National Institute for Health and Care Excellence

Surveillance programme

Surveillance proposal consultation document

Long-acting reversible contraception NICE guideline CG30 – 12-year surveillance review

Background information

Guideline issue date: October 2005

2-year surveillance review: no update

5-year surveillance review: no update

Subsequent to 5 year review: rapid review on progestogen-only subdermal implant

8-year surveillance – no update

Surveillance proposal for consultation

We propose to not update the guideline on long-acting reversible contraception at this time.

We propose to transfer the guideline to the static list because:

- No evidence was identified that would impact on the current guidance and no major ongoing studies or research have been identified as due to be published in the near future (that is, within the next 3-5 years).

Reason for the proposal

New evidence

We found 55 new studies in a search for systematic reviews and randomised controlled trials (RCTs) published between 28 August 2013 and 27 November 2016. We also considered 7 additional studies identified by members of the guideline committee who originally worked on this guideline.

Evidence identified in previous surveillance 8 years after publication of the guideline was also considered. This included 58 studies identified by search.

From all sources, 120 studies were considered to be relevant to the guideline.

This included new evidence that is consistent with current recommendation:

- Contraception and principles of care
- Copper intrauterine devices
- Progestogen only subdermal implants.

We also identified new evidence in the following areas that was inconsistent with, or not covered by, current recommendations, but the evidence was not considered to impact on the guideline:

- Intrauterine system
- Progestogen only injectable contraceptives.

None of the new evidence considered in surveillance of this guideline was thought to have an effect on current recommendations. We asked topic experts whether this new evidence would affect current recommendations on NICE guideline CG30. Topic experts indicated that the service delivery and provision of sexual health care have considerably changed since the guideline was developed. However, provision of sexual health care service was updated in NICE PH51 (contraceptive services for under 25s) in July 2014. This section of CG30 will be considered for update and inclusion in NICE PH51, at the next surveillance review of PH51.

Additionally, we did not identify any relevant ongoing research that is expected to publish results in the next 3–5 years.

Equalities

No equalities issues were identified during the surveillance process.

Overall proposed decision

After considering all the new evidence and views of topic experts, we decided not to update this guideline, and place NICE guideline CG30 on the static list.

Further information

See appendix A: summary of new evidence from surveillance below for further information.

For details of the process and update decisions that are available, see ensuring that published guidelines are current and accurate in 'Developing NICE guidelines: the manual'.

Appendix A: Summary of new evidence from surveillance

Contraception and principles of care

Contraception and principles of care

Recommendations derived from this question

1.1.1 Contraceptive provision

1.1.1.1 Women requiring contraception should be given information about and offered a choice of all methods, including long-acting reversible contraception (LARC) methods.

1.1.1.2 Women should be provided with the method of contraception that is most acceptable to them, provided it is not contraindicated.

1.1.1.3 Contraceptive service providers should be aware that:

- all currently available LARC methods (intrauterine devices [IUDs], the intrauterine system [IUS], injectable contraceptives and implants) are more cost effective than the combined oral contraceptive pill even at 1 year of use
- IUDs, the IUS and implants are more cost effective than the injectable contraceptives
- increasing the uptake of LARC methods will reduce the numbers of unintended pregnancies

1.1.2 Provision of information and informed choice

1.1.2.1 Women considering LARC methods should receive detailed information – both verbal and written – that will enable them to choose a method and use it effectively. This information should take into consideration their individual needs and should include:

- contraceptive efficacy
- duration of use
- risks and possible side effects
- non-contraceptive benefits
- the procedure for initiation and removal/discontinuation
- when to seek help while using the method.

Appendix A summarises information about LARC methods that should be discussed with women.

1.1.2.2 Counselling about contraception should be sensitive to cultural differences and religious beliefs.

1.1.2.3 Healthcare professionals should have access to trained interpreters for women who are not English speaking, and to advocates for women with sensory impairments or learning disabilities.

1.1.3 Contraceptive prescribing

1.1.3.1 A medical history – including relevant family, menstrual, contraceptive and sexual history – should be taken as part of the routine assessment of medical eligibility for individual contraceptive methods.

1.1.3.2 Healthcare professionals helping women to make contraceptive choices should be familiar with nationally agreed guidance on medical eligibility and recommendations for contraceptive use.

1.1.3.3 When considering choice of LARC methods for specific groups of women and women with medical conditions, healthcare professionals should be aware of and discuss with each

woman any issues that might affect her choice (see Sections 1.2, 1.3, 1.4 and 1.5 and Appendix A).

1.1.3.4 Healthcare professionals should exclude pregnancy by taking menstrual and sexual history before initiating any contraceptive methods. [2005]

1.1.3.5 Healthcare professionals should supply an interim method of contraception at first appointment if required.

1.1.3.6 Healthcare professionals should ensure that informed consent is obtained from the woman whenever any method of LARC is being used outside the terms of the UK Marketing Authorisation. This should be discussed and documented in the notes.

1.1.3.7 Women who have a current venous thromboembolism (VTE) and need hormonal contraception while having treatment for the VTE should be referred to a specialist in contraceptive care.

1.1.4 Contraception and sexually transmitted infection

1.1.4.1 Healthcare professionals providing contraceptive advice should promote safer sex.

1.1.4.2 Healthcare professionals providing contraceptive advice should be able to assess risk for sexually transmitted infections (STIs) and advise testing when appropriate.

1.1.4.3 Healthcare professionals should be able to provide information about local services for STI screening, investigation and treatment.

1.1.5 Contraception for special groups

1.1.5.1 Healthcare professionals should be aware of the law relating to the provision of advice and contraception for young people and for people with learning disabilities. Child protection issues and the Fraser guidelines should be considered when providing contraception for women younger than 16 years*.

1.1.5.2 Women with learning and/or physical disabilities should be supported in making their own decisions about contraception.

1.1.5.3 Contraception should be seen in terms of the needs of the individual rather than in terms of relieving the anxieties of carers or relatives.

1.1.5.4 When a woman with a learning disability is unable to understand and take responsibility for decisions about contraception, carers and other involved parties should meet to address issues around the woman's contraceptive need and to establish a care plan.

1.1.6 Training of healthcare professionals in contraceptive care

1.1.6.1 Healthcare professionals advising women about contraceptive choices should be competent to:

- help women to consider and compare the risks and benefits of all methods relevant to their individual needs
- manage common side effects and problems.

1.1.6.2 Contraceptive service providers who do not provide LARC in their practice or service should have an agreed mechanism in place for referring women for LARC.

1.1.6.3 Healthcare professionals providing intrauterine or subdermal contraceptives should receive training to develop and maintain the relevant skills to provide these methods.

1.1.6.4 IUDs and the IUS should only be fitted by trained personnel with continuing experience of inserting at least one IUD or one IUS a month.

1.1.6.5 Contraceptive implants should be inserted and removed only by healthcare professionals trained in the procedure.

*See the Department of Health's Best practice guidance for doctors and other healthcare professionals on the provision of advice and treatment to young people under 16 on contraception, sexual and reproductive health (July 2004).

Surveillance decision

This review question should not be updated.

Contraception and principles of care

2-year surveillance summary

Update not required after review of evidence.

5-year surveillance summary

Update not required after review of evidence.

8-year surveillance summary

Counselling

A systematic review was identified [1] that determined the effectiveness of ancillary techniques to improve adherence to, and continuation rates of, hormonal methods of contraception. Eight RCTs of an intensive counselling technique or client-provider intervention versus routine family planning counselling were included. Interventions included group motivation; structured, peer, or multi-component counselling; and intensive reminders of appointments. From the eight included studies only one showed a statistically significant benefit of the experimental intervention. In that trial, women who received repeated, structured information about the injectable contraceptive depo-medroxyprogesterone acetate (DMPA) were less likely to have discontinued the method by 12 months than were women who had routine counselling. The intervention group was also less likely to discontinue due to menstrual disturbances. The authors concluded that most studies have shown no benefit of strategies to improve adherence and continuation.

A systematic review [2] was identified that assessed the role of long-acting reversible contraceptive (LARC) methods and importance of contraceptive counselling in reducing unintended pregnancy rates. The findings showed that women who received counselling before contraceptive use demonstrated higher rates of after-use method satisfaction, continuation and acceptance than those who did not.

An RCT[3] that evaluated the effectiveness of a personalised counselling on contraceptive acceptability and its use for post-abortion women in Brazil was identified. A total of 246 women randomly distributed in intervention (personalised counselling, n=123) and control (usual care n=123) groups. The follow up findings showed that significantly more women in intervention group were using contraceptive methods compared with women in the control group. The probability of adherence and of the use of any kind of contraceptive method 6 months after the abortion was 41% greater in the intervention group. The findings showed that the individualised contraceptive counselling increased the acceptance and the use of contraceptive methods and also increased the adequate use of the methods.

Structured information

A systematic review [4] was identified that evaluated the effect of interventions to increase uptake of the copper Intrauterine devices (IUD), a long-acting, reversible contraceptive method. Nine studies representing 7960 women were included. The result indicated that the community-based interventions and antenatal contraceptive counselling improved uptake of copper IUD contraception.

An RCT [5] was identified that examined impact of a theory-based video on initiation of long-acting reversible contraception after abortion. A video intervention was developed to increase awareness of LARC methods. Women aged 18-29 years undergoing surgical abortion at a clinic in Chicago, were randomised to watch the intervention video or to watch a stress management video (control), both 7 minutes in duration. Contraceptive methods were supplied to all participants free of charge. The findings showed that the rates of LARC initiation immediately after abortion were not significantly different between the 2 study arms; 59.6% in the intervention and 51.6% in the control arm chose a LARC method.

An RCT [6] was identified that evaluated the theory-based IUD educational video in English and Spanish. A feasibility study and a pre/post evaluation nested within a randomised trial were conducted to test change in knowledge about IUDs and intention to get an IUD after viewing a theory-driven dramatic video. Women

(n=315) completed surveys before and after watching the video. The findings indicated that knowledge about IUD effectiveness and intention to use IUD increased significantly post-video. The authors concluded that an online theory-driven video intervention can reach young women seeking information about long-acting contraception.

A three-arm RCT [7] was identified that assessed the efficacy of a computer-based contraceptive assessment module in increasing the proportion of patients choosing an effective method of contraception (<10 pregnancies/100 women per year). Participants were randomised to complete the module and receive tailored health materials or to a control condition. The findings from n=2231 women showed that family planning patients who used the module were significantly more likely to choose an effective contraceptive method. The findings indicated that patient-centred interventions can positively influence contraceptive method choice.

Further analysis of the same study [8] carried out to assess the efficacy of a computer-based contraceptive assessment module in increasing the proportion of patients who continued use of their chosen contraceptive method 4 months after the family planning visit (n=224). The findings showed that family planning patients who used the module and received individually tailored health materials (n=78), compared to those in the control group (n=70), were significantly more likely to continue use of their chosen contraceptive method to adhere to their method. No significant differences in these outcomes were found for participants who used the module but did not receive tailored materials (n=76), compared to the control group. The authors concluded that tailored health materials significantly improved contraceptive method continuation and adherence.

Barriers

A systematic review [9] was identified that assessed barriers and myths preventing the more widespread use of intrauterine contraception in nulliparous women. The findings indicated that the most widely explored barriers in published studies are those at the health care provider level. User barriers are less well documented and health system barriers are mostly assessed through indirect evidence. The authors concluded that addressing health care provider lack of knowledge, training and confidence with intrauterine contraception (IUC) insertions, particularly in nulliparous women, could make a substantial positive impact on IUC utilisation.

A sub-analysis [10] of baseline data was identified that examined baseline characteristics associated with the intent to use LARC among postpartum women. Eight hundred women completed a pre-intervention survey of demographics and reproductive health history and intentions. The findings indicated that high interest in LARC exists among postpartum women, particularly among women with a recent unintended pregnancy and women who do not desire pregnancy for at least 2 years.

12-year surveillance summary

Counselling

A cluster randomised trial [11] was identified that assessed the effects of an intervention to increase patients' access to LARCs on pregnancy rates. 20 clinics were randomly assigned to receive evidence-based training on providing counselling and insertion of IUDs or progestin implants and 20 to provide standard care. A total of 1500 Women aged 18-25 years attending family planning or abortion care clinics and not desiring pregnancy in the next 12 months were recruited. The finding showed that more women at intervention than control sites selected LARCs during the clinic visit. The pregnancy rate was lower in intervention group than in the control group after family planning visits but not after abortion visits. The overall findings indicated that the pregnancy rate can be reduced by provision of counselling on LARCs and access to devices during family planning counselling visits.

An RCT [12] was identified that assessed the effect of intensive versus non-intensive counselling on discontinuation rates due to bleeding disturbances caused by three long-acting reversible contraceptive. Women accepting each contraceptive method were randomised to either received routine counselling at the clinic, including information on safety, efficacy and side effects, as well as what to expect regarding bleeding disturbances or received 'intensive counselling'. The findings

showed no significant differences between the intensive and routine counselling groups on the discontinuation rates due to unpredictable menstrual bleeding of the three contraceptives under evaluation. The main reasons for discontinuation of the methods were weight gain in users of the ENG-implant and expulsion of the copper T 380A (TCu380A).

