What is the Impact of Contraceptive Methods and Mixes of Contraceptive Methods on Contraceptive Prevalence, Unmet Need for Family Planning, and, Unwanted and Unintended Pregnancies? An Overview of Systematic Reviews.

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1. 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 women; Ross, no date) 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

[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))

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.

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).

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).

1.2. Factors influencing contraceptive prevalence and method mix

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

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

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) estimated 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).

1.3 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). 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

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

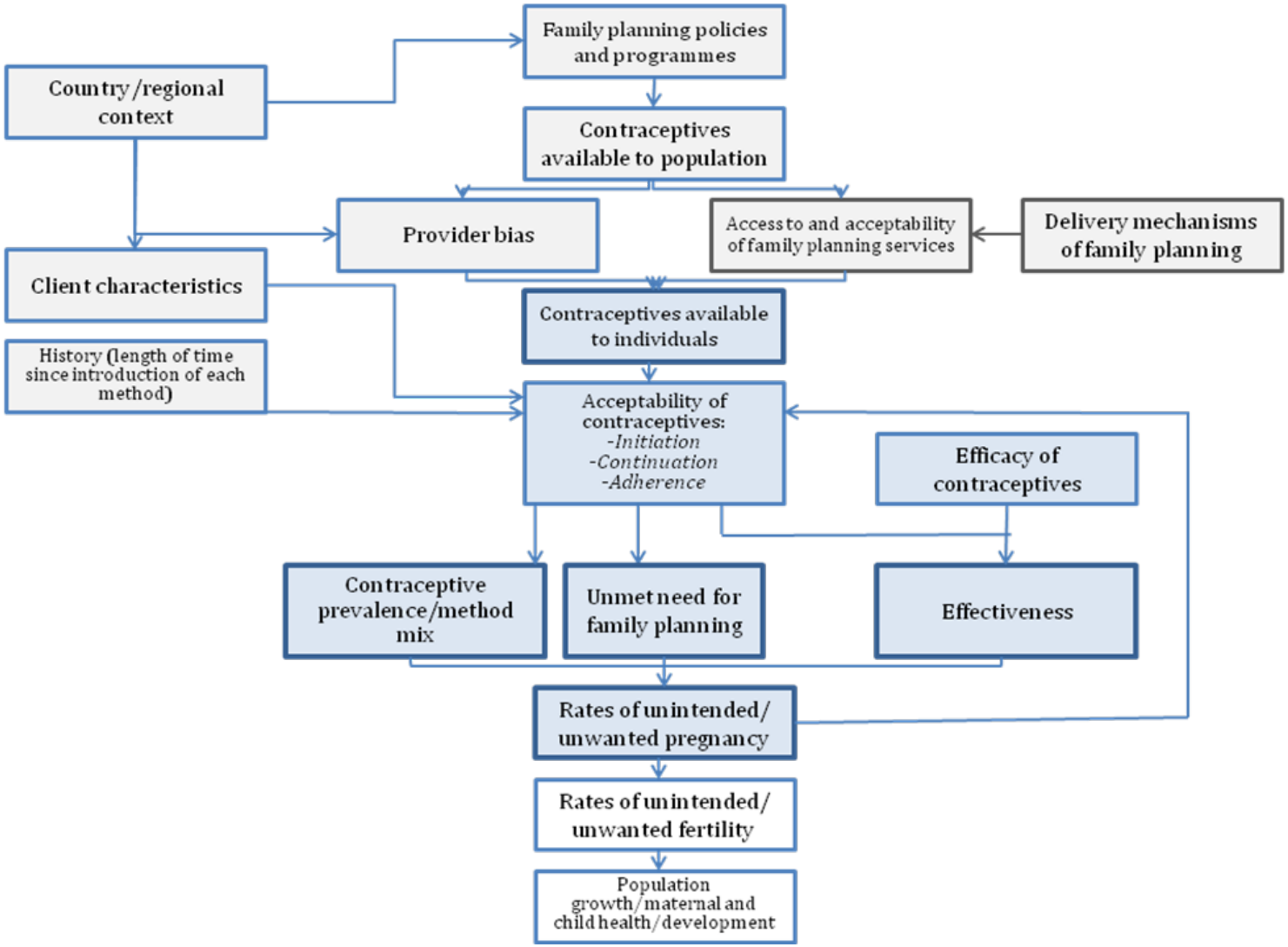

Figure 1. Conceptual framework of the factors influencing contraceptive prevalence, method mix, and unmet need for family planning (Light grey shaded boxes = contextual factors: Blue shaded boxes = focus of this OoR: Unshaded boxes = consequences of unintended/unwanted pregnancies).

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 which 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 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 retard 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.

1.4. Summary: Focus of this review

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. Furthermore, as previously discussed, research suggests that the context (in particular, that at a country-level) in which contraceptives (or combinations of contraceptives) are available (and accessible) affects these outcomes. Hence, where possible, there is a need to examine the impact of different contraceptives (and combinations of contraceptives) on such outcomes in the context of each developing country. Systematic reviews have been conducted in this area (listed in section 8), 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.

2. Objectives

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

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

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

- 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.

This Overview of Systematic Reviews (OoR) will focus on one part of the conceptual framework (as highlighted by the blue shaded boxes on Figure 1). A further mixed-methods systematic review will be conducted to investigate family planning delivery mechanisms (boxes outlined in black). As described in 3.5. Data synthesis, contextual factors (boxes shaded grey) will be described and mapped against the outcomes examined.

3. Methods:

3.1. Criteria for considering reviews for inclusion

3.1.2. Types of studies:

We will include 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 requires 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 do not contain these elements will be excluded from the OoR.

