to be identical in cost to a medical termination for the less than 9^{+0} group. It was assumed that no extra costs (i.e. from complications) above that of the first termination given the paucity of evidence and small numbers in which this could occur.

Details of the costing of terminations are presented in Table 15 below. The impact of alternative assumptions around the cost of terminations was explored extensively in deterministic sensitivity analysis and by applying a gamma distribution to them during probabilistic sensitivity analysis.

Table 15: Cost of termination of pregnancy

Currency Code	Currency Description	Setting	Full Consultant Episodes	Cost
Medical Termination <9^{+0} weeks and 9^{+0} to 12^{+0} weeks				
MA18C	Medical Termination of Pregnancy, less than 14 weeks' gestation	Elective	3,390	£730.82
		Day Case	30,046	£479.40
		Outpatient	4,130	£133.24
			Mean Cost	**£464.03**
Medical Terminations 12^{+0} weeks to 20^{+0} weeks				
MA18D	Medical Termination of Pregnancy, 14 to 20 weeks' gestation	Elective	571	£839.34
		Day Case	834	£440.95
		Outpatient	2	£146.47
			Mean Cost	**£602.21**
Surgical Termination <9^{+0} weeks and 9^{+0} to 12^{+0} weeks				
MA19A	Vacuum Aspiration with Cannula, less than 14 weeks' gestation	Elective	3,118	£1,415.35
		Day Case	26,676	£869.98
		Outpatient	1,034	£196.23
			Mean Cost	**£902.54**
Medical Terminations 12^{+0} weeks to 20^{+0} weeks				

Currency Code	Currency Description	Setting	Full Consultant Episodes	Cost
MA19B	Vacuum Aspiration with Cannula, 14 to 20 weeks' gestation	Elective	178	£1,762.65
	Vacuum Aspiration with Cannula, 14 to 20 weeks' gestation	Day Case	862	£903.92
			Mean Cost	**£1,050.90**

Cost of long acting reversible contraception

Injection and device costs for the economic model were taken from the British National Formulary (BNF) August 2018. The median cost of all suitable injection or devices, identified in the BNF, was used in the base-case. This is to account for the wide range of suppliers of these contraceptives and is not meant to imply that these types are optimal or recommended over others. Where multiple interventions were identified the highest and lowest cost intervention were used as part of a deterministic sensitivity analysis to account for the entire range of possible costs. In the case of IUDs the cost of the device was considered identical whether it was the initial insertion following termination or a later reinsertion following expulsion of the device. The cost of all contraceptives are presented in Table 16.

Table 16: List of costs for contraceptives from BNF in order of cost

BNF Description	Cost
Implant	
Etonogestrel 68mg implant (Ennogen Healthcare Ltd)	**£83.43**
Injection	
Depo-Provera 150mg/1ml suspension for injection pre-filled syringes (Pfizer Ltd)	**£6.01**
Sayana Press 104mg/0.65 ml suspension for injection pre-filled disposable devices (Pfizer Ltd)	**£6.90**
Copper IUD	
Ancora 375 Cu intrauterine contraceptive device (R.F. Medical Supplies Ltd)	£7.95
Load 375 intrauterine contraceptive device (Durbin Plc)	£8.52
Copper T380 A intrauterine contraceptive device (R.F. Medical Supplies Ltd)	£8.95
Multi-Safe 375 intrauterine contraceptive device (Williams Medical Supplies Ltd)	£8.96
Multiload Cu375 intrauterine contraceptive device (Organon Laboratories Ltd)	£9.24
Flexi-T 300 intrauterine contraceptive device (Durbin Plc)	£9.47
Optima TCu 380A intrauterine contraceptive device (Farla Medical Ltd)	£9.65
Steriload intrauterine contraceptive device (Farla Medical Ltd)	£9.65
Flexi-T+ 380 intrauterine contraceptive device (Durbin Plc)	£10.06
T-Safe 380A QL intrauterine contraceptive device (Williams Medical Supplies Ltd)	£10.55
Novaplus T 380 Cu intrauterine contraceptive device mini (R.F. Medical Supplies Ltd)	**£10.95**

BNF Description	Cost
Novaplus T 380 Cu intrauterine contraceptive device normal (R.F. Medical Supplies Ltd)	£10.95
UT380 Short intrauterine contraceptive device (Durbin Plc)	£11.22
UT380 Standard intrauterine contraceptive device (Durbin Plc)	£11.22
Mini TT380 Slimline intrauterine contraceptive device (Durbin Plc)	£12.46
TT380 Slimline intrauterine contraceptive device (Durbin Plc)	£12.46
Novaplus T 380 Ag intrauterine contraceptive device mini (R.F. Medical Supplies Ltd)	£12.50
Novaplus T 380 Ag intrauterine contraceptive device normal (R.F. Medical Supplies Ltd)	£12.50
Neo-Safe T380 intrauterine contraceptive device (Williams Medical Supplies Ltd)	£13.40
Nova-T 380 intrauterine contraceptive device (Bayer Plc)	£15.20
GyneFix intrauterine contraceptive device (Williams Medical Supplies Ltd)	£27.11
LNG-IUS	
Mirena 20micrograms/24hours intrauterine device (Bayer Plc)	£88.00
Kyleena 19.5mg intrauterine device (Bayer Plc)	**£76.00**
Jaydess 13.5mg intrauterine device (Bayer Plc) ▼	**£69.22**
Levosert 20micrograms/24hours intrauterine device (Gedeon Richter (UK) Ltd)	£66.00
Median values (those use in the base case of the model) are in bold. Where two values are bolded a mean has been calculated between the two.	

BNF: British National Formulary; Cu: copper; IUD: intrauterine device; LNG-IUS: levonorgestrel-releasing intrauterine system

Cost of initial administration of contraception

The cost of inserting or administrating implant, copper IUD and LNG-IUS in the termination setting were assumed to be equal to the NHS reference cost of the insertion of IUD on an outpatient basis in gynaecology. This reference cost would include the device cost for both the implant and for Copper IUD but would not for LNG-IUS. The device cost was therefore added to the reference cost for this intervention.

For injection only the drug cost of the first injection was included in the model as insertion of implants or IUD would likely take up significant amount of health care practitioners' time equivalent to a separate appointment whilst injections could be administered at the same appointment as the termination with very minimal impact upon overall time. All future injections were assumed to be administered at the person's GP.

The cost of inserting or administrating contraception later at the person's GP was based upon timings and unit costs estimated as part of the CG30: Long-acting reversible contraception guideline. Whilst this analysis was done in 2005 it was the committees' opinion that administration of these contraceptives have not changed in this time. The cost per minute of patient contact time was updated to the latest Personal Social Services Research Unit (PSSRU) estimate. (Curtis 2017). As with the previous estimate qualification costs were included as these would most accurately represent the true cost. The cost of sterile packs for insertion and removal were again taken from this analysis but were inflated to 2016/17 price using the hospital and community health services (HCHS) index (Curtis 2017).

All costs are presented in Table 17.

Table 17: Costs associated with initial insertion/administration of contraceptives.

