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Date received by WHO:
Thematic area:
☒ Generic/Master protocol
☐ Single site proposal
☐ "Core" proposal (for multicentre study)
☐ Centre-specific proposal under multicentre study
Connect ID No:

Project title

WHO Study ~~A65930:~~ QUALI-DEC: Appropriate use of caesaran section through QUALIty DECision-making by women and providers.

[Former title: QUALI-DEC - Reducing unnecessary caesarean section through QUALIty DECision-making by women and providers in low-and middle-income countries (QUALI-DEC)]

REVIEWER NAME: Maxine Whitaker

REVIEWER NAME: Tsungai Chipato

The master research protocol has been reviewed by the RP2 panel and has been approved. The panel is satisfied with the team's responses and the changes that have been made to the proposal prompted by comments from the RP2 review. The approval covers the generic Master protocol, the research team is invited to submit their implementation protocols for the countries to be involved in implementation of the study.

The secretariat asks that the team engages in research capacity strengthening linkages related to the project and involved partners, by initiating a planning conversation in relation to country implementation.

Date of approval: 2020-03-24

Dr Anna Ekéus Thorson MD, MPH, PhD, Prof **I Research Manager I Research Capacity Strengthening I HRP Alliance I** Department of Reproductive Health and Research I Office: +41227911393 Cell: +41792173401

Last review round:

- Congratulations on the funding and best wishes on the funding.
- We are happy to approve this version without further comments, particularly since the project is now funded adequately.

Review round 1 Conditional approval with clarifications

RE: **WHO Study A65930: QUALI-DEC: Appropriate use of caesaran section through QUALIty DECision-making by women and providers.**

To whom it may concern,

Thank you very much for providing feedback on our submitted research protocol. Below we respond to each of the substantive comments by the reviewers. We have provided our responses next to the comments and have added information where relevant about supporting information and accompanying materials.

Reviewer Comment	**Investigator response**
RP2 Panel collated comments: The panel considered the research topic of to be important and relevant and does encourage research in this area. The panel is impressed by this very high-quality proposal. This is a great model which needs to be further developed. It is perfect timing for this project – we know there is a problem and this needs to be addressed right now. To further improve the proposal, please address the following issues: **Specific:** • The panel is concerned about the sustainability of the project. o The formative work is expensive • Dissemination of the project and an evaluation of the dissemination are included in the budget which increase the quality. • Timeline feedback	We thank the panel for its supportive vision of the project; we are pleased to share with RP2 that the European Commission will be funding this project through a Horizon 2020 grant awarded in August 2019. We acknowledge the huge resources and costs involved in the formative work. The outlined activities are critical to undertaking this research (effective implementation of the various components of QUALI-DEC strategy). These activities have thus been adequately budgeted for (please see attached Budget). Periodic monitoring and evaluation (comprising data quality assurance, audits, evaluation of study safety, progress, barriers and enablers of proposed interventions) and feedback to individual sites will be

- Consider interim feedback activities, as the project stretches over many years (and not only endpoint dissemination). - Scalability should be thought of early in the intervention. - Please add a health economic cost effectiveness component from the start - Site specific information can be added in detail in the site-specific protocols. - Please specify why Burkina Faso was chosen, as overuse and underuse can co-exist in the same country. - Feasibility in sites - Please address that there may be culture specific issues. Examples from the South East Asia specific setting was mentioned, such as selection of the time of birth for the baby, as well as financial profit and insurance issues for clinics. - please clarify, which of the interventions will be chosen	conducted as part of planned quarterly supervisory visits by country-level data managers and principal investigators. These activities will include in-depth discussion with the local implementors and researchers to discuss the barriers encountered and proposed solutions. The discussions will help identify the necessary changes for improved implementation. As noted in the section 'Knowledge transfer', "The scalability assessment tool (SAT) will be used early into implementation to allow for potential modification of the intervention during implementation." The kick-off meeting includes discussions of the tools to evaluate scalability. In addition, innovatively, and as suggested by a WHO Technical Advisory Group (TAG) on Caesarean Section that met in October 2019, we are including Parliamentarians from the four countries as stakeholders within the QUALI-DEC project. It is expected that Parliamentarians can play a role to enhance the implementation, the knowledge-transfer, scalability and legislative strategies if appropriate. Cost-effectiveness component added (see new section on 'Cost-effectiveness analysis') Burkina Faso: Implementation of fee exemption policy for caesarean delivery (during the period 2006 to April 2016) increased access to caesarean sections; however, in some hospitals caesarean section have risen considerably, to as high as 40% with unclear medical justification. Hence, implementation of fee exemption policy should also be accompanied by measures to prevent arise in unnecessary caesarean sections as proposed in the QUALI-DEC strategy. Furthermore, A study carried out in 22

