

**South East**

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Strategic Clinical  
**networks**

**Reducing Preterm Birth**

**Recommendations for the South East Region**

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# **Introduction and Background**

## Introduction

The South East Maternity, Children and Young People's Strategic Clinical Network (SE MCYP SCN) strategic vision is to promote high quality maternity care and experience in line with national guidance and key national indicators in the context of the wider maternity agenda and to reduce rates of stillbirth and pre-term birth across the South East by agreeing best practice pathways and agreed models of care across the pregnancy pathway, which improves outcomes and user experience and reduces unwarranted variation across Kent, Surrey and Sussex.

The aim of this document is to outline recommendations for a reduction of pre-term birth for South East and create organisational readiness ahead of the implementation of the NICE Guideline on preterm labour and birth in November 2015. This document includes an outline of the evidence base and current interventions both nationally and regionally in order to provide clear supporting evidence.

This document has been developed by the Maternity SCN Clinical Director, Clinical Leads and Quality Improvement Lead. The Maternity Clinical Advisory Group (CAG) has supported the development of the reducing preterm birth work stream and this document. Members of the CAG are drawn from medical, nursing, health professionals, commissioners, third sector, public and patient engagement (PPE) groups and those with a strong involvement in the care of mothers and new born babies and sick children and their families. They are appointed from across South East for their personal experience and expertise, and not to represent any organisation or faction. The diversity of membership is intended to enrich contributions and provide a soundly based, mother and baby, children and family-centred approach to improving maternity services and outcomes.

## Background

Preterm birth is the single biggest cause of neonatal mortality and morbidity in the UK, affecting over 52,000 babies (around 7.3% of live births) in England and Wales in 2012.

There has been no decline in the UK preterm birth rate over the last 10 years. Babies born preterm have high rates of early, late and post neonatal mortality, with the risk of mortality being inversely proportional to gestational age at birth. Babies who survive have increased rates of disability.<sup>1</sup>

Preterm birth rates appear to be increasing in most of the countries where data are available. Some of this increase may be accounted for by improved registration of the most preterm babies associated with increased viability and by improved gestational assessment, with change to near universal ultrasound for dating pregnancies in these settings. It may, however, represent a true increase. Possible reasons for this include increases in maternal age, access to infertility treatment, multiple pregnancies and underlying health problems in the mother.<sup>2</sup>

Recent UK studies comparing cohorts born in 1995 and 2006 have shown improved rates of survival (from 40% to 53%) for extreme preterm births (born between 22 and 26 weeks). Rates of disability amongst survivors are largely unchanged over this time period, with rates of bronchopulmonary dysplasia, major cerebral scan abnormality, and weight and/or head circumference less than 2 standard deviations being maintained at 68%, 13% and 44% and

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<sup>1</sup> National Institute for Clinical Excellence, Draft Preterm labour and birth - Full guideline (2015)

<sup>2</sup> World Health Organisation, Born too soon, The Global Action Report on Preterm Birth (2012)

23% respectively, although there has been an increase in the proportion treated for retinopathy of prematurity from 13% to 22% (Costeloe 2012).<sup>1</sup>

Preterm birth is the most important single determinant of adverse infant outcome, in terms of both survival and quality of life. Although preterm birth is defined as being before 37 completed weeks, most mortality and morbidity is experienced by babies born before 34 weeks. Prevention and treatment of preterm labour is important, not as an end in itself, but as a means of reducing adverse events for the child.<sup>1</sup>

Every year, about 15 million babies are born prematurely worldwide (before 37 completed weeks of gestation), and this number is rising.<sup>1</sup> This is more than one in ten of all babies born around the world. All new-borns are vulnerable, but preterm babies are acutely so. Many require special care simply to remain alive.

Current public sector costs of preterm delivery in England and Wales are estimated at £3.4bn (2012/13 prices). If we could delay delivery by 1 week, that amount falls to £2.26bn.<sup>1</sup>

The South East Strategic Clinical Network sought opinions from clinical experts in preterm delivery, with the aim of identifying potential areas for improvements and in turn outlines the recommendations for the South East region.

- Consideration was given to the forthcoming National Institute for Health and Care Excellence (NICE) clinical guideline on pre-term labour and birth in November 2015. As a result this document concentrates on organisational readiness in preparation for the expected guideline change.
- Recognition must be given to the multifactorial difficulties that exist in improving outcomes in preterm birth and to the need for financial support for training and service development into the maternity care pathway in line with new guideline changes.
- It is recommended that a common standard for practice should be developed across the region.

This case for change is based upon evidence gathered from national guidance, published research and exemplars of good practice.

## Definition of Preterm Birth

Preterm birth is defined by WHO<sup>3</sup> as all births before 37 completed weeks of gestation or fewer than 259 days since the first day of a woman's last menstrual period (WHO, 1977). Preterm birth can be further sub-divided based on gestational age:

- extremely preterm (<28 weeks),
- very preterm (28 - <32 weeks)
- moderate preterm (32 - <37) completed weeks of gestation)


Moderate preterm birth may be further split to focus on late preterm birth (34 - <37 completed weeks).