Types of non-randomised trials include:

- 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 will include:

- 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 will include:

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

3.2.2. Types of participants:

We will include Cochrane and non-Cochrane systematic reviews of studies whose participants are 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 will be eligible, but we will only use the data from the studies conducted in "developing", "low income" or "middle income" countries i.e. where the review has examined these separately. Where the review has combined data from developing/low income/middle income and developed/high income countries, and it is not possible to separate these, the systematic review will be excluded.

These inclusion criteria are broad in order to ensure that the OoR includes 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 is feasible that systematic reviews in the area may have taken a broader eligibility criterion, and we would seek to include these in the OoR.

3.2.3. Types of interventions:

This Overview will include 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 will be included in the OoR provided that one of the relevant outcomes has 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), will be included:

1) Modern contraceptive methods:
    a) Terminal methods
        i) Female sterilisation (laparoscopic, minilaparotomy, combination with Caesarean section, Quinacrine).
        ii) Male sterilisation (Vasectomy and non-scalpel vasectomy)
    b) Spacing or temporary methods
        i) The Pill
        ii) The intra uterine device (IUD; including immediate postpartum and post-abortion insertion)
        iii) Injectables
        iv) Implants
        v) The female condom
        vi) The male condom
        vii) Emergency contraception (EC)
        viii) The diaphragm
        ix) Foam/jelly
        x) Induced abortion
2) Traditional methods
    a) Periodic abstinence
    b) Withdrawal
    c) 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 will include 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).

3.2.4. Types of outcome measure:

Our primary outcome measures are:

- 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]).*

[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. We will seek to standardize these statistics to risk ratios.

- 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 will be 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])*

3.3 Search methods for identification of reviews

Since this Overview will include both Cochrane and non-Cochrane systematic reviews searches will be conducted of a variety of electronic databases in the field of healthcare, reproductive health, demography, population studies, population geography and family planning. These databases will include the Cochrane Database of Systematic Reviews, MEDLINE, Database of Abstracts of Reviews of Effects (DARE), Bioline International, Popline, WHO Reproductive Health Library, LILACS, Turning Research Into Practice (TRIP) database and Zetoc (The British Library's Electronic Table of Contents).

