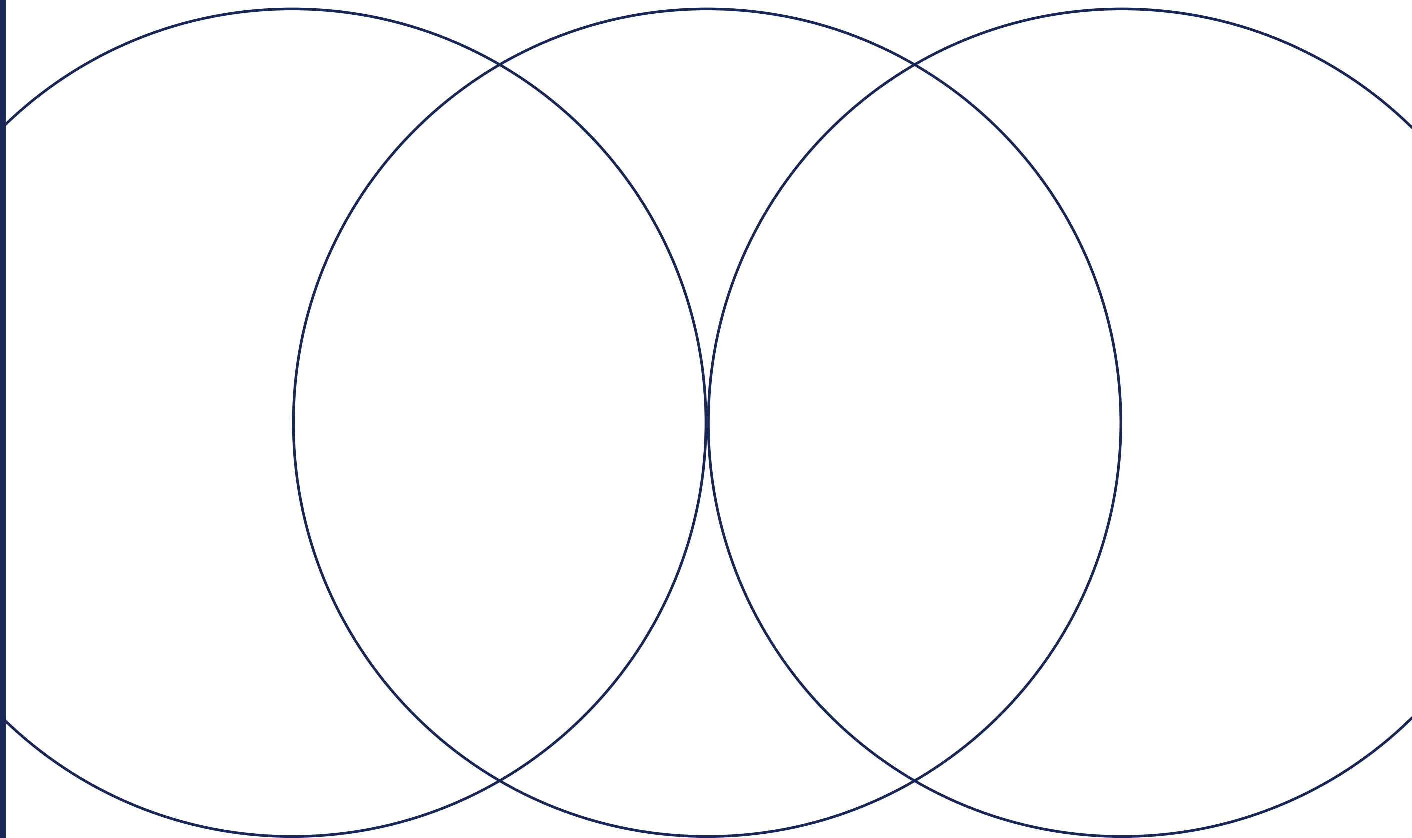
Reframing care and services to improve preconception health

Meeting Report

Geneva, Switzerland
8–9 May 2024



World Health Organization

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Contents

Acknowledgements vi

Executive Summary vii

Introduction 1

Community perspectives on preconception care 4

Scientific updates on men's and women's preconception health 5

Programmatic interventions 7

Integration of preconception care with other health programmes and sectors 9

Measurement of preconception care 12

Evidence gaps on preconception care 13

Framing and language on preconception care 17

Discussion and reflections 25

Bibliography 28

Annex 1: Meeting Agenda 32

Annex 2: FIGO Screening Checklist 34

Annex 3: List of participants 37

Acknowledgements

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Executive summary

Background

This report summarizes discussions that occurred during a World Health Organization (WHO) consultation on preconception care held in Geneva on 8-9 May 2024. The aims of the consultation were to review current understanding and expectation of health and care in the preconception period and to consider the major evidence gaps that need to be addressed to inform relevant policy and programmes.

WHO's 2013 policy brief[1] on preconception care previously provided broad guidance to countries on care and programming to improve preconception health. WHO defined preconception care as the provision of biomedical, behavioural and social health interventions to women and couples before conception occurs, with the aim to improve health status and reduce behaviours and other environmental risk factors that contribute to poor maternal and child health outcomes. But there has been limited progress on the implementation of preconception care in most countries since 2013. There are still no global, comprehensive care guidelines to support pregnancy planning and/or the integration of the full scope of preconception care into other routine services. Efforts to promote preconception care have encountered a range of barriers to implementation.

The conceptualization of preconception care has also been challenged by some within the women's health and rights community with criticism that the term conveys a perceived maternalism – defining women's needs in terms of maternal needs. It is also recognised that broader social and structural factors deterministic in health-related behaviours may not be easily addressed by health education or counselling. In addition to assessing the potential of public health interventions in the preconception period, it is therefore also important to understand and respond to concerns around the social acceptability and structural determinants of preconception care.

Meeting discussions

The meeting generated rich discussions on the current evidence base for and conceptual framing of preconception health. Participants took stock of the ever-growing body of scientific evidence demonstrating the impact of preconception exposures and behaviours on genetics, fetal development, pregnancy and child lifelong health outcomes – including influences from both the mother *and* father. This strong biomedical evidence base compels WHO to support its member states to develop programming in this area. Preconception health also aligns closely with the conceptual shift articulated within the United Nations Sustainable Development Goals (SDGs) to a 'survive and thrive' paradigm, addressing wellbeing as well as illness. Participants recognized the scope and potential of interventions delivered before and between pregnancy to make important inroads in addressing cycles of health inequality.

But while there is a clear rationale for action to ensure individuals, families and communities are aware of the effects of preconception health on their own futures and those of their potential families,

how preconception health is addressed generated debate. The paucity of evidence on the effectiveness of interventions in this area was noted. National programmatic efforts are limited and have yet to demonstrate impact; several document challenges with roll-out. Demonstrating impact is likely to be highly dependent on context and the scale and quality of implementation.

The meeting also highlighted how the language and framing of preconception care raises concerns among programmes and advocates working to promote progressive gender norms and reproductive rights. Areas of concern included the potential entrenchment of stereotyped gender norms and criminalization of women's behaviours. All participants agreed the need to avoid unintended consequences or harms within programmes that are seeking to improve health and well-being.

As a way forward, a framework that promotes both the integration of preconception health into a range of entry points (across different sectors including health and education), coupled with a specific pre-pregnancy package that aims to deliver targeted content to those actively planning a family was developed by meeting participants as a starting point for further discussion. This dual approach was not explicit in WHO's 2013 policy brief.

While there was not a consensus at this meeting on the language used to describe such a double-pronged approach, useful suggestions on terminology to capture the programmatic needs were made. Alternative options considered included 'pregnancy preparation', 'pre-pregnancy care', 'pregnancy planning, preparation and prevention', and 'reproductive life cycle planning'.

Terminology needs to be discussed further internally within WHO and through public consultation, but it seems likely that formulating 'preconception care' as part of a continuum of life-course care, rather than a singular and time-limited 'package' approach, may facilitate its implementation. This would also align with the science of the Developmental Origins of Health and Disease (DoHAD), which demonstrates the life-long impacts of behaviours and exposures throughout the life-course. Detailed guidance on integration – i.e. what information and services can be integrated where, when, with whom, and in what contexts – will also be useful for programme managers. The approach may also ensure that preconception health messaging is not siloed (and potentially neglected), but instead delivered in tandem with other critical sexual and reproductive health (SRH) or broader health education and counselling – for both potential mothers and fathers. Translation of terms into other languages may also convey different ideas.

Introduction

This report summarizes discussions that occurred during a WHO consultation on preconception care held in Geneva on 08-09 May 2024. The report captures ideas and views in a summative format, according to the different topics discussed. As such, the report is not a WHO position paper or guideline on preconception care.

Background to meeting

In 2013, the World Health Organization (WHO) published a policy brief to provide broad guidance to countries on care and programming to improve preconception health. WHO defined preconception care as the provision of biomedical, behavioural and social health interventions to women and couples before conception occurs, with the aim to improve health status and reduce behaviours and other environmental risk factors that contribute to poor maternal and child health outcomes.[1]

The rationale for preconception care is informed by a large body of epidemiological and medical evidence including more recent research on the Developmental Origins of Health and Disease (DOHaD).[2,3] Scientific evidence underpinning the DOHaD concept demonstrates how both maternal and paternal physiology, body composition, diet and lifestyle before and during pregnancy have effects not only on a mother's health, but on long-term child health and disease risk into adulthood. Epidemiological and demographic research also shows how reproductive health and behaviour, in particular contraceptive use at young ages or postpartum can, through delayed first pregnancy and longer birth spacing, significantly improve maternal and child health outcomes, including peri-natal, infant and child health morbidity and mortality, as well as nutritional and educational outcomes.[4,5] Preconception care is also a critical mechanism to address the perpetuation of health inequalities by interrupting the intergenerational transfer of ill-health and instead supporting a trajectory of health and wellbeing throughout the life-course.