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<sup>3</sup> World Health Organisation, Born too soon, The Global Action Report on Preterm Birth (2012)

The South East Maternity Dashboard uses the Royal College of Obstetricians and Gynaecologists (RCOG) definition of “preterm delivery rate (less than 34 weeks).The proportion of total births that occur before 34 weeks of pregnancy.”

Although preterm birth is defined as delivery before 37+ weeks of gestation, the majority of prematurity-related adverse outcomes relate to birth before 33+ weeks of gestation. Mortality increases from approximately two per cent for infants born at 32 weeks of gestation, to more than seventy five per cent for those born at 23 weeks of gestation, very few babies survive that are born at 22 weeks gestation.

The background is a vibrant green with a complex, abstract pattern of overlapping, semi-transparent geometric shapes. These shapes include various polygons, triangles, and rounded forms, creating a sense of depth and movement. The colors range from a bright, saturated green to a slightly darker, more muted shade, giving the overall effect a layered and dynamic appearance.

# **National and Regional Context**

# National and Regional Context

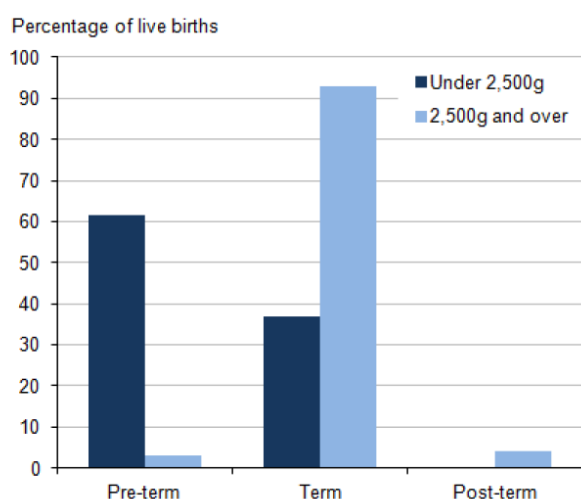
## National Context

Around 60,000 babies are born prematurely each year in the UK<sup>3</sup> and many suffer lifelong consequences as a result. This is one of the highest rates in Europe and it's still rising.

Substantial inequalities in infant mortality rates are known to exist between white and ethnic minority groups in England and Wales (Gray et al, 2009), and low gestational age is strongly linked to poor health/mortality outcomes (Kurinczuk et al, 2009).<sup>4</sup>

For babies born in 2012 in England and Wales, 0.1% of live births occurred at less than 24 weeks. The infant mortality rate for these babies was 877.2 deaths per 1,000 live births. The majority of these deaths (93%) occurred during the early neonatal period (the first week of life).<sup>4</sup>

**Figure 1.** Percentage of live births in England and Wales by grouped birth weight and term, 2012<sup>5</sup>



The draft consultation for Preterm labour and birth (full guideline) commissioned by the National Institute for Health and Care Excellence is now available. The final guideline is expected to be published in November 2015.

The NHS Outcome Framework outlines “*The primary purpose of the NHS is to improve the outcomes of healthcare for all*”. The 2015/16 NHS Outcomes Framework outlines an objective to:

- Reduce deaths in babies and young children
- Improve the safety of maternity services (admission of full-term babies to neonatal care)

<sup>4</sup> Office of National Statistics, Gestation-specific Infant Mortality in 2012 (2014)

<sup>5</sup> Office for National Statistics (2014)

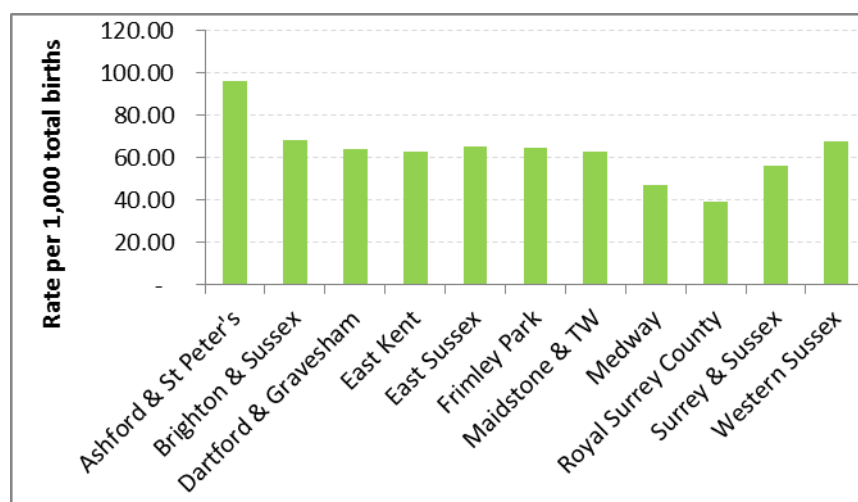


## Regional Context

South East preterm birth data is limited. Figure 2 illustrates preterm birth variation by Trust in the South East. The lower than average preterm birth rate does not negate the imperative to reduce the number of avoidable preterm births within the region. There are regional variations within the South East for preterm birth. This may reflect differences in practice, social demographics (higher rates of social deprivation and therefore higher levels smoking and obesity), or local provision (units with level 3 NICU care will attract higher preterm delivery rates as they accept in utero transfers from elsewhere).

