

SUSTAINABLE DEVELOPMENT GOALS (SDG) focus area(s)



APPLICATION DEADLINE

22nd April 2020 20:30

BACKGROUND

The Grand Challenges family of initiatives fosters innovation to solve key health and development problems. In 2020 four Grand Challenges have been made available:

1. Accelerating discovery for non-hormonal contraceptives

Family planning is one of the most cost-effective ways to reduce maternal, infant and child mortality and contributes to the empowerment of women and families, as well as the expansion of opportunities for economic development. In recent decades, there have been tremendous improvements in the reproductive health of women in low resource settings.

The Bill & Melinda Gates Foundation is committed to a long-term vision of expanding contraceptive options for the most vulnerable women in low-resource settings through development of new methods that better align with women's preferences. Contraceptive product innovation will be required to achieve this goal. **Specifically, the emphasis for this work is on developing safe and effective non-hormonal contraceptive agents with both improved overall tolerability and a side effect profile differentiated from hormonal methods.** This emphasis is based on an understanding that overall tolerability of and side effects from hormonal methods present real and meaningful barriers to women realizing their reproductive intentions

Funding focus areas:

a) Biological Assay Development

A better toolset of in vitro assays is needed that can recapitulate oocyte and follicle development, follicle selection, follicular rupture/ovulation, corpus luteum formation, cumulus-oocyte complex dynamics, and fertilization, including peri-fertilization events.

b) Drug Target Identification and Validation

Emphasis will be placed on unbiased approaches to identify potential contraceptive drug targets. These may include (but are not limited to):

- RNAi- or CRISPR-based methods utilizing a robust and relevant biological assay,
- chemical genomics or proteomics linking probe compound activity to specific drug targets or pathways,
- analyses of human infertility as a pathway to identify relevant drug targets, or
- artificial intelligence-enabled approaches to target identification.

c) Chemical genomics, probe generation, pilot screening

Applications will be considered that propose small pilot-scale screening in complex systems for the purposes of identifying active compounds interfering with key reproductive functions.

d) Contraceptive Antibodies

e) Translational Science/Preclinical Evaluation Tools

This Grand Challenges request for proposals intends to fund individual awards of up to USD \$2 million and for up to 3 years, based on the scope of the proposed project.

More information on this Grand Challenge is available [here](#).

2.) Improving access to and use of safe and appropriate caesarean section

We invite proposals for interventions to address the following challenges related to the cesarean section:

1. Increasing access to cesarean section where it is currently inadequate
2. Increasing quality and safety of cesarean section to reduce iatrogenic harm to both mothers and newborns
3. Reducing rates of non-medically indicated cesarean section.

Interventions addressing more than one challenge (e.g. quality and access) are encouraged.

We seek to make Seed Grants to generate proof of concept of novel interventions together with Validation Grants to generate further evidence of feasibility at a larger scale for existing interventions.

- Seed Grants of \$100K for up to 24 months: These grants are intended to provide proof of concept of an intervention that is entirely novel at small scale (e.g., single facility or district). Applicants should conduct a literature review to verify that the proposed intervention has no documented evidence; documentation of the methods and outcomes of this review must be provided in the application. These grants should demonstrate the feasibility of a novel intervention and its impact on one or more of the c-section challenges identified in this call for applications.
- Validation Grants of \$300K for up to 24 months: These grants are intended to demonstrate the feasibility of a single intervention or a combination of interventions at the scalable unit of a health system. Validation grants must replicate, confirm or more rigorously test one intervention - or multiple interventions - that have previously demonstrated proof of concept at a smaller scale. Given the complexity of the problem, we acknowledge that multi-component interventions are required, and we encourage applications exploring these.

More information on this Grand Challenge is available [here](#).

3.) Innovations in Materials Science for a Transformative Menstrual Health and Hygiene Product (Round 25)

We seek fundamentally transformative and innovative ideas to support the design and development of new MHH products that meet key criteria of being responsive to user needs - particularly in LMIC context; with priority focus on **safety, unobtrusiveness, effectiveness (no leaking), cultural acceptability, and sustainability**.

More information on this Grand Challenge is available [here](#).

4.) Innovations for Improving the Impact of Health Campaigns (Round 25)

We are seeking innovative solutions that accelerate the improvement of coverage, reach, efficiency, and effectiveness of mass health campaigns that deliver health products or services in low-and middle-income countries, specifically through improved planning/microplanning and focus on unreached populations.

Specifically, we are looking for innovations in approaches, practices, or tools that dramatically improve the planning/microplanning that will lead to improved effectiveness of campaigns. We are also looking for innovative tools and technologies to more effectively identify and reach the most vulnerable populations when countries are designing and implementing mass campaigns.

More information on this Grand Challenge is available [here](#).

Please note that if funding is awarded for contract research (excluding scholarships), a **15% UP recovery is applicable** and should be budgeted for by the applicant.