To achieve these aims, preconception care involves the delivery of a range of interventions for both men and women across the life-course, starting in childhood, through adolescence and adulthood to the end of the reproductive years (see Figure 1). These should address various exposures and behaviours such as poor nutrition, diet, and physical activity; poor mental and physical health; sexual and gender-based violence; exposure to environmental pollutants or temperature-related stress; vaccine-preventable diseases; tobacco and alcohol use; genetic conditions; and unplanned pregnancy (including among adolescents and those following short birth intervals).[1]

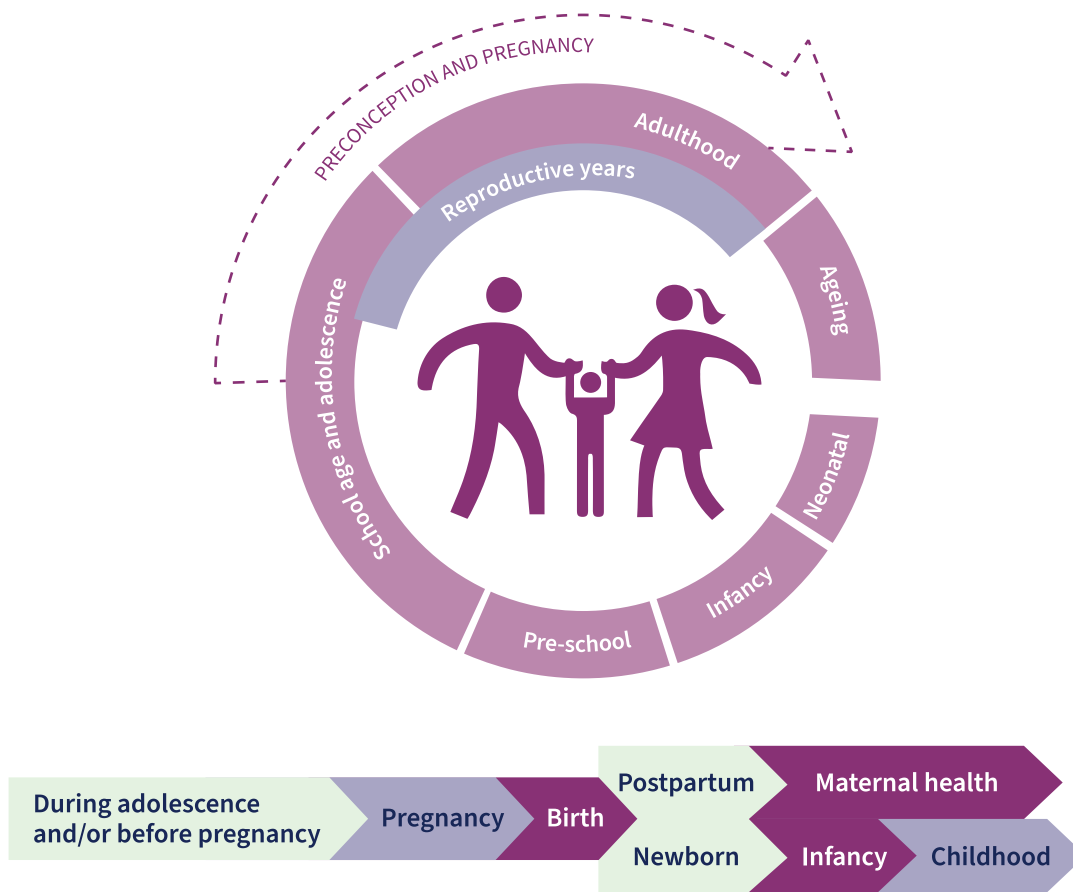

Figure 1: WHO's Life-course model of preconception care, noted in its 2013 report

But since the publication of WHO's 2013 policy brief, and a 2018 Lancet Series on the topic,[3,6] there has been limited progress on the implementation of preconception care in most countries. While several high-income and low- and middle-income countries (HICs/LMICs) have developed and implemented national preconception care guidelines, there are still no global, comprehensive care guidelines to support pregnancy planning and/or the integration of the full scope of preconception care into other routine services.[7] Many attempts to address preconception health have been restricted to demonstration projects or implemented with limited geographic reach.

Efforts to promote preconception care have encountered a range of barriers to implementation including the fragmentation and poor coordination of health services and systems, inhibiting integrated approaches; the high proportions of pregnancies globally that are unplanned, thus limiting scope for intervention in the pre-pregnancy period; lack of education and awareness of the importance of preconception health; lack of male engagement with primary health services; poor health service coverage and quality limiting access for those most in need of preconception care; and societal-level barriers limiting knowledge of, access to and use of preventive healthcare, such as poverty, inequality and racism.[8–10] A public health perspective is therefore needed to address these structural constraints to effective implementation and uptake.

Furthermore, while preconception care has been embraced by many in the maternal and child health

sectors, who see it as a critical mechanism to address limitations of interventions in maternal healthcare, its conceptualization has been challenged some within the women's health and rights community. There has been criticism of 'preconception' terminology as perceived maternalism – defining women's needs in terms of maternal needs – as well as a recognition of the broader social and structural factors to be deterministic in health-related behaviours which may not be easily addressed by health education or counselling. While there is consistency in the goals of the sexual and reproductive health and rights (SRHR) community and the maternal and child health sectors i.e. to deliver services and interventions that improve maternal and child health outcomes, SRHR's broader approach to reproductive rights, justice, and gender equality and equity may be in tension with gender roles potentially inferred in the concept and implementation of preconception care.[11,12]

Notwithstanding these challenges, there are opportunities to improve the delivery of evidence-based interventions in the preconception period. Studies have demonstrated the effectiveness of several interventions in the preconception period that each influence both maternal and child health outcomes.[13] For example, iron and folic acid (IFA) supplementation to prevent and treat anaemia and prevent neural tube defects (NTDs);[14] school-based programmes to tackle poor diets and over-nutrition among adolescents;[15,16] and the routine screening for alcohol, tobacco and other substance use before and during pregnancy.[17] These opportunities need to concurrently address high levels of unmet need and demand for contraception;[18] and growing demands for healthy lifestyles. Large-scale randomized trials are underway across several HIC and LMIC settings to assess the impact of comprehensive preconception programmes and will, in due course, inform policy and practice.[19] Progress has also been made in developing core indicator sets to monitor progress in preconception using routine datasets.[20,21]

Meeting aims and objectives

With this as background, the WHO Department of Maternal, Newborn, Child and Adolescent Health and Ageing (MCA) hosted a consultation in Geneva in 08-09 May 2024 to review current understanding and expectation of health and care in the preconception period and to consider the major evidence gaps that need to be addressed to inform relevant policy and programmes.

The specific objectives of the meeting were:

1. To review evidence and issues that have emerged since the WHO 2013 policy brief on *Preconception care*;
2. To identify areas for consideration in future WHO guidance;
3. To identify evidence gaps related to improving health before and between pregnancy and consider indicators to assess progress in delivery of related health services.

The meeting agenda is contained in Annex 1.

Meeting participants

Participants were researchers and other experts (clinical, policy/legal, community) in preconception health, SRHR, adolescent health, maternal and child health (MCH), gender and human rights, integrated care, disability, mental health, nutrition, ageing and health equity with geographic, gender and community representation (see Annex *). 52 external experts and 22 WHO staff participated in total.

Community perspectives on preconception care

Participants from the University of Southampton (UK) and the University of the Witwatersrand (South Africa) presented findings from two recent multi-country surveys assessing people's knowledge of preconception care as well as their prioritization of topics of importance in pregnancy planning. The Southampton-led study surveyed and interviewed participants online and in-person from eight HIC and LMIC countries (UK, Belgium, Australia, Singapore, Canada, Brazil, Bangladesh, Ghana), while the Wits study engaged participants from five countries using an online panel (UK, USA, Malaysia, Kenya, South Africa).

While both studies are still unpublished (at the time of the consultation), key insights included findings that men have lower knowledge of preconception care than women, including in HIC settings (UK, USA); and that while there are some variations across countries in knowledge and priorities, there are also common trends. For example, the most commonly reported topics across the eight countries were financial and job stability and security, emotional wellbeing, stable relationship with and support from partner, family support and suitable housing. Health-related topics consistently mentioned were health behaviours (e.g. diet, alcohol, smoking), health conditions (e.g. treatment and medication use), and system-level factors (e.g. local access to affordable groceries, health information and healthcare).

Mental health before pregnancy was ranked first by participants in most countries, closely followed by physical health, and factors such as relationships and family, living conditions and economic support, irrespective of gender. The Witwatersrand surveys also asked about preferred sources of health education and information; they found that doctors were commonly desired sources in several countries. They also found that knowledge was positively associated with access to supportive health services, although the analyses were cross-sectional. There is very little previous formative research on knowledge or attitudes towards preconception health from which to compare these findings.

Other research has also demonstrated that young people are keen to learn about their health before any consideration of pregnancy. The 'Me, My health, and My Children's Health' programme (LifeLab), delivered by the University of Southampton, engaged many adolescent boys and girls who valued learning how their health as adolescents and young adults might influence later pregnancy and postnatal outcomes including child health.[16] Their health literacy was improved even one year after experiencing the programme. Preconception care research within the Healthy Life Trajectories Initiative (HeLTI), a set of randomized controlled trials (RCTs) assessing the impacts of preconception care interventions, has also documented community enthusiasm for pregnancy planning and related health information, including among male partners who were as interested as women in approaches to promote healthy families. However, meeting participants also noted the general

lack of public understanding and knowledge about the preconception period, including among medical professionals. For example, when the Lancet Series on preconception health was published in 2018, there was a surprising amount of media interest in the UK since the concept was largely unknown. Other work also raises questions of relative prioritization of health concerns in adolescents. A campaign by the Partnership for Maternal, Newborn and Child Health and WHO's adolescent health team, the "1.8 Billion Young People for Change Campaign", found that key priority topics among adolescents were education and employability, and that healthy pregnancy planning was not explicitly prioritized (though reproductive health was noted).

Scientific updates on men's and women's preconception health

Participants from the University of Toronto (Canada) and University College London (UK) gave updates on scientific progress around men's and women's preconception health and their influence on maternal and child health outcomes, respectively.

Men's preconception health

The bio-medical and genetic science of preconception health has evolved rapidly over the past two decades. While there are still substantive evidence gaps, as well as methodological limitations with longitudinal epidemiological research that aims to measure associations between men's preconception health and child health outcomes, there are now new understandings of the role of men's influence on epigenetics.

Preclinical studies in mice show that pre-pregnancy exposures to various social and environmental risks (including high fat diets, early life stress/adversity, chronic alcohol consumption, environmental stressors, and chronic variable stress) modify small non-coding ribonucleic acid (sncRNA) of sperm.[2] In turn, modified sncRNA of sperm, including altered micro-RNA (miRNA) influence placental function, embryo development and fertility.

This subsequently impacts on pregnancy outcomes and offspring phenotypes, including effects on obesity, dietary preference, cardio-metabolic changes, behaviours, reproductive function, stress reactivity and endocrine function.

More recently human studies have begun to confirm these associations, for example recent work has demonstrated the effects of stress on mi-RNA and Transfer RNA changes. A randomized trial has shown that a diet intervention comprising of olive oil, vitamin D, and omega-3 fatty acids alters the sncRNA landscape of human sperm.[22] The emerging evidence

has implications for fertility (and assisted reproductive technologies (ART)), environmental health (including adaptation to climate change), placental function and embryo development.

Women's preconception health

The body of evidence demonstrating the effects of preconception health on maternal, perinatal and child health outcomes has grown rapidly over the last decade. A recent scoping of systematic reviews, for example, found 34 meta-analyses on the influence of preconception health and interventions on these outcomes, affirming the importance of the preconception period on health, in particular the role of preventing early and rapidly repeated pregnancies and preterm births, as well as optimizing women's nutritional status before pregnancy.[23]

However, to-date, most of the evidence comes from human and animal models, and epidemiological evidence on the effectiveness of interventions remains limited. On the question of whether interventions in the preconception period offer benefits over and above those delivered during pregnancy itself, trial data is sparse and inconclusive, and outcomes of ongoing studies are awaited. Observational data, however, on the effects of smoking on preterm birth show a particular benefit from stopping smoking before conception, in addition to the value of stopping during pregnancy itself.

It was also noted that, with more evidence emerging, we are increasingly understanding the associations between risk factors during preconception for example, maternal overnutrition or increased age at first birth, and subsequent health outcomes. Current opportunities to reduce the risk of long-term disorders are not being fully exploited, however.