	referral hospitals showed that 25% of caesarean sections were not medically indicated which contrast with the unmet needs of women who still deliver outside health facilities. Authors concluded that "non-medically indicated CS is associated with both socioeconomic determinants and medical factors. Hence, interventions are needed to improve the skills of healthcare professionals and awareness of women concerning the risks associated with unnecessary cesarean delivery". Please see below for details: • Kaboré C, Ridde V, Chaillet N, Yaya Bocoum F, Betrán AP, Dumont A. DECIDE: a cluster-randomized controlled trial to reduce unnecessary caesarean deliveries in Burkina Faso. BMC Med. 2019 May 2;17(1):87. • Kabore C, Ridde V, Kouanda S, Agier I, Queuille L, Dumont A. Determinants of non-medically indicated cesarean deliveries in Burkina Faso. Int J Gynaecol Obstet 2016; 135 Suppl 1: S58-S63. Feasibility in sites: We acknowledge there will be inherent differences across study sites (e.g. in the organisation and financing of health facilities, cultural practices surrounding birth, among others). As noted in the 'Study design' section, each of the four components of QUALI-DEC strategy will be tailored to the local context following baseline assessment of drivers, barriers and facilitators of unnecessary caesarean sections. In addition, the study includes regular monitoring visits to adjust in response to learning. **The last comment ("please clarify, which of the interventions will be chosen") relates to a related generic protocol on formative research, submitted to WHO RP2 at the same time as QUALI-DEC protocol. For QUALI-DEC, the four components to

	implement are the following: • Opinion leaders to implement evidence-based clinical guidelines for indication for caesarean section; • Caesarean audits and feedback to help providers identify target groups and strategies for safely reducing unnecessary caesarean sections, • a Decision Analysis Tool (DAT) to help women make an informed decision on mode of delivery; and • Implementation of WHO recommendations on companionship during labour to support women during vaginal birth.

REVIEWER NAME: Elisabeth Faxelid

REVIEWER NAME:

REQUESTED BUDGET: Not specified since generic

DATE OF REVIEW: 23/1 2019

Reviewer Comments	**Investigator Response**
GENERAL comments: The research problem is relevant and important. However, the project is very large with many components. It will thus take a lot of resources including personnel, time, money. Can the project be reduced/limited in some way? In addition, another very similar project is submitted to WHO. I think only one of those projects should be funded.	We agree with the reviewer that this is a costly project as implementation research normally is. In recognition of the relevance and importance, the European Commission will be funding this project through a Horizon 2020 grant awarded in August 2019. The stated resources and activities are complementary (interlinked) and critical for the planned research. The resources and research activities have been adequately budgeted for (see attached project budget).

PROJECT SUMMARY and PROJECT SIGNIFICANCE:

Reviewer Comment	Investigator Response
This is a generic project proposal with the aim to design and evaluate a strategy to implement evidence-based non-clinical interventions targeted at health care professionals, women and organizations to reduce unnecessary cesarean section in low- and middle-income countries. The project is planned to take place in facilities in Argentina, Burkina Faso, Thailand and Vietnam. Thirty-two facilities (8 facilities per country) will be selected purposely. As it is a generic project no budget is presented and no specific study sites are yet chosen.	No issued raised by reviewer.

OVERALL PROJECT DESIGN: *Is the proposal scientifically sound and is the design being proposed the most appropriate to accomplish the stated objectives? Please provide a critique of the conceptual approach and the proposed project structure in relation to the objectives the project seeks to achieve. Have checklists (STROBE, PRISMA, etc.) accurately informed the methods description?*

Reviewer Comments	Investigator Response
In the overall aim it is stated "….to reduce unnecessary CS…." while in the specific objectives implementation methods to achieve appropriate CS rates is stated. It seems that the focus is on reducing CS although both overuse and underuse are problems in low- and middle-income countries.	For consistency, "achieve appropriate CS rates" rephrased to "reducing unnecessary CS". Nonetheless, the study seeks to promote appropriate use of CS by reducing unnecessary CS (all the participating sites have recognized the need to reduce CS).
In the conceptual framework, table 1, several possible theories to guide data collection and analysis are presented. I appreciate theories in research, but the use of many theories in the same project can also be confusing. Do authors suggest that all these theories are to be used?	Each theory in Table 1 is linked to a specific component of the multifaceted strategy. The aim is to provide an explanation or causal pathway through which each of the intervention strategies are thought to lead to the intended outcomes (i.e. to facilitate an understanding of the mechanisms of desired change). Given the complexity of the factors influencing CS rates and the challenge of reducing unnecessary CS, it is important to understand the pathways and research that has led to the selection of the interventions.

It is stated that "A pragmatic hybrid effectiveness implementation Type III mixed methods study design" will be used. Please clarify what this actually mean.	We described in the subsequent text, this "focuses on testing the implementation strategy while gathering data on the impact the intervention has on relevant clinical outcomes". Further details can be found in the below two references cited in the protocol: 1. Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. Med Care. 2012;50(3):217-26. 2. Brown CH, Curran G, Palinkas LA, Aarons GA, Wells KB, Jones L, et al. An Overview of Research and Evaluation Designs for Dissemination and Implementation. Annu Rev Public Health. 2017;38:1-22.
The aim is to design and evaluate a strategy to implement evidence-based non-clinical interventions. However, the three interventions included seems already tested in several RCTs and found effective to reduce CS. So why is "design" included in the aim? Isn´t this a "pure" implementation project with an evaluation of acceptability in each context? Do you refer to that the design should be tailored according to the different cultural contexts?	"Design" here refers to tailoring of the four components of QUALI-DEC strategy to different contexts (e.g. for labour companionship this will involve adaptation taking into account health system factors (such as provider capacity and resources in the maternity unit), legal and policy context (such as who is permitted to be present on the labour ward), women and men's preferences. Intervention tailoring will be informed by planned formative research aiming to identify driving factors, barriers and facilitators of unnecessary caesarean sections. Please also refer to the response above on the design as a pragmatic hybrid effectiveness implementation Type III mixed methods design.