	Implant	Injection	Copper IUD	LNG-IUS	Source
Costs in Termination of Pregancy Setting					
Appointment Cost	£169.08	N/A	£169.08	£169.08	NHS Reference Costs (Outpatient, MA35Z)
Device Cost	N/A	£6.90	N/A	£72.61	BNF
Total Cost	**£169.08**	**£6.90**	**£169.08**	**£241.69**	
Costs in GP Setting					
Device/Injection Cost	£83.34	£6.90	£10.95	£72.61	BNF
Cost GP time (per minute)	£4.00				Curtis 2017
Initial GP consultation (minutes)	20	20	20	20	NICE Guideline CG30
Initial GP consultation cost	£80.00	£80.00	£80.00	£80.00	
GP consultation for insertion (minutes)	16	N/A	18	18	NICE Guideline CG30
GP consultation for insertion cost	£64.00	N/A	£72.00	£72.00	
Sterile pack for insertion	£5.73	N/A	£4.13	£4.13	NICE Guideline CG30
Routine follow-up 3-6 weeks after insertion with GP 9 mins cost	N/A	N/A	£36.00	£36.00	NICE Guideline CG30
Total Cost	**£233.07**	**£80.00**	**£203.08**	**£264.74**	

BNF: British National Formulary; GP: general practitioner; IUD: intrauterine device; LNG-IUS: levonorgestrel-releasing intrauterine system; N/A: not applicable; NHS: National Health Service; NICE: National Institute for Health and Care Excellence

Cost of later injections and removal of devices

The model assumed that all future clinical appointments for contraceptive needs, including subsequent injections, removal of devices at the end of their useful lifespan and reinsertion following expulsion of IUDs would be carried out at the woman's GP. Total future costs associated with continued contraception was assumed equal between the two groups and was added at the start of the model. Given that no evidence was identified to the contrary and the committee did not believe that there would be a difference in costs between the groups this assumption was not tested during sensitivity analysis. Given this cost is identical between the two groups the values below have no impact on the conclusions of the model and are presented for information and completeness in Table 18.

Table 18: Costs associated with continued contraception and removal of devices

	Implant	Injection	Copper IUD	LNG-IUS	Source
Cost GP time (per minute)	£4.00				Curtis 2017
GP consultation for removal (minutes)	20	20	20	20	NICE Guideline CG30
GP consultation for removal cost	£80.00	£80.00	£80.00	£80.00	
Sterile pack for removal	£5.73	N/A	£4.13	£4.13	NICE Guideline CG30
GP visit Injection every 12 weeks 8 minutes cost†	N/A	£48.00	N/A	N/A	NICE Guideline CG30
Total Cost	**£85.73**	**£128.00**	**£84.13**	**£84.13**	

GP: general practitioner; IUD: intrauterine device; LNG-IUS: levonorgestrel-releasing intrauterine system; N/A not applicable; NICE: National Institute for Health and Care Excellence

† Only costed for first year.

Cost of adverse events.

Infection following a termination of pregnancy and administration of contraceptives were assumed to be relatively minor and in the majority of occurrences could be treated with relatively inexpensive antibiotics. Women are likely to be advised if there are signs of possible problems to seek advice. Infection was costed as a non-admitted face-to-face appointment in gynaecology.

Cost of reinsertion of devices following expulsion

The model assumed that all future reinsertion of devices, following expulsion, would be performed at the woman's GP regardless of the initial setting. Costs were assumed equal to the cost of the device, insertion consultation and sterile kit as for initial insertion at the GP. (Table 19) Whilst the costs for the two initial settings are identical given that expulsion is allowed to differ between the two initial settings in the model total costs for reinsertion will differ.

Table 19: Costs associated with reinsertion of devices following expulsion

	Implant	Copper IUD	LNG-IUS	Source
Device Cost	£83.34	£10.95	£72.61	BNF
GP consultation for insertion (minutes)	16	18	18	NICE Guideline CG30
GP consultation for insertion cost	£64.00	£72.00	£72.00	
Sterile pack for insertion	£5.73	£4.13	£4.13	NICE Guideline CG30
Total Cost	**£153.07**	**£87.08**	**£148.74**	

BNF: British National Formulary; GP: general practitioner; IUD: intrauterine device; LNG-IUS: levonorgestrel-releasing intrauterine system; NICE: National Institute for Health and Care Excellence

Cost of subsequent unplanned pregnancies

In the base case of the model all future unplanned pregnancies were assumed to lead to a future termination of pregnancy within 12 weeks of conception and were costed identical to

an initial termination (Table 15). However, the committee acknowledged that this was not a completely realistic assumption and that a number of subsequent pregnancies would lead to a birth. This assumption was therefore relaxed during a secondary analysis and an attempt was made to estimate this cost.

There were a number of difficulties with estimating a cost for this variable. Firstly, the perspective of the costs which should be included. The widest perspective possible would include all healthcare costs during pregnancy and birth, any costs for long-term complications from pregnancy and all future healthcare costs for the child (and potentially for any children that they parent in future years) and this would have to be balanced against all future health benefits. There would be no way of satisfactorily doing this without making an implicit value judgement around the value of life foregone from termination or gained from subsequent pregnancies. As this sort of judgement was outside of the scope of the guideline and would be impossible to make in a systematic way it was decided to restrict the perspective of the costs of subsequent births until the birth of a viable child (including the costs of neonatal care where necessary) identical to the perspective used in CG30: Long-acting reversible contraception.

The second difficulty was with differentiating subsequent births between those that were unwanted and those that were unplanned. For this economic evaluation unwanted pregnancies were those where the woman did not plan to become pregnant or to give birth but for some reason (partner/social pressure, unavailability of termination services etc.) continued with the pregnancy. Unplanned pregnancies were those where the woman did not plan to become pregnant but decided to continue with the pregnancy for reasons within their control. It is important to differentiate between these two types of subsequent pregnancies when costing them as it could be argued that unplanned pregnancies do not lead to women having a larger number of children but leads to having those children earlier in their lifetime. Avoiding this type of pregnancy is not a foregone cost but a deferred one. This cost, when such a pregnancy is avoided, should potentially just be discounted in the model and not excluded. However, there is no consensus in this area with arguments that both unwanted and unplanned pregnancies lead to both no difference and an ultimate increase in the number of children.

Given these difficulties a review of the costing studies identified by the global economic evidence search were reviewed to look for studies to estimate this cost taking into account the second difficulty discussed above. Only one study (Montouchet 2013) was identified which reported the costs of unplanned pregnancies from a NHS and Personal Social Services (PSS) perspective.

Montouchet 2013 estimated the costs to the NHS of unintended pregnancies in England for the year 2010. Unintended pregnancies are defined in the study as that occurred sooner than intended (mistimed) or were not wanted at all or in the future (unwanted) identical to the economic model's definition of subsequent unwanted pregnancies. The study estimated the total cost using Office for National Statistics (ONS) data on births and termination of pregnancy and Hospital Episode Statistics (HES) for miscarriage or ectopic pregnancy. A proportion of these outcomes were assigned to unintended pregnancies based on survey data of 2908 women attending antenatal care and 907 attending for termination of pregnancy at one Scottish hospital. From this it was estimated that 90% of terminations of pregnancy, 12% of births and 8% of miscarriages and ectopic pregnancies were as a result of unintended pregnancies. Each outcome was then costed using 2009/10 NHS reference costs and a total cost of unintended pregnancies estimated. The study dealt with unwanted (40%) and mistimed (60%) pregnancies differently. Unwanted pregnancies were assumed to increase the overall number of children and were assigned the full cost. Mistimed pregnancies were assigned a cost based on the difference between having the pregnancy now and when intended (estimated based on the US National Survey of Family Growth) assuming the NICE standard discount rate of 3.5%.

