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Contents

Table of tables

List of abbreviations

CPR – Contraceptive prevalence rate

DHS – Demographic and health surveys

EC – Emergency contraception

FPE – Family planning Programme Effort Index

ICPD – International conference on population and development

IUD – Intrauterine device

LAM – Lactational amenorrhea method

MDG – Millennium development goal

OoR – Overview of Systematic Reviews

RR – Risk Ratio

Structured abstract

Background:

In many low-and middle-income countries, there is high maternal, infant and child mortality due in part to low contraceptive use and high unmet need for family planning. The aim of this Overview of Systematic Reviews is to synthesise the findings of systematic reviews conducted in this area to assess the impact of various contraceptive methods and mixes of contraceptive methods on contraceptive prevalence, unwanted and unintended pregnancies, and unmet need (want to limit number of children but not using any contraception) for family planning in developing countries/regions.

Methods:

Eight databases (Bioline international, The Cochrane Library, Latin American and Caribbean Health Sciences Literature - LILACS, Popline, Pubmed, Turning Research Into Practice, World Health Organisation reproductive library and Zetoc) were searched from 28.10.2010 to 08.12.2010. Cochrane and non-Cochrane systematic reviews were included. Eligible reviews included studies whose participants were sexually active women or men from countries classified as "developing", "low income" or "middle income". Systematic reviews of any intervention (or combination of interventions) designed to increase contraceptive prevalence, reduce fertility or both were eligible. Data was extracted and synthesised in a narrative manner. 'A Measurement Tool to Assess Systematic Reviews', AMSTAR, was used to evaluate the quality of the included systematic reviews, and 'Grading of Recommendations, Assessment, Development and Evaluation' (GRADE) was used to evaluate the quality of the body of evidence for each comparison. To aid the interpretation of the findings for a variety of settings, relevant contextual information was presented where possible.

Results:

There were 23 systematic reviews included in this Overview of Reviews. The overview examined a range of contraceptive methods, including modern (terminal and spacing) and traditional methods (methods of family planning generally such as withdrawal and periodic abstinence which do not require contraceptive substances or devices and also do not require clinical procedures). However, these systematic reviews did not address all the objectives of the Overview.

Evidence from systematic reviews is lacking about the acceptability of contraceptive methods, and their impact on prevalence and on unmet needs for family planning. The relative effectiveness of a variety of contraceptive methods to prevent pregnancy in developing countries is generally low quality. There is some high quality evidence comparing different derivatives of same contraceptive methods, although this is more often evidence of efficacy than evidence of effectiveness. The results of the review are summarised below according to the objectives.

Objective 1: To assess the impact of various contraceptive methods and mixes of contraceptive methods on contraceptive prevalence in developing countries/regions.

There was no systematic review on the impact of contraceptive methods and mixes of methods on contraceptive prevalence in developing countries.

Objective 2: To assess the impact of various contraceptive methods and mixes of contraceptive methods on unwanted and unintended pregnancies in developing countries/regions.

The body of evidence for the relative efficacy or effectiveness of a variety of contraceptive methods to prevent pregnancy in developing countries was generally rated as low or moderate. There was however a number of comparisons (between different derivatives of same contraceptive methods) for which the evidence was rated as high or moderate quality. Evidence from systematic reviews is lacking about the acceptability of contraceptive methods, and their impact on prevalence and on unmet needs for family planning. The relative effectiveness of a variety of contraceptive methods to prevent pregnancy in developing countries is generally low quality. There is some high quality evidence comparing different derivatives of same contraceptive methods, although this is more often evidence of efficacy than evidence of effectiveness.

Objective 3: To assess the impact of various contraceptive methods and mixes of contraceptive methods on unmet need for family planning in developing countries/regions.

- There was no systematic review on the impact of contraceptive methods and mixes of methods on unmet need for family planning in developing countries..

Limitations and conclusions:

This Overview of Reviews could not identify any systematic reviews that could answer all the questions set out in the protocol, particularly those related to outcomes such as contraceptive prevalence and unmet need for contraception. This indicates lack of evidence either in the form of systematic reviews or in primary research. Thus, this Overview of Reviews points out the need to either undertake Systematic Reviews or RCTs (where these are possible to perform) or non-RCT/observational studies (where RCTs are not possible to perform). The Overview of Reviews, however, did provide an opportunity to compare effectiveness of various contraceptive methods on the outcome measures such as pregnancy and continuation. However much of the available evidence in this area is based on a limited number of poorly conducted studies comparing different formulations of the same type of contraceptive; there is a lack of evidence from well designed studies comparing different types of contraceptives in developing country settings across a wider range of outcomes (e.g. to include birth spacing and unmet need for family planning). It was not possible to present evidence on the included outcomes for a number of types of contraception: male condoms, female condoms, diaphragms, vasectomy, skin patches and vaginal rings. The evidence examining traditional methods was particularly weak.

Executive Summary

i. *Background*

Unintended pregnancies contribute towards accelerated population growth, and lead to closely spaced pregnancies and births, early child bearing, and abortions. These in turn contribute to high maternal and infant mortality (Sedgh et al, 2006). Despite the existence of official family planning programmes, in many developing countries contraceptive prevalence is low (United Nations, 2009) and women continue to have an unmet need for family planning (USAID, 2005). In general, access to a wide range of contraceptive methods is linked to higher levels of overall contraceptive prevalence (Ross et al, 2002; Magadi and Curtis, 2003). Factors including policy, provider bias, history of a method within a country, properties of methods e.g. effectiveness, acceptability and client characteristics also play a role in the methods utilised by the population (Sullivan et al, 2006). Hence, context is an important consideration and there is a need to examine the impact of different contraceptives (and combinations of contraceptives) on unmet need for family planning in the context of each developing country. Systematic reviews have been conducted in this area, but this evidence has not been brought together, and has not always been examined taking into account contextual factors. We therefore conducted an Overview of Systematic Reviews to enable policy makers to identify those contraceptive methods (or range of contraceptive methods) likely to be most successful in the context of a particular country or region.

ii. *Objectives*

Given the above background and conceptual framework, the specific objectives of the proposed Overview of Systematic Reviews (OoR) are:

1. To assess the impact of various contraceptive methods and mixes of contraceptive methods on contraceptive prevalence in developing countries/regions.
2. To assess the impact of various contraceptive methods and mixes of contraceptive methods on unwanted and unintended pregnancies in developing countries/regions.
3. To assess the impact of various contraceptive methods and mixes of contraceptive methods on unmet need for family planning in developing countries/regions.

Wherever possible the review will try to provide findings for various regions: Sub-Saharan Africa, North Africa, South Asia, Southeast Asia, West Asia, Latin America and Caribbean.

iii. *Methods*

This was an Overview of Cochrane and non-Cochrane systematic reviews of randomised and non-randomised trials, observational studies, and economic evaluations. Eligible reviews included studies whose participants were sexually active women or men from countries classified as “developing”, “low income” or “middle income”. Systematic reviews of any intervention (or combination of interventions) designed to increase contraceptive prevalence, reduce fertility or both (in order to prevent unwanted pregnancies; delay pregnancies; space pregnancies; limit fertility) were eligible. Primary outcomes of interest were contraceptive prevalence, unwanted pregnancies, unintended pregnancies and unmet need for family planning. Secondary outcomes were initiation of contraceptive use, continuation of contraceptive use, adherence to contraception, time between pregnancies and time between births. Searches were carried out in the following databases: Bioline international, The Cochrane Library, LILACS, Popline, Pubmed, TRIP, WHO reproductive libarary and Zetoc, from 28.10.2010 to 08.12.2010, with no restriction on date. The search strategy included key worlds that can capture all studies on family planning and associated interventions, without limits on the primary and secondary outcomes. Titles and full texts were independently screened by two review authors. Data was extracted from included studies by two independent review authors using a data collection form designed for this review. Disagreements were resolved via a third author and discussion amongst the team. The AMSTAR tool was used to assess how well the included reviews were conducted. The GRADE approach (‘Grading of Recommendations, Assessment, Development and Evaluation’) was used to assess the overall quality of the evidence in the included studies. The overall approach to synthesis was descriptive, and we did not seek to run a meta-analysis based on the pooled results from systematic reviews as there was heterogeneity across systematic reviews. Data was interpreted with respect to quality of the evidence.

iv. *Details of the included reviews*

Twenty-three systematic reviews were included in this Overview; twenty of which were Cochrane systematic reviews and three of which were articles in peer-reviewed journals. The systematic reviews can be grouped into ten types of contraception (examined at different levels): natural family planning, injectables, intrauterine devices, oral contraceptives, emergency contraception, sterilisation, spermicide, reversible contraception, hormonal and non-hormonal contraception. The reviews assessed a wide variety of outcomes, however, of these only certain outcomes met the inclusion criteria for the Overviews; continuation/discontinuation of contraceptives and pregnancy. Within the included systematic reviews data could be extracted from studies conducted in a number of developing countries (some of which were multi-centre: Argentina, Bangladesh, Brazil, Colombia, Chile, China, Egypt, Ecuador, Ghana, Guatamala, India, Indonesia, Kenya, Malaysia, Mexico, Nepal, Nigeria, Pakistan, Peru, Philippines, Poland, Taiwan, Thailand, Turkey, Vietnam, Zambia) and over a wide period of time (1973-2007).

v. *Synthesis results and conclusions*

Results

Results are presented according to the objectives of the study. The majority of the individual studies included in the systematic reviews were randomised or non-randomised trials. In many systematic reviews very little information is available about how individual studies (within systematic reviews) have recruited participants for various trials, how many have participated in the trials and how many have discontinued trials. This would have helped to examine acceptability or effectiveness/efficacy of various contraceptive methods.

Evidence from systematic reviews is lacking about the acceptability of contraceptive methods, and their impact on prevalence and on unmet needs for family planning. The relative effectiveness of a variety of contraceptive methods to prevent pregnancy in developing countries is generally low quality. There is some high quality evidence comparing different derivatives of same contraceptive methods, although this is more often evidence of efficacy than evidence of effectiveness.

Objective 1: To assess the impact of various contraceptive methods and mixes of contraceptive methods on contraceptive prevalence in developing countries/regions

- There was no systematic review on the impact of contraceptive methods and mixes of methods on contraceptive prevalence in developing countries.

Objective 2: To assess the impact of various contraceptive methods and mixes of contraceptive methods on unwanted and unintended pregnancies (and continuation and discontinuation of family planning methods) in developing countries/regions.

The body of evidence for the relative effectiveness of a variety of contraceptive methods to prevent pregnancy in developing countries was generally rated as low or moderate. There was however a number of comparisons (between different derivatives of the same contraceptive methods) for which the evidence was rated as high or moderate quality.

In the following paragraphs we present the efficacy or effectiveness of each modern and traditional family planning methods on pregnancy, continuation and discontinuation.

Modern contraceptive methods:

Pregnancy

- **Female sterilisation:** There was only one systematic review dealing with female sterilisation; there was moderate quality evidence from two RCT studies (number of participants: 724) demonstrating that rings and clips are equally efficacious (Peto OR=1.09, 95%CI 0.22, 5.36) to prevent pregnancy, although evidence on other methods of tubal occlusion is of low quality.

- **The Pill (Oral contraception):** Seven systematic reviews examining oral contraceptives contained data from developing countries and were included in this Overview of Reviews. For the majority of comparisons, the evidence suggested that there was no difference in effectiveness between a variety of oral contraceptive formulations and modes of administration, and for all comparisons pregnancy rates were low in each group. However, the quality of evidence ranged widely, from very low to moderate, and follow-up was generally short. There was however moderate quality evidence from two RCT studies (number of participants: 2074) in the case of one oral contraceptive to favour a second generation pill (monophasic norgestrel 0.3mg/EE 30mcg) over the first (monophasic norethindrone acetate 1.5mg/EE 30mcg) (RR=0.12, 95% CI 0.02, 0.99) in preventing pregnancy.
- **The Intrauterine devices:** There is high quality evidence from one systematic review to support the programmatic use of the TCU380A intrauterine device over the Multiload Cu375 device: (Rate difference = 0.75, (95% CI 0.13, 0.37) at one year (2 RCT studies, 3371 participants), and 1.50 (95% CI 0.09, 2.91), at two years follow-up (1 RCT study, 1894 participants).
- **Injectables:** Although moderate quality evidence from one systematic review of two RCT studies (number of participants:4272) suggests that there is little to favour the use of two-monthly injections of NET-EN/E2V 50mg over three-monthly injections of DMPA/E2c 5mg, (Peto OR=0.75 (95%CI 0.67,0.84), there was no difference in effectiveness of pregnancy prevention (one RCT study with 3915 participants: Peto OR = 1.95, 95% CI 0.53, 7.20). Where newer products are concerned, the evidence favours NET-EN/E2V over DMPA/E2C since it is equally effective at reducing the risk of pregnancy. There is as yet insufficient data from developing countries to evaluate the comparison of the newer NET-EN/E2V formulation against the 'traditional' DMPA 150 mg regimen. There is moderate quality evidence from one systematic review of one RCT study, that copper intrauterine device (IUDs) are no more effective than depot progestogens to prevent pregnancy.
- **Implants:** Low quality evidence from one systematic review (number of participants: 1219) suggests that the two implants Implanon and Norplant reduce the risk of pregnancy.
- **Emergency contraception (EC):** There is moderate quality evidence from one systematic review of 19 RCT studies that mid-dose mifepristone (25-50mg) is more effective than low-dose mifepristone (<25mg) for emergency contraception (RR= 0.66, 95% CI 0.47, 0.91; number of participants: 11432). There is no added benefit for combination formulations of mifepristone with other agents.
- **Foam/jelly (Spermicides):** The is moderate quality evidence from one systematic review that there is no difference between a variety of spermicides: Neo sampoon tablet (menfegol 60mg) and Ortho/Emko vaginal tablet (100mg of nonoxynol-9; 3 RCT studies; number of participants: 672), Ortho vaginal tablet (100mg of nonoxynol-9) and Emko vaginal tablet (nonoxynol-9; 2 RCT studies; number of participants: 440), and also between Neo sampoon tablet (menfegol 60mg) and Emko foam (nonoynol-9 8%; 2 RCT studies; number of participants: 620), and low quality evidence that collatex sponge (nonoxynol-9 1.15mg) was no different from neo sampoon tablet (menfegol 60 mg; one RCT study; number of participants: 1299).

Traditional methods:

- **Periodic abstinence:** The low quality evidence reported by the systematic review for the comparison between the ovulation method and the symptothermal method (one systematic review, no information on number of participants) did not report any pregnancies occurring in either group and found relatively high discontinuation for both methods.
- **Lactational amenorrhea method (LAM):** The evidence in this area was poor (two systematic reviews and two non-RTC studies; number of participants in each study was 676 and 735), which made it difficult to draw any firm conclusions.

Discontinuation:

- **Oral contraception:** Seven systematic reviews examining oral contraceptives contained data from developing countries and were included in this Overview of Reviews. For the majority of comparisons, the evidence suggested that there was no difference in discontinuation between a variety of oral contraceptive formulations and modes of administration.

- **Intrauterine devices:** Four of the five comparisons provide moderate evidence of no difference in discontinuation. These are as follows: LNG-20 versus a non-hormonal IUD ≤250mm^2 (Rate ratio at 2 years follow-up: 0.93 [95% CI: 0.80-1.07, 1 study and 2118 participants]), MLCu250 versus TCu380A (Rate difference at 1 year follow-up: -1.50 [-1.26, 4.26, 1 study and 2043 participants]) and also the TCu220 when compared with the TCu380A (Rate difference at 1 year follow-up: -3.00 [95% CI: -7.21, 1.21, 1 study and 857 participants]). Similarly, there was moderate evidence of no difference in discontinuation for the TCu200 versus the TCu380A (Rate difference at 1 year follow-up: 1.00 [95% CI: -2.96, 4.96, 1 study and 1678 participants]). For the remaining comparison, there was low quality evidence of no difference between LNG-20 versus subdermal implants (Rate ratio at 1 year: 0.97 [95% CI: 0.72-1.31, 1 study and 200 participants]).

- **Injectables*:*** There was moderate quality evidence that DMPA 25mg/E2C 5mg has lower discontinuation than NET-EN 50mg/E2V 5mg (from Gallo 2008: Peto OR = 0.75 [95%CI: 0.67, 0.84, 2 RCT studies and 4272 participants]). There was also moderate quality evidence to suggest that there is no difference in discontinuation between administering DMPA 150mg IM every 3 months versus NET-EN 200mg IM every 2 months (from Draper 2008, 10 RCT studies and 2467 participants). Additionally, there was low quality evidence suggesting that discontinuation is higher with DMPA 25mg/E2C 5mg than with DMPA 150mg (1 RCT study and 360 participants), and with NET-EN 50mg/E2V 5mg than NET-EN 200mg, 1 RCT study and 849 participants (from Gallo 2008).
- **Implants:** Low quality evidence from one systematic review (number of participants: 1219) suggests that the two implants Implanon and Norplant have no difference in discontinuation rates over a long period of time.
- **Spermicides:** This review presented low evidence to suggest that there is no difference in rates of discontinuation between collatex sponge (nonoxynol-9 1.15mg) and Neo sampoon tablet (menfegol 60mg, 1 RCT study and 1299 participants), Neo sampoon tablet (menfegol 60mg) and Emko foam (nonoxynol-9 8%, 2 RCT studies and 620 participants), nor between vaginal foaming tablets containing nonoxynol-9 (1.15mg, 2 RCT studies and 440 participants) and those containing menfegol 60mg, 3 RCT studies and 672 participants.

Gaps in the evidence: It was not possible to present evidence on the included outcomes for a number of types of contraception, male condoms, female condoms, diaphragms, vasectomy, skin patches or vaginal rings.

Traditional methods:

- **Periodic abstinence:** The low quality evidence reported by the systematic review for the comparison between the ovulation method and the symptothermal method (one systematic review, no information on number of participants) found relatively high discontinuation for both methods.
- **Lactational amenorrhea method (LAM):** The evidence in this area was poor (two systematic reviews and two non-RTC studies; number of participants in each study was 676 and 735), which made it difficult to draw any firm conclusions.

Gaps in the evidence: It was not possible to present evidence on the included outcomes for the withdrawal method, and the quality of the evidence for other types of contraception was poor.

Objective 3: To assess the impact of various contraceptive methods and mixes of contraceptive methods on unmet need for family planning in developing countries/regions.

- There was no systematic review on the impact of contraceptive methods and mixes of methods on unmet need for family planning in developing countries.

vi Limitations and Conclusions

The Overview of Reviews (OoR) could not identify any systematic reviews that could address all the objectives. In particular, the impact of contraceptive methods and mixes of methods on contraceptive prevalence and unmet need for contraception. This indicates a lack of evidence either in the form of systematic reviews or in primary research. Thus, this OoR points out the need to either undertake systematic reviews or RCTs (where these are possible to perform) or non-RCT/observational studies (where RCTs are not possible to perform).

The OoR review, however, did provide an opportunity to compare effectiveness of various contraceptive methods to prevent pregnancy and other outcome measures. Much of the available evidence in this area is based on a limited number of poorly conducted studies comparing different formulations of the same type of contraceptive. There is a lack of evidence from well designed studies comparing different types of contraceptives in developing country settings across a wider range of outcomes (e.g. to include birth spacing and unmet need for family planning). Where the lack of evidence comparing different types of contraceptives is concerned, it is unclear if this is because primary studies do not exist or if it is due to the scope of existing systematic reviews.

Existing systematic reviews provide little in the way of contextual information, for example on ease of access to family planning facilities (in the case of repeat-administration contraceptives), which would help to inform users of the transferability of findings across settings. Future reviews should consider providing as much contextual information as possible to aid interpretation for developing country settings.

1. Background

1.1 Aims and rationale for review

Unintended pregnancies contribute towards accelerated population growth, and lead to closely spaced pregnancies and births, early child bearing, and abortions. These in turn contribute to high maternal and infant mortality (Sedgh et al, 2006). Despite the existence of official family planning programmes, in many developing countries, contraceptive prevalence is low (United Nations, 2009) and women continue to have an unmet need for family planning (USAID, 2005). In general, access to a wide range of contraceptive methods is linked to higher levels of overall contraceptive prevalence (Ross et al, 2002; Magadi and Curtis, 2003). Factors including policy, provider bias, history of a method within a country, properties of methods e.g. effectiveness, acceptability and client characteristics also play a role in the methods utilised by a population (Sullivan et al, 2006). Hence, context is an important consideration and there is a need to examine the impact of different contraceptives (and combinations of contraceptives) on unmet need for family planning in the context of developing countries (and regions). Systematic reviews have been conducted into family planning, but this evidence has not been brought together, and has not always been examined taking into account contextual factors. This Overview of Systematic Reviews was conducted to enable policy makers to identify those contraceptive methods (or range of contraceptive methods) likely to be most successful in the context of a particular country or region.

1.2 Definition and conceptual issues

There is a large amount of terminology currently used in the field of family planning in developing countries. Some key definitions are provided below:

Fertility: the reproductive performance of a woman. It also indicates the incidence of births in a population.

Replacement level of fertility: in the absence of migration, the level of fertility and mortality in a population of interest at which women will replace themselves in a generation.

Desired fertility: total number of children desired by a woman or a couple

Actual fertility: the fertility level achieved by a woman or a couple.

Contraceptive prevalence rate (CPR): the proportion of women of reproductive age (or their partner) who are using a contraceptive method at a given point in time.

Family planning effort: quantification of the nature and strength of family planning efforts in a particular country (i.e. input into family planning).

Method mix: the distribution of contraceptive methods used by a population i.e. the percentage that uses each method.

Skewed method mix: when a single method of contraception accounts for more than half of contraceptive use.

Unintended pregnancies: unintended pregnancies are pregnancies that are reported to have been either unwanted (i.e. they occurred when no children, or no more children, were desired) or mistimed/unplanned (i.e. they occurred earlier than desired).

Unmet need for family planning: women of reproductive age who prefer to avoid or postpone child bearing, but are not using any method of contraception.

1.3 Policy and practice background

In many developing countries (also termed low- and middle-income countries), official family planning programmes began during the 1960s with the aim of reducing high fertility i.e. high numbers of births per woman (Seltzer, 2002). However, in recent years, various Demographic and Health Surveys (DHS) report that women in developing countries have lower desired fertility than actual fertility, i.e. women are having more children than they want. This indicates that there is still an unmet need for family planning i.e. there are a proportion of women of reproductive age who prefer to avoid or postpone childbearing but who are not using any method of contraception. In 2000, an estimated 17% of married women (105 million) had an unmet need for family planning in the developing world (USAID, 2005), and there is considerable variation across countries, for example, 5% in Vietnam and 40% in Haiti (Khan et al, 2007).

Indeed, despite official family planning programmes being in existence for more than 40 years, the contraceptive prevalence rate (CPR)[1] is still low in many countries. The optimum level for contraceptive prevalence is regarded as 80-85% as this level is quite consistent with replacement level fertility (approximately two children per woman; Ross, 2010) i.e. this level of CPR will ensure that sufficient numbers of children will be born and survive to maintain existing population levels. Although increased from the level seen in the 1960s (9%), according to the United Nations Population Division, the contraceptive prevalence for the developing world in 2007 was 61.7%, and there were huge variations in CPR within the developing countries; it was only 2.8% in Chad but 80% in Costa Rica, for example. There were also significant variations between regions; about 28% in Africa region and 74% in South America (United Nations, 2009).

An unmet need for family planning can have many undesired consequences in the areas of health, population growth and development. In developing countries, unintended pregnancies (either mistimed or unwanted at the time of conception) are one of the major consequences of an unmet need for contraception (Pallikadavath and Stones, 2006). This contributes towards accelerated population growth by unwanted fertility and closely spaced births. Further, unintended pregnancies often lead to closely spaced pregnancies and child births, early child bearing, and abortions, which in turn lead to high maternal and infant mortality (Sedgh et al, 2006). Moreover, the need for family planning is generally high in societies where poverty, illiteracy, and gender inequality are high (Nazar-Beutelspacher et al, 1999). In such societies, unintended and repeat pregnancies make it difficult for women to participate in economic development and self-development. This causes a cycle of ill health and poverty which, if uninterrupted, could transfer to future generations. Thus, there is a strong health rationale for addressing the unmet need for family planning services in developing countries and thereby contributing to the achievement of the United Nation's Millennium Development Goals (MDGs); in particular goals 4 and 5:

MDG 4. To reduce child mortality:

- Target 1. Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.

MDG 5. To improve maternal health:

- Target 1. Reduce by three quarters the maternal mortality ratio.
- Target 2. Achieve universal access to reproductive health.

1.4 Research background

Studies have shown that countries in which all couples have easy access to a wide range of contraceptive methods have a more balanced methods mix[2] and higher levels of overall contraceptive prevalence than countries with limited access to various contraceptives (Ross et al, 2002; Magadi and Curtis, 2003). Further, Jain (1989) has estimated that the widespread addition of one method to options available in a country would be associated with an increase of 12% in contraceptive prevalence. A balanced method mix is also an indicator that there is no "systematic limitation of contraceptive choice" (Sullivan et al., 2007). At the global level the most widely used contraceptive methods are female sterilisation (23%), the IUD (15.1%) and the pill (7.2%) (United Nations, 2009). However, there are wide variations in the use of these methods within developing countries. For example, while sterilisation is the most popular contraceptive method in Brazil (40.1%) and India (37.3%) it is not widely used in Indonesia (3%) or Morocco (2.7%) (United Nations, 2009).

1 The proportion of women of reproductive age (or their partner) who are using a contraceptive method at a given point in time (World Health Organisation, 2010))

2 A more balanced distribution of different contraceptive methods used by a population.

A directive issued by the International Conference on Population and Development (ICPD) in 1996 recommended that countries should "Recognise that appropriate methods for couples and individuals vary according to their age, parity, family size preference and other factors, and ensure that women and men have information and access to the widest possible range of safe and effective family planning methods in order to enable them to exercise free and informed choice" (United Nations, 1996). It is after ICPD commitment that many countries have tried to provide a broad range of methods to their population. However, a study carried out using data from 1999 showed that this has not been achieved everywhere; about one-third of developing countries still had a skewed method mix, in which a single method accounted for more than half of contraceptive use (Sullivan et al, 2006).

Contraceptive prevalence and method mix are influenced by a range of factors. According to Sullivan et al (2006) these factors are: (1) policies and programmes: government promotion of certain methods at the expense of others, regulatory barriers, capacity and motivation to provide range of methods; (2) provider bias: provider preference for specific methods; (3) History: length of time since introduction of each method in a country; (4) property of methods themselves: ease of distribution, high programme cost, side-effects, effectiveness; (5) client characteristics: knowledge of alternative methods, desire for limiting vs. spacing, religious beliefs, personal preferences, age and life stage. For example, a strong relationship between the Family planning Programme Effort index (FPE)[3] and contraceptive prevalence was noted in a study using 1999 FPE cycle data from 89 countries. This study also showed that countries with high social and economic development had high contraceptive prevalence (Ross and Stover, 2001). In addition, the FPE and/or the particular social contexts of countries may lead to provision focusing on a particular contraceptive method. Historically in some countries, some contraceptive methods were given more importance than others either because of their effectiveness or ease of administration. Similarly, for religious reasons, some methods were less popular in some countries.

This highlights the importance of context in assessing the suitability of different contraceptive methods (and combinations of methods) for developing countries. This is further supported by research which has been carried out to measure the 'ideal' method mix in order to help focus family planning programmes. According to Choe (1991), contraceptive choices will be different at the different stages of the reproductive life cycle defined as: (1) before first marriage; (2) after first marriage but before first birth; (3) after first birth but before last birth; (4) after last. Using the above framework Choe (1991) suggested an 'ideal' contraceptive mix for Indonesia and showed its potential benefit for improving family planning programmes through targeted interventions. However, there has been no consensus about the 'optimal' or 'ideal' method mix among the international reproductive health community as reproductive needs are different for different countries (Sullivan et al, 2006).

1.5 Conceptual framework

A conceptual framework linking contraceptive prevalence and method mix with unmet need for family planning, unintended pregnancy and fertility is presented below (Figure 1.1). As per the framework, family planning programmes and policies determine the number of contraceptive methods available for public use: the contraceptive choice mix. The range of contraceptives available to individuals may be more limited than those made available for public use; either affected by provider bias and/or an individual's access to and acceptability of the family planning services provided.

The acceptability of the contraceptives to which individuals have access will affect both whether they will choose to use any of the available methods (initiation of contraceptive use) and whether they continue with their chosen method (continuation of contraceptive use). It may also affect whether or not an individual adheres to their chosen contraceptive method (adherence). The context (e.g. client characteristics, length of time since introduction of each method and properties of methods) may affect the expectations and requirements that an individual has of particular contraceptive methods and hence the acceptability of each method.

The acceptability of the contraceptives to which individuals have access will be reflected in the contraceptive prevalence and the method mix i.e. fewer people may use contraceptives if there is a lack of acceptable accessible methods and there may be a greater skew towards contraceptives that are more acceptable (or more accessible). It will also be, more directly, reflected in the levels of unmet need for family planning i.e. where individuals lack access to acceptable contraceptives they will choose not to use the available method, even if they desire to space or limit their fertility. Further, the acceptability of the

3 A summary of family planning effort measured using policy, services, evaluation and method availability.

available contraceptives (individually and in combination) will combine with the known efficacy of the method to produce the effectiveness of both individual contraceptives and of the range of available contraceptives.

The effect of an unmet need for family planning and of the effectiveness of the available contraceptive methods (individually and in combination) is reflected in rates of unintended and unwanted pregnancies, and consequent rates of unintended/unwanted births (fertility). As discussed previously, unintended and unwanted pregnancies could have adverse health effects of mother and child; this could also accelerate population growth and slow down development by reinforcing poverty, illiteracy and gender inequality. Examination of rates of unintended and unwanted pregnancies may indicate where there is a greater need for acceptable spacing or terminal methods of contraception i.e. unintended pregnancies may indicate that more acceptable spacing methods are required and unwanted pregnancies may indicate that more acceptable terminal methods are required.

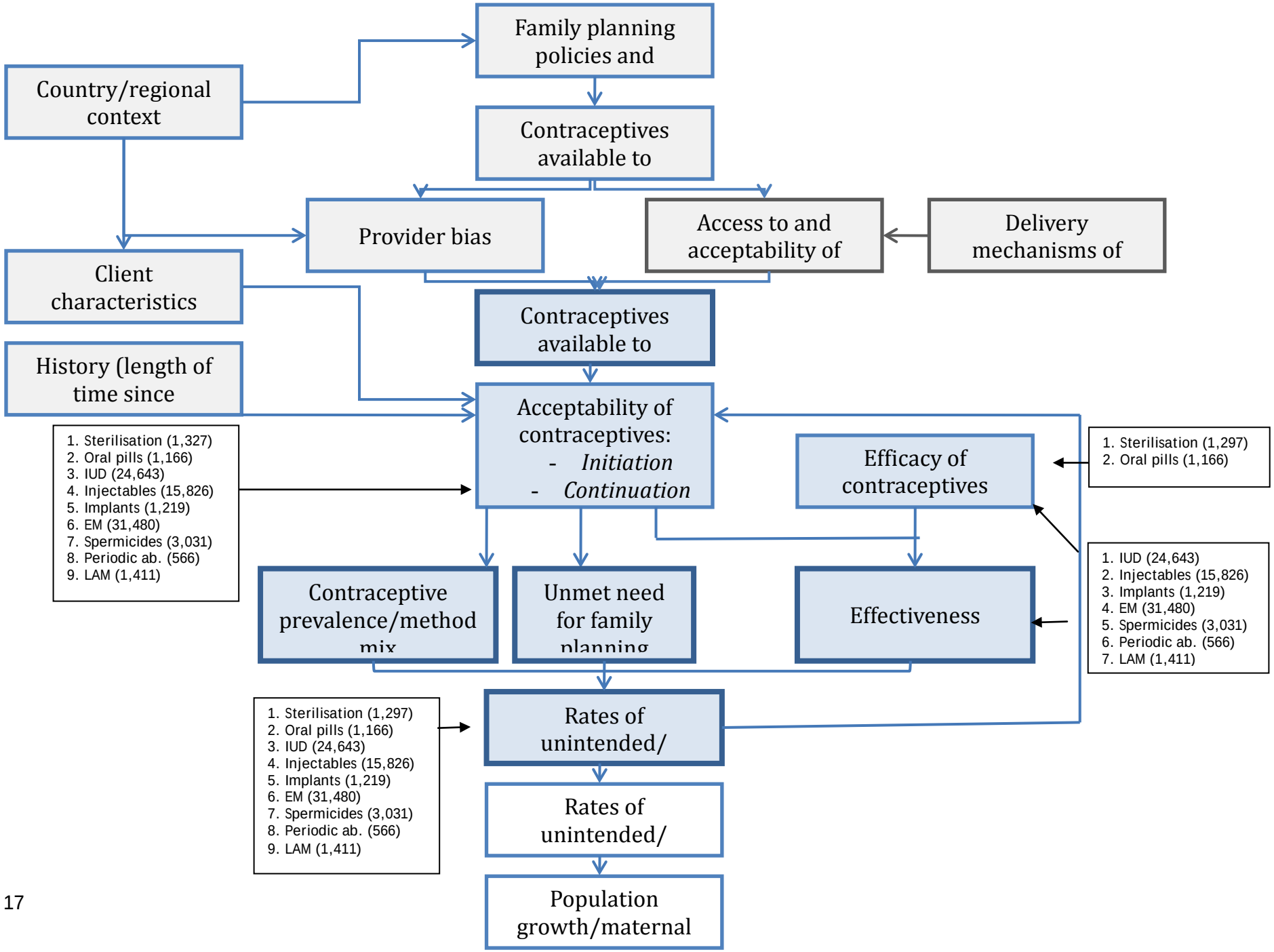

Family planning policies and
Country/regional context
Contraceptives available to
Provider bias
Access to and acceptability of
Delivery mechanisms of
Client characteristics
Contraceptives available to
History (length of time since
Acceptability of contraceptives:
- Initiation
- Continuation
1. Sterilisation (1,327)
2. Oral pills (1,166)
3. IUD (24,643)
4. Injectables (15,826)
5. Implants (1,219)
6. EM (31,480)
7. Spermicides (3,031)
8. Periodic ab. (566)
9. LAM (1,411)
Efficacy of contraceptives
1. Sterilisation (1,297)
2. Oral pills (1,166)
1. IUD (24,643)
2. Injectables (15,826)
3. Implants (1,219)
4. EM (31,480)
5. Spermicides (3,031)
6. Periodic ab. (566)
7. LAM (1,411)
Contraceptive prevalence/method mix
Unmet need for family planning
Effectiveness
1. Sterilisation (1,297)
2. Oral pills (1,166)
3. IUD (24,643)
4. Injectables (15,826)
5. Implants (1,219)
6. EM (31,480)
7. Spermicides (3,031)
8. Periodic ab. (566)
9. LAM (1,411)
Rates of unintended/
Rates of unintended/
Population growth/maternal

Figure 1.1. Conceptual framework of the factors influencing contraceptive prevalence, method mix, and unmet need for family planning (Light grey shaded boxes = contextual factors; Blue shaded boxes = focus of this OoR; Unshaded boxes = consequences of unintended/unwanted pregnancies).