An RCT [13] was identified that examined if a counselling intervention using the principles of motivational interviewing (MI) would impact uptake of LARC after abortion. Sixty women 15-29 years-old were randomised to intervention (counselling intervention using MI) and control (non-standardised counselling). In the intervention arm, significantly more participants received a long-acting method within four weeks compared to the control arm. Uptake and use of any effective method were not statistically different. More women in the intervention arm reported satisfaction with their counselling than women in the control arm. The overall findings indicated that twice as many women in the MI-based contraception counselling intervention initiated and continued to use LARC compared to women who received only non-standardised counselling.

An RCT [14] was identified that evaluated the impact peer counselling has on same-day desire for LARC among adolescents attending a family planning clinic. A total of 110 adolescent females attending an outpatient clinic for contraception were received either brief peer counselling about LARC with routine contraceptive counselling, or routine counselling alone. The findings indicated that peer counselling was well received and 70% reported that it was helpful in contraceptive decision-making. Peer counselling did not affect same-day desire for LARC, however, adolescents who received the intervention were more likely to report increased knowledge and positive change in attitudes towards LARC. Factors positively associated with same-day LARC desire were peer use of LARC and social support.

Structured information

A pilot randomised study [15] was identified that assessed giving information about the contraceptive implant (Nexplanon) using a DVD within a sexual and reproductive health (SRH) service in Edinburgh. It was carried out to determine if the accuracy of information recalled after watching a DVD was comparable to that following a face-to-face consultation, and if patients found the use of a DVD acceptable. Fifty women were randomised to receive information about the implant either by a DVD (n=35) or a face-to-face consultation (n=15). A structured interview was conducted immediately following the DVD/face-to-face consultation and by telephone 3 months later. The findings indicated that the most of the women who watched the DVD felt it was helpful (89%), easy to understand (94%) and acceptable (69%). The majority of those who had watched the DVD found it informative (93%). The authors concluded that the use of a DVD to provide patient information on Nexplanon is acceptable and informative, and may enhance patient consultations.

Personalised contraceptive assistance

An RCT [16] was identified that assessed the rate of postpartum uptake of LARCs following a personalised contraceptive assistance. A total of 50 low-income postpartum women were included. The intervention group received telephone contact from a personal assistant who provided contraception education, facilitation of insurance coverage, appointment scheduling and assistance with childcare and transportation. The control group received routine follow up. Women were surveyed immediately and 3 months postpartum. The findings indicated that providing telephone assistance to help navigate barriers did not increase postpartum uptake of LARCs. Poor uptake of LARCs postpartum were related to women's history of no-shows and/or infrequent clinic visit.

Social media

An RCT [17] was identified that assessed mobile application for information on reversible contraception. A mobile application designed to provide tailored information about the 10 most common non-permanent contraceptive methods. 120 participants were randomised to contraception counselling via tablet or health educator. The findings showed that of the 120 participants in the primary study, 65 chose long-acting reversible methods. The uptake of long-acting reversible contraceptives was similar between the groups. Both groups were demographically similar in age and educational

status. Knowledge of long-acting methods did not differ significantly between the groups. The authors concluded that the mobile application did not adversely affect highly effective birth control uptake in the study population.

An RCT [18] was identified that examined whether social media, specifically Facebook, is an effective tool for improving contraceptive knowledge. Women aged 18-45 years receiving care at an urban academic centre were randomised to a trial of standard contraceptive education and pamphlet (n=74) compared with standard contraceptive education and Facebook information for contraception counselling (n=69). The findings showed that social media as an adjunct to traditional in-office counselling improves patient contraceptive knowledge and increases patient preference for LARCs.

Healthcare policy

A systematic review [19] was identified that assessed the factors that impact IUC utilisation rates among women of reproductive age in different continents and countries. The findings showed that multiple factors appear to contribute to global variability in IUC use, including government policy on family planning, the types of health care providers (HCPs) who are authorised to place and remove IUC, the medicolegal environment, the availability of practical training for HCPs, cost differences and the geographical spread of clinics providing IUC services. The authors concluded that the use of IUC is influenced more by factors such as geographic differences, government policy and the HCP's educational level than by medical eligibility criteria.

Topic expert feedback

The topic experts identified the following studies:

A systematic review [20] of 30 articles examined the evidence regarding desirable and undesirable qualities of long-acting reversible contraception (LARC), including intrauterine devices, the implant and the injection, as perceived by women. The findings indicated that the contraceptive benefits of LARC, including their high efficacy and longevity, were generally considered to be positive qualities by women, while the potential impact of side-effects on the body were considered as negative qualities. Five key themes emerged under which qualities were categorised; including: (1) impact on bleeding; (2) impact on the body; (3) device-specific characteristics; (4) general characteristics; and (5) perceptions and misbeliefs. The authors concluded that the discussion about these positive and negative qualities, during contraception consultations may increase rates of LARC uptake.

A mixed methods study [21] examined barriers to LARC uptake among homeless young women. Fifteen women between 18 and 24 years of age with a past year history of homelessness were interviewed at a homeless drop-in center or shelters. The findings indicated that women reported confusion about the possibility of early termination of LARC, and the perception that providers deliberately withhold selective information about contraceptive options. Women also reported interest in visual aids accompanying verbal contraceptive counselling. The authors concluded that comprehensive counselling about all contraceptive options, including LARC, are important for targeting the perceived gaps in contraceptive education and care among homeless young women.

An observational study [22] evaluated the impact of Quality and Outcomes Framework (QOF), a major pay-for-performance programme in the United Kingdom, on prescribing of LARC in primary care. Analysis carried out using practice level prescribing data from April 2007 to March 2012. The findings showed that the prescribing rates of LARC were stable before the introduction of contraceptive targets to the QOF and increased afterwards by 4% annually. The increase in LARC prescribing was mainly driven by increases in injectable, which was the most commonly prescribed LARC method. The overall findings indicated that pay for performance incentives for contraceptive counselling in primary care has increased uptake of LARC methods.

Topic experts indicated that there have been huge changes in the provision of sexual health services since publication of the guideline. This includes the change to Public Health being responsible for the provision of contraception, but the CCG are responsible for funding terminations of pregnancy. They stated that new devices are now in use including mini

Mirena and Levosert and there is new UKMEC (2016) launched with the changes relating to LARC. They also indicating that change in service delivery and commissioning led to confusion and less access to LARC. Topic experts emphasised on funding issues and capacity issues with the sexual health services. They indicated that inequalities present for patients to access LARC as many GPs no longer providing the service and waiting times are increasing in local health service leading to more 'accidental' pregnancies for women whilst waiting. The training issue and lack of funding for training and its negative impact on LARC and pregnancy rate was also highlighted by one topic. One topic expert indicated that the guideline is out of date in many respects and the original guideline puts pressure on services to promote LARC in a way that intrudes women's autonomy.

Impact statement

The new evidence identified is essentially in line with current guideline recommendations that emphasise contraceptive provision, women's choice and provision of information.

Evidence indicates that structured counselling, social media as an adjunct to counselling, government policy and the health care provider's educational level may have an impact on patient contraceptive knowledge and patient preference and uptake of LARC.

Although new evidence is consistent with guideline recommendations, the topic experts indicated that the service delivery and provision of sexual health care have considerably changed since the guideline was developed and the recommendations no longer fit with current practice. Provision of sexual health care service was updated in NICE PH51 (contraceptive services for under 25s) in July 2014. This section of CG30 will be considered for update and inclusion in NICE PH51, at the next surveillance review of PH51.

New evidence is unlikely to change guideline recommendations.

Copper intrauterine devices

Copper intrauterine devices

Recommendations derived from this question

1.2.1 Decision making

1.2.1.1 Women should be given the following information.

Contraceptive efficacy

- IUDs act by preventing fertilisation and inhibiting implantation.
- The licensed duration of use for IUDs containing 380 mm^2 copper ranges from 5 to 10 years, depending on the type of device.
- The pregnancy rate associated with the use of IUDs containing 380 mm^2 copper is very low (fewer than 20 in 1000 over 5 years).
- There is no evidence of a delay in the return of fertility following removal or expulsion of IUDs.

Effect on periods

- Heavier bleeding and/or dysmenorrhoea are likely with IUD use.

Risks and possible side effects

- Up to 50% of women stop using IUDs within 5 years; the most common reasons are unacceptable vaginal bleeding and pain.

- There is no evidence that IUD use affects weight.
- Any changes in mood and libido are similar whether using IUDs or the IUS, and the changes are small.
- The risk of uterine perforation at the time of IUD insertion is very low (less than 1 in 1000).
- The risk of developing pelvic inflammatory disease following IUD insertion is very low (less than 1 in 100) in women who are at low risk of STIs.
- IUDs may be expelled but this occurs in fewer than 1 in 20 women in 5 years.
- The risk of ectopic pregnancy when using IUDs is lower than when using no contraception.
- The overall risk of ectopic pregnancy when using the IUD is very low, at about 1 in 1000 in 5 years.
- If a woman becomes pregnant with the IUD in situ, the risk of ectopic pregnancy is about 1 in 20, and she should seek advice to exclude ectopic pregnancy.

1.2.2 Other issues to consider before fitting an IUD

1.2.2.1 Women who are aged 40 years or older at the time of IUD insertion may retain the device until they no longer require contraception, even if this is beyond the duration of the UK Marketing Authorisation*.

1.2.2.2 Contraceptive care providers should be aware that the risk of perforation is related to the skill of the healthcare professional inserting the IUD.

1.2.2.3 Testing for the following infections should be undertaken before IUD insertion:

- *Chlamydia trachomatis* in women at risk of STIs
- *Neisseria gonorrhoeae* in women from areas where the disease is prevalent and who are at risk of STIs
- any STIs in women who request it.

1.2.2.4 If testing for STIs is not possible, or has not been completed, prophylactic antibiotics should be given before IUD insertion in women at increased risk of STIs.

1.2.2.5 Women with identified risks associated with uterine or systemic infection should have investigations, and appropriate prophylaxis or treatment before insertion of an IUD.

Specific groups, medical conditions and contraindications

1.2.2.6 IUDs may be used by adolescents, but STI risk should be considered where relevant.[2005]

1.2.2.7 Healthcare professionals should be aware that:

- IUD use is not contraindicated in nulliparous women of any age
- women of all ages may use IUDs
- IUDs can safely be used by women who are breastfeeding.

1.2.2.8 Healthcare professionals should be aware that:

- IUD use is not contraindicated in women with diabetes
- IUD use is a safe and effective method of contraception for women who are HIV positive or have AIDS (safer sex using condoms should be encouraged in this group).

1.2.3 Practical details of fitting IUDs

1.2.3.1 The most effective IUDs contain at least 380 mm2 of copper and have banded copper on the arms. This, together with the licensed duration of use, should be considered when deciding which IUD to use.

1.2.3.2 Provided that it is reasonably certain that the woman is not pregnant, IUDs may be inserted:

- at any time during the menstrual cycle
- immediately after first- or second-trimester abortion, or at any time thereafter

- from 4 weeks post-partum, irrespective of the mode of delivery.

1.2.3.3 Emergency drugs including anti-epileptic medication should be available at the time of IUD insertion in a woman with epilepsy because there may be an increased risk of a seizure at the time of cervical dilation.

Advice for women at time of fitting

1.2.3.4 Women should be informed:

- about symptoms of uterine perforation or infection that would warrant an early review of IUD use
- that insertion of an IUD may cause pain and discomfort for a few hours and light bleeding for a few days, and they should be informed about appropriate pain relief
- about how to check for the presence of IUD threads and encouraged to do this regularly with the aim of recognising expulsion.

1.2.4 Follow-up and managing problems

1.2.4.1 A follow-up visit should be recommended after the first menses, or 3–6 weeks after insertion, to exclude infection, perforation or expulsion. Thereafter, a woman should be strongly encouraged to return at any time to discuss problems, if she wants to change her method of contraception, or if it is time to have the IUD removed.

1.2.4.2 Heavier and/or prolonged bleeding associated with IUD use can be treated with non-steroidal anti-inflammatory drugs and tranexamic acid.

1.2.4.3 Women who find heavy bleeding associated with IUD use unacceptable may consider changing to a levonorgestrel intrauterine system (LNG-IUS).

1.2.4.4 The presence of Actinomyces-like organisms on a cervical smear in a woman with a current IUD requires an assessment to exclude pelvic infection. Routine removal is not indicated in women without signs of pelvic infection.

1.2.4.5 Women who have an intrauterine pregnancy with an IUD in situ should be advised to have the IUD removed before 12 completed weeks' gestation, whether or not they intend to continue the pregnancy.

*Check the Summary of Product Characteristics of individual devices for current licensed indications. Informed consent is needed when using outside the licensed indications. This should be discussed and documented in the notes.

Surveillance decision

This review question should not be updated.

Copper intrauterine devices

2-year surveillance summary

Update not required after review of evidence

5-year surveillance summary

Update not required after review of evidence

8 -year surveillance summary

Risks and benefits

A systematic review [23] of 2 RCTs was identified that compared the contraceptive and non-contraceptive benefits and risks of using the copper-containing IUD versus depot progestogens for contraception. The overall findings indicated that the copper IUD was more effective than depot progestogens/hormonal contraception at preventing pregnancy. HIV disease progression was reduced in the IUD group. There was no significant difference in pelvic inflammatory disease rates between the two groups. Discontinuation of the allocated method was less frequent with the IUD in one study, and less frequent with hormonal contraception in the other study. The authors concluded that in the populations studied, the IUD was more effective than hormonal contraception with respect to pregnancy prevention.

