



Public Health
England

Protecting and improving the nation's health

Making the Case for Preconception Care

Planning and preparation for
pregnancy to improve maternal and
child health outcomes

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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Foreword – Professor Viv Bennett



Giving every child the best start in life is a key priority for Public Health England.

It is a key priority because a healthy, happy and well-supported start in life will help to ensure that children go on to be healthy, happy adults. For those who go on to raise children of their own, the health improvement we achieve here and now with this generation will be passed on to the next.

Better outcomes for parents and babies start long before birth. In fact, if we want to achieve universal health improvement for babies and children, and narrow the health gap for those who are most vulnerable, we need to embed care and support for healthy conception and pregnancy through care pathways for everyone of reproductive age.

Preconception care needs to be part of day-to-day business for many key services, and support for healthy behaviour change important for all. We also need to make sure that those who need extra help are getting it.

This resource sets out new thinking on preconception care, to support commissioners and providers in aligning work in their local area towards a focus on preconception. It aims to help local areas embed preconception care into existing services, and raise awareness of preconception care across the health system. My thanks to the author and the team, you should be rightfully proud of your work. On behalf of PHE I am pleased to present this work to support local areas to achieve best possible outcomes

Professor Viv Bennett CBE

Chief Nurse and Director Maternity and Early Years, Public Health England.

Foreword – Dr Matthew Jolly

There is an increasing recognition that women's pre-conceptual health sets the foundation for a successful pregnancy and the subsequent lifelong health of the baby.

The National Institute for Health Research's Better Beginnings document published last year brought together research about the factors that can be modified before, during and after pregnancy to improve outcomes.



The challenge is how to transform the research evidence into guidance and practice that can help deliver better health for women and their children.

These documents summarise how to support women and their partners plan when to have a baby and optimise their health before and during pregnancy. Local Maternity Systems have a critical role in leading a collaborative approach between primary care, maternity services, public health and local authorities in the provision of preconception care not only for first pregnancies but also for subsequent pregnancies.

The need for a system wide approach to maternity care is a fundamental principle of the Maternity Transformation Programme which aims to implement the vision for maternity services outlined in Better Births.

Dr Matthew Jolly

National Clinical Director for Maternity and Women's Health, NHS England.

Executive summary

Preconception health relates to the health behaviours, risk factors and wider determinants for women and men of reproductive age which impact on maternal, infant and child outcomes.

Maternal weight, smoking, alcohol/substance misuse, folic acid intake, immunisations, long-term physical and mental health conditions, previous pregnancy complications, maternal age, consanguineous relationships and domestic violence all influence these outcomes.

At a population level, preconception care primarily aims to improve maternal and child outcomes through **improving planning and fitness for pregnancy**, but it also brings health benefits to children, young people and adults, both female and male, irrespective of their plans to become parents.

Preconception care is not a new service: It is a way of supporting health improvement for individuals across their reproductive life-course, aligning local services to provide universal support for everyone, as well as targeted support where it is most needed.

It is also about ensuring that services can take a forward view to **promote healthy behaviours** and support early interventions to **manage emerging risks** across the life-course, **prior to first pregnancy**, and then looking ahead to the **next baby and beyond**.

Preconception care is **person-centred and holistic**, requiring coordinated, collaborative commissioning, within local maternity systems, across primary care and more broadly within sustainability and transformation programmes (or integrated care systems, where these are in place).

About this document

Purpose

This document comprises 2 parts, bringing together information on the impact of preconception health as well as ways to improve birth outcomes, address inequalities and radically upgrade prevention through embedding preconception care. It highlights the benefits, including the return on investment, of considering conception across women's reproductive life as they access a range of health services and professionals, and the opportunities for intervention aimed at health improvement within these services. Links to specific evidence, guidance and best practice advice are provided in the text.

Audience

These documents are primarily aimed at informing commissioners and providers in Local Maternity Systems (LMS) of the impact and relevance of preconception care to improving birth outcomes for both women and their children. Preconception care supports the goals of the Maternity Transformation Programme to achieve safer births and create environments offering more choice to women.

LMS have a direct role in the delivery of universal preconception care to women in the inter-pregnancy period, which includes maternity services. LMS' are also well positioned to drive actions needed by wider services in local systems to support people upstream of maternity, prior to a first pregnancy. These documents are also useful for wider services for women of reproductive age to recognise their role in promoting health before pregnancy. Together, these documents provide key evidence to make the case for preconception care and present the pathways to embed and deliver it.

Part 1: Why preconception health matters

What is 'Preconception health?'

Many of the health behaviours and risk factors for poor birth outcomes are established prior to pregnancy, often with limited potential to impact on these after conception (the start of pregnancy)¹⁻⁴. For example, currently 13.7% of adult women smoke⁵ and whilst few, if any, take up smoking as a new behaviour while pregnant, in the UK 11% of women are still smoking through to the birth of their baby⁵.

Avoidable harms and deaths for both mothers and infants still occur. Recent data shows that maternal mortality rates in England remain static and for the first time since 2006, neonatal and infant mortality rates increased in 2015^{6,7}.

By contrast, women who are healthier at conception have a better of chance of becoming pregnant, having a safe and healthy pregnancy and giving birth to a healthy baby³. Opportunities to promote preconception health and reduce risk occur across the early and reproductive years of the life-course¹⁻⁴.

Preconception health
Describes "the health of women and men during their reproductive years, which are the years when they can have a child"⁷

Good preconception health encompasses two main concepts⁸

 **1. Planning pregnancy**
Enabling women and their partners to choose if and when to start or grow their families

 **2. Fit for pregnancy**
Recognising that many pre-pregnancy health behaviours and risk factors are amenable to change

Addressing preconception health in this way could lead to significant improvements in maternal and infant outcomes.



Impacts of poor preconception health

Poor preconception health limits women's choices and impacts on the safety of pregnancy and childbirth for both mothers and babies, with potentially long-term consequences on child health.

Planning pregnancy

45% of pregnancies and a third of births are unplanned or associated with feelings of ambivalence.⁹

Teenage pregnancy

12% of births to women aged under 20 are to young women who are already mothers¹⁰. In 2016 babies born to mothers under 20 years had a 24% higher rate of stillbirth and a 56% higher rate of infant mortality.⁷

Adverse childhood experiences (ACE's)

Experiencing 4 or more ACEs is associated with a 16 times higher risk of being pregnant (or getting someone accidentally pregnant) under the age of 18.¹¹

Smoking in pregnancy

causes up to 2,200 premature births, 5,000 miscarriages and 300 perinatal deaths per year.¹²

Maternal weight

Overweight and obese women have a higher risk of poor birth outcomes and of their children being overweight or obese¹³⁻¹⁴. Prevalence of overweight and obesity in adults is predicted to reach 70% by 2034.¹⁵

Folic acid

In 2011/12, only 31% of women took folic acid before pregnancy (intake of which reduces risk of neural tube defects).¹⁶

Mental health

20% of women experience mental health issues in pregnancy and the first year after birth¹⁷ and up to 10% of fathers suffer from postnatal depression¹⁸. Suicide is one of the commonest causes of maternal mortality.⁶

Long-term conditions

Two-thirds of maternal deaths occurred in those with pre-existing physical or mental health problems.⁶

Drugs and alcohol

One in 12 women under 20 accessing drug and alcohol services are either pregnant or a teenage mother.¹⁹

The preconception period

The period of time before a woman becomes pregnant is important from 2 perspectives.

The individual perspective

This is the time when women and their partners self-identify that they want to become pregnant³. This may or may not coincide with cessation of contraception use³. From this perspective, the preconception period relates to the *weeks to months* before pregnancy begins³. In part, this reflects the fact that over a third of women become pregnant within a month, and 80% within 6 months, of having regular sexual intercourse without contraception²⁰⁻²¹.