1.6 Focus of this review

The conceptual framework outlined above encompasses a wide range of factors which influence contraceptive prevalence, unmet need for family planning and unintended pregnancies and births. One key aspect of this framework for family planning policy development in developing countries is the impact of the type (and range) of contraceptives available to individuals on these outcomes. Although studies suggest that increasing the number of methods of contraception available to women (and their partners) increases contraceptive prevalence, it is important to examine the impact the contraceptives individuals have access to (either individually or in combination) have on contraceptive prevalence or unmet need for family planning, and ultimately on rates of unintended and unwanted pregnancies.

As previously discussed, research suggests that the acceptability of different methods may vary according to context, and therefore that different contraceptives (and ranges of contraceptives) may be more or less successful in different countries or regions. Hence, where possible, there is a need to examine the impact of different contraceptives (and combinations of contraceptives) on outcomes such as unmet need for family planning in this context. Systematic reviews have been conducted in this area, but this evidence has not been brought together, and has not always been examined taking into account contextual factors. We will therefore conduct an Overview of Systematic Reviews to enable policy makers to identify those contraceptive methods (or range of contraceptive methods) likely to be most successful in the context of a particular country or region. Overviews of Systematic Reviews are intended primarily to summarise multiple systematic reviews of interventions, and a have similar structure to systematic reviews but include reviews rather than primary studies as their unit of interest (Higgins and Green, 2011).

1.7 Objectives

The specific objectives of the proposed Overview of Systematic Reviews (OoR) are:

1. To assess the impact of various contraceptive methods and mixes of contraceptive methods on contraceptive prevalence in developing countries/regions.

2. To assess the impact of various contraceptive methods and mixes of contraceptive methods on unwanted and unintended pregnancies in developing countries/regions.

3. To assess the impact of various contraceptive methods and mixes of contraceptive methods on unmet need for family planning in developing countries/regions.

2. Methods used in the review

2.1 User involvement

2.1.1 Approach and rationale

Consumer involvement in OoRs and systematic reviews can help to ensure that reviews address topics and outcomes salient to a particular population. Due to time constraints, it was not possible to engage in a wide consultation with relevant stakeholders to inform the scope of the OoR. In order to ensure the salience and scope of the OoR, we have established a multidisciplinary review team including Dr Saseendran Pallikadavath, who has experience of conducting global health research in India and Brazil, and Professor William Stones, who is the Puribai Kanji Professor and Chair, Department of Obstetrics and Gynaecology, Aga Khan University, Nairobi, Kenya. Further, we have sought peer review from the South African Cochrane Centre and the UK Cochrane Centre.

2.2 Identifying and describing reviews

2.2.1 Defining relevant reviews: inclusion and exclusion criteria

Types of reviews:
For this OoR we included Cochrane and non-Cochrane systematic reviews of randomised and non-randomised trials, observational studies, and economic evaluations on the effects of methods (and mixes of methods) of contraception (see *Types of interventions*) listed below on (1) contraceptive prevalence, (2) unwanted pregnancies, (3) unintended pregnancies and (4) unmet need for family planning. Our definition for a systematic review required that the review meets the following criteria (Green, Higgins, Alderson, Clarke, Mulrow & Oxman, 2008):

- a clearly stated set of objectives with pre-defined eligibility criteria for studies;
- an explicit, reproducible methodology;
- a systematic search that attempts to identify all studies that would meet the eligibility criteria;
- an assessment of the validity of the findings of the included studies, for example through the assessment of risk of bias; and
- a systematic presentation, and synthesis, of the characteristics and findings of the included studies.

Reviews that did not contain these elements were excluded from the OoR. Included systematic reviews may have incorporated a full range of study designs:

Randomised controlled trial:

- All types of randomised control studies were considered eligible for inclusion.

Types of non-randomised trials considered eligible for inclusion were:

- Quasi-randomised controlled trial: for example, in which allocation to groups is via a non-random method such as alternation.
- Controlled before and after study (CBA): for example, one locality is matched to a second locality, and in one locality a new contraceptive method or combination of methods is implemented whilst the other locality stays the same, and both locations are measured concurrently before and after the intervention.
- Interrupted time series (ITS): for example, one locality is measured at a series of points in time prior to, and again after, a new contraceptive method or combination of methods is implemented. A minimum of three time points before and three time points after the intervention is required in order to see a change in trend. This study type may or may not include a concurrent control arm.
- Simple "before and after" studies: for example, only one locality is measured, once before and once after an intervention, and there is no concurrent control arm. These studies will be included in this review however it is acknowledged that this type of study is subject to a lot of potential confounding.

Observational studies considered eligible for inclusion were:

- Cohort studies: for example a group of people who have been exposed to one type of contraceptive method or combination of methods are followed-up prospectively, and compared to a concurrent group of people who have been exposed to a different type of contraceptive method mix.
- Case-control studies: for example, a group of people with desirable outcomes are matched to a group of people with undesirable outcomes and a retrospective investigation takes place to examine the combination of contraceptive methods they were exposed to.
- Longitudinal studies: for example, a study of a single service area which is followed up over a period in time before and after the implementation of a new contraceptive method or combination of contraceptive methods (akin to ITS).

Economic evaluations considered eligible for inclusion were:

- Full economic evaluations:
    - Cost-effectiveness analyses
    - Cost-utility analyses
    - Cost-benefit analyses
- Partial economic evaluations:
    - Cost-analyses
    - Cost description analyses
    - Cost-outcome analyses

Types of participants:
For this OoR we included Cochrane and non-Cochrane systematic reviews of studies whose participants were sexually active women or men from countries classified as "developing", "low income" or "middle income" countries by the author(s) of the review; or those classified as low-and middle-income countries according to the World Bank classification of countries based on gross national income (GNI) (http://data.worldbank.org/about/country-classifications) at the time the study was conducted. Reviews that included studies with participants from "high income" or "developed" countries were eligible, but only when it was possible to use the data from the studies conducted in "developing", "low income" or "middle income" countries separately. Where the review had combined data from developing/low income/middle income and developed/high income countries, and it was not possible to separate these, the systematic review was excluded.

These inclusion criteria were broad in order to ensure that the OoR included all relevant systematic reviews. For example, although we acknowledge that Family Planning Services in developing countries are typically targeted at 'currently married' women aged 15-49 years, it was feasible that systematic reviews in the area may have taken a broader eligibility criterion, and we sought to include these in the OoR.

Types of interventions:
This Overview included systematic reviews of any intervention (or combination of interventions) designed to increase contraceptive prevalence, reduce fertility or both (in order to prevent unwanted pregnancies, delay pregnancies, space pregnancies, limit fertility). Systematic reviews which have examined the use of contraception for other purposes (e.g. condoms to reduce the transmission of infectious disease) or included studies which have done so were included in the OoR provided that one of the relevant outcomes had been assessed.

Any of the following interventions either individually or in any combination (when offered as part of a service, to target individual preferences, needs, or both), were included:

Modern contraceptive methods:

- Terminal methods
- Female sterilisation (laparoscopic, minilaparotomy, combination with Caesarean section, Quinacrine).
- Male sterilisation (Vasectomy and non-scalpel vasectomy)
- Spacing or temporary methods
- The Pill
- The intra uterine device (IUD; including immediate postpartum and post-abortion insertion)
- Injectables
- Implants

- The female condom
- The male condom
- Emergency contraception (EC)
- The diaphragm
- Foam/jelly
- Traditional methods
- Periodic abstinence
- Withdrawal
- Lactational amenorrhea method (LAM)

Where systematic reviews of randomised, non-randomised trials or observational studies (as defined in 'Types of Studies') are concerned, the OoR included those that compare any of the above interventions (in any combination) with any comparison intervention (such as alternative methods or combinations of contraceptive methods, single methods of contraception, placebo, lack of family planning, etc).

Types of outcome measure:
Our primary outcome measures were:

- Contraceptive prevalence (measured as the proportion of women of reproductive age (or their partner) who are using a contraceptive method at a given point in time[4]).
- Unwanted pregnancies (unplanned pregnancies which are not desired by the woman: this could be measured either as number of unwanted pregnancies[5] or as proportion of women who had an unwanted pregnancy[4]).
- Unintended pregnancies (unplanned pregnancies which are more closely spaced than desired by the woman: measured either as number of unintended pregnancies[5] or as proportion of women who had an unintended pregnancy[4]).
- Unmet need for family planning (measured as the proportion of women of reproductive age who prefer to avoid or postpone child bearing, but are not using any method of contraception[4]).

The following secondary outcome measures were included:

- Initiation of contraceptive use (measured as the proportion of women (or their partners) initiating the use of contraceptives[4]).
- Continuation of contraceptive use (measured as either the proportion of women (or their partners) who have continued contraceptive use throughout the period of the study[4] or as time-to-event[6]).
- Adherence to contraception (measured in a number of ways including number of missed pills, number of times had intercourse without contraception[4)].
- Time between pregnancies (measured as time to event data – likely presented by systematic reviews as hazard ratios[6]).
- Time between births (measured as time to event data – likely presented by systematic reviews as hazard ratios[6])

2.2.2 Identification of potential reviews: Search strategy

Since this Overview includes both Cochrane and non-Cochrane systematic reviews, searches were conducted of a variety of electronic databases in the field of healthcare, reproductive health, demography, population studies, population geography and family planning. Searches were made of the following databases during the period 28.10.2010 to 08.12.2010: Cochrane Library (search date: 18.11.2010), Pubmed (search date: 22.11.10,), Bioline International (search date: 1.11.2010 to 8.11.2010), Popline (search date: 19.11.10), WHO Reproductive Health Library (search date: 28.10.10 to 29.10.10), LILACS (search date: 18.11.10), Turning Research Into Practice (TRIP) (search date: 03.12.10 to 08.12.10) database and Zetoc (The British Library's Electronic Table of Contents) (search date: 18.11.10).

4 These outcome measures could be presented by systematic reviews as risk ratios, odds ratios, risk difference/absolute risk reductions or number needed to treat. If necessary, we sought to standardize these statistics to risk ratios.

5 These outcome measures would be presented by systematic reviews as a rate ratio and, where necessary, we sought to standardise to a risk ratio.

6 These outcome measures would be presented by systematic reviews as a hazard ratio and, where necessary, we sought to standardise to a risk ratio.

Search strategies can be found in Appendix 2.2. No language or date restrictions were employed. Advice was sought from an information specialist to ensure rigorous search strategies were employed. Search results were imported into reference management software and duplicates were removed prior to screening for relevance. We did not attempt to update any existing systematic reviews which were out of date to see if any new RCTs or non RCTs had been published. Protocols and ongoing systematic reviews were not included in this Overview of Reviews.

2.2.3 Screening reviews: applying inclusion and exclusion criteria

Titles were independently screened by two review authors. For those titles deemed potentially eligible (and where there was disagreement between review authors) both the titles and abstracts were reviewed. These were independently screened by two review authors and rated as either 'exclude' or 'potentially eligible'. Disagreements were resolved by discussion between the two review authors. Full reports of abstracts were obtained for citations classified as potentially eligible, and where there was doubt about eligibility or disagreement between review authors that could not be resolved by discussion. The full reports were assessed independently by two review authors to establish their eligibility for inclusion in the OoR using the study eligibility form in Appendix 2.3. They were then classified as either 'excluded', 'included' or 'subject to clarification'. Disagreements were resolved by discussion between the two review authors. Other authors were brought in where disagreements could not be resolved, and a resolution was achieved by discussion amongst the review team. At each stage of screening, all titles, abstracts, and full reports were screened by one review author (HM), with the second independent screening shared amongst the rest of the team (SP, TD, AD, WS); this provided a level of consistency and helped identify duplicate publications of the same report.

2.2.4 Characterising included reviews

Data was extracted from included reviews using a data collection tool designed for this review (Appendix 2.4). In general, the data collection form sought information on the following: general information (e.g. review identification, authors, contact details and date of last update), objectives, inclusion and exclusion criteria, participants, interventions, comparison interventions, length of interventions, length of follow-up, included studies, countries in which included studies were conducted, included study designs, outcomes for which data was reported, comparisons performed, methods and results of study-level quality assessment, summary of results for each relevant outcome, and review quality assessment. Source page numbers were included for ease of reference and, where information was missing or unclear this was marked as such on the form.

Due to time constraints, data was extracted by authors and verified upon data inputting. The authors of the original systematic reviews were contacted for any missing data or for clarification where necessary.

2.2.5 Identifying and describing reviews: quality assurance process

There were a number of ways in which the quality of the identification and description of studies was ensured. Firstly, the team consisted of a number of review authors with a range of expertise and backgrounds. Secondly, the protocol for the OoR was subject to peer review by both the UK and the South African Cochrane Centres, and advice was sought from an information specialist to ensure robust search strategies were employed. Thirdly, all stages of screening (title, title and abstract, full-text) were completed independently by two review authors, who then compared their decisions and came to a consensus. Finally, both the study eligibility and data collection forms were piloted for ease of use and clarity. Notes sheets were provided for additional information (e.g. the World Bank's classifications of countries by income) to ensure that decisions were informed by clear and transparent information.

2.3 Methods for synthesis

2.3.1 Assessing quality of reviews

Included reviews
The quality of included reviews was independently assessed by two review authors using the AMSTAR tool (Shea et al., 2007), which is composed of the following items (responses are: yes, no, can't answer, not applicable):

1. Was an 'a priori' design provided?
2. Was there duplicate study selection and data extraction?
3. Was a comprehensive literature search performed?
4. Was the status of publication (i.e. grey literature) used as an inclusion criterion?
5. Was a list of studies (included and excluded) provided?
6. Were the characteristics of the included studies provided?
7. Was the scientific quality of the included studies assessed and documented?
8. Was the scientific quality of the included studies used appropriately in formulating conclusions?
9. Were the methods used to combine the findings of studies appropriate?
10. Was the likelihood of publication bias assessed?
11. Was the conflict of interest stated?

Any disagreements were resolved by discussion between the assessors and by bringing in a third review author. Where disagreements could not be resolved through discussion amongst the review team, a two-thirds majority informed the final decision. Where items were graded as 'Can't answer', the authors of the original systematic review were contacted for clarification.

Quality of evidence in included reviews
The GRADE approach was used to assess the overall quality of the evidence in the included reviews (GRADE working group, 2004). This approach defines quality of evidence as "the extent to which one can be confident that an estimate of effect is correct". The quality of evidence was graded in the following stages according to the listed criteria:

- High = Randomised trials or double-upgraded observational studies
- Moderate = Downgraded randomised trials or upgraded observational studies
- Low = Double-downgraded randomised trials or observational studies
- Very low = Triple-downgraded randomised trials or downgraded observational studies or case studies/case reports

A study is downgraded if:

- Serious (-1) or very serious (-2) limitation to study quality
- Important inconsistency (-1)
- Some (-1) or major (-2) uncertainty about directness
- Imprecise or sparse data (-1)
- High probability of reporting bias (-1)

A study is upgraded if:

- Strong evidence of association – significant risk ratio of >2 (<0.5) based on consistent evidence from two or more observational studies, with no plausible confounders (+1)
- Very strong evidence of association – significant risk ratio of >5 (<0.2) based on direct evidence with no major threats to validity (+2)
- Evidence of a dose response gradient (+1)
- All plausible confounders would have reduced the effect (+1)

2.3.2 Overall approach to and process of synthesis

The overall approach to synthesis was descriptive, and we did not seek to run a meta-analysis based on the pooled results obtained from systematic reviews. This is because of heterogeneity between reviews. However, where appropriate pooled results of individual systematic reviews were presented. Our approach was to map the current evidence against the taxonomy of interventions detailed in section 2.2. This mapping additionally enabled an assessment of areas in which there is a lack of systematic review evidence. Further, in synthesising the evidence, information was sought on contextual factors and on intervention characteristics that may explain the extent to which the intervention or outcomes are sustained. For each country included in the final OoR the following was recorded:

- GDP (Gross Domestic Product), at the time of the study(s).
- A description of the current family planning programme as follows:
- Family planning effort
- Contraceptive methods available
- Methods of delivery of family planning services (e.g. community based, home visits, incentives, social marketing)
- Method mix (the distribution of contraceptive methods used by a population)
- Contraceptive prevalence rate
- Total fertility rate (TFR)
- Average ideal number of children (AINC)

At the study level, for each outcome, and where possible (i.e. where description has been provided in the systematic review), the following contextual factors were also mapped: access to Family Planning Services including distance factors (e.g. distance to family planning services, lack of transportation), health-system factors (e.g. provider bias, staffing shortages, and lack of availability of preferred methods) and client/community factors (e.g. prohibitive cost of products/services, lack of client awareness, cultural factors).

2.3.3 Selection of studies for synthesis (if not all studies that were described are included in the synthesis)

All studies meeting the inclusion criteria were included in the synthesis.

2.3.4 Selection of outcome data for synthesis

Outcome data was only extracted where the outcome met our inclusion criteria and it was possible to extract the data from developing countries separately. Data was extracted using a Data Collection Form to ensure that the relevant information was extracted uniformly across reports (see Data Collection Tool in Appendix 2.4). Where available, we extracted the pooled effect estimates of meta-analyses (with confidence intervals where provided) conducted within included systematic reviews. If this information was not available, we presented the findings according to the statistical information available in each review. Systematic review authors were contacted to provide additional information or clarification as appropriate.

2.3.5 Process used to combine/synthesise data

Data was interpreted with respect to the quality of the evidence, and critique of the included systematic reviews. We aimed to present the best available evidence, to help inform policy. Where systematic reviews of RCTs and those of RCT and non-RCTs have examined the same intervention and outcome, a judgement was made about whether to include the non-RCT data. This decision was primarily informed by the quality of the non-RCT evidence and whether this evidence conflicted with that provided by RCT evidence. For example, where there was good quality non-RCT evidence (i.e. upgraded or double-upgraded observational studies) this was included. However, where observational studies that have not been upgraded conflict with evidence from good quality RCT evidence, this evidence has not been included. Such decisions have been documented in Section 4. Where we have found only low quality non-RCT evidence, this will be presented as the best available evidence, but the limitations with regard to the interpretation of such evidence have been discussed.

Where possible, to further enable comparisons, statistical reports of outcomes have been standardised across included reviews. Attention was also paid as to whether reviews have treated pregnancy as an event or a non-event, in order to ensure that the findings were correctly interpreted and presented consistently alongside those from different reviews. Attention was also paid to studies that had been included in more than one review, to avoid unit of analysis errors. If a comparison was examined by more than one systematic review and there was an overlap between included studies, data was extracted from both reviews and duplicate study data removed. If there was any discrepancy in the data presented from a study contained in more than one systematic review, the original paper was inspected.

Given the time available and the additional statistical support that would be required, where systematic reviews have not included all potential information on direct comparisons, we did not seek to undertake additional statistical analyses of indirect comparisons. In this case, we have noted the lack of available evidence for each potential direct comparison.

2.4 Deriving conclusions and implications

Where possible, data from the included systematic reviews has been presented in an Overview of Reviews table (the equivalent of the Summary of Findings tables in systematic reviews (Becker & Oxman, 2008)) under the following headings: outcomes, assumed risk (with comparator), corresponding risk (with intervention), relative effect, number of participants and studies, quality and comments. Data was managed using RevMan 5.

3. Search results

3.1 Studies included from searching and screening

The screening process is described in Figure 3.1. Of the 12680 citations identified by the searches, 203 were identified as duplicates and removed. Due to the large number of citations and high volume of irrelevant records (the TRIP database required free-text searching and proved to yield results with low specificity), an initial screen of titles was performed independently by two review authors. As a result 889 titles and abstracts (where review authors agreed the reference was potentially eligible or disagreed about eligibility) were screened for potential relevance to the Overview. Of these, 141 were identified as potentially eligible and the full-text retrieved for screening. Of these 23 were included in the review.

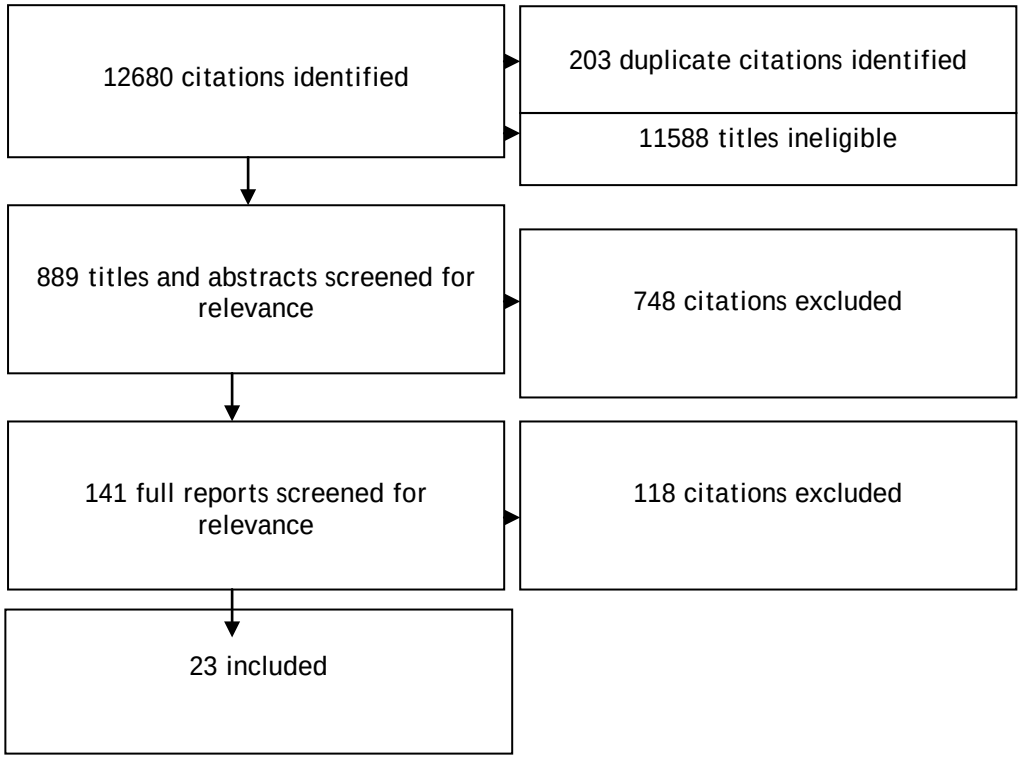


Figure 3.1. Filtering of papers from searching to map to synthesis

3.2 Details of included reviews

Twenty-three systematic reviews were included in this Overview; twenty of which were Cochrane systematic reviews and three of which were articles in peer-reviewed journals. The systematic reviews can be grouped into ten types of contraception (examined at different levels): natural family planning, injectables, intrauterine devices, oral contraceptives, emergency contraception, sterilisation, spermicide, reversible contraception, hormonal and non-hormonal contraception. The included reviews assessed a wide variety of outcomes; however, of these, only the following met the inclusion criteria for the Overview: continuation/discontinuation of contraceptives and pregnancy. Details of included reviews are provided in Appendix 3.1.

4. Synthesis results

4.1 Further details of reviews included in the synthesis

The majority of the systematic reviews included in this Overview of Reviews compared different formulations within one category of contraceptives (e.g. different formulations of the contraceptive pill: Cheng 2008, Draper 2008, Edelman 2005, French 2004, Gallo 2008, Gallo 2011, Grimes 2004, Grimes 2005, Grimes 2010a, Grimes 2010b, Halpern 2010, Kejuan 2007, Kulier 2007, Lawrie 2011, Maitra 2004, Power 2007, Van der Wijden 2003, Van Vliet 2006a, Van Vliet 2006b, Wen 2009). Only one of the included systematic reviews compared one type of contraceptive with another (Hofmeyr 2010). The majority of the studies included in the systematic reviews were predominately RCTs. Within the included systematic reviews, data could be extracted from studies conducted in a number of developing countries (some of which were multi-centre: Argentina, Bangladesh, Brazil, Colombia, Chile, China, Egypt, Ecuador, Ghana, Guatamala, India, Indonesia, Kenya, Malaysia, Mexico, Nepal, Nigeria, Pakistan, Peru, Philippines, Poland, Taiwan, Thailand, Turkey, Vietnam, Zambia) and over a wide period of time (1973-2007).

We had originally planned to map the findings in relation to a number of contextual factors, primarily access to Family Planning Services including distance factors (e.g. distance to family planning services, lack of transportation); health-system factors (e.g. provider bias, staffing shortages, and lack of availability of preferred methods) and client/community factors (e.g. prohibitive cost of products/services, lack of client awareness, cultural factors. However, only a handful of reviews reported any contextual information for (at least some of) the included comparisons and this predominantly focussed on the location of delivery of services and the profession of those delivering them (Cheng 2008, French 2004, Gallo 2008, Grimes 2004, Grimes 2010a, Halpern 2010, Hofmeyr 2010, Kulier 2007). Additionally, no reviews focussed on the effectiveness and/or acceptability of contraceptives within different settings (e.g. developing countries). Appendices 4.1, 4.2 and 4.3 provide further information about reviews included in the synthesis.

4.2 Quality of included reviews

All included reviews had 'a priori' research questions and inclusion criteria. Eleven of the 23 included reviews conducted duplicate study selection and data extraction (Cheng, 2008; Draper 2008; Grimes 2010a; Grimes 2010b; Halpern 2010; Kejuan 2007; Lawrie 2011; Maitra 2004; Power 2007; Van der Wijden 2003; Van Vliet 2006a; Wen 2009). However, in one of these reviews, the second author confirmed the eligibility of the reports selected rather than screening independently (Grimes 2010b). In two other reviews this was the case for data extraction (Van der Wijden 2003; Van Vliet 2006b). A further review only did so for articles not published in Chinese (Cheng 2008). Six included reviews reported conducting singular study eligibility screening and duplicate data extraction (Edelman, 2005; French 2004; Gallo 2008; Grimes 2011; O'Brien 2008; Kulier 2007). An additional review reported duplicate data extraction but did not report on screening study eligibility (Hofmeyr 2010) and a further review reported single author eligibility screening for titles and abstracts but failed to mention the procedure for full-text screening (Gallo 2011). One review made no mention of the procedure for screening or data extraction (Grimes 2004).

Nineteen reviews conducted comprehensive literature searches (Cheng 2008; Draper 2008; Edelman 2005; French 2004; Gallo 2008; Gallo 2011; Grimes 2004; Grimes 2010a; Halpern 2010; Hofmeyr 2010; Kejuan 2010; Lawrie 2011; Maitra 2004; O'Brien 2008; Power 2007; Van der Wijden 2003; Van Vliet 2006a, Van Vliet 2006b; Wen 2009). The literature searches of three reviews were not comprehensive; in two, no dates were provided (Grimes 2010b; Grimes 2011); in another the search was not supplemented (Kulier 2007). The status of publication was used as an inclusion criterion in nine reviews (Draper 2008; Gallo 2011; Grimes 2004; Hofmeyr 2010; Kejuan 2007; Kulier 2007; O'Brien 2008). All except two reviews provided a list of included and excluded studies; (Kejuan 2007; Power 2007) failed to report excluded studies. The characteristics of included studies were provided in all but one review (Kejuan 2007), which provided incomplete information. The scientific quality of the included studies was assessed and documented in all reviews. This assessment was used appropriately in formulating conclusions in all but two reviews (French 2004; Kejuan 2007).

The methods used to combine the findings of studies were appropriate in fifteen of the included reviews (Cheng 2008; Gallo 2011; Grimes 2004; Grimes 2010a; Grimes 2010b; Grimes 2011; Halpern 2010; Hofmeyr 2010; Lawrie 2011; O'Brien 2008; Power 2007; Van der Wijden 2003; Van Vliet 2006a; Van Vliet 2006b; Wen 2009). In five reviews the methods used to combine reviews were not appropriate; three did not test for

homogeneity of pooled results (Edelman 2005; Gallo 2008; Maitra 2004) and one occasionally used fixed effects models regardless of the high size of I^2 (Kulier 2007). It was not possible to judge this for one review (French 2004) because the methods did not clearly reflect the presentation of the results; fixed effects models were used to pool data with heterogeneity (which is not consistently reported) and it was not clear how the authors decided whether to use fixed or random effects models. Most reviews (n=16) did not assess the likelihood of publication bias (Edelman 2005; French 2004; Gallo 2008; Gallo 2011; Grimes 2004; Grimes 2010b; Grimes 2011; Halpern 2010; Kejuan 2007; Kulier 2007; Lawrie 2011; Maitra 2004; O'Brien 2008; Power 2007; Van der Wijden 2003; Van Vliet 2006a; Van Vliet 2006b). However, many reviews conducted narrative syntheses where this was not possible. All except two reviews (Draper 2008; Kejuan 2007) made statements regarding conflict of interest.

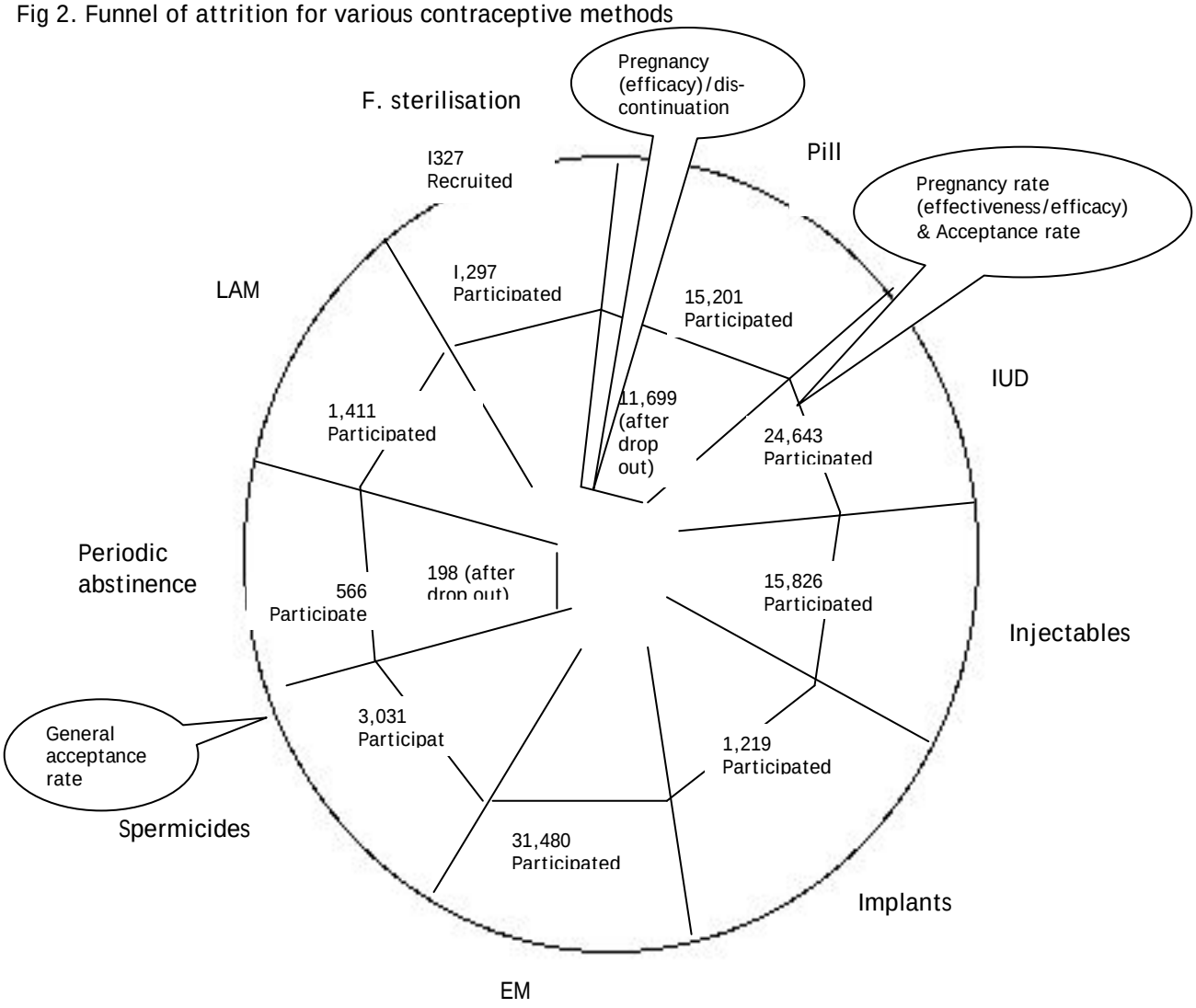
4.3 Synthesis: quality assurance results

At each stage of screening, all titles, abstracts, and full reports were screened by one review author (HM), with the second independent screening shared amongst the rest of the team (SP, TD, AD, WS); this provided a level of consistency and helped identify duplicate publications of the same report. In the case of titles, disagreement was resolved by reviewing the abstracts. At all other stages, disagreements were resolved by discussion between the two review authors. Other authors were brought in where disagreements could not be resolved, and a resolution was achieved by discussion amongst the review team. The full reports were assessed independently by two review authors to establish their eligibility for inclusion in the OoR using the study eligibility form in Appendix 2.3. Data extraction was also conducted using a pre-specified format (see Data Collection Tool in Appendix 2.4).

4.4 Synthesis of evidence

Synthesis of evidence are presented according to the objectives of the overview. No systematic reviews covered unmet needs, contraceptive prevalence, or economic evaluations; other outcomes meeting our inclusion criteria. Fig 2 "funnel of attrition" for various contraceptives is provided to help readers understand various data points used in the analysis. The outer layer in the circle shows how many women were recruited in various studies included in the overview. If we have information about the number of target population it would have been possible to estimate general acceptability of each contraceptive method. However, for this information was not available and therefore the evidence presented in this OoR is mainly evidence of efficacy rather than evidence of effectiveness. The second layer in the attrition funnel is the number of women who have participated in various trials. If we know how many women were recruited then we can find out the participation rate (another measure of acceptance). For many methods we do not know further details such as how many were discontinued and whether or not these women were included in the calculation of pregnancy rates. Therefore, these rates could reflect either efficacy or effectiveness of methods.

Fig 2. Funnel of attrition for various contraceptive methods



Objective 1: To assess the impact of various contraceptive methods and mixes of contraceptive methods on contraceptive prevalence in developing countries/regions.

There was no systematic review on the impact of contraceptive methods and mixes of methods on contraceptive prevalence in developing countries.

Objective 2: To assess the impact of various contraceptive methods and mixes of contraceptive methods on unwanted and unintended pregnancies in developing countries/regions.

The body of evidence for the relative effectiveness of a variety of contraceptive methods to prevent pregnancy in developing countries was generally rated as low or moderate. There was however a number of comparisons (between different derivatives of same contraceptive methods) for which the evidence was rated as high or moderate quality.