For example, pregnancy itself enables the identification of women at risk, since treatable pre-existing conditions, such as high blood pressure or high blood sugar, become more apparent during pregnancy;[25] Additionally, management of pregnancy-specific conditions such as gestational diabetes mellitus may reduce subsequent risks of later non-communicable diseases.

Technological advances

Recent advances in technology and laboratory methods have greatly enhanced understanding and knowledge. In particular, techniques to examine the microbiome and the use of multi-omic platforms have increased understanding of the relationships between the microbiome and metabolism, brain development and immune function; also, how molecular phenotypes can reveal biological responses to or sources of environmental exposures at an early time point in life; and the complexity of genomic influences and their interactions with complex environmental exposures over the life-course – in particular the role of early childhood exposures and environments and their role in cognitive, behavioural and social functioning.

Programmatic interventions

Participants noted that the ‘how’ of preconception care is as important as the ‘what’. A variety of service delivery models of preconception care were presented and/or discussed during the meeting:

Netherlands – Solid Start

This national programme delivers preconception care through an integrated approach and is financed by central government and through social insurance. Preconception advice is part of a broader package of approaches including contraception, occupational health, and inter-conception care. After a screening question by providers, women intending to become pregnant in the next year are given a preconception consultation with a GP, gynaecologist or midwife. The service also includes a web-based tool to support preparation for a pregnancy. The implementation approach is collaborative, involving cooperation between medical professionals, social care, preventive care and local government. Challenges include unclear responsibility for the programme, skepticism among professionals, lack of preventive care (in general), women’s own intention to self-care (which reduces perceived need for advice) and lack of starting point for interventions. The programme has not been evaluated.

Sri Lanka – Newly-married couples package

A national publicly funded programme targeting newly married couples was initiated in 2010, with national coverage since 2014. The programme was designed to address stagnating health outcome indicators, and to fill a ‘vacuum’ in the life-course approach between contraceptive services and antenatal care (ANC). The programme is implemented by the public health team at divisional level, and includes risk screening, physical assessment, vaccination, health education/promotion/awareness, service provision (contraception and counselling). The programme is now reaching 58% of newly married couples, but it’s impact on outcomes has not been evaluated. Pilot data demonstrated feasibility and acceptability. Sri Lanka’s approach is underpinned by a broader commitment to women and girls’ education and health. The high uptake of the service was notable, given the lack of incentivization to promote uptake.

South Africa – Bukhali project *(presented by video)*

The intervention package was designed as part of the Healthy Life Trajectories Initiative (HeLTI), an RCT aiming to assess the impact of interventions during the preconception, pregnancy and postnatal periods on maternal, infant and child health. Implemented in Soweto, a mixed but predominantly deprived area with high unemployment, Bukhali comprises an integrated set of interventions for women covering an 18-month period of preconception, pregnancy, infancy and early childhood. It aims to improve diet and physical activity during preconception, and health during pregnancy; reduce perinatal depression, increase exclusive breastfeeding and improve parental nurturing care. The approach uses community health workers (CHWs) or ‘Health Helpers’ who deliver various interventions, including healthy conversations (empowerment and behaviour change support), health promotion resource materials, micronutrient supplements, and services, including screening tests (BMI, blood pressure,

haemoglobin, mental health, lifestyle), as well as home-based HIV and pregnancy testing.

Australia – General practice

An ‘opportunistic’ approach to delivering preconception care at primary care level was presented from Australia. Preconception care guidelines exist but implementation remains weak or non-existent. In theory, general practitioners (GPs) should be offering screening, case-finding and providing genetic counselling and preventive advice (including on pre-existing medical conditions, mental health, weight optimization, nutrition and micronutrient supplementation, alcohol, fertility and birth spacing). Challenges include lack of political prioritization, the lack of dedicated funding and resources, time constraints, lack of demand, competing preventive priorities, costs of and access to services. In a study on women’s perspectives, women were interested in receiving preconception care and recommended that GPs be more proactive in promoting preconception services. However, they also emphasised the need to be “in the zone” and actively planning a pregnancy to engage with the messages.[26]

Professional Associations – Preconception screening and competencies

Two job aids to support implementation of preconception care were presented.

The first, a screening checklist produced by the International Federation of Gynaecologists and Obstetricians (FIGO) has been presented in recent publications, translated into 10 languages and disseminated via the organization’s professional networks (see Annex 2). Items covered in the checklist were selected based on expert opinion and include assessment of pre-existing conditions, nutrition (including over- and under-nutrition), micronutrient supplementation, healthy lifestyles, vaccines and birth spacing. Its uptake among doctors is unknown and there has been no evaluation of its impact on health outcomes.

The International Confederation of Midwives (ICM) has recently updated its midwifery competencies to include greater emphasis on both SRH and preconception care. Competencies covered are SRH education; support on natural family planning and barrier methods; contraceptives provision; preconception care; care after physical and sexual violence and abuse. The topics of preconception care covered are similar to those in the FIGO tool, but also include socio-cultural aspects of human sexuality, genetic history screening, communicable and non-communicable disease screening, pregnancy options for women living with HIV, and screening for STI/HIV. These competency lists have not been translated into any guidelines or job aids. The definition of the preconception period is not made clear, but generally understood to mean pre- and inter-pregnancy periods. SRH and preconception were purposefully included together to cater to the needs of women planning pregnancy as well as those planning not to become pregnant.

Integration of preconception care with other health programmes and sectors

Many participants emphasized the importance of integrating care for improving preconception health into existing services and programmes. Opportunities to promote healthy pregnancies are currently being missed. For example, many women do not register for prenatal care during their first trimester, sometimes due to fears of miscarriage which impede disclosure of their pregnancy; crucial interventions in this period, such as folic acid supplementation, are therefore not delivered. Representatives from other departments in WHO reflected on the need to better integrate preconception health in their work, including nutrition, mental health, adolescent health, disability, maternal and newborn health (MNH) and SRH. **Opportunities** that exist are currently not being leveraged: for example, both nutrition and mental health groups focus primarily on pregnancy and postpartum periods. Mental health services rarely focus on pre-pregnancy planning, which could also impact upon maternal suicide rates, an important cause of maternal mortality in many HICs.

Ahead of the discussions, the question had also been raised whether there is a need for these services to be specifically delivered as part of planning for a pregnancy or if they are an integral part of universal health coverage and good quality of care.

The risks of providing a verticalized preconception care service were also underscored by some participants. Vertical and well-funded initiatives may be successful but are unlikely to be sustainable in resource-stretched health systems. This was exemplified by a successful vertical pilot preconception programme in the Bedfordshire, Luton and Milton Keynes Integrated Care Board (North-West London, UK) that stopped because of funding constraints.

Many participants therefore advocated for a **life-course approach**, in which preconception health education is addressed across a range of different education, health and social care services, in an age-appropriate way. This may consider both proximal services, to support active pregnancy planning, as well as distal interventions, related to the promotion of a healthy lifestyle. **Entry points** and **timing of preconception** education and care discussed over the course of the meeting were:

- **School health:** Schools offer an opportunity to deliver messaging on multiple topics around pregnancy, including pregnancy prevention, fertility and infertility, as well as the effects of preconception health on pregnancy and child health outcomes. It was noted that it is not sufficient to address pregnancy planning in comprehensive sexuality education (CSE), but it requires integration into

other curricula, such as biology and science. Based on research completed, some participants commented that teenage children, both boys and girls, are interested to learn more about their health and how health status impacts pregnancy outcomes and also the lifetime health of offspring.

- **Adolescent health:** In addition to school health, many countries have specific adolescent health interventions, such as HPV vaccination at age 12-13 or tetanus/diphtheria/polio and meningococcal vaccination at age 14, which may offer opportunities for additional health promotion messaging. UNICEF also promotes adolescent health delivery platforms focused on human-centred health and well-being. There are additionally a range of other adolescent health and development programmes which may offer opportunities for integration.
- **Contraceptive services and other SRH:** Family planning is a common pre-pregnancy health service contact that can be utilized for preconception messaging, including health education on fertility as well as pre-pregnancy care. The fact that almost 50% of pregnancies are unintended – in both low and high resource settings – is also a strong rationale for integrated counselling which can address women's desires to either prevent or plan for pregnancy. In the UK, there is now an aim that every contraceptive consultation should include a conversation on pregnancy planning.[27] Other SRH entry points noted included cervical cancer screening.
- **Pre-pregnancy screening:** Some participants recommended a pre-pregnancy screening approach for all women. Its timing could be determined by the average age of first birth in the country. It was also noted, however, that there is not yet a substantial evidence base to guide the formulation and implementation of screening interventions, and that approaches to asking women about pregnancy planning should also encompass plans for prevention of unintended pregnancy. Some countries currently implement couple screening for consanguineous marriages, which could be further developed for preconception screening.
- **ANC:** In some settings, ANC provides an opportunity to initiate discussions for current and future pregnancies. It was noted that women attending ANC are also a captive audience who are highly motivated to hear behavioural messaging.
- **Postpartum care:** The need to provide information and services to women in the postpartum and interpregnancy period was highlighted. In some settings, this is the only feasible and practical option to reach women with preconception health messaging. However, low uptake of these services is a reminder that much more is needed to improve delivery of integrated care.
- **Community health:** Participants from lower-income countries underlined the critical role of CHWs and community health volunteers (CHVs) in delivering health promotion advice, including preconception care advice. This can also include **health outreach** programmes that deliver services and health education to remote or other marginalized communities who are at greatest risk of poor pregnancy and child health outcomes. CHWs can also include **health visitors** who often target the needs of vulnerable households.
- **Primary care:** As noted above, the primary care system is being proposed in many countries to deliver preconception care interventions. Checklists such as the FIGO checklist presented above can facilitate discussion of key topics. For example, in South Africa, the government took a decision

to augment existing baby wellness clinic visits with a broader package to address women's health needs including preconception health.

- **Occupational health**: to address needs of working populations.
- **Specialist health:** There are questions that can be added into specialist medical care such as cancer care. The special needs of women with pre-existing medical conditions, discussed further below, was also discussed.

Despite the broad agreement that an integrated approach is needed, it was also emphasized that different health programmes have their own intrinsic values and benefits, and that advice on pregnancy planning should not necessarily be dominant. For example, adolescent health programmes usually focus on the prevention of unintended pregnancy and broader health education on healthy lifestyles. Some participants felt that preconception care messaging should therefore be integrated into broader health education and health literacy, including on pregnancy prevention and fertility awareness, while not being a primary focus. Participants also emphasized the need for 'integrated integration', ensuring that preconception care counselling is delivered hand-in-hand with contraceptive services and other SRH to enable holistic planning around reproduction.
It was also felt that certain 'services' previously highlighted as components of preconception care in WHO's 2013 policy brief, such as programmes to prevent or eliminate female genital mutilation (FGM), violence against women, or child marriage, are NOT in fact entry points for preconception care and instead are separate programmes with complementary aims.

Challenges to an integrated approach were also discussed. Many different specialized programmes design large packages of interventions aimed at a singular primary care worker who must grapple with multiple demands on their time. Each health programme involves obligations with training, supervision, tools/checklist utilization, guidelines, clinical algorithms and reporting. The feasibility of integration needs to be considered and interventions carefully planned for. One participant noted how there needs to be a shift towards "conversations" rather than specific clinics, to enable integration into existing and already fragmented services.