The population perspective

In contrast, the population perspective accounts for the *period that women are of childbearing age*³. This recognises the time required to embed healthy behaviours, address upstream determinants and reduce risk factors such as obesity³. A population approach across the life-course is also needed to include more vulnerable individuals, as those with greatest need may often be the least likely or able to proactively prepare for pregnancy.

From the population perspective of commissioners and providers looking to improve outcomes, a forward view involves taking action early and recognising that many preconception risk factors are also population level factors so that by addressing preconception health, this brings benefits to the health of women and men, irrespective of their intention to have a baby³.

For healthcare professionals, it is important to be aware of and acknowledge both perspectives.

Voices from women across England

What does 'preconception health' mean to me?

Women from diverse backgrounds across England have expressed their desire to be better informed about preconception health:

"I did plan to have a baby but I didn't take the vitamins [folic acid] until I knew I was pregnant... It's hard to know how long it will take to get pregnant".

"You read up on all the stuff about being healthy during a pregnancy, but nothing really before that. It never occurred to me, we just started trying and a few months later, it happened".

"I've been trying for 2 years so the idea that there are things I can do that have a big effect on getting pregnant would really interest me".

"Knowing if I'm able to get pregnant, am I fit to have a child - I'm 40, so there would be health risks - and is my child going to be OK will there be complications".

"If I'd known the impact of carrying all this extra weight when I was pregnant, like getting pre-eclampsia and having a really difficult birth then I might have tried to lose weight before. They didn't tell me. This time, the doctor said it would be good to lose weight but he didn't explain why".

"I think if you'd gone in for something like contraception or even a smear it's easier to start asking if you're thinking about a family in the future and what to do".

"Not everyone is the same, different types [of information] for different people/learning needs".

"Peer support – recruit mums with learning disability who have experienced pregnancy . They can support new mums and help to build trusting relationships with health professionals".

Focus groups (PHE/Tommy's): Newcastle, Northampton, Dagenham, Dewsbury.

Preconception Health

Health before pregnancy – Improving outcomes for mothers and babies



Healthy behaviours

Include: a healthy diet, folic acid supplements, regular physical activity, promoting emotional wellbeing, and ensuring cervical screening, sexual health checks and immunisations are up to date



Risk factors

Include: smoking, alcohol, substance misuse, obesity, long-term physical and mental health conditions, previous pregnancy complications, genetic risks, maternal age, adverse childhood experiences, domestic abuse, migrant health factors



Wider determinants

Include: relationships and support, education, housing, employment, financial stability, environment, community safety and cohesiveness

Planning pregnancy: Choosing if and when to start or grow a family

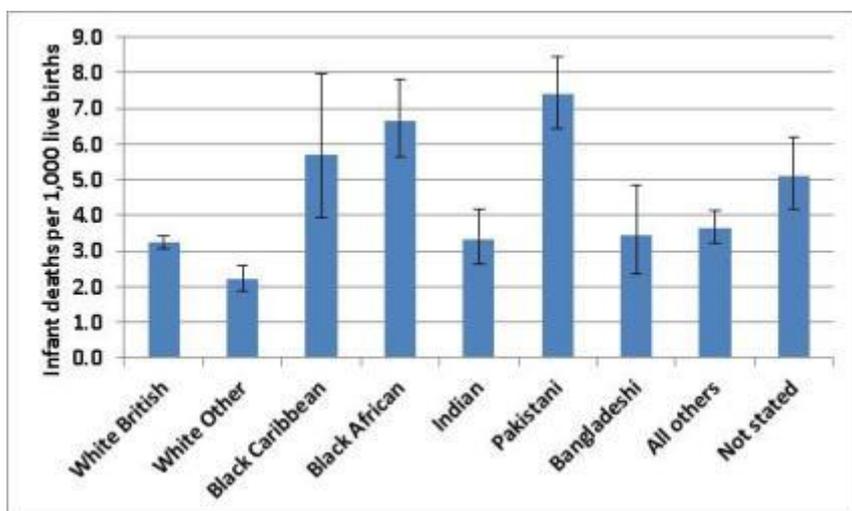
Currently 45% of pregnancies and 1/3 of births are unplanned or associated with feelings of ambivalence.⁹

Pregnancy can bring mixed feelings and responses whether it has been planned or not, and many 'unplanned' pregnancies may be mistimed, not unwanted. While many are welcomed, unplanned pregnancy can be associated with poorer outcomes for mother and child²². Unplanned pregnancies also represent a missed opportunity to optimise pre-pregnancy health.²³ Supporting people to develop healthy relationships and prevent unplanned pregnancy is key to enabling them to fulfil their aspirations and potential, and to their emotional wellbeing. For the child, planned pregnancies support every child to have the best start in life.

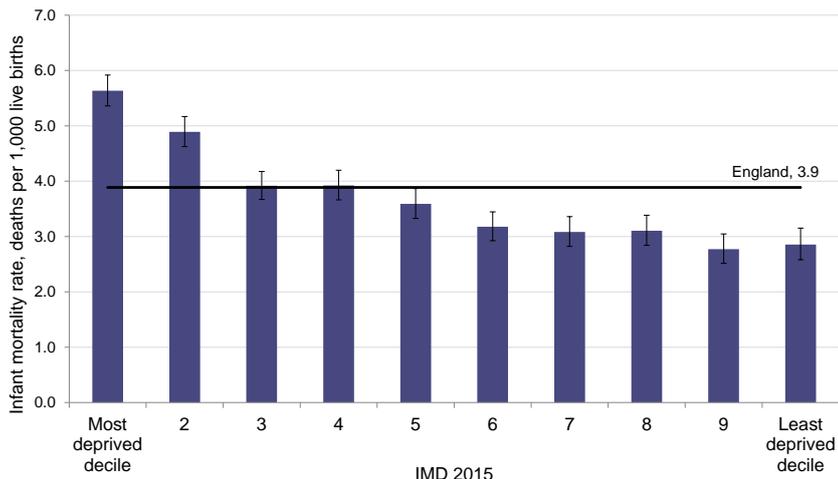
Teenagers are the group at highest risk of unplanned pregnancy but the greatest number occur in women aged 20 to 34⁹. Outcomes for young parents and their children are still disproportionately poor, contributing to inter-generational inequity with higher rates of infant mortality, still birth, low birthweight term babies, child developmental delay and poor maternal mental health²⁴. Experience of a previous pregnancy is a risk factor for young women becoming pregnant under the age of 18 with 12% of births to those under 20 being to young women who are already mothers¹⁰. Rates of abortion are highest among young women with the highest rate in the 20-24 age group at 27.0 per 1,000 female residents²⁵.

Inequalities in outcomes

Analyses of infant mortality highlight the relationship of inequalities and wider determinants to poor outcomes. These relationships are complex; for example some minority ethnic groups are at greater risk as they are more likely to experience deprivation²⁶.

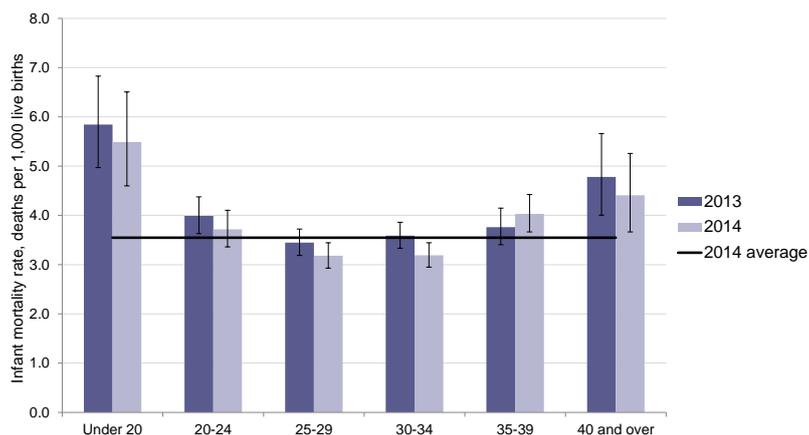


Infant mortality by ethnic group



Infant mortality by deprivation

Source: PHE Analysis of ONS Data.