A systematic review [24] was identified that assessed the evidence about risks for adverse pregnancy outcomes among women who conceive with an IUD in situ. Nine articles met the inclusion criteria. The overall findings indicated that pregnancies complicated by a remaining IUD in situ were at greater risk of adverse pregnancy outcomes. Early IUD removal appeared to improve outcomes but did not entirely eliminate risks.

A double-blinded, multicentre RCT [25] among patients requesting an IUD was identified that assessed efficacy of vaginal misoprostol prior to insertion of an intrauterine device. Nulli- and multi-parous women were included, and both copper-containing and levonorgestrel intrauterine device (LNG-IUD) were used. Participants were allocated to either 400 mug misoprostol (102) or placebo (97). The primary outcome measure was failed insertion. Study showed no benefit for use of misoprostol prior to IUD insertion. However, there was a tendency of possible harm regarding side-effects. The authors concluded that based on the findings, they would not recommend standard pre-treatment with misoprostol.

A retrospective, population-based, case-control [26] was identified that compared the risk of breast cancer for LNG-IUD versus copper IUDs in women younger than 50 years of age. Data was obtained from cancer registers in Finland and Germany. Analysis carried out for 5113 breast cancer cases diagnosed 2000-2007 and 20,452 controls - matched by year of birth and area of residence. The findings did not indicate an increased risk of breast cancer for users of LNG-IUD and no indications for tumour promotion.

A cohort study [27] was identified that evaluated the impact of a copper-containing intrauterine contraceptive device (IUCD) and the LNG-IUD on puerperal and menstrual bleeding when fitted intraoperatively during scheduled elective caesarean. Participants were allocated to 3 groups: caesarean with no device inserted; IUCD inserted during caesarean; and IUS inserted during caesarean. The findings indicated that intrauterine system fitting at the time of elective caesarean was associated with significant reductions in the duration and amount of puerperal blood loss, as well as a high incidence of amenorrhea and lighter periods afterward.

A double blind RCT [28] was identified that compared the side effects of Copper-T and Cu 375 IUCD in women using contraceptive method and had used no contraception before. A total of 80 women of reproductive age group were included in the study. The effectiveness and side effects of two copper releasing IUCDs, Copper-T and Cu 375 IUCD was observed. Pelvic inflammatory disease occurred more often with Cu 375 IUCD than other group. Dysmenorrhoea was also experienced more with Cu 375 IUCD user than Copper-T. Menorrhagia rate was also high in Cu 375 IUCD users. The only case of uterine perforation was in the user of Copper-T. Overall findings indicated that Copper-T is a highly effective method of contraception than Cu 375 IUCD with good patient acceptance and lesser side effects.

Time of fitting

A multicentre randomised comparative study [29] was identified that compared safety and efficacy among 3 types of IUD, namely UCu200, TCu380A, and medicated -IUD, when inserted after abortion with vacuum aspiration. A total of 1800 parous women requesting an IUD were enrolled in 12 centres across China in 2004-2005. The women received 1 of the 3 types of IUD and were followed-up for 12 months. Among the participants, 596 received the UCu200, 591 received the TCu380A, and 594 received the medicated -IUD. The findings indicated that immediate insertion of the device after vacuum aspiration was found to be safe and effective for all 3 types of IUD. Compared with the other IUDs, the medicated -IUD had a lower rate of medical removal and might be the most appropriate for broad use.

A randomised non-inferiority trial [30] involving 575 women undergoing uterine aspiration for induced or spontaneous abortion at 5 to 12 weeks of gestation who desired an IUD, was identified. Women were randomly assigned to IUD insertion immediately after the abortion or 2 to 6 weeks afterward (delayed insertion). The primary outcome was the rate of IUD expulsion 6 months after IUD insertion. Findings showed that the 6-month expulsion risk was 5.0% after immediate insertion and 2.7% after delayed insertion which was consistent with the

predefined criterion for non-inferiority. Six-month rates of IUD use were significantly higher in the immediate-insertion group. Adverse events were rare and did not differ significantly between groups. No pregnancies occurred in the immediate-insertion group whereas five occurred in the delayed insertion group. Overall findings indicated that immediate insertion resulted in higher rates of IUD use at 6 months, without an increased risk of complications.

A prospective, observational clinical study [31] was identified that examined the expulsion rates of intrauterine contraception placed immediately after confirmed, completed first-trimester medical abortion. Of 97 subjects who completed the study, there were 4 clinical expulsions (4.1%) during 3 months of follow-up. There were no diagnosed pelvic infections, pregnancies, or uterine perforations. The continuation rate at 3 months was 80%.

A case control study [32] was identified that assessed the safety (infection, conception rate and perforation) of IUCD insertion at caesarean section. Group 1 (cases) were 50 women who had IUCD inserted at caesarean section. Groups 2 and 3 were controls, group 2 consisted of 50 matched women who had a caesarean section without IUCD insertion and group 3 consisting of 50 women who had IUCD inserted as an interval procedure. The findings showed that hospital stay of group 1 was 3.48 days as compared to 3.46 in group 2. Wound was infected in 10% women in group 1 and 2% in group 2; lochia was heavy in 4% in group 1 and 0% in group 2. Eighty two percent women were willing to continue with IUCD in group 1 and 86% in group 3 after 6 months. The authors concluded that women undergoing caesarean section, who wish this method, should be given the option of IUCD insertion at the same time.

An RCT [33] was identified that compared immediate versus delayed placement of Copper T380A IUD insertion 2-4 weeks after second trimester abortion. The primary outcome was the percentage of women using a copper T380A IUD 6 months after surgery. A total of 215 women were enrolled. The findings indicated that placing the IUD immediately after the procedure significantly increases the likelihood of use of effective contraception following a second-trimester procedure. The authors concluded that women who have an IUD placed immediately after their procedure may also be less likely to have a subsequent unplanned pregnancy.

A systematic review [34] of 11 RCTs was identified that assessed the safety and efficacy of IUD insertion immediately after spontaneous or induced abortion. The authors concluded that the insertion of an IUD immediately after abortion is safe and practical. IUD expulsion rates appear higher than after interval insertions. However, IUD use was higher at six months with immediate than with interval insertion.

A systematic review [35] of 9 RCTs was identified that assessed the efficacy and feasibility of IUD insertion immediately after expulsion of the placenta (within 10 minutes of placental expulsion). Comparisons included different IUDs, different insertion techniques, immediate versus delayed post-partum insertion, or immediate versus interval insertion (unrelated to pregnancy).The findings showed that the expulsion by six months was more likely for the immediate group than the delayed insertion group. The authors concluded that immediate post-partum insertion of IUDs appeared safe and effective, though direct comparisons with other insertion times were limited. Expulsion rates appear to be higher than with interval insertion.

An RCT [36] was identified that assessed the effects of timing of IUC insertion after medical abortion. Women undergoing medical abortion with mifepristone and misoprostol up to 63 days gestation and opting for IUC were randomised to early insertion (day 5-9 after mifepristone) or delayed (routine) insertion (at 3-4 weeks after mifepristone). The primary outcome was the rate of IUC expulsion at six months after IUC insertion. A total of 129 women were randomised. The overall findings indicated that early insertion of IUC after medical abortion was safe and well tolerated with no increased incidence for expulsions or complications. Women were more likely to return for the IUC insertion if scheduled early after the abortion, and less likely to have had an unprotected intercourse prior to the IUC insertion.

An RCT [37] was identified that compared IUD use at 6 months in 156 women randomised to

receive an intrauterine copper contraceptive 1 week compared with 1 month after medical abortion. The findings indicated that expulsion rates were comparable; 12% (8 of 69) in the immediate group compared with 11% (7 of 65) in the delayed group. Removals occurred in 14% (10 of 69) of immediate and 8% (5 of 65) of delayed group participants. Four pregnancies occurred in delayed group participants who did not return for IUD insertion. The immediate and delayed groups reported a median of 20 and 19 bleeding or spotting days, respectively. There was no cases of serious infection, uterine perforation, or haemorrhage. The overall findings showed that immediate insertion increased uptake of the IUD without increasing expulsions or bleeding.

A systematic review [38] of 19 studies was identified that evaluated the evidence regarding the safety and effectiveness of IUD insertion immediately following spontaneous or induced abortion. The overall findings indicated that intrauterine device insertion immediately after abortion is not associated with an increased risk of adverse outcomes. Intrauterine device expulsion rates, while generally low, were higher with insertions that occurred after later first-trimester abortion compared with after early first-trimester abortion and higher with IUD insertion after second-trimester abortion compared with after first-trimester abortion.

Treatments for bleeding

A systematic review [39] was identified that evaluated the evidence for effective therapeutic and preventive treatments for bleeding irregularities during Cu-IUD use. A total of 17 articles included. The findings suggest that non-steroidal anti-inflammatory drugs (NSAIDs) may be effective treatments for bleeding irregularities associated with Cu-IUD use; antifibrinolytic agents and antidiuretics have also been studied as possible treatments in a small number of subjects, but their safety has not been well documented. The authors concluded that NSAIDs and antifibrinolytics may also prevent bleeding irregularities among new Cu-IUD users.

HIV disease progression

A systematic review [40] of 8 RCTs and observational studies was identified that examined whether HIV-infected women who use hormonal or intrauterine contraception are at increased risk of HIV disease progression, other adverse health outcomes, or HIV transmission to uninfected sexual partners. The findings showed that the evidence regarding the safety of hormonal and intrauterine contraceptive use among women with HIV remains limited, but generally reassuring regarding adverse outcomes, disease transmission to uninfected partners, and disease progression. However, one study raised concerns about enhanced disease progression among women using hormonal contraception.

Haemoglobin

A systematic review [41] was identified that measured haemoglobin and serum ferritin at baseline and after 1 year of use of copper IUDs or a LNG-IUS. Fourteen studies involving copper IUDs in non-anaemic women and 4 studies in anaemic women and 6 involving the LNG-IUS met the criteria for the systematic review. The overall findings from meta-analysis indicated that decreases in haemoglobin mean values in copper IUD users were not sufficient to induce anaemia in previously non anaemic women. Women who are borderline anaemic would likely benefit from using the LNG-IUS.

A systematic review [42] of 4 RCTs and observational studies was identified that evaluated the evidence regarding whether haemoglobin levels should be measured prior to copper IUD insertion. Overall findings showed no clinically significant changes in haemoglobin levels with up to 5 years of follow-up. The authors concluded that limited fair-quality evidence was mixed but generally showed no clinically significant changes in haemoglobin among women with anaemia who used copper IUDs for up to 12 months. Indirect evidence among healthy women using copper IUDs did not show clinically significant changes in haemoglobin levels when followed for up to 5 years of use.

Experience with IUD

A retrospective descriptive study [43] was identified that examined the experience with IUD use in adolescents and young women over an 8-year period. The findings from reviewing 233 records showed 50% of the <18-year-old age group and 71.5% of the 18-21-year-old group had their IUD in place at 5 years. Age

was found to be a significant factor for removal, with under 18-year-olds at greater risk of removal/expulsion and prior sexually transmitted infection (STI) were significant risk factors for infection. Nulliparous patients were at higher risk of expulsion. The authors concluded that the rate of continuation was lower in adolescents under 18 compared to18-21-year-olds, but was still higher than for other hormonal contraceptives. IUDs appear to be a safe option in young adolescents (<18 years old) and nulliparous women.

12-year surveillance summary

Risks and benefits

A systematic review [44] was identified that investigated LNG-IUD and copper-bearing (Cu) IUD safety among breastfeeding women and, for Cu-IUD use, breastfeeding performance and infant health. Sixteen studies were included. The overall findings indicated that the risks for adverse events among IUD users, including expulsion, pain and removals, were similar or lower for breastfeeding women versus non-breastfeeding women. Uterine perforation with IUDs, while rare, appeared more frequent among breastfeeding women. No evidence indicated that Cu-IUD use in breastfeeding women influences breastfeeding performance or infant growth.

A systematic review [45] was identified that evaluated the evidence for the effect of inserting IUDs on different days of the menstrual cycle on contraceptive continuation, effectiveness and safety. Eight studies were included that examined the Cu-IUD; no studies were identified that examined the LNG-IUD. Overall findings suggested that timing of Cu-IUD insertion has little effect on longer term outcomes (rates of continuation, removal, expulsion, or pregnancy) or on shorter term outcomes (pain at insertion, bleeding at insertion, immediate expulsion). There was no evidence to suggest that outcomes were better when Cu-IUD insertions were performed during menses. The authors concluded that timing of Cu-IUD insertion has little effect on contraceptive continuation, effectiveness or safety.

An RCT [46] was identified that compared the expulsion rate of Nova-T380, Multiload 375, and Copper-T380A IUCDs inserted during caesarean delivery. All women scheduled for an elective caesarean were randomly allocated to receive the Nova-T380 (group 1, n=40), Multiload 375 (group 2, n=40), or Cu-T380A (group 3, n=40). The findings showed that at 1 year, expulsion had been reported for 5 (13%) women in-group 1, 2 (5%) in group 2, and 6 (15%) in group 3. The frequency of displacement was significantly lower in-group 2 than in group 1 and group 3. The findings suggested that the Multiload 375 device had the lowest risk of displacement.