The burden of preterm birth is substantial and is increasing in those regions with reliable data. Improved recording of all pregnancy outcomes and standard application of preterm definitions is important.<sup>6</sup> Without uniformity of regional reporting local figures are meaningless and trends may go unidentified.

**Figure 2:** Pre-Term Births (less than 37 completed gestational weeks) by South East Trust per 1,000 total births by month, April 2012 to March 2014.<sup>7</sup>



Source: South East Coast Quality Observatory (2014)

<sup>6</sup> The Lancet ,Volume 379 (2012)

<sup>7</sup> South East Coast Quality Observatory (2014)

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# **Patient Perspective**

## Patient Perspective

All parents are affected by the quality of care they receive in pregnancy, around the birth of their baby and in the postnatal period.<sup>8</sup>

In 2008, Lord Darzi's High Quality Care for All – NHS Next Stage Review stated that quality measures would “go beyond mortality rates for surgery to include patient-reported outcomes and patient experience of services”. More recently, the Francis report reinforced “the need to put patients first at all times”. The direction of travel in the NHS is to make ‘patient experience’ a concern equal to those of service safety and effectiveness, and the reasons are clear: good patient experience not only helps recovery, it informs quality improvement and saves money. The challenge is to ensure that capturing and responding to patient experiences is a routine practice, embedded in health service delivery.

Measuring and understanding the experiences of both mothers and fathers can help assess if the level of parental involvement in care and decision making is right, and can identify if appropriate support and information are being provided. Parents' feedback can be used by units to benchmark themselves against NHS, NICE and BAPM (British Association of Perinatal Medicine) standards, and against others in their network, and nationally.

Measuring parents' experience also provides evidence of performance and quality in the delivery of family centred care – part of the NHS's vision for neonatal services. It can reveal whether the family-centred approach is enhancing the attachment between babies and their families, meeting their physical, psychological and social needs.<sup>9</sup>

Parents affected by a preterm birth are a powerful advocacy force around the world. Increasingly, parents are organising among themselves to raise awareness of the problem, facilitate health professional training and public education, and improve the quality of care for premature babies. Parent groups are uniquely positioned to bring visibility to the problem of preterm birth in their countries and regions and to motivate government action at all levels.<sup>3</sup>

Bliss (for babies born too soon, too small, too sick) are the only national charity that supports premature and sick babies and their families in the UK. The Bliss, Parent Experiences Report (2013) recommends that NHS England centrally commission a written retrospective survey of parents' experience of neonatal care in which all units in England are required to participate. The South East Strategic Clinical Network supports this and recommends all trusts within the South East undertake a survey of parents' experience of neonatal care in which all units are required to participate. The need is to carry out the survey on a regular basis (every three years).

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<sup>8</sup> National Perinatal Epidemiology Unit, Listening to Parents after stillbirth or the death of their baby after birth (2014)

<sup>9</sup> Bliss, Parent experiences report (2013)

The background consists of overlapping, semi-transparent green shapes in various shades, creating a complex, abstract pattern. The shapes are primarily polygons and rounded forms, some pointing towards the center and others towards the edges, creating a sense of depth and movement.

# **Risk Factors and Causes of Preterm Birth**

# Risk Factors and Causes of Preterm Birth

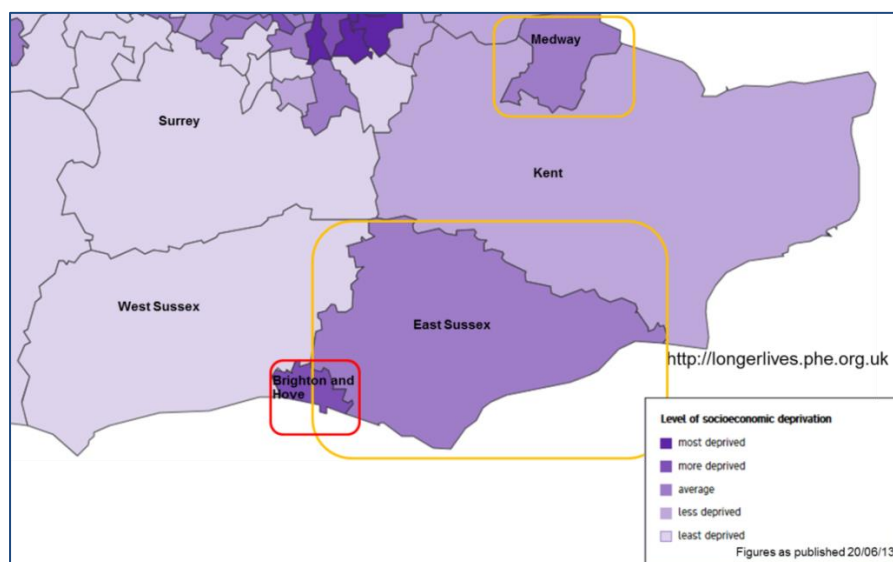
## Risk Factors for Preterm Birth

The Marmot report “Fair Society Healthy Lives” reported that “one quarter of all deaths under the age of one would potentially be avoided if all births had the same level of risk as those to women with the lowest level of deprivation”. In addition, “deprivation, births outside marriage, non-white ethnicity of the infant, maternal age under the age of 20 and male gender of the infant are all independently associated with an increased risk of infant mortality”. Other causes such as obesity, smoking in pregnancy and teenage pregnancy (below 18 years) are significant risk factors for pre-term birth. Better understanding of the causes and mechanisms will advance the development of solutions to prevent preterm birth.