The study estimated £193m for 218,100 unintended pregnancies equating to cost of £885.83 per pregnancy for the year 2010. These were inflated to 2017 costs using the HCHS index (Curtis 2017) to estimate a cost of £967.77 per subsequent unwanted pregnancy for use in the secondary analysis.

Planned pregnancies, where a woman has made a decision to become pregnant prior to conception were not considered by the model as this was assumed to be equal between the two groups and such a decision would not be influenced by setting.

Patient preference and quality of life

The difficulties discussed above with estimating costs for this economic evaluation were also true when trying to estimate quality of life for the competing interventions. Again strict interpretation of the NICE base-case perspective would take into account quality of life for both the woman undergoing a termination of pregnancy and contraception as well as for any child from subsequent unplanned pregnancies. It would be impossible to estimate quality of life using this perspective without assigning a quality of life weight (or choosing not to) to any child from unplanned pregnancies. The committee agreed doing so would again implicitly make a value judgement around the value of life foregone from termination or gained from subsequent pregnancies. As with costs, these sort of value judgements were outside the scope of the guideline. Therefore, quality of life or quality adjusted life years (QALYs) were not estimated for this analysis and results are presented as costs and clinical outcomes.

However, as studies identified in the clinical evidence review reported outcomes around womens' experience of the interventions considered and a quality of life study for a similar patient group and intervention to immediate contraception for this analysis this patient group identified a narrative discussion of patient preference and quality of life is presented.

Patient preference

A full discussion of the patient preference outcomes from the clinical evidence review are presented in the Evidence statements section.

Clinical evidence on patient preference was identified in 2 studies (Hognert 2016, Raymond 2016a, Raymond 2016b) comparing immediate contraception to delayed contraception for women receiving either implant or injection. No patient satisfaction evidence was identified around either copper IUD or LNG-IUS. The clinical evidence review identified there was a clinically important increase in patient acceptability defined as "preferring the allocated time of insertion" (RR= 1.57 [95% CI 1.33-1.86]) and patient satisfaction with group allocation defined as "pleased" at enrolment and at time termination of pregnancy is determined complete (RR= 1.47 [95% CI 1.29-1.69] & RR= 1.50 [95% CI 1.34-1.68] respectively) in the immediate contraception group. This was also true for injection at both time of enrolment (RR= 1.65 [95% CI 1.4-1.95]) and time that termination of pregnancy was determined complete (RR= 1.77 [95% CI 1.51-2.08]). There was a higher clinically important difference in patient satisfaction with group allocation defined as "very satisfied/fairly satisfied" at 3-months post implant insertion in the immediate contraception group (RR= 1.2 [95% CI 1.06-1.37]) but not at 6-months post implant (RR= 1.06 [95% CI 0.93-1.21]). All patient satisfaction outcomes identified in the clinical evidence review either favoured immediate administration of implant or injection or were not clinically important.

The committee, from this evidence, thought it was reasonable that there is unlikely to be any detriment to quality of life, at least as a direct result of the timing of administration, from administering either implant or injection immediately and that it could be weakly inferred that this group would have a higher quality of life. Although evidence around copper IUD and LNG-IUS was not identified again the committee believed that there was unlikely to be any detriment in quality of life, even with the higher rates of IUD expulsion and infection within 1 month. Given the issues discussed above though no effort was made to estimate or quantify any differences in quality of life.

Quality of life

One quality of life study (Toffol 2016) was identified for this patient group. 742 women, undergoing a termination of pregnancy, enrolled in an RCT (Pohjoranta 2015) comparing immediate insertion of copper IUD or LNG-IUS compared to a prescription of oral contraceptives by the hospital completed an EuroQoL Quality of Life Questionnaire (EQ-5D, EQ-VAS) as well as State-Trait Anxiety Inventory (STAI) Scale, a questionnaire designed to specifically measure anxiety. The RCT was set in one city in 1 hospital and 1 family planning centre in Helsinki, Finland. All women were over the age of 18, had a gestational age less than 12^{+0} weeks and were happy to be fitted with an IUD or LNG-IUS.

The EQ-5D and EQ-VAS was given to women to complete at the time of termination of pregnancy (baseline), at 3 months and at 12 months and scored using the Finnish general population weightings. There was an improvement in quality of life from baseline to 3 months and 12 months in both the intervention group (difference=0.05 [95% CI -0.01-0.10] & difference=0.05 [95% CI 0.00-0.10], respectively) and control group (difference=0.05 [95% CI -0.01-0.10] & difference=0.04 [95% CI 0.02-0.10], respectively).

Whilst the intervention and population for this study matches those in this economic analysis the comparator of immediate prescription of oral contraception does not. The RCT run in parallel to this study (Pohjoranta 2015) was identified by the search of the clinical evidence and was excluded for the reasons above. The issue considered by the RCT (immediate IUD or LNG-IUS versus immediate prescription of oral contraception) is also outside of the scope of this guideline and is considered in CG35: Long-acting reversible contraception.

The committee discussed using this quality of life evidence to estimate QALYs for the two groups in this economic analysis using immediate oral contraception as a proxy for the delayed group. However, given the issues discussed below, that the differences between the groups were not statistically significantly different and differences between reported EQ-5D scores were very small (<0.01) such an analysis would not be useful. However, it was noted that quality of life improved between termination of pregnancy and both 3 months and 12 months in the intervention and control group and it was the committee's clinical opinion that this would be the case for all interventions for both immediate contraception and delayed contraception for this economic analysis.

Discounting

All clinical outcomes considered in the economic model occurred within 1 year of the termination of pregnancy and it was therefore not appropriate to discount these. The costs of subsequent pregnancies were the only costs that occurred after the first year in the economic model. As these had already been discounted by the source authors in line with the 3.5% per annum as recommended for the NICE reference case (NICE 2016) no further discounting was undertaken within the model.

Results

Clinical and economic outcomes base-case results-all unplanned subsequent pregnancies lead to a termination of pregnancy

Under the base-case assumptions immediate contraception is cost saving for all patient groups other than for LNG-IUS for the after 12^{+1} weeks group where delayed contraception is £3 per person less expensive (Table 20). This is as a result of the higher expulsion rate (17.2% versus 3.6%) and the infection rate (22.2% versus no events) in the immediate contraception group. This small cost increase is in contrast to the small cost saving for the earlier gestational age groups receiving LNG-IUS again where both expulsion rate and infection rate are higher.

In the interventions and subgroups where delayed contraception is more expensive, for it to be cost effective in at a £20,000 per QALY threshold, it would need to result in an increase of between 0.0002 QALYs and 0.0036 QALYs to be the preferred option equivalent to between 0.07 and 1.31 days in perfect health.