Since the aim is to reduce CS, will the intervention really be a way helping women to make an informed own choice of mode of birth (as stated) or will it be a way to convince women that they should not choose CS?	Majority of CS in the study settings (and globally) are medically unnecessary (given lack of evidence of health benefits despite high CS rates). As outlined in our conceptual framework (Table 1), our hypothesis is that the Decision-Analysis Tool (DAT) will facilitate meaningful dialogue between clinicians and women (with considerations of the risks and benefits of planned CS vs. vaginal birth, women fears surrounding birth, values and preferences for different modes of delivery) leading to an informed and appropriate choice of mode of delivery among low-risk women.
One primary and a number of secondary outcomes are presented. Why isn´t women´s satisfaction included as secondary outcome since it seems to be included in the postpartum interviews?	Satisfaction with birth experience now included as a secondary outcome measure. Please also see additional details added to clarify study endpoints in the 'Primary and secondary outcomes' section.
A knowledge transfer strategy is presented (knowledge brokering). Is this part of the intervention or is it a plan for scaling up and transfer information when the intervention has been evaluated? Although important, it seems to be a huge commitment!	Knowledge transfer strategy outlined comprises dissemination activities aimed at improving utilization of project findings by target stakeholders (women, men, health professionals, policymakers). We agree that this is a substantial investment and consider it a crucial component of this research.

SAMPLING PROCEDURES: *Is the sampling, (including representativeness, if required) and the sample size, adequately described and justified? Are adequate procedures outlined to recruit the respondents? If a qualitative study, is selection of participants and method for gathering data accurately described?*

Reviewer Comment	**Investigator Response**
Since the project is generic sampling procedures are not yet decided. But what is presented regarding study populations is relevant.	Sampling procedures now presented in the section 'Study sites and population'

DATA COLLECTION: *Do you foresee any difficulties in the proposed field activities, especially in the plans for data collection?*

Reviewer Comment	**Investigator Response**
The project is very large with many components. It will thus take a lot of resources including personnel and time. Can the project be reduced/limited?	The stated resources and activities are complementary (interlinked) and critical for the planned research. The resources and research activities have been adequately budgeted for (see attached project budget). As stated above, we are very pleased to share with the reviewers that the European Commission will be funding this project through a Horizon 2020 grant awarded in August 2019.

ANALYSES, MAIN VARIABLES or OUTCOMES: *Is information provided on methods of analyses? For quantitative studies, intended statistical methods? Are the main variables or outcomes properly described?*

Reviewer Comment	**Investigator Response**
Methods for analysis are presented.	No issue raised by reviewer.

For qualitative studies, are scientifically sound methods of data collection analyses described, aiming for robustness and trustworthiness. Are theories used adequately?

Reviewer Comment	**Investigator Response**
For the qualitative parts (interviews, FGDs) more information about analysis is needed. Aspects of how to achieve trustworthiness is not presented. Process of data collection need to be elaborated on.	Methods for the analysis of qualitative data added in the section 'Qualitative data analyses'. Trustworthiness also addressed: "…the person transcribing the data will be the same person who conducted the interview to improve trustworthiness of the data."

RESEARCH STANDARDS: (*Gender, Human Rights, equity aspects, country engagement, stakeholders involvement, fulfilling implementation research standards as relevant?)*

Reviewer Comment	**Investigator Response**
Not elaborated on.	Please see the following sections (under 'Ethical considerations and core values') for relevant details. *'Gender and social equity'* ***'Significance to the sexual and reproductive health and rights research area'***

CV, TIMELINE AND BUDGET

Reviewer Comment	**Investigator Response**
Not included.	Gantt Chart updated with timing, deliverables and milestones specified for each of the six work packages (For details see section on 'Timeline'): WP1: Project management and coordination WP2: Intervention implementation WP3: Evaluation of the intervention at health systems level WP4: Evaluation of the intervention at societal level WP5: Monitoring maternal and perinatal outcomes WP6: Knowledge transfer

	Budget now attached. CV of the lead researchers in the collaborating partners have been included in the proposal.

OVERALL ASSESSMENT AND FEASIBILITY: *Please comment on the overall quality of this project.*

Reviewer Comment	**Investigator Response**
The research problem and overall design of the project is relevant. However, the project is large, which might challenge feasibility as stated above. A number of aspects related to qualitative methodology (sampling, process of data collection, analysis, trustworthiness etc.) need to be elaborated on. Tools need to be presented. The research team and their skills related to topic and methods should be described. I don´t think this proposal is yet ready - See my comments and questions above under overall project design.	Issues raised in this reviewer summary have been addressed in our previous comments (e.g. budget attached to justify funding for each of the research activities; details about sampling, data collection provided, and issue of trustworthiness addressed). We agree with the reviewer this is a complex project addressing an array of areas, including health promotion, women's rights, best clinical practices, appropriate information for decision-making and action, and quality of improvement in maternity units. It will thus be grounded in different disciplines including epidemiology, sociology, psychology, anthropology, demography, public health, clinical medicine (obstetrics and midwifery), women's rights, implementation science (qualitative and quantitative research), management and economics. The Collaborating Partners have been chosen for their specific expertise in each of the

	disciplines and needs of the project. Please see attached CVs of the lead researchers.

