

Preconception Health and Primary Prevention – a challenge for all

Dr Karen New, PhD, RN, RM
Council of International Neonatal Nurses
Executive Support Officer, Australian College of Neonatal Nurses
Senior Research Fellow, The University of Queensland

Preconception Care

- The idea of Preconception Care (PCC) has been around since the 1960s
- Started to receive more attention in 2005 in the US – convened a summit to address stalled infant mortality rate and persistent disparities in adverse pregnancy outcomes
- In 2013 - Meeting to develop a global consensus on preconception care to reduce maternal and childhood mortality and morbidity. Geneva, World Health Organization

The “Draft action plan for the prevention and control of noncommunicable diseases 2013–2020” which were discussed at the 66th World Health Assembly in May 2013, calls governments to reduce modifiable risk factors for noncommunicable diseases and underlying social determinants. Preconception care, as part of the national policy framework, is recognized as an important contributor to noncommunicable disease prevention and control (6).

POLICY BRIEF

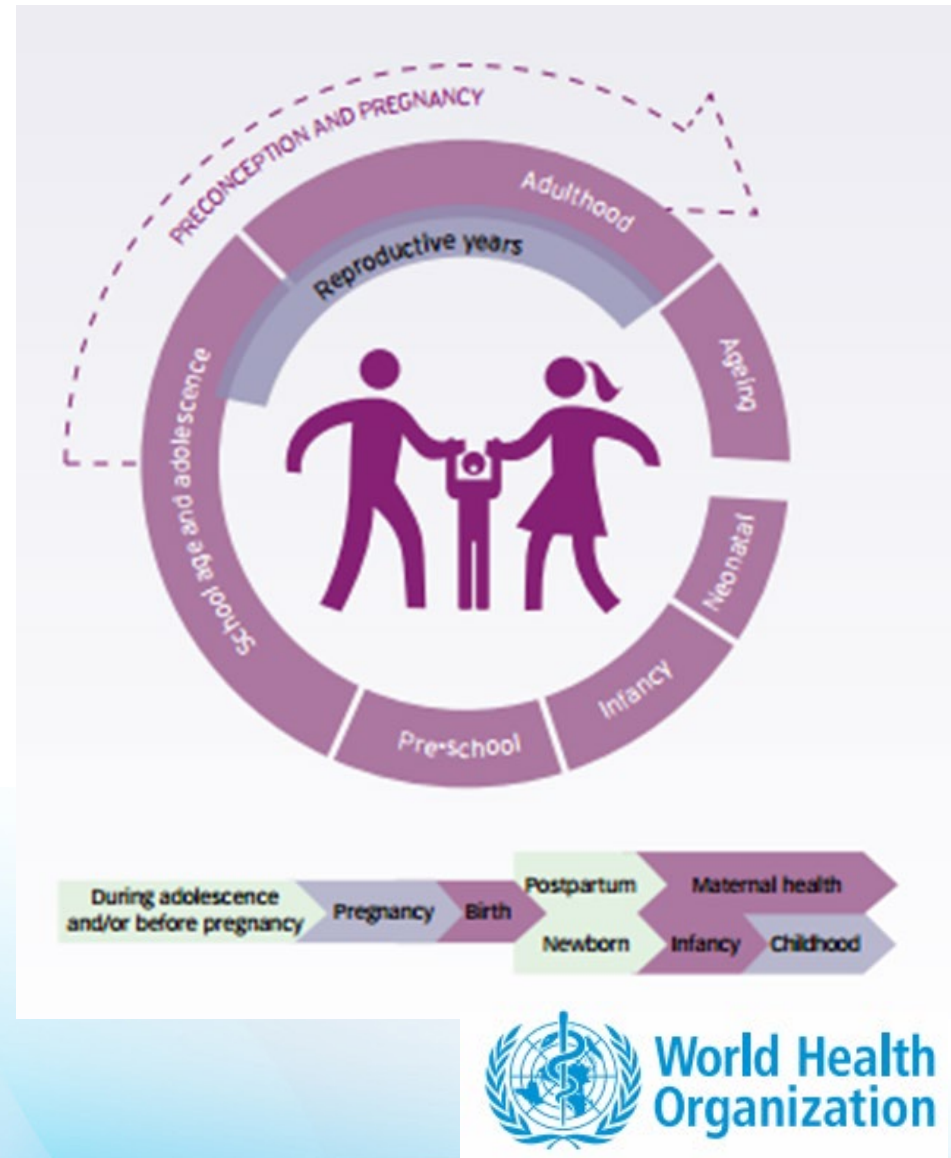
Preconception care: Maximizing the gains for maternal and child health



A new WHO report shows that preconception care has a positive impact on maternal and child health outcomes (1). Addressed primarily at health professionals responsible for developing national and local health policies, the report provides a foundation for

Preconception Care...