An RCT[47] was identified that evaluated the effects of the copper intrauterine device versus injectable progestin contraception on pregnancy rates among women attending termination of pregnancy services. A total of 7,000 women were randomised to IUD=1,247, and injectable progestin contraception (IPC)=1,246. The trial closed early due to international concerns regarding a possible association between IPC and HIV acquisition. The findings showed that pregnancy occurred significantly less frequently among women allocated to the IUD than IPC: 56/971 (5.8%) versus 83/992 (8.4%), respectively. Discontinuation rates were similar between IUD and IPC groups. Women in the IUD group were more likely to discontinue contraceptive use due to abdominal pain or backache and non-specific symptoms, than those in the IPC group. The authors concluded that the IUD was significantly more effective in preventing pregnancy than IPC.

An RCT [48] was identified that compared rates of unintended pregnancy, method continuation and reasons for removal among women using the 52-mg levonorgestrel (daily release 20 microgram) LNG-IUD or the TCu380A intrauterine device. The findings showed that the LNG-IUD and the TCu380A have very high contraceptive efficacy, with the LNG-IUD significantly higher than the TCu380A. Overall rates of IUD removals were higher among LNG-IUD users than TCu380A users.

An RCT [49] was identified that assessed the bleeding and dysmenorrhea in ML CU 375 IUD and Copper T 380A IUD. Participants were randomised to two equal groups receiving IUD ML CU 375 or receiving IUD Copper T 380A. The results showed that the mean score of bleeding in the first four months after IUD insertion in IUD ML CU 375 users was

significantly lower than IUD Copper T 380A group. In the third and fourth months severity of dysmenorrhea in group IUD ML CU 375 was lower than IUD Copper T 380A. Duration of dysmenorrhea in the first four months after IUD insertion in IUD ML CU 375 group was significantly lower than IUD Copper T 380A group.

Time of fitting

An RCT [50] was identified that compared the safety, bleeding pattern, effects, side-effects, complications and 6-month continuity rates of LNG-IUS with conventional copper intrauterine device (Cu-IUD) inserted immediately after voluntary termination of pregnancy up to 10 weeks of gestation. Women (n=100) were randomly allocated to Cu-IUD (n=50) or LNG-IUS (n=44) and followed up at 10 days, and at 1, 3 and 6 months. The findings indicated that the continuity and expulsion rate for Cu-IUD and LNG-IUS at the end of 6 months was 74%, 12%, and 75%, 11.3%, respectively. In LNG-IUS users, the incidence of amenorrhea and the number of spotting days were higher and haemoglobin increased throughout the follow-up period. The side-effects related to both methods were not different from interval insertions. The authors concluded that immediate post-abortion intrauterine contraception with Cu-IUD or LNG-IUS is a safe and reliable method.

An RCT [51] was identified that assessed if the provision of intrauterine contraception in association with first trimester induced abortion reduces the need of repeat abortion. A total of 751 women were randomised into two groups. The intervention group (n = 375) was provided with intrauterine contraception (either the LNG-IUD or copper-releasing intrauterine device) immediately following surgical abortion or at a follow-up 2-4 weeks after medical abortion. Women in the control group were prescribed oral contraceptives. The findings during the follow-up year showed that the number of women requesting subsequent abortion was significantly lower in the intervention than in the control group. The author concluded that in order to decrease the need of subsequent abortions, IUDs should be provided at the time of abortion.

HIV disease progression

A systematic review [52] was identified that assessed whether women living with HIV who use hormonal contraception are at increased risk of HIV-disease progression compared with those who do not use hormonal contraception. Eleven studies including one RCT and ten cohort studies were included. Findings from the RCT showed an increased risk for the composite outcome of a reduced CD4 cell count or death among hormonal contraceptive users when compared with copper IUD users. Cohort studies consistently found no association between hormonal contraceptive use and HIV-disease progression compared with non-use of hormonal contraceptives.

An RCT [53] was identified that evaluated contraceptive adherence to copper intrauterine device (Cu-IUD) and injectable DMPA among women with HIV. A total of 200 HIV-infected women on highly active antiretroviral therapy (HAART) were randomised to either the Cu-IUD or DMPA. Findings indicated that contraceptive adherence between the Cu-IUD and DMPA was similar at 1 year with similar high rates of satisfaction among users of both methods at 1 year.

Treatments of bleeding

An RCT [54] was identified that investigated the effect of vitamin B1 on menstrual bleeding and spotting after insertion of the TCu380A IUD. Women (n=110) who noted that their menstrual flow or intermenstrual spotting had increased one month after the insertion of a TCu380A were randomly assigned to two groups (intervention: 100 mg of vitamin B1 daily, control: placebo). The findings indicated in the intervention group the duration of menstrual bleeding, the number of sanitary pads and the amount of spotting decreased significantly compared to the control group. The authors concluded that vitamin B1 is a safe, natural and cost-effective supplement that is devoid of side effects and reduces menstrual bleeding and spotting caused by a copper bearing-IUD.

Topic expert feedback

Topic experts indicated that there have been huge changes in the provision of sexual health services since publication of the guideline. This includes the change to Public Health being responsible for the provision of contraception, but the CCG are responsible for funding terminations of pregnancy. They stated that

new devices are now in use including mini Mirena and Levosert and there is new UKMEC (2016) launched with the changes relating to LARC. They also indicating that change in service delivery and commissioning led to confusion and less access to LARC. Topic experts emphasised on funding issues and capacity issues with the sexual health services. They indicated that inequalities present for patients to access LARC as many GPs no longer providing the service and waiting times are increasing in local health service leading to more 'accidental' pregnancies for women whilst waiting. The training issue and lack of funding for training and its negative impact on LARC and pregnancy rate was also highlighted by one topic expert.

They also noted that the epidemiologic data regarding the rates of various contraception usage are out of date in CG30 and need to be updated.

Impact statement

Evidence was identified relating to benefits and risks, insertion time, treatments for bleeding irregularities and women experience with cu-IUD which is broadly in line with CG30 current recommendations. New evidence from two observational studies was identified about immediate IUCD insertion following caesarean section. There are currently no recommendations on immediate IUCD insertion following caesarean and the new evidence is insufficient to trigger an update of this question and the addition of new recommendations.

Although new evidence is broadly consistent with guideline recommendations, the topic experts indicated that the service delivery and provision of care have considerably changed since the guideline was developed and the recommendations no longer fit with current practice. Provision of sexual health care service was updated in NICE PH51 (contraceptive services for under 25s) in July 2014. This section of CG30 will be considered for update and inclusion in NICE PH51, at the next surveillance review of PH51.

New evidence is unlikely to change guideline recommendations.

Intrauterine system

Intrauterine system

Recommendations derived from this question

1.3 Intrauterine system

Appendix A lists key features of the IUS to discuss with women, and Appendix B summarises issues affecting choice for specific groups of women and women with medical conditions.

1.3.1 Decision making

1.3.1.1 Women should be given the following information.

Contraceptive efficacy

- The IUS may act predominantly by preventing implantation and sometimes by preventing fertilisation.
- The pregnancy rate associated with the use of the IUS is very low (fewer than 10 in 1000 over 5 years).
- The licensed duration of use for the IUS is 5 years for contraception.
- There is no evidence of a delay in the return of fertility following removal or expulsion of the IUS.

Effects on periods

- Irregular bleeding and spotting are common during the first 6 months following IUS insertion.
- Oligomenorrhoea or amenorrhoea is likely by the end of the first year of IUS use.

Risks and possible side effects

- Up to 60% of women stop using the IUS within 5 years. The most common reasons are unacceptable vaginal bleeding and pain; a less common reason is hormonal (non-bleeding) problems.
- There is no evidence that IUS use causes weight gain.
- Any changes in mood and libido are similar whether using the IUS or IUDs, and the changes are small.
- There may be an increased likelihood of developing acne as a result of absorption of progestogen, but few women discontinue IUS use for this reason.
- The risk of uterine perforation at the time of IUS insertion is very low (less than 1 in 1000).
- The risk of developing pelvic inflammatory disease following IUS insertion is very low (less than 1 in 100) in women who are at low risk of STIs.
- The IUS may be expelled, but this occurs in fewer than 1 in 20 women in 5 years.
- The risk of ectopic pregnancy when using the IUS is lower than when using no contraception.
- The overall risk of ectopic pregnancy when using the IUS is very low, at about 1 in 1000 in 5 years.
- If a woman becomes pregnant with the IUS in situ, the risk of ectopic pregnancy is about 1 in 20, and she should seek advice to exclude ectopic pregnancy.

1.3.2 Other issues to consider before fitting an IUS

1.3.2.1 Women who are aged 45 years or older at the time of IUS insertion and who are amenorrhoeic may retain the device until they no longer require contraception, even if this is beyond the duration of UK Marketing Authorisation*.

1.3.2.2 Contraceptive care providers should be aware that the risk of perforation is related to the skill of the healthcare professional inserting the IUS.

1.3.2.3 Testing for the following infections should be undertaken before IUS insertion:

- Chlamydia trachomatis in women at risk of STIs
- Neisseria gonorrhoeae in women from areas where the disease is prevalent and who are at risk of STIs
- any STIs in women who request it.

1.3.2.4 If testing for STIs is not possible, or has not been completed, prophylactic antibiotics should be given before IUS insertion in women at increased risks of STIs.

1.3.2.5 Women with identified risks associated with uterine or systemic infection should have investigations, and appropriate prophylaxis or treatment before insertion of the IUS.

Specific groups, medical conditions and contraindications

1.3.2.6 The IUS may be used by adolescents, but STI risk should be considered where appropriate.

1.3.2.7 Healthcare professionals should be aware that:

- IUS use is not contraindicated in nulliparous women of any age
- women of all ages may use the IUS.
- the IUS can safely be used by women who are breastfeeding.

1.3.2.8 Healthcare professionals should be aware that:

- there is no evidence that the effectiveness of the IUS is reduced when taking any other medication
- IUS use is not contraindicated in women with diabetes
- IUS is a safe and effective method of contraception for women who are HIV positive or have AIDS (safer sex using condoms should be encouraged in this group)
- all progestogen-only methods, including the IUS, may be used by women who have migraine with or without aura
- women with a history of VTE may use the IUS
- IUS is medically safe for women to use if oestrogen is contraindicated.

1.3.3 Practical details of fitting the IUS

1.3.3.1 Provided that it is reasonably certain that the woman is not pregnant, the IUS may be inserted:

- at any time during the menstrual cycle (but if the woman is amenorrhoeic or it has been more than 5 days since menstrual bleeding started, additional barrier contraception should be used for the first 7 days after insertion)
- immediately after first- or second-trimester abortion or at any time thereafter
- from 4 weeks post-partum, irrespective of the mode of delivery**.

1.3.3.2 Emergency drugs including anti-epileptic medication should be available at the time of IUS insertion in a woman with epilepsy because there may be an increased risk of a seizure at the time of cervical dilation.

Advice for women at time of fitting

1.3.3.3 Women should be informed:

- about symptoms of uterine perforation or infection that would warrant an early review of IUS use
- that insertion of an IUS may cause pain and discomfort for a few hours and light bleeding for a few days, and they should be informed about appropriate pain relief
- about how to check for the presence of IUS threads, and encouraged to do this regularly with the aim of recognising expulsion.

1.3.4 Follow-up and managing problems

1.3.4.1 A follow-up visit should be recommended after the first menses, or 3–6 weeks after insertion, to exclude infection, perforation or expulsion. Thereafter, a woman should be strongly encouraged to return at any time to discuss problems, if she wants to change her method of contraception, or if it is time to have the IUS removed.

1.3.4.2 The presence of *Actinomyces*-like organisms on a cervical smear in a woman with a current IUS requires an assessment to exclude pelvic infection. Routine removal is not indicated in women without signs of pelvic infection.

1.3.4.3 Women with an intrauterine pregnancy with an IUS in situ should be advised to have the IUS removed before 12 completed weeks' gestation whether or not they intend to continue the pregnancy.

* Check the Summary of Product Characteristics of individual devices for current licensed indications. Informed consent is needed when using outside the licensed indications. This should be discussed and documented in the notes.

**At the time of original publication (October 2005), use before 6 weeks post-partum is outside the UK Marketing Authorisation for the IUS. Check the Summary of Product Characteristics for current licensed indications. Informed consent is needed when using outside the licensed indications. This should be discussed and documented in the notes.

Surveillance decision

This review question should not be updated.

Intrauterine system

2-year surveillance summary

Update not required after review of evidence

5-year surveillance summary

Update not required after review of evidence

8-year surveillance summary

Care prior to IUD insertion

A randomised, double-blinded, placebo-controlled pilot study [55] was identified that evaluated the efficacy and tolerability of 10-mg nitroprusside gel (1 mL) or identical placebo gel applied intracervically in 24 nulliparous women immediately prior to IUD placement. Findings indicated that intracervical administration of 10-mg nitroprusside gel immediately prior to IUD insertion does not appear to provide a clinically relevant improvement in patient-reported pain with IUD insertion among nulliparous women.