Table 20: Base-case results of economic model

Approach to contraception	Ongoing pregnancy	Incomplete termination	Unintended subsequent pregnancy	Expulsion of device	Infection	Total cost	Difference cost
Implant							
Immediate	0.9%	4.9%	0.6%	N/A	N/A	£806	-£71
Delayed	0.9%	3.9%	2.7%	N/A	N/A	£877	
Injection							
Immediate	3.6%	6.3%	2.4%	N/A	N/A	£650	-£61
Delayed	0.9%	5.3%	3.2%	N/A	N/A	£711	
Copper IUD							
Immediate	N/A	N/A	0.5%	10.0%	None	£726	-£30
Delayed	N/A	N/A	3.6%	7.8%	None	£756	
LNG-IUS ≤9^{+0} weeks							
Immediate	N/A	N/A	4.7%	13.5%	6.9%	£841	-£4
Delayed	N/A	N/A	7.3%	11.0%	None	£845	
LNG-IUS 9^{+1} weeks to 12^{+0} weeks							
Immediate	N/A	N/A	2.0%	29.9%	9.8%	£861	-£8
Delayed	N/A	N/A	12.0%	12.0%	None	£868	
LNG-IUS ≥12^{+1} weeks							
Immediate	N/A	N/A	3.9%	17.2%	22.2%	£1,006	£3
Delayed	N/A	N/A	14.3%	3.6%	None	£1,003	

IUD: intrauterine device; LNG-IUS: levonorgestrel-releasing intrauterine system; N/A: not applicable

When the Montouchet 2013 assumptions are used to cost unintended subsequent pregnancies immediate contraception is cost saving for all patient groups and method of contraception. Where these interventions were cost saving in the base-case these savings are greater under the Montouchet 2013 assumptions. This is most pronounced for LNG-IUS where there are now cost savings per person of more than £50 for both the 9^{+1} weeks to 12^{+0} weeks and ≥12^{+1} weeks groups. This is a result of the large differences in unintended subsequent pregnancies between immediate contraception and delayed contraception in these groups. Under these assumptions for delayed contraception to be cost effective, at a £20,000 per QALY threshold, it would need to result in an increase of between 0.0009 QALYs and 0.0041 QALYs to be the preferred option equivalent to between 0.32 and 1.50 days in perfect health.

Table 21: Clinical and economic outcomes secondary analysis Montouchet 2013 assumptions

Approach to contraception	Ongoing pregnancy	Incomplete termination	Unintended subsequent pregnancy	Expulsion Of Device	Infection	Total Cost	Difference Cost
Implant							
Immediate	0.9%	4.9%	0.6%	N/A	N/A	£809	-£82
Delayed	0.9%	3.9%	2.7%	N/A	N/A	£891	
Injection							
Immediate	3.6%	6.3%	2.4%	N/A	N/A	£662	-£66
Delayed	0.9%	5.3%	3.2%	N/A	N/A	£727	
Copper IUD							
Immediate	N/A	N/A	0.5%	10.0%	None	£729	-£46
Delayed	N/A	N/A	3.6%	7.8%	None	£774	
LNG-IUS ≤9^{+0} weeks							
Immediate	N/A	N/A	4.7%	13.5%	6.9%	£865	-£17
Delayed	N/A	N/A	7.3%	11.0%	None	£882	
LNG-IUS 9^{+1} weeks to 12^{+0} weeks							
Immediate	N/A	N/A	2.0%	29.9%	9.8%	£871	-£58
Delayed	N/A	N/A	12.0%	12.0%	None	£929	
LNG-IUS ≥12^{+1} weeks							
Immediate	N/A	N/A	3.9%	17.2%	22.2%	£1,025	-£50
Delayed	N/A	N/A	14.3%	3.6%	None	£1,075	

IUD: intrauterine device; LNG-IUS: levonorgestrel-releasing intrauterine system; N/A: not applicable

Discussion

Administering contraception at the time or as soon as possible after a termination of pregnancy resulted in a cost saving for all types of contraception and for all sub-groups in all but one analysis. These savings were more pronounced when the Montouchet 2013 assumptions were used and the cost of subsequent unintended pregnancies increased. These results were in line with the expectations of the committee with reduced appointments and a decrease in unintended pregnancies leading to cost savings even when there was an increase in adverse events such as infection and expulsion. The economic evaluation was based on RCTs and UK cost data. Other than quality of life, all clinical outcomes of interest to the economic model were identified in the clinical evidence review and no assumptions were made around any clinical variable.

The economic model did not consider implementation costs of being able to provide contraceptive services in the same setting as the termination of pregnancy. Currently, contraceptive advice and administration can be given in the majority of clinics where there is the necessary privacy. It is unlikely that additional clinics or accommodation will be needed. Where these contraceptive services are not available the barrier to this is likely to be training. This can be overcome by a short course to nurses where required. The economic model also did not consider quality of life. Any recommendations made in this area are likely to increase patient choice with it not being practical or desirable to prevent women receiving contraception at a later date from their GP if this was their preference. There will be some detriment to quality of life through an increase in infections, probability of expulsion and incomplete terminations but this would be offset by fewer appointments and decreased probability of an unintended subsequent pregnancy. The committee believed that providing

the option of contraception at the same time or as soon as possible after a termination of pregnancy would not overall be detrimental to quality of life and potentially increase it. Under these circumstances any cost saving or cost neutral intervention would be considered cost effective for any decision rule.

Appendix K – Excluded studies

Excluded studies for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

Clinical studies

Study	Reason for Exclusion
Advice helps women after termination, Nursing Standard, 25, 11-11, 2010	Non-comparative study
Aiken, A., Lohr, P. A., Aiken, C. E., Forsyth, T., Trussell, J., Contraceptive method preferences and provision after termination of pregnancy: a population-based analysis of women obtaining care with the British Pregnancy Advisory Service, 124, 815-824, 2017	Outcomes not in PICO: reports method of contraception chosen for both arms but information on method of contraception received is only available for women who received their contraception from BPAS
Arrowsmith, M. E., Aicken, C. R. H., Majeed, A., Saxena, S., Interventions for increasing uptake of copper intrauterine devices: Systematic review and meta-analysis, Contraception, 86, 600-605, 2012	Setting and population not in PICO: Includes non-OECD countries and not limited to contraceptive uptake after termination of pregnancy
Arrowsmith, M. E., Aicken, C. R. H., Saxena, S., Majeed, A., Strategies for improving the acceptability and acceptance of the copper intrauterine device, Cochrane Database of Systematic Reviews, 2012	Setting and population not in PICO: Includes non-OECD countries and not limited to contraceptive uptake after termination of pregnancy
Baldwin,M.K., Edelman,A.B., The effect of long-acting reversible contraception on rapid repeat pregnancy in adolescents: a review, Journal of Adolescent Health, 52, S47-S53, 2013	Non-systematic review
Becker, D., Diaz Olavarrieta, C., Garcia, S. G., Harper, C. C., Women's reports on postabortion family-planning services provided by the public-sector legal abortion program in Mexico City, International Journal of Gynaecology & ObstetricsInt J Gynaecol Obstet, 121, 149-53, 2013	Non-comparative study
Bednarek, P. H., Creinin, M. D., Reeves, M. F., Cwiak, C., Espey, E., Jensen, J. T., Immediate versus delayed intrauterine device insertion after uterine aspiration, Obstetrical and Gynecological Survey, 66, 624-625, 2011	Abstract and editorial comment only
Bednarek, P. H., Nichols, M. D., Carlson, N., Edelman, A. B., Creinin, M. D., Truitt, S., Jensen, J. T., Effect of "observed start" vs. traditional "Sunday start" on hormonal contraceptive continuation rates after medical abortion, Contraception, 78, 26-30, 2008	Comparison not in PICO: started contraception at follow-up visit compared with Sunday after follow-up visit
Cameron, S. T., Glasier, A., Chen, Z. E., Johnstone, A., Dunlop, C., Heller, R., Effect of contraception provided at termination of pregnancy and incidence of subsequent termination of pregnancy, 119, 1074-80, 2012	Comparison not in PICO: comparison between different contraceptive methods chosen after termination of pregnancy
Ceylan, A., Ertem, M., Saka, G., Akdeniz, N., Post abortion family planning counseling as a tool to increase contraception use, BMC public health, 9, 20, 2009	Non-comparative study