REVIEWER NAME: Maxine Whittaker

REVIEWER NAME:

REQUESTED BUDGET: Core protocol. ½+2+2+1/2 years duration (baseline, intervention, follow-up, dissemination) = 5 years

DATE OF REVIEW:

GENERAL comments:

PROJECT SUMMARY and PROJECT SIGNIFICANCE:

Reviewer Comments	**Investigator Response**
Despite the long-lasting international concern and debate, the proportion of birth by caesarean section (CS) continues to increase When medically indicated a caesarean can effectively prevent maternal and perinatal mortality and morbidity but there is no evidence of the benefits of a caesarean delivery for women and infants who do not need the procedure can even affect future pregnancies These risks are higher and more severe in low-resource settings that lack the capacity to conduct safe surgery and/or treat surgical complications. In addition, in LMIC, overuse and underuse of CS co-exist, widening the health inequalities and further weakening	No issue raised by reviewer.

health systems in these countries. Evidence-based clinical interventions to improve the quality of care during labor and delivery are well known and could enhance appropriate use of CS if they would be used systematically by health care professionals. Moreover, overuse of CS can no longer be seen only as the result of clinical practices. Non-clinical factors such as social or cultural influences or the convenience of a CS have emerged as potential drivers and need to be taken into account. Non-clinical interventions and policies are needed to implement best practices in health care facilities including the appropriate use of CS. The overall **aim** of the project is to design and evaluate a strategy (QUALI-DEC) to implement evidence-based non-clinical interventions targeted at health care professionals, women and organizations to reduce unnecessary CS in LMIC. The specific **objectives** are the following: 1. To develop, adapt and extent to new settings evidence-based non-clinical interventions which aim to: a. improve clinicians' adherence to evidence-based clinical guidelines using audit of indications of CS combined with onsite training and opinion leader; b. improve the doctor-patient decision-making process for mode of delivery by equipping women for an informed decision and dialogue with providers, using a Data-Analysis Tool (DAT); c. optimize organization and logistics allowing companionship during labor. 2. To evaluate the multifaceted intervention at health professionals and system's level in terms of participation of clinicians (obstetricians and midwives) in the audit and training activities, acceptability and	

empowerment of health professionals, implementation processes and implementation costs at the organization level. 3. To evaluate the multifaceted intervention at women's level in terms of participation of patients to activities targeting them, acceptability and empowerment of women in decision-making, fear of childbirth, decision conflict and satisfaction with care. 4. To assess the effectiveness of the multifaceted intervention in terms of changes in CS rates at hospital level. The primary endpoint measure is the CS rate in the participating centers among low-risk women with singleton pregnancy, fetus in cephalic presentation which has reached at least 37 weeks' gestation and with no previous CS. Reductions in the primary outcome should be achieved without worsening other maternal and perinatal relevant outcomes. We will also evaluate the effects of the multifaceted intervention on differentials in caesarean delivery between countries and between hospitals within the same country. 5. To enhance utilization of the project findings through engagement of stakeholders including women, men, health professionals and policy-makers from the very start of the project and through knowledge transfer activities of key results. We will assess intervention scalability and design innovative activities for knowledge transfer (including Knowledge brokering, Deliberative dialogue, Policy briefs, films, etc.) to disseminate key findings on optimal implementation methods to achieve appropriate CS rates. We will produce a "toolkit" of guidelines and training materials, to facilitate scale-up and implementation of effective interventions in other health care facilities	

OVERALL PROJECT DESIGN: *Is the proposal scientifically sound and is the design being proposed the most appropriate to accomplish the stated objectives? Please provide a critique of the conceptual approach and the proposed project structure in relation to the objectives the*

project seeks to achieve. Have checklists (STROBE, PRISMA, etc.) accurately informed the methods description?

Reviewer Comment	**Investigator Response**
The main hypothesis of this implementation research is that the practice of CS is the result of interactions between social, biomedical, behavioural and institutional factors at the community, collective and individual levels. The use by health professionals of guidelines and audit of CS as well as the use by pregnant women of Decision-analysis Tool (DAT) during antenatal care and companionship during labour should contribute to a better quality decision making for mode of birth and thus enhance medically adequate use of CS. **The intervention**: multifaceted; 3 components, each component of the intervention already tested in different RCTs (evidence provided) and proven feasible and effective in reducing overuse of CS in specific contexts; tailored after the baseline assessment of driving factors, barriers and facilitators to reducing unnecessary CS and inequalities in different contexts and resources requirements including contextual factors and gender issues Target: targeting health professionals, pregnant women during the ANC period and health systems. [10, 13, 14]. 1. <u>Component 1:</u> Implementation of clinical guidelines; audit of caesareans with feedback to the healthcare professionals including Robson dashboards. Target: All providers ObGyn, GPs, MWs or ObS. Nurses) involved in CS decision-making and in the care of women in the participating hospitals 2. <u>Component 2:</u> Antenatal decision analysis	No issue raised by reviewer.

tool (DAT[1]) for pregnant women. Target: All pregnant women with no prior contraindication to a vaginal birth presenting for antenatal care in the participating facilities. 3. <u>Component 3:</u> Companionship during labour: the WHO recommendation on continuous companionship during labour will be adapted into a locally appropriate document that will meet the specific needs of each health service. A set of actions will be established to ensure that an enabling environment is created and that the behaviour of the healthcare practitioner adapts to the use of this evidence-based practice.	

SAMPLING PROCEDURES: *Is the sampling, (including representativeness, if required) and the sample size, adequately described and justified? Are adequate procedures outlined to recruit the respondents? If a qualitative study, is selection of participants and method for gathering data accurately described?*

Reviewer Comment	**Investigator Response**
For robust analyses of interrupted time series data, 40-50 time points are required and denominators of more than 100. For the study, at least a target of 10,000 total births and of 4000 births among low-risk women (Robson Groups 1-4) in 1 year between 8 intervention sites in each of 4 countries, with monthly time intervals. Will have 60 time points (12 pre-intervention (6 retrospective, 6 prospective) and 48 post-intervention), with more than 300 births among low-risk women at each time point (primary outcome), for each country, when births from the 8 centres are pooled. The	No issue raised by reviewer.