Risks and benefits

A randomised three-arm, phase II trial [56] was identified that assessed the appropriate dose for a new contraceptive LNG-IUS. A total of 738 women in thirty-seven centres in five European countries were included. Women were randomised to treatment with LNG-IUSs with initial invitro release rates of 12 or 16 microgram/d (LNG-IUS12/16) (n=239) or 20 microgram/d (Mirena) (n=254).The main outcomes were bleeding profile, ease/pain of placement/removal, adverse events. The overall findings showed that LNG-IUS12 and LNG-IUS16 provided effective contraception, acceptable bleeding patterns, and were well tolerated compared with Mirena.

A multicentre, pilot RCT [57] was identified that assessed the efficacy and safety of intrauterine contraception for 23 adolescents aged 14-18 years. Participant randomised to the Copper T 380A intrauterine device (n=11) or the LNG-IUD (n=12) and followed up for 6 months following the insertion. At 6 months, though not statistically significant, adolescent continuation rates trended towards being greater with the LNG-IUD compared to the Copper T 380A. Two Copper T 380A users experienced partial expulsion. Heavy bleeding and pelvic pain were the most commonly reported side effects. Participants rated both methods favourably.

Time of fitting

An RCT [58] was identified that examined if 6-month use of the LNG-IUD would be higher when insertion occurred within 10 minutes of placental delivery compared with 6-8 weeks postpartum. A total of 102 patients were randomly assigned to the postplacental and delayed groups. The findings indicated that intrauterine device use 6 months after delivery is similar in women who have postpartum or scheduled delayed IUD placement. Expulsions are significantly higher with postplacental compared with delayed IUD placement. Women asked to follow up with their own health care providers for delayed insertion were significantly less likely to receive an IUD.

An RCT [59] was identified that assessed the effect of timing of postpartum LNG-IUD insertion on breast-feeding continuation. Women were randomised to immediate postplacental insertion (postplacental group) or insertion 6-8 weeks after vaginal delivery (delayed group). Duration and exclusivity of breast-feeding were assessed at 6-8 weeks, 3 months, and 6 months postpartum. The findings indicated that immediate postplacental insertion of the LNG-IUD is associated with shorter duration of breast-feeding and less exclusive breast-feeding.

An RCT [60] was identified that compared the 6-month usage of the LNG-IUD when placed immediately or 3 to 6 weeks after dilation and evacuation (D&E) procedure. 88 women undergoing D&E at 15 to 23 weeks of gestation were recruited and randomised to immediate or delayed (3 to 6 weeks later) LNG-IUD insertion. The findings showed that significantly more participants had the LNG-IUD placed in the immediate insertion group compared with the delayed insertion group. Intrauterine device expulsion occurred in three subjects (6.8%) and one subject (5.0%) in whom the IUD was placed in the immediate and delayed groups, respectively. No significant adverse events

occurred. The authors concluded that given the low risk of complications, immediate post-D&E insertion of the LNG-IUD should be offered, especially for populations that may have difficulty returning for follow-up.

A prospective randomised pilot study [61] was identified that conducted to determine the feasibility of LNG-IUS insertion at three different times postpartum. Forty two women randomised to three insertion times: immediate (within 10 min of placenta delivery), early (10 min to 48 h postpartum) or interval (>=6 weeks postpartum). The findings showed that insertion of LNG-IUS <=48 h postpartum is feasible and may be associated with similar utilisation at 6 months, increased expulsion rates and decreased pain at insertion when compared to placement after 6 weeks.

Treatments for bleeding

A case control study [62] that evaluated the efficacy of mifepristone to reduce intermenstrual bleeding in LNG-IUS users, was identified. Thirty six women using the LNG-IUS for menorrhagia received 100mg of mifepristone every 30 days for 3 months (group 1). Fifty age-matched LNG-IUS users who did not receive any drugs were used as the comparison group (group 2). Menstrual bleeding days, pictorial blood loss assessment chart (PBAC) score, and intermenstrual bleeding/spotting days were compared between the 2 groups at 3 months (during treatment) and at 6 months (3 months post treatment). The findings showed that at 3 months, median duration and episodes of intermenstrual bleeding/spotting were significantly lower in group 1 compared with group 2. More women were satisfied with the LNG-IUS in the mifepristone group compared with the control group. At 6 months, the median duration of intermenstrual bleeding/spotting was significantly lower in group 1 compared with group 2. Mifepristone was effective in reducing the number of episodes and duration of intermenstrual bleeding/spotting in LNG-IUS users.

An RCT [63] was identified that assessed the efficacy of tranexamic acid or mefenamic acid in the management of the initial "nuisance" bleeding or spotting in the period immediately after placement of the LNG-IUD. A total of 187 women were randomised to tranexamic acid (n=63), mefenamic acid (n=63), or placebo (n=61). The median number of bleeding or spotting days experienced during treatment was 25, 29, and 33 days in the three groups, respectively. The median number of bleeding or spotting days was reduced by 6 days with tranexamic acid and by 3 days with mefenamic acid compared with placebo. Most women (85% or more) were satisfied with the LNG-IUD across the groups. The authors concluded that tranexamic acid and mefenamic acid during the first 90 days after LNG-IUD placement do not improve "nuisance" bleeding or spotting.

An RCT [64] was identified that evaluated whether oral naproxen or transdermal estradiol decreases bleeding and spotting in women who are initiating the LNG-IUD. A total of 129 women who were assigned randomly to naproxen (n = 42 women), estradiol (n = 44 women), or placebo (n = 43 women). The naproxen group was more likely to be in the lowest quartile of bleeding and spotting days compared with placebo (42.9% vs 16.3%). In the multivariable analysis, the naproxen group had a 10% reduction in bleeding and spotting days compared with placebo. More frequent bleeding and spotting was observed in the estradiol group. Overall findings indicated that the administration of naproxen resulted in a reduction in bleeding and spotting days compared with placebo.

Haemoglobin

An observational study [65] was identified that compared the effects of LNG-IUD and copper releasing (Cu T) IUCD on body iron stores and menstrual bleeding patterns. A total of 100 women were divided into two groups of fifty each where either LNG or Cu T 200 IUCD was inserted. Main outcome measures were change in serum ferritin, haemoglobin concentration, menstrual bleeding and spotting days 12 months after insertion. The findings indicated that LNG significantly reduced the number of menstrual bleeding days and increased the haemoglobin and serum ferritin levels. The authors concluded that this may be especially important for women in developing countries where decrease in blood loss may improve iron deficient situations.

12-year surveillance summary

Care prior to insertion

An RCT [66] was identified that examined if insertion of intrauterine contraceptive devices is easier in women who have a full bladder at the time of insertion. 200 women requesting intrauterine contraception with a pre-filled bladder were randomised to delayed emptying (after insertion; n=100) or immediate emptying (before insertion; n=100). The findings indicated that there was no significant difference with reported ease of insertion between the groups. Doctors reported that insertions were either 'very easy' or 'quite easy' in 82% and 83% of women in the immediate and delayed emptying groups, respectively. There was no significant difference in pain scores, with mean pain scores between the two groups. The author concluded that bladder filling does not have a significant effect on ease of insertion of an intrauterine method of contraception.

Risks and benefits

A NICE evidence summary (Long-acting reversible contraception: levonorgestrel 13.5 mg intrauterine delivery system (June 2014) ESNM41 the MPP evidence summary on Jaydess) was identified that describes the safety and effectiveness of levonorgestrel 13.5mg intrauterine delivery system. Evidence was identified from one RCT [67] that evaluated the efficacy and safety of two low-dose LNG-IUDs. Women requesting contraception were randomised to 3 years of treatment with 13.5mg total content LNG-IUD (n=1,432) or 19.5mg total content (n=1,452). The primary outcome was the pregnancy rate. Over the 3-year study period, 0.33 pregnancies per 100 women-years were observed with the 13.5mg intrauterine contraceptive system compared with 0.31 per 100 women-years with the 19.5mg intrauterine contraceptive system. The rates of adverse effect (partial expulsions, discontinuation resulting from an adverse event) were similar between the two groups. The authors concluded that both lower-dose LNG-IUD were highly effective for 3 years of use and generally well tolerated.

An RCT[68] was identified that assessed the efficacy and safety of a new 52-mg levonorgestrel intrauterine contraceptive (LNG20) designed for up to 7 years use. A total of 1600 women were including 1011 (57.7%) nulliparous and 438 (25.1%) obese women were participated. Successful placement occurred in 97.9% women. The cumulative life-table pregnancy rate was 0.55 through 3 years. Expulsion was reported in 62 (3.5%) participants, most during the first year of use. Pelvic infection was diagnosed in 10 (0.6%) women. Only 26 (1.5%) LNG20 users discontinued due to bleeding complaints. The authors concluded that the LNG20 intrauterine system is highly effective and safe over 3 years of use in nulliparous and parous women.

A cluster randomised trial [69] in 40 reproductive health centres was identified that assessed the impact of an IUD and implant intervention on dual method use among young women. A total of 1500 sexually-active women aged 18-25 years who did not desire pregnancy were followed for one year. Findings showed no differences between intervention and control group in dual method use or condom use at one year. Sexually transmitted infections incidence did not differ between intervention and control groups. A provider training intervention to increase LARC access neither compromised condom use nor increased STI incidence among young women.

A systematic review [70] was conducted that assessed the efficacy of the intrauterine device in women with diabetes mellitus type I and II. Seven articles which gave event rate efficacy evaluable results and three which evaluated the effect of the IUD on laboratory parameters were included. One of the earlier efficacy studies showed an abnormally high pregnancy rate. The remaining 6 studies produced acceptable pregnancy rates. Three studies showed that the copper and LNG-IUD /IUS do not affect the diabetic state in any way. The authors concluded that the copper bearing and LNG-IUDs are safe and effective in women with diabetes type I and diabetes type II.

A systematic review [71] was identified that assessed the safety of intrauterine contraception initiation among women with current asymptomatic cervical infections or at increased risk of sexually transmitted infections. Ten studies were included. The findings indicated that IUD placement does not increase the risk of PID compared with no IUD placement.

A systematic review [72] was identified that determined the association between use of

IUDs by young women and risk of adverse outcomes. 14 studies were included. Overall findings indicated that the risk of adverse outcomes related to pregnancy, perforation, infection, heavy bleeding or removals for bleeding among young IUD users was low and might not be clinically meaningful. However, the risk of expulsion, especially for Cu-IUDs, was higher for younger women compared with older women. The authors concluded that IUDs are safe for young women and provide highly effective reversible contraception.

A sub-analysis of an RCT[73] was identified that examined the extended use of the 3-year one-rod etonogestrel (ENG)-releasing subdermal contraceptive implant to 5 years. A total of 1328 women were enrolled: 390, 522 and 416 in the ENG-implant, LNG-implant and IUD groups, respectively. The findings indicated that over 200 women used the ENG implant for at least 5 years. No pregnancies occurred during the additional 2 years of follow up in the ENG or LNG implant group. The overall 5-year K-M cumulative pregnancy rates for ENG- and LNG- implants were 0.6 per 100 Women-Years and 0.8 per 100 Women-Years respectively. Complaints of bleeding changes were similar; however, ENG-users were more likely than LNG-users to experience heavy bleeding. The 2-year rate for pregnancy in the IUD group compared with the two implant groups combined was 4.1 per 100 Women-Years. The authors concluded that the ENG-releasing subdermal implant is still highly effective up to 5 years after insertion. No relevant evidence was identified.

A multicentre randomised, phase III study [74] was identified that compared the LNG-IUS 8, with the ENG subdermal implant with regard to the 12-month discontinuation rate. The study carried out at 38 centres in 6 European countries and 766 women were recruited. The findings showed that the 12-month discontinuation rates were 19.6% and 26.8% in the LNG-IUS 8 and ENG implant groups, respectively. Fewer women in the LNG-IUS 8 group than in the ENG implant group discontinued because of increased bleeding (3.2% vs. 11.3%) or adverse events (14.3% vs. 21.8%).

A systematic review [75] of 18 studies was identified that assessed the safety and expulsion rates of postpartum IUDs. The findings indicated that a LNG-IUS insertion within 48 hours of delivery is safe. Postplacental insertion and insertion between 10 minutes and 48 hours after delivery result in higher expulsion rates than insertion 4 to 6 weeks postpartum, or non-postpartum insertion.

A systematic review [76] was identified that assessed evidence regarding the risk of pelvic infection, HIV disease progression or HIV transmission among women with HIV using IUDs. Eight articles from six study populations, which addressed pelvic infections or other IUD-related complications, were included. The overall findings suggested no differences in infectious complications when comparing IUD complication rates among women with varying levels of HIV disease severity. The authors concluded that the studies generally found no differences in genital viral shedding or disease progression; however, there was little direct evidence to address potential differences related to HIV.

A systematic review [77] was identified that examined IUD continuation rates compared with other forms of contraception in young women aged 25 years and younger. Nine studies were included. Findings suggested that continuation rates for IUDs were generally higher compared with other contraceptive methods for women aged 25 years and younger. There was no statistically significant difference in 12-month continuation between the IUD and another LARC method, the subdermal etonogestrel implant. The authors concluded that in a population with high rates of unintended pregnancies, generally low adherence, and imperfect use with other non-LARCs, IUD use should be encouraged.

