

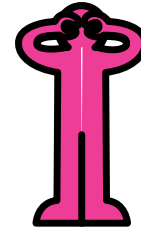
Public health summary report

2015

The first 1,000 days



Finding out more about the health of Southampton



If Southampton is to become a healthier city, we need to know what our current health outcomes are, trends over time, how we compare with similar cities and what the evidence suggests will make the biggest difference if we want to improve.

There is a wide range of information in our Joint Strategic Needs Assessment (JSNA) that helps us understand the health of people in Southampton. This resource is regularly updated and paints a picture of what life is like in Southampton and what the health challenges are. The full JSNA is a web-based resource and can be found at www.publichealth.southampton.gov.uk/jsna. As well as data and analyses, there are mapping tools and summaries which enable a detailed picture to be built up on a wide range of topics.

The back catalogue of annual reports is available on our website; these give an in-depth analysis of a range of topics that remain current in our city. As well as publishing an Annual Report and a Joint Strategic Needs Assessment (JSNA), we also produce a number of other resources that help build up a more detailed picture of health in Southampton. These include briefing notes which are a comprehensive look at topics such as child growth, inequalities and sexual health. We produce profiles of the sixteen electoral wards in the city; these are available as an interactive mapping tool on our website. Please visit our website to access any of these resources: www.publichealth.southampton.gov.uk

Acknowledgements

My special thanks go to Bob Coates and Dan King for editing this report and to the following members of the public health team for their contributions: Jenifer Barker, Debbie Chase, Ginny Cranshaw, Parvin Damani, Sally Denley, Nicola Duffield, Tim Davis, Mohammed Jawad, Vanella Mead, Rebecca Nunn, Robin Poole, Cassandra Powers, Dawn Saunders, Ravita Taheem, and Gemma Ward.

Special thanks also to guest contributors: Laura Brook, Hazel Inskip Jeyanthi John, Patrick O'Shea and Sue Thompson.



Wednesday exercises in Queen's Park, Southampton by Kay Brown of Urban Sketchers Southampton ©

Preface

This is my third report since Public Health leadership and responsibilities transferred from the NHS back to local authorities on 1st April 2013. In it I report on the state of Southampton's health, underlying trends and some of the future challenges that we face, and make recommendations for how health can be improved.

“Start well, stay well” could sum up our approach to improving health and reducing inequalities. It is also where the evidence tells us we should go if we are serious about making a difference to the lives of Southampton people. While the health of people living in Southampton continues to improve and we are living longer, not all of these extra years of life are lived in good health or free from disability. Some health indicators in childhood show that we are not yet succeeding in our aim to give every young person the best possible start in life. There has also been limited progress in narrowing the health gap between the wealthy and those who are on low incomes, and many challenges remain or have increased in significance.

In this report I have chosen to focus on the first 1,000 days of life; the lead up to conception, pregnancy and the first two years of life. This period is critical to future health and wellbeing and is the time when there are huge opportunities to influence outcomes for the better.

The University of Southampton has contributed significantly to our improved understanding of what influences future health and what we can do about it. In a specially commissioned introduction this year, Professor Hazel Inskip from the University's MRC Lifecourse Epidemiology Unit sets out the rationale for focusing on fetal and infant development. There are clear pointers driving us to improve nutrition and lifestyles of young women and their children because of their far reaching implications for future health.

The series of briefings in this report set out in more detail how these and other influences impact on health. Social factors, including poverty, housing and language development are associated with poorer health outcomes such as teenage pregnancy and childhood dental decay. Tackling the root causes of social disadvantage is essential, but much can be done to reduce the impact of these factors.

Emotional and mental health play an important role throughout life and attachment is a key factor in early positive childhood development. The 0-5 year Healthy Child Programme aims to strengthen protective factors around the mother and her child, identifying issues at an early stage, mobilising social support and building self-confidence.