Study	Reason for Exclusion
Che, Y., Liu, X. T., Zhang, B., Cheng, L. N., Oral contraception following abortion A systematic review and meta-analysis, Medicine, 95, 2016	Setting not in PICO: Non-OECD countries
Church, E., Sengupta, S., Chia, K. V., The contraceptive implant for long acting reversible contraception in patients undergoing first trimester medical termination of pregnancy, Sexual & reproductive healthcare : official journal of the Swedish Association of MidwivesSex Reprod Healthc, 1, 105-9, 2010	Outcomes not in PICO: effectiveness of medical termination of pregnancy
Curtis, C., Huber, D., Moss-Knight, T., Postabortion family planning: addressing the cycle of repeat unintended pregnancy and abortion, International Perspectives on Sexual & Reproductive Health, 36, 44-48, 2010	Commentary
Dewan, R., Bharti, N., Mittal, A., Dewan, A., Early IUD insertion after medically induced abortion, European journal of contraception & reproductive health care, 23, 231-236, 2018	Setting not in PICO: non-OECD country (India)
Douthwaite, M., Candelas, J. A., Reichwein, B., Eckhardt, C., Ngo, T. D., Dominguez, A., Efficacy of early induced medical abortion with mifepristone when beginning progestin-only contraception on the same day, International Journal of Gynaecology & ObstetricsInt J Gynaecol Obstet, 133, 329-33, 2016	Outcomes not in PICO: efficacy of medical termination of pregnancy
Fang, N. Z., Sheeder, J., Teal, S. B., Factors associated with initiating long-acting reversible contraception immediately after first-trimester abortion, Contraception, 11, 11, 2018	Comparison not in PICO: comparison between different contraceptive methods chosen after termination of pregnancy
Gaffield,M.E., Kapp,N., Ravi,A., Use of combined oral contraceptives post abortion, Contraception, 80, 355-362, 2009	Outcomes not in PICO: safety and side effects of using combined oral contraceptives after termination of pregnancy
Goldstone, P., Mehta, Y. H., McGeechan, K., Francis, K., Black, K. I., Factors predicting uptake of long-acting reversible methods of contraception among women presenting for abortion, Medical Journal of Australia, 201, 412-416, 2014	Non-comparative study
Goodman, S., Hendlish, S. K., Benedict, C., Reeves, M. F., Pera-Floyd, M., Foster-Rosales, A., Increasing intrauterine contraception use by reducing barriers to post-abortal and interval insertion, Contraception, 78, 136-42, 2008	Insufficient presentation of results
Harper, C. C., Rocca, C. H., Thompson, K. M., Morfesis, J., Goodman, S., Darney, P. D., Westhoff, C. L., Speidel, J. J., Reductions in pregnancy rates in the USA with long-acting reversible contraception: A cluster randomised trial, The Lancet, 386, 562-568, 2015	Population not in PICO: includes both women having a termination of pregnancy and women attending family planning clinics (results not reported separately)
Heikinheimo,O., Gissler,M., Suhonen,S., Age, parity, history of abortion and contraceptive choices affect the risk of repeat abortion, Contraception, 78, 149-154, 2008	Non-comparative study
Huber, D., Curtis, C., Irani, L., Pappa, S., Arrington, L., Postabortion Care: 20 Years of	Setting not in PICO: non-OECD countries

Study	Reason for Exclusion
Strong Evidence on Emergency Treatment, Family Planning, and Other Programming Components, Global health, science and practice, 4, 481-494, 2016	
Jacovetty, E. L., Clare, C. A., Squire, M. B., Kubal, K. P., Liou, S., Inchiosa, M. A., Clinical oversight and the avoidance of repeat induced abortion, International Journal of Gynecology and Obstetrics, 142, 349-353, 2018	Non-comparative study
Joseph, K., Whitehead, A., Unintended pregnancy and therapeutic abortion in the postpartum period. Is an opportunity to intervene being missed?, New Zealand Medical Journal, 125, 30-40, 2012	Non-comparative study
Kirby, D., The impact of programs to increase contraceptive use among adult women: A review of experimental and quasi-experimental studies, Perspectives on Sexual and Reproductive Health, 40, 34-41, 2008	Population not in PICO: general population of adult women
Korjamo, R., Heikinheimo, O., Mentula, M., Risk factors and the choice of long-acting reversible contraception following medical abortion: effect on subsequent induced abortion and unwanted pregnancy, European Journal of Contraception and Reproductive Health Care, 23, 89-96, 2018	Non-comparative study
Korjamo, R., Mentula, M., Heikinheimo, O., Expulsions and adverse events following immediate and later insertion of a levonorgestrel-releasing intrauterine system after medical termination of late first- and second-trimester pregnancy: a randomised controlled trial, 124, 1965-1972, 2017	Outcomes not in PICO: IUD expulsions and adverse events
Korjamo, R., Mentula, M., Heikinheimo, O., Fast-track vs. delayed insertion of the levonorgestrel-releasing intrauterine system after early medical abortion - a randomized trial, Contraception, 96, 344-351, 2017	Outcomes not in PICO: IUD expulsions and adverse events
Lohr, P. A., Aiken, A. R. A., Forsyth, T., Trussell, J., Telephone or integrated contraception counselling before abortion: Impact on method choice and receipt, BMJ Sexual and Reproductive Health, 44, 114-121, 2018	Comparison not in PICO: telephone counselling or integrated face-to-face counselling
Lohr, Patricia A., Fjerstad, Mary, DeSilva, Upeka, Lyus, Richard, Abortion, BMJ: British Medical Journal, 348, 29-33, 2014	Non-systematic review
Mark, A., Sonalkar, S., Borgatta, L., One-year continuation of the etonogestrel contraceptive implant in women with postabortion or interval placement, Contraception, 88, 619-623, 2013	Comparison not in PICO: comparison between implants placed after termination of pregnancy and at routine visit for contraceptive care (not after a termination of pregnancy)
McCall, S. J., Flett, G., Okpo, E., Bhattacharya, S., Who has a repeat abortion? Identifying women at risk of repeated terminations of pregnancy: Analysis of routinely collected health care data, Journal of Family Planning and Reproductive Health Care, 42, 133-142, 2016	Non-comparative study