[1] The DAT allows women to understand risks and benefits of each mode of birth (vaginal vs. elective CS), to clarify and summarize their values and preferences for an informed dialogue with their physician on mode of delivery, assessing what aspects of birth, needs and options are most important for them. Ottawa Decision Support Tutorial to train health care professionals in participating hospitals on the use of the DAT (1-Day training)

smallest monthly denominator is 200 (indicator- CS rate among multiple pregnancy – Robson Group 9, combined for all countries). This implementation research will be conducted in facilities in Argentina, Burkina Faso, Thailand and Vietnam. Thirty-two facilities (8 facilities per country) selected purposely by the Ministry of Health of each country will be involved. Facilities with CS higher than the 75th centile for the country will be eligible for inclusion. To take into account different contexts, they will select different categories of hospitals in each country: district hospitals in rural context (n=2), regional or provincial hospitals (n=2), private clinics (n=2) and tertiary/academic hospitals (n=2). **Inclusion**: All women who delivered at participating facilities and whose newborns had a gestational age of at least 28 weeks and weighed at least 1000 g at delivery will be included in the analysis. **Exclusion**: Women with intrauterine foetal death or fetal malformation will be excluded. Unit of intervention: HCF Unit of analysis: woman **Women data set**: Women without contra-indication for vaginal birth and with intention to deliver in participant hospital, attending antenatal care in or outside participant hospital, will be included in the cohort at around 15-34 weeks of gestation. Information will be collected at inclusion (women's characteristics and birth preference), during pregnancy via phone call at 36-38 weeks of gestation (knowledge, decision conflict, fear of childbirth and birth preference) and at 6-8 weeks post-natal (use of DAT, companionship, mode of	

birth, breastfeeding, satisfaction). Data will be collected among a cohort of 50 pregnant women per hospital at baseline (N=1600) and during the follow-up period (N=1600). The sample size was estimated in order to ensure adequate statistical power to show a difference of 0.3-0.4 Standard Deviation in the total score of Decision conflict scale and a reduction of severe fear of Childbirth from 15% to 10% between women in baseline and post-intervention period. *Clarification: What I would like is a clearer way of showing how many interviews a person in each category may need to participate in as that is a bit unclear amount the many IDI tools in Annexes*	Referred Annexes do not relate to QUALI-DEC proposal but to a generic formative research proposal which was submitted at the same time (already approved by RP2). Unfortunately, there was a mix-up in the collation of comments by RP2 for the two proposals.

DATA COLLECTION: *Do you foresee any difficulties in the proposed field activities, especially in the plans for data collection?*

Reviewer Comment	**Investigator Response**
A pragmatic hybrid effectiveness-implementation Type III mixed methods study design will be used, which focuses on testing the implementation strategy while gathering data on the impact the intervention has on relevant clinical outcomes. Appears an appropriate approach given their discussion. A good clear amount of detail provided on the	No issue raised by reviewer.

approach. All the annexes rpovdie great depth to the tools to be used. **Women and companion data:** <u>Societal context, women's and men's preferences</u>: using in-depth individual interviews during the 6-months baseline period., at home with pregnant women and their spouse or companion (separately). Aim: document woman's and companion's perceptions of risks and benefits of vaginal delivery and CS. Interviews with women in post-partum period will be used to evaluate the decision-making process for events relevant to childbirth and the intervention. Data will be used to assess individual fears, values and needs surrounding birth and to adapt the DAT booklet to each context. <u>Women's acceptability and empowerment</u> Interviews with women in the post-partum period at the end of the intervention period will allow to document in detail the process of decision to participate using the DAT and to choose a companion during labour, the understanding and perception of women vis-à-vis these two interventions, the characteristics of the relationships with health care providers, the perception of women towards the health system and health care providers. In particular, the notion of trust will be explored. Data will also detail self-empowerment and professional support provided to women to choose the mode of delivery that better suits their needs. Assists analysis of whether the intervention enables women to develop positive self-esteem, improve knowledge and overcome	

their sense of powerlessness deciding over mode of delivery. Fear of childbirth, decision conflict and satisfaction with care: a specific dimension within a spectrum of pregnancy-related anxiety; will use the Delivery Expectancy/Experience Questionnaire (W-DEQ) (version A) measures fear of childbirth as operationalized by the cognitive appraisal of the approaching delivery. The 33-item graphic self-assessment rating scale has six scale steps per item, ranging from 'not at all' to 'extremely' with a minimum score of 0 and a maximum of 165. C-section as a preferred mode of childbirth is strongly associated with severe fear of childbirth (W-DEQ score>85). Decision conflict, knowledge and choice congruence: assessed using the 16 items questionnaire that measures degree of uncertainty about which course of action to take and the main modifiable factors contributing to uncertainty, using a questionnaire that will be developed and piloted for the study, based on key risk and benefit information contained in the DAT booklet. The choice congruence will be assessed by comparing preferred mode of birth during pregnancy and final mode of birth (vaginal vs. CS). Patient's values will be measured using a Multi-Dimensional Measure of Informed Choice, which assesses the extent to which the choice is based on relevant knowledge, is consistent with a person's values/attitudes, and is behaviourally implemented. Postnatal satisfaction will be estimated using a visual analog scale from 0 to 10, where women are asked to place a cross on the scale to indicate ''how they feel about their birth experience''. Women will also be asked if they used the DAT during pregnancy, if they chose a companion	

during labour and if they are breastfeeding. **Perinatal outcomes:** use the Robson 10-Group Classification System as a perinatal audit system to interpret CS rates and other outcomes surrounding labour and delivery	