The key role of diet and nutrition in laying the foundations for good health is explored in further detail; eating the right foods in pregnancy, the role of supplements, the importance of breast feeding,

maintaining a healthy weight and making healthy food choices. Important recommendations are set out that will support families to ensure that children enjoy the life-long benefits of being a healthy weight.

Smoking, drugs and alcohol cause harm to babies, both in the womb and after they are born. The most vulnerable should be protected from harmful substances if they are to have the best possible start in life. Two chapters in the report are devoted to setting out what these threats to future health are and what more we can do to enable parents to avoid them.

Infections are a much lesser threat than they were even a decade ago, as vaccination programmes have expanded to protect against a wider range of infectious agents. However, new problems are emerging, including antibiotic resistance, and vigilance will always be needed to prevent, detect early and treat well.

Screening for infections and other health problems contributes to reducing preventable disease, disability and avoidable deaths. The final section of the report describes the screening programmes that are on offer. They remain an offer. It is vital that we communicate the risks and benefits clearly and consistently, enabling all families to make good choices encouraging as many parents as possible to opt in.

A set of 12 key indicators are given at the end of the report (see Appendix 2). These will help demonstrate over time whether what we do in the first 1,000 days is having an impact on improving the health and life-time chances of our city's children.

As with last year's Public Health Report, we are making the online version of the report a more useful resource; full technical briefings on this year's selected topics are published along with links to further information in the JSNA and elsewhere, as well as topic summaries, city profiles and other resources.

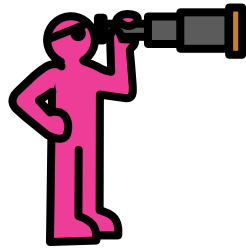
My hope is that the Report and its recommendations not only stir debate but lead to much-needed action.



Dr Andrew Mortimore
Director of Public Health
Southampton City Council

February 2016

Introduction



The theme for this year's report is the first 1,000 days of life...

Shakespeare got it seriously wrong - at least from a health perspective. His "seven ages of man" in *As You Like It* starts with the "infant mewling and puking in the nurse's arms". But by the time infants start mewling and puking, they have done a lot of growing and have already acquired many characteristics that will determine their health in later life. We need to start further back in time.

We have been slow to wake up to the importance of pregnancy, let alone pre-conception. Until relatively recently, pregnancy was something to be slightly embarrassed about. Queen Victoria, herself pregnant many times, despised it and wrote to her daughter saying "What you say of the pride of giving life to an immortal soul is very fine, dear, but I cannot enter into that; I think much more of our being like a cow or a dog at such moments." Fortunately, times have changed, pregnancy is celebrated and we try to support pregnant women and their families to ensure the health of the mother and child.

Think of a car. Which would you expect to last longer; the car made out of parts from a scrap yard, or a new car straight from a high-tech factory? Not a difficult question to answer. We have all absorbed the maxim that the better something is made, the longer it will last. Specifically, though, we've taken it on board in relation to technology. However, we've been extraordinarily slow in applying it to the way humans are made.

The first 1,000 days refers to the period from conception to age two years. The interest in this period largely arose in relation to low income countries where there was concern about children being stunted. Women's health and nutrition before and during pregnancy, and infant feeding and weaning were considered vital for healthy children; the first 1,000 days has become widely accepted as a time when action is needed to give children the best start in life. However, it is also important in high income countries, such as the UK, too. Here though, the major concern is not stunting and under-development but the opposite, namely, our obesity epidemic and the later risk of chronic diseases such as diabetes and cardiovascular disease.