4.4.1 Pregnancy

4.4.1.1 Terminal methods

(i) Female sterilisation

The analysis presented in this section is based on 1,297 women who have participated in the trials from a total number of 1,327 women who have initially agreed to participate in the trials. As these results are based on the number of women who have remained in the trials until they have been sterilised, outcomes can be interpreted as efficacy of female sterilisation to prevent pregnancies. Since only very few women have dropped out after recruitment into the study the acceptability of female sterilisation was very high (98%). One included systematic review examined female sterilisation (Lawrie 2011); four of the comparisons contained data from developing countries and could be included in the Overview (Appendix 4.2, Table 4.2a). One comparison (including data from two RCT studies and 724 participants) examined the number of pregnancies in a group sterilised using tubal rings versus those sterilised using tubal clips.

No difference was found in the number of pregnancies between groups (Peto OR = 1.09, 95% CI 0.22, 5.36). The quality of the body of evidence for this comparison was given a GRADE rating of moderate. No differences in numbers of pregnancies were found in the remaining three comparisons (each containing one study): modified Pomeroy versus electrocoagulation (Peto OR = 4.47, 95% CI 0.07, 286.78; 295 participants), tubal ring versus electrocoagulation (Peto OR = 0.0, 95%CI 0.0, 0.0; 160 participants) and modified Pomeroy versus clip (Peto OR = 8.28, 95% CI 0.16, 419.87; 148 participants).

It should, however, be noted that the body of evidence for all comparisons was graded as very low, for two of these comparisons the confidence intervals were extremely wide and for the other there were no pregnancies in either group. The results outlined above obtained from developing countries are comparable with results obtained from developing and developed countries combined, indicating no difference in the effectiveness of different female sterilisation procedures on preventing pregnancy. The implication policy and practice is that failure rates are very low for all methods of female sterilisation.

(ii) Male sterilisation

No systematic reviews examining male sterilisation met the eligibility criteria for this Overview of Reviews.

4.4.1.2 Spacing/temporary methods

(i) The Pill

Overall 15,201 women have agreed to participate in various trials included in the systematic reviews that were included in the Overview. Of this, 3,502 have discontinued and the analysis is based on the remaining 11,699 women who have completed the trial. Therefore, the results refer to efficacy of various pills rather than its effectiveness to prevent pregnancy. Of the included systematic reviews, seven examined the impact of oral contraception on pregnancy and discontinuation of the method (Van Vliet 2006b, Edelman 2005, Gallo 2011, Maitra 2004, Van Vliet 2006a, Grimes 2010b, Kejuan 2007: Appendix 4.2, Table 4.2b & 4.2c). Within these reviews, 17 comparisons contained (extractable) data from developing countries examining pregnancy as an outcome. Fifteen comparisons contained extractable, relevant, data examining discontinuation as an outcome. Data on continuation was reported for a further comparison.

For the pregnancy outcome, two comparisons found significant differences between the intervention and comparison oral contraceptive regimen, although the quality of the evidence for these varied. One review (Maitra 2004), interested in progestogens in COCs, identified moderate quality evidence that (using pooled data from two studies, comprising 2074 participants) monophasic norgestrel 0.3mg/EE 30mcg (Lo-femenal; second generation OC) was more effective at preventing pregnancy than was monophasic norethindrone acetate 1.5mg/EE 30mcg (Lo-estrin: first generation OC: RR = 0.12 (95%CI: 0.02, 0.99)). A further review (Edelman 2005) examined continuous or extended cycles versus cyclic use of combined hormonal contraception.

This review identified low quality evidence, from a single study (900 participants), which indicated that 28-day cycle (cyclic) vaginal administration of 50µg ethinyl estradiol and 250µg levonorgestrel resulted in fewer pregnancies than did continuous administration (1 year: Peto OR = 0.14, 95% CI 0.02, 0.97). In addition, a review predominantly of RCTs (Grimes 2010b; number of studies: one study; number of participants: 518), which was interested in progestin-only pills for contraception, reported fewest pregnancies in the group taking levonorgestrel 150/ethinyl estradiol 30mg, followed (in order of effectiveness) by norethisterone 1mg/mestraw 150mg then levonorgestrel 30mg and finally, norethisterone

350mg.

For seven comparisons, no significant differences were identified between different types of oral contraception, although it should be noted that the quality of the evidence was rated as either low or very low in all cases. From the review comparing various triphasic OCs versus monophasic OCs (Van Vliet 2006b) these were as follows: triphasic LNG 50-70-125µg/EE 30-40-30µg versus monophasic LNG 150µg/EE 30µg (followed up at both 6 and 12 cycles: data from one and three studies respectively: respective risk ratios were 0.65 (95%CI 0.11, 3.78; one study, 189 participants) and 1.00 (95%CI 0.06, 16.01; three studies, 3010 participants)), triphasic LNG 50-70-125µg/EE 30-40-30µg versus monophasic NET 600µg/EE 35µg (data from one study, 186 participants, RR = 0.94 (95%CI: 0.13, 6.52)), and, triphasic GTD 50-70-100µg/EE 30-40-30µg versus monophasic DSG 150µg/EE 30µg (data from one study, 168 participants, RR = 1.00 (95%CI: 0.06, 15.73)).

With regard to COCs containing 20µg estrogen versus those containing >20µg (from Gallo 2011, RCT) no significant differences were reported for the following comparisons: EE 20µg + desogestrel 150µg versus EE 30µg + gestodene 75µg (data from one study, 416 participants, RR = 2.97 (95%CI: 0.12, 72.52)) and, finally, monophasic desogestrel 150µg + EE 30µg versus monophasic gestodene 75µg + EE 30µg (data pooled from three studies, 1730 participants, RR = 1.13 (95%CI: 0.07, 18.02)). One review (Grimes 2010b, RCT), which was interested in progestin-only pills for contraception, reported findings from a very small study (97 participants) in which there was no difference in pregnancy rate between low-dose mifepristone and levonorgestrel (OR = 0.71 (95%CI: 0.07-6.95)). Finally the evidence from a review of once-a-month contraceptive pills (Kejuan 2007, one study, 712 participants) found pearl indices for Quin-Lg and Quin-Lng were 2.9 and 1.8 respectively.

For the additional six comparisons (number of participants: 313 - 1200; no information for one comparison), no pregnancies occurred in the either the intervention or the comparison groups. All comparisons contained data from single studies only. In the review comparing triphasic versus monophasic oral contraceptives (Van Vliet 2006b, RCT, one study, 1200 participants) this was the case for the comparison between triphasic LNG 50-70-125 µg/EE 30-40-30 µg and monophasic NET 400 µg/ EE 35 µg. In the review comparing COCs containing 20µg estrogen versus those containing >20µg (Gallo 2011, RCT one study, 416 participants), this refers to the comparison between EE 20µg + gestodene 75µg and EE 30µg + gestodene 75µg. For the comparison between monophasic NE (norethindrone) 0.4mg + EE 35mcg and monophasic LNG (levonorgestrel) 150mcg + EE 30mcg (monophasics) reported by a review interested in progestogens in COCs (Maitra 2004, RCT, one study, 150 participants) this was also the case.

Furthermore, in a review which compared biphasic and triphasic oral contraceptives (Van Vliet 2006a, RCT, one study, 1199 participants), this occurred in both the comparison between biphasic levonorgestrel/EE(preparation Alpha) and triphasic levonorgestrel/EE (preparation Gamma), and the comparison between biphasic levonorgestrel/EE (preparation Beta) and triphasic levonorgestrel/EE (preparation Gamma). Finally, one review (Grimes 2010b: progestin-only pills for contraception; RCT; one study) reported on a study comparing progestin only pills started six weeks postpartum versus a six month post-partum commencement, in which there were similarly no pregnancies in either group.

(ii) The intra uterine device (IUD; including immediate postpartum and post-abortion insertion)
This analysis is based of 24,643 women. It was not possible to separate how many were contacted, how many agreed, and how many dropped out from the study. It is, therefore, difficult to ascertain whether the results pertain to effectiveness or efficacy of the method to prevent pregnancy. Of the included systematic reviews, five examined the impact of intrauterine devices on pregnancy and discontinuation of the method (Wen 2009, French 2004, Grimes 2010a, Kulier 2007, O'Brien 2008: Appendix 4.2, Table 4.2d and 4.2e). Within these reviews, 16 comparisons contained (extractable) data from developing countries and examined pregnancy and/or discontinuation/continuation as outcomes.

Within the included systematic reviews, there was high quality evidence that, at both one and two years follow-up, TCu380A is more effective at pregnancy prevention than MLCu375 (Rate difference: 0.75 [0.13, 0.37; 2 RCT studies and 3371 participants] and 1.50 [95%CI: 0.09, 2.91, 1 RCT study and 1894 participants] respectively). This was supported by moderate quality evidence from a different systematic review (RR: 0.25 [95%CI: 0.08, 0.75, 4 studies and 3617 participants]). Furthermore, there was moderate quality of evidence to suggest that TCu380A is more effective than MLCu250 (Rate difference: 1.00 [95%CI: 0.24, 1.76, 1 study and 2043 participants]). Within TCu IUDs, moderate quality evidence suggested that TCu220 was more effective than TCu380A at two years follow-up (Rate difference: -1.00 [95%CI: -1.98, -0.02, 1 study and 954 participants]). However, it should be noted that, as presented below this is not the case at

one and three years follow-up.

For five comparisons there was moderate quality evidence to suggest that there were no differences in effect between the following types of IUD: LNG-20 intrauterine system versus non-hormonal IUD >250mm^2 (Rate ratio at 3 years: 0.11 [95%CI: 0.01, 2.12, 1 study and 2118 participants) and versus a non-hormonal IUD ≤250mm^2 (Rate ratios: -0.90 [-2.01, -0.21, 1 study and 2118 participants],], -0.56 [95%CI: -1.30, 0.18, 1 study and 2118 participants] at one, two and three years respectively), TCu380S versus TCu380A (Rate differences: 0.10 [95%CI: -0.33, 0.53, 1 study and 1568 participants], -0.18 [95%CI: -0.73, 0.37, 1 study and 1568 participants], -0.90 [-95%CI: 2.21, 0.41, 1 study and 1568 participants] at one, two and three years respectively), TCu220 versus TCu380A (Rate differences: -0.20 [95%CI: -1.47, 1.07, 2 studies and 1811 participants] and -0.70 [95%CI: -1.84, 0.44, 1 study and 954 participants] at one and three years respectively) and also for TCu200 versus TCu380A (Rate differences: 1.06 [95%CI: -0.90, 3.02, 3 studies and 2842 participants], 0.72 [95%CI: -1.65, 3.09, 3 studies and 2842 participants] and 0.60 [95%CI: -0.93, 2.13, 1 study and 964 participants] at one, two and three years respectively).

Finally, three comparisons provided low quality evidence of no difference between the following types of IUD: LNG-20 intrauterine system versus subdermal implants (Rate ratios: 3.01 [95%CI: 0.13, 75.56, 1 study and 200 participants], 3.06 [95%CI: 0.12, 75.56, 1 study and 200 partcipants] and 3.00 [95%CI: 0.12, 73.53, 1 study and 200 participants] at one, two and three years respectively), TCu220 versus the MLCu375 (Rate difference: 0.44 [95%CI: -1.17, 2.05, 1 study and 768 participants]) and also TCu380A versus the GyneFix frameless IUD (Rate difference: -0.34 [95%CI: -1.01, -0.33, 1 study and 606 participants]). One review (Grimes 2010a, predominantly RCT) also examined the immediate post-partum insertion of intrauterine devices. This review reported low quality evidence of no difference between the immediate post-partum insertion of Delta T versus Delta loop (12-month pregnancy rates per 100 women of 0 and 2.1 respectively, 1 study and 400 participants).

(iii) Injectables

Data for this method comes from 15,826 women who have accepted injectables as a contraceptive method. No data is available on dropout from the studies. Therefore, the results may be interpreted as efficacy or effectiveness of injectables to prevent pregnancy. Two of the included systematic reviews examined injectables (Gallo 2008, Draper 2008 : Appendix 4.2, Table 4.2f); five of the comparisons contained relevant data from developing countries and could be included in the Overview. For two comparisons extractable data was available for pregnancy and discontinuation, an additional comparison had extractable data for pregnancy only and the remaining two for discontinuation only.

There was moderate quality evidence to suggest that there is no difference between the number of pregnancies that occur with NET-EN 50mg/E2V 5mg and DMPA 25mg/E2C 5mg. Additionally, there was low quality evidence suggesting that NET-EN 50mg/E2V 5mg was equally as effective as NET-EN 200mg and nonhormonal IUDs (from Gallo 2008).

(iv) Intrauterine devices versus injectables

The number of women who completed the trial and included in the analysis are 482. Although there was discontinuation and dropouts from the trial, it was not possible to extract that information from the systematic reviews. Therefore, results may be interpreted as efficacy or effectiveness to prevent pregnancy. One included systematic review examined intrauterine devices compared with injectables for contraception (Hofmeyr 2010: Appendix 4.2, Table 4.2g). One of the comparisons contained relevant data from developing countries and could be included in the Overview. This review pooled results from two studies to examine pregnancy in copper containing intra-uterine devices versus depot progestogen. For discontinuation the two studies were reported separately (due to heterogeneity).

There is moderate quality evidence to suggest that there are fewer pregnancies with copper containing intra-uterine devices than with depot progestogens (RR: 0.47 [95%CI: 0.25, 0.85, 1 study and 937 participants]).

(v) Implants

The number of women included in this analysis is 1,219. It was not possible to extract data on the number of women who dropped out; the results may be interpreted as efficacy or effectiveness of implants to prevent pregnancy. One included systematic review examined implants for contraception (Power 2007: Appendix 4.2, Table 4.2h). One of the comparisons contained relevant data from developing countries and

could be included in the Overview. Narrative synthesis was provided for this comparison; no meta-analyses were conducted.

This review reported low quality evidence from three systematic reviews (3 studies and 1,219 participants) which indicated no differences in effectiveness for pregnancy prevention between Implanon versus Norplant; there were no pregnancies in either group.

(vi) The female condom
No systematic reviews examining female condoms met the eligibility criteria for this Overview of Reviews.

(vii) The male condom
No systematic reviews examining male condoms met the eligibility criteria for this Overview of Reviews.

(viii) Emergency contraception (EC)
The results presented in this section are based on 31,480 women. There was no dropout reported in this study. Therefore, the results can be interpreted as efficacy of Emergency Contraception to prevent contraception. No information is available to calculate effectiveness or acceptability of this method to prevent pregnancy. One included systematic review examined emergency contraception (Cheng 2008: Appendix 4.2, Table 4.2i); 18 of the comparisons contained relevant data from developing countries and could be included in the Overview.

For six comparisons there were significant differences between the intervention and comparison emergency contraceptive regimen, although the quality of the evidence for these varied. There is moderate quality evidence that mid-dose mifepristone (25-50mg) is more effective than low-dose mifepristone (<25mg) for emergency contraception (RR: 0.66 [95%CI: 0.47, 0.91, 19 RCT studies and 11,432 participants]). Five further comparisons offered low to very low quality evidence to favour one emergency contraceptive regime over another. These comparisons suggested the following differences: IUD as more effective than expectant management (RR: 0.09 [95%CI: 0.03, 0.26, 1 study and 300 participants]), mid-dose (25-50mg) and low-dose (<25mg) mifepristone as more effective than levonorgestrel (RR: 2.01 [95%CI: 1.27, 3.17, 15 studies and 3743 participants] and RR: 2.05 [95%CI: 1.11, 3.81, 7 studies and 1647 participants] respectively), and high dose (>50mg) as more effective than low-dose (<25mg) mifepristone (RR: 0.19 [95%CI: 0.04, 0.90, 4 studies and 1726 participants]). There were also lower numbers of pregnancies in groups taking mifepristone than in those taking anordrin (RR: 0.26 [95%CI: 0.11, 0.63, 7 studies and 1035 participants]).

For twelve comparisons there were no significant differences between the intervention and comparison emergency contraceptive regimen. Again, the quality of the evidence for these varied. There is moderate quality evidence to suggest that there is no difference in effectiveness at pregnancy prevention between a split dose of levonorgestrel given 24 hours apart and one given 12 hours apart (RR: 0.98 [95%CI: 0.53, 1.82, 1 study and 2060 participants]) nor between a split dose (given 12 hours apart) and a single dose (RR: 0.54 [95%CI: 0.16, 1.85, 1 study and 1118 participants]). For the remaining comparisons, there was low to very low evidence of no difference in effectiveness at pregnancy prevention. This includes levonorgestrel versus anordrin (RR: 0.67 [95%CI: 0.11, 3.89, 1 study and 172 participants]) and a variety of comparisons between doses of mifepristone: a low-dose of <25mg versus a low-dose of ≤10mg (RR: 1.04 [95%CI: 0.07, 16.37, 1 study and 220 participants]), a mid-dose of >50mg versus a mid-dose of 25mg (RR: 0.72 [95%CI: 0.41, 1.27, 13 studies and 3123 participants]) and a high-dose (>50mg) versus a mid-dose (25-50mg) (RR: 0.83 [95%CI: 0.39, 1.77, 8 studies and 1890 participants]).

Further, there was very low evidence of no difference in effectiveness between mifepristone and danazol (RR: 0.20 [95%CI: 0.02, 1.67, 1 study and 241 participants]). Similarly, when comparing mifepristone alone with mifepristone combined with other agents there was low to very low evidence of no effect. The additive agents were as follows: anordrin (RR: 1.32 [95%CI: 0.72, 2.41, 5 studies and 3038 participants]), MTX (RR: 3.00 [95%CI: 0.13, 71.92, 1 study and 100 participants]), tamoxifen (RR: 3.00 [95%CI: 0.31, 28.60, 1 study and 400 participants]) and misoprostol (RR: 3.49 [95%CI: 0.73, 16.65, 1 study and 599 participants]). Similarly, there was very low evidence of no difference in effectiveness at pregnancy prevention between mifepristone and Cu-IUD (RR: 1.51 [95%CI: 0.06, 36.67, 1 study and 185 participants]).

(ix) The diaphragm
No systematic reviews examining the diaphragm met the eligibility criteria for this Overview of Reviews.

(iix) Foam/jelly (Spermicides)
Results are based on 3,031 women who have completed the trial in various studies included in the systematic reviews. No information is available on dropouts. One included systematic review examined spermicides (Grimes 2005); five of the comparisons contained relevant data from developing countries and could be included in the Overview (Appendix 4.2, Table 4.2j). All comparisons were reported in a narrative manner; no meta-analyses were conducted.

There was moderate evidence of no effect for three comparisons: between Neo sampoon tablet (menfegol 60mg) and Ortho/Emko vaginal tablet (100mg of nonoxynol-9), Ortho vaginal tablet (100mg of nonoxynol-9) and Emko vaginal tablet (nonoxynol-9, 3 RCT studies and 672 participants), and also between Neo sampoon tablet (menfegol 60mg) and Emko foam (nonoynol-9 8%, 2 RCT studies and 620 participants). There was low quality evidence to suggest that there is no difference in the efficacy for pregnancy prevention of collate sponge (nonoxynol-9 1.15mgand Neo sampoon table (menfegol 60mg, 1 RCT study and 1299 participants).

4.4.1.3 Pregnancy: Traditional methods

(i) Periodic abstinence
Results are based on 566 women who have completed the trial in various studies included in the systematic reviews. No information is available on dropouts. One included systematic review examined fertility awareness-based methods for contraception (Grimes 2004); one of the comparisons contained relevant data from developing countries and could be included in the Overview (see Appendix 4.2, Table 4.2k). This comparison was reported in a narrative manner; no meta-analyses were conducted.

The systematic review reported a comparison between the ovulation method and the symptothermal method. However, the evidence for this comparison was of very low quality and there were no pregnancies in either group.

(ii) Withdrawal
No systematic reviews examining the diaphragm met the eligibility criteria for this Overview of Reviews.

(iii) Lactational amenorrhea method (LAM)
Results are based on 1,411 women; no information is available on dropouts. One included systematic review examined the lactational amenorrhea method (LAM: Van der Wijden 2003); two of the comparisons contained relevant data from developing countries and could be included in the Overview (see Appendix 4.2, Table 4.2k). All comparisons were reported in a narrative manner; no meta-analyses were conducted, and the quality of the evidence for all comparisons was very low.

One study compared LAM with support versus LAM without support. The life-table pregnancy rate was 0.45 (one pregnancy in 1671 woman months accumulated, 1 study and 676 participants) in the LAM with support group and there were no pregnancies in the LAM without support group. Another study compared LAM with support with controls who used non-hormonal IUDs two months post-partum and on demand feeding. No women became pregnant in the IUD group and the life-table pregnancy rate for those using LAM with support was 2.45 after 6 months (1 study and 735 participants (using the standard definition of amenorrhea).

4.4.2 Discontinuation

4.4.2.1 Terminal methods

(i) Female sterilisation
As female sterilisations are terminal methods once a woman accepts sterilisation, it is very rarely reversed. The systematic reviewed included in this overview did not examine reversal of female sterilisation.

(ii) Male sterilisation
No systematic reviews examining male sterilisation met the eligibility criteria for this Overview of Reviews.

4.4.2.2 Spacing/temporary methods

(i) The Pill
Overall 15,201 women have agreed to participate in various trials included in the systematic reviews included in the Overview; 3,502 dropped out from the studies. Of the included systematic reviews, seven examined the impact of oral contraception on pregnancy and discontinuation of the method (Van Vliet 2006b, Edelman 2005, Gallo 2011, Maitra 2004, Van Vliet 2006a, Grimes 2010b, Kejuan 2007: Appendix 4.2, Table 4.2b & 4.2c). Within these reviews 17 comparisons contained (extractable) data from developing countries examining pregnancy as an outcome. Fifteen comparisons contained extractable and relevant data examining discontinuation as an outcome. Data on continuation was reported for a further comparison.

For discontinuation, there were significant differences identified between the intervention and comparison oral contraceptive regimen. One review (Maitra 2004, predominantly RCTs), interested in progestogens in COCs, identified moderate quality evidence that (using pooled data from two studies) there is lower discontinuation for monophasic norgestrel 0.3mg/EE 30mcg (second generation OC) than for monophasic norethindrone acetate 1.5mg/EE 30mcg (Lo-estrin: first generation OC: RR = 0.79, 95%CI 0.69, 0.91; 2074 participants). This review also identified low quality evidence from one study that monophasic NE (norethindrone) 0.4mg + EE 35mcg has lower discontinuation than monophasic LNG (levonorgestrel) 150mcg + EE 30mcg (RR = 0.79, 95%CI 0.66, 0.94; 1199 participants).

For two comparisons, there was moderate evidence of no difference between the intervention OC and the comparison OC. The first was reported by a review comparing various triphasic OCs versus monophasic OCs (Van Vliet 2006b, predominantly RCTs; 1 study and 189 participants), which found no difference in discontinuation between triphasic LNG 50-70-125mcg/EE 30-40-30mcg and monophasic NET 400mcg/EE 35mcg. The second was reported by the review concerned with progestogens in COCs (Maitra 2004, predominantly RCTs, 3 studies and 1730 participants), which found no difference in discontinuation between monophasic desogestrel 150mcg + EE30mcg and monophasic gestodene 75mcg + EE30mcg.

Furthermore, there was low quality evidence of no difference for eleven comparisons. The included review (Van Vliet 2006b, predominantly RCTs) that compared various triphasic OCs versus monophasic OCs reported five such comparisons: triphasic LNG 50-70-125 µg/EE 30-40-30 µg versus monophasic LNG 150 µg/EE 30 µg (follow-up = 6 cycles; one study and 189 participants), triphasic LNG 50-70-125 µg/EE 30-40-30 µg versus monophasic LNG 150 µg/EE 30 µg (follow-up = 12 cycles; 3 studies and 3010 participants), Triphasic LNG 50-70-125 µg/EE 30-40-30 µg versus monophasic NET 600 µg/ EE 35 µg, triphasic GTD 50-70-100 µg/EE 30-40-30 µg versus monophasic DSG 150 µg/ EE 30 µg (follow-up = 6 cycles; 1 study and 168 participants) and triphasic GTD 50-70-100 µg/EE 30-40-30 µg versus monophasic DSG 150 µg/ EE 30 µg (follow-up = 12 cycles; 1 study and 168 participants).

A further review (Edelman 2005, predominantly RCTs; 1 study and 900 participants), which examined continuous or extended cycles versus cyclic use of combined hormonal contraception reported one such comparison: 28-day cycle (cyclic) vaginal administration of 50µg ethinyl estradiol and 250µg levonorgestrel versus 1 year (continuous) administration. Another (Gallo 2008: COCs containing 20µg estrogen versus those containing >20µg), reported two comparisons with low evidence for no difference: EE 20µg + desogestrel 150µg V EE30µg + gestodene 75µg (1 study and 416 participants) and EE 20µg + gestodene 75µg V EE 30µg + gestodene 75µg (1 study and 150 participants). Two comparisons examining biphasic versus triphasic OCs (Van Vliet 2006a, predominantly RCT) gave low quality evidence of no difference: biphasic levonorgestrel/EE(preparation Alpha) versus triphasic levonorgestrel/EE (preparation Gamma) (1 study and 313 participants) and biphasic levonorgestrel/EE (preparation Beta) versus triphasic levonorgestrel/EE (preparation Gamma) (1 study and 298 participants). Finally, a comparison between norethisterone and levonorgestrel 150 + ethinyl estradiol combination pill also provided low quality evidence of no effect (Grimes 2010b, RCT, 1 study and 1199 participants).

(ii) The intra uterine device (IUD; including immediate postpartum and post-abortion insertion)
This analysis on the discontinuation of intra uterine device is based on 24,643 women who participated in various trials. Of the included systematic reviews, five examined the impact of intrauterine devices on pregnancy and discontinuation of the method (Wen 2009, French 2004, Grimes 2010a, Kulier 2007, O'Brien 2008: Appendix 4.2, Table 4.2d and 4.2e). Within these reviews, 16 comparisons contained (extractable)

data from developing countries and examined pregnancy and/or discontinuation/continuation as outcomes.

Four of the five comparisons that could be extracted for this Overview provide moderate evidence of no difference in discontinuation. These are as follows: LNG-20 versus a non-hormonal IUD ≤250mm^2 (Rate ratio at 2 years follow-up: 0.93 [95%CI: 0.80-1.07, 1 study and 2118 participants]), MLCu250 versus TCu380A (Rate difference at 1 year follow-up: -1.50 [-1.26, 4.26, 1 study and 2043 participants]) and also the TCu220 when compared with the TCu380A (Rate difference at 1 year follow-up: -3.00 [95%CI: -7.21, 1.21, 1 study and 857 participants]). Similarly, there was moderate evidence of no difference in discontinuation for the TCu200 versus the TCu380A (Rate difference at 1 year follow-up: 1.00 [95%CI: -2.96, 4.96, 1 study and 1678 participants]). For the remaining comparison, there was low quality evidence of no difference between LNG-20 versus subdermal implants (Rate ratio at 1 year: 0.97 [95%CI: 0.72-1.31, 1 study and 200 participants]).

(iii) Injectables
Data for the analysis of continuation of injectables was taken from 15,826 women also participated in various studies included in the systematic reviews. Two of the included systematic reviews examined injectables (Gallo 2008, Draper 2008 : Appendix 4.2, Table 4.2f); five of the comparisons contained relevant data from developing countries and could be included in the Overview. For two comparisons extractable data was available for pregnancy and discontinuation, an additional comparison had extractable data for pregnancy only and the remaining two for discontinuation only.

There was moderate quality evidence that DMPA 25mg/E2C 5mg has lower discontinuation than NET-EN 50mg/E2V 5mg (from Gallo 2008: Peto OR = 0.75 (95%CI: 0.67, 0.84, 2 RCT studies and 4272 participants)). There was also moderate quality evidence to suggest that there is no difference in discontinuation between administering DMPA 150mg IM every 3 months versus NET-EN 200mg IM every 2 months (from Draper 2008, 10 RCT studies and 2467 participants). Additionally, there was low quality evidence suggesting that discontinuation is higher with DMPA 25mg/E2C 5mg than with DMPA 150mg (1 RCT study and 360 participants), and with NET-EN 50mg/E2V 5mg than NET-EN 200mg, 1 RCT study and 849 participants (from Gallo 2008).

(iv) Intrauterine devices versus injectables
The number of women included in this analysis is 482. Due to heterogeneity, the two studies reporting discontinuation were reported separately. Both provided moderate quality evidence; however, the studies provided conflicting results. One compared copper containing intra-uterine devices with depot progestogen only and found lower discontinuation with the IUD (RR: 0.17 [95%CI: 0.07, 0.39, 1 RCT study and 338 participants]). However, an alternative study, comparing copper containing intra-uterine devices with mixed hormonal contraception (depot progestogen and/or OC), found lower discontinuation with the mixed hormonal contraception (RR: 4.20 [95%CI: 3.06, 5.78, 1 study and 599 participants]).

(v) Implants
See section on continuation

(vi) The female condom
No systematic reviews examining female condoms met the eligibility criteria for this Overview of Reviews.

(vii) The male condom
No systematic reviews examining male condoms met the eligibility criteria for this Overview of Reviews.

(viii) Emergency contraception (EC)
The results presented in this section are based on 31,480 women. One included systematic review examined emergency contraception (Cheng 2008: Appendix 4.2, Table 4.2i); 18 of the comparisons contained relevant data from developing countries and could be included in the Overview.

(ix) The diaphragm
No systematic reviews examining the diaphragm met the eligibility criteria for this Overview of Reviews.

(iix) Foam/jelly (Spermicides)
The results presented for the discontinuation of spermicides is based on the 3,303 women who have been recruited for trials. One included systematic review examined spermicides (Grimes 2005); five of the comparisons contained relevant data from developing countries and could be included in the Overview (Appendix 4.2, Table 4.2j). All comparisons were reported in a narrative manner; no meta-analyses were conducted.

This review presented low evidence to suggest that there is no difference in rates of discontinuation between collatex sponge (nonoxynol-9 1.15mg) and Neo sampoon tablet (menfegol 60mg, 1 RCT study and 1299 participants), Neo sampoon tablet (menfegol 60mg) and Emko foam (nonoxynol-9 8%, 2 RCT studies and 620 participants), nor between vaginal foaming tablets containing nonoxynol-9 (1.15mg, 2 RCT studies and 440 participants) and those containing menfegol 60mg, 3 RCT studies and 672 participants. As the results of these comparisons were presented in a narrative manner, there are conflicting findings for some comparisons.

For example, the review presented low quality evidence that suggested similar discontinuation rates between Neo sampoon tablet (menfegol 60mg) and Ortho/Emko vaginal tablet (nonoxynol-9 100mg, 2 RCT studies and 440 participants); however, it also presented low quality evidence to suggest that there was significantly lower discontinuation due to discomfort for Neo sampoon tablet (menfegol 60mg) than for Ortho vaginal tablet (100mg of nonoxynol-9, 3 RCT studies and 672 participants), which was significantly lower than for Emko vaginal tablet (100mg of nonoxynol-9, 2 RCT studies and 440 participants). Similarly, the review also presented conflicting low quality evidence for the relative discontinuation rates for Ortho vaginal tablet (nonoxynol-9 100mg) compared with the Emko vaginal tablet (nonoxynol-9 100mg, 2 RCT studies and 440 participants). One RCT study suggested no difference in discontinuation, while another suggested lower discontinuation for Ortho vaginal tablet (nonoxynol-9 100mg, 2 RCT studies and 440 participants).

4.4.2.3 Discontinuation: Traditional methods

(i) Periodic abstinence
One included systematic review examined fertility awareness-based methods for contraception (Grimes 2004); one of the comparisons contained relevant data from developing countries and could be included in the Overview (see Appendix 4.2, Table 4.2k). This comparison was reported in a narrative manner; no meta-analyses were conducted.

The low quality evidence reported by the systematic review for the comparison between the ovulation method and the symptothermal method suggests that there is relatively high discontinuation for both methods. There was high-drop out before the beginning of the observation period (but after randomisation); 53% of couples in the ovulation method group dropped out, as did 61% of those in the symptothermal method group. During follow-up 31% of couples in the ovulation method group discontinued compared with 30% of those in the symptothermal method group.

(ii) Withdrawal
No systematic reviews examining the diaphragm met the eligibility criteria for this Overview of Reviews.

(iii) Lactational amenorrhea method (LAM)
Discontinuation was not reported for any comparisons included in this Overview of Reviews.

4.4.3 Continuation

4.4.4.1 Terminal methods

(i) Female sterilisation
The systematic reviewed included in this overview examined continuation of female sterilisation as this is a terminal family planning method.

(ii) Male sterilisation
No systematic reviews examining male sterilisation met the eligibility criteria for this Overview of Reviews.

4.4.4.2 Spacing/temporary methods

(i) The Pill
Overall 15,201 women have agreed to participate in various trials included in the systematic reviews that were included in the Overview. Of this 3,502 have discontinued. Of the included systematic reviews seven examined the impact of oral contraception on pregnancy and discontinuation of the method (Van Vliet 2006b, Edelman 2005, Gallo 2011, Maitra 2004, Van Vliet 2006a, Grimes 2010b, Kejuan 2007: Appendix 4.2, Table 4.2b & 4.2c). Within these reviews, 17 comparisons contained (extractable) data from developing countries examining pregnancy as an outcome. Fifteen comparisons contained extractable and relevant data examining discontinuation as an outcome. Data on continuation was reported for a further comparison.

Two comparisons reported continuation rather than discontinuation. Both provided low quality evidence. One (Grimes 2010b, 1 study and 200 participants) involved progestin only pills started six weeks postpartum versus a six month post-partum commencement, in which there was similar continuation in either group. The second (from Kejuan 2007, 1 study and 712 participants) involved Quin-Ng versus Quin-Lng where the one and two year net cumulative continuation rates for Quin-Lng pills of 87 and 78 per 100, respectively, and for Quin-Lng pills 74 and 64 per 100 respectively. The difference between the two pills appeared to be due to discontinuation for side effects other than bleeding problems.

(ii) The intra uterine device (IUD; including immediate postpartum and post-abortion insertion)
Of the included systematic reviews, five examined the impact of intrauterine devices on pregnancy and discontinuation of the method (Wen 2009, French 2004, Grimes 2010a, Kulier 2007, O'Brien 2008: Appendix 4.2, Table 4.2d and 4.2e). Within these reviews 16 comparisons contained (extractable) data from developing countries and examined pregnancy and/or discontinuation/continuation as outcomes.

For one comparison there was moderate quality evidence to suggest that continuation is higher with TCu380S than with TCu380A (Rate difference at 1 year: -5.50 [95%CI: -9.11, -1.89, 1 study and 1568 participants]). When comparing the immediate post-partum insertion of TCu200 versus progestasert, there is low quality evidence to suggest that there is higher continuation with the TCu200 regardless of method of insertion (12-month continuation rates (per 100 women) for hand insertion were 86.3 for the Tcu 200 and 59.9 for the progestasert (1 study and 400 participants) and for instrument insertion were 86.1 and 57.2 respectively, 1 study and 400 participants). Low quality evidence from a different review indicates higher continuation in Gynefix frameless IUD than in TCu380A at two and three years follow-up (continuation rates (SE) at 3 years were 90.7(1.7) in the GyneFix group (1 study and 606 participants) and 85.3(2.0) in the TCu380A group (1 study and 606 participants).