ANALYSES, MAIN VARIABLES or OUTCOMES: *Is information provided on methods of analyses? For quantitative studies, intended statistical methods? Are the main variables or outcomes properly described? For qualitative studies, are scientifically sound methods of data collection analyses described, aiming for robustness and trustworthiness. Are theories used adequately?*

Reviewer Comment	**Investigator Response**
The primary endpoint measure is the CS rate in the participating centers among low-risk women with singleton pregnancy, fetus in cephalic presentation which has reached at least 37 weeks' gestation and with no previous CS. Reductions in the primary outcome should be achieved without worsening other maternal and perinatal relevant outcomes. Secondary outcomes are: unnecessary CS rates measured by local audit committee, rate of birth without intervention, rate of CS among each Robson group, rates of oxytocin augmentation, epidural analgesia, operative vaginal deliveries, episiotomy, sphincter rupture, postpartum haemorrhage, blood transfusion, neonatal intensive care unit admission, maternal and perinatal deaths. Analysis: classical inductive qualitative approach, plus for the evaluation of implementation using the conceptual framework most currently used in this field: Consolidated Framework for Implementation Research (CFIR): composed of 39 constructs,	No issue raised by reviewer.

of which some will be selected by the evaluation team to gather data via in-depth interviews with stakeholders at the end of the intervention period and records of the program (audit reports, Robson dashboards, DAT, observations in delivery room). Allows an immersion in the process of implementation of the intervention with an empirical and inductive approach, bringing different levels of analysis. Team will also assess fidelity of the intervention. Comparison of outcomes between before and after intervention periods, adjusted on hospital's and patient's characteristics, will evaluate psycho-social effects of the intervention. Changes in socio-economic differentials will assess the equity effects.	

RESEARCH STANDARDS: (*Gender, Human Rights, equity aspects, country engagement, stakeholders involvement, fulfilling implementation research standards as relevant?)*

Reviewer Comment	**Investigator Response**
Have been discussed in general and appear appropriate. Will need to be part of the contextual assessment for each specific site.	No issue raised by reviewer.

CV, TIMELINE AND BUDGET:

Reviewer Comment	**Investigator Response**
½+2+2+1/2 years duration (baseline, intervention, follow-up, dissemination) = 5 years. Budget categories appear standard – need more allocation for the broad range of dissemination	Adequate funds have been allocated for dissemination activities (Please see attached Budget). As stated above, we are very pleased to share with the reviewers that the European Commission will be funding this project through a Horizon 2020 grant awarded in

activities discussed.	August 2019.
Comment: ensure some feedback disseminations long the way to keep engagement – 5 years a long time for policy makers and programme managers and also often for advocates. Maintaining community engagement may also need some tools.	Periodic monitoring and evaluation (comprising data quality assurance, audits, evaluation of study safety, progress) and feedback to individual sites will be conducted as part of planned quarterly supervisory visits by country-level data managers and principal investigators. We considered this activity extremely important as suggested by the reviewer. It is planned that these monitoring activities at country level will include in-depth discussion with the local implementors and researchers to discuss the barriers encountered and proposed solutions. These discussions will help identify the necessary changes for improved implementation.

OTHER COMMENTS

Reviewer Comment	**Investigator Response**
Appreciate the use of The scalability assessment tool (SAT) will be used early into implementation to allow for potential modification of the intervention during implementation.4 sections, corresponding to the critical factors facilitating scale up emerging from the evidence review, namely the attributes of the: 1. innovation; 2 implementers; 3. potential adopting organisations or communities; and 4. socio-political context. (ala WHO 2009 Practical guidance for scaling up health service innovations. Geneva: WHO) Also like the dissemination strategies and that is will be evaluated. Details include: develop an innovative evidence based knowledge transfer (KT) strategy, on which researchers, decisions makers and all stakeholders will be trained on KT. Based on evidence and contextual factors for each country. Comprises of training, implementation and evaluation of a knowledge	No issue raised by reviewer.

broker (KB) in each country. Using a diversity KT activities and tools (Deliberative dialogues; policy briefs; workshops, films/animations, etc.) in order to improve the use of evidence by decision-makers and for communities etc.	

OVERALL ASSESSMENT AND FEASIBILITY: *Please comment on the overall quality of this project.*

Reviewer Comment	**Investigator Response**
A major undertaking and will need carefully chosen teams in each country, and good support. Well designed. Feasible if well resourced – especially by people and if supportive environments. Clarification: What I would like is a clearer way of showing how many interviews a person in each category may need to participate in as that is a bit unclear amount the many IDI tools in Annexes	Referred Annexes do not relate to QUALI-DEC proposal (unfortunately there was a mix-up in the RP2 reviewer comments and comments relating to a related formative research proposal have been provided alongside QUALI-DEC comments).

REVIEWER NAME: **Prof Andrew Weeks**

REVIEWER NAME: **-**

REQUESTED BUDGET: **Not specified**

DATE OF REVIEW: **27th January 2019**

GENERAL comments:

Reviewer Comment	**Investigator Response**
PROJECT SUMMARY and PROJECT	No issue raised by reviewer.