Simply relying on an integrated approach may also exclude certain groups: for example, youth, and in particular young men, rarely attend for primary care or other health services and their needs are not well-served by many health systems. There are, however, lessons from other efforts in integrated health programming that can be used to improve design, such as HIV programmes which have successfully integrated or decentralized into primary care in many countries.

In addition to discussing how to integrate, the group also discussed the needs of **specific population groups** with preconception health messaging:

- **Women with pre-existing conditions:** For women with pre-existing medical conditions, a continuous focus on planning for pregnancy can be beneficial, in particular when advice and support is well integrated with other aspects of healthcare delivery related to the management of chronic conditions such as epilepsy. This can extend from teenage years, through a pre-pregnancy period and to the management of pregnancy, including miscarriage. Well-designed preconception care can also help

those with complex medical needs to navigate structurally fragmented health services.

- **People living with disability (PWD):** It was noted how the specific needs of PWD have been excluded from many pieces of guidance and health promotion messaging. It is particularly important to plan to avoid the potential for further stigmatization of PWD. Not only are they frequently stigmatized for wanting to avoid pregnancy (due to stigma around their sexual activity) but they may also be stigmatized for wanting to plan pregnancy. WHO's disability department recommends an integrated approach in which inclusivity is addressed in mainstream services, and also ensuring that all health professionals are trained to address the specific needs of PWD.

Measurement of preconception care

Advances in the measurement of pregnancy planning and preconception health were presented, primarily from experiences in high-income country settings. In the UK, an annual report card has been argued for,[6] with an expert group recommending 66 indicators, mostly available through routine datasets.[20] Important indicators not yet routinely available are attendance at a preconception assessment, and pregnancy intentions (the latter only measurable through a national survey conducted every 10-12 years). Among indicators that are routinely collected in maternity services, an analysis from 2018/19 found the prevalence of preconception indicators ranged from 0.2% (hepatitis B) to 85% (not stopping smoking among women who smoked before pregnancy).[28] Overall, researchers found 92% of women had at least one risk factor for sub-optimal preconception health.[20]

In the USA, 45 indicators from surveillance data were identified in 2011 by the Centers for Disease Control and Prevention (CDC) as measures of preconception health.[29,30] They were subsequently refined these to nine indicators of preconception wellness as quality metrics for improving health care delivery.[31] Ten preconception health indicators were recommended for surveillance at state level,[21] and 30 indicators to monitor programmes and plan strategies.[32] Through the CDC-run Pregnancy Risk Assessment Monitoring System (PRAMS), an ongoing population-based surveillance system, the US does capture a measure of unplanned pregnancy, but the question is retrospective and focuses uniquely on the intended timing of pregnancy, not other factors that influence planning. In Australia, seven measurement domains were identified by the Preconception Health Network (PCHN), which were similar to those described in the UK and USA.[33] As with the UK, many indicators were unavailable through routine health systems, such as diet, exercise, and educational status.

One key aspect of measurement is the intendedness or 'planned-ness' of the pregnancy. The London Measure of Unplanned Pregnancy is a validated metric assessing the circumstances of pregnancy, to derive an overall

score of how 'planned' it was.[34] The tool has been validated and translated into 20 languages. While it has been widely applied in research, its use in clinical settings is currently limited to four hospitals in the UK and two in Sydney.[35,36]

The International Core Indicators for Preconception Health and Equity Alliance (iCIPHE) is aiming to reach international consensus on a core set of preconception indicators for surveillance that can be implemented across LMICs and HICs. The work includes public engagement to assess what is important to people before pregnancy (as described above), and an international study to develop a core indicator set for preconception health surveillance.

Evidence gaps on preconception care

While there has been a lot of progress in understanding the biological and genetic mechanisms of preconception exposures over the past two decades, there are still major gaps in knowledge, in particular operational research to understand the optimal mechanisms for delivery of preconception care across different contexts, as well as to provide epidemiological evidence on the human response to altered environmental exposures.

Evidence gaps in biomedical science and the developmental origins of health and disease (DOHaD)

Seven major evidence gaps were articulated:

1) **Which interventions and when:** There is a need to understand biologically the nature of individual or packaged interventions and when are the best times to intervene over the life-course, before and between pregnancies, to influence both early and late health outcomes.
2) **Timing of exposures:** To understand how timing of exposures influences adversity and leads to outcomes.
3) **Mechanisms:** While there is mechanistic information from animal models, more work is needed to understand how this translates into humans. Artificial Intelligence and other technology will enable future research in this area.
4) **Genetics:** Current genetic understanding is based on research within a small proportion of the world's population, so further work is needed in other countries, especially the global south. Genetic science has previously focused on risk but more work is now needed to better understand genetic resilience.
5) **Epigenetics:** Despite the growing research in this area, there are many more emerging questions, including how epigenetic changes interact with the transcriptome, how it changes over time, epigenetic changes during development, and how the

interaction of interventions with the epigenome (including at different times) may result in different outcomes.

6) **Microbiome:** Science is only starting to unravel the complexity of the microbiome. New sequencing can support further research in this area. Particular areas of focus are impacts on metabolism (and associated under- and over-nutrition), brain/ behaviours, and immune function.
7) **Fathers:** While there is now clear biological evidence of the connection between father's health, well-being, behaviours and environment and the developing embryo, biological understanding is far behind that of mothers. Studying interventions in fathers will also be critical.

Other areas discussed by the larger group included understanding the impact of tailored interventions, to enable targeting of individuals with identified biomarkers of risk. Additionally, understanding public acceptability of interventions on the epigenome was flagged as an important area of research, in particular given ethical concerns over genetic engineering. Another area with ethical and programmatic implications highlighted in the discussions was assisted reproductive technologies (ARTs), with a need to consider information sought from potential donors, and what can be communicated to potential parents. Linked to this, the need for research on preconception care among peri- or post-menopausal women was also noted, as increasing numbers of women globally are using ART later in life. Lastly, the need to understand the impact of preconception interventions on parents as well as children over the life-course was noted, including impacts on their long-term health.

Evidence gaps in implementation science

Gaps that could be addressed through implementation science included:

1) **Effectiveness studies:** There is a dearth of real-world studies, either trials or natural experiments, demonstrating impact at population level. Nuanced understanding of the specific interventions that work in specific contexts or with specific groups is lacking.
2) **Cost-effectiveness studies:** To demonstrate the costs and potential economic value of investments in preconception health.
3) **Public acceptability studies:** To understand public perceptions of and responses to preconception programming, including enhancing effectiveness through intervention co-design processes.
4) **Sustainability and scalability:** To understand the design and implementation processes supporting the long-term sustainability of programmes as well as their scalability from initial pilots or small intervention trials.
5) **Adoption:** To understand how preconception care is accepted and supported both at service delivery level and by national policymakers.
6) **Coverage:** To understand what is being implemented, where, and by whom.
7) **Outcomes:** To develop and assess standardized core indicators to measure programmatic success.

These priorities can also be integrated into a **RE-AIM framework** of implementation science.
In broader discussion, participants also noted the need to understand how to **generate public demand** for preconception care. The role of CHWs in promoting preconception care also requires further research, in particular their capacity to deliver integrated interventions while recognising they already have

diverse and time-consuming responsibilities. It is also important to ensure that research encompasses **interventions that go beyond health care**, including work to influence social norms. Some participants felt that much stronger programmatic evidence is needed to demonstrate **the association between education or knowledge transfer interventions (e.g. during adolescence) with longer-term effects** on pregnancy planning and other outcomes. Lastly, it will be important to generate **comparative research** on the cost-effectiveness of 'upstream' interventions, such as policies on sugar or salt content, vs 'downstream' social and behavioural change interventions. The latter can face multiple challenges, including in implementation, or in effectiveness due to structural barriers and social norms.

Evidence gaps in rights and equity

The group agreed four priority areas:

1) **Appraising evidence:** In both producing and appraising scientific evidence on preconception care, attention is needed on the underlying assumptions that shape our knowledge production. This is best achieved by ensuring that research teams are multidisciplinary – in particular ensuring a social science perspective on preconception care research. Principles: More understanding is needed about the mechanisms by which to ensure that rights-based principles are incorporated and achieved throughout preconception care delivery, including SRH autonomy; non-discrimination; do 'no harm'; prevention of stigma and discrimination; and gender equality.
2) **Marginalised groups:** Studying ways to prioritize the needs of marginalized groups is important including persons living with disability or people with diverse sexual orientations. Settings where there are high levels of need such as those with high levels of obesity, poverty, gender-based violence or HIV incidence are especially important to understand.
3) **Assessing different levels of the health system:** Evidence gaps are present across the levels of health systems, including how changes in law and policy influence reproductive health and child health and rights outcomes; at the national level, on how preconception programmes interact with existing law and policy; at the provider level, to understand how providers are being trained, and whether the design or implementation of interventions supports or undermines equity; and at the community level, to understand the benefits of co-produced programme design.

It was also noted that children and their rights to health are commonly not considered in discussions of rights and equity while the rights of women and mothers are actively promoted and protected.

Evidence gaps on measurement

The importance of measurement can be understood in four areas: (1) to describe and define need; (2) to guide policy and service delivery design; (3) to evaluate delivery of services and whether they meet needs; and (4) with the overall aim of achieving a healthy life-course.

It was noted that informational needs can be split into a) information that the health system needs to know routinely about everybody; and b) what information is tailored for preconception care (e.g. IFA supplementation or pre-pregnancy medication review). Indicators can also be distinguished by those that are output-based (e.g. uptake of genetic screening; smoking cessation; workforce preparedness), vs. those that are outcome-based (e.g. health behaviours,

reductions in unplanned pregnancy, improved maternal and child health). Measures of quality of service are also important.

Common gaps in data include:

- Men and men's involvement, as well as other genders.
- Pregnancy intentions (both prospective and retrospective), and how acceptability of these questions may vary culturally. This may also include intention to not ever have a child.
- Infertility (or sub-fertility).
- Uptake of genetic screening.
- Uptake of preconception care.
- Uptake of and attrition from programmes offering preconception care.
- Specific populations including adolescents (12+) and people living with disabilities.
- Medication purchased over the counter.
- Dietary intake and physical activity / adherence to lifestyle interventions.
- Patient reported experience measures, patient reported outcomes, and satisfaction.
- Reproductive autonomy.

Evidence gaps also differ by setting, and there is a particular lack of data in routine systems in LMICs. Even *Demographic and Health Surveys (DHS)* which do cover women's fertility intentions and desired family size, do not survey men on these same questions. Upcoming DHS questionnaire revisions may offer the opportunity to insert preconception indicators, including discussion about the integration of the *London Measure of Unplanned Pregnancy.*

Other common challenges in measurement include:

- **Data linkage**, including linking woman to child, partner to woman and child; as well as linkage across different datasets, including linkage between paper-based and digital data systems.
- **Succinct/core indicator sets:** There is still a lack of core indicators agreed by global or national health agencies, or a definition of 'receipt of preconception care'. Simpler indicator packages can also support translation of data into political advocacy. Indicators should focus on modifiable risk factors that are mostly likely to effectuate change on desired outcomes.
- **Surveillance vs outcome indicators:** These need clear articulation.
- **Non-pregnant population data** needs improving, since existing approaches to measurement have focused on data of pregnant women.
- **Public acceptability of reporting:** Requires further investigation, including which indicators are acceptable for patients to report on and how those are collected.
- **Timing of data collection:** There are temporal challenges in the timing of measurement of risk factors or interventions in relation to a subsequent pregnancy. For example, a BMI measured years before a pregnancy may not be helpful.
- **Data quality**, including data methods, accuracy and completeness, in particular where there is a reliance on self-reported data.