Study	Reason for Exclusion
Michaels, L. L., Stockdale, C. K., Zimmerman, M. B., Hardy-Fairbanks, A., Factors affecting the contraceptive choices of women seeking abortion in a Nonurban area, Journal of Reproductive Medicine, 63, 369-374, 2018	Non-comparative study
Michie, L., Cameron, S. T., Improving the uptake of long acting reversible contraception: A review, Minerva Ginecologica, 65, 241-252, 2013	Non-systematic review
Mittal, S., Contraception after medical abortion, Contraception, 74, 56-60, 2006	Study date not in PICO: review conducted prior to 2007
Moreau, C., Trussell, J., Bajos, N., Contraceptive Paths of Adolescent Women Undergoing an Abortion in France, Journal of Adolescent Health., 2012	Non-comparative study
Moslin,T.A., Rochat,R.W., Contraceptive use among clients of the Atlanta Feminist Women's Health Center at three to five weeks post-abortion, Maternal and Child Health Journal, 15, 759-764, 2011	Non-comparative study
Niinimaki, M., Pouta, A., Bloigu, A., Gissler, M., Hemminki, E., Suhonen, S., Heikinheimo, O., Frequency and risk factors for repeat abortions after surgical compared with medical termination of pregnancy, Obstetrics & GynecologyObstet Gynecol, 113, 845-52, 2009	Comparison not in PICO: medical termination of pregnancy versus surgical termination of pregnancy
Nobili, M. P., Piergrossi, S., Brusati, V., Moja, E. A., The effect of patient-centered contraceptive counseling in women who undergo a voluntary termination of pregnancy, Patient Education and Counseling, 65, 361-368, 2007	Comparison not in PICO: contraceptive counselling versus treatment as usual (no counselling)
Norman, W. V., Brooks, M., Brant, R., Soon, J. A., Majdzadeh, A., Kaczorowski, J., What Proportion of Canadian Women Will Accept an Intrauterine Contraceptive at the Time of Second Trimester Abortion? Baseline Data From a Randomized Controlled Trial, Journal of Obstetrics and Gynaecology Canada, 36, 51-59, 2014	Outcomes not in PICO: baseline data and satisfaction with prior contraception
Okusanya, B. O., Oduwole, O., Effa, E. E., Immediate postabortal insertion of intrauterine devices, Cochrane Database of Systematic Reviews, 2014	Setting not in PICO: Includes non-OECD countries
Palanivelu, L. M., Oswal, A., Contraceptive practices in women with repeat termination of pregnancies, Journal of obstetrics and gynaecology, 27, 832-834, 2007	Non-comparative study
Pohjoranta, E., Mentula, M., Gissler, M., Suhonen, S., Heikinheimo, O., Provision of intrauterine contraception in association with first trimester induced abortion reduces the need of repeat abortion: first-year results of a randomized controlled trial, Human Reproduction, 30, 2539-46, 2015	Comparison not in PICO: all women received contraception either immediately or early (in the case of medical termination of pregnancy) but the type of contraception differed (IUD versus oral contraception)
Pohjoranta, E., Suhonen, S., Mentula, M., Heikinheimo, O., Intrauterine contraception after medical abortion: factors affecting success of	Outcomes not in PICO: adverse events from termination of pregnancy and IUD insertion

Study	Reason for Exclusion
early insertion, Contraception, 95, 257-262, 2017	
Prager, S. W., Steinauer, J. E., Foster, D. G., Darney, P. D., Drey, E. A., Risk factors for repeat elective abortion, American journal of obstetrics and gynecology, 197, 2007	Non-comparative study
Rocca, C. H., Thompson, K. M., Goodman, S., Westhoff, C. L., Harper, C. C., Funding policies and postabortion long-acting reversible contraception: results from a cluster randomized trial, American Journal of Obstetrics & GynecologyAm J Obstet Gynecol, 214, 716.e1-8, 2016	Insufficient presentation of results
Rogers, C., Dantas, J. A. R., Access to contraception and sexual and reproductive health information post-abortion: A systematic review of literature from low- and middle-income countries, Journal of Family Planning and Reproductive Health Care, 43, 309-318, 2017	Setting not in PICO: non-OECD countries
Rose,S.B., Lawton,B.A., Brown,S.A., Uptake and adherence to long-acting reversible contraception post-abortion, Contraception, 82, 345-353, 2010	Comparison not in PICO: intervention has multiple components including making LARC freely available versus treatment as usual where LARC was not freely available
Schunmann, C., Glasier, A., Specialist contraceptive counselling and provision after termination of pregnancy improves uptake of long-acting methods but does not prevent repeat abortion: A randomized trial, Human Reproduction, 21, 2296-2303, 2006	Study date not in PICO: Study published prior to 2007
Sedlecky, K., Stankovic, Z., Contraception for adolescents after abortion, European Journal of Contraception & Reproductive Health CareEur J Contracept Reprod Health Care, 21, 4-14, 2016	Insufficient presentation of results
Stacey, R. E., Dempsey, A., The influence of trust in health care systems on postabortion contraceptive choice, Contraception, 92, 458-462, 2015	Non-comparative study
Steenland,M.W., Tepper,N.K., Curtis,K.M., Kapp,N., Intrauterine contraceptive insertion postabortion: a systematic review, Contraception, 84, 447-464, 2011	Setting and comparisons not in PICO: includes non-OECD countries and comparisons between different types of IUD and between first and second trimester termination of pregnancy
Steinauer, J. E., Sokoloff, A., Roberts, E. M., Drey, E. A., Dehlendorf, C. E., Prager, S. W., Immediate versus delayed initiation of the contraceptive patch after abortion: A randomized trial, Contraception, 89, 42-47, 2014	Comparison not in PICO: all women received the contraceptive patch immediately after surgical termination of pregnancy but either started it immediately (observed start) or on the following Sunday
Stoddard, A., Eisenberg, D. L., Controversies in family planning: timing of ovulation after abortion and the conundrum of postabortion intrauterine device insertion, Contraception, 84, 119-21, 2011	Commentary
Thompson, K. M. J., Speidel, J. J., Saporta, V., Waxman, N. J., Harper, C. C., Contraceptive policies affect post-abortion provision of long-acting reversible contraception, Contraception, 83, 41-47, 2011	Outcomes not in PICO: contraceptive policies and practices at clinics providing terminations of pregnancy

Study	Reason for Exclusion
Tsikouras, P., Vrachnis, N., Grapsa, A., Tsagias, N., Pinidis, P., Liberis, A., Ammari, A., Grapsas, X., Galazios, G., Liberis, V., IUD in first-trimester abortion: Immediate intrauterine contraceptive devices insertion vs delayed insertion following the next menstruation bleeding, Archives of Gynecology and Obstetrics, 290, 2014	Population not in PICO: includes women who had miscarriages as well as terminations of pregnancy (results not reported separately)
Wang, K., Cheng, Y., Yang, H., Tang, Y. H., Jiang, J., Ji, F., Li, L. B., Wu, S. C., Effectiveness research of medicated gamma intrauterine device and medicated genefix intrauterine device inserted immediately after abortion, Zhonghua fu chan ke za zhi, 51, 198â 203, 2016	Article not in English
Xu, J. S., Dai, Y., Jiao, N., Qian, X., Zhang, W. H., Systematic review of experiences and effects of integrating post-abortion family planning services into existing health system worldwide, Journal of Reproduction and Contraception, 26, 31-45, 2015	Setting not in PICO: non-OECD countries

BPAS: British pregnancy Advisory Service; IUD: intrauterine device; LARC: Long-Acting Reversible Contraception; OECD: Organisation for Economic Co-operation and Development; PICO: population, intervention, comparison, outcome

Economic studies

No economic evidence was identified for this review.