There was moderate quality evidence of no difference in continuation between MLCu375 and TCu380A (Rate difference: -2.20 [95%CI: -5.39, 0.99, 1 study and 1477 participants]) and also between TCu200 and TCu380A (Rate difference: -3.00 [95%CI: -12.84, 6.84, 1 study and 200 participants]). With regard to the immediate postpartum insertion of IUDs, there was low quality evidence of no difference in continuation between both Delta T and Delta loop (12-month continuation rates (per 100 women) were 93.3 for the Delta Loop and 90.7 for Delta T, 1 study and 246participants), and, TCu200 and IPCS-52mg (12-month continuation rates (per 100 women) were 73.8 for the Tcu 200 and 57.3 for the IPCS-52 (1 study and 400 participants).

(iii) Injectables
Two of the included systematic reviews examined injectables (Gallo 2008, Draper 2008 : Appendix 4.2, Table 4.2f); five of the comparisons contained relevant data from developing countries and could be included in the Overview. For two comparisons extractable data was available for pregnancy and discontinuation, an additional comparison had extractable data for pregnancy only and the remaining two for discontinuation only.

(iv) Intrauterine devices versus injectables
One included systematic review examined intrauterine devices compared with injectables for contraception (Hofmeyr 2010: Appendix 4.2, Table 4.2g). One of the comparisons contained relevant data from

developing countries and could be included in the Overview. This review pooled results from two studies to examine pregnancy in copper containing intra-uterine devices versus depot progestogen. For discontinuation the two studies were reported separately (due to heterogeneity).

(v) Implants
The number of women included in this analysis is 1,219. One included systematic review examined implants for contraception (Power 2007: Appendix 4.2, Table 4.2h). One of the comparisons contained relevant data from developing countries and could be included in the Overview. Narrative synthesis was provided for this comparison; no meta-analyses were conducted.

With regard to continuation, low quality evidence indicated no significant differences between Implanon and Norplant at one, two, three and four years follow-up (at 1 year 91.6% continued to use Implanon and 92.4% continued to use Norplant (3 studies and 1219 participants), at 2 years 82.5% continued to use Implanon and 81.4% continued to use Norplant (3 studies and 1219 participants), at 3 years 67.4% continued to use Implanon and 72.5% continued to use Norplant (3 studies and 1219 participants) and at 4 years 17.1% continued to use Implanon and 16.9% continued to use Norplant (3 studies and 1219 participants).

(vi) The female condom
No systematic reviews examining female condoms met the eligibility criteria for this Overview of Reviews.

(vii) The male condom
No systematic reviews examining male condoms met the eligibility criteria for this Overview of Reviews.

(viii) Emergency contraception (EC)
The results presented in this section are based on 31,480 women. One included systematic review examined emergency contraception (Cheng 2008: Appendix 4.2, Table 4.2i); 18 of the comparisons contained relevant data from developing countries and could be included in the Overview.

(ix) The diaphragm
No systematic reviews examining the diaphragm met the eligibility criteria for this Overview of Reviews.

(iix) Foam/jelly (Spermicides)
The results are based on 3,031 women who participated in various studies. One included systematic review examined spermicides (Grimes 2005); five of the comparisons contained relevant data from developing countries and could be included in the Overview (Appendix 4.2, Table 4.2j). All comparisons were reported in a narrative manner; no meta-analyses were conducted.

4.4.4.3 Continuation: Traditional methods

(i) Periodic abstinence
The analysis is based on 1,411 women who participated in trials. One included systematic review examined fertility awareness-based methods for contraception (Grimes 2004); one of the comparisons contained relevant data from developing countries and could be included in the Overview (see Appendix 4.2, Table 4.2k). This comparison was reported in a narrative manner; no meta-analyses were conducted.

(ii) Withdrawal
No systematic reviews examining the diaphragm met the eligibility criteria for this Overview of Reviews.

(iii) Lactational amenorrhea method (LAM)
The analysis is based on 1,411 women participated in the trials. One included systematic review examined the lactational amenorrhea method (LAM: Van der Wijden 2003); two of the comparisons contained relevant data from developing countries and could be included in the Overview (see Appendix 4.2, Table 4.2k). All comparisons were reported in a narrative manner; no meta-analyses were conducted, and the quality of the evidence for all comparisons was very low.

Objective 3: To assess the impact of various contraceptive methods and mixes of contraceptive methods on unmet need for family planning in developing countries/regions.

- There was no systematic review on the impact of contraceptive methods and mixes of methods on unmet need for family planning in developing countries.

5. Conclusions and recommendations

Overall this OoR could not answer questions on the impact of various contraceptive methods and mixes of contraceptive methods on contraceptive prevalence and unmet need for family planning (objectives 1 and 3). This is because there were no systematic reviews available to include in the OoR, a restriction imposed by the OoR methodology. Therefore, the OoR predominantly focuses on various contraceptive methods on preventing pregnancy. In general, the quality of the evidence for the comparisons examined with this Overview of Reviews was low. In part this was due to inconsistent reporting of risk of bias within systematic reviews which limited the ability to make confident assessments of the quality of the evidence. However, there were several comparisons for which there was moderate evidence and this section will focus predominantly on these. Where there are important gaps in the evidence, or where there are important implications when evidence is of low quality, these will also be discussed. This section is arranged with commentary in relation to each contraceptive method in turn, highlighting findings of potential importance for policy and programming, and identifying topics that should be a focus for further research in each case.

5.1 Sterilisation in developing countries

Where female sterilisation is concerned, included studies examined sterilisation conducted in a number of circumstances; immediately postpartum (including after a Caesarean section), delayed postpartum, post-abortion and interval. There is good evidence to suggest that rings and clips are equally effective for tubal occlusion; both have a very low failure rate. Thus, consideration of costs, infrastructure issues and the risk and severity of side effects might usefully inform programme decisions. Studies comparing these methods with others (Modified Pomeroy and electrocoagulation) suggested that failure rates are very low for all methods, however, the quality of the evidence was poor and event rates were zero in all groups. For all comparisons, the follow-up periods were short. Hence, longitudinal research making direct comparisons between the full range of methods (on a number of outcomes) would be informative.

Such research would also allow a fuller investigation of the relative effectiveness (and risk of side effects) of conducting sterilisation in a variety of circumstances in developing countries; as only one study has currently done so (Yan, 1990; conducted in Taiwan). As Caesarean delivery rates increase in the developing world, there is an increasing number of women who are likely to undergo repeat Caesarean for subsequent births and request the convenience of tubal ligation at the same time (Ghoshal AA, Agrawal SD, Sheth SS, 2003). Postpartum tubal ligation is not favoured in developed countries because of concern about the small risk of venous thromboembolism following surgery in the puerperium, but it remains popular in many developing countries because of a desire to reduce costs and avoid further hospital admission for an interval procedure.

In the case of South India there is a concern that very widespread recourse to female sterilisation at a low mean age may have adverse consequences such as regret and request for reversal or recourse to assisted conception (Singh A, Ogollah R, Ram F, and Pallikadavath S, 2012). These concerns are set against the advantages of limiting family size such as opportunities for education and employment. An examination of these issues within longitudinal research (in any developing country) might help to build a fuller picture of the advantages and disadvantages of sterilisation for individuals, communities and populations.

A systematic review has been conducted comparing minilaparotomy versus laparoscopic approaches to sterilisation, which may be informative for policy makers as some of the included studies were conducted within developing countries. However, this review focussed on morbidity and mortality as outcomes, and consequently did not fall within the scope of this Overview of Reviews (Kulier 2004). It is also important to highlight that although there are systematic reviews on male sterilisation (e.g. Cook 2007a, Cook 2007b), these were not included in this Overview. For one review this was because the data for developing countries was not able to be extracted separately and for the other, it was because the outcomes examined (azoospermia) did not meet the inclusion criteria. A systematic review of the literature on this topic within developing countries would likely provide greater understanding of the effectiveness and acceptability of male sterilisation in this context.

5.2 Oral contraception in developing countries

A number of systematic reviews were included which compared a wide variety of different oral contraceptive preparations (biphasic versus triphasic, triphasic versus monophasic, 20µg versus >20µg oestrogen, progestogens in combined oral contraceptives, progestin-only pills) and modes of administration (continuous or extended cycle versus cyclic use, once-a-month pills). For the majority of comparisons, the evidence suggested that there was no difference in effectiveness or discontinuation between a variety of oral contraceptive formulations and modes of administration, and for all comparisons pregnancy rates were low in each group. However, the quality of evidence ranged widely, from very low to moderate, and follow-up was generally short. Thus, at present there is little to recommend one preparation over another and the choice of preparations to be included in programming might be more usefully informed by availability in countries and cost.

There was however good evidence (from studies conducted in Malaysia, Egypt, Thailand, Mexico and the Philippines) to suggest that in the case of one oral contraceptive preparation, the second generation pill (monophasic norgestrel 0.3mg/EE 30mcg) decreased the risk of pregnancy by 88% and the risk of discontinuation by 21% when compared with the first generation (monophasic norethindrone acetate 1.5mg/EE 30mcg). It is difficult to make a statement about the extent to which this is true of all second versus first generation oral contraceptives since the quality of the evidence for the other comparisons was low. Further research would help to elucidate this. However, at least for the above preparation, these findings suggest that policy and programming should be focused on procurement and supply chain logistics to allow access to the second generation preparation. Moreover, the cost effectiveness analyses underpinning procurement decisions should incorporate discontinuation evidence. This evidence may lead to procurement of more expensive but better tolerated preparations as part of a 'pill mix', for example to offer a 'second line' preparation for those experiencing problems with the basic pill preparation. In general, public family planning programmes in developing countries have yet to offer more than one combined pill preparation.

Although this Overview did not seek to make indirect comparisons, and the quality of evidence is generally low, looking across studies, discontinuation rates vary widely. This might be reflective of differences in study design and execution, but might also reflect population/cultural differences in acceptance of different oral contraceptives. Studies were conducted over a wide number of countries and regions. The overview of reviews methodology is not best suited to exploration of the different rationales for 'discontinuation' in detail. In a mature family planning programme, method switching is expected and can be seen as a marker of a balanced programme offering informed choice from a range of methods. On the other hand it may simply represent dissatisfaction with the method or with the programme. Reference to contextual studies of 'reasons for discontinuation' is required to obtain a nuanced understanding of these issues. It may be that certain programmes experience more discontinuation and would be better able to make use of 'low discontinuation' pill preparations than other programme settings where discontinuation is less prevalent. This is an appropriate topic for operations research.

This overview was not able to examine reviews of alternative routes of administration of 'oral contraceptive' hormones such as transdermal and vaginal ring preparations, in developing country settings. Although a systematic review has been conducted comparing skin patches and vaginal rings with oral contraceptives (Lopez 2010) it was not included in the overview because only one included study was conducted in a developing country (Thailand), and this did not meet our inclusion criteria for outcomes. Data from developed countries suggests these two alternative delivery routes are no more effective than oral contraceptives, although the patch had higher discontinuation rates when compared with oral contraceptives (Lopez 2010). Further studies investigating the effectiveness, acceptability and economics of providing access to newer technology delivery systems for combined hormonal contraception in developing countries is recommended.

5.3 Intrauterine devices in developing countries

The overview identified evidence from one systematic review which indicates a 75% reduction (lower bound of confidence interval 25% reduction) in the risk of pregnancy with use of the TCu380A device compared with the Multiload Cu375 device, consistent with the widespread incorporation of the former device into programming. There are no appreciable differences between the two 'T' devices with 380 mm^2 copper content. There is heterogeneity in findings of outcomes with devices with a lower copper content TCu220 and overall there is a limited place for these devices.

There is a dearth of comparative data regarding both pregnancy risk and discontinuation data for the levonorgestrel-releasing intrauterine system (LNG-IUS), although the single developing country study (conducted in India) included in this overview is a large one. It appears unlikely that further primary research or reviews will uncover major differences of programmatic significance in pregnancy rates, and the basis for considering inclusion of the LNG-IUS in programmes is to increase the scope for intrauterine contraception for women with heavy menstrual bleeding, for whom a copper device would be unsuitable. As such it has an important place given the high prevalence of menstrual disorders.

Postpartum intrauterine device insertion was addressed in the overview (including insertion immediately after Caesarean section), but the overall quality of the evidence was low. Furthermore, those studies conducted in developing countries compared the effectiveness and (dis)continuation of different types of IUD administered immediately post-partum. Only one included study (conducted in Turkey) compared immediate with delayed post-partum insertion. This is a vital topic from a programmatic perspective, since the opportunity to provide intrauterine contraception immediately post-partum avoids many of the practical constraints of interval insertion. Delayed post-partum insertion requires a repeat visit and internal examination, which may deter women from having an IUD. The primary literature is mainly from the 1970s and indicates a higher rate of expulsion compared with interval insertion (data not reviewed in this overview; for many women a higher but not excessive expulsion rate may not be a barrier to this approach, with appropriate counselling. Good quality studies comparing an immediate versus delayed postpartum insertion of IUDs in a developing country setting are required in order to provide a firm evidence base upon which to base policy.

5.4 Injectables in developing countries

This overview shows that pregnancy rate data for injectables are broadly uninformative for policy and programming, as event rates are extremely low with all the relevant products. There is no recommendation for further work on pregnancy rates as the key policy and programming issues are continuation rates and, most importantly, the population level impact of substantial use of injectables on variables such as birth spacing. This overview was not able to address birth spacing but other literature based on analysis of DHS data is available (Rutstein, 2011).

A key finding of this overview is that there is moderate quality evidence (from a multi-centre trial conducted) to indicate that discontinuation rates do not differ between two commonly used injectables; three-monthly DMPA and two-monthly NET-EN. However, there was not any data studies conducted in developing countries from which to gain information about the relative effectiveness of these two methods. This means that, at present, programmatic decisions might be more usefully based on cost and availability; there is likely to be little benefit in offering both products together.

Newer products featured in this overview include two combinations of progestogen with estradiol, which may have a more favourable adverse effect profile. There is a substantial effect favouring the NET-EN/E2V formulation with a 25% lower risk of discontinuation compared to DMPA/E2C, and no difference in effectiveness of pregnancy prevention. There is as yet insufficient data from developing countries to evaluate the comparison of the newer NET-EN/E2V formulation against the 'traditional' DMPA 150 mg regimen; this should be a high priority for further research given the massive part played by DMPA in current family planning programming, especially in Africa, and its prominence in community based distribution programming. It would also be of great interest to establish the impact of NET-EN/E2V on birth spacing and other population level outcomes.

There was also systematic review data comparing intrauterine contraception with injectables. In this comparison the IUD was associated with a substantially lower risk of pregnancy, although the findings on discontinuation are contradictory. The former finding is perhaps unexpected and should be a topic for further research given the moderate pooled sample size. The authors of the systematic review attribute the conflicting discontinuation rates to differences in acceptability across the two included studies. This highlights that acceptability of the IUD versus depot progestogens may differ across populations.

5.5 Implants in developing countries

The overview findings with regard to contraceptive implants are that pregnancy rates are similarly low with both Implanon and Norplant. Discontinuation rates are also similar between formulations and are consistent with typical reproductive behaviour and the product characteristics, with a fall off after three years. The policy and programming implication is that the choice of formulation to be included in programmes should be based on cost and availability; there would seem to be little advantage in offering more than one formulation. No research priorities were identified in this area.

5.6 Emergency contraception

A number of comparisons in this overview relate to the potential introduction of mifepristone as an agent for use in emergency contraception. The overview indicates that mifepristone at various doses is superior to levonorgestrel, which is the current standard of care. Further comparisons are reported between different doses of mifepristone and overall the dose of 25-50 mg is favoured. There is no added benefit for combination formulations of mifepristone with other agents. The future place of mifepristone for this purpose will depend on regulatory considerations in countries, given the drug's use at higher doses for medical abortion and the potential for adverse effects on a continuing pregnancy (unlike levonorgestrel).

5.7 Spermicides in developing countries

A limited number of review findings were available for nonoxynol-9 and menfegol based products and no substantial differences in efficacy or continuation data were identified. In the light of the adverse effects of surfactant products on the vaginal mucosa, with consequent risk of increasing the risk of HIV transmission it is unlikely that further research or programmatic emphasis will be appropriate. There is scope for basic research to identify novel potential spermicides that can be demonstrated not to cause vaginal or penile irritation or epithelial disruption.

5.8 Pre-and postcoital hormonal contraception in developing countries

The range of studies included in this section of the overview were of low methodological quality and/or included small numbers, making clear conclusions difficult to identify.

5.9 Natural family planning in developing countries

Much of the literature on natural methods was uninformative, in the case of the symptothermal method because of very high dropout rates. Lactational amenorrhoea studies were also uninformative. Given the very widespread use of 'natural' methods and the programmatic emphasis being given to variations such as the Standard Days Method in settings where there may be religious or cultural objections to modern methods, there is a substantial gap in knowledge from comparative studies to inform policy and programming. A possible approach would be to undertake reviews with a wider range of outcome measures, especially operational variables such as counselling time and relative acceptability.

5.10 Gaps in the evidence

There are a number of important gaps in the evidence presented in this Overview of Reviews. Firstly, it is important to highlight a number of contraceptive methods for which systematic review data could not be included. As already highlighted there are systematic reviews (comparing minilaparotomy versus laparoscopic approaches to sterilisation, on male sterilisation and conducted comparing skin patches and vaginal rings with oral contraceptives), which did not meet the inclusion criteria of the Overview of Reviews. In addition, no systematic reviews met the inclusion criteria examining male or female condom, the diaphragm, or the withdrawal method for contraception, and consequently no evidence can be discussed for these methods.

Secondly, it is important to note that many of the studies included in the systematic reviews compared variations within a contraceptive type, for example, copper-containing versus non copper-containing intrauterine devices. There is little information comparing one type of contraception (e.g. oral contraceptives) with another (e.g. injectables), or a mix of contraceptive types with another (for example, in a trial conducted across communities). It is difficult to be sure whether this reflects the focus of existing systematic reviews in this area, or whether it reflects a dearth of studies that make direct comparisons between types of contraceptives. Similarly, although it was within the scope of this Overview to present data on a variety of outcomes, including birth spacing, in reality systematic review outcomes tended to focus on pregnancy, (dis)continuation and side-effects. Again, it is difficult to establish whether this reflects the scope of existing systematic reviews or of primary studies in the area. Moreover, the examination of side-effects was not within the scope of this review. This should be considered when interpreting the findings.

Finally, there were no systematic reviews that examined contraceptive method-mixes and contraceptive prevalence, unmet need. This gap in evidence did not allow this OoR to answer research objectives 1 and 3 set out in this study. This OoR, therefore, recommends that more systematic reviews or primary research is required to answer the association between contraceptive method mix and contraceptive prevalence.

6. References

6.1 Reviews included in Overview

From the eligibility screening to date the following systematic reviews were included in the Overview of Reviews (as agreed independently by two review authors):

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Edelman A, Gallo MF, Jensen JT, Nichols MD, Grimes DA. Continuous or extended cycle vs. cyclic use of combined hormonal contraceptives for contraception. *Cochrane Database of Systematic Reviews* 2005, Issue 3. Art. No.: CD004695. DOI: 10.1002/14651858.CD004695.pub2

French R, Sorhaindo AM, Van Vliet HAAM, Mansour DD, Robinson AA, Logan S, Helmerhorst FM, Guillebaud J, Cowan FM. Progestogen-releasing intrauterine systems versus other forms of reversible contraceptives for contraception. *Cochrane Database of Systematic Reviews* 2004, Issue 3. Art. No.: CD001776. DOI: 10.1002/14651858.CD001776.pub2

Gallo MF, Grimes DA, Lopez LM, Schulz KF, d'Arcangues C. Combination injectable contraceptives for contraception. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD004568. DOI: 10.1002/14651858.CD004568.pub3

Gallo MF, Nanda K, Grimes DA, Lopez LM, Schulz KF. 20 µg versus >20 µg estrogen combined oral contraceptives for contraception. *Cochrane Database of Systematic Reviews* 2011, Issue 1. Art. No.: CD003989. DOI: 10.1002/14651858.CD003989.pub4

Grimes DA, Gallo MF, Halpern V, Nanda K, Schulz KF, & Lopez LM. Fertility awareness-based methods for contraception. *Cochrane Database of Systematic Reviews* 2004*,* Issue 4. Art. No.: CD004860. DOI: 10.1002/14651858.CD004860.pub2

Grimes DA, Lopez LM, Raymond EG, Halpern V, Nanda K, Schulz KF. Spermicide used alone for contraception. *Cochrane Database of Systematic Reviews* 2005, Issue 4. Art. No.: CD005218. DOI: 10.1002/14651858.CD005218.pub2

Grimes DA, Lopez LM, O'Brien PA, Raymond EG. Progestin-only pills for contraception. *Cochrane Database of Systematic Reviews* 2010, Issue 1. Art. No.: CD007541. DOI: 10.1002/14651858.CD007541.pub2

Grimes DA, Lopez LM, Schulz KF, Van Vliet HAAM, Stanwood NL. Immediate post-partum insertion of intrauterine devices. *Cochrane Database of Systematic Reviews* 2010, Issue 5. Art. No.: CD003036. DOI: 10.1002/14651858.CD003036.pub2

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Kejuan F, Meirik O, Yongang D, Yan C, Weijin Z, & Fajans P. (2007). Once-a-month contraceptive pills in China: a review of available evidence. *Contraception, 75*, 337-343

Kulier R, O'Brien P, Helmerhorst FM, Usher-Patel M, & d'Arcangues C. Copper containing, framed intra-uterine devices for contraception. *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD005347. DOI: 10.1002/14651858.CD005347.pub3

Lawrie TA, Nardin JM, Kulier R, Boulvain M. Techniques for the interruption of tubal patency for female sterilisation. *Cochrane Database of Systematic Reviews* 2011, Issue 2. Art. No.: CD003034. DOI: 10.1002/14651858.CD003034.pub2

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Van der Wijden C, Brown J, Kleijnen J. Lactational amenorrhea for family planning. *Cochrane Database of Systematic Reviews* 2003, Issue 4. Art. No.: CD001329. DOI: 10.1002/14651858.CD001329

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Appendices

Appendix 1.1: Authorship of this report

This research was funded by the Department for International Development. This report was written by Dr Heather Mackenzie, Dr Amy Drahota, Dr Saseendran Pallikadavath and Professor Tara Dean of the University of Portsmouth, UK, and Professor William Stones, Aga Khan University, Kenya. We wish to acknowledge the assistance of Mr Christopher Hayes with conducting searches of bibliographic databases and screening titles for eligibility, and Anne Eisinga (Information Specialist) who provided peer review and feedback on the search strategy.

Contribution of authors:

Protocol development and editing – HM, AD, SP, TD, WS
Develop the search strategy – HM, AD, SP, TD, WS (with assistance from AE)
Run the search strategy – HM (with assistance from CH)
Data synthesis – HM, AD, SP

Preparation of final report - HM, AD, SP, TD, WS

Peer review was by arrangement with the UK Cochrane Centre and South African Cochrane Centre.

Appendix 2.1 Inclusion and exclusion criteria

Types of reviews:
For this OoR we included Cochrane and non-Cochrane systematic reviews of randomised and non-randomised trials, observational studies, and economic evaluations on the effects of methods (and mixes of methods) of contraception (see *Types of interventions*) listed below on (1) contraceptive prevalence (2) unwanted pregnancies (3) unintended pregnancies and (4) unmet need for family planning. Our definition for a systematic review required that the review meets the following criteria (Green, Higgins, Alderson, Clarke, Mulrow & Oxman, 2008):

- a clearly stated set of objectives with pre-defined eligibility criteria for studies;
- an explicit, reproducible methodology;
- a systematic search that attempts to identify all studies that would meet the eligibility criteria;
- an assessment of the validity of the findings of the included studies, for example through the assessment of risk of bias; and
- a systematic presentation, and synthesis, of the characteristics and findings of the included studies.

Reviews that did not contain these elements were excluded from the OoR.

Types of non-randomised trials considered eligible for inclusion were:

- Quasi-randomised controlled trial; for example, in which allocation to groups is via a non-random method such as alternation.
- Controlled before and after study (CBA); for example, one locality is matched to a second locality, and in one locality a new contraceptive method or combination of methods is implemented whilst the other locality stays the same, and both locations are measured concurrently before and after the intervention.
- Interrupted time series (ITS); for example, one locality is measured at series of points in time prior to, and again after, a new contraceptive method or combination of methods is implemented. A minimum of three time points before and three time points after the intervention is required in order to see a change in trend. This study type may or may not include a concurrent control arm.
- Simple "before and after" studies; for example, only one locality is measured, once before and once after an intervention, and there is no concurrent control arm. These studies will be included in this review however it is acknowledged that this type of study is subject to a lot of potential confounding.

Observational studies considered eligible for inclusion were:

- Cohort studies; for example a group of people who have been exposed to one type of contraceptive method or combination of methods are followed-up prospectively, and compared to a concurrent group of people who have been exposed to a different type of contraceptive method mix.
- Case-control studies; for example, a group of people with desirable outcomes are matched to a group of people with undesirable outcomes and a retrospective investigation takes place to examine the combination of contraceptive methods they were exposed to.
- Longitudinal studies; for example, a study of a single service area which is followed up over a period in time before and after the implementation of a new contraceptive method or combination of contraceptive methods (akin to ITS).

Economic evaluations considered eligible for inclusion were:

- Full economic evaluations:
- Cost-effectiveness analyses
- Cost-utility analyses
- Cost-benefit analyses

Partial economic evaluations:

- Cost-analyses
- Cost description analyses
- Cost-outcome analyses

Types of participants:
For this OoR we included Cochrane and non-Cochrane systematic reviews of studies whose participants were sexually active women or men from countries classified as "developing", "low income" or "middle income" countries by the author(s) of the review or those classified as low-and middle-income countries according to the World Bank classification of countries based on gross national income (GNI) (http://data.worldbank.org/about/country-classifications) at the time the study was conducted. Reviews that included studies with participants from "high income" or "developed" countries were eligible, but only when it was possible to use the data from the studies conducted in "developing", "low income" or "middle income" countries separately. Where the review had combined data from developing/low income/middle income and developed/high income countries, and it was not possible to separate these, the systematic review was excluded.

These inclusion criteria were broad in order to ensure that the OoR included all relevant systematic reviews. For example, although we acknowledge that Family Planning Services in developing countries are typically targeted at 'currently married' women aged 15-49 years, it was feasible that systematic reviews in the area may have taken a broader eligibility criterion, and we sought to include these in the OoR.

Types of interventions:
This Overview included systematic reviews of any intervention (or combination of interventions) designed to increase contraceptive prevalence, reduce fertility or both (in order to prevent unwanted pregnancies; delay pregnancies; space pregnancies; limit fertility). Systematic reviews which have examined the use of contraception for other purposes (e.g. condoms to reduce the transmission of infectious disease) or included studies which have done so were included in the OoR provided that one of the relevant outcomes had been assessed.

Any of the following interventions either individually or in any combination (when offered as part of a service, to target individual preferences, needs, or both), were included:

Modern contraceptive methods:

Terminal methods:
- Female sterilisation (laparoscopic, minilaparotomy, combination with Caesarean section, Quinacrine).
- Male sterilisation (Vasectomy and non-scalpel vasectomy)

Spacing or temporary methods
- The Pill
- The intra uterine device (IUD; including immediate postpartum and post-abortion insertion)
- Injectables
- Implants
- The female condom
- The male condom
- Emergency contraception (EC)
- The diaphragm
- Foam/jelly

Traditional methods
- Periodic abstinence
- Withdrawal
- Lactational amenorrhea method (LAM)

Where systematic reviews of randomised, non-randomised trials or observational studies (as defined in 'Types of Studies') are concerned, the OoR included those that compare any of the above interventions (in any combination) with any comparison intervention (such as alternative methods or combinations of contraceptive methods, single methods of contraception, placebo, lack of family planning, etc).

Types of outcome measure:

Our primary outcome measures were:

- Contraceptive prevalence (measured as the proportion of women of reproductive age (or their partner) who are using a contraceptive method at a given point in time[7]).
- Unwanted pregnancies (unplanned pregnancies which are not desired by the woman: this could be measured either as number of unwanted pregnancies*8* or as proportion of women who had an unwanted pregnancy[4]).
- Unintended pregnancies (unplanned pregnancies which are more closely spaced than desired by the woman: measured either as number of unintended pregnancies[5] or as proportion of women who had an unintended pregnancy[4]).
- Unmet need for family planning (measured as the proportion of women of reproductive age who prefer to avoid or postpone child bearing, but are not using any method of contraception[4]).

The following secondary outcome measures were included:

- Initiation of contraceptive use (measured as the proportion of women (or their partners) initiating the use of contraceptives[4]).
- Continuation of contraceptive use (measured as either the proportion of women (or their partners) who have continued contraceptive use throughout the period of the study[4] or as time-to-event[9]).
- Adherence to contraception (measured in a number of ways including number of missed pills, number of times had intercourse without contraception[4)].
- Time between pregnancies (measured as time to event data – likely presented by systematic reviews as hazard ratios[6]).
- Time between births (measured as time to event data – likely presented by systematic reviews as hazard ratios[6])

7 These outcome measures could be presented by systematic reviews as risk ratios, odds ratios, risk difference/absolute risk reductions or number needed to treat. If necessary, we sought to standardize these statistics to risk ratios.

8 These outcome measures would be presented by systematic reviews as a rate ratio and, where necessary, we sought to standardise to a risk ratio.

9 These outcome measures would be presented by systematic reviews as a hazard ratio and, where necessary, we sought to standardise to a risk ratio.