Figure 1: Lifecourse model of chronic disease risk

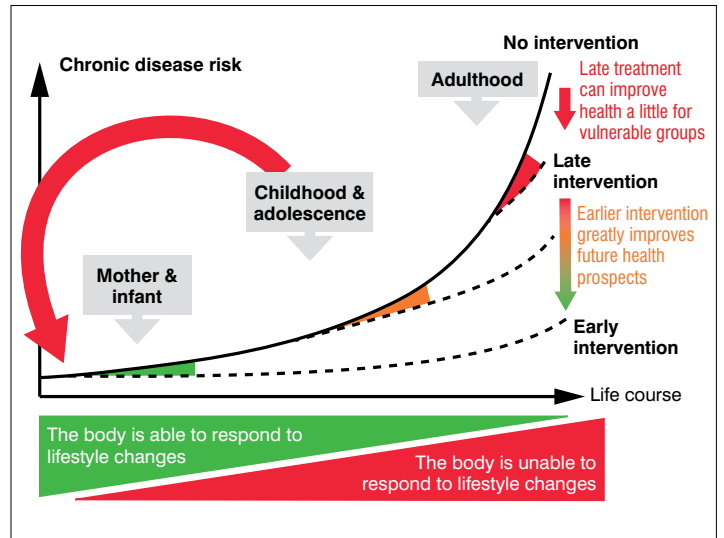


Figure 1 shows that our risk of chronic disease increases as we age, but early intervention can have a greater effect than leaving it until later. Improving the lives of children and adolescents has a double advantage as it improves the health of the children themselves but also prepares them better for having their own children so their pre-conception health is enhanced and their children benefit. Adapted from Hanson M and Gluckman PD. *Physiological reviews*, 2014.

Studies in the last few years from around the world have shown that people who were born small have higher risks in adult life of coronary heart disease, raised blood pressure and cholesterol, obesity, osteoporosis and bone fractures. However, it's also true that there is an association between high birth weight and later obesity, diabetes and other chronic diseases. There are thought to be two routes to later obesity: via excess or restricted growth in the womb and early life.

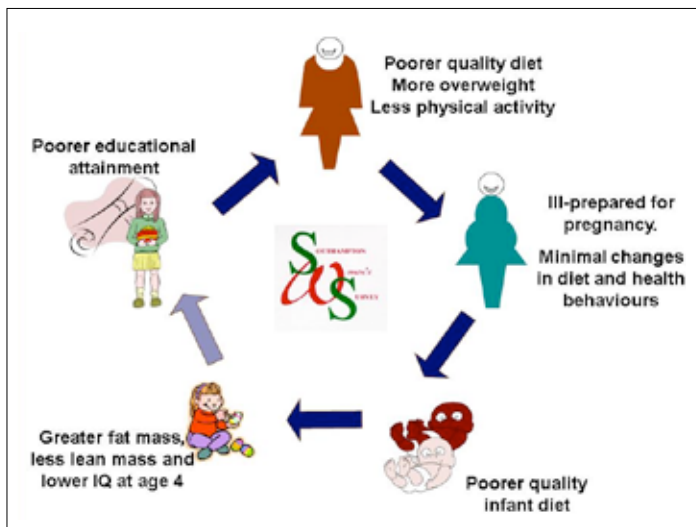
Clearly something about the way babies are formed before they are born has an impact much later in life. Size at birth is a crude measure that summarises the way the baby has grown in the womb, but despite the crudeness of the measure, we still see strong relationships with these major disorders. The list of diseases is dramatic. Heart disease is the commonest cause of death in this country and heart disease and diabetes rates are rising in many countries. Furthermore, rapid growth in early life seems to have a negative effect on health and development

of the child. Rapid growth may however not be bad, as it could be due to the baby catching up after less-than-optimal growth in the womb. But failure to thrive after birth is not good either. Infant feeding is a complex issue, but infancy is a time of rapid growth, and infant diets provide the building blocks for physical development.

So how are babies made? We all think we know the answer to that! But what is the impact of the diet and health of the parents before conception? What happens around conception? And what happens in the womb during the subsequent nine months? What makes babies different from each other when they emerge from the womb? What influences their health and development in the early years?

In Southampton, the Southampton Women's Survey (SWS) was set up to examine these issues, among others. More than 12,500 women aged 20-34 years were recruited to the study when they were not pregnant and those who subsequently became pregnant were seen three times in pregnancy, with the babies measured at birth and then followed-up frequently through childhood. More than 3,000 babies were born to women in the study.