Infant mortality by mother's age

Source: Pregnancy and ethnic factors influencing births and infant mortality, England, 2014, ONS.

Exposure to risks around conception and early pregnancy as well as the limitations around modifying some risks eg obesity during pregnancy, emphasise the need to take action prior to pregnancy in order to reduce inequality and improve outcomes.

Fit for pregnancy: Health behaviours and risk factors

Even amongst those who do plan their pregnancy, a relatively small proportion of women currently modify behaviours pre-pregnancy²⁷.

Healthy behaviours

These include: a healthy diet, regular physical activity and promoting emotional wellbeing, as well as ensuring immunisations, sexual health checks and smear tests are up to date^{1-3,28}. In addition women require folic acid supplements prior to conception to reduce the risk of neural tube defects^{1-3,28}. A universal, life-course approach, focussing on the early and reproductive years, is needed to support these behaviours to be adopted and embedded.

Risk factors

Early intervention to manage or reduce risk factors as they emerge could significantly improve maternal and child outcomes^{1,29}. Preconception risk factors include: smoking, alcohol, substance misuse, obesity, long term physical and mental health conditions, previous pregnancy complications, genetic risks, maternal age, adverse childhood experiences (ACEs), domestic violence and migrant health factors^{1-3,28}.

Multiple unhealthy behaviours and/or risk factors

However, it is important to recognise that each factor may not occur in isolation²⁹.

For example, obese pregnant women are more likely to experience symptoms of depression than women who are a healthy weight³⁰. Similarly women who misuse substances are more likely to smoke, drink alcohol during pregnancy, have poor nutrition, experience domestic violence and mental health problems³¹. Unhealthy behaviours are recognised to cluster in the population, with 7 in 10 people in England experiencing two or more unhealthy behaviours³².

Wider determinants: Factors underlying inequality

How do wider determinants affect preconception health?

There are clear relationships between health behaviours and risk factors that impact on preconception health, demographic and socioeconomic factors such as education, income, age, and ethnicity. The communities and places that we live in can strengthen - or protect against - some of these associations too, for example.

Housing and the environment: Currently 1 in 5 dwellings fail to meet decent living standards³³. Efforts are needed to ensure safe, comfortable, affordable housing which support women and their partners to be connected to communities and to be physically active.

Education and skills are key to accessing work, feeling empowered and having supportive social connections. Those with the lowest healthy life expectancy are 3 times more likely to have no qualifications compared to those with the highest life expectancy³³.

Financial security: With 1 in 5 people living in poverty, greater financial security would support reducing stress, adopting and maintaining healthy behaviours as well as providing sufficient resources to fulfil needs³³.

Work. Having supportive, fulfilling work could enable us to have sufficient resources as well as widening our social networks.

Family and relationships Positive relationships could reduce conflict, increase social capital and provide a supportive environment from which to enter pregnancy.

How do wider determinants impact on preconception care?

This uneven distribution of need highlights that access to and uptake of preconception care interventions may be uneven and those with the greatest need may have most difficulty accessing care. Also some people may require additional support compared to others eg those with migrant health issues.

Economic costs of poor preconception health

Contraception

Investing in contraception has long been recognised to be cost effective with an £11 return for every £1 invested commonly quoted.³⁴ PHE are updating the return on investment analysis for contraception.

Teenage pregnancy

Addressing teenage pregnancy can save money with £4 saved for every £1 spent³⁵. Every teen mum who returns to Education, Employment & Training (EET) saves agencies £4500 /year and for every child prevented from going into care, social services would save on average £65k/year.³⁶

Smoking

Treating mothers and their babies (0-12 months) with problems caused by smoking during pregnancy is estimated to cost the NHS between £20 million and £87.5 million each year.³⁷

Maternal obesity

Obesity places a burden on public resources in terms of health costs, on employers through lost productivity and on families because of the increasing burden of long-term chronic disability.³⁸ The direct cost to the NHS in 2006/07 of people being overweight and obese was £5.1bn.³⁹ These costs have been updated to £6.1bn to take into account inflation.³⁹

Perinatal mental health problems

Taken together, perinatal depression, anxiety and psychosis carry a total long-term cost to society of about £8.1bn for each one-year cohort of births in the UK.⁴⁰ Nearly three-quarters (72%) of this cost relates to adverse impacts on the child rather than the mother.⁴⁰ Over a fifth of total costs (£1.7bn) are borne by the public sector, with the bulk of these falling on the NHS and social services (£1.2bn).⁴⁰

Smoking: The single biggest modifiable risk factor for poor birth outcomes

currently 13.7% of adult women in the UK smoke cigarettes.⁵

Nearly 11% of women in England are still recorded as smoking at the time of delivery and in some areas of England these rates are much higher, rising to as high as 28%.⁵

Smoking during pregnancy causes up to 2,200 premature births, 5,000 miscarriages and 300 perinatal deaths every year¹². It also increases the risk of stillbirth, complications in pregnancy, low birthweight, and of the child developing other conditions in later life.¹²

Women from routine and manual occupations and teenagers are more likely to smoke throughout their pregnancy² with mothers under 20 being 3 times more likely to smoke throughout pregnancy.⁴¹

Maternal weight: A driver of obesity from one generation to the next

Over 55% of women were overweight or obese in England in 2016/17⁵. The prevalence of overweight and obese adults is predicted to reach 70% by 2034.¹⁵

Women who are overweight or obese before pregnancy have increased risk of infertility as well as complications during pregnancy and birth including: impaired glucose tolerance/gestational diabetes, miscarriage, pre-eclampsia, thromboembolism and maternal death.¹³

Babies born to obese women have a higher risk of foetal death, stillbirth, congenital abnormality, shoulder dystocia, macrosomia and subsequent obesity¹³.

Inequalities in maternal obesity are related to socioeconomic deprivation and ethnicity.^{13,42-3}

Research shows an intergenerational effect with higher risks for children whose parents are obese or overweight.¹⁴

Avoiding alcohol and substance misuse

Alcohol is a 'teratogen', which means that it can affect foetal development and cause birth defects or complications during pregnancy.⁴⁴

Foetal alcohol spectrum disorder (FASD) is an umbrella term for conditions that can occur in a person whose mother consumed alcohol during pregnancy. The most severe form is known as foetal alcohol syndrome.⁴⁴

Even at consumption levels of 1-2 units/day, there are increased risks of poor pregnancy outcomes, which rise with rising consumption.⁴⁴

Effects of different drugs of misuse during pregnancy are broadly similar and are largely non-drug specific.^{31,45}

Intra-uterine growth retardation and pre-term deliveries contribute to increased rates of low birth-weight and increased perinatal mortality rate. These outcomes are multifactorial and are also affected by factors associated with socio-economic deprivation, including smoking.^{31,45}

Mental health and wellbeing: Protecting the parent-child bond

Mental health problems in pregnancy and the first year after birth are experienced by up to 20% of women.¹⁷

If untreated maternal mental illness during the perinatal period can adversely affect: infant cognitive, emotional and behavioural outcomes; maternal-infant bonding and quality of parenting.⁴⁶

Suicide is one of the commonest causes of maternal mortality in the UK.⁶

The chances that a woman with a previous diagnosis of bipolar disorder will experience a major episode of ill health in pregnancy are between 1 in 2 and 1 in 4.⁶

Vulnerable populations that have been identified include mothers living in deprived areas or on low-incomes, teenage mothers, women in some BAME communities, women with a pre-existing psychiatric diagnosis and new mothers with an increased risk of depression.¹⁸

It is also acknowledged that up to 10% of fathers will suffer from postnatal depression.¹⁸