Excluded studies for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

Clinical studies

Study	Reason for Exclusion
Barros Pereira, I., Carvalho, R. M., Graca, L. M., Intra-abortion contraception with etonogestrel subdermal implant, European Journal of Obstetrics, Gynecology, & Reproductive BiologyEur J Obstet Gynecol Reprod Biol, 185, 33-5, 2015	Study design not of interest for review in light of RCT evidence: prospective comparative observational study
Bednarek, P. H., Nichols, M. D., Carlson, N., Edelman, A. B., Creinin, M. D., Truitt, S., Jensen, J. T., Effect of "observed start" vs. traditional "Sunday start" on hormonal contraceptive continuation rates after medical abortion, Contraception, 78, 26-30, 2008	Interventions not of interest for review: combined hormonal contraceptive pill, ring or patch
Church, E., Sengupta, S., Chia, K. V., The contraceptive implant for long acting reversible contraception in patients undergoing first trimester medical termination of pregnancy, Sexual & reproductive healthcare : official journal of the Swedish Association of MidwivesSex Reprod Healthc, 1, 105-9, 2010	Study design not of interest for review in light of RCT evidence: prospective comparative observational study
Douthwaite, M., Candelas, J. A., Reichwein, B., Eckhardt, C., Ngo, T. D., Dominguez, A.,	Study design not of interest for review in light of RCT evidence: Retrospective case notes review

Study	Reason for Exclusion
Efficacy of early induced medical abortion with mifepristone when beginning progestin-only contraception on the same day, International Journal of Gynaecology & ObstetricsInt J Gynaecol Obstet, 133, 329-33, 2016	
Gemzell-Danielsson, K., Kallner Kopp, H., Post abortion contraception, Women's Health, 11, 779-784, 2015	Study design not of interest for review: literature review
Park, J., Robinson, N., Wessels, U., Turner, J., Geller, S., Progestin-based contraceptive on the same day as medical abortion, International Journal of Gynaecology & ObstetricsInt J Gynaecol Obstet, 133, 217-20, 2016	Study design not of interest for review: retrospective chart review
Rowlands, S., Gemzell-Danielsson, K., Postabortion contraception, European Journal of Contraception and Reproductive Health Care, 22, 162-163, 2017	Study design not of interest for review: clinical guideline
Sonalkar, S., Hou, M. Y., Borgatta, L., Administration of the etonogestrel contraceptive implant on the day of mifepristone for medical abortion: a pilot study.[Erratum appears in Contraception. 2014 Feb;89(2):142 Note: Hou, Melody [corrected to Hou, Melody Y]], Contraception, 88, 671-3, 2013	Study design not of interest for review: non-comparative observational study
Sonalkar, S., McClusky, J., Hou, M. Y., Borgatta, L., Administration of depot medroxyprogesterone acetate on the day of mifepristone for medical abortion: a pilot study, Contraception, 91, 174-7, 2015	Study design not of interest for review: non-comparative observational study

RCT: randomised controlled trial

Economic studies

No economic evidence was identified for this review.

Excluded studies for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

Clinical studies

Study	Reason for Exclusion
Anonymous,, Immediate IUD insertion after abortion, Prescrire International, 21, 248, 2012	Narrative review of Bednarek trial of women receiving IUD after surgical termination
Bednarek, P. H., Creinin, M. D., Reeves, M. F., Cwiak, C., Espey, E., Jensen, J. T., Immediate versus delayed intrauterine device insertion after uterine aspiration, Obstetrical and Gynecological Survey, 66, 624-625, 2011	Population not in PICO (they had surgical termination of pregnancy)
Bednarek, P. H., Creinin, M. D., Reeves, M. F., Cwiak, C., Espey, E., Jensen, J. T., Post-Aspiration, I. U. D. Randomization Study Trial Group, Immediate versus delayed IUD insertion after uterine aspiration, New England journal of medicine, 364, 2208-17, 2011	Population not in PICO (they had surgical termination of pregnancy)
Bednarek,P., Creinin,M., Reeves,M., Cwiak,C., Espey,E., Jensen,J., Immed ate intrauterine device inserti n following suction aspiration between 5-12 weeks gestation is safe and does not	Population not in PICO (they had surgical termination of pregnancy).

Study	Reason for Exclusion
significantly increase expulsion, International Journal of Gynecology and Obstetrics, #19th FIGO World Congress of Gynecology and Obstetrics Cape Town South Africa. Conference Start, S122-S123, 2009	
Bednarek,P.A., Creinin,M.D., Reeves,M.F., Cwiak,C.A., Espey,E., Jensen,J.T., Immediate intrauterine device insertion following suction aspiration between 5-12 weeks of gestation increases rates of insertion and utilization compared to scheduled delayed insertion, Contraception, 80, 203-, 2009	Population not in PICO (they had surgical termination of pregnancy)
Bednarek,P.H., Botha,R.L., Creinin,M.D., Reeves,M.F., Cwiak,C.A., Jensen,J.T., The effect of immediate intrauterine device (IUD) insertion on bleeding patterns following first trimester suction aspiration, Fertility and Sterility, 92, S27-, 2009	Population not in PICO (they had surgical termination of pregnancy)
Chen, B. A., Reeves, M. F., Hohmann, H. L., Creinin, M. D., Comparing outcomes following immediate or delayed levonorgestrel-IUD insertion after dilation and curettage, dilation and evacuation and vaginal delivery, Contraception, 82 (2), 192, 2010	Population not in PICO (they had surgical termination of pregnancy or vaginal delivery at term)
Creinin, M. D., Bednarek, P. H., Reeves, M. F., Cwiak, C. A., Espey, E., Incomplete and failed abortion following immediate or delayed postaspiration IUD insertion, Contraception, 80 (2), 203, 2009	Population not in PICO (they had surgical termination of pregnancy)
Cremer, M., Bullard, K. A., Mosley, R. M., Weiselberg, C., Molaei, M., Lerner, V., Alonzo, T. A., Immediate vs. delayed post-abortal copper T 380A IUD insertion in cases over 12 weeks of gestation, Contraception, 83, 522-7, 2011	Population not in PICO (they had surgical termination of pregnancy)
Cremer, M., Bullard, K., McDonald-Mosley, R., Weiselberg, C., Alonzo, T., Molaei, M., Contraceptive and pregnancy outcomes: A randomized controlled trial of immediate vs. delayed post-abortal copper T 380A IUD insertion after second trimester abortions, Contraception, 82 (2), 184, 2010	Abstract of Cremer 2011 (full text).
Dewan, R., Bharti, N., Mittal, A., Dewan, A., Early IUD insertion after medically induced abortion, European journal of contraception & reproductive health care, 23, 231-236, 2018	Comparison not in PICO
Grimes, D. A., Lopez, L. M., Manion, C., Schulz, K. F., Cochrane systematic reviews of IUD trials: lessons learned, Contraception, 75, S55-9, 2007	Narrative review
Heikinheimo, O., Pohjoranta, E., Routine early provision of intrauterine contraception following first trimester induced abortion, International Journal of Gynecology and Obstetrics, 143 (Supplement 3), 400, 2018	Published as abstract only, not enough information to definitely ascertain that the study did not meet inclusion criteria, but it seems the comparison not in PICO (early insertion was 1-4 weeks after medical termination)
Hohmann, H. L., Reeves, M. F., Chen, B. A., Perriera, L. K., Hayes, J. L., Creinin, M. D., Immediate versus delayed insertion of the levonorgestrel-releasing intrauterine device following dilation and evacuation: a randomized controlled trial, Contraception, 85, 240-5, 2012	Population not in PICO (they had surgical termination of pregnancy)
Hohmann, H. L., Reeves, M. F., Chen, B. A., Perriera, L., Hayes, J. L., Creinin, M. D., Immediate versus delayed insertion of the levonorgestrel-releasing intrauterine device following dilation and evacuation: A randomized controlled trial, Contraception, 80 (2), 209, 2009	Population not in PICO (they had surgical termination of pregnancy)