- Aims at improving health status, and reducing behaviours and individual and environmental factors that contribute to poor maternal and child health outcomes.
- Its ultimate aim is to improve maternal and child health, in both the short and long term.
- Also brings health benefits to the adolescent, women and men, irrespective of their plans to become parents.
- Opportunities to prevent and control diseases occur at multiple stages of life; strong public health programmes that use a life-course perspective from infancy through childhood and adolescence to adulthood are needed.



Why it is important – ‘Origins of Disease’

The “Barker Hypothesis”

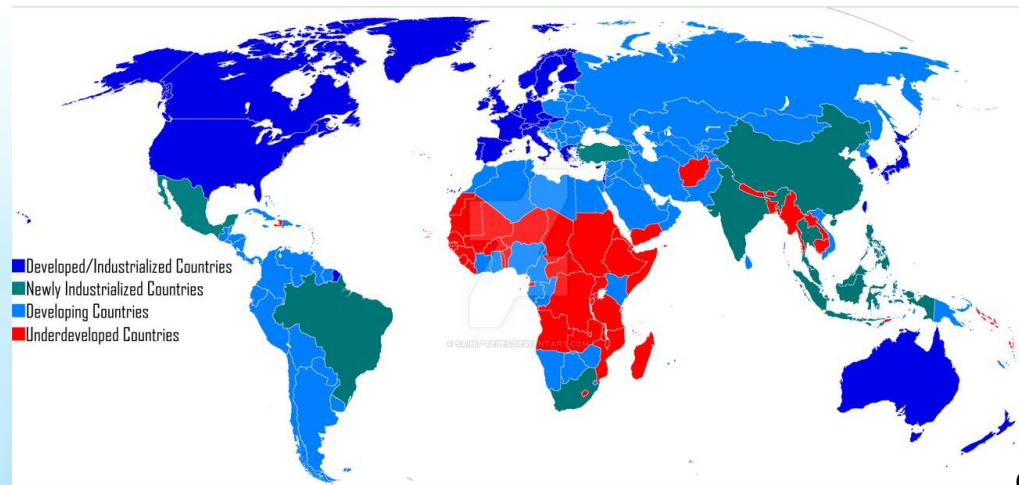
- Adult onset diseases are influenced by fetal epigenetic alteration(s) in gene function
- 20 years ago he demonstrated that the lower the birth weight of a baby, the higher the risk of developing heart disease in later life (not associated with prematurity)
- Subsequently demonstrated an increased risk of hypertension, stroke and type 2 diabetes into adulthood
- The ‘Barker hypothesis’ of the fetal origins of disease has been widely accepted

Why it is important – ‘Origins of Disease’

- That a **woman's body composition and diet at the time of conception** is the basis for the subsequent health of her **offspring**
 - Excess weight gain contributes to future obesity, risk for cardiovascular disease and diabetes
 - Malnourished – Low Birth Weight infant - poor growth trajectory during childhood
 - Influence the infant's brain development, composition & size of the body, the metabolic competence
- Fetal over-nutrition – adverse health outcomes in childhood and adolescence and intergenerational cycles of obesity, hypertension, metabolic syndrome

Why it is important – ‘Origins of Disease’

- These issues are relevant for all Countries
 - Developed countries: many babies remain poorly nourished because their mothers eat diets that are unbalanced in macronutrients and deficient in micronutrients, or because their mothers are excessively thin, overweight or obese
 - Developing countries: many girls and young women are chronically malnourished
 - Global rise in maternal obesity
 - Gestational diabetes
 - Pre-eclampsia
 - Obstetric interventions
 - Congenital anomalies



The Challenges

- Diet and lifestyle advice and modification has long been a foundation of antenatal care
- However:
 - women present for care during pregnancy typically after 8 weeks gestation when all fetal organs and systems are already in place
 - thus the antenatal period is too late to intervene in order to prevent the onset of chronic disease in the next generation
- The difficulty in research and health service delivery in the field of preconception health is determining the type of pre-pregnancy services to provide and how these can be effectively targeted to adolescent girls and boys, women and men, whether they are planning a pregnancy or not

The Challenges

Parents' roles start before most plan

19 AUGUST 2014

Australian researchers say people should be more aware of epigenetics, and the various ways that a parent's experiences can filter down to their child.