Immunisations: Improving outcomes from vaccine-preventable diseases

Congenital rubella syndrome, pertussis, influenza and hepatitis B infection are all vaccine-preventable diseases which can lead to poor outcomes for mother and baby.^{4,47}

Maternal rubella infection in pregnancy may result in foetal loss or congenital rubella syndrome. As a consequence of MMR immunisation, rubella infections in pregnancy in England are now rare. Of the 23 cases of rubella infection in pregnancy (2005-2015), all of the mothers were born overseas. Children from developing countries are at particular risk.⁴⁸⁻⁴⁹

Influenza infection in pregnancy is associated with risks to the foetus (including still birth), mother and the baby (those <6m of age have the highest hospitalisation rates for influenza)⁶. During the period 2009 to 2012, 1 in 11 maternal deaths were due to influenza⁶. Furthermore women with long-term conditions who become pregnant are at higher risk still from influenza infection.⁶

Folic acid: Key to reducing the risk of neural tube defects

Folic acid (also known as vitamin B9) is very important for the development of a healthy foetus, as it can significantly reduce the risk of neural tube defects (NTDs), such as spina bifida.⁵⁰

The proportion of women in England taking folic acid supplements before pregnancy fell from 35% in 1999-2001 to 31% in 2011-12.¹⁶

Non-Caucasian women were less likely to take supplements before pregnancy than Caucasian women. Young women (6% of those under 20) were less likely to take supplements than older women (40% of those aged 35-39).¹⁶

Long-term conditions: Women are entering pregnancy with more pre-existing problems

Between 2013 and 2015, the maternal death rate in the UK was 8.8 per 100 000 maternities and two thirds of the women who died had pre-existing physical or mental health problems.⁶

Improvements in care may have made a difference to the outcome for 41% of women who died, 52% of women with epilepsy and 26% of women with severe mental illness.⁶

Maternal suicide remains the leading cause of direct maternal deaths occurring during pregnancy or up to a year after the end of pregnancy, with 1 in 7

women who die in the period between 6 weeks and one year after pregnancy dying by suicide.⁶

Women are entering pregnancy with more pre-existing problems, including both significant mental, learning and physical health disorders (including obesity, epilepsy, type 2 diabetes), as well as complex social challenges.⁶

Reducing genetic risk

Genetic risk is an important factor to consider as genes play a significant role in the development of congenital anomalies, which are a major cause of infant mortality.⁵²

In populations which practice consanguineous marriage eg some Pakistani populations, there is an increased risk of inherited genetic disorders.⁵³

Inherited genetic disorders can be inherited in different ways including where both parents are carriers eg sickle cell and thalassemia or where one parent carries a genetic mutation eg tuberous sclerosis; or where the mutation is specifically on the X chromosome eg Duchenne muscular dystrophy.⁵⁴

Non-inherited conditions include chromosome disorders eg Down's syndrome, and spontaneous genetic mutations.⁵⁴

Adverse childhood experiences and domestic abuse

Adverse foetal and early childhood experiences can lead to disruptions in the brain that can last a lifetime.⁵⁵

Adverse childhood experiences (ACEs) relate to a set of harms, both direct (eg abuse, neglect) and indirect (eg parental conflict, substance abuse or mental illness)⁵⁶ whilst there is a strong association between increased number of ACEs and poor outcomes, screening is not predictive and there are vulnerable children who have not experienced ACEs.⁵⁷

Women are more likely than men to suffer domestic violence, which includes sexual, physical and non-physical abuse or threats perpetrated by a partner, ex-partner or family member.²

As well as affecting the physical and mental health of the woman, domestic abuse in pregnancy can lead to poor birth outcomes.²

Maternal age

Although teenage pregnancy rates are at their lowest level since 1969⁵⁸ with reduced inequalities⁵⁹, young people in England still experience higher teenage birth rates than their peers in Western Europe⁶⁰, with persistent inequalities between and within local authorities.⁶¹

Prevalence of teenage pregnancy is often concentrated geographically in more deprived areas.⁶¹

Teenage pregnancy is associated with a higher risk of: late booking antenatally; lower birth weight babies, stillbirth and infant mortality.^{6,62}

In 2016, 22% of births were to women aged 35 and over with 4% to women aged over 40.⁶³

The risks of birth complications, congenital abnormalities, stillbirth and emergency section increase with age.⁶⁴⁻⁶⁷

However, the exact age at which these risks increase is uncertain and co-existence of additional risk factors eg smoking, will increase the chance of adverse birth outcomes.⁶⁸

Part 2: Improving preparation for pregnancy

Preconception care

Preconception care is defined by the World Health Organization as:

*“the provision of biomedical, behavioural and social health interventions to women and couples before conception occurs, aimed at improving their health status, and reducing behaviours and individual and environmental factors that could contribute to poor maternal and child health outcomes”.*¹

The aim of preconception care is to improve maternal and child health outcomes, in both the short and the long-term, to enable the next generation to have the best start in life¹. To achieve this, the WHO advocates a life-course perspective to approaching preconception care of women and men, from early years through to the end of reproductive years.^{1,69}

Preconception care needs to be universal (available to all). However, because maternal and child morbidity and mortality are higher in socio-economically deprived families and communities, some people and communities will need more support and care than others. This principle of ‘proportionate universalism’ – providing service for all, but focusing more resource where it is most needed - is an important step towards reducing inequalities and improving outcomes for all.⁷⁰

What does preconception care involve?

Preconception care focuses on helping individuals via services, interventions, support and advice to plan and be fit for pregnancy, including eg smoking cessation, sensible alcohol consumption, awareness of the risks from substance misuse, achieving and maintaining a healthy weight (See Appendix 1: Supporting tools and guidance). However, preconception care also helps to create healthier communities and populations through:

1. Integrating contraception and fitness for pregnancy care so that preconception care happens at the same time as contraception and an earlier stage before pregnancy.²⁸
2. Continuing preconception care (both planning and fitness for pregnancy) during and between pregnancies.⁸
3. Ensuring that high risk groups including women with long-term conditions and those with multiple vulnerabilities receive help early to plan pregnancy and additional support to have a healthy pregnancy.⁶⁸

4. Population level interventions to promote preconception health across the life-course which align with general health and wellbeing messages for the whole population.¹
5. Action on the wider influences on health and risks, for example with housing, education or employment, and tackling inequalities in pregnancy outcomes to the needs of local areas.^{71,72}

The preconception pathway

Preconception health is a pathway from the early years through to first and subsequent pregnancies. Along this pathway, there are positive health behaviours to promote and assets to utilise, particularly the universal services which accompany the reproductive years of the life-course. For risks which may emerge, a targeted, proactive approach to managing and mitigating these early can similarly be integrated into the pathway as follows:

Pathway 1: Prior to first pregnancy - *Universal preconception care.*

Pathway 2: Managing emerging risks - *Targeted preconception care.*

Pathway 3: Next baby and beyond - Universal and targeted preconception care.

The early years and adolescence: Building blocks for preconception health

It is important that services for babies and children focus on giving them the best start in life. This will support their chances of entering their reproductive years in optimal preconception health. Services, interventions and advice should focus on:

Giving every child the best start in life: Having a loving, secure home, being breast fed, completing routine immunisations, being physically active, eating well, communicating early and having good emotional wellbeing.

Promoting children and young people's emotional health and wellbeing: Having access through school to relationship and sex education, personal, social, health and economic education and receiving the HPV vaccine.