### Deprivation

The South East covers a geographical area of 3,600 square miles where the demographics range considerably between 20% urban and 80% rural. The health of the people in Kent, Surrey and Sussex is generally better than the England average. Deprivation is lower than the England average. There is widespread affluence and high educational and professional achievement. There are also significant pockets of deprivation in coastal areas, isolated rural areas and among travellers, transient workers and asylum seekers.<sup>10</sup> Figure 3 identifies the population density across the SE (the darker areas indicator people living in the most deprived areas).

**Figure 3.** Levels of Deprivation in the South East Region (2011)<sup>11</sup>



### Obesity

Obesity is a problem of increasing magnitude globally with estimated 300 million women of reproductive age who are obese (WHO, 2011). Overweight and obese women (body mass

<sup>10</sup> South East Coast, Strategic Clinical Network, Maternity Baseline Review (2014)

<sup>11</sup> Public Health England - Level of Deprivations SEC region (2011)

index greater than 25 kg/m<sup>2</sup>) have a higher risk for preterm births (McDonald et al., 2010; Torloni et al., 2009), hypertension and pre-eclampsia.(Fetal Medicine Foundation, 2015).

The worldwide epidemic of obesity and diabetes is likely to become an increasingly important contributor to global preterm birth. In one region in the United Kingdom, 17% of all babies born to diabetic mothers were preterm; more than double the rate in the general population (Steer, 2005).<sup>3</sup>

Among women of child-bearing age in England, the prevalence of obesity (BMI ≥30) is estimated to be 19% and the prevalence of morbid obesity (BMI ≥40) is just over 2% The UK-wide Obstetric Surveillance System (UKOSS) carried out a surveillance study of extreme obesity during pregnancy between March 2007 and August 2008. The study identified that nearly one in every thousand women giving birth in the UK has a body mass index (BMI) of at least 50kg/m<sup>2</sup> or weighs more than 140kg.<sup>12</sup> Figure 4 shows the prevalence of maternal obesity in the England in 2009.

**Figure 4:** Prevalence of Maternal Obesity by Strategic Health Authority in 2009<sup>13</sup>

SHA	Total number of women giving birth <sup>a</sup> (N)	BMI category (%)			
		≥35	35-39.99	40-49.99	≥50
East Midlands	7719	5.27	3.21	1.80	0.26
East of England	10544	6.23	3.53	2.41	0.29
London	22087	3.46	2.19	1.16	0.11
North East	4853	5.28	3.28	1.88	0.12
North West	14895	5.47	3.50	1.77	0.19
South Central	7814	5.66	3.39	2.00	0.27
South East Coast	8457	4.38	2.46	1.76	0.15
South West	9655	4.58	2.50	1.92	0.17
West Midlands	11379	4.32	2.57	1.57	0.18
Yorkshire and the Humber	11051	5.57	3.28	2.06	0.23

<sup>a</sup> Total number of women reported to have given birth during March and April 2009

## Smoking Cessation

Cigarette smoking approximately doubles the threat of preterm birth (Andres and Day, 2000). Despite the risk of fetal growth restriction and preterm birth (Cnattingius, 2004; Honein et al., 2007; Siero et al., 2004), a survey of women in low- and middle-income countries found that many pregnant women currently used tobacco or were exposed to second-hand-smoke (Bloch et al, 2008).<sup>14</sup>

Smoking in pregnancy continues to be a priority area for action within national, regional and local tobacco control plans. Whilst the number of women who smoke during pregnancy has reduced in recent years, the rate at which this is declining remains a concern. Current data reveals that 12% of women are still smoking at the point of delivery (2014/15), resulting in around 76,000 babies born to mothers who smoke. There are substantial variations across the country, with rates as high as 28% in some areas and significantly higher prevalence in those aged under 20 years old and amongst routine and manual groups.