Sharing of best practice on data collection and indicators will be beneficial, in particular to achieve short-term 'quick wins' as well as the 'nice-to-haves'. It will be important for countries to look at what preconception data is already available, and not duplicate systems.

The need to document and **monitor laws and policies** was also highlighted. This type of policy monitoring

is already done within family planning and HIV programmes, and supports the provision of high quality services.

WHO colleagues noted the need to ensure **integration with other measurement initiatives**, including work on patient-reported outcome measures, and various measurement advisory groups.

Lastly it was noted that the production of quality data can be powerful, and with the help of effective knowledge or science brokers, can lead to meaningful political change. In some settings, like the UK, there is now a meaningful demand for data and evidence to support decision-making, including at both national and local commissioning levels.

Framing and language on preconception care

The meeting generated discussion and debate around the language and framing of preconception care. While some participants felt that it was important not to focus on terminology, arguing that participants are usually grateful to learn through preconception care and do not report negative connotations, others felt that the terms ‘preconception’ and ‘preconception care’ can have significant, if unintended, political, legal and social consequences. Throughout discussions there was strong consensus that all participants want to see an approach that is supportive of human rights – both women and child – and that recognizes the importance of interventions over the life-course to address inequality.

A wide range of framings and issues related to preconception care and their implications are summarised below. A synopsis of framings and language discussed is provided in "**Error! Reference source not found..**" It was noted that any further work to evolve the framing and terminology around preconception care should also involve public consultation.

Preconception care as a health intervention

Some participants felt the existing terminology and framing of preconception care are fit for purpose and useful. Characterising and successfully delivering specific interventions at various timepoints across the preconception period may, in addition to broader public health or SRHR programmes, have scope to impact on inequities.

Underlying much of the concern about the term ‘preconception care’ is the way in which the language of ‘conception’, and care around the time of conception including the option of abortion, has been politicised in some countries (discussed further below). It was noted that shifting away from the use of ‘preconception care’ due to fears of political misappropriation (for

example legislation that criminalizes behaviours in the preconception period with the purpose of restricting women's rights) could allow some groups to control the narrative and determine the agenda for their own political ends. Rather, WHO and others in the public health sector promoting preconception care need to first establish and then protect human rights while being cognizant of any harmful effects and set clear guidance and standards on how rights-based programmes are delivered (see below).

Shifting terminology away from preconception care may also not avoid the risk of commercialisation of care or any alternative term being used to reinforce gender stereotypes. For example, while one participant noted potential misuse by health insurance companies to reject claims or deny care, insurers may still be able to deny care if purchasers have not achieved certain behavioural targets.

It was commented that redefining preconception care today and how it should be delivered may be an opportunity to promote gender-transformative approaches with the aim of changing social norms and behaviours of both women and men who are involved in pregnancy.

Preconception care as a period of measurement
The terminology of preconception is commonly used in the research sphere, with investigators using the term to define both proximal and distal biological periods of time in which behaviours and interventions can influence later health outcomes.

Given the effects of long-term behaviours and environmental exposures on later maternal and child health, this 'biological paradigm' led to preconception being defined as an extended period from puberty onwards (and even before this if the impacts of child health and development are considered). But during the meeting it was acknowledged that this framing, which is referred to in WHO's 2013 report, does not always easily translate into a programmatic period of intervention, in particular when women may spend many of their reproductive years not actively planning a pregnancy, and more commonly trying to prevent pregnancy. It was also noted that its defined duration is variable – for example some studies intervene and document behaviour in a period up to two years preconception, whereas others are shorter. Other school-based interventions provide information about health and behaviour many years before either boys or girls ever consider being parents. This variability has consequences for how interventions and guidance are considered, designed and delivered.

The long time required to intervene to improve some aspects of preconception health was recognized, for example with weight loss and physical activity, and participants discussed how this may impact demonstration of positive outcomes.

Concept/framing	Advantages	Disadvantages
Preconception care	Focused terminology that does not get diluted by other health topics. Can cover a broad period of intervention before active pregnancy planning starts, including preventive health promotion in adolescence. Aligned with biological and research definitions of the preconception phase and a simple label to describe broader interventions and programmes.	Could be interpreted as maternalist and deterministic language that orients women's healthcare towards the production of healthy children and reinforces restricted gender stereotypes. Does not recognize the integrated nature of many preconception interventions. May have legal consequences for non-adherence to recommended 'care'. Suggests a timepoint of 'care' which is not accurate.
Pre-pregnancy care Or Pre-pregnancy health Or Preparation for a healthy pregnancy Or Pregnancy preparation (care and services)	Promotes active planning of pregnancy. Can target women with higher motivation for behavioural change. Reduces the politicisation of the term 'conception' in some countries and sense of determinism of the term 'preconception' in some communities.	Could be interpreted as maternalist and deterministic language. Misses scope for delivering health promotion education or other interventions across all reproductive years and to boys and men as well as girls and women.
Mindful preparation for a wanted pregnancy	As previous, but also aims to address burden of unintended pregnancy.	The term 'wanted' can be stigmatizing. Wantedness can change over time. Pregnancy intentions are also not dichotomous. Difficult to use as a label for services or as a descriptive term for a time period (in the context of research, biological descriptions or timing of interventions).
Optimized pregnancy and childbearing	Can promote active planning of pregnancy but may extend into a longer period of reproductive age.	A desired outcome rather than an approach. Potentially judgemental/ guilt-inducing.
Pregnancy capability	Can be used to identify a population at risk and address pregnancy planning and guide decision-making, whether pregnancies are being planned or not.	Describes a period of time and capacity and not an approach. Potentially stigmatizing. Does not include interventions for men. People with infertility may feel excluded by this definition.
Healthy Futures	Can be used within a 'human capital' framing that can support an economic rationale for investment in preconception health.	Could apply to any stage of the life-course with no clear link to reproduction. Closely aligned with 'health promotion'.
Pregnancy prevention or planning Or Pregnancy planning, preparation and prevention	Enables an integrated approach encompassing both contraceptive services as well as support for pregnancy planning.	Equalizes the two services when demand may be unbalanced (contraception likely required for the majority of reproductive age; vs active pregnancy planning which likely lasts just a few years).
Healthy family planning	Integrates contraceptive and preconception care concepts.	WHO has moved away from terminology of 'family planning' to contraceptive care services, which is considered less deterministic.

Concept/framing	Advantages	Disadvantages
Reproductive life (cycle) planning	Generic term that reduces sense of maternal determinism and can incorporate pregnancy prevention, fertility education and pregnancy planning. Not restricted to the immediate pre-pregnancy period.	Potentially superfluous to SRHR, but could be considered an integral part of it.
Life-course care	Generic term that avoids maternal determinism. Captures the sense of intergenerational transfer of health.	No explicit link to reproduction.
Optimized generation planning	Orients population to consider inter-generational transfer of ill-health and inequity.	May suggest that 'optimal' is achievable, and also may have negative connotations with genetic engineering.
Newlywed health	Allows intervention among easily identifiable couples to support planning of pregnancy (including prevention and active planning).	Not suitable in countries with high proportion of births out of wedlock or late age at marriage.

Language and translations

Participants discussed how language itself plays a heavy influence on framing of preconception care. Participants from non-English speaking countries noted that the term 'preconception' is rarely translated literally, and that other words are used to describe the concept in a more understandable way (such as pre-pregnancy care, pre-pregnancy check-up, pregnancy planning, becoming pregnant in a healthy way). In some settings, the concept is adapted to need: in Qatar for example, 'pre-marital screening' is delivered due to the high prevalence of genetic diseases and co-sanguinity.

The use of the word 'care' also sets expectations for the delivery of a specific health service, but as discussed previously many of the suggested interventions involve a broader approach to health education that need to occur throughout the life-course, in particular from adolescence onwards. 'Conception' is also a specific timepoint in reproductive biology, but it is not normally associated with medical treatment. It is also problematic in sectors where the definition of conception itself is highly contested. The work on ICM's competencies (see above), for example, encountered sensitivities around the term preconception and necessitated a switch to 'pre-pregnancy' care in the original iteration of the ICM framework. Furthermore, the use of the prefix 'pre' may set up a deterministic view of the interventions (whether pre-pregnancy or preconception), i.e. that populations should only receive the information because they are planning pregnancy (see below on the challenge with 'anticipatory motherhood'). However, 'pre-' may simply infer any time before pregnancy and be considered inclusive of longer periods before a pregnancy that allows longer-term intervention, such as mental health or other behaviour change approaches.

Others felt that translation was not the problem, but rather the use of the whole approach that can be used for political ends. The concept has been adapted

in some settings, for example in India the Sanskrit term ‘healthy living’ has been used, to recognise the importance of the life cycle and additionally avoids some of the sensitivities related to the term preconception care.

Human capital framing

One suggested framing acknowledged the economic consequences of poor preconception health. While this may not translate easily into a service package, raising with policy makers the economic arguments for investment in health promotion for women and men before conception will likely be beneficial. A linked programmatic focus could be around ‘healthy futures’. Similar efforts to demonstrate return on investment through economic analyses have been beneficial to disability programmes.

A life-course framing

The importance of a life-course view to preconception care was emphasized. The intergenerational transfer of ill-health is influenced by exposures and behaviours throughout the life-course, and this understanding is key to the DOHaD concept. While the “First 1000 Days” has adapted to encompass the preconception period, it may not be sufficient to make transformative and intergenerational impacts. It is therefore important to think of a continuum of interventions across the life-course. Such an approach also allows greater consideration of the multiple environmental exposures on health, including nutritional, socio-economic and physical (including the influence of climate change).

Two alternative terms suggested may reduce the sense of maternalist determinism in women’s health care are reproductive life planning or life-course care. The former offers the advantage of integrating both pregnancy preparation as well as pregnancy prevention. The latter incorporates understanding of the intergenerational transfer of health.

Pre-pregnancy health and care framing

Several interventions discussed at the meeting were focused on an immediate (c.12 months) pre-pregnancy intervention period (either before a first pregnancy or in the interconception period).

This framing targets people most receptive to guidance on pregnancy planning. It focuses on ‘preparation of a healthy wanted pregnancy’ or ‘mindful preparation of a wanted pregnancy’ among those actively planning pregnancy and those with an expressed interest who are most likely to be motivated to change their behaviours. A similar suggestion was for optimized pregnancy and childbearing.

Others felt strongly, however, that a focus on the immediate pre-pregnancy period ignores the earlier influences of health and behaviour throughout the lifecycle, in particular in earlier reproductive years, and that contribute to the intergenerational transfer of poor health. A ‘pre-pregnancy’ framing also assumes that pregnancies are wanted and planned. But it was underscored that pregnancy planning or preconception health should be addressed through a continuum of care that responds to the needs of both those preparing for pregnancy as well as those who want to prevent pregnancy or who choose abortion after an unintended pregnancy. The promotion of care and services that empower populations to achieve their families at a desired time, whether through family planning or pre-pregnancy support and counselling, or preconception care would be more holistic.