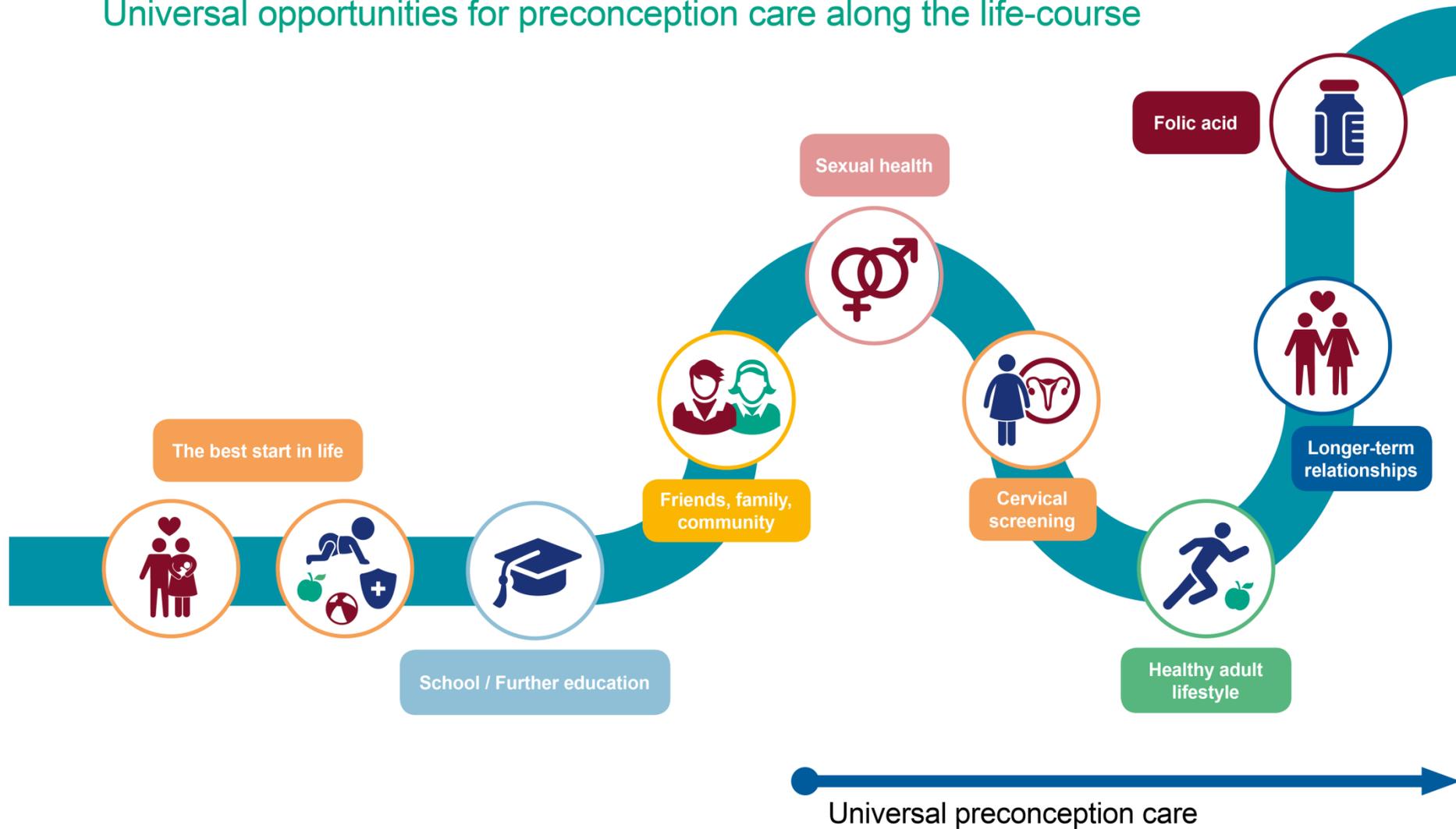
Community-centred approaches for health and wellbeing: Having supportive social networks including friends, family, community.

Support which accompanies the early years includes both universal and targeted services:

- **healthy child programme 0-19:** health visitor and school nurse commissioning
- **high impact areas**
- **family nurse partnership**

Preconception Pathway 1: Prior to First Pregnancy

Universal opportunities for preconception care along the life-course



The reproductive years: Universal preconception care

Universal services which accompany the reproductive years are **generally based within primary care and sexual health services:**

When women arrange a consultation to initiate contraception

This is a key opportunity to commence preconception care, thereby providing more holistic reproductive care. The discussion may focus exclusively on the woman's health, but it may also include health before pregnancy, should the woman wish to have a baby one day.

When women attend to have long-term contraception discontinued

Women stop using contraception for a variety of reasons. For those who have decided they are ready for pregnancy, discontinuing long-term contraception is a key opportunity to discuss preconception issues.

Further opportunities to deliver preconception care sensitively may arise for:

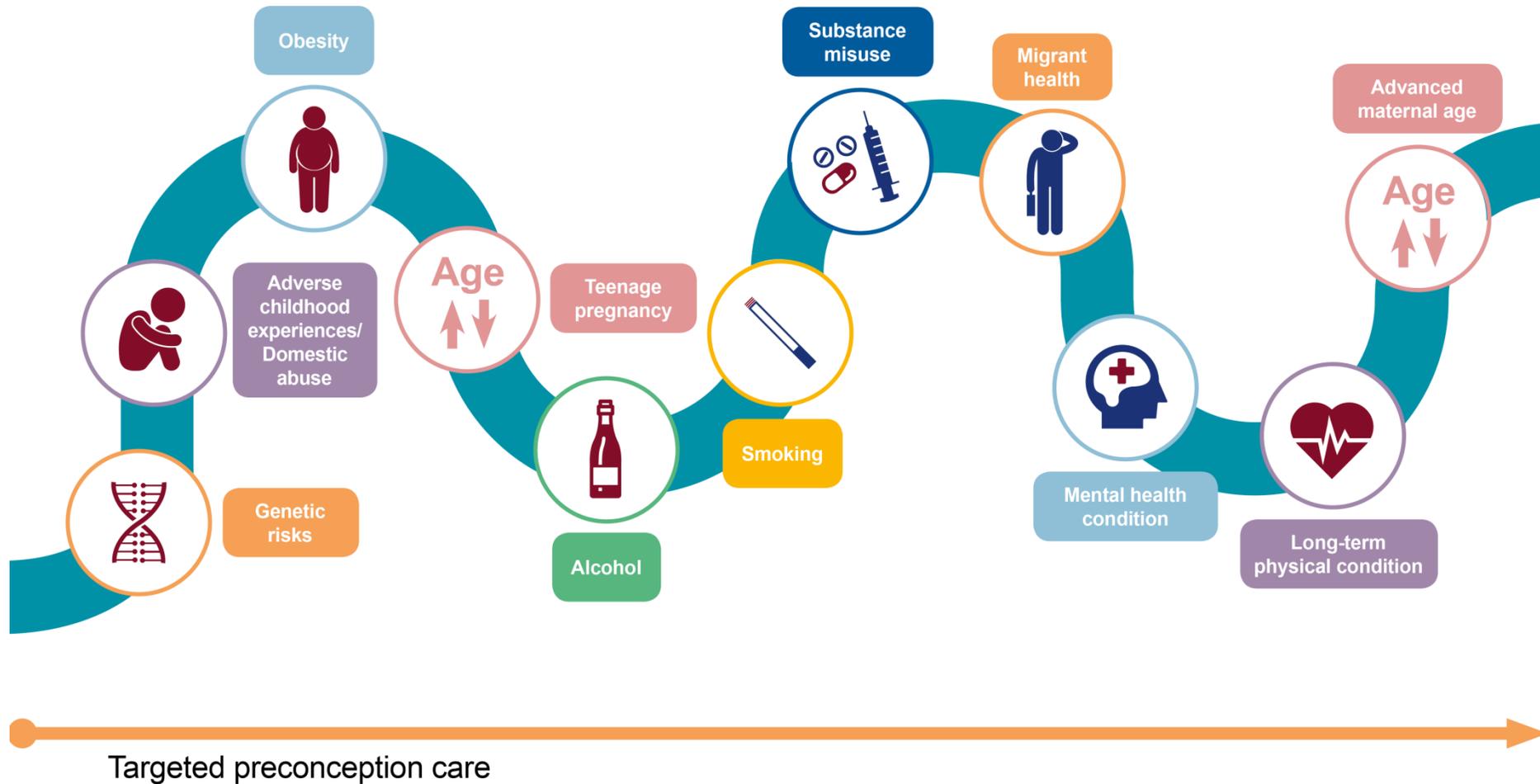
- women who miscarry or seek fertility advice
- women who have an abortion
- women who attend for cervical screening (3 yearly from age 25 -64 years)
- women who are peri-menopausal and attend for advice