SIGNIFICANCE: The QUALI-DEC project seeks to develop and implement interventions to reduce the use of unnecessary caesarean section (CS). It proposes multi-faceted interventions directed at pregnant women, health professionals and their organizations. The project will be implemented in 4 countries (Argentina, Burkina Faso, Thailand and Vietnam) with 8 facilities of various levels studied in each country. The project outline specifies 5 interventions that are classified into 3 sections: implementation of guidelines (through opinion leaders, onsite training and regular audit), introducing a decision-analysis tool, and adopting policies to allow women to have a companion during childbirth. [This list is contradicted by the Annex which states that facilities will choose 2 of 12 interventions that, in addition to the above, covers group therapy, prenatal education, mandatory second opinions, goal setting, public dissemination of CS rates, and financial and legal changes at the institution level.] Multiple interviews and focus groups are carried out throughout the project at baseline (to assess the situation and help design the programs), and during follow-up to assess the effect of the interventions. The primary outcome is the CS rate in Robson Groups 1-4 with a planned interrupted time series analysis to look for significant falls in the CS rate in these groups. This is a timely and important project that builds on recent systematic reviews published in the Lancet series, and the "Intrapartum Care of a Positive Birth Experience" guidelines published recently by WHO.	

OVERALL PROJECT DESIGN: *Is the proposal scientifically sound and is the design being proposed the most appropriate to accomplish the stated objectives? Please provide a critique of the conceptual approach and the proposed project structure in relation to the objectives the project seeks to achieve. Have checklists (STROBE, PRISMA, etc.) accurately informed the methods description?*

Reviewer Comment	**Investigator Response**
The conceptual approach is appropriate. However: 1. *There ae no details on the DAT. Who will develop this, or will a standard tool use used?* 2. *One of the main concerns driving the high CS rate is perinatal morbidity and mortality. However, the neonatal outcomes are minimal and only include death and NICU admission (which is not objective and open to change even if there is no improvement in objective outcomes). Would not the addition of APGAR scores be a helpful, simple outcome?* 3. *I would have valued more information on the nature of the 'knowledge broker'. Would this be a MoH official? Or one of the champion opinion leaders? Of a media expert (e.g. a journalist) employed specifically for the project? I would have used a communications firm to achieve these aims.* 4. *In the Annex, the Guiding principles box in Annex 4 and Annex 5 are largely the same.*	1. Details on DAT now included in the 'Intervention' section. 2. Apgar < 7 at 5 minutes now added as a secondary outcome (in the section 'Primary and secondary outcomes' 3. Details of 'Knowledge broker' now included in the section 'Benefit sharing actions for low- and lower middle-income countries' In addition, as explained above, innovatively, and as suggested by a WHO Technical Advisory Group (TAG) on Caesarean Section that met in October 2019, we are including Parliamentarians from the four countries as stakeholders within the QUALI-DEC project. It is expected that Parliamentarians can play a role to enhance the implementation, the knowledge-transfer, scalability and legislative strategies if appropriate. 4. Referred Annexes do not relate to QUALI-DEC proposal (unfortunately there was a mix-up in the RP2 reviewer comments and comments relating to a related formative research proposal have been provided alongside QUALI-DEC comments).

SAMPLING PROCEDURES: *Is the sampling, (including representativeness, if required) and the sample size, adequately described and justified? Are adequate procedures outlined to recruit the respondents? If a qualitative study, is selection of participants and method for gathering data accurately described?*

Reviewer Comment	**Investigator Response**
It states that the research team ('external facilitators') will be visiting the unit to collect data on the use and implementation of the DAT tool (see page 9). I have concerns that the intermittent nature of the visits will change / improve the unit's behavior during the visits so	The DAT tool is intended to facilitate a meaningful dialogue between clinicians and women (e.g. regarding values and preferences for mode of delivery, risks and benefits of planned CS vs. vaginal delivery); periodic data collection unlikely to influence this

that they don't reflect the usual practice. Ongoing data collection would be better so as to remove this bias.	interaction. Also, the visits may influence use (increase use of DAT tool), hence improving compliance with DAT intervention.

DATA COLLECTION: *Do you foresee any difficulties in the proposed field activities, especially in the plans for data collection?*

Reviewer Comment	**Investigator Response**
I have some concerns about the sustainability of the data collection process. This relates to 3 areas: 1. The baseline interviews are extensive and are a vital part of a good program moving forward. I assume that researchers will be provided to the study centres to conduct, transcribe and analyse the qualitative interviews, but how will this be provided to other centres in the future when they implement their own programs? 2. The use of 'pre-existing perinatal registries' is described to provide audit data based on the Robson classification. This might be possible in Argentina, or in large units in the other countries – but is unlikely to be accurate in lower level units. How will this data collection be supported? 3. Collecting audit data is time consuming – but the study report suggests that it will all be done by the audit committee members. I would suggest that this is not possible – the people who have time to do the work will not be senior enough to be on the committee, and the committee members will not have the time to collect and analyse the data. Resources will be needed to collect and analyse the data and it is not clear where this is coming from in either the study or in the later generalization phase. I also have doubts about the ability to collect	1. Sustaining research activities beyond the funded period is a common challenge in all forms of research. Possible strategy to address resource requirements should the QUALI-DEC strategy be proven to be safe and cost-effective, is through strategic long-term planning and budgeting by ministries of health, policymakers and hospital administrators to provide the necessary resources to integrate the QUALI-DEC strategy within existing maternal, newborn and child health programmes. We agree with the reviewer that the first step to understand drivers will always depend on investment and interest of the local stakeholders. 2. Agree, we anticipate that data quality (completeness and accuracy) is likely to be an issue given variable quality of hospital registers and medical records across study sites. A number of strategies are planned to address this, including: regular monitoring of data quality by country-level during quarterly supervisory visits by country level data managers; examination of data outliers and unrealistic patterns, among other strategies described in the 'Data management' section. 3. Audit data will be collected by trained data collectors (see updated section on 'Data collection'). However, the **audit cycle** (Component 2, Figure 4) will be implemented by the local audit committees, with the support of a country-level coordinator and data manager. 4. Referred data will be collected via face to