Time of fitting

An RCT [78] was identified that compared LNG-IUD use at 1 year after delivery between women randomised to postplacental insertion at the time of caesarean delivery(n=20) and delayed insertion 4-8 weeks after delivery (n=22). The findings showed that expulsion was significantly more common in the postplacental group. The authors indicated that the trial did not answer the intended question as it was halted early due to slow enrolment.

An RCT [79] was identified that investigated if early placement of an IUD at 3 weeks after delivery, compared to placement at 6 weeks, is associated with greater use at 3 months postpartum. Participants were assigned to an early (3 week, n=101) or standard (6 week, n=100) postpartum visit with IUD placement and were followed for 6 months. The findings indicated that IUD use did not differ between groups at 3 months or 6 amongst those women for whom follow-up was available. Pain with insertion and satisfaction did not vary based on actual timing of insertion. The authors concluded that offering IUD placement at 3 weeks postpartum compared to standard scheduling at 6 weeks does not result in increased use at 3 months. However, early IUD placement is acceptable to women and without increased pain.

A systematic review of RCTs [80] was identified that examined the outcomes of IUC insertion immediately after placenta delivery (within 10 minutes), especially when compared with insertion at other postpartum times. A total of 15 trials included. The findings indicated that expulsion by six months was more likely for the immediate group, but the confidence interval was wide. IUC use at six months was more likely with immediate insertion than with standard insertion. Study arms did not differ in use at 3 or 12 months in individual small trials. The authors concluded that benefit of effective contraception immediately after delivery may outweigh the disadvantage of increased risk for expulsion.

An RCT [81] was identified that assessed intrauterine device placement during caesarean delivery and continued use 6 months postpartum. Women (n=112) who were undergoing a caesarean delivery and desired an IUD were randomised to intra-caesarean delivery (n=56) or interval IUD placement (n-=56). The primary outcome was IUD use at 6 months postpartum. Findings indicated that intrauterine device placement at the time of caesarean delivery leads to a higher proportion of IUD use at 6 months postpartum when compared with interval IUD placement.

One systematic review of RCTs [82] was identified that assessed the safety and efficacy of IUD insertion immediately after spontaneous or induced abortion. Twelve trials with 7,119 participants were included. The findings showed that insertion of an IUD immediately after abortion is safe and practical. IUD expulsion rates appeared higher immediately after abortions compared to delayed insertions. IUD use was higher following immediate insertion compared to delayed insertion at six months post-abortion.

Subgroup analysis of a randomised trial [83] was identified that assessed the success and factors affecting early IUD provision after first trimester medical termination of pregnancy (MTOP). A total of 606 women were included and followed for 3 months. The intervention group (n=307) was offered an IUD (either the LNG-IUD or copper-IUD) at a follow-up visit 1-4 weeks after MTOP. The control group (n=299) contacted primary health care for follow-up and contraceptive provision. The findings indicated that 85 (27.7%) women in the intervention group and 38 (12.7%) in the control group received treatment because of presumed adverse event mainly residual tissue. In the control group, 23 (60.5%) of these occurred during the first 2 weeks. IUD expulsion occurred in 12 (5.4%) of the 222 women in the intervention group. The authors concluded that the early insertion following MTOP is safe, and the rate of IUD expulsion is low.

Women experience

An RCT [84] was identified that compared the user satisfaction and adverse events (AEs) with a LNG-IUS 8; average levonorgestrel release rate approximately 8 mug/24 h over the first year [total content 13.5 mg]) and a 30 mug ethinyl estradiol/3 mg drospirenone (EE/DRSP) combined oral contraceptive (COC) in a population of young women. Women (aged 18-29 years) with regular menstrual cycles (21-35 days) were randomised to LNG-IUS 8 (n=279) or EE/DRSP (n=281) for 18 months. The primary endpoint was the overall user satisfaction rate at month 18/end of study visit. The findings indicated that LNG-IUS 8 and EE/DRSP were associated with similarly high user satisfaction rates. However, LNG-IUS 8 users were significantly more likely to prefer to continue their contraceptive method post-study. The authors concluded that a LNG-IUD is an appealing contraceptive option for young women.

An RCT [85] was identified that evaluated the acceptability of postpartum intrauterine device to women. Forty nine (49) women attending prenatal care at a maternity hospital in Malawi were recruited into a trial comparing immediate (10 minutes to 48 hours, n=26) to 6 week postpartum insertion (n=23). Findings indicated that the intrauterine device is acceptable to some postpartum women in Malawi.

An RCT [86] was identified to assess the side effects unrelated to disease activity and the acceptability of combined oral contraceptives (COCs), progestin-only pills (POPs) and IUDs in women with systemic lupus erythematosus (SLE). A total of 162 women with SLE, assigned to COC (n=54), POP (n=54) or IUD (n=54). Follow-up visits were conducted after 1, 2, 3, 6, 9 and 12 months of treatment. The findings showed significantly different discontinuation rates due to any reason or nonmedical reasons were observed among the COC, POP and IUD groups. Nausea was most frequent among COC users, dysmenorrhea among IUD users and acne and hirsutism among POP users. Mean blood pressures remained unchanged. Mild increases in body weight were observed over time in all treatment groups. Most women were satisfied with the use of the assigned contraceptive method.

Topic expert feedback

The topic experts identified the following studies:

A prospective cohort study [87] compared 48 and 60 month continuation rates of LNG-IUD and Cu-IUDs among women enrolled in the Contraceptive CHOICE Project (CHOICE). Women who had either LNG or Cu-IUDs inserted between January 2008 and June 2009 were contacted by telephone and were asked whether they were still using their LNG or Cu-IUDs. Women who reported discontinuation were asked for the reasons and subsequent contraceptive use. The findings indicated that IUD continuation remains high (> 60%) at 48 months with no difference between Cu and LNG-IUDs.

A prospective, non-interventional study [88] compared two-year continuation rates and user satisfaction with the LNG-IUS and the etonogestrel releasing-subdermal implant (ENG implant) in 363 women at 72 sites in Europe. The findings showed that the LNG-IUS is associated with higher continuation rates and user satisfaction than the ENG implant. Bleeding problems was the most reported reason for discontinuing with the ENG implant.

A prospective multicenter study [89] in four European countries was highlighted that examined the bleeding pattern during second consecutive LNG-IUS use. A total of 204 women who wished to continue with LNG-IUS use immediately after the first 5-year period were recruited and followed up until the end of the first year of the second IUS. The findings showed that about 70% of women were free of bleeding during years 2-5 and up to 49% were amenorrheic. Absence of bleeding was associated with high overall satisfaction and continuation rates. No serious adverse events assessed as related to the LNG-IUS use occurred during the 5-year period. The cumulative expulsion rate during the 5-year study period was 1.2%. The overall findings indicated that the consecutive use of LNG-IUS was associated with a predictable bleeding pattern which was absence of the initial period of irregular bleeding after interval insertion and a non-bleeding pattern in the vast majority of women.

Topic experts noted that the epidemiologic data regarding the rates of various contraception usage are out of date in CG30 and need to be updated. They were also concerned about availability of funding for renew health care professional training/competencies. Topic experts stated that new devices are now in use including mini Mirena and Levosert and there is new UKMEC (2016) launched with the changes relating to LARC.

Impact statement

Evidence was identified relating to benefits and risks, insertion time, treatments for bleeding irregularities and women experience with IUD which is broadly in line with CG30 current recommendations. New evidence was also identified about immediate IUD insertion following caesarean section and pre insertion care which currently there are no recommendations on the topics in CG30. However the evidence is limited and insufficient to trigger an update of this question and the addition of new recommendations.

The current recommendations on LNG-IUD were drafted based on Mirena, which was the

available LNG-IUD at the time of guideline development. Topic experts indicated that there are now two new LNG-IUDs products; Levosert and mini Mirena (Jaydess). As the new product may differ in risks and possible side effects, Appendix A and Appendix B may need amending based on the new products' risks and possible side effects.

Furthermore, the current recommendation indicates that the licensed duration of use for the IUS is 5 years for contraception (1.3.1.1) whereas the new products Jaydess and Levosert are licensed for 3 years use. In addition the current recommendation indicates that the IUS may be used by adolescents (1.3.2.6) however, the Summary of Product Characteristics for Levosert states that the product has not been studied in under 16s.

The Summary of Product Characteristics also states that levonorgestrel IUS insertion should not be performed earlier than 6 weeks after delivery but current recommendation states that IUS may be inserted from 4 weeks postpartum, irrespective of the mode of delivery (1.3.3.1).

Checking the Summary of Product Characteristics of individual devices for current licensed indications is an important factor that was highlighted in the footnote of the CG30 recommendations.

The guideline should be read in conjunction with Long-acting reversible contraception: levonorgestrel 13.5 mg intrauterine delivery system (June 2014) ESNM41 evidence summary on Jaydess.

The topic also experts indicated that the service delivery and provision of care have considerably changed since the guideline was developed and the recommendations no longer fit with current practice. Provision of sexual health care service was updated in NICE PH51 (contraceptive services for under 25s) in July 2014. This section of CG30 will be considered for update and inclusion in NICE PH51, at the next surveillance review of PH51.

New evidence is unlikely to change guideline recommendations.

Progestogen only injectable contraceptives

Progestogen only injectable contraceptives

Recommendations derived from this question

1.4 Progestogen-only injectable contraceptives

Appendix A lists key features of progestogen-only injectable contraceptives to discuss with women, and Appendix B summarises issues affecting choice for specific groups of women and women with medical conditions.

1.4.1 Decision making

1.4.1.1 Women should be given the following information.

Contraceptive efficacy

- Progestogen-only injectable contraceptives act primarily by preventing ovulation.
- The pregnancy rate associated with injectable contraceptives, when given at the recommended intervals, is very low (fewer than 4 in 1000 over 2 years) and the pregnancy rate with Depo medroxyprogesterone acetate (DMPA) is lower than that with norethisterone enantate (NET-EN).
- DMPA should be repeated every 12 weeks and NET-EN every 8 weeks[3].

- There could be a delay of up to 1 year in the return of fertility after stopping the use of injectable contraceptives.
- If a woman stops using injectable contraceptives but does not wish to conceive, she should start using a different contraceptive method immediately even if amenorrhoea persists.

Effects on periods

- Amenorrhoea is likely during use of injectable contraceptives; this is:
- more likely with DMPA than NET-EN
- more likely as time goes by
- not harmful.
- Up to 50% of women stop using DMPA by 1 year; the most common reason is an altered bleeding pattern, such as persistent bleeding.

Risks and possible side effects

- DMPA use may be associated with an increase of up to 2–3 kg in weight over 1 year.
- DMPA use is not associated with acne, depression or headaches.
- DMPA use is associated with a small loss of bone mineral density, which is largely recovered when DMPA is discontinued.
- There is no evidence that DMPA use increases the risk of fracture.

1.4.2 Other issues to consider before giving injectable contraceptives

Specific groups, medical conditions and contraindications

1.4.2.1 Because of the possible effect on bone mineral density, care should be taken in recommending DMPA to:

- adolescents, but it may be given if other methods are not suitable or acceptable[4]
- women older than 40 years, but in general the benefits outweigh the risks, and it may be given if other methods are not suitable or acceptable[4].

1.4.2.2 Healthcare professionals should be aware that:

- women with a body mass index over 30 can safely use DMPA and NET-EN
- women who are breastfeeding can consider using injectable contraceptives.

1.4.2.3 Healthcare professionals should be aware that:

- all progestogen-only methods, including injectable contraceptives, may be used by women who have migraine with or without aura
- DMPA is medically safe for women to use if oestrogen is contraindicated
- injectable contraceptives are not contraindicated in women with diabetes
- DMPA use may be associated with a reduction in the frequency of seizures in women with epilepsy
- there is no evidence that DMPA use increases the risk of STI or HIV acquisition
- DMPA is a safe and effective method of contraception for women with STIs, including HIV/AIDS (safer sex using condoms should be encouraged in this group)
- women taking liver enzyme-inducing medication may use DMPA and the dose interval does not need to be reduced.

1.4.3 Practical details of giving injectable contraceptives

1.4.3.1 Injectable contraceptives should be given by deep intramuscular injection into the gluteal or deltoid muscle or the lateral thigh.

1.4.3.2 Provided that it is reasonably certain that the woman is not pregnant, the use of injectable contraceptives may be started:

- up to and including the fifth day of the menstrual cycle without the need for additional contraceptive protection
- at any other time in the menstrual cycle, but additional barrier contraception should be used for the first 7 days after the injection
- immediately after first- or second-trimester abortion, or at any time thereafter
- at any time post-partum.

1.4.4 Follow-up and managing problems

1.4.4.1 Women attending up to 2 weeks late for repeat injection of DMPA may be given the injection without the need for additional contraceptives*.

1.4.4.2 A pattern of persistent bleeding associated with DMPA use can be treated with mefenamic acid or ethinylestradiol.

1.4.4.3 Women who wish to continue DMPA use beyond 2 years should have their individual clinical situations reviewed, the balance between the benefits and potential risks discussed, and be supported in their choice of whether or not to continue.

1.4.4.4 Healthcare professionals should be aware that if pregnancy occurs during DMPA use there is no evidence of congenital malformation to the fetus.

*Refer to CSM advice issued in November 2004. Search for Depo Provera.