An example search has been included in Appendix 2 to demonstrate our general approach to the design of the search strategies. Additional searches will be tailored to the specific database and advice will be sought from an information specialist to ensure rigorous search strategies are

[5] These outcome measures would be presented by systematic reviews as a rate ratio and we will seek to standardise to a risk ratio.
[6] These outcome measures would be presented by systematic reviews as a hazard ratio and we will seek to standardise to a risk ratio.

employed. Search results will be managed using reference management software and duplicates will be removed prior to screening for relevance.

3.4. Data collection and analysis

3.4.1. Selection of reviews

All abstracts and titles that are of potential relevance to the Overview will be independently screened by two review authors. These will be rated as either ‘exclude’ or ‘potentially eligible’. Full reports of abstracts will also be obtained where they have been classified as potentially eligible, or where there is doubt about eligibility or disagreement between review authors. These will be assessed independently by two review authors to establish their eligibility for inclusion in the OoR. These will then be classified as either ‘excluded’ or ‘included’. Disagreements will be resolved by discussion between the two review authors. Other authors will be brought in where disagreements cannot be resolved. Again, a resolution will be achieved by discussion amongst the review team.

3.4.2. Data extraction and management

Data will be extracted from included reviews using a data extraction form designed for this review. In general, the data collection form will seek 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 conducted, included study designs, outcomes for which data were reported, comparisons performed, methods and results of quality assessment, summary of results for each relevant outcome and review limitations. Source page numbers will be included for ease of reference and, where information is missing or unclear this will be marked as such on the form.

Data will be extracted independently by two authors and disagreements will be resolved by discussion between them. A third author will be brought in where disagreements cannot be resolved. Again, a resolution will be achieved by discussion. The authors of the original systematic reviews will be contacted for any missing data or for clarification where necessary.

3.4.3. Assessment of methodological quality of included reviews

3.4.3.1. Quality of included reviews

The quality of included reviews will be 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 will be resolved by discussion between the assessors and by bringing in a third review author. Where disagreements cannot be resolved through discussion amongst the review team, a two-thirds majority would inform the final decision. Where items are graded as ‘Can’t answer’, the authors of the original systematic review will be contacted for clarification.

3.4.3.2. Quality of evidence in included reviews

The GRADE approach will be 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 will be 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 will be downgraded if:

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

A study will be upgraded if:

1. 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)
2. Very strong evidence of association – significant risk ratio of >5 (<0.2) based on direct evidence with no major threats to validity (+2)
3. Evidence of a dose response gradient (+1)
4. All plausible confounders would have reduced the effect (+1)

3.5. Data synthesis

We will map the current evidence against the taxonomy of interventions detailed in the "Types of Interventions" section of this protocol. This mapping will additionally enable an assessment of areas in which there is a lack of systematic review evidence. Further, in synthesising the evidence, information will be 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 will be 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 will also be mapped: access to Family Planning Services will be examined 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).

Where available, we will extract and report the pooled effect estimates of meta-analyses (with confidence intervals where provided) conducted within included systematic reviews. If this information is not available, we will present the findings according to the statistical information available in each review. Where possible, statistical reports of outcomes will be standardised across included reviews, to further enable comparisons. Attention will also be paid as to whether reviews have treated pregnancy as an event or a non-event, in order to ensure that the findings are correctly interpreted and presented consistently alongside those from different reviews.

We will aim 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 will be made about whether to include the non-RCT data. This decision will be primarily informed by the quality of the non-RCT evidence and whether this evidence conflicts with that provided by RCT evidence. For example, should there be good quality non-RCT evidence (i.e. upgraded or double-upgraded observational studies) this will be included. However, should observational studies that have not been upgraded conflict with evidence from good quality RCT evidence; this evidence would not be included. Such decisions will be documented in the OoR. If we find only low quality non-RCT evidence, this will be presented as the best available evidence, also the limitations with regard to the interpretation of such evidence will be discussed.