Appendix 2.2 Search strategy for electronic databases

Bioline International:

Date of searches = 01.11.10 - 18.11.10

Free-text search using the following terms:

Family planning
Contraception
Contraceptive
Population control
Planned parenthood
Birth control
Birth regulation
Population regulation
Population regulating
Fertility regulation
Fertility regulating
Birth space
Birth spacer
Birth spacing
Birth spacings
Fertility control
Sterilisation
Vasectomy
Minilaparotomy
Quinacrine
Chemical occlusion
Vas plugs
Vas excision
Fascial interposition
Spacing method
Spacing methods
The pill
Intrauterine device
Intra-uterine device
Intrauterine devices
Intra-uterine devices
IUD
Injectable
Injectables
Condom
Condoms
Emergency contraception
Morning after pill
Morning-after pill
Abortion
Withdrawal method
Lactational amenorrhea
Natural family planning
Rhythm method
Calendar method
Symptothermal method
Symptothermal methods
Sympto-thermal method
Sympto-thermal methods
Symptothermic method
Symptothermic methods
Sympto-thermic method
Sympto-thermic methods
Cervical mucus method
Fertility awareness
Billings method
Basal body temperature method
Personal hormone monitoring
Coitus interruptus
Vaginal sponge
Cervical cap
Vaginal ring
Intrauterine system
Intrauterine systems
Intra-uterine system
Intra-uterine systems
Vaginal diaphragm
Latex diaphragm
Spermicide
Spermicides
Barrier method
Pregnancy prevention
Abstain sex intercourse
Abstinence sex intercourse
Abstain sexual intercourse
Abstinence sexual intercourse

The Cochrane Library

Date of search = 18.11.10

1. Contraception [MeSH]
2. Contraception:ti,ab
3. Contraceptive devices [MeSH]
4. Contraceptive agents [MeSH]
5. Contraceptive:ti,ab
6. "Family planning":ti,ab
7. Family planning policy [MeSH]
8. Family planning services [MeSH]
9. "Population control"[MeSH Terms]
10. "Planned parenthood":ti,ab
11. "Birth control":ti,ab
12. "Birth regulation":ti,ab
13. Population NEXT regulati*:ti,ab
14. Fertility NEXT regulati*:ti,ab
15. Birth NEXT spac*:ti,ab
16. "Fertility control" :ti,ab
17. Sterilisation:ti,ab
18. Vasectomy:ti,ab
19. Minilaparotomy:ti,ab
20. "Quinacrine/therapeutic use"[MeSH]
21. "chemical occlusion":ti,ab
22. "Vas plugs":ti,ab
23. "Vas excision":ti,ab
24. "Fascial interposition":ti,ab
25. Spacing NEXT method*:ti,ab
26. "The pill" :ti,ab
27. Intrauterine device:ti,ab
28. Intra-uterine device:ti,ab
29. IUD:ti,ab
30. Injectable*:ti,ab
31. Condom:ti,ab
32. "Emergency contraception":ti,ab
33. Morning after pill:ti,ab
34. Morning-after pill:ti,ab
35. Abortion:ti,ab
36. "Withdrawal method" :ti,ab
37. "Natural family planning":ti,ab
38. "Rhythm method":ti,ab
39. "Calendar method":ti,ab
40. Symptothermal NEXT method*:ti,ab
41. Sympto-thermal NEXT method*:ti,ab
42. Symptothermic NEXT method*:ti,ab
43. Sympto-thermic NEXT method*:ti,ab
44. "Cervical mucus method":ti,ab
45. "Fertility awareness" NEXT method*:ti,ab
46. "Billings method":ti,ab
47. "Basal body temperature method":ti,ab
48. "Personal hormone monitoring":ti,ab
49. "Coitus interruptus":ti,ab
50. "Vaginal sponge":ti,ab
51. "Cervical cap":ti,ab
52. "Vaginal ring":ti,ab
53. Intrauterine NEXT system*:ti,ab
54. Intra-uterine NEXT system*:ti,ab
55. Vaginal diaphragm*:ti,ab
56. Latex diaphragm*:ti,ab

57. Spermicide*:ti,ab
58. “Barrier method”:ti,ab
59. Pregnan* NEXT prevent*:ti,ab
60. Abstinence OR Abstain:ti,ab
61. Sex OR Sexual:ti,ab
62. #60 AND #61
63. Intercourse :ti,ab
64. #62 AND #63
65. Amenorrhea [MeSH]
66. Amenorrhoea:ti,ab
67. Amenorrhea:ti,ab
68. Lactational :ti,ab
69. Method :ti,ab
70. #65 OR #66 OR #67
71. #68 AND #69 AND #70
72. #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52 OR #53 OR #54 OR #55 OR #56 OR #57 OR #58 OR #59 OR #64 OR #71
73. Animals[MeSH Terms]
74. Humans[MeSH Terms]
75. #73 AND #74
76. #73 NOT #75
77. #72 NOT #76

LILACS

Date of search = 18.11.10

Language restrictions = English only

1. Subject descriptor="contraception" or "contraceptive devices" or "contraceptive agents" or "family planning" or "family planning policy" or "family planning services" or "population control" or "quinacrine"
2. contracepti$ or "family planning" or "population control" or "planned parenthood" or "birth control" or "birth regulation" or "fertility control" or sterilisation or vasectomy or minilaparotomy or "chemical occlusion" or "vas plugs" or "vas excision" or "fascial interposition" or "the pill" or iud or injectabl$ or condom$ or "emergency contraception" or "morning after pill" or “morning-after pill” or abortion or "withdrawal method" or "lactational amenorrhea" or "natural family planning" or "rhythm method" or "calendar method" or "cervical mucus method" or "fertility awareness" or "billings method" or "basal body temperature method" or "personal hormone monitoring" or "coitus interruptus" or "vaginal sponge" or "cervical cap" or "vaginal ring" or spermicide$ or “barrier method”
3. (population and regulati$) or (fertility and regulati$) or (birth and spac$) or (spacing and method$) or (intrauterine and devic$) or (intra-uterine and devic$) or (symptothermal and method$) or (symptom-thermal and method$) or (symptothermic and method$) or (symptom-thermic method$) or (intrauterine and system$) or (intra-uterine and system$) or (vaginal and diaphragm$) or (latex and diaphragm$) or (pregnan$ and prevent$) or (abstain and sex$ and intercourse) or (abstinence and sex$ and intercourse)
4. #1 OR #2 OR #3
5. #4 AND Publication type = Meta-analysis
6. #4 AND Publication type = Review
7. Title = meta-analysis or search$
8. Abstract = meta-analysis or search$
9. #7 OR #8
10. #4 AND #8
11. #5 OR #6 OR #10
12. #11 (Language restriction English)

POPLINE

Date of search = 19.11.10

((Family planning/Population control/Planned parenthood/Birth control/Birth regulation/Population regulati*/Fertility regulati*/Birth spac*/Fertility control/Sterilisation/Vasectomy/Minilaparotomy/ Quinacrine/Chemical occlusion/Vas plugs/Vas excision/Fascial interposition/Spacing method*/The pill/ Intrauterine device*/Intra-uterine device*/IUD/Injectable*/Condom/Emergency contraception/Morning after pill/Morning-after pill/Abortion/Withdrawal method/Lactational amenorrhea method/Natural family planning/Rhythm method/Calendar method/ Symptothermal method*/Sympto-thermal method*/ Symptothermic method*/Sympto-thermic method*/Cervical mucus method/Fertility awareness method*/ Billings method/Basal body temperature method/Personal hormone monitoring/Coitus interruptus/Vaginal sponge/Cervical cap/Vaginal ring/ Intrauterine system*/Intra-uterine system*/Vaginal diaphragm*/Latex diaphragm*/Spermicide*/Barrier method/Pregnan* prevent*)/((Abstinence/Abstain)&(Sex/Sexual)))&(Meta-analysis/Review/Search*)

PUBMED

Date of search = 22.11.10

1. Contraception [Tiab]
2. Contraception [MeSH Terms]
3. Contraceptive devices [MeSH Terms]
4. Contraceptive agents [MeSH Terms]
5. "Contraceptives" [Tiab]
6. "Contraceptive" [Tiab]
7. "Family planning" [Tiab]
8. Family planning policy [MeSH Terms]
9. Family planning services [MeSH Terms]
10. "Population control"[MeSH Terms]
11. "Population control" [Tiab]
12. Planned parenthood [Tiab]
13. "Birth control" [Tiab]
14. Birth regulation [Tiab]
15. Population regulati* [Tiab]
16. Fertility regulati* [Tiab]
17. Birth spac* [Tiab]
18. "Fertility control" [Tiab]
19. Sterilisation [Tiab]
20. Vasectomy [Tiab]
21. "Minilaparotomy" [Tiab]
22. "Quinacrine/therapeutic use"[MeSH]
23. "chemical occlusion" [Tiab]
24. Vas plugs [Tiab]
25. Vas excision [Tiab]
26. "Fascial interposition" [Tiab]
27. Spacing method* [Tiab]
28. "The pill" [Tiab]
29. Intrauterine device* [Tiab]
30. Intra-uterine device* [Tiab]
31. IUD [Tiab]
32. Injectable* [Tiab]
33. Condom [Tiab]
34. Emergency contraception [Tiab]
35. Morning after pill [Tiab]
36. Morning-after pill [Tiab]
37. Abortion [Tiab]
38. "Withdrawal method" [Tiab]
39. Lactational amenorrhea method [Tiab]
40. Natural family planning [Tiab]

41. “Rhythm method” [Tiab]
42. “Calendar method” [Tiab]
43. Symptothermal method* [Tiab]
44. Sympto-thermal method* [Tiab]
45. Symptothermic method* [Tiab]
46. Sympto-thermic method* [Tiab]
47. “Cervical mucus method” [Tiab]
48. “Fertility awareness method” [Tiab]
49. “Fertility awareness methods” [Tiab]
50. “Billings method” [Tiab]
51. “Basal body temperature method” [Tiab]
52. “Personal hormone monitoring” [Tiab]
53. “Coitus interruptus” [Tiab]
54. “Vaginal sponge” [Tiab]
55. “Cervical cap” [Tiab]
56. “Vaginal ring” [Tiab]
57. Intrauterine system* [Tiab]
58. Intra-uterine system* [Tiab]
59. Vaginal diaphragm* [Tiab]
60. Latex diaphragm* [Tiab]
61. Spermicide* [Tiab]
62. “barrier method” [Tiab]
63. Pregnan* prevent* [Tiab]
64. Abstinence [Tiab]
65. Abstain [Tiab]
66. #64 OR #65
67. Sex [Tiab]
68. Sexual [Tiab]
69. #67 OR #68
70. #66 AND #69
71. Intercourse [Tiab]
72. #70 AND #71
73. #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52 OR #53 OR #54 OR #55 OR #56 OR #57 OR #58 OR #59 OR #60 OR #61 OR #62 OR #63 OR #72
74. Animals[MeSH Terms] NOT (Humans[MeSH Terms] AND Animals[MeSH Terms])
75. #73 NOT #74
76. Meta-analysis[publication type]
77. Meta-analysis [Title/abstract]
78. Meta-analysis [MeSH Terms]
79. Review[Publication Type]
80. Search*[Title/Abstract]
81. #76 OR #77 OR #78 OR #79 OR #80
82. #75 AND #81

TRIP Database

Date of search = 03.12.10 - 08.12.10

Publication type = systematic reviews

Searched the following free-text terms:

- Contracepti*
- "Family planning"
- "Population Control"
- "Planned parenthood"
- "Birth control"
- "Birth regulation"
- "Population regulation"
- "population regulating"
- " Fertility regulati*"
- "Birth spac*"
- "Fertility control"
- Sterilisation
- Vasectomy
- Minilaparotomy
- Quinacrine
- "Chemical occlusion"
- "Vas plugs"
- "Vas excision"
- "Fascial interposition"
- "Spacing method*"
- "The pill"
- "Intrauterine device*"
- "Intra-uterine device*"
- IUD
- Injectable*
- Condom
- "Emergency contraception"
- "Morning after pill"
- "Morning-after pill"
- Abortion
- "Withdrawal method"
- "Lactational amenorrhea method"
- "Natural family planning"
- "Rhythm method"
- "Calendar method"
- "Symptothermal method*"
- "Sympto-thermal method*"
- "Symptothermic method*"
- "Sympto-thermic method*"
- "Cervical mucus method"
- "Fertility awareness method*"
- "Billings method"
- "Basal body temperature method"
- "Personal hormone monitoring"
- "Coitus interruptus"
- "Vaginal sponge"
- "Cervical cap"
- "Vaginal ring"
- "Intrauterine system*"
- "Intra-uterine system*"
- "Vaginal diaphragm*"

- "Latex diaphragm*"
- Spermicide*
- "Barrier method"
- Pregnan* prevent*
- Sex* AND abstain AND intercourse
- Sex* AND abstinence AND intercourse

WHO Reproductive Health Library

Date of search = 28.10.10 - 29.10.10

As the WHO Reproductive Health Library contains only a small number of reviews those indexed under the following headings were added (by hand) into the main reference management database:

Fertility regulation:

- Contraception (and associated Cochrane Reviews)
- Induced abortion (and associated Cochrane Reviews)
- Adolescent sexual and reproductive health (and associated Cochrane Reviews)
- HIV (and associated Cochrane Reviews)

Zetoc (British Library's table of contents)

Date of search = 18.11.10

- Contracepti* and Meta-analysis (title)
- Contracepti* and Review (title)
- Contracepti* and Search (title)
- "Family planning" and Review (title)
- Population regulati* and Review (title)
- "Birth control" and Review (title)
- Population regulati* and Review (title)
- Fertility regulati* and Review (title)
- Fertility regulati* and Search (title)
- Birth spac* and Meta-analysis (title)
- Birth spac* and Review (title)
- "Fertility control" and Review (title)
- "Fertility control" and Search (title)
- Sterilisation and Review (title)
- Vasectomy and Meta-analysis (title)
- Vasectomy and Review (title)
- Spacing method* and Review (title)
- Minilaparotomy and Review (title)
- Quinacrine and Review (title)
- "the pill" and Meta-analysis (title)
- "the pill" and Review (title)
- "the pill" and Search (title)
- Intrauterine device* and Meta-analysis (title)
- Intrauterine device* and Review (title)
- Intra-uterine device* and Review (title)
- IUD and Meta-analysis (title)
- IUD and Review (title)
- Injectable* and Meta-analysis (title)
- Injectable* and Review (title)
- Injectable* and Search (title)
- Condom* and Meta-analysis (title)
- Condom* and Review (title)

- “Emergency contraception” and Meta-analysis (title)
- “Emergency contraception” and Review (title)
- Abortion and Meta-analysis (title)
- Abortion and Review (title)
- Abortion and Search (title)
- “Lactational amenorrhea method” and Search (title)
- “Calendar method” and Review (title)
- “Vaginal ring” and Review (title)
- Intrauterine system* and Meta-analysis (title)
- Intrauterine system* and Review (title)
- Intrauterine system* and Search (title)
- Intra-uterine system* and Meta-analysis (title)
- Intra-uterine system* and Review (title)
- Spermicide* and Meta-analysis (title)
- Spermicide* and Review (title)
- Spermicide* and Search (title)
- Pregnan* prevent* and Meta-analysis (title)
- Pregnan* prevent* and Review (title)

Appendix 2.3 Study eligibility form and notes

OVERVIEW OF REVIEWS: SYSTEMATIC REVIEW ELIGIBILITY FORM

If the answer to any of the below questions is no then the report will be excluded and no further questions need be answered.

	Yes Next question	Unclear	No Exclude
Methods used in review			
Is there a clearly stated set of objectives with pre-defined eligibility criteria for studies?	☐	☐	☐
Is there an explicit, reproducible methodology?	☐	☐	☐
Is there a systematic search that attempts to identify all studies that would meet the eligibility criteria?	☐	☐	☐
Is there an assessment of the validity of the findings of the included studies, for example through the assessment of risk of bias?	☐	☐	☐
Is there a systematic presentation, and synthesis, of the characteristics and findings of the included studies?	☐	☐	☐
Participants[10]			
Does the systematic review include studies whose participants are sexually active women or men?	☐	☐	☐
Setting[1]			
Does the systematic review include studies conducted in countries either defined by the review as developing, low income, middle income or low-middle income or defined by the World Bank Classification [Note 1] as lower income, lower-middle income or upper-middle income economies?	☐	☐	☐
Is it possible to extract the data from studies conducted in developing countries separately from those conducted in developed countries?	☐	☐	☐
Intervention[1]			
Does the systematic review include studies which include one or a combination of interventions designed to increase contraceptive prevalence, reduce fertility or both (in order to prevent unwanted pregnancies; delay pregnancies; space pregnancies; limit fertility)? [Note 2]	☐	☐	☐
Outcomes[1]			
Does the systematic review include studies which measure an outcome related to contraceptive use, unwanted pregnancy or births, or unmet need for family planning? [Note 3]	☐	☐	☐

STUDY DESIGNS*

To be included in the Overview of Reviews the systematic review must include one or more of the following study designs.

	Yes	Unclear	No
Randomised Controlled Trial (RCT)			
A trial in which the participants were definitely assigned prospectively to one or two (or more) alternative forms of health care using a process of random allocation.	☐	☐	☐
Controlled Clinical Trial (CCT)			
A trial in which participants were either definitely or possibly assigned prospectively to one or two (or more) alternative forms of healthcare using a quasi-random method of allocation (e.g. alternation, date of birth).	☐	☐	☐
Controlled Before and After Study (CBA)			

[10] According to the inclusion and exclusion criteria detailed in the systematic review

A study in which one locality is matched to a second, and in one locality a new contraceptive method or combination of methods is implemented whilst the other stays the same, and both locations are measured concurrently before and after the intervention.	☐	☐	☐
Interrupted Time Series (ITS)			
A study in which one locality is measured at series of points in time prior to, and again after, a new contraceptive method or combination of methods is implemented. A minimum of three time points before and three time points after the intervention is required in order to see a change in trend. This study type may or may not include a concurrent control arm.	☐	☐	☐
Before and After Study			
A study in which only one locality is measured, once before and once after an intervention, and there is no concurrent control arm.	☐	☐	☐
Cohort Study			
A study in which a group of people who have been exposed to one type of contraceptive method or combination of methods are followed-up prospectively, and compared to a concurrent group of people who have been exposed to a different type of contraceptive method mix.	☐	☐	☐
Case Control Study			
A study in which a group of people with desirable outcomes are matched to a group of people with undesirable outcomes and a retrospective investigation takes place to examine the combination of contraceptive methods they were exposed to.	☐	☐	☐
Longitudinal Study			
A study of a single service area which is followed up over a period in time before and after the implementation of a new contraceptive method or combination of contraceptive methods (akin to ITS).	☐	☐	☐
Economic Evaluation			
Any of the following: Full economic evaluations: cost-effectiveness analyses, cost-utility analyses, cost-benefit analyses. Partial economic evaluations: cost-analyses, cost description analyses, cost-outcome analyses.	☐	☐	☐

FINAL DECISION:	Include	☐	Subject to clarification	☐	Exclude ☐

NOTES

[1] 2008 World Bank list of economies

Lower income economies [INCLUDED]
Afghanistan, Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Congo, Dem. Rep, Eritrea, Ethiopia, Gambia, The, Ghana, Guinea, Guinea-Bisau, Haiti, Kenya, Korea, Dem Rep., Kyrgyz Republic, Lao PDR, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Senegal, Sierra Leone, Somalia, Tajikistan, Tanzania, Togo, Uganda, Uzbekistan, Vietnam, Yemen, Rep., Zambia, Zimbabwe

Lower-middle income economies [INCLUDED]
Albania, Angola, Armenia, Azerbaijan, Belize, Bhutan, Bolivia, Cameroon, Cape Verde, China, Congo, Rep., Côte d'Ivoire, Djibouti, Ecuador, Egypt, Arab Rep., El Salvador, Georgia, Guatemala, Guyana, Honduras, India, Indonesia, Iran, Islamic Rep., Iraq, Jordan, Kiribati, Kosovo, Lesotho, Maldives, Marshall Islands, Micronesia, Fed. Sts., Moldova, Mongolia, Morocco, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Paraguay, Philippines, Samoa, São Tomé and Principe, Solomon Islands, Sri Lanka, Sudan, Swaziland, Syrian Arab Republic, Thailand, Timor-Leste, Tonga, Tunisia, Turkmenistan, Ukraine, Vanuatu, West Bank and Gaza.

Upper-middle-income economies [INCLUDED]
Algeria, American Samoa, Argentina, Belarus, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Fiji, Gabon, Grenada, Jamaica, Kazakhstan, Latvia, Lebanon, Libya, Lithuania, Macedonia, FYR, Malaysia, Mauritius, Mayotte[1], Mexico, Montenegro, Namibia, Palau, Panama, Peru, Poland, Romania, Russian Federation, Serbia, Seychelles, South Africa, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Turkey, Uruguay, Venezuela, RB

High-income economies [EXCLUDED]
Andorra, Antigua and Barbuda[2], Aruba, Australia, Austria, Bahamas, The, Bahrain, Barbados[3], Belgium, Bermuda, Brunei Darussalam, Canada, Cayman Islands, Channel Islands, Croatia[4], Cyprus[5], Czech Republic[6], Denmark, Equatorial Guinea[7], Estonia[8], Faeroe Islands, Finland, France, French Polynesia, Germany, Greece[9], Greenland, Guam[10], Hong Kong SAR, China, Hungary[11], Iceland, Ireland, Isle of Man[12], Israel, Italy, Japan, Korea, Rep.[13], Kuwait, Liechtenstein, Luxembourg, Macao SAR[14], China, Malta[15], Monaco, Netherlands, Netherlands Antilles[16], New Caledonia[17], New Zealand, Northern Mariana Islands[18], Norway, Oman[19], Portugal, Puerto Rico[20], Qatar, San Marino, Saudi Arabia[21], Singapore, Slovak Republic[22], Slovenia[23], Spain, Sweden, Switzerland, Trinidad and Tobago[24], United Arab Emirates, United Kingdom, United States, Virgin Islands (U.S.)

PLEASE NOTE CHANGES IN STATUS (Records from 1987 to 2008):

This was classified as a high-income economy in 1990 only
This was **not** classified as a high-income economy from 1987-2001, 2003-2004
This was classified as a high-income economy in 1989, 2000, 2002, 2006-08 only
This was **not** classified as a high-income economy until 2008
This was **not** classified as a high-income economy in 1987
This was **not** classified as a high-income economy until 2006
This was **not** classified as a high-income economy until 2007
This was **not** classified as a high-income economy until 2007
This was **not** classified as a high-income economy until 1996
This was classified as a high-income economy in 1987-89 and 1995-2008 only
This was **not** classified as a high-income economy until 2007
This was classified as a high-income economy in 1987-89 and 2002-2008 only
This was classified as a high-income economy in 1995-97 and 2001-2008 only
This was **not** classified as a high-income economy until 1994
This was classified as a high-income economy in 1989, 1998, 2000 and 2002-2008 only
This was **not** classified as a high-income economy until 1994
This was **not** classified as a high-income economy until 1995
This was classified as a high-income economy in 1995-2001 and 2007-08 only
This was **not** classified as a high-income economy until 2007

This was classified as a high-income economy in 1989 and 2002-08 only
This was classified as a high-income economy in 1987-89 and 2004-08 only
This was **not** classified as a high-income economy until 2007
This was **not** classified as a high-income economy until 1997
This was **not** classified as a high-income economy until 2006

COUNTRIES NO LONGER IN EXISTENCE:

Czechoslovakia, Serbia & Montenegro, USSR and Yugoslavia were not classified as high income economies at any date.

[2] List of contraceptive methods:

- Female sterilisation (laparoscopic, minilaparotomy, combination with Caesarean section, Quinacrine)
- Male sterilisation (Vasectomy and non-scalpel vasectomy)
- The Pill
- The intra uterine device (IUD; including immediate postpartum and post-abortion insertion)
- Injectables
- Implants
- The female condom
- The male condom
- Emergency contraception (EC)
- The diaphragm
- Foam/jelly
- Periodic abstinence
- Withdrawal
- Lactational amenorrhea method (LAM)

[3] List of outcomes:

Primary
- Contraceptive prevalence (the proportion of women of reproductive age (or their partner) who are using a contraceptive method at a given point in time)
- Unwanted pregnancies (unplanned pregnancies which are not desired by the woman)
- Unintended pregnancies (unplanned pregnancies which are more closely spaced than desired by the woman)
- Unmet need for family planning (the proportion of women of reproductive age who prefer to avoid or postpone child bearing, but are not using any method of contraception)

Secondary
- Initiation of contraceptive use (likely to be measured as the proportion of women (or their partners) initiating the use of contraceptives)
- Continuation of contraceptive use (likely to be measured as either the proportion of women (or their partners) who have continued contraceptive use throughout the period of the study or as time-to-event)
- Adherence to contraception (could be measured in a number of ways including number of missed pills, number of times had intercourse without contraception)
- Time between pregnancies (likely to be measured as time to event data)
- Time between births (likely to be measured as time to event data)

*Systematic Review ID*_____ *Reviewer ID*_____

Appendix 2.4 Data collection tool

OVERVIEW OF REVIEWS: SYSTEMATIC REVIEW DATA COLLECTION FORM
Impact of Contraceptive Methods and Mixes of Contraceptive Methods on Contraceptive Prevalence, Unmet Need for Family Planning, and, Unwanted and Unintended Pregnancies.

Throughout data collection please include the page number(s) from which information has been obtained.

A. Notes

B. Questions for authors? E.g. to ask for missing information or clarification.

C. General Information

Type of report (e.g. journal article)
Author contact details
Date searches conducted
Date review published ☐ Exclude (review withdrawn)
Date of last update
Date this form completed

*Systematic Review ID*_____ *Reviewer ID*_____

D. VERIFICATION OF SYSTEMATIC REVIEW ELIGIBILITY	Done	Not done	Not clear
Did this review use an explicit, reproducible methodology (including a systematic search strategy and assessment of the validity of findings of included studies) to produce a systematic presentation, and synthesis, of the findings of included studies?	☐	☐	☐
Were participants sexually active women or men?	☐	☐	☐
Does it include at least one study conducted in a developing country?	☐	☐	☐
Is it possible to extract the data from studies conducted in developing countries separately from those conducted in developed countries?	☐	☐	☐
Do the included studies examine methods of contraception (individually or in combination) as an intervention?	☐	☐	☐
Do the included studies measure an outcome related to contraceptive use, unwanted pregnancy or births, or unmet need for family planning?	☐	☐	☐
Does the review include studies using at least one of the following study designs[11]:			
RCT	☐	☐	☐
CCT	☐	☐	☐
CBA	☐	☐	☐
ITS	☐	☐	☐
Before and After Study	☐	☐	☐
Cohort Study	☐	☐	☐
Case Control Study	☐	☐	☐
Longitudinal Study	☐	☐	☐
Economic Evaluation	☐	☐	☐
Are relevant and interpretable data presented and obtainable?	☐	☐	☐

[11] See additional notes for definitions

*Systematic Review ID*_____ *Reviewer ID*_____

E. QUALITY ASSESSMENT OF SYSTEMATIC REVIEW *See additional notes for further guidance*

	Yes	No	Can't answer*	N/A	Notes
Was an 'a priori' design provided?	☐	☐	☐	☐	
Was there duplicate study selection and data extraction?	☐	☐	☐	☐	
Was a comprehensive literature search performed?	☐	☐	☐	☐	
Was the status of publication (i.e. grey literature) used as an inclusion criterion?	☐	☐	☐	☐	
Was a list of studies (included and excluded) provided?	☐	☐	☐	☐	
Were the characteristics of the included studies provided?	☐	☐	☐	☐	
Was the scientific quality of the included studies assessed and documented?	☐	☐	☐	☐	
Was the scientific quality of the included studies used appropriately in formulating conclusions?	☐	☐	☐	☐	
Were the methods used to combine the findings of studies appropriate?	☐	☐	☐	☐	
Was the likelihood of publication bias assessed?	☐	☐	☐	☐	
Was the conflict of interest stated?	☐	☐	☐	☐	

*If can't answer ticked please note in 'Questions for Authors'

*Systematic Review ID*_____ *Reviewer ID*_____

F. DATA EXTRACTION: Methods of the systematic review

In this section please record the inclusion and exclusion criteria of the review. This can be found in the methods section and should not include information about the included studies (e.g. that found in 'Description of studies' sections or similar).

	Inclusion criteria	Exclusion criteria
Participants		
Settings (e.g. limited to any particular countries)		
Intervention		
Comparison/Control		
Outcomes - primary		
Outcomes - secondary		

G. DATA EXTRACTION: Relevant comparisons conducted and outcomes for which possible to extract developing countries data

Please tick the boxes for all outcomes **for which we can extract the developing countries data separately** (i.e. in a review that includes meta-analysis those outcomes for which all contributing studies were conducted in a developing country, in a narrative review those for which the contribution of studies conducted in developing countries is clear).

Comparisons (please complete for each comparison)		**Outcomes** (please tick)								
		Contraceptive prevalence	Unwanted pregnancies	Unmet need for family planning	Initiation of contraceptive use	Continuation of contraceptive use	Adherence to contraception	Time between pregnancies	Time between births	Not able to extract
C1	V	☐	☐	☐	☐	☐	☐	☐	☐	☐
C2	V	☐	☐	☐	☐	☐	☐	☐	☐	☐
C3	V	☐	☐	☐	☐	☐	☐	☐	☐	☐
C4	V	☐	☐	☐	☐	☐	☐	☐	☐	☐
C5	V	☐	☐	☐	☐	☐	☐	☐	☐	☐
C6	V	☐	☐	☐	☐	☐	☐	☐	☐	☐
C7	V	☐	☐	☐	☐	☐	☐	☐	☐	☐
C8	V	☐	☐	☐	☐	☐	☐	☐	☐	☐

*Systematic Review ID*_____ *Reviewer ID*_____

H. DATA EXTRACTION: Measurement of outcomes

For those outcomes where it is possible to extract the developing countries data separately please complete the following information about how the outcomes were measured. Please tick N/A for outcomes where it is not possible to extract this data.

Outcome	N/A	Measured as:	Summary statistic presented:[12]						
			RiR	OR	RD/ARR	NNT	RaR[13]	HR[1]	Other
Contraceptive prevalence	☐	☐ Proportion of women of reproductive age (or their partner) who are using a contraceptive method at a given point in time ☐ Other_____	☐	☐	☐	☐	☐	☐	☐ _____
Unwanted pregnancies[14]	☐	☐ Proportion of women who had an unwanted pregnancy. ☐ Number of unintended pregnancies. ☐ Other_____	☐	☐	☐	☐	☐	☐	☐ _____
		Was pregnancy treated as an event ☐ or non-event? ☐							
Unmet need for family planning	☐	☐ Proportion of women of reproductive age who prefer to avoid or postpone child bearing, but are not using any method of contraception. ☐ Other_____	☐	☐	☐	☐	☐	☐	☐ _____
Initiation of contraceptive use	☐	☐ Proportion of women (or their partners) initiating the use of contraceptives ☐ Other_____	☐	☐	☐	☐	☐	☐	☐
Continuation of contraceptive use	☐	☐ Proportion of women (or their partners) who have continued contraceptive use throughout the period of the study ☐ Time-to-event ☐ Other_____	☐	☐	☐	☐	☐	☐	☐ _____
Adherence to contraception	☐	☐ Number of missed pills ☐ Number of times had intercourse without contraception ☐ Other_____	☐	☐	☐	☐	☐	☐	☐ _____
Time between pregnancies	☐	☐ Time-to-event ☐ Other_____	☐	☐	☐	☐	☐	☐	☐ _____
Time between births	☐	☐ Time-to-event ☐ Other_____	☐	☐	☐	☐	☐	☐	☐ _____

I. DATA EXTRACTION: Results for outcomes relevant to OoR (where meta-analyses have been undertaken). ***Please complete one table per outcome***

[12] For abbreviations see additional notes
[13] Will need standardising to risk ratio
[14] Unplanned pregnancies not desired by the woman

*Systematic Review ID*_____ *Reviewer ID*_____

Outcome (please tick only one):

☐ Contraceptive prevalence ☐ Unwanted pregnancies ☐ Unmet need for family planning ☐ Initiation of contraceptive use
☐ Continuation of contraceptive use ☐ Adherence to contraception ☐ Time between pregnancies ☐ Time between births

C[15]	Risk in comparison group[16]	Risk in intervention group[7]	Relative risk (95% CI) E.g. Pooled odds ratio	Number of participants (studies)	Studies included (Author et al, year)	Countries in which included studies conducted	Length of follow up (Please tally number of studies for each time period)		Additional comments
							< 6 mths		
							6 mths – 1 year		
							> 1year		
							< 6 mths		
							6 mths – 1 year		
							> 1year		
							< 6 mths		
							6 mths – 1 year		
							> 1year		
							< 6 mths		
							6 mths – 1 year		
							> 1year		

[15] Please complete the comparison number here using the number assigned to them in Section G. Please do not complete for comparison where it is not possible to extract data related to this outcome.

[16] e.g. n/N had unwanted pregnancies

*Systematic Review ID*_____ *Reviewer ID*_____

J. DATA EXTRACTION: Results for outcomes relevant to OoR (where meta-analyses have <u>not</u> been undertaken) ***Complete one table per outcome***

Outcome (please tick only one):

☐ Contraceptive prevalence ☐ Unwanted pregnancies ☐ Unmet need for family planning ☐ Initiation of contraceptive use
☐ Continuation of contraceptive use ☐ Adherence to contraception ☐ Time between pregnancies ☐ Time between births

C[17]	Summary of findings	Studies included (Study ID e.g. author, year)	Countries in which included studies conducted

[17] Please complete the comparison number here using the number assigned to them in Section G. Please do not complete for comparison where it is not possible to extract data related to this outcome.

*Systematic Review ID*_____ *Reviewer ID*_____

K. DATA EXTRACTION: For all types of analyses – further contextual information. *Complete one table per outcome*

Outcome (please tick only one):

☐ Contraceptive prevalence ☐ Unwanted pregnancies ☐ Unmet need for family planning ☐ Initiation of contraceptive use
☐ Continuation of contraceptive use ☐ Adherence to contraception ☐ Time between pregnancies ☐ Time between births

C[18]	How were family planning services provided? E.g. community-based, clinic-based.	How accessible were the family planning services? E.g. distance to travel to access, transportation available to services.	How were the family planning services staffed? E.g. nurse-led clinics	Were there any issues regarding availability of contraceptive methods?	How much did the service cost users?	Were there any cultural factors which may have affected choice or availability of contraceptive methods?	Who funded the family planning services (e.g. NGO, private sector)?
	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear
	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear
	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear
	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear	☐ Not clear

[18] Please complete the comparison number here using the number assigned to them in Section G. Please do not complete for comparison where it is not possible to extract data related to this outcome.

*Systematic Review ID*_____ *Reviewer ID*_____

L. QUALITY OF EVIDENCE: for each comparison – as reported in the systematic review.[19]

C[20]	Study design(s) – what study designs contributed to the evidence for this comparison RCTs, observational studies?	Study quality – was there adequate allocation concealment, blinding and follow-up; were there any serious limitations?	Consistency – was there similarity of estimates of effect across studies?	Directness – how similar were the people, interventions and outcomes to those of interest?	If reported – what was the grade assigned to the overall body of evidence?
					☐ Not reported
					☐ Not reported
					☐ Not reported
					☐ Not reported

[19] For further guidance see GRADE Working Group. (2004). Grading quality of evidence and strength of recommendations. *BMJ, 328*, 1490 – provided in additional notes.

[20] Please complete the comparison number here using the number assigned to them in Section G. Please do not complete for comparison where it is not possible to extract data related to this outcome.

Appendix 3.1 Table of included reviews

Cheng 2008

Review type	Cochrane review
Study design	Predominantly RCTs
Date assessed as up-to-date	17th February 2008
Population	Inclusion criteria: Women with regular menses requesting emergency contraception following unprotected intercourse. Exclusion criteria: Women attending clinics for 'once a month' contraception in the form of luteal phase contraceptives and menstrual regulation using mifepristone (RU 486) and prostaglandin analogues.
Setting	Not limited by setting
Interventions	Inclusion criteria: Both intervention and comparisons as listed: 1. Any regimen vs nothing/placebo 2. Hormonal ECPs: comparisons of different regimens: • Levonorgestrel vs Yuzpe • Levonorgestrel vs mifepristone • Mifepristone vs Yuzpe • Mifepristone vs anordin • Mifepristone vs mifepristone +anordin • Mifepristone vs mifepristone + misoprostol • Mifepristone vs mifepristone + tamoxifen • Mifepristone vs danazol • Yuzpe vs high-dose oestrogen • Yuzpe vs danazol • CDB-2914 vs levonorgestrel • Drug/dose comparisons • Others 3. IUD comparisons to ECPs Combination treatments and comparisons of these with other treatments alone or in combination were considered for inclusion when such data are available, including different doses. Exclusion criteria: Similar interventions used by women as regular postcoital contraception. Comparisons of different delivery systems such as advance provision or over-the-counter delivery, and any kind of educational interventions.
Comparison interventions	N/A
Outcomes for which data were reported	Primary: Pregnancy rate in women receiving different regimens (or control). Secondary:

	1. Observed number of pregnancies (all women) 2. Ectopic pregnancy 3. Side-effects • Any side-effect • Nausea • Vomiting • Headache • Dizziness • Fatigue • Breast tenderness • Diarrhoea • Spotting or bleeding • Others 4. Menses (early or late)
Review limitations	

Draper 2006

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	23rd May 2006
Population	Inclusion criteria: Healthy women of reproductive age, of all ethnic groups who are using either of the IPCs i.e. DMPA or NET-EN.
Setting	Not limited by setting
Interventions	Inclusion criteria: DMPA given at does of 150mg IM every 3 months versus…
Comparison interventions	NET-EN given at does of 200mg IM every 2 months.
Outcomes for which data were reported	Primary: Cumulative discontinuation risks: overall risks and risks due to specific menstrual and non-menstrual effects. Contraceptive efficacy: Accidental pregnancy as a reason for discontinuation. Minor effects: Amenorrhea, menorrhagia, spotting, irregular bleeding, dysmenorrhoea. Non-menstrual = headache, clinically significant weight change of 24kg, decreased libido, mood swings/depression, nausea, dizziness, vaginal discharge. Major effects: Increased HIV vaginal shedding, susceptibility to HIV and other sexually transmitted infections.
Review limitations	Review has not been recently updated.