Surveillance decision

This review question should not be updated.

Progestogen only injectable contraceptives

2-year surveillance summary

Update not required after review of evidence

5-year surveillance summary

Update not required after review of evidence

8-year surveillance summary

Risk and benefits

A systematic review [90] was identified that examined the effectiveness of hormonal contraceptives in preventing pregnancy among women who were overweight or obese versus women with a lower body mass index (BMI) or weight. Seventeen (17) studies with a total of 63,813 women were included. Overall findings did not indicate an association between higher BMI or weight and effectiveness of hormonal contraceptives.

A systematic review [91] was identified that assessed ectopic pregnancy risk associated with use of implants and progestin-only injectable contraceptives. Fifty-three studies of implants and 28 studies of injectables were included. The overall findings indicated that the progestin-only contraceptive implants and injectables protect against ectopic pregnancy by being highly effective in preventing pregnancy. However, the absolute risk of ectopic pregnancy varies by type of progestin. The authors concluded that the risk of ectopic pregnancy should not be a deterrent for use or provision of these methods.

A systematic review [92] was identified that evaluated the safety of subcutaneous depot medroxyprogesterone acetate (DMPA-SC) among women with various characteristics or medical conditions. A total of 14 studies were included. Ten reported results relevant to DMPA users of varying age or with obesity, endometriosis or HIV; four compared the safety of DMPA-SC and DMPA-IM when used by general populations of healthy women. No consistent differences contraceptive efficacy, weight change, bleeding patterns and occurrence of other adverse effects among obese and non-obese DMPA-SC users were observed. Women with endometriosis using DMPA-SC over 6 months had minimal decreases in bone mineral density, weight gain, few serious adverse events and experienced improved pain symptoms. Women living with HIV tolerated injection of DMPA-SC with rare complications.

A population-based case - control study [93] among 1,028 women was identified that

assessed the association between DMPA use and breast cancer risk. Detailed information on DMPA use and other relevant covariates was obtained through structured questionnaires. The findings showed that DMPA use for 12 months or longer was associated with a 2.2-fold increased risk of invasive breast cancer. This risk did not vary appreciably by tumour stage, size, hormone receptor expression, or histologic subtype.

An RCT [94] was identified that evaluated estrogen supplementation during DMPA initiation. Women initiating DMPA were randomised to receive an estradiol vaginal ring for 3 months versus DMPA alone. The findings showed no statistically significant difference in the median number of bleeding or spotting days in the estrogen ring group (n=26) compared to the DMPA alone group (n=23). Seventy-seven percent of the intervention group received a second injection compared with 70% in the DMPA alone group. The overall findings indicated that vaginal estrogen supplementation during DMPA initiation is acceptable to women and may decrease total bleeding.

A prospective experimental study [95] was identified that assessed the effect of DMPA-SC on serum androgen markers in normal-weight, obese, and extremely obese women. Five normal-weight [body mass index (BMI)=18.5-24.9 kg/m2], five obese (BMI=30-39.9 kg/m2) and five extremely obese (BMI>=40 kg/m2) women were recruited in which 104 mg DMPA-SC was administered at baseline and 12 weeks later. The findings indicated that DMPA-SC use in normal-weight, obese and extremely obese women can decrease serum androgen markers.

A prospective experimental study [96] was identified that compared the impact of DMPA-SC on cardiometabolic markers in obese and normal-weight women. Women with normal-weight (BMI18.5-24.9 kg/m[2]) and obese (BMI>=30 kg/m[2]) received injections of 104 mg DMPA-SC at baseline and 12 weeks later. Markers of cardiometabolic risk measured at baseline and 18 weeks after the first injection. Findings indicated that obese women have an increased baseline cardiometabolic risk when compared with normal-weight women at baseline. There was a significantly greater decline in -cell compensation for insulin resistance in obese women on DMPA after 18 weeks.

A case control study [97] was identified that assessed the risk of venous thrombosis associated with nonoral contraceptives (ie, injectable depot-medroxyprogesterone acetate contraceptives, hormone [LNG-IUD, a contraceptive patch, or a contraceptive implant). 446 patients and 1146 controls were included. Findings showed that injectable depot- medroxyprogesterone acetate contraceptives were associated with a 3.6-fold increased risk of venous thrombosis compared with nonusers of hormonal contraceptives. The use of a LNG-IUD was not associated with an increased risk. The authors concluded that the risk of venous thrombosis was increased for injectable depot-medroxyprogesterone acetate contraceptive users, while there was no increased risk associated with LNG-IUD use. Therefore, the latter seems to be the safest option regarding the risk of venous thrombosis

Weight change

An observational study [98] identified that evaluated the relationship between weight changes at 10 to 14 weeks post-DMPA initiation. Baseline and 10 to 14 weeks post-DMPA initiation data were obtained via retrospective chart review of 86 female adolescent. There was no significant difference in the mean weight change during the 10 to 14 weeks post-DMPA initiation by race for black patients compared to non-black patients. The overall findings indicated that race, and baseline weight were not associated with weight gain 10 to 14 weeks following initiation of DMPA.

Bone density

A case control study [99] was identified that evaluated the relationship between use of hormonal contraceptives, specifically DMPA, and fracture risk. The data was obtained from United Kingdom-based General Practice Research Database. A total of 17,527 incident fracture cases and 70,130 control patients (DMPA exposure: 11 and 8%, respectively) was identified. Compared with non-use, current use of one to two, three to nine, or 10 or more DMPA prescriptions yielded adjusted odds ratio for fractures of 1.18, 1.36, and 1.54, respectively. Fracture risk was highest after longer treatment duration (>2-3 yr), and there was no difference in patients below and above the age of 30 yr. The overall finding suggests that use of DMPA is associated with a slightly increased risk of fractures.

A longitudinal observational study [100] was identified that examined whether increased bone turnover in DMPA users after peak bone mass is associated with bone mineral loss. Women over age 34 were assigned to three groups; established DMPA users (n = 23), discontinuers (n = 14), and controls (n = 27). The findings showed that despite increased biochemical markers of bone turnover in DMPA users, there was no decrease in BMD. Bone turnover markers did not correlate with change in BMD. The authors concluded that in established DMPA users, after peak bone mass, a single normal BMD measurement could provide reassurance for long-term use. Measurement of bone turnover does not predict bone loss in DMPA users

Administration

An RCT [101] was identified that assessed the feasibility of administering DMPA-SC in a pharmacy setting and assessed patient satisfaction. Fifty women, continue or restart any form of DMPA were randomised to receive two subsequent injections at a nearby pharmacy by trained pharmacists or at the clinic. Women completed two follow-up surveys to rate their satisfaction with DMPA-SC and their clinic/pharmacy experiences. The findings showed that the relative risk of returning and receiving a second DMPA-SC injection of women randomised to the pharmacy compared with those randomised to the clinic was 0.73. The relative risk of returning and receiving a third DMPA-SC injection was 0.75. No significant difference in patient satisfaction with location, convenience, privacy, and respect from providers was found between study groups. There was no significant difference in attitudes or satisfaction among women between their two follow-up injections.

HIV disease progression

A systematic review of observational studies [102] was identified that assessed whether hormonal contraception alters the risk of HIV transmission from an HIV-positive woman to an HIV-negative male partner. Seven of eight indirect studies indicated no adverse effect of various hormonal contraception methods on plasma viral load. The only direct study on OCPs or injectable contraception and female-to-male HIV transmission suggests increased risk with the use of injectables.

An observational study [103] was identified that assessed the hormonal contraceptive use and risk of HIV-1 disease progression. The study carried out among 2,269 chronically HIV-1-infected women from seven countries in eastern and southern Africa. The primary outcome was a composite endpoint of CD4 decline, initiation of antiretroviral therapy, or death. Overall findings showed that among African women with chronic HIV-1 infection, use of hormonal contraception was not associated with deleterious consequences for HIV-1 disease progression.

Treatments of bleeding

A systematic review [104] was identified that evaluated preventive and therapeutic approaches to normalise bleeding irregularities associated with the use of progestin-only contraceptives. Thirty-three RCTs with 3,677 participants were included. The findings indicated that the estrogen treatments reduced the number of days of an ongoing bleeding episode in DMPA and Norplant users. However, more discontinuation due to gastrointestinal upset was reported. Combinations of oral ethinyl estradiol and levonorgestrel improved bleeding patterns in Norplant users, but with high rate of discontinuation. Successful use of combined oral contraceptives in treating amenorrhea among DMPA users was reported in one included trial. Anti-progestin mifepristone used in Norplant users, reduced days of bleeding during treatment compared to those with placebo. Mifepristone used monthly by new Norplant acceptors reduced bleeding, when compared to placebo. A variety of NSAIDS showed mixed results for their ability to treat abnormal bleeding. Norplant users receiving SERM (tamoxifen) had less unacceptable bleeding after treatment and were more likely to continue using Norplant than those receiving placebo. Tranexamic acid, mifepristone combined with an estrogen and doxycycline were more effective than placebo in terminating an episode of bleeding in women using progestin-only contraceptives, according to three small studies. The authors concluded that the results of the review do not support routine clinical use of any of the regimens included in the trials, particularly for long-term effect.

An RCT [105] was identified that examined the effect of injectable contraception. Doxycycline (DOX) compared to placebo in treating a current bleeding episode during depot DMPA use. Women were randomly assigned to receive 100 mg DOX twice daily for 5 days (34 patients) or an identical placebo (34 patients).

The findings indicated that DOX treatment caused no significant difference compared to placebo in the number of bleeding and/or spotting days in the 3 months following the treatment. The authors concluded that doxycycline is not effective in stopping bleeding with DMPA.

12-year surveillance summary

A NICE evidence summary (Long-acting reversible contraception: subcutaneous depot medroxyprogesterone acetate (DMPA-SC)) was identified that describes the safety and effectiveness of DMPA-SC. The evidence summary is based on one RCT with 534 participants and two non-comparative studies with 16,023 women. The studies were aimed to assess efficacy, safety, and user satisfaction in women receiving DMPA-SC or DMPA-IM (intramuscular) injections. The overall findings indicated that DMPA was associated with significant loss of bone mineral density (BMD), which was greater with increasing duration of use (no statistically significantly different in the DMPA-SC and DMPA-IM groups). There was no significant difference between DMPA-IM and DMPA-SC in the decrease in BMD after 3 years' use. Weight gain was possible with both DMPA-SC and DMPA-IM but there was wide variation between individual women.

Administration

A systematic review [106] was identified that assessed the effectiveness and safety of the contraceptive injectable method when women themselves administer it. A total of 3 studies were included. The findings showed that there may be little or no difference in continuation rates when women self-administer contraceptive injections (326 per 1000 women) compared with administration by healthcare providers (304 per 1000 women). No serious adverse events were reported in the included studies. The authors concluded that with appropriate information and training the provision of contraceptive injectable for the woman to self-administer at home can be an option in some contexts.

An RCT [107] was identified to evaluate the feasibility, acceptability, continuation, and trough serum levels following self-administration of subcutaneous (sc) DMPA. Women (n=137) were randomised to self or clinician administered sc DMPA 104 mg. The findings indicated that self-administration and clinic administration resulted in similar continuation rates and similar DMPA serum levels. The authors concluded that self-administration of sc DMPA is feasible and may be an attractive alternative for many women.

Weight change

A systematic review [108] was identified that evaluated the association between progestin-only contraceptive use and changes in body weight. Twenty-two studies with a total of 11,450 women were included. The overall findings showed limited evidence of change in weight or body composition with use of progestin-only contraceptives (POCs). Mean weight gain at 6 or 12 months was less than 2 kg (4.4 lb) for most studies. Those with multiyear data showed mean weight change was approximately twice as much at two to four years than at one year, but generally the study groups did not differ significantly. The authors concluded that the appropriate counselling about typical weight gain may help reduce discontinuation of contraceptives due to perceptions of weight gain.

Risk of HIV acquisition

A systematic review [109] was identified that examined if the risk of HIV infection in DMPA users. Studies were included in the meta-analysis that had examined the association between use of DMPA and the presence (cross-sectional studies, n = 8) or acquisition (longitudinal studies, n = 16) of HIV+ status in women. Statistically significant positive associations between DMPA use and HIV positivity were observed both in cross-sectional and longitudinal studies.

A meta-analysis of 12 observational studies [110] was identified that assessed the hormonal contraceptive use and women's risk of HIV acquisition. The overall findings showed an increase in HIV risk in the ten studies of depot medroxyprogesterone acetate with a smaller increase in the risk for women in the general population. There was no evidence of an increased HIV risk in ten studies of oral contraceptive pills or five studies of norethisterone enanthate.

Breast feeding

A systematic review [111] was identified that assessed the safety of the progesterone-releasing vaginal ring (PVR) among lactating women. Seven were included. All studies were of a prospective cohort design. The finding from all studies consistently showed that use of the PVR among breastfeeding women

compares favourably to other methods of contraception with regard to effectiveness, does not compromise a woman's breastfeeding performance, and does not adversely affect infant growth during the first year postpartum. The authors concluded that the PVR is a safe and highly effective method of contraception use among breastfeeding women.