<sup>12</sup> Centre for Maternal and Child Enquires, Maternal Obesity in the UK – findings from a national report (2010)

<sup>13</sup> Centre for Maternal and Child Enquires, Maternal Obesity in the UK – findings from a national report (2010)

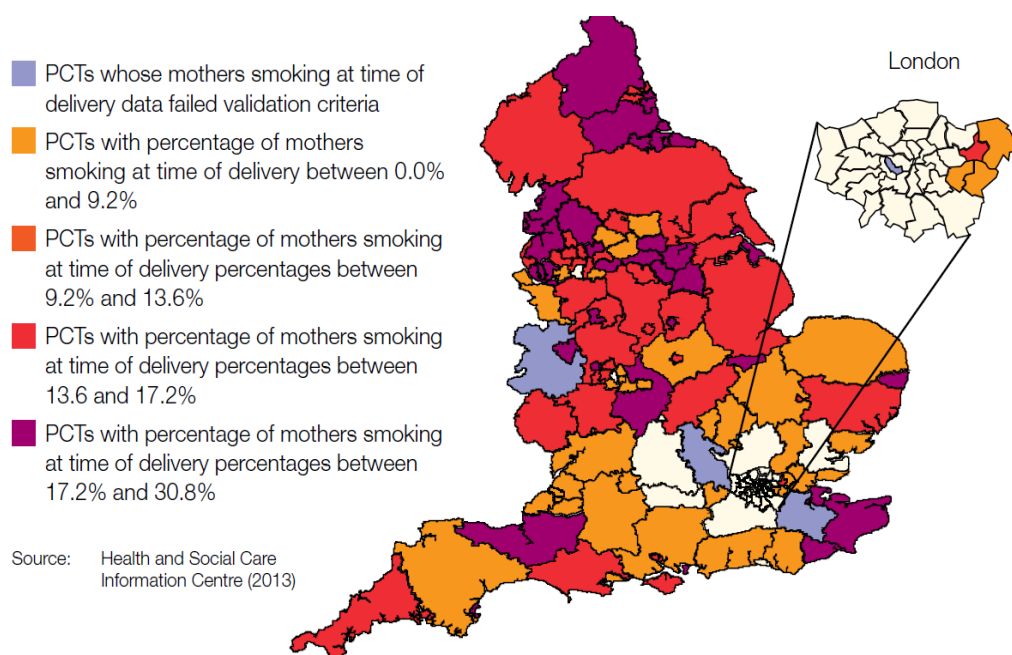
<sup>14</sup> Action on Smoking and Health, Smoking Cessation in Pregnancy - A Call to Action (2013)

NICE produced guidance on Quitting Smoking in Pregnancy and Following Childbirth in 2010 and whilst progress has been made since this time, implementation has not been consistent or comprehensive across the country.<sup>15</sup>

Whilst the overall smoking rates in the South East region are low, there are pockets of deprivation where smoking is more prevalent.

Figure 5 illustrates smoking at the time of delivery by English Primary Care Trust (2012 – 2013).

**Figure 5.** Smoking at the time of delivery by English Primary Care Trust 2012 - 2013<sup>16</sup>



Pregnancy offers a window of opportunity when women are highly motivated to stop smoking. Women are twice as likely to stop smoking in pregnancy and 45% were found to successfully quit with a Stop Smoking Programme. It is also important to consider the impact of a smoking partner. There is an association with smaller birth weight babies in women who live with smokers and an increased risk of still birth. Additionally, women who stop smoking will find it easier to restart with a smoking partner in the house.<sup>17</sup>

The role and impact of electronic cigarettes has been one of the great debates in public health in recent years and as a result Public Health England commissioned an independent review of the latest evidence to ensure that practitioners, policy makers and, most importantly of all, the public have the best evidence available. The review 'E-cigarettes: an evidence update' (2015) outlines "best estimates show e-cigarettes are 95% less harmful to your health than normal cigarettes, and when supported by a smoking cessation service, help most smokers to quit tobacco altogether". This information is reassuring but there remains no evidence for use in pregnancy. Further research in this area is awaited.

<sup>15</sup> Public Health England, Tackling Smoking in Pregnancy to Reduce Health Inequalities and Infant Mortality (2015)

<sup>16</sup> Action on Smoking and Health, Smoking Cessation in Pregnancy - A Call to Action (2013)

<sup>17</sup> Health and Social Care Information Centre, Statistics on NHS Stop Smoking Services: England, April 2011 – March 2012. (2012)

## Causes of Preterm Birth

Common causes of preterm birth include multiple pregnancies, infections and chronic conditions, such as diabetes and high blood pressure; however, often no cause is identified. There is also a genetic influence. Better understanding of the causes and mechanisms will advance the development of prevention solutions. Family planning and increased empowerment of women, especially adolescents, plus improved quality of care before, between and during pregnancy can help to reduce preterm birth rates.<sup>3</sup>

### Preterm Delivery

Around 75% of women delivering preterm do so after preterm labour. In the majority of women with preterm labour, a “cause” is not found, although it is known that a significant proportion of preterm labours are associated with infection. The remaining women delivering preterm have undergone elective or iatrogenic preterm delivery when this is thought to be in the fetal or maternal interest (e.g. because of extreme growth restriction in the baby, or because of maternal conditions such as pre-eclampsia). “Treatments” for preterm labour include strategies to reduce the risk in women who are at high risk, tocolytics to delay preterm delivery, and additional antenatal strategies to improve outcomes for babies who will be born preterm.<sup>18</sup>