Women's rights, gender norms and 'anticipatory motherhood' considerations

Several participants had concerns about the consequences of a preconception care framing that would result in women receiving education, services or other interventions throughout their whole reproductive lives. It was noted that framing may position "women as vessels for the next generation". In the USA, the introduction of preconception care introduced the language that women are "always potentially pregnant". This resulted in beneficial population-level interventions such as the fortification of cereal grains with iron and folic acid. However, it was also met with hostility in the media in some parts of the US.

'Anticipatory motherhood' reframes maternal responsibility to begin before motherhood starts. It also feeds into 'mother blame' which is rampant in many societies. Requirements to attend preconception care appointments or achieve specific healthy behaviours may have implications for insurance reimbursements. Some countries are already criminalizing women for health-related behaviours such as mother-to-child transmission of HIV, or for smoking or substance abuse in pregnancy. Induced abortion is criminalized in many countries, and restrictive abortion laws in the USA is now leading to hyper-surveillance of women's bodies. Participants warned that there is scope for similar consequences with preconception or pre-pregnancy health obligations. There is fear that programmatic stipulations requiring women to behave in certain ways to ensure the healthy future of their unconceived children has scope for misappropriation and misuse. This is particularly concerning given the growth of anti-gender and anti-rights groups, and the instability of government support for and legislative action around women's health and rights. There is therefore a risk that women become second class citizens to their fetus (conceived or unconceived). It can also contribute to the 'bio-medicalization' of women's bodies, for example by further increasing the current medicalization of pregnancy and birth into the preconception period.

The potential impact on gender norms was emphasized. Discussions of women's health should not be predicated on their reproductive functions. It was noted that the Advisory Group on Gender and Rights of the *UNDP/UNFPA/UNICEF/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP), administered through WHO*, had recommended against use of the term preconception health in 2012, fearing that this approach reduces women to stereotyped roles of motherhood. Currently many countries are back-sliding on women's reproductive rights and gender equality, and some participants cautioned that the promotion of preconception care could further undermine women's bodily autonomy.

Participants therefore emphasized the need for careful programme design using a rights-based and equity lens, and a life-course approach combined with targeted interventions for those actively planning pregnancy. A framing was discussed (see ***Figure 2***). The framework incorporates cross-cutting **principles** to be embedded within any preconception programming, as well as intentional design to ensure the principle of **"do no harm"** is achieved, including prevention of stigma, criminalization, restrictions to choice and the reinforcement of harmful gender stereotypes and social norms. Preconception care should be supporting women's autonomy to achieve planned and wanted

pregnancies. The framework promotes a dual approach targeting both proximal interventions in an immediate preconception period (for those actively planning a pregnancy), as well as an integrated approach in which preconception education and counselling is delivered within other pre-existing health programmes (such as contraceptive services or post-natal care) over the life-course. This framing was appreciated by the group.

In terms of the title, some participants felt that the terms ‘healthy’ and ‘wanted’ may be stigmatizing to those who are not able to achieve these aims. ‘Wanted’ in particular has been rejected in other MNH frameworks, due to connotations with abortion. It also implies a ‘binary’ view of pregnancy intendedness: other research has demonstrated high degrees of ambivalence on pregnancy intentions. It also may prevent consideration of adoption outcomes for those whose pregnancies were unwanted. The principles of ‘do no harm’ also need to be considered in a broader context of multiple potential benefits and harms to women and children.

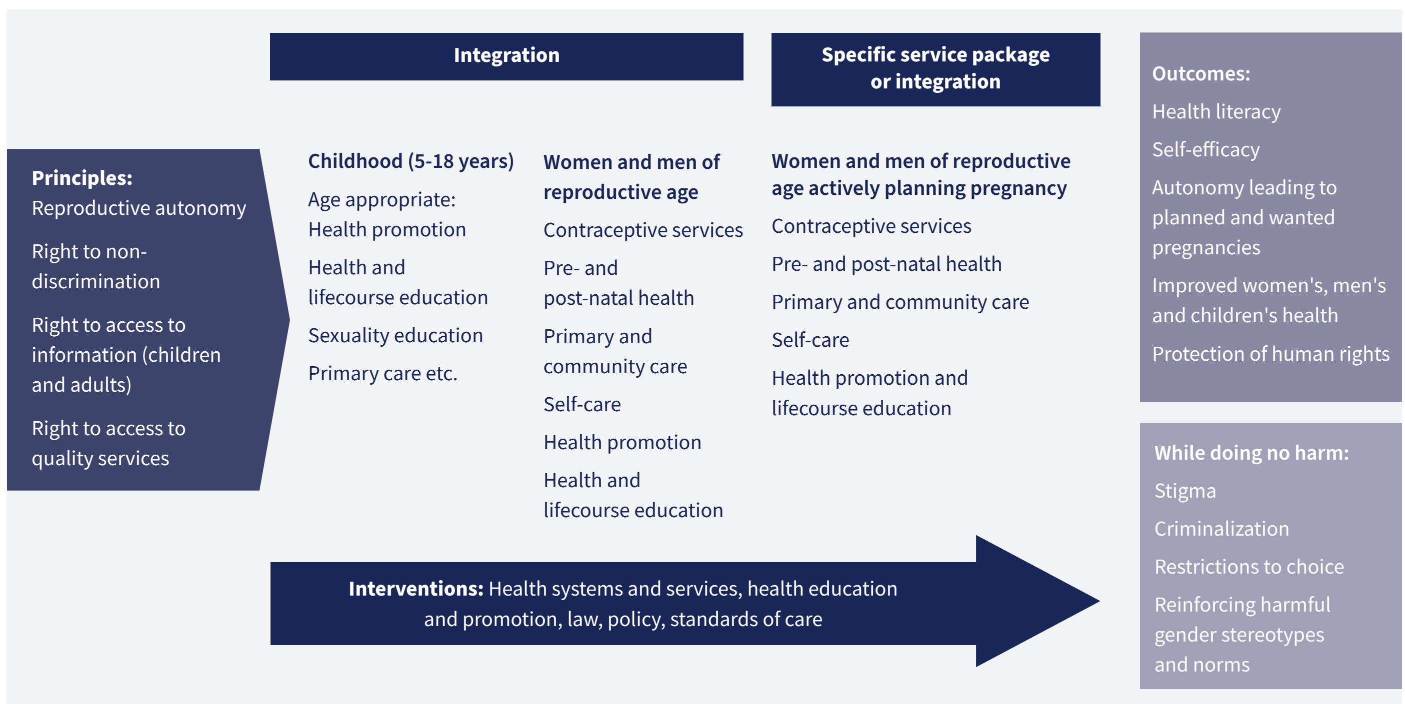

Figure 2: "Preparation for a Healthy Wanted Pregnancy within a Life-course Approach" - example framework discussed in the meeting*
**Note: The framework was suggested by the group and should not be understood as a WHO-endorsed framework on preconception care.*

Consideration of the social determinants of health

Participants acknowledged that people's behaviour and choices are also determined by the social, economic and political contexts in which they live. A programmatic focus on individual level health education may obviate broader structural factors – such as racism, poverty, pollution, education, misogyny – that are determinant in individual behavioural choices. Healthy choices are not an option for many disadvantaged groups who are obliged to make decisions within a limited range of possibilities due to externalities. It could even be considered unethical to 'educate' individuals and families on their individual behaviour when they cannot influence broader risks. For example, in India, education on indoor solid fuel burning and its associated pollution fails to achieve behavioural change when families lack resource to switch fuel sources.

Preconception care could therefore have unintended consequences on people's mental health and attitudes towards pregnancy. Health promotion messaging has scope to increase anxiety, in particular if people have little control over their behaviour or exposures. One participant noted how teaching on preconception health to her students had led to questions on whether unplanned pregnancies should be terminated simply because of preconception behaviours, such as alcohol consumption. Persons who are overweight or obese or who have other health conditions may feel bad or even "shamed" if pregnant or wanting to have children. The rhetoric around preconception care can position perfection as a possibility, potentially leading to an increase in unwanted terminations. It may also set women up for later mental health issues once they realise that 'perfection' in parenting is not achievable.

Any efforts to deliver preconception services or 'integrate' preconception care into other health or education services must take into account these social determinants of health during programmatic design. This aligns with WHO's own definition of health, which recognizes the importance of well-being. The risks described are present irrespective of the terminology given to the service e.g. preconception care, and are not in themselves reasons not to intervene but highlight the need for careful programme design.

Universal Health Coverage framing

It was also argued that a broad package of preconception care in an extended pre-pregnancy period may not be necessary given the aims of **universal health coverage**, which aim to lift quality of life and optimize health outcomes for *all*. It was argued that simply doing primary care better would deliver a "bigger bang for our buck" than creating parallel programmes with similar health promotion content. Indeed, it was noted that many generic (non-vertical) health promotion programmes already address overlapping themes such as alcohol use, nutrition and mental health. The inherent challenge of 'targeting' over a potentially long preconception period was also noted, implying that integration of messaging into other 'essential' healthcare packages was important. This linked to a broader lack of evidence on any preconception health interventions at the population level: the benefits, including cost benefit of preconception programmes for population health are not yet proven.

It was also noted that **self-care** is an increasing area of policy and normative interest for WHO and other public health actors. As with many aspects of public health, to be successful, improving preconception health will

need to leverage substantive self-motivation and self-determination within the context of an enabling environment.

Others argued, however, that a more proactive approach to healthy pregnancy planning was needed, since opportunities are being missed. Participants also questioned whether the demands and time constraints of primary care and general practice would allow for preconception health promotion, especially if staff have not been specifically trained in it. And widening inequities in health outcomes, and generally poor trends in health outcomes despite major resourcing and investment (e.g. increases in maternal mortality), also point to failures in the general primary care system. Specific interventions that are designed to address the structural determinants of health and to break inter-generational inequities are therefore needed now more than ever.

Child health and rights

Much of the discussion focused on the implications of preconception care for women's health and rights. The origins of DOHaD and preconception care, however, were more centred around child health and the achievement of improved peri- and neo-natal and child health outcomes. Some participants felt that child health outcomes were being side-lined and forgotten in broader life-course and integrated care frameworks.

Discussion and reflections

The meeting generated rich discussions on the current evidence base for and conceptual framing of preconception health. Participants took stock of the ever-growing body of scientific evidence demonstrating the impact of preconception exposures and behaviours on genetics, fetal development, pregnancy and child lifelong health outcomes – including influences from both the mother and father. This strong evidence base compels WHO to support its member states to develop programming in this area. Preconception health also aligns closely with the conceptual shift articulated within the United Nations Sustainable Development Goals (SDGs) to a 'survive and thrive' paradigm, addressing wellbeing as well as illness.

A life-course view of preconception health was appreciated by all participants: the effects of early exposures and behaviours demonstrated the need for specific efforts from adolescence onwards to impact the inter-generational transfer of ill-health in later pregnancies. A life-course view also enables the building of capacities for improved health later in life as well as for the next generation. All participants recognised the scope and potential of interventions delivered before pregnancy to make important inroads in addressing cycles of health inequality.