Edelman 2005

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	3rd September 2009

Population	Inclusion criteria: Reproductive-age women using combined hormonal contraceptives for contraceptive purposes. Exclusion criteria: Use of combined hormonal contraceptives for conditions such as endometriosis.
Setting	Not limited by setting
Interventions	Inclusion criteria: Any type of combined hormonal contraceptive (pill, patch, ring) given in a continuous manner (>28 days active hormones)
Comparison interventions	Traditional cyclic use combined hormonal contraceptive (21 days active hormone, placebo).
Outcomes for which data were reported	Primary: Study discontinuation. Pregnancy. Bleeding. Endometrial thickness. Adherence. Satisfaction. Adverse events.
Review limitations	

French 2004

Review type	Cochrane review
Study design	Predominantly RCT and CCT
Date assessed as up-to-date	14th July 2009
Population	Inclusion criteria: Women of reproductive years
Setting	Not limited by setting
Interventions	Inclusion criteria: Hormonally impregnated IUDs
Comparison interventions	Hormonal IUDs; Barrier contraception; oral contraceptives; injectable contraceptives; subdermal implants; other implants
Outcomes for which data were reported	Primary: Pregnancy due to method failure at 1,2,3,4 and 5+ years. Continuation of method at 1,2,3,4 and 5+ years Secondary: Planned pregnancy after discontinuation at 1+2 years; Failed removal; side effects; menstrual bleeding changes. Adverse clinical events; reason for discontinuation.
Review limitations	

Gallo 2008

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	31st October 2010
Population	Inclusion criteria: Reproductive age women. Exclusion criteria: Contraindications to combination injectable contraceptive use.
Setting	Not limited by setting
Interventions	Inclusion criteria: Combination injectable contraceptives (limited to formulations marketed at the time of the

	review).
Comparison interventions	Any other contraceptive method or placebo.
Outcomes for which data were reported	Primary: Measures of contraceptive efficacy. Bleeding patterns. Continuation. User preferences. Side effects. Biochemical measures were excluded.
Review limitations	

Gallo 2011

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	2nd November 2010
Population	Inclusion criteria: Women of reproductive age, irrespective of previous COC history. Exclusion criteria: Medical contraindications to COCs
Setting	Not limited by setting although only English language reports included.
Interventions	Inclusion criteria: Any combined oral contraceptive (COC) containing ≥20µg of EE (ethinyl estradiol). Trial interventions had to be designed to be administered for a minimum of 3 consecutive cycles. Exclusion criteria: If COC used primarily as treatment for non-contraceptive conditions e.g. acne, anovulation, dysmenorrhea, menorrhagia, pelvic pain or endometriosis.
Comparison interventions	COC containing >20µg EE.
Outcomes for which data were reported	Primary: Contraceptive effectiveness, bleeding patterns, side effects, trial discontinuation due to bleeding-related reasons or other side-effects. Trials measuring only biochemical changes were excluded.
Review limitations	

Grimes 2004

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	1st November 2009
Population	Inclusion criteria: All couples included in the eligible trials.
Setting	Not limited by setting
Interventions	Inclusion criteria: Any fertility awareness-based methods used to prevent pregnancy. These included but were not limited to the calendar method, the basal-body temperature method, the ovulation or Billings method, the symptothermal method and ovulation prediction devices that rely on assays. Interventions could include fertility awareness-based methods used with or without a barrier contraceptive or withdrawal.
Comparison interventions	Compared with placebo, another method, including an alternative fertility awareness-based method or

	fertility awareness-based methods used in conjunction with another contraceptive.
Outcomes for which data were reported	Primary: Pregnancy rates Secondary: Continuation rates, acceptability.
Review limitations	In this review there was poor reporting of data collection and analysis methods. The review has mixed the reporting of inclusion/exclusion criteria with the description of included studies.

Grimes 2010a

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	31st March 2010
Population	Inclusion criteria: Post-partum women of any age
Setting	Not limited by setting
Interventions	Inclusion criteria: Insertion of any type of IUD within 10 minutes of passing the placenta
Comparison interventions	Different devices, different insertion techniques, immediate post-partum versus delayed insertion and versus internal insertion (>6 weeks after delivery).
Outcomes for which data were reported	Primary: Pregnancy; Spontaneous expulsion; Continuation with the method
Review limitations	

Grimes 2010b

Review type	Cochrane review
Study design	Predominantly RCT
Date assessed as up-to-date	7th July 2008
Population	Inclusion criteria: Women requiring contraception with data in the eligible trials.
Setting	Not limited by setting
Interventions	Inclusion criteria: Progestin- only pill. Any dose
Comparison interventions	Other progestin-only pill; different dose of progestin-only pill; combined oral contraceptive; other contraceptives
Outcomes for which data were reported	Primary: Pregnancy Secondary: Side effects including bleeding patterns; continuation rates Trials measuring invalid surrogate end points, especially ovulation, were excluded.
Review limitations	

Grimes 2005

Review type	Cochrane Review
Study design	Predominantly RCT

Date assessed as up-to-date	19th September 2010
Population	Inclusion criteria: All women included in eligible trials
Setting	Not limited by setting
Interventions	Inclusion criteria: Any commercially available spermicide used for prevention of pregnancy. Spermicide alone. Exclusion criteria: Trials using spermicide for preventing STIs.
Comparison interventions	Different spermicide. Same spermicide and barrier method. Different dose of same spermicide. Different formulation of same spermicide. Another contraceptive.
Outcomes for which data were reported	Primary: Pregnancy Secondary: Continuation rates. Side effects. Acceptability. Changes to vaginal epithelium. Trials which only reported surrogate end-points, such as in-vitro effects on sperm motility were excluded.
Review limitations	

Halpern 2010

Review type	Cochrane Review
Study design	Predominantly RCT and CCT
Date assessed as up-to-date	9th February 2009
Population	Inclusion criteria: Women who repeatedly used hormonal methods immediately before or after coitus to prevent pregnancy and who provided data in the eligible trials.
Setting	Not limited by setting
Interventions	Inclusion criteria: Hormonal drug by mouth after or immediately before each act of intercourse and taken repeatedly during one or more menstrual cycles for contraception.
Comparison interventions	Not given.
Outcomes for which data were reported	Primary: Pregnancy Secondary: All related side effects, including bleeding patterns, and discontinuation rates (if available).
Review limitations	

Hofmeyr 2010

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	07th February 2010
Population	Inclusion criteria: Women in the childbearing age group. Potential subgroup analyses included: parity (nulliparous, multiparous), STI risk (high, low), HIV status (positive, negative, unknown), types of copper IUDs or depot progestogens (injectables, implants, mixed hormonal).
Setting	Not limited by setting
Interventions	Inclusion criteria: Copper-containing IUD
Comparison interventions	Compared with depot progestogen contraception alone or compared to mixed hormonal contraception

	(including a depot progestogen).
Outcomes for which data were reported	Primary: (1) Unintended pregnancy (2) Discontinuation of the allocated method. Secondary: (1) time to unintended pregnancy (2) time to discontinuation of the allocated method (3) gential tract infection (within four weeks of initiation and long-term) (4) HIV seroconversion (5) oligo-amenorrhea (6) menorrhagia (7) dysmenorrhea (8) weight gain (9) weight loss (10) nausea/vomiting (11) surgical complications of IUD insertion (e.g. perforation of the uterus) (12) depression (13) bone fracture (14) bone mineral density (15) stroke (16) any adverse event possibly related to contraceptive method (17) involuntary infertility
Review limitations	This review pooled data on two different comparison groups versus IUD. For this Overview the data has been extracted for the two comparison groups separately. Also in the text of the review it says that the data they are reporting are risk ratios but this is not the case the results are actually presented as odds ratios (as per the forest plots). The results have been converted for this Overview and are presented as risk ratios. Furthermore, for discontinuation the groups have been presented incorrectly in the forest plot (data for the intervention group as control group data and vice versa). This has been corrected for presentation in this Overview.

Kejuan 2007

Review type	Journal article
Study design	Predominantly RCT and CCT
Date assessed as up-to-date	2007
Population	Inclusion criteria: Healthy Chinese women of child-bearing age.
Setting	China
Interventions	Inclusion criteria: Pills containing quinestrol 3.0mg and norgestrel 12mg (Quin-Ng)
Comparison interventions	Quinestrol 3.0mg and levonorgestrel 6mg (Quin-Lng) with at least 3 months of subject use.
Outcomes for which data were reported	Primary: Side effects (nausea, vomiting, headache, leukorrhea, dizziness, changes in monthly bleeding patterns and dysmenorrhea, liver function, serum lipids and blood pressure), contraceptive effectiveness and continuation rates as proxies for acceptability. Secondary: Papers with data on associations between use of once-a-month pills with female cancers, cardiovascular disease and birth defects were specifically searched for.
Review limitations	Review has not been recently updated.

Kulier 2007

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	19th August 2007
Population	Inclusion criteria: Women using copper IUDs for contraception, regardless of timing of insertion: immediate postabortion/post-partum and unrelated to pregnancy.
Setting	Not limited by setting

Interventions	Inclusion criteria: Any framed copper IUD
Comparison interventions	Any other framed copper IUD.
Outcomes for which data were reported	Primary: Effectiveness = pregnancy rates (failures), ectopic pregnancy rates. Side-effects (side/adverse effects as reason for discontinuation): prolonged/heavy menstrual bleeding, intermenstrual bleeding, pain, bleeding and pain combined, infection, total medical removal rates. Expulsion rates. Non-medical (personal) removal rates. Overall discontinuation rates. Events at insertion = failed or diffciult insertions, cervical injuries. Perforation rates.
Review limitations	Review has not been recently updated.

Lawrie 2011

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	19th July 2010
Population	Inclusion criteria: Women requesting tubal sterilisation as an interval, post-abortion or post-partum procedure.
Setting	Not limited by setting
Interventions	Inclusion criteria: Techniques to interrupt tubal patency: partial salpingectomy, tubal clips, tubal silicone rings, electrocoagulation, other interventions e.g. instillation of chemical agents, or insertion of microinserts or removal plugs into fallopian tubes.
Comparison interventions	Not given.
Outcomes for which data were reported	Primary: Failure rate (yearly incidence of unintended pregnancy) including extrauterine pregnancy, operative mortality, major and minor morbidity (procedure related intestinal, vascular or bladder injuries, injury to other pelvic organs, blood transfusion, re-admission), failure of technical approach (e.g. clip converted to partial salpingectomy). Secondary: Operative time, changes in menstrual bleeding pattern, post-operative pain (pain scores or use of analgesics), post-operative complications (wound infection, reoperation, urinary tract infection, pelvic inflammatory disease), length of hospital stay, difficulty of procedure, persistent pain, women's satisfaction, surgeons' satisfaction.
Review limitations	It is not clear how the review authors managed different lengths of follow-up. There is inconsistent reporting of risk of bias. There are differences between the Peto Odds Ratios reported in the text and those in the forest plots. Those from the forest plots are reported here.

Maitra 2004

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	15th April 2008 - converted to new format (new search not conducted)
Population	Inclusion criteria: Women of reproductive age.

	Exclusion criteria: Biochemical change assessment trials. Women prescribed OCs for non-contraceptive purposes. Crossover studies.
Setting	Not limited by setting
Interventions	Inclusion criteria: Same phasic doses, grouped into 4 interventions (1) monphasic low-dose estrogen (<50µg) COC containing a 3rd generation progestogen versus any monophasic low-dose oestrogen COC containing a second-generation progestogen (same for multiphasic preparations) (2) Any monophasic low-dose estrogen COC containing a third-generation progestogen versus any monophasic low-dose oestrogen COC containing a first-generation progestogen (same for multi-phasic preparations) (3) Any monophasic low-dose oestrogen COC containing a second-generation progestogen versus any monophasic low-dose oestrogen COC containing a first-generation progestogen (same for multiphasic preparations) (4) Comparisons between low-does oestrogen OCs containing a certain type of progestogen. Exclusion criteria: Trials comparing monophasic with multiphasic OCs are not eligible even if the progestogens fall within the scope of this review. Interventions have to be applied for a minimum of 6 months before a trial is considered for inclusion.
Comparison interventions	N/A
Outcomes for which data were reported	Primary: Contraceptive effectiveness, discontinuation rates, cycle control, side effects, satisfaction.
Review limitations	Information about what countries studies were conducted in were not clearly available. Several studies are large multicentre 'European' studies and could therefore have included countries such as Poland, Romania, Serbia, Bulgaria, Bosnia & Herzegovinia. Belarus. As this information was not provided outcome data from such studies were not included in the Overview.

O'Brien 2008

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	12th November 2004
Population	Inclusion criteria: Women requesting an IUD for contraceptive purposes.
Setting	Not limited by setting
Interventions	Inclusion criteria: Frameless IUD or any classical IUD with a copper bearing frame.
Comparison interventions	N/A
Outcomes for which data were reported	Primary: Pregnancy rates, ectopic pregnancy rate, expulsion rate, removal rate for pain, for bleeding, for pain and/or bleeding and pelvic inflammatory disease rate, continuation rate.
Review limitations	Review has not been recently updated.

Power 2007

Review type	Cochrane Review

Study design	Predominantly RCT and CCT
Date assessed as up-to-date	21st April 2007
Population	Inclusion criteria: Women of reproductive years seeking effective contraception. Exclusion criteria: Pregnant women.
Setting	Not limited by setting
Interventions	Inclusion criteria: Subdermal implants
Comparison interventions	(1) Non-hormonal IUDs (2) Barrier contraceptives (3) Oral contraceptives (4) Injectable contraceptives (5) Progestogen-releasing intrauterine systems (IUSs) (6) different subdermal implants (e.g. norplant vs implanon).
Outcomes for which data were reported	Primary: Pregnancy due to method failure at 1, 2, 3, 4, 5 years after starting contraceptive method. Continuation of contraceptive method after 1, 2, 3, 4, 5 years of follow-up. Secondary: (1) Menstrual changes (2) Hormonal side effects (3) Adverse clinical effects (4) Study withdrawals/reason for discontinuation
Review limitations	Review has not been recently updated.

Van der Wijden 2003

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	06th February 2008
Population	Inclusion criteria: Sexually active, healthy fertile women recently given birth and practicing the LAM contraception method only. LAM = lactational amenorrhea method (breastfeeding as contraception and supported to do so) Exclusion criteria: Not sexually active
Setting	Not limited by setting
Interventions	Inclusion criteria: LAM as only method of contraception
Comparison interventions	Women who gave birth recently and used breastfeeding, but without support.
Outcomes for which data were reported	Primary: Number of women per specific month who experienced menstruation or who became pregnant confirmed by (1) physical examination (2) pregnancy test. Amenorrhea defined (p3) data collected in life table menstruation and pregnancy rates.
Review limitations	(1) Inconsistency between description of method and results (2) Salami slicing noted in review (a) Diaz presents data in 4 separate publications; 3 present intervention data only; 1 with similar data plus controls (p5) (3) Perez uses same cases in 2 publications. One paper with controls, one without.

Van Vliet 2006a

Review type	Cochrane Review

Study design	Predominantly RCT
Date assessed as up-to-date	24th November 2008
Population	Inclusion criteria: Healthy women of reproductive age who desired to use oral contraceptives for preventing pregnancy. Exclusion criteria: Contra-indications for oral contraceptive use
Setting	Not limited by setting
Interventions	Inclusion criteria: Any biphasic oral contraceptive pill (both 21 and 28 pill package) when used to prevent pregnancy Exclusion criteria: 1. Studies examining sequential pills (those containing estrogen alone early in the cycle, followed by estrogen plus progestin later in the cycle). 2. Used as a treatment and not as a contraceptive.
Comparison interventions	Any triphasic oral contraceptive pill (both 21 and 28 pill packages) when used to prevent pregnancy.
Outcomes for which data were reported	Primary: -Incidence of accidental pregnancy. -Spotting, breakthrough bleeding, amenorrhea, inter-menstrual bleeding, discontinuation due to side effects Secondary: Studies which focused primarily on meta-bolic outcome measures and follicular growth.
Review limitations	

Van Vliet 2006b

Review type	Cochrane Review
Study design	Predominantly RCT
Date assessed as up-to-date	24th November 2008
Population	Inclusion criteria: Healthy women of reproductive age starting or switching oral contraceptives for preventing preganancy Exclusion criteria: Contra-indications for contraceptive use
Setting	Not limited by setting
Interventions	Inclusion criteria: Triphasic oral contraceptive pill used to mprevent pregnancy (21 or 28-day packages)[Applied for a minimum of 3 consecutive cycles] Exclusion criteria: Triphasic OCs used as a treatment (e.g. For acne, dysmenorrhea or menorrhalgia)
Comparison interventions	Monophasic oral contraceptive pill used to prevent pregnancy (21 or 28- day package)[Applied for a minimum of 3 consecutive cycles]. Excluding monophasic OCs used as a treatment
Outcomes for which data were reported	Primary: • Contraceptive efficacy (proportion of women pregnant) • Bleeding patterns • Trial discontinuation

	o Proportion of women that discontinued within 3, 6 and 12 cycles of pill use o Proportion of women that discontinued due to bleeding disturbances or adverse events within 3, 6 and 12 cycles of pill use.
Review limitations	Authors noted generally poor quality of trials conducted to date and consequent limitations on conclusions.

Wen 2009

Review type	Journal article
Study design	Predominantly RCT
Date assessed as up-to-date	Not reported.
Population	Inclusion criteria: Participants were women using copper IUDs for contraception and without any contraindications, regardless of timing of insertion, whether immediate postabortion/postpartum or unrelated to pregnancy. Exclusion criteria: Duplicates and articles with greater than 20% loss to follow up in the first year were excluded.
Setting	Not limited by setting
Interventions	Inclusion criteria: Copper IUD TCu380A
Comparison interventions	Copper IUD MLCu375
Outcomes for which data were reported	Primary: Effectiveness-Pregnancy rate, continuation rate, removal rate, and expulsion rate. Safety- Infection, pain, abnormal menstruation, uterine perforation, and other adverse events.
Review limitations	

Appendix 4.1 Tables of further information

Table 4.1a Further information for sterilisation in developing countries

Sterilisation in developing countries						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review) and study design	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	Tubal ring V Clip	Lawrie 2011	Aranda 1985 (RCT), Argueta 1980 (RCT)	Costa Rica; Costa Rica	None reported	>1year (Not reported for Aranda 1985)
	Modified Pomeroy V Electrocoagulation	Lawrie 2011	Sitompul 1984 (RCT)	Indonesia	The intervention and comparison intervention were delivered at a University hospital.	Not reported.
	Tubal ring V Electrocoagulation	Lawrie 2011	Koetsawang 1978 (RCT)	Thailand	The intervention and comparison intervention were delivered at a hospital	6-12 months
	Modified Pomeroy V Clip	Lawrie 2011	Yan 1990 (RCT)	Taiwan, China.	The intervention and comparison intervention were delivered at a general hospital.	> 1 year
Discontinuation						
	N/A	N/A	N/A	N/A	N/A	N/A

Table 4.1b Further information for oral contraceptives in developing countries

Oral contraceptives in developing countries						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg	Van Vliet 2006b	Chen 1987 (RCT)	China	None reported	6 cycles

	V monophasic LNG 150 µg/EE 30 µg (follow-up = 6 cycles)					
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic LNG 150 µg/EE 30 µg (follow-up = 12 cycles)	Van Vliet 2006b	Dunson 1993 (RCT), Ramos 1989 (RCT), Saxena 1992 (RCT)	Sudan, Sri Lanka, Chile, Ecuador, Dominican Republic; Philippines; India	None reported	12 cycles
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic NET 600 µg/ EE 35 µg	Van Vliet 2006b	Chen 1987 (RCT)	China	None reported	6 cycles
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic NET 400 µg/ EE 35 µg	Van Vliet 2006b	Ramos 1989 (RCT)	Philippines	None reported	12 cycles
	Triphasic GTD 50-70-100 µg/EE 30-40-30 µg V monophasic DSG 150 µg/ EE 30 µg	Van Vliet 2006b	Agoestina 1987 (RCT)	Indonesia	None reported	12 cycles
	28-day cycle vs. 1 year cycle	Edelman 2005	Coutinho 1995 (RCT)	Brazil, China, Egypt	None reported	6-12 months
	EE 20µg + desogestrel 150µg V EE30µg + gestodene 75µg	Gallo 2011	Teichmann 1995 (RCT)	Poland	None reported	12 cycles
	EE 20µg + gestodene 75µg V EE 30µg + gestodene 75µg	Gallo 2011	Taneepanichskul 2002 (RCT)	Thailand	None reported	12 cycles
	Monophasic norgestrel 0.3mg/EE 30mg (Lo-femenal) V Monophasic norethindrone acetate 1.5mg/EE 30 mcg (Lo-estrin) (Second versus first generation OCs)	Maitra 2004	Dunson (NG-NE) (RCT), Ramos (LNG-NE) (RCT)	Malaysia, Egypt, Thailand, Mexico; Philippines.	None reported	6-12 months

	Monophasic desogestrel 150 mcg + EE 30mcg V Monophasic gestodene 75mcg + EE 30mcg (monophasics)	Maitra 2004	Koetsawang 1977 (RCT), L. America 1994 (RCT), Halbe 1998 (RCT)	Thailand; Brazil, Argentina, Chile, Colombia, Venezuela; Brazil.	None reported	6-12 months
	Monophasic NE (norethindrone) 0.4mg + EE 35mcg V Monophasic LNG (levonorgestrel) 150mcg + EE 30mcg (monophasics)	Maitra 2004	Ramos (LNG-NE) (RCT)	Philippines	None reported	6-12 months
	Biphasic levonorgestrel/EE(preparation Alpha) V triphasic levonorgestrel/EE (preparation Gamma)	Van Vliet 2006a	Larranaga 1978 (RCT)	Peru	None reported	Not reported.
	Biphasic levonorgestrel/EE (preparation Beta) V triphasic levonorgestrel/EE (preparation Gamma)	Van Vliet 2006a	Larranaga 1979 (RCT)	Peru	None reported	Not reported.
	Low dose mifepristone v levonorgestrel	Grimes 2010b	Lakha 2007 (RCT)	Nigeria, S. Africa, Hong Kong, Edinburgh	None reported	Not reported.
	Norethisterone v levonorgestrel 150+ ethinyl estradiol combinaiton pill	Grimes 2010b	Sheth 1982 (RCT)	India, Yugoslavia	None reported	Not reported.
	Progestron only pill v 6 months postpartum	Grimes 2010b	Were 1997 (RCT)	Kenya	None reported	Not reported.
	Quin-Ng V Quin-Lng	Kejuan 2007	Weng et al 1992 (RCT)	China	None reported	Not reported.

Discontinuation						
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic LNG 150 µg/EE 30 µg (follow-up = 6 cycles)	Van Vliet 2006b	Chen 1987 (RCT)	China	None reported	6 cycles
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic LNG 150 µg/EE 30 µg (follow-up = 12 cycles)	Van Vliet 2006b	Dunson 1993 (RCT) , Ramos 1989 (RCT), Saxena 1992 (RCT)	Sudan, Sri Lanka, Chile, Philippines; India.	None reported	12 cycles
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic NET 600 µg/ EE 35 µg	Van Vliet 2006b	Chen 1987 (RCT)	China	None reported	6 cycles
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic NET 400 µg/ EE 35 µg	Van Vliet 2006b	Ramos 1989 (RCT)	Philippines	None reported	12 cycles
	Triphasic GTD 50-70-100 µg/EE 30-40-30 µg V monophasic DSG 150 µg/ EE 30 µg (follow-up = 6 cycles)	Van Vliet 2006b	Agoestina 1987 (RCT)	Indonesia	None reported	6 cycles
	Triphasic GTD 50-70-100 µg/EE 30-40-30 µg V monophasic DSG 150 µg/ EE 30 µg (follow-up = 12 cycles)	Van Vliet 2006b	Agoestina 1987 (RCT)	Indonesia	None reported	12 cycles
	28-day cycle vs. 1 year cycle	Edelman 2005	Coutinho 1995 (RCT)	Brazil, China, Egypt	None reported	6-12 months
	EE 20µg + desogestrel 150µg V EE30µg + gestodene 75µg	Gallo 2011	Teichmann 1995 (RCT)	Poland	None reported	12 cycles
	EE 20µg + gestodene 75µg V EE 30µg + gestodene 75µg	Gallo 2011	Taneepanichskul 2002 (RCT)	Thailand	None reported	12 cycles
	Monophasic norgestrel	Maitra 2004	Dunson (NG-NE), Ramos	Malaysia, Egypt,	None reported	6-12 months

	0.3mg/EE 30mg (Lo-femenal) V Monophasic norethindrone acetate 1.5mg/EE 30 mcg (Lo-estrin) (Second versus first generation OCs)		(LNG-NE) (RCT)	Thailand, Mexico; Philippines.		
	Monophasic desogestrel 150 mcg + EE 30mcg V Monophasic gestodene 75mcg + EE 30mcg (monophasics)	Maitra 2004	Koetsawang 1977 (RCT), L. America 1994 (RCT), Halbe 1999 (RCT)	Thailand; Brazil, Argentina, Chile, Colombia, Venezuela; Brazil.	None reported	6-12 months
	Monophasic NE (norethindrone) 0.4mg + EE 35mcg V Monophasic LNG (levonorgestrel) 150mcg + EE 30mcg (monophasics)	Maitra 2004	Ramos (LNG-NE) (RCT)	Philippines	None reported	6-12 months
	Biphasic levonorgestrel/EE(preparation Alpha) V triphasic levonorgestrel/EE (preparation Gamma)	Van Vliet 2006a	Larranaga 1978 (RCT)	Peru	None reported	Not reported.
	Biphasic levonorgestrel/EE (preparation Beta) V triphasic levonorgestrel/EE (preparation Gamma)	Van Vliet 2006a	Larranaga 1978 (RCT)	Peru	None reported	Not reported.
	Norethisterone v levonorgestrel 150+ ethinyl estradiol combinaiton pill	Grimes 2010b	Sheth 1982 (RCT)	India, Yugoslavia	None reported	Not reported.

Continuation						
	Progestron only pill v 6 months postpartum	Grimes 2010b	Were 1997 (RCT)	Kenya	None reported	Not reported.
	Quin-Ng V Quin-Lng	Kejuan 2007	Weng et al 1992 (RCT)	China	None reported	Not reported.

Table 4.1c Further information for intrauterine devices in developing countries

Intrauterine devices in developing countries						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	TCu380A V MLCu375	Wen 2009	Kong C 1993 (RCT), Fang KJ 2006 (RCT), Yang MM 1999 (RCT), Wu DD 2005 (RCT)	China	None reported	1 year
	c-1 LNG-20 V NON HORMONAL IUD >250 MM2	French 2004	Baveja 1989 (RCT)	India	The intervention and comparison intervention were delivered at a family planning clinic.	3 years
	c-2 LNG-20 v non-hormonal < or equal 250 mm2 IUD	French 2004	Baveja, 1989 (RCT)	India	The intervention and comparison intervention were delivered at a family planning clinic.	3 years
	c-4: LNG-20 V subdermal implants	French 2004	Wang 1992 (RCT)	China	The intervention and comparison intervention were delivered at a family planning clinic.	3 years
	Immediate post partum insertion: Delta T vs Delta loop	Grimes 2010a	Kisnisci 1985 (RCT)	Turkey	The intervention and comparison intervention were delivered at a family planning clinic.	Not reported.
	Immediate post-partum insertion TCu 380 A (hand insertion) VS Tcu 380	Grimes 2010a	Apelo 1985 (RCT)	Philippines	The intervention and comparison intervention were delivered at a family planning clinic.	Not reported.

	A(instrument insertion)					
	MLCu 375 V Tcu380A (Follow-up = 1 year)	Kulier 2007	Cole 1985C (RCT), Sastrawinata 1991(RCT)	Yugoslavia, Panama, Costa Rica, Egypt; Indonesia	None reported	1 year
	MLCu 375 V Tcu380A (Follow-up = 2 years)	Kulier 2007	Sastrawinata 1991(RCT)	Indonesia	None reported	2 year
	MLCu250 V Tcu 380A	Kulier 2007	Farr 1994C (RCT)	Sri Lanka, Thailand, Malaysia	Family planning clinics. IUD insertion by physicians.	Not reported.
	TCu380S V TCu380A (Follow-up = 1 year)	Kulier 2007	Bahamondes 1999 (RCT)	Brazil	School of Medicine. Insertion by nurse, gynaecologist, resident, or medical student in training.	1 year
	TCu380S V TCu380A (Follow-up = 2 years)	Kulier 2007	Bahamondes 1999 (RCT)	Brazil	School of Medicine. Insertion by nurse, gynaecologist, resident, or medical student in training.	2 years
	TCu380S V TCu380A (Follow-up = 3 years)	Kulier 2007	Bahamondes 1999 (RCT)	Brazil	School of Medicine. Insertion by nurse, gynaecologist, resident, or medical student in training.	3 years
	Tcu220 V Tcu 380A (Follow-up = 1 year)	Kulier 2007	Baveja 1989 (RCT), Farr 1994B (RCT)	India, Mexico, Philippines	Human reproductive research centres and family planning clinics	1 year
	Tcu220 V Tcu 380A (Follow-up = 2 years)	Kulier 2007	Baveja 1989 (RCT)	India	Human reproductive research centres and family planning clinics	2 years
	Tcu220 V Tcu 380A (Follow-up = 3 years)	Kulier 2007	Baveja 1989 (RCT)	India	Human reproductive research centres and family planning clinics	3 years
	Tcu200 V TCu380A (Follow-up = 1 year)	Kulier 2007	Baveja 1989 (RCT), Farr 1994A (RCT), Shrestha 1995 (RCT)	India; Cameroon, Chile, Egypt, El Salvador, Mexico, Pakistan; Nepal.	Human reproduction research centres. No information for Farr 1994A.	1 year

	Tcu200 V TCu380A (Follow-up = 2 years)	Kulier 2007	Baveja 1989 (RCT), Farr 1994A (RCT), Shrestha 1995 (RCT)	India; Cameroon, Chile, Egypt, El Salvador, Mexico, Pakistan; Nepal.	Human reproduction research centres. No information for Farr 1994A.	2 years
	Tcu200 V TCu380A (Follow-up = 3 years)	Kulier 2007	Baveja 1989 (RCT)	India	Human reproduction research centres. No information for Farr 1994A.	3 years
	TCu220 V MLCu375 (Follow-up = 1 year)	Kulier 2007	Ho 1992 (RCT)	China	MCH hospitals and family planning centres. IUD insertion by experienced physicians.	1 year
	TCu380A V GyneFix frameless IUD	O'Brien 2008	Wu 2000 (RCT)	China	None reported	Not reported.
Discontinuation						
	c-1 LNG-20 V NON HORMONAL IUD >250 MM2	French 2004	Baveja 1989 (RCT)	India	The intervention and comparison intervention were delivered at a family planning clinic.	3 years
	c-2 LNG-20 v non-hormonal < or equal 250 mm2 IUD	French 2004	Baveja, 1989 (RCT)	India	The intervention and comparison intervention were delivered at a family planning clinic.	3 years
	c-4: LNG-20 V subdermal implants	French 2004	Wang 1992 (RCT)	China	The intervention and comparison intervention were delivered at a family planning clinic.	3 years
	MLCu250 V Tcu 380A (Follow-up = 1 year)	Kulier 2007	Farr 1994C (RCT)	Sri Lanka, Thailand, Malaysia	Family planning clinics. IUD insertion by physicians.	1 year
	Tcu220 V Tcu 380A (Follow-up = 1 year)	Kulier 2007	Farr 1994B (RCT)	Mexico, Philippines	Family planning clinics.	1 year
	Tcu200 V TCu380A (Follow-up = 1 year)	Kulier 2007	Farr 1994A (RCT)	Cameroon, Chile, Egypt, El Salvador, Mexico, Pakistan.	Human reproduction research centres. No information for Farr 1994A.	1 year

Continuation						
	TCu380A V MLCu375	Wen 2009	Kong C 1993 (RCT), Fang KJ 2006 (RCT), Yang MM 1999 (RCT), Wu DD 2005 (RCT)	China	None reported	1 year
	Immediate post partum insertion: Delta T vs Delta loop	Grimes 2010a	Kisnisci 1985 (RCT)	Turkey	The intervention and comparison intervention were delivered at a family planning clinic.	Not reported.
	Immediate post-partum insertion by hand TCu 200 Vs progestasert	Grimes 2010a	Lavin 1983 (RCT)	Chile	The intervention and comparison intervention were delivered at a family planning clinic.	Not reported.
	Immediate post-partum insertion by instrument Tcu 200 vs progestart	Grimes 2010a	Lavin 1983 (RCT)	Chile	The intervention and comparison intervention were delivered at a family planning clinic.	Not reported.
	Immediate post-partum insertion Tcu 200 VS IPCS-52 mg	Grimes 2010a	Apelo 1985 (RCT)	Philippines	The intervention and comparison intervention were delivered at a family planning clinic.	Not reported.
	MLCu 375 V Tcu380A	Kulier 2007	Cole 1985C (RCT)	Yugoslavia, Panama, Costa Rica, Egypt	None reported	Not reported.
	TCu380S V TCu380A (Follow-up = 1 year)	Kulier 2007	Bahamondes 1999 (RCT)	Brazil	School of Medicine. Insertion by nurse, gynaecologist, resident, or medical student in training.	1 year
	Tcu200 V TCu380A	Kulier 2007	Shrestha 1995 (RCT)	Nepal	None reported	Not reported.
	TCu380A V GyneFix frameless IUD	O'Brien 2008	Wu 2000 (RCT)	China	None reported	Not reported.

Table 4.1d Further information for injectables in developing countries

Injectables in developing countries						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	NET-EN 50mg/E2V 5mg V DMPA 25mg/E2C 5mg	Gallo 2008	Sang 1995 (RCT)	China	Not reported.	
	NET-EN 50mg/E2V 5mg V NET-EN 200mg	Gallo 2008	Indian Council 1990 (RCT)	India	Not reported.	
	NET-EN 50mg/E2V 5mg V Nonhormonal IUD	Gallo 2008	Von Kesseru 2000 (RCT)	Argentina	Not reported.	
Discontinuation						
	DMPA 150mg IM every 3 months V NET-EN 200mg IM every 2 months	Draper 2008	Salem HT (RCT), WHO Alexandria (RCT), WHO Bangkok (RCT), WHO Ibadan (RCT), WHO Karachi (RCT), WHO Lusaka (RCT), WHO Manila (RCT), WHO Mexico City (RCT), WHO Salvador (RCT), WHO Santiago (RCT)	Egypt, Thailand, Nigeria, Pakistan, Zambia, Philippines, Mexico, Brazil, Chile	Not reported.	
	NET-EN 50mg/E2V 5mg V DMPA 25mg/E2C 5mg	Gallo 2008	Sang 1995 (RCT), WHO 1997 (RCT)	China; China, Cuba, Indonesia	Not reported.	
	DMPA 25mg/E2C 5mg V DMPA 150mg	Gallo 2008	Ruminjo 2005 (RCT)	Kenya	The intervention and comparison intervention were delivered at a family planning clinic.	
	NET-EN 50mg/E2V 5mg V NET-EN 200mg	Gallo 2008	Indian Council 1990 (RCT)	India	Not reported.	