Figure 2: Southampton Women's Survey findings



The SWS has given us some important insights into what is going on. Figure 2 shows some of the findings which are presented as a cycle that needs to be broken if we are to improve health. Educational attainment is strongly associated with the quality of a woman's diet, her body composition and her levels of physical activity. Women do not modify their lifestyles to any great extent in the months leading up to pregnancy (many pregnancies being unplanned) and only make minimal changes to their dietary quality during pregnancy itself. The strongest predictor of the quality of diets of the infants and children is the quality of the diet of the mother before she even became pregnant. Poor quality of infant feeding, even adjusted for a wide

range of socio-economic and maternal factors, is associated with greater fat mass and less lean mass (such as muscle) and lower IQ in the children at age four years. While the SWS children are not old enough to measure educational outcomes it would not be surprising if the circle were closed to provide the link in pale blue in figure 2.

Further work in the SWS has identified five key factors that are associated with obesity in the child at ages 4 and 6 years. The factors in question are: the mother being overweight before conception of the child, excessive weight gain in pregnancy, low levels of vitamin D in the mother during pregnancy, maternal smoking during pregnancy, and short duration of breastfeeding. Children with four or five of these factors were around four times more likely to be overweight or obese at ages 4 and 6 years than those with none.

Work linked to the SWS has also demonstrated the importance of the role of fathers. While it is women who get pregnant, their lifestyles are inextricably linked with those of their partners and the men can have a strong influence on the family diet. Men's sperm quality is undoubtedly important too, so the importance of a healthy lifestyle before conception doesn't only apply to women.

We are gradually putting together the pieces of the jigsaw to give us a picture of the influences on fetal and infant development. For now, we have clear pointers driving us to improve the nutrition and lifestyles of young women and their children. The effects of these undoubtedly have far-reaching implications for health, and so optimising the influences during the first 1,000 days is crucial.

For anyone able to read this report, it's too late to alter what happened to us in the womb and in early life – our first 1,000 days are over. But we can maximise our health prospects and those of our children at any stage. Even the poorly made car can be kept going for longer if it is lovingly maintained and carefully driven. So, while adding an extra age to Shakespeare's "seven ages of man", we need to remember that at all eight ages there are opportunities for improving our health, but certainly a greater focus on the first 1,000 days would benefit future generations.



Professor Hazel Inskip
Southampton University
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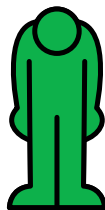
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Social factors in the first 1,000 days



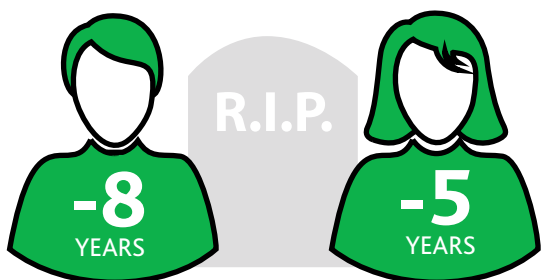
Why is this issue important?

About 12,000 children and young people (aged under 19 years) in Southampton live in relative poverty (over half are under 5). Living in poverty has a serious impact on children's lives, negatively affecting their educational attainment, health and happiness as well as having long term adverse consequences into adulthood. In Southampton, life expectancy is on average 8 years shorter for males and 5 years shorter for females when we compare the most affluent and deprived areas.

Poverty of the family, combined with a range of social factors can be measured or quantified as a socio-economic deprivation index*. From highest to lowest levels of deprivation, children living in more deprived circumstances are:

- Nine times more likely to die of a sudden unexpected death in infancy
- Three times more likely to have a mental health problem
- Thirteen times more likely to suffer injury or poisoning
- More likely to have language delay and experience a much higher number of discouragements than encouragements
- More likely to live in cold, damp and mouldy homes increasing their risk of mental health problems, slower physical and cognitive development and making them between 1.5 and 3 times more likely to develop symptoms of asthma than children living in warm and dry homes

In Southampton, life expectancy is on average 8 years shorter for males and 5 years shorter for females when we compare the most affluent and deprived areas.