There is overwhelming evidence that a child's future health is influenced by more than just genetic material.

For instance, children born of unhealthy parents will already be pre-programmed for greater risk of poor health, according to University of Adelaide researchers.

In a new paper called "**Parenting from before conception**", experts say environmental factors prior to conception have more influence on the child's future than previously thought.

"It's only been in the last 10 years that the science community has been seriously discussing these issues, and only in the last five years that we've begun to understand the mechanisms of how this is happening," says Professor Sarah Robertson, Director of the University's Robinson Research Institute.

The paper says parental influences on a child begin before conception, because stored environmental factors in the egg and sperm contribute more than just genetic material to the child.

"Many things we do in the lead up to conceiving is having an impact on the future development of the child - from the age of the parents, to poor diet, obesity, smoking and many other factors, all of which influence environmental signals transmitted into the embryo," Professor Robertson says.



The Challenges

- Only approximately 50% of pregnancies are planned or intended
- 50% of the DNA is from the male – yet most preconception information is directed at women only
- Studies show that most women and men acknowledge that preconception care is important but
 - ‘It is for others’
 - For those having difficulties in conceiving
 - ‘Conceiving should be natural’



The screenshot displays the City Fertility Centre website. The header includes the logo and tagline "your partners in life", along with social media icons for Facebook, Twitter, Pinterest, and Google+. A navigation bar lists: HOME, INFORMATION, FERTILITY SERVICES, IVF SUCCESS, COSTS, and SPECIALIST TEAM. The main content area is titled "Preconception Care" with a green background image. Below this, a breadcrumb trail reads "City Fertility / Information / Pregnancy Planning / Preconception Care". The section "Preparing for Pregnancy" contains text about the importance of a healthy lifestyle and diet for reproductive health. To the right of the text is a photograph of a woman in a white lab coat, likely a healthcare professional, preparing food on a plate.

CITY FERTILITY CENTRE
your partners in life

HOME INFORMATION FERTILITY SERVICES IVF SUCCESS COSTS SPECIALIST TEAM

Preconception Care

City Fertility / Information / Pregnancy Planning / Preconception Care

Preparing for Pregnancy

A healthy lifestyle is recommended before and during pregnancy. You may be surprised to learn that your diet, lifestyle and environment all have a profound bearing on your individual reproductive health and on the health of a baby. Put simply, preconception care involves making sure there is an adequate supply of all factors essential to the quality of sperm, eggs and fertilisation, and a trouble-free pregnancy and delivery of a healthy baby.

Given the formation of mature sperm takes about two months and maturation of eggs about 100 days before ovulation, your reproductive health today is actually the product of your health, diet, lifestyle and environment two to three months earlier.



Guidelines for prevent general practice 9th edition



2. Summary of recommendation

Pre-pregnar

The American College of Obstetricians and Gynecologists recommend that all health encounters during a woman's reproductive years, particularly those that are a part of preconception care, should include counseling on appropriate health behaviors to optimize pregnancy outcomes and prevent maternal mortality.

CHECKLIST OF PRECONCEPTION CARE TOPICS:

Education:

- Smoking, alcohol abuse and other drug use
- Folic acid supplementation, 400 mcg daily as a standard of care

Counseling:

- Sexually transmitted infections including HIV
- Family planning and pregnancy spacing
- Healthy body weight and diet
- Importance of oral health
- Increased risk of hepatitis C in those with tattoos and/or body piercings
- Lead and other environmental and/or occupational exposures
- Genetic disorders (including cystic fibrosis and sickle cell genotypes)

Assessment:

- Physical assessment including physical examination and medical and family history
- Carrier screening (racial/ethnic background/family history)
- Immunization record including rubella, hepatitis B, and varicella
- Complications with past pregnancies (postpartum hemorrhage, thrombotic event, preeclampsia/eclampsia, PIH, gestational diabetes, Rh incompatibility, etc.)
- Identification and assistance for victims of domestic violence
- Psychosocial screening for parent readiness

Recommendation 1

Medical history

An assessment of any medical problems and a discussion of how they may be affected by, a pregnancy should be undertaken.