Attention will be paid to studies which have been included in more than one review, to avoid unit of analysis errors. If a comparison is examined by more than one systematic review and there is an overlap between included studies data will be extracted from both reviews and duplicate study data removed. Should there be any discrepancy in the data presented from a study contained in more than one systematic review the original paper will be 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 will not seek to undertake additional statistical analyses of indirect comparisons. In this case, we will note the lack of available evidence for each potential direct comparison.

Data will be interpreted with respect to the quality of the evidence, and critique of the included systematic reviews. Where possible, data from the included systematic reviews will be 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. As appropriate, forest top plots of pooled effect estimates study results will be included and presented by relevant subgroups. These will enable presentation of the data by subgroups (location of study), and to assist with interpretation of contextual factors. Data will be managed using RevMan 5.

4. Contribution of authors

Develop and approve the protocol – HM, AD, SP, TD, WS

Develop the search strategy – HM, AD, SP, TD, WS

Run the search strategy – HM

5. User involvement

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 has not been 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.

6. Dissemination

In addition to dissemination to the Department for International Development we plan to submit a paper on this OoR to an international peer-reviewed journal in the area (e.g. International Family Planning Perspectives).

7. Declarations of interest

None of the authors have any past or present affiliations or other involvement with any organization or entity with an interest in the Overview which might lead to a conflict or interest (perceived or real).

8. Example systematic reviews

Briggs, C.J., & Garner, P. (2006). *Strategies for integrating primary health services in middle- and low-income countries at the point of delivery*. Cochrane Database of Systematic Reviews, Issue 2. Art. No.: CD003318. DOI: 10.1002/14651858.CD003318.pub2

Cheng, L., Gülmezoglu, A.M., Piaggio, G. G P., Ezcurra, E. E., Van Look, P. P. F. A. (2008). *Interventions for emergency contraception*. Cochrane Database of Systematic Reviews. Issue 2. Art. No.: CD001324. DOI: 10.1002/14651858.CD001324.pub3.

Cook, L. A., Van Vliet, H. A. A. M., Lopez. L. M., Pun, A., & Gallo, M. F. (2007). *Vasectomy occlusion techniques for male sterilization.* Cochrane Database of Systematic Reviews, Issue 2. Art. No.: CD003991. DOI: 10.1002/14651858.CD003991.pub3.

Gallo, M. F., Grimes, D. A., Lopez, L. M., Schulz, K. F., & d'Arcangues C. (2008). *Combination injectable contraceptives for contraception*. Cochrane Database of Systematic Reviews, Issue 4. Art. No.: CD004568. DOI: 10.1002/14651858.CD004568.pub3

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Appendix 1. Glossary

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

Total fertility rate (TFR): the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates.

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. It corresponds to a TFR of 2.04 to 2.10.

Desired fertility: Total number of children desired by a woman or a couple and the actual fertility is the fertility level achieved by a woman or a couple.

Wanted total fertility rate: based on women's future desire to have children, in order to classify births (or current pregnancies) as wanted or unwanted.

Average ideal number of children (AINC): the average ideal number of children that women would like to have.

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: 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.

Appendix 2. Indicative search strategy for MEDLINE (ISI Web of Knowledge)

1. MeSH Heading:exp=(contraception)
2. MeSH Heading:exp=(family planning services)
3. MeSH Heading:exp=(family planning policy)
4. Title=(contracepti*)
5. Title=(family planning)
6. #1 OR #2 OR #3 OR #4 OR #5
7. Title=(fertility)
8. Title=(reduction)
9. #7 AND #8
10. #6 OR #9
11. TI=systematic review
12. AB=systematic review
13. TI=meta-analysis
14. AB=meta-analysis
15. Topic=(meta-analysis)
16. MeSH Heading:exp=(Meta-Analysis as Topic)
17. MeSH Heading:exp=(Meta-Analysis)
18. #11 OR #12 OR #13 OR #14 OR #16 OR #17
19. #10 AND #18