Poverty and associated risk factors

A caregiver's experience of poverty, mental health problems, domestic violence and substance misuse impacts the young child's rapidly developing nervous system and their health and wellbeing across the life span. These stresses often couple together with other risk factors such as poor diet and smoking in the household.

Looked after children

In April 2015 there were 615 looked after children and 387 on child protection plans in Southampton (75% higher compared to England and 37% higher than our statistical neighbours). Indicators of health and wellbeing and learning development for these children suggest that their experience is much worse than the average for our overall child population.

Teenage pregnancy

Teenage conceptions have long been regarded as a proxy indicator for wider evidence of low aspirations, and social and educational disengagement. In 2013 there were 129 under 18 conceptions in Southampton; a significantly higher conception rate compared with other similar areas in England.

Dental health

Keeping children healthy and free from dental decay is important as they are learning to speak and socialise. In Southampton around 500 children were admitted to hospital in 2014-15, of which around 180 were aged under 5 years. The majority of admissions were for dental extractions under general anaesthetic. The highest levels of dental caries are experienced by the most deprived groups.

What is currently being done or can be done in Southampton?

Return on investment

Evidence has shown that the early caregiving environment, and in particular parenting, mediates around 50% of the contextual factors (e.g. poverty) that influence children's early development and wellbeing. For instance:

- Every £1 invested in quality early care and education saves the taxpayer up to £13 in future costs.

*Please see map in Appendix 1 (page 17) - Income Deprivation Affecting Children England Deciles for Southampton LSOAs

- For every £1 spent on early year's education, £7 has to be spent to have the same impact in adolescence.
- Targeted parenting programmes to prevent conduct disorders pay back £8 over 6 years for every £1 invested with savings to the NHS, education and criminal justice system.

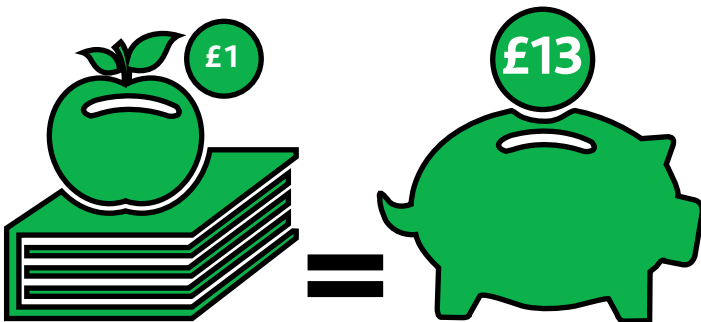
Parenting programmes

Parenting has a greater influence on a child's life in the early years than education, wealth or class. Supporting parents with parenting programmes has a positive impact on both parent's and children's wellbeing and mental health.

Family Nurse Partnership Programme (FNP)

The FNP offers intensive support for first time younger pregnant women that are more vulnerable and are more likely to smoke, have a poor diet and are often subject to stigma. A recently published randomised trial of FNP suggested no additional short term benefits compared to usual care. Longer term outcomes on attachment and educational outcomes are awaited.

Every £1 invested in quality early care and education saves the taxpayer up to £13 in future costs.



In August 2014, Southampton City Council's children's service team assessed the impact of pre-birth to 5 services in Southampton against a child's achievement at the end of the early years foundation stage (EYFS). They found that those children who accessed at least 3 terms (540 hours) of early years' service provision from 2009-14 were almost 17% more likely to achieve a good level at EYFS compared to those with zero hours.

Children's Centres

There are 14 children's centres within the city offering high quality early years education and focusing on areas of highest deprivation. Over 14,900 (89% of children under 5) had registered contact with Children's Centres in 2014/15 with 37% using the centres on a monthly basis.

Dental health

A locally-developed programme Saving Smiles is being rolled out across Early Years settings in the city. Currently 25 settings are on board and a member of staff in each is being trained as an oral health 'champion'. Implementing the city's water fluoridation scheme would go further to protect and improve the dental health of children living in the area.