such complex and detailed information from women by telephone (at 36-38 weeks and 6-8 weeks postnatally). The information includes very long forms (for example the 33-item W-DEQ) as well as visual analogue scale for satisfaction and a assessment of decision conflict.	face interviews with women (and not by telephone) – see updated section on 'Data collection'

ANALYSES, MAIN VARIABLES or OUTCOMES: *Is information provided on methods of analyses? For quantitative studies, intended statistical methods? Are the main variables or outcomes properly described?*

Reviewer Comment	**Investigator Response**
These are generally well described. However, my concerns are: 1. Neonatal outcomes (as above) 2. 'Empowerment' is an important outcome, but this is being collected through qualitative interviews. How will this be converted into a binary outcome to assess success? Why are exit interviews not being conducted instead?	1. Apgar < 7 at 5 minutes now added as a secondary outcome (in the section 'Primary and secondary outcomes'). 2. We strongly agree with the reviewer regarding the importance of 'empowerment' outcome. Similar to other qualitative data, data on 'Empowerment' will be analysed using thematic analysis (and will not be converted into a binary outcome). Post-intervention interviews outlined appear sufficient given the stated project objectives (added value for the proposed exit interviews unclear).

For qualitative studies, are scientifically sound methods of data collection analyses described, aiming for robustness and trustworthiness. Are theories used adequately?

Reviewer Comment	**Investigator Response**
Annex 1 provides detailed qualitative modules upon which to conduct the baseline analyses. These are high quality and provide an effective guide to collect data. There are also numerous post-intervention interviews and focus groups planned to evaluate the effects on health professionals and	Please note that Annex 1 and post-intervention interviews and focus groups mentioned here are not part of the QUALI-DEC proposal (unfortunately, there was a mix-up in WHO RP2 reviewer comments with those relating to a related formative research protocol submitted to WHO RP2 alongside QUALI-DEC, also

women participants, but details of these are not provided.	provided with the QUALI-DEC comments).

RESEARCH STANDARDS: (*Gender, Human Rights, equity aspects, country engagement, stakeholders involvement, fulfilling implementation research standards as relevant?)*

Reviewer Comment	**Investigator Response**
The ethical considerations and community involvement sections are not well filled – both sections are simply used to restate the project methods. I would appreciate descriptions of consent, non-maleficence and post-project sustainability in the ethics section, and a description of community involvement (i.e. patient and public involvement – PPI) in the management and oversight committees in the 'community involvement' section.	Section on ethical considerations now revised with relevant aspects (e.g. consent, non-maleficence) addressed. For details see section on 'Ethical considerations and core values'.

CV, TIMELINE AND BUDGET:

Reviewer Comment	**Investigator Response**
Not provided	Gantt Chart updated with timing, deliverables and milestones specified for each of the six work packages (For details see section on 'Timeline'): WP1: Project management and coordination WP2: Intervention implementation WP3: Evaluation of the intervention at health systems level WP4: Evaluation of the intervention at societal level WP5: Monitoring maternal and perinatal outcomes

	WP6: Knowledge transfer Budget now attached.

OVERALL ASSESSMENT AND FEASIBILITY: *Please comment on the overall quality of this project.*

Reviewer Comment	**Investigator Response**
The project outline is both extensive and impressive and will provide excellent information on which of the various interventions work and in what settings. It will also provide extensive knowledge transfer activities to allow the project to be generalized to other settings. The project still needs to be refined however and the points above addressed. The project is not yet in its final format and so still requires further work: • Complete the budget and Gantt chart, ensuring adequate funds are available in each unit to implement, monitor and analyze the findings • Clarification of the scope and nature of the interventions (those in Form II or those in the Annex?). Detailed descriptions for each of the interventions should be provided. • Completion of the qualitative guides for the post-intervention assessments Clarification of the minor questions outlined above	• Budget now attached. Gantt chart updated with timings, deliveries and milestones specified. • Details of the below components of the QUALI-DEC strategy now provided in the section 'Interventions': Component 1: Opinion leaders Component 2: Audit and feedback Component 3: Decision analysis tool Component 4: Companionship during labour **As previously pointed out, the annexes relate to a related protocol (formative research) submitted at the same time to WHO RP2, and not the QUALI-DEC proposal considered here. Unfortunately, there was a mix-up of comments from RP2 reviewers). Similarly, the qualitative guides mentioned are not part of the QUALI-DEC proposal.

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Please do not hesitate to contact us if you require additional information. We look forward to receiving approval for the project and beginning the study.

Sincerely,

Investigator name: Ana Pilar Betran Lazaga

Medical Officer,

Sexual and Reproductive Health (SRH)

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