Study	Reason for Exclusion
Korjamo, R., Mentula, M., Heikinheimo, O., Authors' reply re: Immediate versus delayed initiation of the levonorgestrel-releasing intrauterine system following medical termination of pregnancy - 1-year continuation rates: a randomised controlled trial, 125, 93, 2018	Author reply to letter
Korjamo, R., Mentula, M., Heikinheimo, O., Immediate versus later insertion of the levonorgestrel-releasing intrauterine system after medical abortion between 9 to 12 weeks of gestation-a randomized controlled study, International Journal of Gynecology and Obstetrics, 5), E141, 2015	Abstract of Korjamo 2017a, b and c which is included as full-text
Mentula, M., Pohjoranta, E., Suhonen, S., Gissler, M., Heikinheimo, O., Provision of intrauterine contraception at the time of abortion reduces subsequent abortions-first-year results of a randomized, controlled trial, Human Reproduction, 1), i74-i75, 2015	Comparison not in PICO (IUD inserted within 4 weeks after medical termination of pregnancy versus oral contraceptive prescription/contraception via primary healthcare unit)
Nct,, Immediate Versus Delayed IUD Insertion After Second Trimester Medical Abortion, Https://clinicaltrials.gov/show/nct03505047, 2018	Ongoing trial, recruiting currently
Norman, W. V., Brant, R., Bryan, S., Peterson, S., Soon, J., Dicus, L., Trouton, K., Kaczorowski, J., Immediate versus delayed insertion of intrauterine contraception after second-trimester abortion: A randomized controlled trial, Contraception, 94 (4), 402, 2016	Abstract of Norman 2014 trial, which is not in PICO (population had surgical termination)
Norman, W. V., Brooks, M., Brant, R., Soon, J. A., Majdzadeh, A., Kaczorowski, J., What Proportion of Canadian Women Will Accept an Intrauterine Contraceptive at the Time of Second Trimester Abortion? Baseline Data From a Randomized Controlled Trial, Journal of Obstetrics and Gynaecology Canada, 36, 51-59, 2014	Population is not in PICO (they had surgical termination)
Norman, W. V., Kaczorowski, J., Soon, J. A., Brant, R., Bryan, S., Trouton, K. J., Dicus, L., Immediate vs. delayed insertion of intrauterine contraception after second trimester abortion: study protocol for a randomized controlled trial, Trials, 12, 14, 2011	Study protocol
Okusanya, B. O., Oduwole, O., Effa, E. E., Immediate postabortal insertion of intrauterine devices, Cochrane Database of Systematic Reviews, 2014	Systematic review, checked for relevant studies
Pandey, S., Re: Immediate versus delayed initiation of the levonorgestrel-releasing intrauterine system following medical termination of pregnancy - 1-year continuation rates: a randomised controlled trial: Levonorgestrel-releasing intrauterine system following medical termination of pregnancy: a randomised controlled trial, 05, 05, 2017	Letter to the editor without any relevant data
Pandey, S., Re: Immediate versus delayed initiation of the levonorgestrel-releasing intrauterine system following medical termination of pregnancy - 1-year continuation rates: a randomised controlled trial: Levonorgestrel-releasing intrauterine system following medical termination of pregnancy: a randomised controlled trial, BJOG: An International Journal of Obstetrics and Gynaecology, 125, 92-93, 2018	Letter to the editor without any relevant data
Pohjoranta, E., Mentula, M., Gissler, M., Suhonen, S., Heikinheimo, O., Provision of intrauterine contraception at the time of abortion reduces the need of subsequent abortion-results of a randomized, controlled trial, Reproductive Sciences, 1), 113A, 2015	Comparison not in PICO (IUD inserted within 4 weeks after medical termination of pregnancy versus oral contraceptive prescription/contraception via primary healthcare unit)

Study	Reason for Exclusion
Pohjoranta, E., Mentula, M., Gissler, M., Suhonen, S., Heikinheimo, O., Provision of intrauterine contraception in association with first trimester induced abortion reduces the need of repeat abortion: first-year results of a randomized controlled trial, Human Reproduction, 30, 2539-46, 2015	Comparison not in PICO (IUD inserted within 4 weeks after medical termination of pregnancy versus oral contraceptive prescription/contraception via primary healthcare unit)
Pohjoranta, E., Suhonen, S., Mentula, M., Heikinheimo, O., Intrauterine contraception after medical abortion: factors affecting success of early insertion, Contraception, 95, 257-262, 2017	Comparison not in PICO (IUD inserted within 4 weeks after medical termination of pregnancy v oral contraceptive prescription/contraception via primary healthcare unit)
Reeves, M. F., Smith, K. J., Creinin, M. D., Contraceptive effectiveness of immediate compared with delayed insertion of intrauterine devices after abortion: a decision analysis.[Erratum appears in Obstet Gynecol. 2007 Oct;110(4):936], Obstetrics & GynecologyObstet Gynecol, 109, 1286-94, 2007	Population is not in PICO (they had surgical termination)
Saav, I., Danielsson, K. G., Early post abortion insertion of intrauterine contraception, Acta obstetricia ET gynecologica scandinavica, 159), 33-34, 2012	Abstract of Saav 2012, which is included as full-text
Saav, I., Gemzell-Danielsson, K., Early post abortion insertion of intrauterine contraception, International Journal of Gynecology and Obstetrics, 3), S356, 2012	Abstract of Saav 2012, which is included as full-text
Salcedo, J., Sorensen, A., Parvataneni, R., Rodriguez, M., Immediate post-abortion iud insertion compared with planned insertion at abortion follow-up: A cost analysis, Contraception, 86 (3), 297-298, 2012	Population not in PICO (they had surgical termination)
Salcedo,J., Sorensen,A., Rodriguez,M.I., Cost analysis of immediate postabortal IUD insertion compared to planned IUD insertion at the time of abortion follow up, Contraception, 87, 404-408, 2013	Population not in PICO (they had surgical termination)
Shimoni, N., Davis, A., Westhoff, C., Can ultrasound predict IUD expulsion after medical abortion?, Contraception, 89, 434-439, 2014	Outcomes not in PICO
Shimoni, N., Davis, A., Westhoff, C. L., Ramos, M. E., Rosario, L., A randomized trial of immediate versus delayed insertion of the copper T 380Q following medication abortion, Contraception, 82 (2), 189, 2010	Abstract of Shimoni 2011, which is incldued as full-text
Steenland,M.W., Tepper,N.K., Curtis,K.M., Kapp,N., Intrauterine contraceptive insertion postabortion: a systematic review, Contraception, 84, 447-464, 2011	Systematic review, checked for relevant studies of which there were none.
Tsikouras, P., Vrachnis, N., Grapsa, A., Tsagias, N., Pinidis, P., Liberis, A., Ammari, A., Grapsas, X., Galazios, G., Liberis, V., IUD in first-trimester abortion: Immediate intrauterine contraceptive devices insertion vs delayed insertion following the next menstruation bleeding, Archives of Gynecology and Obstetrics, 290, 2014	Not an RCT; population not in PICO (all women had surgical termination)
Wildemeersch, D., Rationale for the immediate insertion of an IUD/IUS following pregnancy termination, European Journal of Contraception and Reproductive Health Care, 1), 148, 2010	Abstract only, does not report any data, appears to be narrative review

IUD: intrauterine device; PICO: population, intervention, comparison and outcomes

Economic studies

No economic evidence was identified for this review.

Appendix L – Research recommendations

Research recommendations for review question: What strategies are effective at facilitating access to contraception after termination of pregnancy?

No research recommendations were made for this review question.

Research recommendations for review question: For women who are having medical termination of pregnancy and plan to use a progestogen-only contraceptive implant or depot injection, does administration of the contraception at the same time as mifepristone influence the efficacy of the termination?

No research recommendations were made for this review question.

Research recommendations for review question: For women who have had a medical termination of pregnancy, how soon afterwards is it safe to insert an intrauterine contraceptive device?

No research recommendations were made for this review question.