But while there is a clear rationale for action to ensure individuals, families and communities are aware of the effects of preconception health on their own futures and those of their potential families, *how*

preconception health is addressed generated more debate. Firstly, there is still a paucity of evidence on the effectiveness of interventions in this area. Examples of national programmatic efforts are limited and have yet to demonstrate impact. Several document challenges with roll-out. It is hoped that the ongoing HeLTI RCTs will provide valuable evidence related to intervention in pre-pregnancy or inter-pregnancy phases. But HeLTI is a carefully designed research study and such efforts tend to show positive results until they reach the point of scaling-up.[37,38] Demonstrating the impact of more distal interventions in an extended pre-pregnancy period will be harder. Furthermore, challenges in health education, health promotion and social and behaviour change interventions across many other health programmes, including nutrition, maternal health, HIV and SRH, suggest that demonstrating impact may be highly dependent on context and the scale and quality of implementation.

Secondly, the meeting highlighted how the language and framing of preconception care raises concerns among programmes and advocates working to promote progressive gender norms and reproductive rights. While there has been limited resistance to the concept of preconception care in public discourse (aside from some media attention and rebuttal by policy groups and advocates in the USA)[12], warnings of potential entrenchment of stereotyped gender norms, criminalization of women's behaviours, threats to women's bodily autonomy and political misappropriation were discussed and recognized. Terminology has also generated debate within WHO itself, and previous recommendations against the use of 'preconception care' by HRP's Advisory Group on Gender and Rights are noteworthy. All participants agreed on the need to avoid unintended consequences or harms within programmes seeking to improve health and well-being.

But many participants at this meeting wanted to ensure that the education and counselling on preconception health does not get lost within a broader health promotion or SRHR framework: there was general consensus on the moral and ethical imperative of public health practitioners to communicate known scientific evidence on preconception health to the communities – young people and adults of reproductive age – with whom they work.

A useful proposition at this meeting was a framework that promotes *both* the integration of preconception health into a range of entry points (across different sectors including health and education), coupled with a specific pre-pregnancy package that aims to deliver targeted content to those actively planning a family. While WHO's 2013 policy brief on preconception health did articulate a life-course view, this dual approach was not explicit. Furthermore, the policy brief suggested that preconception care *encompasses* programmes such as SRH, STIs/HIV, nutrition or mental health, rather than proposing or advising on an explicit integration approach in which preconception health is addressed *by* these other programmes.

While there was not a consensus at this meeting on the language used to describe such a double-pronged approach, useful suggestions were made. Terminology needs to be discussed further internally within WHO and through public consultation, but it seems likely that formulating 'preconception care' as part of a continuum of life-course care, rather than a singular and time-limited 'package' approach, may help promote understanding and acceptability. It also

aligns with the science of DOHaD, which demonstrates the long-term impacts of behaviours and exposures throughout the life-course, and additionally optimizes existing service provision. It could also enable the elaboration of detailed guidance on integration – i.e. what information and services can be integrated where, when, with whom, and in what contexts – as well as detailing a specific 'pregnancy planning package'. This approach may also ensure that preconception health messaging isn't siloed and critically, never neglected, but instead delivered in tandem with other critical SRH and broader health counselling. This will enable its full integration within universal health coverage and primary health care.

Bibliography

1. World Health Organization. Preconception Care: *Maximizing the Gains for Maternal and Child Health - Policy Brief.* World Health Organization; 2013. Accessed May 22, 2024. https://www.who.int/publications/i/item/WHO-FWC-MCA-13.02

2. Fleming TP, Watkins AJ, Velazquez MA, et al. Origins of lifetime health around the time of conception: causes and consequences. *Lancet.* 2018;391(10132):1842-1852. doi:10.1016/S0140-6736(18)30312-X

3. Poston L, Godfrey K, Gluckman P, Hanson M. *Developmental Origins of Health and Disease, 2nd Edition.* Cambridge University Press; 2022.

4. Cleland J, Conde-Agudelo A, Peterson H, Ross J, Tsui A. Contraception and health. *The Lancet.* 2012;380(9837):149-156. doi:10.1016/S0140-6736(12)60609-6

5. Yount KM, Zureick-Brown S, Halim N, LaVilla K. *Fertility Decline, Women's Well-Being, and Gender Gaps in Well-Being in Poor Countries.*; 2012. https://www.icrw.org/wp-content/uploads/2016/10/ICRW-WPS_Yount_-May-2012.pdf

6. Stephenson J, Vogel C, Hall J, et al. Preconception health in England: a proposal for annual reporting with core metrics. *Lancet.* 2019;393(10187):2262-2271. doi:10.1016/S0140-6736(19)30954-7

7. Dorney E, Boyle JA, Walker R, et al. A Systematic Review of Clinical Guidelines for Preconception Care. *Semin Reprod Med.* 2022;40(3-04):157-169. doi:10.1055/s-0042-1748190

8. Cassinelli EH, McKinley MC, Kent L, et al. Preconception health and care policies, strategies and guidelines in the UK and Ireland: a scoping review protocol. *BMJ Open.* 2023;13(5):e067822. doi:10.1136/bmjopen-2022-067822

9. Mazza D, Chapman A, Michie S. Barriers to the implementation of preconception care guidelines as perceived by general practitioners: a qualitative study. *BMC Health Services Research.* 2013;13(1):36. doi:10.1186/1472-6963-13-36

10. M'hamdi HI, van Voorst SF, Pinxten W, Hilhorst MT, Steegers EAP. Barriers in the Uptake and Delivery of Preconception Care: Exploring the Views of Care Providers. *Matern Child Health J.* 2017;21(1):21-28. doi:10.1007/s10995-016-2089-7

11. Waggoner M. Motherhood Preconceived: The Emergence of the Preconception Health and Health Care Initiative. *Journal of Health Politics, Policy and Law.* 2013;38(2):345-371. Accessed May 22, 2024. https://read.dukeupress.edu/jhppl/article-abstract/38/2/345/13539/Motherhood-Preconceived-The-Emergence-of-the?redirectedFrom=fulltext

12. Dehlendorf C, Akers AY, Borrero S, et al. Evolving the Preconception Health Framework: A Call for Reproductive and Sexual Health Equity. *Obstetrics & Gynecology.* 2021;137(2):234. doi:10.1097/AOG.0000000000004255

13. Withanage NN, Botfield JR, Srinivasan S, Black KI, Mazza D. Effectiveness of preconception interventions in primary care: a systematic review. *Br J Gen Pract.* 2022;72(725):e865-e872. doi:10.3399/BJGP.2022.0040

14. Viswanathan M, Urrutia RP, Hudson KN, Middleton JC, Kahwati LC. Folic Acid Supplementation to Prevent Neural Tube Defects: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. *JAMA.* 2023;330(5):460-466. doi:10.1001/jama.2023.9864

15. Hargreaves D, Mates E, Menon P, et al. Strategies and interventions for healthy adolescent growth, nutrition, and development. *The Lancet.* 2022;399(10320):198-210. doi:10.1016/S0140-6736(21)01593-2

16. Woods-Townsend K, Hardy-Johnson P, Bagust L, et al. A cluster-randomised controlled trial of the LifeLab education intervention to improve health literacy in adolescents. *PLoS One*. 2021;16(5):e0250545. doi:10.1371/journal.pone.0250545

17. Stephenson J, Heslehurst N, Hall J, et al. Before the beginning: nutrition and lifestyle in the preconception period and its importance for future health. *The Lancet.* 2018;391(10132):1830-1841. doi:10.1016/S0140-6736(18)30311-8

18. Sully E, Biddlecom A, Darroch J, et al. *Adding It Up: Investing in Sexual and Reproductive Health 2019.* Guttmacher Institute; 2020. Accessed June 29, 2023. https://www.guttmacher.org/report/adding-it-up-investing-in-sexual-reproductive-health-2019

19. Kumaran K, Birken C, Baillargeon JP, et al. An intergenerational life-course approach to address early childhood obesity and adiposity: the Healthy Life Trajectories Initiative (HeLTI). *Lancet Glob Health.* 2023;11 Suppl 1:S15. doi:10.1016/S2214-109X(23)00098-0

20. Schoenaker DAJM, Stephenson J, Connolly A, et al. Characterising and monitoring preconception health in England: a review of national population-level indicators and core data sources. *J Dev Orig Health Dis.* 2022;13(2):137-150. doi:10.1017/S2040174421000258

21. Robbins CL, D'Angelo D, Zapata L, et al. Preconception Health Indicators for Public Health Surveillance. *J Womens Health (Larchmt).* 2018;27(4):430-443. doi:10.1089/jwh.2017.6531

22. Vaz C, Kermack A, Burton M, et al. Short-term diet intervention comprising of olive oil, vitamin D and omega-3 fatty acids alters the small non-coding RNA (sncRNA) landscape of human sperm. *Scientific Reports (in press).*

23. Poix S, Elmusharaf K. Investigating the pathways from preconception care to preventing maternal, perinatal and child mortality: A scoping review and causal loop diagram. *Prev Med Rep.* 2023;34:102274. doi:10.1016/j.pmedr.2023.102274

24. Godfrey KM, Titcombe P, El-Heis S, et al. Maternal B-vitamin and vitamin D status before, during, and after pregnancy and the influence of supplementation preconception and during pregnancy: Prespecified secondary analysis of the NiPPeR double-blind randomized controlled trial. *PLoS Med.* 2023;20(12):e1004260. doi:10.1371/journal.pmed.1004260

25. Sattar N, Greer IA. Pregnancy complications and maternal cardiovascular risk: opportunities for intervention and screening? *BMJ.* 2002;325(7356):157-160. Accessed July 4, 2024. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1123678/

26. Mazza D, Chapman A. Improving the uptake of preconception care and periconceptional folate supplementation: what do women think? *BMC Public Health.* 2010;10(1):786. doi:10.1186/1471-2458-10-786

27. Faculty of Sexual and Reproductive Health. *The FSRH Hatfield Vision.* FSRH; :2024. https://www.fsrh.org/news-and-advocacy/the-fsrh-hatfield-vision/

28. Schoenaker DAJM, Stephenson J, Smith H, et al. Women's preconception health in England: a report card based on cross-sectional analysis of national maternity services data from 2018/2019. *BJOG.* 2023;130(10):1187-1195. doi:10.1111/1471-0528.17436

29. Broussard DL, Sappenfield WB, Fussman C, Kroelinger CD, Grigorescu V. Core state preconception health indicators: a voluntary, multi-state selection process. *Matern Child Health J.* 2011;15(2):158-168. doi:10.1007/s10995-010-0575-x

30. Floyd RL, Johnson KA, Owens JR, Verbiest S, Moore CA, Boyle C. A National Action Plan for Promoting Preconception Health and Health Care in the United States (2012–2014). *J Womens Health (Larchmt).* 2013;22(10):797-802. doi:10.1089/jwh.2013.4505

31. Frayne DJ, Verbiest S, Chelmow D, et al. Health Care System Measures to Advance Preconception Wellness: Consensus Recommendations of the Clinical Workgroup of the National Preconception Health and Health Care Initiative. *Obstet Gynecol.* 2016;127(5):863-872. doi:10.1097/AOG.0000000000001379

32. Surveillance and Research Workgroup and Clinical Workgroup of the National Preconception Health and Health Care Initiative. Surveillance Indicators for Women's Preconception Care. *J Womens Health (Larchmt).* 2020;29(7):910-918. doi:10.1089/jwh.2019.8146