Other primary care services and consultations

All people of reproductive age attending primary care: Every interaction is a chance to deliver messages and support people to adopt healthy behaviours, which will also make them healthier for pregnancy and parenthood.⁷³

Preconception Pathway 2: Managing Emerging Risks

Early interventions to manage emerging risks along the life-course



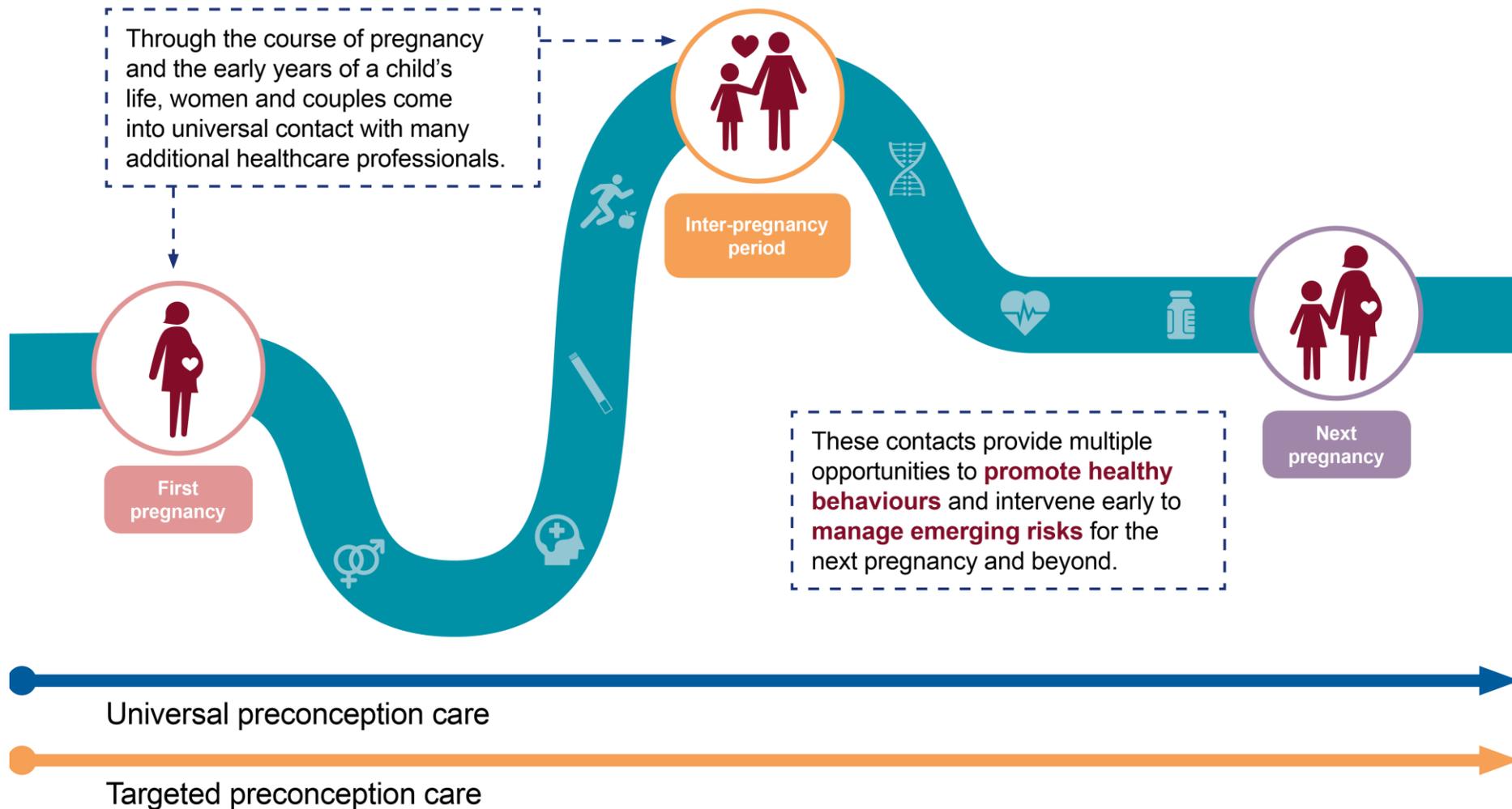
Early and reproductive years: Targeted preconception care

Increasing access to services and facilitating early intervention for people in their early and reproductive years could help to mitigate and manage preconception risk factors. Professionals in these services^{1-3,28} have the opportunity to support preconception care through promoting contraception and fitness for pregnancy:

- genetic services
- social services
- secondary care services managing long-term physical conditions
- psychological therapies and psychiatric services
- drug and alcohol services
- stop smoking services
- weight management services
- migrant health-related services eg TB, hepatitis B, HIV
- non-clinical, community-led services eg debt management, legal advice, arts activities
- primary care services including general practice, community pharmacies and dentists

Preconception Pathway 3: Next Baby and Beyond

Planning and preparing for subsequent pregnancies



Preconception care for subsequent pregnancies

Universal services to support preconception care continue with **the transition from midwifery into health visiting and early years services:**

When women attend for their booking appointment

During this key opportunity, women routinely discuss their current and recent health behaviours and any identified risk factors, are offered antenatal screening and receive advice on having a healthy pregnancy going forwards. Embedding preconception care involves extending this advice to include the inter-pregnancy period and early discussions regarding postnatal contraception.

When women first see a health visitor in the antenatal period

This supports women with: continuity of their preconception care, reinforcing health messages; accessing behaviour change interventions and support, and making plans for postnatal contraception.

When women are in contact with health visitors and services during the early years

Women and their family's needs will change after the arrival of the first baby. Preconception care for subsequent pregnancies needs to recognise these changed circumstances and how preconception health can be optimised in the context of a growing family.

When women are in contact with primary care services

Women will continue to come into contact with primary care services between pregnancies and may even have more primary care contact as a consequence of theirs and their family's needs.

How does preconception care fit with existing models of care?

A theme through all services

A focus on preconception care should complement and support other health improvement efforts throughout people's reproductive lives. This is because the services and activities included in preconception care will help people to be healthy across the life course, *regardless of whether or not they go on to become pregnant.*

Achieving health improvement for people planning to become parents and those of reproductive age will benefit everyone, and could result in longer term savings to health and local authority services, for example, by reducing the number of women of reproductive age who are overweight or obese.

Linking reproductive health and preconception

Including preconception care within reproductive health services, which emphasise contraception and planning parenthood, will also help women and men who may become parents one day to understand how to achieve better outcomes for them and for their children, through birth and beyond.

Who is preconception care for?

Preconception care is for everyone thinking about becoming a parent – and everyone who might, in the future, go on to be a parent, even if they are not actively considering it now.

People become parents through different routes, and in a range of relationships with each other. Anyone – regardless of their gender, sexual orientation or other factor – may consider parenthood at any point in their reproductive lives. Even if they are not actively considering parenthood, they may still enter into or be in a relationship that results in pregnancy, if they are not using effective contraception.

Preconception care is not a new service or intervention: It is about embedding principles and actions into current care models prior to first and subsequent pregnancies. The impact of preconception health on mother and child and the importance of planning conception are important considerations for all health services used by people of reproductive age.

This resource contains information and advice for professionals and services aimed at women actively planning conception, and for those aimed at people of reproductive age.