ELIGIBILITY CRITERIA

1. Accelerating discovery for non-hormonal contraceptives

Proposals are sought that:

- Engage scientists across a variety of disciplines, including those new to the field of contraceptive R&D;
- Demonstrate innovative thinking by applying or incorporating concepts, methods or technologies not currently being used for contraceptive discovery;
- Present concepts and strategies that are "off the beaten track", significantly radical in conception, and daring in premise

Proposals are **NOT** sought for:

- Proposals focused on development of male contraceptives, including work on sperm-based approaches that could only feasibly be applied as vaginal methods;
- Proposals targeting the endometrium for the prevention on embryo implantation;
- Proposals on novel drug delivery systems for contraception;
- Discovery of adjunct or complementary molecules intended for co-delivery with hormonal contraceptive regimens;
- Basic studies of human reproductive biology without a clear connection to enabling non-hormonal contraceptive discovery;
- Pre-clinical or clinical development of advanced leads and candidates;
- Social science, marketing, or acceptability studies related to contraceptive use and uptake

2. Improving access to and use of safe and appropriate caesarean section

All applications should:

- Focus on health service or delivery innovation. This call for applications **excludes** development of new medical devices and non-interventional analysis of data
- Describe how the intervention will be tailored to the epidemiology and health system where it will be implemented
- Ensure that women and newborns receive care that respects and preserves their dignity, including informed consent
- Include **participation from institutions based in South Asia and sub-Saharan Africa**; applications led by institutions from these geographies are encouraged
- Propose interventions that align with the attributes of scalable health innovations
- Report impact on c-section rates disaggregated by **Robson classification**, and safety with indicators such as case fatality rates and rates of post-operative complication
- Propose activities to be implemented in a country in Sub-Saharan Africa or South Asia (India, Pakistan, Bangladesh)

3. Innovations in Materials Science for a Transformative Menstrual Health and Hygiene Product (Round 25)

Proposals should include how they will address the following criteria:

- **Innovation:** We are seeking radical transformation of existing MHH products, including leveraging materials science and other product innovations.
- **Discretion:** The ability to use a product without it being detected is of high importance to women and girls, specifically during: **wear** (e.g., no blood leaking and staining clothes), **cleaning** (e.g., for reusable products, washing product can be kept discreet and is feasible in the absence of clean water supply), and **disposal** (e.g., for disposable products, does not leave conspicuous waste). Other considerations include **safety** (e.g., obviating the need to access public sanitation facilities at night). Finally, functionality over the life course depends upon adaptability to times of irregular and sometimes heavy bleeding, including perimenarche, postpartum, and perimenopause.
- **Sustainability:** Current MHH products either require access to clean water to clean (e.g., menstrual cup) or result in waste (e.g., disposable pad). A transformative product would neither require neither clean water nor result in waste.

The following will **NOT** be considered for funding:

- Basic research in materials science or product design that does not address the criteria as outlined above
- Proposals only focusing on innovative new materials science without a clear path toward developing an MHH prototype manufacturing process
- Proposals where there is no clear path forward to scale
- Proposals focused on current MHH product delivery and education, as opposed to a technological solution for innovations in new products
- Proposals that focus on incremental change of existing products
- Proposals focused on other aspects of MHH, including infrastructure/systems for addressing access to existing products, water and sanitation improvements or shifting social norms around stigmatization.

4. Innovations for Improving the Impact of Health Campaigns (Round 25)

Criteria for success include solutions that:

- Are transformative, novel, or innovative. These interventions will significantly change the way in which campaigns are planned, conducted, or evaluated by proposing new ways of working, leveraging lessons from other sectors, or increasing transparency and effectiveness.
- Could be used by various health campaigns beyond the campaign in which the innovation is originally conceptualized or tested, such as for immunization (measles, yellow fever, meningitis, etc.), neglected tropical diseases (trachoma, onchocerciasis, schistosomiasis etc.), nutrition (vitamin A, deworming), malaria (bed net distribution, seasonal malaria chemoprophylaxis), and polio.
- Could be used in various low- and middle-income countries beyond the country in which the innovation is originally conceptualized or tested.
- Can be designed, tested, and scaled as a "best practice".
- Can be applied in low- and middle-income countries.
- Are cost effective.

We will **NOT** consider funding for:

- Proposals that are not innovative; proposals that only offer incremental / non-transformative improvements (e.g., use of mobile data collection instead of paper-based collection) with no clear link to dramatically improved campaign effectiveness; proposals that repeat conventional approaches without novel application.
- Proposals addressing one specific health need/campaign platform, rather than an innovation that would improve health campaigns in general.
- Proposals focused on educational campaigns or are not specifically focused on campaign-based delivery of health goods and services. Interventions that are better classified as technical assistance or campaign implementation (e.g., focused on the delivery or improvement of a single campaign).
- Proposals focused on improving access to existing tools or technologies or seeking to apply existing tools in ways that do not transform the current practices used for campaign-based delivery.
- Proposals where the solution is to leverage one health campaign for co-delivery of other goods or services (e.g., using a NTD campaign to deliver vaccine reminders).
- Approaches not directly relevant to low-income settings and that do not clearly consider the local context of available financial systems and infrastructure for resource poor health settings (e.g., using expensive devices; require government issued IDs where few people have them; require hospital deliveries in settings where this is not the norm).
- Secondary analysis of existing studies or systematic reviews unless there is a clear way in which the analysis can be scaled and will fundamentally change practice.
- Approaches that circumvent the public sector completely.
- Approaches which would require a donor's long-term financial support to sustain.
- Approaches that are clinic based

HOW TO APPLY

1. Accelerating discovery for non-hormonal contraceptives

Please read the application instructions (attached) before proceeding with your applications.

Applications can be completed [here](#).

2. Improving access to and use of safe and appropriate caesarean section

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4. Innovations for Improving the Impact of Health Campaigns (Round 25)

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Please send a complete copy with all supporting documents, that you have submitted online to the Faculty Research Office – natasha.jeftha@up.ac.za

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