Topic expert feedback

A cross sectional study [112] was highlighted by a topic expert that examined the acceptability of receiving contraceptive injections from a community pharmacist in women attending a large urban sexual and reproductive health clinic. A total of 220 women completed the questionnaire. Of the 191 current non-users, 33% indicated that they would consider using this method if it was available at the pharmacy. The main apparent advantages of attending the pharmacy were quicker appointments (52%) and easier access (47%). The authors concluded that provision of the injectable contraceptive from a pharmacist might make this method attractive to almost one in three women who are not currently using it.

Topic experts specified that there are new products and method of administration in use and subcutaneous version of DMPA are now licensed for self-administration (Sayana Press).

One topic expert expressed that “the guideline includes progestin injectables as LARC and they are really no longer considered to be such. The guideline defines LARC purely on the basis of duration of action which is fair if taken literally but now most people think of LARC as methods which require removal by a health provider and which as a result have high continuation rates and very low failure rates. DMPA does not fit this definition”.

One topic expert indicated that injectable contraceptives are preferentially provided for those with learning disability in a disproportionate manner and CG30 guideline pre-dates the implementation of the Mental Capacity Act 2005.

Impact statement

Topic experts highlighted that a new subcutaneous formulation of medroxyprogesterone injection is now available (Sayana Press). Appendix A and appendix B of CG30 were drafted based on the available products at the time of guideline development; NET-EN (Noristerat) and DMPA (Depo-Provera). Appendices A and B need to be amended based on the available new products and their risks and possible side effect which may differ from NET-EN and DMPA. The Summary of Product Characteristics also states that Sayana should not be performed earlier than 6 weeks after birth and should not be used in adolescents.

The guideline should be read in conjunction with ESNM31 Long-acting reversible contraception: subcutaneous depot medroxyprogesterone acetate (DMPA-SC), the MPP report on Sayana Press®.

There is evidence that self-administration of sc DMPA is feasible and may be an alternative for many women. There are no recommendations currently regarding the self-administration and new evidence does not definitively establish the basis for recommending the practice. The evidence in relation to risks and benefits of the DMPA is consistent with recommendations in section 1.4.

The evidence from a systematic review regarding DMPA and HIV suggests an increased risk of HIV acquisition with DMPA use. This may have an impact on current recommendation that states “there is no evidence that DMPA use increases the risk of STI or HIV acquisition” (1.4.2.3). However the studies were heterogeneous in matters of population and intervention and the evidence does not provide solid basis for changing the recommendation.

The topic experts also indicated that the service delivery and provision of sexual health care have considerably changed since the guideline was developed and the recommendations no longer fit with current practice. Provision of sexual health care service was updated in NICE PH51 (contraceptive services for under 25s) in July 2014. This section of CG30 will be considered for update and inclusion in NICE PH51, at the next surveillance review of PH51.

New evidence is unlikely to change guideline recommendations.

Progestogen only subdermal implants

Progestogen only subdermal implants

Recommendations derived from this question

1.5 Progestogen-only subdermal implants

Appendix A lists key features of progestogen-only subdermal implants to discuss with women, and Appendix B summarises issues affecting choice for specific groups of women and women with medical conditions.

1.5.1 Inform women that etonogestrel implants* have a very low failure rate (less than 1 pregnancy per 1000 implants fitted over 3 years). [new 2014]

1.5.2 Inform women that vaginal bleeding patterns are likely to change while using an etonogestrel implant. Vaginal bleeding may stop, become more or less frequent, or be prolonged during implant use. [new 2014]

1.5.3 Inform women that dysmenorrhoea may reduce during etonogestrel implant use. [new 2014]

1.5.4 Inform women that there is no evidence showing a delay in return to fertility after an etonogestrel implant is removed. [new 2014]

1.5.5 Inform women that complications with etonogestrel implant insertion and removal are uncommon. (Possible complications are listed in the summary of product characteristics.) [new 2014]

*At the time of publication (September, 2014), Nexplanon was the only subdermal implant licensed in the UK and did not have UK marketing authorisation for use outside of the age range 18-40 years. Outside of this age range, the prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Good practice in prescribing medicines – guidance for doctors and the Nursing and Midwifery Council's Standards of proficiency for nurse and midwife prescribers for further information.

Surveillance decision

This review question should not be updated.

Progestogen only subdermal implants

2-year surveillance summary

Update not required after review of evidence.

4-year surveillance summary

Update not required after review of evidence.

8-year surveillance summary

As this section of the guideline was scheduled to undergo a rapid update it was not considered during the 8-year surveillance review.

12-year surveillance summary

Risk and benefits

A multicentre randomised, phase III study [74] was identified that compared the LNG-IUS 8, with the ENG subdermal implant with regard to the 12-month discontinuation rate (primary outcome). The study carried out at 38 centres in 6 European countries and 766 women were recruited. The findings showed that the12-month discontinuation rates were 19.6% and 26.8% in the LNG-IUS 8 and ENG implant groups, respectively. Fewer women in the LNG-IUS 8 group than in the ENG implant group discontinued because of increased bleeding (3.2% vs. 11.3%) or adverse events (14.3% vs. 21.8%).

A multicentre RCT [113] evaluated whether a etonogestrel releasing subdermal contraceptive implant affect the efficacy of medical abortion if inserted immediately at the same visit as, mifepristone, at medical abortion or inserted at 2-4 week follow up. The insertion rate was

275/277 (98.9%) in the immediate group compared to 187/261 (71.6%) women in the routine group (2-4 weeks). At 6 months of follow-up significantly fewer women in the immediate group had become pregnant again (2/277, 0.8%) compared to the routine group (10/261, 3.8%). The overall findings showed that etonogestrel releasing subdermal implant inserted on the day of mifepristone did not impair the efficacy of the medical abortion compared with routine insertion at 2-4 weeks after the abortion.

A systematic review [114] was identified that investigated the clinical outcomes of breastfeeding duration, initiation of supplemental feeding and weaning, as well as infant outcomes including infant growth, health and development among breastfeeding women using POCs compared with breastfeeding women not using POCs (including IUD and implants). Forty-seven studies were included that investigated the use of POCs in breastfeeding women and reported clinically relevant outcomes of infant growth, health or breastfeeding performance. Studies generally failed to show negative effects of the use of POCs on breastfeeding outcomes or on infant growth or development. The overall findings showed no adverse breastfeeding outcomes or negative health outcomes in infants such as restricted growth, health problems or impaired development associated with using POCs.

A systematic review [115] was identified that assessed ectopic pregnancy risk associated with use of implants and progestin-only injectable contraceptives. Fifty-three studies of implants and 28 studies of injectables were included. The overall findings indicated that the progestin-only contraceptive implants and injectables protect against ectopic pregnancy by being highly effective in preventing pregnancy. The authors concluded that the risk of ectopic pregnancy should not be a deterrent for use or provision of these methods.

A multicentre RCT [116] was identified that accessed the difference in the clinical performance of the 3-year one-rod ENG and the 5-year two-rod LNG-IUD implants during 3 years of insertion, and between implant and IUD contraception. A total of 2,982 women were enrolled. The findings indicated that the cumulative contraceptive effectiveness after 3 years and method continuation through 2.5 years were not significantly different between ENG and LNG implants, but both outcomes were significantly worse in the non-randomised age-matched group of IUD users than in the combined implant group.

Time of fitting

An RCT [117] was identified that examined the effect of immediate postpartum insertion of the ENG implant on breast milk volume. Women and their newborns (NBs) were randomised into two groups: Implant group (ENG implant inserted within 48 h after delivery, n=12) and Control group (absence of contraceptive method, n=12). The primary outcome was the amount of breast milk intake by the NBs in the first 6 weeks after delivery. The findings indicated that there was no significant difference between the two groups in median breast milk intake and exclusive breastfeeding rate and NB weight were similar between groups in the first 6 weeks postpartum. The authors concluded that ENG implant insertion immediately postpartum does not alter the volume of breast milk intake by NBs.

An RCT [118] was identified that compared immediate postpartum insertion of the contraceptive implant to placement at the 6-week postpartum visit among adolescent and young women. Ninety-six participants were randomised into the trial. The findings indicated that there was no difference in use at 12 months between the immediate group and the 6-week group (81% vs. 78%). At 3 months, the immediate group was more likely to have the implant in place (92% vs. 70%). The authors concluded that providing contraceptive implants to adolescents prior to hospital discharge takes advantage of access to care, increases the likelihood of effective contraception in the early postpartum period, appears to have no adverse effects on breastfeeding, and may lead to increased utilisation at one year postpartum.

Treatment of bleedings

An RCT [119] was identified that assessed the effect of combined oral contraceptive treatment for bleeding complaints with the etonogestrel contraceptive implant. Participants received continuous COCs or placebo for four weeks to evaluate self-reported bleeding improvement at four weeks. The study was closed after

enrolling 26 participants due to recruitment ineffectuality. Women on COCs had significant bleeding improvement at four weeks compared with placebo users. The authors concluded that although, women who have bleeding while using the contraceptive implant may experience improvement with no treatment over 4 weeks, women using COCs were more likely to report significant improvement.

An RCT [120] was identified that examined if a short course of tamoxifen would reduce bleeding/spotting days and increase satisfaction in etonogestrel contraceptive implant users compared to placebo. Fifty six (56) women were randomised to receive tamoxifen 10mg or placebo twice daily for seven days. A text message-bleeding diary was completed for 180 days. The findings showed that 30 days after study, tamoxifen users experienced significantly fewer days of bleeding/spotting than placebo. Duration of amenorrhea after therapy was longer for tamoxifen subjects than placebo. Satisfaction was higher in the tamoxifen group and side effects were similar.

Topic expert feedback

Topic experts indicated that there have been huge changes in the provision of sexual health services since publication of the guideline. These include the changes both in the LARC products available, service provision and potential costs of LARC. They commented that Public Health being responsible for the provision of contraception, but the CCG are responsible for funding terminations of pregnancy. They described that change in service delivery and commissioning led to confusion and less access to LARC. Topic experts also emphasised on funding issues and capacity issues with the sexual health services. They indicated that inequalities present for patients to access LARC as many GPs no longer providing the service and waiting times are increasing in local health service leading to more 'accidental' pregnancies for women whilst waiting. The training issue and lack of funding for training and its negative impact on LARC and pregnancy rate was also highlighted by one topic.

Topic experts commented that intravascular insertion of implants (previously only suspected) has now been documented. One topic expert commented that new categories considered in UKMEC (2016) revision about implant insertion in women with cardiac conditions. One topic expert stated that the recommendation in the CG30 2014 addendum to inform women that complications with the etonogestrel implant insertion and removal are uncommon, is inadequate and misleading. It was stated that the recommendation is not in step with proper consent as laid down in English case law. Topic experts stated that the recent MHRSA drug safety on Nexplanon implants reported cases of implants having reached the lung via the pulmonary artery.

Impact statement

This section on progestogen only subdermal implants was updated in 2014 and the new evidence is consistent with current recommendations. However, topic experts raised concerns about its safety and highlighted the recent MHRSA drug safety on Nexplanon implants which reported cases of implants having reached the lung via the pulmonary artery. This may Impact the section on the 'other risks' in appendix A of CG30 which lists key risk features of progestogen only subdermal implants to discuss with women.

Topic experts indicated that the service delivery and provision of sexual health care have considerably changed since the guideline was developed and the recommendations no longer fit with current practice. Provision of sexual health care service was updated in NICE PH51 (contraceptive services for under 25s) in July 2014. This section of CG30 will be considered for update and inclusion in NICE PH51, at the next surveillance review of PH51.

New evidence is unlikely to change guideline recommendations.

Research recommendations

Few women use contraception perfectly (that is, exactly in accordance with the product instructions) and consistently. Pregnancy rates during typical use reflect effectiveness of a method among women who use the method incorrectly or inconsistently. Few data are available on typical use of any contraceptive method among women in the UK. Much of the data on contraceptive effectiveness used in the guideline come from clinical trials or surveys undertaken in other countries such as the USA. Large prospective cohort studies are needed to compare the contraceptive effectiveness of LARC methods with non-LARC methods during typical use in the UK. [2005]

Surveillance decision

No new evidence was identified that would affect this research recommendation. This research recommendation will be considered again at the next surveillance point.

Most women will need to use contraception for more than 30 years. Patterns of contraceptive use vary with age, ethnicity, marital status, fertility intention, education and lifestyle. Large prospective cohort studies are needed to identify:

Surveillance decision

No new evidence was identified that would affect this research recommendation. This research recommendation will be considered again at the next surveillance point.

In addition to individual circumstances and needs, a woman's choice and acceptance of LARC may be influenced by potential health disbenefits (side effects and risks) as well as non-contraceptive benefits of LARC (such as alleviation of menorrhagia). Large population studies of appropriate design are needed to determine the effect of these factors on the uptake of LARC methods and the implications for NHS resources. [2005]

Surveillance decision

No new evidence was identified that would affect this research recommendation. This research recommendation will be considered again at the next surveillance point.

RR – 01 The effect of injectable contraceptives on bone mineral density in women who have used DMPA for longer than 2 years is uncertain. Adequately powered surveys or cross-sectional studies are needed to examine the recovery of bone mineral density after discontinuation of DMPA after long-term and very long-term use. Studies are also needed to examine the risk of bone fractures in older women. [2005]

Surveillance decision

No new evidence was identified that would affect this research recommendation. This research recommendation will be considered again at the next surveillance point.

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