Preconception care is holistic and person-centred

The advice and support needed to enable women (and their partners) to change behaviour and reduce their health-related risk will differ from person to person, depending on their circumstances and risk factors.

People also often have more than one risk factor³², so it is important that services for women of reproductive age, including reproductive health services, offer a holistic, person-centred approach.⁷⁴

This means that preconception care is not a single package of interventions in a one setting at a single point in time. Instead, it is a theme that cuts across existing models of care, keeping the focus on the person receiving the care and their journey through the life-course.

Within preconception care it is also important to recognise that both male and female health should be addressed, and it should be empowering for girls and women.

Men's health and men's health behaviours have important implications for the health of their partners and their children and they have important roles to play as partners, fathers and community members.

Similarly the influence of wider family member's on women's behaviours and choices may necessitate a family-centred approach to care.

The whole system is involved in preconception care

As preconception care runs along the reproductive life course, it involves the whole health system – and needs a whole system approach⁷⁵ to ensure that it is consistent and effective, working to ensure good preconception care for all, with additional support for groups that need it most.

Local maternity systems (LMS) are well positioned to co-ordinate preconception care from the first pregnancy through to subsequent pregnancies. However, for preconception care before a first pregnancy, other services also need to be engaged. Whole systems at the local level need to collectively tailor how care is co-ordinated and commissioned for women in the way that best meets local need.

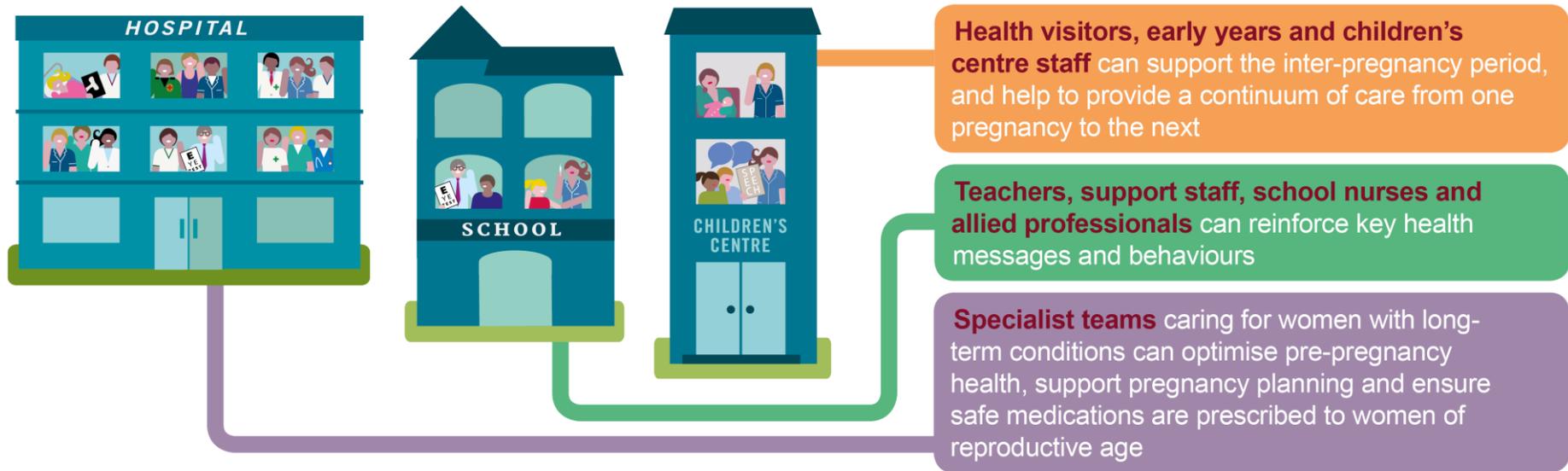
Data from the JSNA can support commissioning decisions and could underpin a preconception care strategy to bring to the attention of the Health and Wellbeing Board.

Clear communication, agreed referral pathways, and a commitment to work collaboratively towards a person-centred approach will all help embed preconception care, whatever shape the local system takes.

It is important to evaluate different care models as they emerge, including their impact and the experience of people moving through them, so that evidence and good practice can be shared.

Local authorities also have a wider role in improving preconception health through action on the wider determinants; a 'preconception health in all policies'⁷⁶ approach could support this.

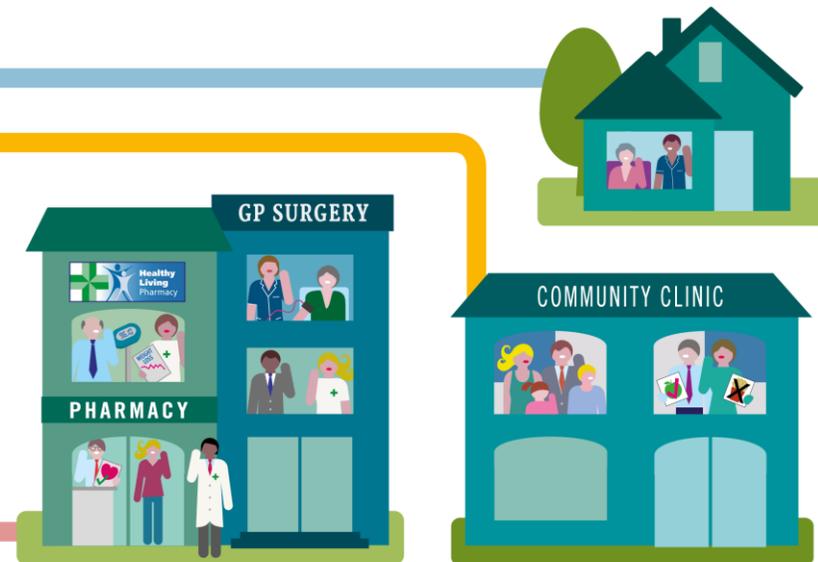
We all have a role to play



Midwives, midwifery support workers and obstetricians are well placed to promote pregnancy planning, fitness for future pregnancies and healthy behaviours in general

Community health, social care & voluntary sector staff can support signposting, uptake of services, peer support and reducing isolation

GPs, practice nurses, sexual health nurses, community pharmacists, dentists and allied professionals in primary care are trusted and embedded in communities, so well placed to support adults of reproductive age to enter pregnancy in optimal health



Local government, the NHS and voluntary sector have vital roles in building confident and connected communities

Potential actions for Local Maternity Systems (LMS):

- apply existing evidence to the local context, and ensure that place-based strategies are effective in meeting the needs of the local population
- to tackle inequalities and for high risk groups, the family of community-centred approaches could support commissioning preconception services⁷⁷
- through the LMS, local authorities and commissioners of health services can work collaboratively to meet the ambitions for the local system
- enable information sharing to set commissioning targets across local government and the NHS and to monitor efficacy

As well as promoting uptake and widening access to services, community-centred approaches may increase health literacy and give individuals the confidence to engage in their health care.

Engaged communities can provide supportive environments and positive social norms that help individuals to gain motivation, confidence and skills to self-care.

Frontline professionals need to:

- know the needs of their service users; and the services available
- consider the resources to support healthy beginnings in the local system
- understand which activities can prevent and protect from harm, and promote the best start in life

Across your population

Healthcare professionals should be aware of the interventions at population level, which include promoting understanding of the importance of the pregnancy and the first 2 years of life for children's future health and wellbeing, as well as promoting adult health and wellbeing.

Working with communities

Community health professionals and providers of specialist services can have an impact by: being aware of the local services; being involved in activities to make healthy places for children and families; developing integrated services between health, education providers, community and voluntary sector organisations to ensure they are responsive to needs; being aware of NICE guidance and demonstrate improved public health outcomes.

Working with families and individuals

Healthcare professionals can have an impact on an individual level through actions to support smoke-free pregnancies, can give advice on eg nutrition, physical activity, alcohol, folic acid; and can support behaviour change.