Table 4.1e Further information for intrauterine devices versus injectables in developing countries

Intrauterine devices versus injectables in developing countries						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	IUD V depot progestogen	Hofmeyr 2010	Feldblum 2005 (RCT), Stringer 2007 (RCT)	Brazil, Guatamala, Egypt, Vietnam;	Family planning clinics; Primary clinics	12 months; Not reported
Discontinuation						
	IUD V depot progestogen	Hofmeyr 2010	Feldblum 2005 (RCT)	Brazil, Guatamala, Egypt, Vietnam.	Family planning clinics	12 months
	IUD V Mixed hormonal contraception	Hofmeyr 2010	Stringer 2007 (RCT)	Zambia	Primary clinics	Not reported

Table 4.1f Further information for implants in developing countries

Implants in developing countries						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	Implanon V Norplant (Follow-up = 1 year)	Power 2007	Organon 34510 (RCT), Organon 34520 (RCT), Zheng 1991(RCT)	Indonesia, Thailand; Indonesia; China	None reported.	1 year
	Implanon V Norplant (Follow-up = 2 years)	Power 2007	Organon 34510 (RCT), Organon 34520(RCT), Zheng 1991(RCT)	Indonesia, Thailand; Indonesia; China	None reported.	2 years
	Implanon V Norplant (Follow-up = 3 years)	Power 2007	Organon 34510(RCT), Organon 34520(RCT), Zheng 1991(RCT)	Indonesia, Thailand; Indonesia; China	None reported.	3 years
	Implanon V Norplant (Follow-up = 4 years)	Power 2007	Organon 34510(RCT), Organon 34520(RCT), Zheng 1991(RCT)	Indonesia, Thailand; Indonesia; China	None reported.	4 years
Continuation						

	Implanon V Norplant (Follow-up = 1 year)	Power 2007	Organon 34510 (RCT), Organon 34520 (RCT), Zheng 1991 (RCT)	Indonesia, Thailand; Indonesia; China	None reported.	1 year
	Implanon V Norplant (Follow-up = 2 years)	Power 2007	Organon 34510 (RCT), Organon 34520 (RCT), Zheng 1991(RCT)	Indonesia, Thailand; Indonesia; China	None reported.	2 years
	Implanon V Norplant (Follow-up = 3 years)	Power 2007	Organon 34510 (RCT), Organon 34520 (RCT), Zheng 1991(RCT)	Indonesia, Thailand; Indonesia; China	None reported.	3 years
	Implanon V Norplant (Follow-up = 4 years)	Power 2007	Organon 34510 (RCT), Organon 34520 (RCT), Zheng 1991(RCT)	Indonesia, Thailand; Indonesia; China	None reported.	4 years

Table 4.1g Further information for emergency contraception in developing countries

Emergency contraception in developing countries.						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which respective studies conducted	Contextual information	Length of follow-up
Pregnancy						
	IUD V Expectant management	Cheng 2008	Askalani 1987 (RCT)	Egypt	Both the intervention and comparison intervention were delivered at family planning clinics.	Not reported.
	Levonorgestrel split dose 24 hr V 12 hour	Cheng 2008	Ngai 2005 (RCT)	China	None provided.	Not reported.
	Levonorgestrel single dose V Levonorgestrel split dose	Cheng 2008	Arowojolu 2002 (RCT)	Nigeria	Both the intervention and comparison intervention were delivered at family-planning clinics at University College Hospital and Planned Parenthood Federation of Nigeria.	Not reported.
	Levonorgestrel V Mid-dose mifepristone	Cheng 2008	Han 1999a (RCT), Hu X 2003 (RCT), Li A 2000	China	In eleven of the studies the intervention and comparison	Not reported.

	(25-50mg)		(RCT), Li J 2005 (RCT), Liang 2001 (RCT), Liao, 2003 (RCT), Qi M 2003 (RCT), Su 2001 (RCT), Sun 2000 (RCT), Sun P 2003 (RCT), Wang Q 2000 (RCT), Wang Y 2003 (RCT), Xu 2000 (RCT), Xu Z 2000 (RCT), Zhang JQ 2000 (RCT).		intervention were delivered at hospital clinics, in three at family planning clinics and in one at a reproductive medicine clinic.	
	Levonorgestrel V Low-dose mifepristone (<25mg)	Cheng 2008	Li W 2002 (RCT), Lin 2000 (RCT), Liu 2000 (RCT), Pei 2001 (RCT), Sheng A 2002 (RCT), Wang C 2000 (RCT), Wu 1999a (RCT)	China	In five of the studies the intervention and comparison intervention were delivered at family planning clinics (one study specified as urban), one at a family planning hospital, and one at a research institute for family planning.	Not reported.
	Levonorgestrel V Anordrin	Cheng 2008	Xu Z 2000 (RCT)	China	Both the intervention and comparison intervention were delivered at a family-planning clinic.	Not reported.
	Low-dose mifepristone (<25mg) V Low-dose mifepristone (≤10mg)	Cheng 2008	Zhang L 2005 (RCT)	China	Both the intervention and comparison intervention were delivered at a hospital clinic.	Not reported.
	Mid-dose mifepristone (25-50mg) V Low-dose mifepristone (<25mg)	Cheng 2008	Cao 1999 (RCT), Cheng 1999a (RCT), Ding G 2005 (RCT), Du J 2002 (RCT), Fan HL 2001 (RCT), Han L 2001 (RCT), Lai Z 2004 (RCT), Qi 2000b (RCT), Sang 1999 (RCT), Tan L 2003 (RCT), Wang J 2006 (RCT), Wang L 2004 (RCT), Wang SZ 2001 (RCT), Wei RH 2002	China	In four of the studies the intervention and comparison intervention were delivered at a family planning clinic (one study specified as urban), six at a gynaecology clinic, one at an outpatient clinic, three at a MCH hospital, and four at a hospital clinic. One study did not report the location of	Not reported.

			(RCT), Xiao 2002 (RCT), Zhang Y 1998 (RCT), Zhao J 2003 (RCT), Zuo 1999 (RCT).		the treatment.	
	Mid-dose mifepristone (50mg) V Mid-dose mifepristone (25mg)	Cheng 2008	Cao 1999 (RCT), Chen R 2002 (RCT), Cheng 1999a (RCT), Fang 2000 (RCT), Han 1996 (RCT), Li 2000 (RCT), Li H 2000 (RCT), Lou C 2002 (RCT), Tan 1999 (RCT), Xie 1998 (RCT), Yang F 2003 (RCT), Zhang JQ 2000 (RCT), Zhao J 2003 (RCT)	China	In three of the studies the intervention and comparison intervention were delivered at a family planning clinic, five at a hospital, and three at a MCH hospital. Two studies did not report the location of the treatment.	Not reported.
	High-dose mifepristone (>50mg) V Low-dose mifepristone (<25mg)	Cheng 2008	Cao 1999 (RCT), Ding G 2005 (RCT), Tan L 2003 (RCT), Zhang Y 2002 (RCT)	China	In one of the studies the intervention and comparison intervention were delivered at a family planning clinic, two at a hospital clinic and one at a MCH hospital.	Not reported.
	High-dose mifepristone (>50mg) V Mid-dose mifepristone (25-50mg)	Cheng 2008	Cao 1999 (RCT), Ding G 2005 (RCT), Li H 2000 (RCT), Qian 1999 (RCT), Tan L 2003 (RCT), Xie 1998 (RCT), Zhang Y 2002 (RCT), Zheng A 2005 (RCT).	China	In two of the studies the intervention and comparison intervention were delivered at a family planning clinic, three at a hospital clinic and two at a MCH hospital. One study did not report the location of the treatment.	Not reported.
	Mifepristone V Danazol	Cheng 2008	Yang 2001(RCT)	China	The intervention and comparison intervention were delivered at a MCH hospital.	Not reported.
	Mifepristone V Anordrin	Cheng 2008	Chen G 2001 (RCT), Fu X 2000 (RCT), Han 1995 (RCT), Liu L 2001 (RCT), Wang 1999 (RCT), Xu Z 2000 (RCT), Yang 2001(RCT)	China	In one of the studies the intervention and comparison intervention were delivered at a family planning clinic. The remainder were delivered at a hospital	Not reported.

					clinic.	
	Mifepristone alone (all doses) V Mifepristone + anordrin (all doses)	Cheng 2008	Han 1995 (RCT), Han 1996 (RCT), Lou X 2005 (RCT), Sang 1999 (RCT), Zhang YM 2002 (RCT)	China	In one of the studies the intervention and comparison intervention were delivered at a family planning clinic and a hospital, and four at a hospital clinic.	Not reported.
	Mifepristone alone (all doses) V Mifepristone + MTX (all doses)	Cheng 2008	Chen H 2002 (RCT)	China	The intervention and comparison intervention were delivered at a hospital clinic.	Not reported.
	Mifepristone alone (all doses) V Mifepristone + tamoxifen (all doses)	Cheng 2008	He CH 2002 (RCT)	China	The intervention and comparison intervention were delivered at a family planning clinic.	Not reported.
	Mifepristone V Mifepristone + misoprostol (all doses)	Cheng 2008	Wu XZ 2002 (RCT)	China	None provided.	Not reported.
	Mifepristone (all doses) V Cu-IUD	Cheng 2008	Liu L 2002 (RCT)	China	The intervention and comparison intervention were delivered at a hospital clinic.	Not reported.
Discontinuation						
	No comparisons	Cheng 2008	N/A	N/A	N/A	N/A

Table 4.1h Further information for spermicide in developing countries

Spermicide in developing countries						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	Collatex sponge (nonoxynol-9 1.15mg) V Neo sampoon tablet (menfegol 60mg)	Grimes 2005	Chi 1987 (RCT)	Belgrade, Maribor (former Yugoslavia), Taiwan and	None reported.	6 months

				Bangladesh.		
	Neo sampoon tablet (menfegol 60mg) V Ortho or Emko vaginal tablet (100mg of nonoxynol-9)	Grimes 2005	Kazi 1992 (RCT), Lamptey 1985 (RCT), Abdelsalaam 1984 (RCT).	Pakistan; Ghana; Egypt.	None reported.	12 months
	Ortho vaginal tablet nonoxynol-9 100mg V Emko vaginal tablet nonoxynol-9 100mg	Grimes 2005	Lamptey 1985 (RCT), Younis 1985 (RCT).	Ghana; Egypt.	None reported.	12 months
	Neo sampoon tablet menfelgol 60mg V Emko foam nonoxynol-9 8%	Grimes 2005	Youssef 1987 (RCT), Andolsek 1988 (RCT).	Egypt; Yugoslavia.	None reported.	12 months
Discontinuation						
	Collatex sponge (nonoxynol-9 1.15mg) V Neo sampoon tablet (menfegol 60mg)	Grimes 2005	Chi 1987 (RCT)	Belgrade, Maribor (former Yugoslavia), Taiwan and Bangladesh.	None reported.	6 months
	Vaginal foaming tablets nonxynol-9 100mg V menfegol 60mg	Grimes 2005	Chompootaweep 1990 (RCT), Klufio 1988 (RCT).	Thailand; Ghana.	None reported.	12 months
	Neo sampoon tablet (menfegol 60mg) V Ortho or Emko vaginal tablet (100mg of nonoxynol-9)	Grimes 2005	Kazi 1992 (RCT), Lamptey 1985 (RCT), Abdelsalaam 1984 (RCT).	Pakistan; Ghana; Egypt.	None reported.	12 months
	Ortho vaginal tablet nonoxynol-9 100mg V Emko vaginal tablet nonoxynol-9 100mg	Grimes 2005	Lamptey 1985 (RCT), Younis 1985 (RCT).	Ghana; Egypt.	None reported.	12 months
	Neo sampoon tablet menfelgol 60mg V Emko foam nonoxynol-9 8%	Grimes 2005	Youssef 1987 (RCT), Andolsek 1988 (RCT).	Egypt; Yugoslavia.	None reported.	12 months

Table 4.1i Further information for repeated use of pre- and postcoital hormonal contraception in developing countries

Repeated use of pre- and postcoital hormonal contraception in developing countries.						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	Chinese LNG V Hungarian LNG	Halpern 2010	He 1991(RCT)	China	None reported.	Not reported.
	One LNG tablet immediately (but no later than 3 hours) after each sexual intercourse. Five groups: 0.15mg, 0.25mg, 0.30mg, 0.35mg, 0.40mg.	Halpern 2010	Kesseru 1973 (non-RCT)	Peru	The intervention and comparison intervention were delivered at a fertility outpatients in research clinic.	Not reported.
	One dose quinestanol acetate within 24 hrs of intercourse in following dose size: 0.5mg, 0.6mg, 0.75mg, 0.8mg, 1.5mg, 2.0mg.	Halpern 2010	Mischler 1974 (non-RCT)	Mexico, Peru, Argentina, Chile.	None reported.	Not reported.
	Quinagestanol acetate 1.5mg V LNG within 1 hour post-coitus.	Halpern 2010	Moggia 1974 (non-RCT)	Argentina	The intervention and comparison intervention were delivered at a maternity and children's city hospital, Buenos Aires	Not reported.
	Quinagestanol acetate within 24 hrs of intercourse. Max of 1 dose/24hrs. Dose sizes as follows: 0.2mg, 0.3mg, 0.4mg, 0.5mg, 0.75mg, 0.8mg.	Halpern 2010	Rubio 1970 (non-RCT)	Mexico, Peru, Chile	None reported.	Not reported.
	Progestogens	Halpern	Zanartu 1974 (non-RCT)	Chile	None reported.	Not reported.

	before/after coitus. Four different types of progestogens: retroprogestogen 30-40mg, clogestone 1.0mg, norgestrienone 0.5mg, ethynodiol 0.5mg.	2010				
	Groups: clogestone 1.0mg 5/6 hours prior to intercourse, two clogestone 0.6mg tablets (=1.2mg total) one before and one after coitus, two clogestone 1.0mg (total 2.0mg) one before, one after coitus.	Halpern 2010	Zanartu 1976 (non-RCT)	Chile	None reported.	Not reported.
Continuation						
	Chinese LNG V Hungarian LNG	Halpern 2010	He 1991 (RCT)	China	None reported.	Not reported.
	One dose quinestanol acetate within 24 hrs of intercourse in following dose size: 0.5mg, 0.6mg, 0.75mg, 0.8mg, 1.5mg, 2.0mg.	Halpern 2010	Mischler 1974 (non-RCT)	Mexico, Peru, Argentina, Chile.	None reported.	Not reported.
	Quinagestanol acetate 1.5mg V LNG within 1 hour post-coitus.	Halpern 2010	Moggia 1974 (non-RCT)	Argentina	The intervention and comparison intervention were delivered at a maternity and children's city hospital, Buenos Aires	Not reported.
	Quinagestanol acetate within 24 hrs of intercourse. Max of 1 dose/24hrs. Dose sizes	Halpern 2010	Rubio 1970 (non-RCT)	Mexico, Peru, Chile	None reported.	Not reported.

	as follows: 0.2mg, 0.3mg, 0.4mg, 0.5mg, 0.75mg, 0.8mg.					
Continuation	Progestogens before/after coitus. Four different types of progestogens: retroprogestogen 30-40mg, clogestone 1.0mg, norgestrienone 0.5mg, ethynodiol 0.5mg.	Halpern 2010	Zanartu 1974 (non-RCT)	Chile	None reported.	Not reported.
Continuation	Groups: clogestone 1.0mg 5/6 hours prior to intercourse, two clogestone 0.6mg tablets (=1.2mg total) one before and one after coitus, two clogestone 1.0mg (total 2.0mg) one before, one after coitus.	Halpern 2010	Zanartu 1976 (non-RCT)	Chile		Not reported.

Table 4.1j Further information for natural family planning in developing countries

Natural family planning in developing countries						
Outcome	Intervention and comparison intervention	Review ID	Included studies (using study ID from review)	Countries in which studies conducted	Contextual information	Length of follow-up
Pregnancy						
	Ovulation method V symptothermal method	Grimes 2004	Medina 1980 (RCT)	Colombia	All participants entered a training program lasting 3 to 5 months. Thereafter, all participants were visited monthly by study personnel for follow-up and	Not reported.

					counselling.	
	LAM with support V LAM without support	Van der Wijden 2003	Diaz 1988 (non-RCT)	Chile	None reported.	Not reported.
	LAM with support V (Controls) used non-hormonal IUD 2 months postpartum and on demand feeding	Van der Wijden 2003	Perez 1991 (non-RCT)	Chile	None reported.	Not reported.
Discontinuation						
	Ovulation method V symptothermal method	Grimes 2004	Medina 1980 (RCT)	Colombia	All participants entered a training program lasting 3 to 5 months. Thereafter, all participants were visited monthly by study personnel for follow-up and counselling.	Not reported.

Appendix 4.2 Overview of Review tables

Modern contraceptive methods

Terminal methods

Table 4.2a Overview of Reviews table for sterilisation in developing countries (data synthesised using meta-analysis)

Sterilisation in developing countries						
Outcome	Intervention and comparison intervention	Illustrative comparative risks (95% CI)		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence
		Assumed risk With comparator	Corresponding risk With intervention			
Pregnancy						
	Tubal ring V Clip	8 per 1000	9 per 1000 (2 to 43)	Peto OR: 1.09 [0.22, 5.36]	724 (2)	⊕⊕⊕O MODERATE[1]
	Modified Pomeroy V Electrocoagulation	Cannot calculate	Cannot calculate	Peto OR: 4.47 [0.07, 286.78]	295(1)	⊕OOO VERY LOW[2]
	Tubal ring V Electrocoagulation	Cannot calculate	Cannot calculate	Peto OR: 0.0 [0.0, 0.0]	160 (1)	⊕OOO VERY LOW[3]
	Modified Pomeroy V Clip	Cannot calculate	Cannot calculate	Peto OR: 8.28 [0.16, 419.87]	148 (1)	⊕OOO VERY LOW[4]
Discontinuation						
	N/A	N/A	N/A	N/A	N/A	N/A

Spacing/Temporary methods

Table 4.2b Overview of Reviews table for oral contraceptives in developing countries (data synthesised using meta-analysis)

Oral contraceptives in developing countries						
Outcome	Intervention and comparison intervention	Illustrative comparative risks (95% CI)		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence
		Assumed risk With comparator	Corresponding risk With intervention			
Pregnancy						
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic LNG 150 µg/EE 30 µg (follow-up = 6 cycles)	32 per 1000	21 per 1000 (4 to 121)	RR: 0.65 [0.11, 3.78]	189 (1)	⊕OOO VERY LOW
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic LNG 150 µg/EE 30 µg (follow-up = 12 cycles)	1 per 1000	1 per 1000 (0 to 11)	RR: 1.00 [0.06, 16.01]	3010 (3)	⊕⊕OO LOW
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic NET 600 µg/ EE 35 µg	22 per 1000	21 per 1000 (3 to 149)	RR: 0.94 [0.13, 6.52]	186 (1)	⊕OOO VERY LOW
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic NET 400 µg/ EE 35 µg	Cannot calculate	Cannot calculate	RR: 0.0 [0.0, 0.0]	1200 (1)	⊕⊕⊕O MODERATE
	Triphasic GTD 50-70-100 µg/EE 30-40-30 µg V monophasic DSG 150 µg/ EE 30 µg	12 per 1000	12 per 1000 (1 to 189)	RR: 1.00 [0.06, 15.73]	168(1)	⊕OOO VERY LOW
	28-day cycle vs. 1 year cycle (continuous) of 50 µg ethinyl estradiol and 250 µg levonorgestrel (dosed vaginally)	9 per 1000	1 per 1000 (0 to 9)	Peto OR 0.14 [0.02, 0.97]	900 (1)	□□□□ LOW
	EE 20µg + desogestrel 150µg V EE30µg + gestodene 75µg	Cannot calculate	Cannot calculate	RR: 2.97 [0.12, 72.52]	416 (1)	⊕OOO VERY LOW

	EE 20µg + gestodene 75µg V EE 30µg + gestodene 75µg	Cannot calculate	Cannot calculate	RR: 0.0 [0.0, 0.0]	150(1)	⊕OOO VERY LOW
	Monophasic norgestrel 0.3mg/EE 30mg (Lo-femenal) V Monophasic norethindrone acetate 1.5mg/EE 30 mcg (Lo-estrin) (Second versus first generation OCs)	8 per 1000	1 per 1000 (0 to 8)	RR: 0.12 [0.02, 0.99]	2074 (2)	⊕⊕⊕O MODERATE
	Monophasic desogestrel 150 mcg + EE 30mcg V Monophasic gestodene 75mcg + EE 30mcg (monophasics)	1 per 1000	1 per 1000 (0 to 20)	RR: 1.13 [0.07, 18.02]	1730(3)	⊕⊕OO LOW
	Monophasic NE (norethindrone) 0.4mg + EE 35mcg V Monophasic LNG (levonorgestrel) 150mcg + EE 30mcg (monophasics)	Cannot calculate	Cannot calculate	RR: 0.0 [0.0, 0.0]	1199 (1)	⊕⊕OO LOW
	Biphasic levonorgestrel/EE(preparation Alpha) V triphasic levonorgestrel/EE (preparation Gamma)	Cannot calculate	Cannot calculate	RR: 0.0 [0.0, 0.0]	313(1)	⊕⊕OO LOW
	Biphasic levonorgestrel/EE (preparation Beta) V triphasic levonorgestrel/EE (preparation Gamma)	Cannot calculate	Cannot calculate	RR: 0.0 [0.0, 0.0]	N/A	⊕⊕OO LOW
Discontinuation						
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic LNG 150 µg/EE 30 µg (follow-up = 6 cycles)	183 per 1000	176 per 1000 (95 to 322)	RR: 0.96 [0.52, 1.76]	189(1)	⊕OOO VERY LOW
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic LNG 150 µg/EE 30 µg (follow-up = 12 cycles)	522 per 1000	548 per 1000 (506 to 595)	RR: 1.05 [0.97, 1.14]	3010(3)	⊕⊕OO LOW
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic NET 600 µg/ EE 35 µg	189 per 1000	174 per 1000 (83 to 367)	RR: 0.94 [0.51, 1.72]	186(1)	⊕OOO VERY LOW
	Triphasic LNG 50-70-125 µg/EE 30-40-30 µg V monophasic NET 400 µg/ EE 35 µg	321 per 1000	276 per 1000 (231 to 327)	RR: 0.86 [0.72, 1.02]	1200(1)	⊕⊕⊕O MODERATE
	Triphasic GTD 50-70-100 µg/EE 30-40-30 µg V monophasic DSG 150 µg/ EE 30 µg (follow-up =	60 per 1000	60 per 1000 (20 to 200)	RR: 1.00 [0.33, 3.33]	168(1)	⊕⊕OO LOW

	6 cycles)					
	Triphasic GTD 50-70-100 µg/EE 30-40-30 µg V monophasic DSG 150 µg/ EE 30 µg (follow-up = 12 cycles)	155 per 1000	132 per 1000 (62 to 726)	RR: 0.85 [0.40, 1.78]	168(1)	⊕⊕OO LOW
	28-day cycle vs. 1 year cycle	137 per 1000	140 per 1000 (96 to 204)	Peto OR 1.02 [0.70, 1.49]	900(1)	⊕⊕OO LOW
	EE 20µg + desogestrel 150µg V EE30µg + gestodene 75µg	232 per 1000	267 per 1000 (172 to 418)	RR: 1.11 [0.79, 1.56]	416(1)	⊕⊕OO LOW
	EE 20µg + gestodene 75µg V EE 30µg + gestodene 75µg	257 per 1000	216 per 1000 (103 to 452)	RR: 0.87 [0.49, 1.54]	150(1)	⊕⊕OO LOW
	Monophasic norgestrel 0.3mg/EE 30mg (Lo-femenal) V Monophasic norethindrone acetate 1.5mg/EE 30 mcg (Lo-estrin) (Second versus first generation OCs)	305 per 1000	241 per 1000 (210 to 278)	RR: 0.79 [0.69, 0.91]	2074 (2)	⊕⊕⊕O MODERATE
	Monophasic desogestrel 150 mcg + EE 30mcg V Monophasic gestodene 75mcg + EE 30mcg (monophasics)	121 per 1000	144 per 1000 (113 to 183)	RR: 1.19 [0.93, 1.51]	1730 (3)	⊕⊕⊕O MODERATE
	Monophasic NE (norethindrone) 0.4mg + EE 35mcg V Monophasic LNG (levonorgestrel) 150mcg + EE 30mcg (monophasics)	321 per 1000	254 per 1000 (212 to 302)	RR: 0.79 [0.66, 0.94]	1199 (1)	⊕⊕OO LOW
	Biphasic levonorgestrel/EE(preparation Alpha) V triphasic levonorgestrel/EE (preparation Gamma)	321 per 1000	353 per 1000 (125 to 992)	Peto OR: 1.10 [0.39, 3.09]	313(1)	⊕⊕OO LOW
	Biphasic levonorgestrel/EE (preparation Beta) V triphasic levonorgestrel/EE (preparation Gamma)	46 per 1000	71 per 1000 (27 to 188)	Peto OR: 1.54 [0.58, 4.09]	298 (1)	⊕⊕OO LOW

Table 4.2c Overview of Reviews table for oral contraceptives in developing countries (data synthesised using narrative synthesis)

Oral contraceptives in developing countries.				
Outcome	Intervention and comparison intervention	Narrative synthesis	Number of participants (studies)	Quality of the evidence
Pregnancy				
	Low dose mifepristone v levonorgestrel	Pregnancy rate was lower with mifepristone when compared	97(1)	⊕⊕OO

		to levonorgestrel (OR0.71; 95% ci 0.07-6.95) p=0.77. No strong evidence of effect (p21)		LOW
	Norethisterone v levonorgestrel 150+ ethinyl estradiol combinaiton pill	Descriptive provided. P=0.007 (test unknown); Norethisterone 350mg, N=130; pregnancy=13.2%; Levonorgestrel 30 mg, N=128, pregnancy=9.5%; Norethisterone 1mg/mestraw 150 mg, N=123, Pregnancy=8.3%; Levonorgestrol 150/ethinyl estradiol 30mg, N=137, pregnancy=2.7%;	518(1)	⊕OOO VERY LOW
	Progestin only pill (6 weeks postpartum start) vs. progestin only pill (6 months postpartum start)	Total N=200; (51% loss to follow up); no pregnancies in either group	200(1)	⊕OOO VERY LOW
	Quin-Ng V Quin-Lng	2 year cumulative pregnancy rate of Quin-Ng pill was 3.9 per 100 and 3.3 per 100 for Quin-Lng. Pearl indices were 2.9 and 1.8 per 100 women-years for Quin-Ng and Quin-Lng pills respectively. Of the 14 pregnancies in Quin-Ng users and of the 10 in Quin-Lng users, 11 and 6 pregnancies were method failures respectively, which gave Pearl indices for perfect use of 2.3 per 100 women years for Quin-Ng and 1.1 per 100 women years for Quin-Lng pills (p<0.01)	712(1)	Cannot calculate
Discontinuation				
	Norethisterone v levonorgestrel 150+ ethinyl estradiol combinaiton pill	Discontinuation at 360 days. All causes, p=0.805.	518(1)	⊕OOO VERY LOW
Continuation				
	Progestron only pill v 6 months postpartum	Continuation rates similar between groups. Note: 51% losses to follow-up. Unclear how dealt with missing data.	200(1)	⊕OOO VERY LOW
	Quin-Ng V Quin-Lng	1 and 2 year net cumulative continutation rates for Quin-Lng pills of 87 and 78 per 100, respectively, and for Quin-Lng pills 74 and 64 per 100 respectively. The difference between the two pills appeared to be due to discontinuation for side effects other than bleeding problems.	712(1)	Cannot calculate

Table 4.2d Overview of Reviews table for intrauterine devices in developing countries (data synthesised using meta-analysis)

Intrauterine devices in developing countries.					
Outcome	Intervention and comparison intervention	Illustrative comparative risks (95% CI)	Relative effect (95% CI)	Number of participants	Quality of the evidence

		Assumed risk With comparator	Corresponding risk With intervention		(studies)	
Pregnancy						
	TCu380A V MLCu375	8 per 1000	2 per 1000 (1 to 6)	**RR:** 0.25 [0.08, 0.75]	3617(4)	⊕⊕⊕O MODERATE
Continuation						
	TCu380A V MLCu375	943 per 1000	952 per 1000 (943 to 971)	**RR:** 1.01 [1.00, 1.03]	3617(4)	⊕⊕⊕O MODERATE

Table 4.2e Overview of Reviews table for intrauterine devices in developing countries (data synthesised using narrative synthesis)

Intrauterine devices in developing countries.				
Outcome	Intervention and comparison intervention	Narrative synthesis	Number of participants (studies)	Quality of the evidence
Pregnancy				
Pregnancy	LNG-20 ius V NON HORMONAL IUD >250 MM2	3 yr: Rar=0.11 (0.01, 2.12) Baveja 1989	2118(1)	⊕⊕⊕O MODERATE
Pregnancy	LNG-20 ius v non-hormonal < or equal 250 mm2 IUD	To present data for Baveja 1989 only, used life-table differences rather than rate ratios. For 1 year = -0.90 (-2.01 to 0.21), 2 year = -0.90 (-2.01 to -0.21), 3 year = -0.56 (-1.30, 0.18).	2118(1)	⊕⊕⊕O MODERATE
Pregnancy	LNG-20 ius V subdermal implants	1 yr: 3.01 (0.13,75.56) 2 yr:3.06 (0.12,75.56); 3 ys:3.00 (0.12,73.53)- no strong evidence of effect	200(1)	⊕⊕OO LOW
Pregnancy	Immediate post partum insertion: Delta T vs Delta loop	12-month pregnancy rates (per 100 women) were 2.1 for the Delta-loop and 0 for the Delta T. No statistical significance was reported on unwanted pregnancies..	246(1)	⊕⊕OO LOW
Pregnancy	Immediate post-partum insertion TCu 380 A (hand insertion) VS Tcu 380 A(instrument	12-month continuation rates (per 100 women) were 84.9 for TCu200 and 77.1 for IPCS-52. Unable to extract 36-month	400(1)	⊕⊕OO LOW

	insertion)	continuation rates due to lack of table column headers. Statistical significance only tested at 36 months.		
Pregnancy	MLCu 375 V Tcu380A (Follow-up = 1 year)	Rate difference = 0.75 [0.13, 1.37]	3371 (2)	⊕⊕⊕⊕ HIGH
Pregnancy	MLCu 375 V Tcu380A (Follow-up = 2 years)	Rate difference = 1.50 [0.09, 2.91] (exp = MLCu375, Tcu 380A)	1894 (1)	⊕⊕⊕⊕ HIGH
Pregnancy	MLCu250 V Tcu 380A	Rate difference = 1.00 [0.24, 1.76] (Exp - MLCu250, Con - TCu380A)	2043(1)	⊕⊕⊕O MODERATE
Pregnancy	TCu380S V TCu380A (Follow-up = 1 year)	Rate difference = 0.10 [-0.33, 0.53] (Exp - TCu380S, Con - TCu380A)	1568(1)	⊕⊕⊕O MODERATE
Pregnancy	TCu380S V TCu380A (Follow-up = 2 years)	Rate difference = -0.18 [-0.73, 0.37] (Exp - TCu380S, Tcu 380A)	1568(1)	⊕⊕⊕O MODERATE
Pregnancy	TCu380S V TCu380A (Follow-up = 3 years)	Rate difference = -0.90 [-2.21, 0.41] (Exp - TCu380S, Con - TCu380A)	1568(1)	⊕⊕⊕O MODERATE
Pregnancy	Tcu220 V Tcu 380A (Follow-up = 1 year)	Rate difference = -0.20 [-1.47, 1.07] (Exp - TCu220, Con - TCu380A)	1811(2)	⊕⊕⊕O MODERATE
Pregnancy	Tcu220 V Tcu 380A (Follow-up = 2 years)	Rate difference = -1.00 [-1.98, -0.02] (Exp - TCu220, Con - TCu380A)	954(1)	⊕⊕⊕O MODERATE
Pregnancy	Tcu220 V Tcu 380A (Follow-up = 3 years)	Rate difference = -0.70 [-1.84, +0.44] (Exp - TCu220, Con - TCu380A)	954(1)	⊕⊕⊕O MODERATE
Pregnancy	Tcu200 V TCu380A (Follow-up = 1 year)	Rate difference = 1.06 [-0.90, 3.02]	2842(3)	⊕⊕⊕O MODERATE
Pregnancy	Tcu200 V TCu380A (Follow-up = 2 years)	Rate difference = 0.72 [-1.65, 3.09]	2842(3)	⊕⊕⊕O MODERATE
Pregnancy	Tcu200 V TCu380A (Follow-up = 3 years)	Rate difference = 0.60 [-0.93, 2.13]	964(1)	⊕⊕⊕O MODERATE
Pregnancy	TCu220 V MLCu375 (Follow-up = 1 year)	Rate difference = 0.44 [-1.17, 2.05]. Exp = TCu220, Con -	768(1)	⊕⊕OO

		MLCu375)		LOW
Pregnancy	TCu380A V GyneFix frameless IUD	The pregnancy rate (SE) at 3 years was 0.0(0.0) for the frameless group and 0.3(0.3) for the TCu380A group. The rate ratio was 0.32(0.01-7.91) and the rate difference -0.34 (-1.01-0.33).	606(1)	⊕⊕OO LOW
Discontinuation				
Discontinuation	c-2 LNG-20 v non-hormonal < or equal 250 mm2 IUD	2 yr rate ratio: 0.93 (0.80-1.07) Baveja	2118(1)	⊕⊕⊕O MODERATE
Discontinuation	c-4: LNG-20 V subdermal implants	1 yr rate ratio: 0.97 (0.72-1.31)	200(1)	⊕⊕OO LOW
Discontinuation	MLCu250 V Tcu 380A (Follow-up = 1 year)	Rate difference = -1.50 [-1.26, 4.26]. Exp = MLCu250, Con - TCu380A)	2043(1)	⊕⊕⊕O MODERATE
Discontinuation	Tcu220 V Tcu 380A (Follow-up = 1 year)	Rate difference = -3.00 [-7.21, 1.21]]. Exp = TCu220, Con - TCu380A)	857(1)	⊕⊕⊕O MODERATE
Discontinuation	Tcu200 V TCu380A (Follow-up = 1 year)	Rate difference = 1.00 [-2.96, 4.96]]. Exp = TCu200, Con - TCu380A)	1678(1)	⊕⊕⊕O MODERATE
Continuation				
Continuation	Immediate post partum insertion: Delta T vs Delta loop	12-month continuation rates (per 10 women) were 93.3 for the Delta Loop and 90.7 for Delta T. No test of statistical significance was reported	246(1)	⊕⊕OO LOW
Continuation	Immediate post-partum insertion by hand TCu 200 Vs progestasert	12-month continuation rates (per 100 women) were 86.3 for the Tcu 200 and 59.9 for the progestasert (significantly different).	400(1)	⊕⊕OO LOW
Continuation	Immediate post-partum insertion by instrument Tcu 200 vs progestastert	12-month continuation rates (per 100 women) were 86.1 for the Tcu 200 and 57.2 for the progestasert (significantly different).	400(1)	⊕⊕OO LOW
Continuation	Immediate post-partum insertion Tcu 200 VS IPCS-52 mg	12-month continuation rates (per 100 women) were 73.8 for the Tcu 200 and 57.3 for the IPCS-52 . 36-month continuation rates (per 100 women)-unable to extract from table due to lack of headers. Statistical significance only tested at 36 months	400(1)	⊕⊕OO LOW
Continuation	MLCu 375 V Tcu380A	Rate difference -2.20 [-5.39, 0.99]. Exp = MLCu375, Con - TCu380A)	1477 (1)	⊕⊕⊕O MODERA

				TE
Continuation	TCu380S V TCu380A (Follow-up = 1 year)	Rate difference = -5.50 [-9.11, -1.89]. Exp = TCu380S, Con - TCu380A)	1568(1)	⊕⊕⊕O MODERATE
Continuation	Tcu200 V TCu380A	Rate difference = -3.00 [-12.84, 6.84]]. Exp = TCu380A, Con - TCu200)	200(1)	⊕⊕⊕O MODERATE
Continuation	TCu380A V GyneFix frameless IUD	Continuation rates (SE) at 3 years were 90.7(1.7) in the frameless group and 85.3(2.0) in the TCu380A group. The rate ratio was 1.06 (1.00-1.13) and the rate difference 5.48 (0.33-10.63). The continuation rates tended to be higher with Gynefix, significantly in the second and third years. Here too the differences in continuation rates is explained mainly by the differences in the expulsions which were lower with the frameless device. At the end of 1st year 95% with Gynefix and 92% with TCu380A (RR 1.04 (1-1.08); RD 5.48 (0.33-10.63). *It is not clear in the review if this data refers to continuation or expulsion.*	606(1)	⊕⊕OO LOW

Table 4.2f Overview of Reviews table for injectables in developing countries (data synthesised using meta-analysis)

Injectables in developing countries						
Outcome	Intervention and comparison intervention	Illustrative comparative risks (95% CI)		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence
		Assumed risk With comparator	Corresponding risk With intervention			
Pregnancy						
	NET-EN 50mg/E2V 5mg V DMPA 25mg/E2C 5mg	2 per 1000	3 per 1000 (1 to 11)	**Peto OR:** 1.95 [0.53, 7.20]	3915 (1)	⊕⊕⊕O MODERATE
	NET-EN 50mg/E2V 5mg V NET-EN 200mg	9 per 1000	3 per 1000 (0 to 16)	**Peto OR:** 0.30 [0.05, 1.75]	849 (1)	⊕⊕OO LOW
	NET-EN 50mg/E2V 5mg V Nonhormonal IUD	30 per 1000	7 per 1000 (1 to 74)	**Peto OR:** 0.22 [0.02, 2.47]	148 (1)	⊕OOO VERY

						LOW
Discontinuation						
	DMPA 150mg IM every 3 months V NET-EN 200mg IM every 2 months	461 per 1000	461 per 1000 (406 to 521)	**RR:** 1.00 [0.88, 1.13]	2467(10)	⊕⊕⊕O MODERATE
	NET-EN 50mg/E2V 5mg V DMPA 25mg/E2C 5mg	257 per 1000	193 per 1000 (172 to 216)	**Peto OR:** 0.75 [0.67, 0.84]	4272(2)	⊕⊕⊕O MODERATE
	DMPA 25mg/E2C 5mg V DMPA 150mg	222 per 1000	497 per 1000 (317 to 777)	**Peto OR** 2.24 [1.43, 3.50]	360 (1)	⊕⊕OO LOW
	NET-EN 50mg/E2V 5mg V NET-EN 200mg	357 per 1000	503 per 1000 (382 to 664)	**Peto OR:** 1.41 [1.07, 1.86]	849 (1)	⊕⊕OO LOW

Table 4.2g Overview of Reviews table for intrauterine devices versus injectables in developing countries (data synthesised using meta-analysis)

Intrauterine devices versus injectables in developing countries						
Outcome	Intervention and comparison intervention	Illustrative comparative risks		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence
		Assumed risk With comparator	Corresponding risk With intervention			
Pregnancy						
	IUD V depot progestogen	68 per 1000	32 per 1000	RR: 0.47 [0.25, 0.85]	937 (1)	⊕⊕⊕O MODERATE
Discontinuation						
	IUD V depot progestogen	36 per 170	6 per 168	RR: 0.17 [0.07, 0.39]	338 (1)	⊕⊕⊕O MODERATE
	IUD V Mixed hormonal contraception	83 per 313	146 per 286	RR: 4.20 [3.06, 5.78]	599 (1)	⊕⊕⊕O MODERATE

Table 4.2h Overview of Reviews table for implants in developing countries (data synthesised using narrative synthesis)

Implants in developing countries.