### Preterm pre labour rupture of the membranes (PPROM)

Preterm pre labour rupture of the membranes (PPROM) complicates only 2% of pregnancies but is associated with 40% of preterm deliveries and can result in significant neonatal morbidity and mortality.<sup>19</sup>

The three causes of neonatal death associated with PPRM are prematurity, sepsis and pulmonary hypoplasia. Women with intrauterine infection deliver earlier than non-infected women and infants born with sepsis have a mortality rate four times higher than those without sepsis. In addition, there are maternal risks associated with chorioamnionitis. There is evidence demonstrating an association between ascending infection from the lower genital tract and PPRM. In women with PPRM about one-third of pregnancies have positive amniotic fluid cultures and studies have shown that bacteria have the ability to cross intact membranes.<sup>20</sup>

Smoking during pregnancy is a well-known cause of preterm birth, especially preterm birth complicated by PPRM. Smoking cessation interventions in high-income countries that combine counseling with additional social support services have been found to significantly reduce preterm birth and should be adapted for application in low- and middle-income countries where the large majority of smokers live.<sup>21</sup>

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<sup>18</sup> National Institute for Clinical Excellence, Draft Preterm labour and birth - Full guideline (2015)

<sup>19</sup> Royal College of Obstetricians and Gynaecology - Preterm Pre labour Rupture of Membranes ‘Green-top Guideline No. 44’ (2010)

<sup>20</sup> Royal College of Obstetricians and Gynaecologists ‘Green-top Guideline No. 60’ (2011)

<sup>21</sup> Ballard and Radley, Committee opinion no. 471: Smoking cessation during pregnancy (2010).



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# Prevention of Preterm Birth

## Better Booking Review

### An audit of booking risk assessment and pregnancy notes within the South East

Lack of antenatal recognition of fetal growth problems in pregnancy is the single largest avoidable cause of adverse outcomes such as stillbirth, neonatal death, prematurity, perinatal morbidity and cerebral palsy. Identification of these babies in pregnancy is vital as those with recognised growth restriction have significantly lower rates of stillbirth because they are more likely to receive appropriate investigations and management.<sup>22</sup>

Comprehensive risk assessment at booking by the midwife is essential to identify those women at increased risk of pre-term birth. They may need early referral to an obstetrician, And depending on the risk factors identified:-increased surveillance with blood pressure monitoring, support for healthy eating for the obese, smoking cessation, cervical scanning or interventions such as cervical cerclage.

The risks for pre-term birth overlap with some of the risks for growth restriction and stillbirth. Women who smoke, women at risk of pre-eclampsia, gestational diabetes and with medical co morbidities are more likely to have pre-term births and babies who are stillborn.

A SE SCN audit of the booking risk assessment and the pregnancy notes used in each Trust in South East was carried out in spring 2014 using the standards recommended within National institute of Clinical Excellence guideline CG62 (2008) and the Royal College of Obstetricians and Gynaecologists Green-Top Guideline 31(2013). The results of the South East booking audit found that the RCOG risk assessment algorithm had not been implemented by any trust.

### Recommendation

Use the recommended risk assessment at booking with which to identify women at risk of pre-term birth (Appendix 1)

## Preterm Birth Midwifery and Obstetric Services and MDTs

Some Trusts (nationally and regionally) already have dedicated Obstetricians to support mothers who have experienced previous preterm birth. There is variation in services across the South East. By creating a standardised approach for the region linked to the national initiatives, each unit will benefit from information sharing and benchmarking day to day care against best practise. Multidisciplinary Working (MDT) is also needed to provide both physical and psychological care to mothers who have experienced preterm delivery and for some perinatal death.

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<sup>22</sup> BMJ 346, Maternal and fetal risk factors for stillbirth: population based study (2013)

## Recommendations

- Each Trust should identify a named Obstetrician and Midwife to lead on preterm birth prevention and management
- Each Trust's preterm birth leads should be encouraged to participate in locally driven audit and research and contribute data to the National Preterm Birth Clinics Network.
- There are benefits for parents to come to a dedicated clinic where they receive continuity of care. Mothers who have experienced perinatal loss do not want to repeat the story every time they come to clinic. Having a dedicated team who they can contact if they are concerned will also improve signposting and access to services for mothers who are at risk of preterm delivery and improved support for their partners.

## Screening for Preterm Birth

The main focus of this paper is to create organisational readiness to screen for those at risk of preterm labour however optimal management of other high risk groups will reduce the incidence of iatrogenic pre-term birth. These interventions are dependent upon the identification of pregnancies at risk of growth restriction, pre-eclampsia and diabetes.

- **Small for Gestational Age / Intrauterine Growth Restriction**  
Screening by use of the 'SCN Better Booking Guidance' and 'NHS England Stillbirth Care Bundle' algorithm and risk assessment tool, stringent attention to correct measurement of symphysis fundal height and rapid access to ultrasound assessment can increase the identification of growth restriction and referral for optimal obstetric management.
- **Pre-eclampsia**  
Screening by history, Doppler, or biochemical methods may be considered in order to triage women into the appropriate pathway.
- **Diabetes**  
All women with risk factors for gestational diabetes should be offered glucose tolerance testing in line with current national guidance. Testing should be performed at the appropriate time, with documentation of results and correct clinical management of abnormal results.