Innovation in practice

The evidence-base for preconception models of care and interventions is limited but new studies are underway, with growing evidence from the UK and abroad.

International models of preconception care

Hungary; 'Preconception Service' 1984-2010: nurse/midwife-led primary care clinic which has shown evidence of smoking reduction and reduction in congenital anomalies.⁷⁸

Canada; the 'Healthy Life Trajectories Initiative': a multilevel preconception intervention, trial currently underway.⁷⁹

The Netherlands; 'Healthy Pregnancy 4 All' programme: delivered by GPs and midwives in the community, prospective cohort study underway.⁸⁰

Interventions

LifeLab Southampton: an educational intervention to assess the effects on students' diet and lifestyle. Students' scientific awareness and health literacy improved and was maintained as measured 12 months after the intervention, but this did not translate into behaviour change.⁸¹

Postnatal contraception: The Faculty of Sexual and Reproductive Health (FSRH) 2018 guideline recommends discussing contraception with all pregnant women and advises that contraception can be initiated immediately after childbirth if desired and medically eligible.⁸²

Preconception management of long-term conditions: The 2015 NICE guideline for Diabetes in Pregnancy illustrates key aspects of preconception care which could translate to other long-term conditions: education, contraception advice, preventative actions (diet and physical activity being of particular relevance to diabetes), disease monitoring and medication safety.⁸³

Evaluating progress: How can we see the difference preconception care makes?

As described, preconception care encompasses a broad range of health behaviours and risk factors for men and women across the early stages of the life-course.

However, primarily it aims to improve maternal and child health outcomes and several indicators of preconception and early pregnancy health are routinely collected when women attend their booking appointment at the end of the first trimester of pregnancy.

This information from maternity services is being used to create a 'Health of Women Before and During Pregnancy' toolkit, which includes a national report looking at inequalities as well as a tool to identify risk factors and needs for preconception populations locally. The toolkit includes demographic data as well as data on: smoking, maternal BMI, booking within 13 completed weeks of pregnancy, folic acid use, alcohol, substance misuse, family support and complex social factors.

The tool and report will help to inform the development of indicators of 'preconception health' at national and local levels which will appear in PHE's Fingertips tool, and these will also appear in future versions of the risk factor tool for benchmarking purposes. These will be used to assist with evaluating local actions to deliver preconception care.

Next steps

To embed preconception care and improve outcomes, the following key steps are necessary:

1. **Raising awareness.** A public-facing '*Planning for Pregnancy*' tool will shortly be launched as a collaboration between PHE, Tommy's, RCOG and UCL. Alongside this, a preconception animation will support local systems to identify points of contact to embed universal preconception care.
2. **Providing training.** Developing training tools and resources for frontline professionals will support them to deliver preconception care.
3. **Embedding preconception into care pathways.** Preconception care, combining planning and fitness for pregnancy, needs to be visible in all relevant health and social care pathways
4. **Building the evidence base.** Encouraging innovation, supporting local systems to develop and connect evidence-based pathways, and evaluating the impact of services and interventions will help to build the evidence base.
5. **Developing preconception indicators.** To prioritise preconception health, population health measures need to include preconception indicators and outcomes. Improving the quality and completeness of information gathered at booking in the maternity services dataset, will allow for indicators to be developed and published on PHE Fingertips.
6. **Addressing wider determinants.** To improve the circumstances in which women enter pregnancy, the impact of housing, education, income, work and relationships needs to be recognised.

Appendix: Supporting tools and guidance

General

- 'Better Beginnings' (2017) themed review on NIHR research into modifiable factors to influence health before, during and after pregnancy
- National Maternity Review. 'Better Births' Improving outcomes of maternity services in England: A Five Year Forward View for maternity care. 2016
- Tommy's 'Planning for Pregnancy' tool. 2018
- NICE Clinical Knowledge Summaries: [Pre-conception – Advice and management](#)
- Local Health and Care Planning: Menu of preventative interventions (2016) aims to help local decision makers consider evidence-based public health and preventative interventions
- [Start4Life](#), social marketing campaign to encourage healthy living from an early age to parents-to-be and parents of children up to the age of 5, including information on postnatal contraception
- King's Fund [Tackling multiple unhealthy risk factors](#)
- Behaviour change: general approaches (PH6) is aimed at those responsible for helping people to change their behaviour to improve their health.
- Behaviour change: individual approaches (PH49) also makes recommendations on individual-level interventions aimed at health-damaging behaviour in over 16s
- [Pregnancy and complex social factors: a model for service provision for pregnant women with complex social factors \(CG110\)](#) how to improve access to care for pregnant women with complex social factors
- King's Fund [What is social prescribing?](#)
- Making Every Contact Count www.gov.uk/government/publications/making-every-contact-count-mecc-practical-resources
- Antenatal and newborn screening www.gov.uk/topic/population-screening-programmes

Pregnancy planning and contraception

- www.gov.uk/government/publications/teenage-pregnancy-prevention-framework
- www.rcn.org.uk/professional-development/publications/pdf-006962
- FSRH Guideline [Contraception after pregnancy](#)

Early years

- [Healthy Child Programme 0-5 \(2009\)](#)
- [Rapid review to update the evidence for the Healthy Child Programme 0-5 \(2015\)](#)
- [Health Visiting and Midwifery Partnership – pregnancy and early weeks](#)

Mental health

- NICE. Antenatal and Perinatal Mental Health (CG192)
- Prevention Concordat for Better Mental Health (2017)

Domestic violence

- NICE Quality Standard Domestic Violence and Abuse

Folic acid

- Scientific Advisory Committee on Nutrition. Folic acid: updated SACN recommendations. 2017
- The Healthy Start scheme www.healthystart.nhs.uk

Maternal healthy weight

- www.nice.org.uk/guidance/ph27/chapter/1-recommendations
- www.gov.uk/government/publications/uk-physical-activity-guidelines
- **Error! Hyperlink reference not valid.** www.gov.uk/government/publications/start-active-stay-active-infographics-on-physical-activity

Smoking

- www.nice.org.uk/guidance/qs43/chapter/quality-statement-1-identifying-people-who-smoke
- NICE. Smoking: stopping in pregnancy and after childbirth (PH26) NICE costing template, tool for implementing PH26, NICE Tobacco Control Return on Investment tool, Self-assessment for local partnerships to review progress on implementing.
- Tobacco Control Plan for England (2017) ambition to reduce rates of smoking during pregnancy to 6% by 2022
- Assessment of the training needs of midwives and obstetricians to address smoking in pregnancy (2017). Report by the Smoking in pregnancy challenge group.

Alcohol and substance misuse

- www.gov.uk/government/publications/alcohol-consumption-advice-on-low-risk-drinking
- www.nice.org.uk/guidance/cg110/ifp/chapter/pregnant-women-who-have-problems-with-alcohol-or-drugs this document advises pregnant women who have problems with alcohol or drugs

- www.gov.uk/government/publications/communicating-the-uk-chief-medical-officers-alcohol-guidelines. The update to **Drug misuse and dependence: UK guidelines on clinical management** includes an expanded section on pregnancy and neonatal care.

Vaccine-preventable diseases

- Immunisation against infectious disease (the Green Book) chapter on influenza: www.gov.uk/government/publications/influenza-the-green-book-chapter-19
- NICE Hepatitis B and C testing: people at risk of infection

Long-term conditions

- NICE Diabetes in Pregnancy: Management from preconception to the postnatal period
- Valproate medicines (Epilim▼, Depakote▼): contraindicated in women and girls of childbearing potential unless conditions of Pregnancy Prevention Programme are met www.gov.uk/drug-safety-update/valproate-medicines-epilim-depakote-contraindicated-in-women-and-girls-of-childbearing-potential-unless-conditions-of-pregnancy-prevention-programme-are-met

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