Outcome	Intervention and comparison intervention	Narrative synthesis	Number of participants (studies)	Quality of the evidence
Pregnancy				
	Implanon V Norplant (Follow-up = 1 year)	Authors state that they did meta-analysis on all but tables not provided for effectiveness. It just says "no difference in effectiveness between the two implants" - no pregnancies (and hence no table!) in either the Implanon or Norplant groups after 26, 972 and 28, 108 women months of follow-up respectively. This includes all studies regardless of location. Using data on number of participants from only developing country trials = 0 pregnancies in either group (Norplant = 610, Implanon = 609).	1219(3)	⊕⊕OO LOW
	Implanon V Norplant (Follow-up = 2 years)	Authors state that did meta-analysis on all but tables not provided for effectiveness. It just says "no difference in effectiveness between the two implants" - no pregnancies (and hence no table!) in either the Implanon or Norplant groups after 26, 972 and 28, 108 women months of follow-up respectively. This includes all studies regardless of location. Using data on number of participants from only developing country trials = 0 pregnancies in either group (Norplant = 610, Implanon = 609).	1219(3)	⊕⊕OO LOW
	Implanon V Norplant (Follow-up = 3 years)	Authors state that did meta-analysis on all but tables not provided for effectiveness. It just says "no difference in effectiveness between the two implants" - no pregnancies (and hence no table!) in either the Implanon or Norplant groups after 26, 972 and 28, 108 women months of follow-up respectively. This includes all studies regardless of location. Using data on number of participants from only developing country trials = 0 pregnancies in either group (Norplant = 610, Implanon = 609).	1219(3)	⊕⊕OO LOW
	Implanon V Norplant (Follow-up = 4 years)	Authors state that did meta-analysis on all but tables not provided for effectiveness. It just says "no difference in effectiveness between the two implants" - no pregnancies	1219(3)	⊕⊕OO LOW

		(and hence no table!) in either the Implanon or Norplant groups after 26, 972 and 28, 108 women months of follow-up respectively. This includes all studies regardless of location. Using data on number of participants from only developing country trials = 0 pregnancies in either group (Norplant = 610, Implanon = 609).		
Continuation				
	Implanon V Norplant (Follow-up = 1 year)	91.6% continued to use Implanon and 92.4% continued to use Norplant.	1219(3)	⊕⊕OO LOW
	Implanon V Norplant (Follow-up = 2 years)	82.5% continued to use Implanon and 81.4% continued to use Norplant.	1219(3)	⊕⊕OO LOW
	Implanon V Norplant (Follow-up = 3 years)	67.4% continued to use Implanon and 72.5% continued to use Norplant.	1219(3)	⊕⊕OO LOW
	Implanon V Norplant (Follow-up = 4 years)	17.1% continued to use Implanon and 16.9% continued to use Norplant.	1219(3)	⊕⊕OO LOW

Table 4.2i Overview of Reviews table for emergency contraception in developing countries (data synthesised using meta-analysis)

Emergency contraception in developing countries.						
Outcome	Intervention and comparison intervention	Illustrative comparative risks (95% CI)		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence
		Assumed risk With comparator	Corresponding risk With intervention			
Pregnancy						
	IUD V Expectant management	220 per 1000	20 per 1000 (7 to 57)	**RR:** 0.09 [0.03, 0.26]	300(1)	⊕⊕OO LOW
	Levonorgestrel split dose 24 hr V 12 hour	20 per 1000	20 per 1000 (11 to 36)	**RR:** 0.98 [0.53, 1.82]	2060 (1)	⊕⊕⊕O MODERATE
	Levonorgestrel single dose V Levonorgestrel split dose	13 per 1000	7 per 1000 (2 to 24)	**RR:** 0.54 [0.16, 1.85]	1118(1)	⊕⊕⊕O MODERATE
	Levonorgestrel V Mid-dose mifepristone (25-50mg)	14 per 1000	28 per 1000 (18 to 44)	**RR:** 2.01 [1.27, 3.17]	3743(15)	⊕⊕OO LOW
	Levonorgestrel V Low-dose mifepristone (<25mg)	13 per 1000	27 per 1000 (14 to 50)	**RR:** 2.05 [1.11, 3.81]	1647(7)	⊕⊕OO LOW
	Levonorgestrel V Anordrin	35 per 1000	23 per 1000 (4 to 136)	**RR:** 0.67 [0.11, 3.89]	172(1)	⊕OOO VERY LOW
	Low-dose mifepristone (<25mg) V Low-dose mifepristone (≤10mg)	9 per 1000	9 per 1000 (1 to 146)	**RR:** 1.04 [0.07, 16.37]	220(1)	⊕OOO VERY LOW
	Mid-dose mifepristone (25-50mg) V Low-dose	16 per 1000	11 per 1000 (8 to 15)	**RR:** 0.66 [0.47, 0.91]	11432(19)	⊕⊕⊕O

	mifepristone (<25mg)					MODERATE
	Mid-dose mifepristone (50mg) V Mid-dose mifepristone (25mg)	16 per 1000	12 per 1000 (7 to 20)	**RR:** 0.72 [0.41, 1.27]	3123(13)	⊕⊕OO LOW
	High-dose mifepristone (>50mg) V Low-dose mifepristone (<25mg)	32 per 1000	6 per 1000 (1 to 29)	**RR:** 0.19 [0.04, 0.90]	1726 (4)	⊕⊕OO LOW
	High-dose mifepristone (>50mg) V Mid-dose mifepristone (25-50mg)	17 per 1000	14 per 1000 (7 to 30)	**RR:** 0.83 [0.39, 1.77]	1890(8)	⊕⊕OO LOW
	Mifepristone V Danazol	42 per 1000	8 per 1000 (1 to 70)	**RR:** 0.20 [0.02, 1.67]	241(1)	⊕OOO VERY LOW
	Mifepristone V Anordrin	40 per 1000	10 per 1000 (4 to 25)	**RR:** 0.26 [0.11, 0.63]	1035 (7)	⊕⊕OO LOW
	Mifepristone alone (all doses) V Mifepristone + anordrin (all doses)	12 per 1000	16 per 1000 (9 to 29)	**RR:** 1.32 [0.72, 2.41]	3038(5)	⊕⊕OO LOW
	Mifepristone alone (all doses) V Mifepristone + MTX (all doses)	20 per 1000	60 per 1000 (3 to 1000)	**RR:** 3.00 [0.13, 71.92]	100 (1)	⊕OOO VERY LOW
	Mifepristone alone (all doses) V Mifepristone + tamoxifen (all doses)	5 per 1000	15 per 1000 (2 to 143)	**RR:** 3.00 [0.31, 28.60]	400 (1)	⊕⊕OO LOW
	Mifepristone V Mifepristone + misoprostol (all doses)	7 per 1000	23 per 1000 (5 to 112)	**RR:** 3.49 [0.73, 16.65]	599 (1)	⊕⊕OO LOW
	Mifepristone (all doses) V Cu-IUD	Cannot calculate	Cannot calculate	**RR:** 1.51 [0.06, 36.67]	185(1)	⊕OOO VERY LOW
Discontinuation						

	No comparisons	N/A	N/A	N/A	N/A	N/A

Table 4.2j Overview of Reviews table for spermicide in developing countries (data synthesised using narrative synthesis)

Spermicide in developing countries.						
Outcome	Intervention and comparison intervention	Narrative synthesis			Number of participants (studies)	Quality of the evidence
Pregnancy						
	Collatex sponge (nonoxynol-9 1.15mg) V Neo sampoon tablet (menfegol 60mg)	Pregnancy rates varied widely by site: Rates were 5 x higher in Taiwan than Belgrade. Bangladesh excluded due to losses. Life table pregnancy rates at 12 months ranged from 3.8-18.2/100 women with sponge, and 6.2-29.9 with Neo Sampoon tablet. Non-significant.			1299(1)	⊕⊕OO LOW
	Neo sampoon tablet (menfegol 60mg) V Ortho or Emko vaginal tablet (100mg of nonoxynol-9)	No significant differences. In Kazi 1992, the 12 month rates were 15.2 for menfegol and 22.5 for Ortho. Lamptey 1985 provided Pearl Index: 10.6 for menfegol, 13.8 for Ortho, 17.9 for Emko.			672(3)	⊕⊕⊕O MODERATE
	Ortho vaginal tablet nonoxynol-9 100mg V Emko vaginal tablet nonoxynol-9 100mg	The 12-month life-table pregnancy rates were nearly identical in Lamptey and Younis.			440(2)	⊕⊕⊕O MODERATE (see provision)
	Neo sampoon tablet menfelgol 60mg V Emko foam nonoxynol-9 8%	Life-table pregnancy rates were similar for the two methods in both trials.			620(2)	⊕⊕⊕O MODERATE (see provision)
Discontinuation						
	Collatex sponge (nonoxynol-9 1.15mg) V Neo sampoon tablet (menfegol 60mg)	Discontinuation rates were non-significant.			1299(1)	⊕⊕OO LOW
	Vaginal foaming tablets nonxynol-9 100mg V menfegol 60mg	Life-table discontinuation rates for discomfort were not significantly different. In Klufio the 12 month discontinuation rates for medical reasons were 9.0 for menfegol, 0 for			272(2)	⊕⊕OO LOW

		nonoxynol-9 - a significant difference.		
	Neo sampoon tablet (menfegol 60mg) V Ortho or Emko vaginal tablet (100mg of nonoxynol-9)	Abdelsalaam: 6 month discontinuation for discomfort were similar and for medical and product-related reasons. Kazi: 12 month discontinuation rates were similar for both groups. Lamptey: Significant difference in 12 month discontinuation rates for discomfort: 0 for menfegol, 2.7 for Ortho, 12.8 for Emko.	672(3)	⊕⊕OO LOW
	Ortho vaginal tablet nonoxynol-9 100mg V Emko vaginal tablet nonoxynol-9 100mg	Lamptey: Emko = 12.8, Ortho = 2.7 discontinuation rate for discomfort at 12 months (significant difference). Younis: Emko = 5.6, Ortho = 11.6 discontinuation rate for discomfort at 12 months (not a significant difference).	440(2)	⊕⊕OO LOW
	Neo sampoon tablet menfelgol 60mg V Emko foam nonoxynol-9 8%	Discontinuation rates due to discomfort were similar. Overall rates were higher in Andolsek compared to Youssef.	620(2)	⊕⊕OO LOW (see provisio n)

Table 4.2k Overview of Reviews table for repeated use of pre- and postcoital hormonal contraception in developing countries (data synthesised using narrative synthesis)

Repeated use of pre- and postcoital hormonal contraception in developing countries.				
Outcome	Intervention and comparison intervention	Narrative synthesis	Number of participan ts (studies)	Quality of the evidenc e
Pregnancy				
	Chinese LNG V Hungarian LNG	5/361. Pearl index = 16.6 (number of pregnancies = 5). N = 361 (1). < 6 months follow-up.	361(1)	⊕⊕⊕O MODERA TE (see provisio n)
	One dose quinestanol acetate within 24 hrs of intercourse in following dose size: 0.5mg, 0.6mg, 0.75mg, 0.8mg, 1.5mg, 2.0mg.	Pearl index by dose (note where two indices are given for one dose, these came from different traisl sites, which could not be combined due to lack of information about number of pregnancies): (i) 0.5 mg = 36 (ii) 0.6mg = 38 (iii) 0.75mg = 23.1 (iv) 0.75mg = 20.2 (v) 1.5mg = 5.4 (vi) 1.5m = 0.8 (vii)	2792(1)	⊕OOO VERY LOW

		2mg = 1.2. N = 2792. Length of follow-up not provided.		
	Quinagestanol acetate 1.5mg V LNG within 1 hour post-coitus.	LNG: discontinued without pregnancy 25-31%, used > 6 months 42-78%, range for duration up to 30 months, mean duration 9 months/cycles.	899(1)	⊕OOO VERY LOW
	Quinagestanol acetate within 24 hrs of intercourse. Max of 1 dose/24hrs. Dose sizes as follows: 0.2mg, 0.3mg, 0.4mg, 0.5mg, 0.75mg, 0.8mg.	Pearl indices for doses as follows: (i) 0.2mg = 168 (ii) 0.3mg = 36 (iii) 0.4mg = 16.6 (iv) 0.5mg = 10.3 (v) 0.8mg = 0. N = 317. No intended duration of follow-up. Same participants also in Mischler 1974.	317(1)	⊕OOO VERY LOW
	Progestogens before/after coitus. Four different types of progestogens: retroprogestogen 30-40mg, clogestone 1.0mg, norgestrienone 0.5mg, ethynodiol 0.5mg.	Q. Combined? Pearl indices as follows: Retroprogestogen = 4.5, Ethynodiol = 36.9, Norgestrienone = 2.6, Clogestone = 2.5. N= 1805. No intended duration of follow-up given.	1805(1)	⊕OOO VERY LOW
	Groups: clogestone 1.0mg 5/6 hours prior to intercourse, two clogestone 0.6mg tablets (=1.2mg total) one before and one after coitus, two clogestone 1.0mg (total 2.0mg) one before, one after coitus.	Pearl indices by Clogestone dose: 1.0mg = 17, 1.2mg = 15, 2.0mg = 15	756(1)	⊕OOO VERY LOW
Continuation				
	One dose quinestanol acetate within 24 hrs of intercourse in following dose size: 0.5mg, 0.6mg, 0.75mg, 0.8mg, 1.5mg, 2.0mg.	Non LNG drugs. Mean duration use: 4.8 month/cycles. Follow-up less than 6 months.	2792(1)	⊕OOO VERY LOW
	Quinagestanol acetate 1.5mg V LNG within 1 hour post-coitus.	LNG - discontinued without pregnancy 11%, used > 6 months 37%, range 1-26 (months), mean use (months) 9.2.	899(1)	⊕OOO VERY LOW
	Quinagestanol acetate within 24 hrs of intercourse. Max of 1 dose/24hrs. Dose sizes as follows: 0.2mg, 0.3mg, 0.4mg, 0.5mg, 0.75mg, 0.8mg.	Non LNG drugs. Range for use - up to 14 months, mean duration 4.2 months. Follow-up less than 6 months.	317(1)	⊕OOO VERY LOW
	Progestogens before/after coitus. Four different types of progestogens: retroprogestogen 30-40mg, clogestone 1.0mg, norgestrienone 0.5mg, ethynodiol 0.5mg.	Non LNG drugs. Mean duration 5.5 months. Follow-up less than 6 months.	1805(1)	⊕OOO VERY LOW
	Groups: clogestone 1.0mg 5/6 hours prior to intercourse, two clogestone 0.6mg tablets (=1.2mg total) one before and one after coitus, two clogestone 1.0mg (total 2.0mg) one before, one after coitus.	Non LNG drugs. Mean duration 5.4 months. Follow-up less than 6 months.	756(1)	⊕OOO VERY LOW

Traditional methods

Table 4.2l Overview of Reviews table for natural family planning in developing countries (data synthesised using narrative synthesis)

Natural family planning in developing countries.				
Outcome	Intervention and comparison intervention	Narrative synthesis	Number of participants (studies)	Quality of the evidence
Pregnancy				
	Ovulation method V symptothermal method	Pregnancy rates could not be determined because of high drop-out.	N/A	⊕OOO VERY LOW
	LAM with support V LAM without support	The life table pregnancy rate (using the standard definition of amenorrhea) was 0.45 (one pregnancy in 1671 woman months accumulated) for the women using the LAM, compared with zero (none in 690 WMAC) for the controls, who were fully breastfeeding, amenorrhoeic women not using any other method of contraception).	676(1)	⊕OOO VERY LOW
	LAM with support V (Controls) used non-hormonal IUD 2 months postpartum and on demand feeding	Life table pregnancy rate after 6 months was 2.45 (using standard definition of the end of amenorrhea) and 0.45 (using 'any bleeding' to mark the end of amenorrhea).	735(1)	⊕OOO VERY LOW
Discontinuation				
	Ovulation method V symptothermal method	"Most randomised participants dropped out before beginning the observation period: 149 of 279 couples (53%) assigned to the ovulation method discontinued during training, in contrast to 176 of 287 assigned to the symptothermal method (61%). Eleven women assigned to the ovulation method and 32 assigned to the symptothermal method were excluded from analysis because of non-compliance during the training phase, and one more in each group was excluded during the active observation phase. Only a minority of participants entered the follow-up phase: 130 assigned to the ovulation method and 111 to the symptothermal method. Of these, 86 (31%) and 82 (30%) dropped out during the follow-up phase.	N/A	⊕OOO VERY LOW

		With the training and follow-up phases combined, 72 women assigned to the ovulation method became pregnant compared with 71 assigned to the alternative method. The corresponding numbers of participants who discontinued because of lack of interest or dissatisfaction with the method were 63 and 69, respectively.		

Appendix 4.3 Contextual information for included studies from included reviews

Argentina	Two studies carried out during 1974 and 2000 were included in the systematic reviews included in this OoR. The GDP per capita in 1980 and 2000 were $4857 and $9203. In 2009 Argentina was on the 82th rank among the 225 nations for which data were compiled. The population policy of Argentina has ever been promoting fertility control. Yet, fertility has been low compared to many developing countries. During 1970-74 the total fertility rate was 3.1 which dropped to 2.28 in 2003. In 2009, Argentina was on the 106th rank among 225 nations for which total fertility date were complied.
Bangladesh	Only one study carried out in Bangladesh and published in 1987 was included in a systematic review included in the OoR, In 1987 GDP per capita in Bangladesh was $440. In 2009 Bangladesh held 197th rank in GDP per capita among the 225 countries for which data were complied. Contraceptive prevalence among married women increased from 8% in the mid-1970s to about 60% in 2004. Fertility decreased from an average of more than 6 children per woman in 1975 to slightly more than three children per woman in 2004. Recent studies show that virtually all women in Bangladesh were aware of modern family planning methods. In 2000 the most popular method was pills (23%) followed by female sterilisation (7%) and injectables (7%). In 2009 Bangladesh stands at 81st position in total fertility rate among the 225 nations for which data were compiled. In 2009 family planning effort in Bangladesh was 56% which was lower than the Asia average of 54%. Thus, despite low economic status contraceptive use is increasing in Bangladesh and fertility is falling.
Brazil	Only one study published in 1995 was included in a systematic review included in this OoR. In 1995 GDP per capita of Brazil was $6466. In 2009 Brazil's economic status was 102 among the 225 nations for which economic data were compiled. In Brazil the most common family planning method was female sterilisation (53%) followed by pill (27%). Use of other modern methods were low (below 5%). In Brazil total fertility rate during 1990-95 was 2.45. In 2009 Brazil's rank in total fertility rank was 116th (2.21) among the 225 national. The family planning effort in Brazil was 39% which is lower than the average for Latin America which was 50%.
Colombia	One study carried out in 1980 was included in a systematic review included in this OoR. The GDP per capita in 1980 was $2446. Contraceptive prevalence among currently married women in 1990 was 47% (for modern family planning methods). The most popular method in 1990 was oral pills (18%) followed by IUD (11%) and female sterilisation (8%). Total fertility rate in 1990 was 2.8 which dropped to 2.46 in 2009. In 2009, Colombia's rank in total fertility rate was 98 among the 225 nations for which data were compiled. In 2009 family planning effort in Colombia was 50% which is same effort level for average Latin America region.
Chile	Studies carried out in Chile during 1991 and 1998 were included in the systematic reviews included in the OoR. In 1991 GDP per capita of Chile was $5,287 which increased to $9037 in 1998. In 2009 Chile's GDP per capita rank was 76th among the 225 countries for which data were compiled. Chile began family planning programmes in 1962. In 1991 total fertility rate in Chile was 2.6 and in 1998 it was 2.2. And in 2009 Chile's rank in total fertility was 139 (1.92) among the 225 nations for which date were compiled. Contraceptive prevalence in early 1990 was about 56%. In 2009 the family planning effort was 65%, higher than the average for Latin America (50%)

China	Studies conducted in China during 1987, 1991, 1993, 1995, 1996, 1998-2006 were included in the systematic reviews included in this OoR. In 1987 GDP per capita of China was $1026 which increased to $1,999 in 1998. In 2009 China ranked 136th position in GDP per capita among the 225 nations for which data were compiled. In 1992 female sterilisation (42%) and IUD (40%) were the major family planning methods used by couples. In 1990-95 total fertility rate in China was 1.8. In 2009 China's rank in total fertility (1.79) was 157 among the 225 nations for which data were compiled. In 2009 the family planning effort was 72% which is higher than the Asia average of 54%.
Egypt	Two studies conducted in Egypt included in the OoR relates to years 1984 and 1995. The GDP per capita of in those years were $1,871 and $2,995, respectively. In 2009 Egypt ranked 135th among the 225 countries for which estimates of GDP were available. During 1984 contraceptive prevalence in Egypt was around 37% among the currently married women. Pill and IUD were the most popular family planning methods and each accounted for about around 15%; use of other family planning methods was very low. In 1990 contraceptive prevalence increased to 47%. Among currently married women knowledge about contraception was near universal in 1990. Ideal number of children reported by women was 4 children during 1984 and 2.9 children during early 1990s. There were corresponding declines in fertility- decline of total fertility rate from 4.0 in 1984 to around 2.9 children in early 1990s. Unmet need for family planning during 1990s was around 20% and was an important factor for the high fertility. The overall family planning effort in 1994 was about 61% which is higher than the Middle East/North Africa average of 52%. Thus, the studies from Egypt included in took place in a context of relatively better economic situation and declining fertility.
Ecuador	One study carried out Ecudador in 1999 was included in the systematic review selected in this OoR. In 1999 GDP per capita was $4,574. In 2009 GDP per capita rank was 117 among 225 nations for which data were compiled. Family planning programmes in Ecuador were introduced in the mid 1960s. Contraceptive prevalence increased from 56% in 1994 to 66% in 1999. In 1994 female sterilisation was the most popular family planning method (35%) followed by IUD (21%) and pill (18%). Other modern family methods were accounted for less than 5%. Among the family planning users about 22% were traditional method adopters. Total fertility rate during 1975-80 was 5.4 which declined to 3.10 in 2000. In 2009 the family planning effort was 53% which was slightly higher than the Latin America average (50%)
Ghana	Studies included in the OoR from Ghana relates to years 1985, 1987, 1988, and 1999. The GDP per capita of Ghana in these years were $524; $573; $673; $924 and $954, respectively. In 2009 Ghana was on 196th position in GDP per capita among the 225 countries. In Ghana, fertility remained high (around 6 children) up to mid 1980s. In 1988 the total fertility rate was 6.4 which dropped to 4.4 in 1998. In 1998 knowledge about contraception was 93% among currently married women. Contraceptive prevalence increased from 10% in 1988 to 13% in 1999. The fertility decline is reflected in ideal number of children which declined to from 5.5 in 1988 to 4.8 in 1998. The family planning effort scores also increased from 10% in 1972 to 47% in 2009. Ghana's family planning effort in 2009 was same as that of the Sub-Saharan Africa average (47%).
Guatemala	Only one study carried out in Guatemala was included in the systematic review included in this OoR. This study was published in 1999. In 1999 GDP per capita was $3857. First family planning clinic opened in Guatemala City in 1965. Like many Latin American countries female sterilisation was the most common family planning method in Guatemala. In 1999 about 33% of the contraceptive

	users were sterilisation adopters followed by injectable (14%) and pill users (12). Total fertility rate in Guatemala in 1999 was about 5 children. Of this about 4 were wanted fertility reflecting substantial demand for having children. In 2009 the family planning effort was 43% which was lower than the Latin American average (50%).
India	Three studies carried out during 1990, 1992, and 1994 were included in the systematic review included in this OoR. GDP per capita in 1990, 1992 and 1994 were $869; $943; $1054. Official family planning programmes began in 1951. In 1992-93 contraceptive prevalence was 36% which rose to 49% in 2005-06. The most popular family planning method has been female sterilisation; in 1992-3 about 27% of the currently married women were sterilised. In 2009 total fertility rate was 2.78. India's family planning effort was 54% in 2009 which was same as the average for Asia region (54%).
Indonesia	Three studies carried out during 1984, 1987, and 1992 were included in the systematic reviews included in this OoR. In 1987 pill was the most popular method (15%) followed by IUD (13%) and injectables. In 1997, the most popular method was inectables (about 22%) followed by pill (15%) and IUD (8%). Contraceptive prevalence rose from 19% in 1976 to 60% in 2003. Total fertility rate dropped from 5.6 in 1968 to 2.4 in 2003. In 2009 the family planning effort was 60% which was higher than Asian average of 54%.
Kenya	One study from Kenya published in 2005 was included in the systematic review selected for this OoR. In 2005 GDP per capita of Kenya was $1433. In 2009 Kenya was in 185th position among the 225 countries for which GDP per capita data were compiled. In Kenya, total fertility rate in 1989 was 6.7 children per woman which dropped to 4.9 in 2003. During this period contraceptive use increased from 27% to 41% among currently married women. Among the contraceptive methods injectables was the most popular method followed by pill, sterilisation, IUD and condom. Wanted fertility remained at around 4 children during 1993-2003. However, during this period unwanted pregnancy declined from about 2 children to just over 1 a child. Family planning services were first made available in Kenya in the 1950s by private doctors and from 1962 by the Family Planning Association of Kenya. The family planning effort score in Kenya increased from 20% in 1972 to 49% in 2009. This was slightly higher than the average for the Sub-Saharan Africa region (47%).
Malaysia	One study carried out in Malaysia published in 1993 was included in the OoR. In 1993 GDP per capita in Malaysia was $6,361. In 2009 Malaysia's rank in GDP per capita was 75th among the 225 nations for which GDP per capita was available. Malaysia's national family planning programme started in 1966 to promote health of mothers and children. Between 1966 and 2008 the total fertility declined from 5.7 to 2.3. During this period contraceptive prevalence increased from 8% to 50%. In 2009 Malaysia's the family planning effort score was 62% which was higher than the Asia average of 54%.
Mexico	Two studies carried out in Mexico were included in systematic reviews included in this OoR. These studies were published in 1993 and 1999. In 1993 GDP per capita of Mexico was $6,238 which increased to $9,939 in 1999. During 1960s average fertility was about 7 children. Fertility started to decline from 1960. In 1993 total fertility was 3.04 and in 2000 it was 2.40. In 1995, female sterilisation was the most popular method (41%) followed by IUD (22%), pill (13%). In 2009 the family planning effort was 52% which was slightly higher than the Latin America average of 50%.
Nepal	One study carried out in 1995 was included in the systematic review selected for this OoR. Family planning activities in Nepal started as early as 1950s. Total fertility rated declined from 7.1 in 1971 to 4.1 in 2001. Contraceptive prevalence rate in 1976 was 2.6 which

	rose to 35.4% in 2001. In 1996 unmet need for family planning was 28.5 which increased to 39% in 2001. In 2001, the most popular family planning method was condoms (38%) followed by implants (21%), pills (16%) and female sterilisation (7%). In 2009 Nepal's family planning effort score was 57% which was higher than the Asia average of 54%.
Nigeria	One study carried out in 2002 was included in the systematic review included in this OoR. The GDP per capita of Nigeria in 2002 was $1456. In 2009 Nigeria was on 175th among the 225 for which data were complied. In 2002 total fertility rate was 5.4. The most popular family planning method was oral pills (34%), followed by IUD (23), injectables (20%), condoms (11%) and sterilisation (9%). In 2002 contraceptive prevalence rate was 8% among currently married women. In 2009 the family planning effort in Nigeria was 34% which was lower than the Sub-Saharan Africa average (47%).
Pakistan	Only study from Pakistan published in 1992 included in a systematic review is selected in this OoR. The GDP per capita of Pakistan in 1992 was $1429. In 2009 Pakistan ranks 170th position among the 225 countries for which GDP per capita data is available. Pakistan's official family planning program started in 1960. Despite this early start fertility declined slower than many Asian countries. The total fertility rate in 1992 was 5.4 which declined to 4.1 in 2006. Knowledge about family planning methods is near universal. Contraceptive prevalence increased from 12% in 1990-91 to 28% in 2000-01. Most prominent family planning methods are female sterilisation; condom; injectables; and pills. Unmet need for family planning in Pakistan was 25% and most of it was among the poorest and with lower levels of education. Family planning is generally weak at all levels and method mix is skewed towards few methods. Family planning effort score in 2009 was 46% which was lower than the Asia average of 54%.
Peru	Two studies carried out in Peru during 1973 and 1978 were included in the systematic reviews included in this OoR. The GDP per capita in 1980 was $2963. In 1991-2 contraceptive prevalence was 33%. The most popular method was IUD (13%) followed by female sterilisation (8%) and pills (6%). Total fertility in 1991-2 was 3.5 which dropped to 2.8 in 2000. In 2009 family planning effort score was 41% which was lower than the Latin America average of 50%.
Philippines	Three studies carried out in Philippines and published in 1985, 1989 and 1994 were included in the systematic reviews selected for this OoR. In 1989 GDP per capita was $1,674. In 2009 Philippines was on the 160th rank in GDP per capita among the 225 nations. Total fertility rate in Philippines declined from 6 children in 1975-80 to 3.34 children in 2000-05. In 1995 about 45% of the births were unplanned. In 2009 family planning effort score was 30% which was substantially lower than the Asia average of 54%.
Poland	One study carried out in 1995 was included in the systematic review included in this OoR. GDP per capita in 1995 was $7256. The total fertility rate dropped from 2.07 in 1989 to 1.22 in 2003. In 1991 contraceptive prevalence in Poland was 49%.
Thailand	Two studies conducted in Thailand in 1998 and 1990 were included in the systematic reviews selected in his OoR. The GDP per capita in 1998 and 1990 were $2207 and $2903, respectively. Total fertility rate in Thailand during 1995-2000 was 1.86. In 1996 the most popular method of family planning was pill (32%) followed by female sterilisation (31%). Rest of the modern family planning methods accounted for only less than 5%.
Taiwan	One study carried out in Taiwan and published in 1987 was included in the systematic review included in this OoR. The GDP per

	capita in 1989 was $8985. In 2009 Taiwan ranks 42nd position among the 225 nations for which data were compiled. In Taiwan the most popular family planning method in 1992 was female sterilisation (33%) followed by IUD (27%), barrier methods (22%) and pills (6%). In 2003 total fertility rate was 1.57.
Turkey	One study carried out in 1985 was included in the systematic review included in this OoR. The GDP per capita in 1985 was $3838.Total fertility in 1984 was around 3.9 which dropped to 2.12 in 2009. Contraceptive prevalence in 1993 was around 63%. In 2009 the family planning effort was 53% which was slightly higher than the Middle East/North Africa average of 52%.
Vietnam	One study carried out in 1996 was included in the systematic review included in this OoR. The GDP per capita in 1996 was $1106. In 1997 total fertility rate in Vietnam was 2.3. Contraceptive prevalence in 1994 was around 65%. Among the currently married women about 40% used IUD followed by sterilisation (7%), condom (5%) and pill (4%). In 2009 family planning effort score was 71% which was substantially higher than the Asia average of 54%.
Zambia	One study carried out in Zambia in 2007 was included in the systematic review included in this OoR. The GDP per capita of Zambia in 2007 was $1380. Contraceptive prevalence rate in 2007 was 26%. Unmet need for family planning in the same period was 27%. In 2007 the most popular family planning method was pill (27%) followed by injections (21%), and condom (12%) and female sterilisation (5%). Total fertility rate in 6.2 in 2007. Government clinics/pharmacy is the main source of contraception (about 70%). In 2009 the family planning effort was 45% which was lower than the Sub-Saharan Africa average (47%).