### Cervical Length Measurement

The National Institute for Clinical Excellence (NICE) plan to publish a clinical guideline on pre-term labour and birth in November 2015. Although the precise indications for cervical length scanning have not been published it is expected that every obstetric unit will be required to be capable of providing high quality measurement of cervical length using transvaginal ultrasound.

The draft NICE guideline for Preterm labour and birth (June 2015) outlines "*if the clinical assessment suggests that the woman is in suspected preterm labour and she is 30+0 weeks pregnant or more, consider transvaginal ultrasound measurement of cervical length as a diagnostic test to determine likelihood of birth within 48 hours.*"

There is currently variation across South East regarding to the availability of cervical length measurement. The South East Strategic Clinical Network allocated non-recurrent funding to facilitate the prompt implementation of cervical length scan training across the region. The aim is to ensure all provider units have the capability to provide a high quality measurement of cervical length using transvaginal ultrasound. The overarching aim is to reduce the preterm birth rates across South East by creating the training slots and hence the capacity to offer cervical length assessment for high risk mothers. In the future screening of primigravid women may also be considered.

Essential to the use of any measurement is that it is always undertaken in the same way using the same standard criteria. This can create comparable data sets which in turn can be used to drive best practise and policy change.

## Recommendation

- It is recommended that all Trusts identify at least one Sonographer and Consultant Obstetrician to undertake the online training in cervical length provided by the Fetal Medicine Foundation.<sup>23</sup> In addition we would encourage units to train all staff who scan to undertake the training and thus create "organisational readiness" for future care.

### **Cervical Cerclage**

Over the last 50 years the use of cerclage has expanded to the management of women considered to be at high risk of mid-trimester loss and spontaneous preterm birth by virtue of factors such as multiple pregnancy, uterine anomalies, a history of cervical trauma (e.g. conisation or operations requiring forced dilatation of the cervical canal), and cervical shortening seen on sonographic examination. However its use and efficacy in these different groups is highly controversial since there is contradiction in the results of individual studies and meta-analyses.<sup>20</sup>

A consensus for the use of cervical cerclage should be developed alongside the use of cervical length screening. This will include a review of which type of suture should be inserted and should be based on best practise for improved outcomes as opposed to local expertise. Additional training may be required in some units.

In high risk cases abdominal cerclage may be appropriate and referral to a tertiary centre should be considered.

Lastly rescue cerclage needs to be assessed on a case by case basis and requires paediatric involvement and careful counselling of parents. Identifying who is trained in this procedure and who can give advice locally can be discussed and included in unit protocols before an emergency arises.

## Recommendation

- All Trusts should identify two or three clinicians to specialise in transvaginal cervical cerclage to enable sufficient capacity for 52 week cover.
- Local and National audit/research findings will be investigated to develop the network standard for the use of cerclage and the best method to use.

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<sup>23</sup> <https://fetalmedicine.org/cervical-assessment>

- Abdominal cerclage has been shown to be effective in high risk cases. Units will be identified that have the expertise to provide this service.

## OPPTIMUM Study

The OPPTIMUM study is a UK-based randomised trial to determine if progesterone prophylaxis to prevent preterm labour improves outcome. The purpose of the study is to see if giving progesterone to women at high risk of preterm delivery is good for mother's and baby's health. The health of the mother is monitored during the pregnancy and the baby's health until the baby is two years of age. The OPTIMUM trial closes at the end of 2015 and the evaluation results are highly anticipated.

## Progesterone

Progesterone (200mg) once per day has been shown to reduce the risk of preterm birth, where a short cervix of less than 25mm has been identified by cervical length screening. This is a relatively inexpensive treatment but a clear protocol for its wholesale introduction has not yet been developed.

The draft NICE guideline for Preterm labour and birth (2015) outlines "Offer prophylactic vaginal progesterone to women with no history of spontaneous preterm birth or mid-trimester loss in whom a transvaginal ultrasound scan has been carried out between 16+0 and 24+0 weeks of pregnancy that reveals a cervical length of less than 25 mm".

## Fibronectin

Fibronectin is already well established across the South East for stratification of mothers who present with threatened preterm labour. The introduction of Fibronectin for screening and the use of progesterone prophylaxis will depend on the outcome of the OPTIMUM trial and the final publication of the NICE guidance in November 2015. If it is to be introduced as a screening tool across the region the costs will need to be established as it is currently costed for threatened pre term birth only.

## Associated South East Strategic Clinical Network Projects

### South East Maternity Dashboard

The introduction of a robust and valid maternity dashboard has enabled maternity units within South East to obtain a clear view of the quality and safety of their own service. In addition, a regional view will highlight areas of variation in practice and provide valuable benchmarking to facilitate improvement. The dashboard will apply national and regionally

agreed standards and definitions. Information from the dashboard will allow individual trusts to assess their preterm birth rates prior to 34 and 37 weeks and compare regional variation.