Stabilisation of pre-existing medical conditions and assessment of maternal status prior to a pregnancy is necessary to optimise pregnancy outcomes.

Recommendation 2

Reproductive carrier screening

If there is a **high risk** of a chromosomal or genetic disorder based on family history or ethnic background then pre-pregnancy genetic counselling should be offered to determine the couple's risk of an affected child and to provide information about options for carrier screening, preimplantation genetic testing, prenatal diagnosis and postnatal management.

Recommendation 3

Vaccinations

Vaccination history for measles, mumps, rubella, varicella zoster, diphtheria and pertussis should be checked and maintained as per recommendations published by the relevant Australian and New Zealand Governments. Hepatitis B, rubella and varicella immunisation should be considered for women with incomplete immunity.

Recommendation 4

Lifestyle recommendations

Healthy weight

Active steps to correct high BMI (dietary, exercise and where appropriate, consideration of bariatric surgery) prior to a pregnancy should be undertaken.

Supplementation

Folic acid should be taken for a minimum of one month before conception and the first 3 months of pregnancy. The recommended dose is at least 5mg daily. Where there is an increased risk of NTD (anti-convulsant medication, pregnancy diabetes mellitus, previous child or family history of NTD) a 5mg daily dose should be used.

Substance use

Counselling and pharmacotherapy should be considered for either alcohol or drug use when relevant. Advice to women that there is no known safe level of alcohol consumption during pregnancy is appropriate.

1. Preventi

Age	< 2	2-3

Every woman of reproductive age should have interventions that aim to optimise pregnancy outcomes. These include reproductive planning, cessation (A)² and a woman could become pregnant (B),³ oral health,⁹ and

There is evidence to suggest that interventions in pre-pregnancy care, such as diabetes, phenylketonuria, and folic acid supplementation¹² and

What does pre-pregnancy care involve?

Medical issues

Reproductive life plan



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Glamour Magazine • 6.7M views • 6 months ago

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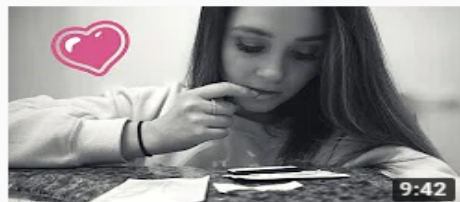


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My Extraordinary **Pregnancy** explores what it's like to be **pregnant** in extreme situations. Last season's astonishing women included

Key Challenges to Universal Preconception Health Delivery

Challenge	Areas for Action	Rationales
Whom to target	<ul style="list-style-type: none"> X Women only ✓ Men and Women (Partners) ✓ Late Adolescence 	<ul style="list-style-type: none"> • Only approx 50% of pregnancies of planned or intended. • In relationships, the health and lifestyle practices of one partner tend to mimic the other. <p>Studies show that most women and men acknowledge that preconception care is important but</p> <ul style="list-style-type: none"> • 'It is for others' • For those having difficulties in conceiving • 'Conceiving should be natural'
How to deliver	<ul style="list-style-type: none"> • Social marketing & health promotion for consumers • Public Health and Community Action • Opportunistic and routine • Clinical practice • Public policy and finance 	<p>Increase public awareness of the importance of preconception health behaviors and increase individuals' use of preconception care services using information and tools appropriate across varying age, literacy, health literacy, and cultural/linguistic contexts.</p>
What interventions to deliver	<ul style="list-style-type: none"> • Data and research • Preconception AND Interconception Healthcare? 	<p>Maximize public health surveillance and related research mechanisms to monitor preconception health.</p>



Rebecca Manehanitai, MPhil Candidate

Research/Thesis: Developing, Implementing and Evaluating
Community Focused PCC Interventions in the Solomon Islands

Preconception Care: advancing from 'important to do and can be done' to 'is being done and is making a difference' Mason et.al., 2014

Meitaki