33. Subasinghe AK, Black KI, Dorney E, Boyle JA. Assessing preconception health in Australia to support better outcomes in the first 2000 days - A critical need for building a core indicator framework. *Aust N Z J Obstet Gynaecol.* Published online April 20, 2024. doi:10.1111/ajo.13815

34. Hall JA, Barrett G, Copas A, Stephenson J. London Measure of Unplanned Pregnancy: guidance for its use as an outcome measure. *Patient Relat Outcome Meas.* 2017;8:43-56. doi:10.2147/PROM.S122420

35. Hall JA, Stewart C, Stoneman B, et al. Implementation of the London Measure of Unplanned Pregnancy in routine antenatal care: A mixed-methods evaluation in three London NHS Trusts. *Eur J Midwifery.* 2024;8(June):1-13. doi:10.18332/ejm/188118

36. Cheney K, Black K, Pelosi M, Dorney E. Introduction of the London Measure of Unplanned Pregnancy at the booking visit and the midwives' perspective. *BMJ Sex Reprod Health.* 2023;49(2):112-117. doi:10.1136/bmjsrh-2022-201576

37. Mills A. Vertical vs horizontal health programmes in Africa: idealism, pragmatism, resources and efficiency. *Soc Sci Med.* 1983;17(24):1971-1981. doi:10.1016/0277-9536(83)90137-5

38. Mounier-Jack S, Mayhew SH, Mays N. Integrated care: learning between high-income, and low- and middle-income country health systems. *Health Policy Plan.* 2017;32(suppl_4):iv6-iv12. doi:10.1093/heapol/czx039

Annex 1: Meeting Agenda

DAY 1: WEDNESDAY 8 MAY 2024

Time	Session	Speakers
09:00 – 09h30	**Welcome and Introductions**	Anshu Banerjee
09h30 – 09h45	**Changing landscapes, views in tension and time to listen** - WHO 2013 Policy brief on preconception care - Emerging issues - Meeting objectives and agenda	Allisyn Moran Doris Chou Anshu Banerjee
09h45 – 10h30	**Understandings and views about services to improve birth, postnatal and child health outcomes** - Community views on what matters most before pregnancy from low, middle- and high-income countries (7 countries) - Preconception health and care perspectives from general population surveys in South Africa, Kenya, Malaysia, and Canada Discussion	Danielle Schoenaker Kuthala Mabetha
10h30 – 11h00	**Tea/Coffee**	
11h00 – 11h45	**Science updates … from the past 10 years** - The influence of men's health on pregnancy, birth, and health outcomes - The influence of women's health on pregnancy, birth, maternal and child health outcomes Discussion	Steve Matthews Judith Stephenson
11h45 – 12h30	**Round table discussion: What makes health, care and services before conception different from women's and men's general health and behaviour?** Discussion	Moderator: Danielle Mazza Kumar Gavali Ngawai Moss Judith Stephenson
12h30 – 13h30	**Lunch**	
13h30 – 14h15	**Health, care and services – learning from current practices** - Netherlands - Sri Lanka - South Africa (Soweto) - Australia	Adja Waelput Nethanjalie Mapitigama Video Danielle Mazza
14h15 – 14h45	**Health Professional Association initiatives** - **FIGO: Preconception and Nutrition Checklists** - **ICM: Midwifery competencies for preconception care** Discussion	(online) Fionnuala McAuliffe Sally Pairman (TBC)
14h15 – 14h45	**Health Professional Association initiatives** - **FIGO: Preconception and Nutrition Checklists** - **ICM: Midwifery competencies for preconception care** Discussion	(online) Fionnuala McAuliffe Sally Pairman (TBC)
14h45 – 15h30	**Moderated plenary discussion:** When and how should services offer care before and between pregnancy: Identifying entry points Discussion	Chair and Shane Norris

10h30 – 11h00	**Tea/Coffee**	
16h00 – 17h00	**Reframing the language of "preconception" health and care: why the divergence between biomedical and sociological perspectives?** Moderated discussion with invited comments	Moderator: Michelle Pentecost Miranda Waggoner
17h00	**D1 Summary and wrap up**	

DAY 2: THURSDAY, 09 MAY 2024

09h00 – 09h10	**D1 Recap and today's agenda**	
09h10 – 09h30	**Setting the scene: research and indicators for improving before and between pregnancy** - Scoping review: DOHaD and other biomedical research: ongoing work - Indicators to track health and services before and between pregnancy	Stephen Lye Jenny Hall
09h30 – 10h30	**Break out groups (x4)** - Identifying evidence gaps and questions i. DOHaD / biomedical ii. Implementation research iii. Rights and equity - Indicators to track health and service delivery before and between pregnancy Discussion	
10h30 – 11h00	**Tea/Coffee**	
11h00 – 12h00	**Report back** - Evidence gaps and questions Discussion	
12h00 – 12h30	**Report back** - Indicators of health and service delivery before and between pregnancy Discussion	
12h30 – 13h30	**Lunch**	
13h30 – 15h30	**Reflections on WHO programmes and mapping what's needed:** - Guidance on interventions - Suggested entry points and models of care - Actions to reduce risk and inequities plus promoting rights and equality - Coordinating indicators and monitoring progress - Aligning terminology **Discussion**	
15h30	**Close and next steps**	Anshu Banerjee
16h00	**Tea/Coffee**	

Annex 2: FIGO Screening Checklist

FIGO Preconception Checklist for women desiring pregnancy

This checklist is designed for girls/women* to complete together with their healthcare professional to assess their health status before getting pregnant and provide a basis for their healthcare professional to give advice on the best possible way to prepare for conception.

Date of birth: ____________________ Blood type: ____________________

Has your mother/father/siblings had health problems such as hypertension, diabetes, thrombosis, genetic diseases or others? Yes ☐ No ☐ Don't know ☐

Nutrition

For assessment, use the FIGO Nutrition Checklist for pre-pregnancy/early pregnant women (https://survey.figo.org/c/kuxayx3e)

Weight: ☐ kg, Height: ☐ m^2, BMI: ☐ kg/m^2

If your BMI is higher than 30kg/m^2 or lower than 18.5 kg/m^2, refer to a dietician.

Supplementation

a) Start taking folic acid at least 3 months before conception:

- **0.4 mg per day** if you are at low risk of neural tube defects (NDTs).
- **4-5 mg per day** if you are at increased risk of NTDs (e.g. BMI higher than 30, NTD history in a previous child, epilepsy, anticonvulsant use, type 2 diabetes.

b) Start taking multiple micronutrients.

c) Your haemoglobin levels should be checked and anaemia corrected if necessary.

d) Your calcium and Vitamin D levels should be checked and any deficiency corrected if necessary.

Lifestyle variables

a) Do you smoke tobacco? Yes ☐ No ☐

If you have replied YES, you should stop smoking before trying to get pregnant.

If you smoke regularly, you may need to be assessed in more detail by an expert.

b) Do you consume alcoholic drinks? Yes ☐ No ☐

If you have replied YES, you should avoid drinking alcohol when trying to get pregnant. If you consume alcohol regularly, you may need to be assessed in more detail by an expert.

c) Do you use substances/illicit drugs? Yes ☐ No ☐

If you have replied YES, and your use is occasional you should stop. If you use regularly, you may need to be assessed in more detail by an expert.

d) Do you think you are exposed to any toxic environmental chemicals? Yes ☐ No ☐ Don't know ☐

If you have replied YES, you should be given specific advice on how to avoid/reduce exposure.

e) Do you practice regular physical activity? Yes ☐ No ☐

Please remember that moderate physical activity of at least 30 minutes a day, 5 days a week, for a minimum of 150 minutes of moderate exercise per week is usually recommended before and during pregnancy.

Vaccines

a) Measles-Mumps-Rubella	Yes ☐	No ☐	Don't know ☐
b) Hepatitis B	Yes ☐	No ☐	Don't know ☐
c) Human Papilloma Viruses	Yes ☐	No ☐	Don't know ☐
d) Meningococcal (ACWY and B)	Yes ☐	No ☐	Don't know ☐
e) Varicella	Yes ☐	No ☐	Don't know ☐
f) Tetanus, Diphtheria and Pertussis	Yes ☐	No ☐	Don't know ☐
g) Influenza	Yes ☐	No ☐	Don't know ☐

If you have replied NO, you should consider vaccination to prevent complications for yourself and your baby.

Interpregnancy intervals

a) How many previous pregnancies have you had? 1 2 3 4 or more ______

b) When? Dates ______

c) Did you have complications during any pregnancy and/or delivery? Yes ☐ No ☐

If you have replied YES, please specify in more detail ______

(Please remember that a time lapse of 12 to 24 months between once pregnancy and another is likely the more optimal interval to minimize complications for your baby and yourself).

Pre-existing medical conditions

a) Did/do you have high blood glucose levels/diabetes?	Yes ☐	No ☐	Don't know ☐
b) Did/do you have a congenital or acquired endocrine disorder?	Yes ☐	No ☐	Don't know ☐
c) Did/do you have high blood cholesterol levels?	Yes ☐	No ☐	Don't know ☐
d) Did/do you have high blood pressure?	Yes ☐	No ☐	Don't know ☐
e) Have you had a thromboembolic/thrombotic event?	Yes ☐	No ☐	Don't know ☐
f) Do you have congenital or acquired thrombophilia?	Yes ☐	No ☐	Don't know ☐
g) Do you have congenital or acquired heart disease?	Yes ☐	No ☐	Don't know ☐
h) Have you had a heart attack/stroke?	Yes ☐	No ☐	Don't know ☐
i) Did/do you have congenital or acquired lung disease?	Yes ☐	No ☐	Don't know ☐
j) Did/do you have congenital or acquired kidney disease?	Yes ☐	No ☐	Don't know ☐
k) Do you have recurrent urinary tract infections?	Yes ☐	No ☐	Don't know ☐
l) Did/do you have congenital or acquired liver and/or bowel disease?	Yes ☐	No ☐	Don't know ☐
m) Did/do you have congenital or acquired neurological disease?	Yes ☐	No ☐	Don't know ☐
n) Did/do you suffer from depression, or any other mental disorder?	Yes ☐	No ☐	Don't know ☐
o) Did/do you suffer from eating disorders (anorexia, bulimia)?	Yes ☐	No ☐	Don't know ☐
p) Did/do you have an autoimmune disease?	Yes ☐	No ☐	Don't know ☐
q) Did/do you have anaemia or any other blood disorder?	Yes ☐	No ☐	Don't know ☐
r) Did/do you have a sexually transmitted infection?	Yes ☐	No ☐	Don't know ☐
s) Did/do you have cancer?	Yes ☐	No ☐	Don't know ☐
t) Did/do you have any other known congenital or aquired disease?	Yes ☐	No ☐	Don't know ☐
u) Do you take specific medications regularly?	Yes ☐	No ☐	Don't know ☐

If you have replied YES to any of the above questions you may need to be assessed in more detail.

This document is based on *FIGO Preconception Checklist. Preconception care for mother and baby. *Int J Gynecol Obstet* 2024, 165:2. FIGO, Benedetto C, Borella F, Director H et al.

FIGO is the world's largest alliance of national societies of obstetrics and gynaecology dedicated to the health and well-being of women, girls and newborns.

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