### **Sonographer Workforce Capacity**

There is a significant shortfall in maternity ultrasound capacity both nationally and within South East region. There is a shortage of adequately trained Sonographers able to provide scans needed in obstetrics and gynaecology. The problems providing an adequate service are worsened by increasing demand and increasing complexity of scans.

South East Strategic Clinical Network are working in partnership with Health Education Kent, Surrey and Sussex to identify workforce issues and variation related to antenatal sonography across South East. Options being considered include:

- Recruiting from other medical specialties e.g. Midwifery and gynaecology nursing into specialised scanning roles following focussed short ultrasound training courses
- Direct entry training into MSC level ultrasound courses
- Overseas recruitment

One of the biggest barriers to training a larger workforce is creating sufficient training capacity and proposed solutions from other regions are currently being evaluated and will be considered.

The background is a vibrant green color with a complex, abstract pattern of overlapping, semi-transparent geometric shapes. These shapes include various polygons, triangles, and rounded rectangles, creating a layered, textured effect. The colors range from a bright, saturated green to a slightly darker, muted green, giving the overall design a sense of depth and movement.

# **Recommendations for the South East Region**

## Recommendations

- Preparation and Implementation of NICE Guideline on pre-term labour and birth
  - The SCN recommends a focus on organisational readiness in preparation for the expected guideline change in November 2015.
  - All Trusts to implement the guideline when published.
- Each Trust should identify a named Obstetrician and Midwife to lead on preterm birth prevention and management
  - Each Trust's preterm birth lead should join the National Preterm Birth Clinics Network
- All Trusts should identify two or three clinicians to specialise in transvaginal cervical cerclage to enable sufficient capacity for 52 week cover
- Consideration to be given to a regional centre for abdominal cervical cerclage
  - SCN to support commissioners in identifying possible centre
- Use of the 'SCN Better Booking Guidance' and 'NHS England Stillbirth Care Bundle' algorithm and risk assessment tool to be used at all bookings

## Continuous Improvement to Services

- In order to maintain the longer term implementation and momentum of maternity work programmes, the SCN would encourage annual peer group support meetings for providers to discuss:
  - South East Maternity Dashboard
  - Stillbirth Work Programme
  - Pre-term Birth Work Programme
- Recommended peer group support for future services across the South East, adopting ways of working similar to that of an Operational Delivery Network.

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- The Fetal Medicine Foundation



# Appendices

## Appendix 1.

### Risk assessment at booking to identify women at risk of pre-term birth

What		Rationale	Reference
<b>Investigations</b>			
Mid-stream urine	Asymptomatic bacteriuria	Risk factor for Pre term birth as a result of increased chance of developing pyelonephritis	NICE CG 62
CO2 monitoring	Smoker status monitoring	Smoking is a risk factor for stillbirth and pre-term birth	RCOG guideline 31
<b>Maternal factors</b>			
Medical history	Chronic hypertension	Major risk factor for SGA	RCOG guideline 31
		High risk factor for pre-eclampsia	NICE CG 107
	Diabetes and vascular disease	Major risk factor for SGA	RCOG guideline 31
		Type 1 or 2 - High risk factor for pre-eclampsia	NICE CG 107
	Renal impairment	Major risk factor for SGA	RCOG guideline 31
	Chronic kidney disease	High risk factor for pre-eclampsia	NICE CG 107
	Antiphospholipid syndrome*	Major risk factor for SGA	RCOG guideline 31
		High risk factor for pre-eclampsia	NICE CG 107
	Risk factor for Pre term birth	RCOG guideline 17	
Lupus erythematosus*	High risk factor for pre-eclampsia	NICE CG 107	
Uterine anomalies		Risk factor for pre-term birth	RCOG guideline 60
Cervical trauma	Cone biopsy, any operation forcibly dilating the cervix	Risk factor for pre-term birth	RCOG guideline 60
<b>Family history</b>			
Pre-eclampsia		Moderate risk factor for pre-eclampsia	NICE CG 107
<b>Previous pregnancies</b>			
Parity	Nulliparity	Moderate risk factor for pre-eclampsia	NICE CG 107

Reducing Preterm Birth - Recommendations for the South East Region

Previous babies	Gestational age at birth <36 weeks	Risk factor for pre-term birth	
Previous miscarriage	3+	Risk factor for pre-term birth	RCOG guideline 17
Current pregnancy			
Multiple pregnancy		Risk of pre-term birth	RCOG guideline 31
		Moderate risk of pre-eclampsia	NICE CG 107

\* autoimmune diseases

References:

1. NICE Clinical Guideline 62- Antenatal care (2008)
2. RCOG guideline 31 – The Investigation and Management of the Small-for-Gestational-Age-Fetus (2013)
3. RCOG guideline 17- The Investigation and Treatment of Couples with Recurrent First-trimester and Second –trimester Miscarriage (2011)
4. RCOG guideline 60- Cervical cerclage (2011)
5. NICE Clinical Guideline 107 – Hypertension in pregnancy: the management of hypertensive disorders during pregnancy (2010)
6. NICE Clinical Guideline 129- Multiple Pregnancy (2011)