Future infrastructure: integrating health and children's centre provision

In Southampton, children's centre staff work in partnership with health visitors and midwives. With the new local authority commissioning responsibility for health visiting and family nurse partnership, we have the opportunity to formally integrate health and children centre provision for 0-5 year olds ensuring shared ownership of outcomes.

Recommendations of the Director of Public Health

- ♥ The Health and Wellbeing Board should promote the development of a child poverty strategy for Southampton (as recommended by the Children's Commissioner)
- ♥ Reducing health and developmental inequalities must be a priority for those young children identified as vulnerable, ensuring the approach supports "proportionate universalism"
- ♥ Service providers should identify new ways of engaging with disadvantaged groups of women pre-conceptually and during pregnancy to support them to make healthy choices in recognition of their social circumstances
- ♥ The Health and Wellbeing Board should consider the poor dental health in children that has persisted for over two decades and make a recommendation on the implementation of Southampton's water fluoridation scheme
- ♥ Locality based children's health and social care teams should be formally integrated to deliver shared outcomes, and seek opportunities to "make every contact count"

Emotional and mental health and the first 1,000 days

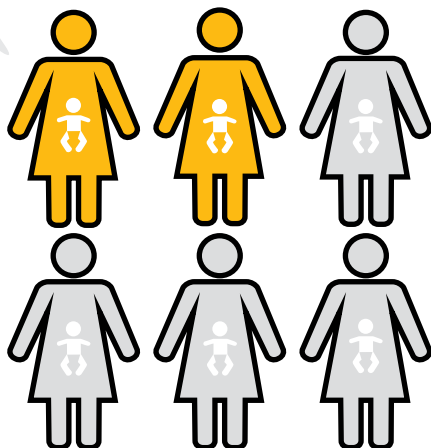


Why is this issue important?

The significance of maternal mental health and its subsequent impact upon infant mental health cannot be overstated; the foundation years (up to five years) are the time that children develop their emotional intelligence, resilience and ability to empathise.

- Early adversities such as maltreatment, trauma or stress and/or exposure to high levels of maternal stress hormones in the womb can interfere with neuro-development in the baby, leading to problems throughout their life course such as lower educational attainment, the adoption of risky health-related behaviours, social, emotional and mental health problems
- Of about 6,000 births at Southampton maternity units each year around 2,000 mothers responded yes when asked whether they have a mental health problem
- It is estimated that postnatal depression affects 10-15% of women and many others experience other mental health problems such as post-traumatic stress disorder (PTSD), anxiety and adjustment disorders

Of about 6,000 births at Southampton maternity units each year around 2,000 mothers responded **yes** when asked whether they have a mental health problem



- Children of mothers with mental ill-health are five times more likely to have mental health problems themselves
- Maternal depression impacts on school readiness, resulting in an increased likelihood of behaviour and emotional problems, language development delay, impaired parent child attachment, conduct disorders and learning difficulties
- Maternal depression, together with anxiety and psychosis carry a long term cost to society of about £8.1 billion for each one year cohort of births in the UK
- It is estimated that around 50% of women with perinatal health problems are not identified or treated
- Attachment is a key factor in early positive childhood development. The way parents interact with their children influence how children regulate their own behaviour and emotions

What is currently being done or can be done in Southampton?

In Southampton, all mothers known to the health service and identified as having low mood are offered evidence based interventions. Integrated working between health visitors, the Individual Access to Psychological Therapy (IAPT) service and children's centres enable the delivery of cognitive behavioural therapy group sessions for mothers with postnatal depression.

Specialist Perinatal Team

Southampton mothers have access to a perinatal team in a specialist facility with 10 beds. Admissions are received from across England with referral criteria including moderate to severe depression, anxiety disorders, bipolar disorder, complex presentations and puerperal psychosis.

Health Visitors & Protective Factors

Health visitors in Southampton seek to strengthen protective factors during the transition to motherhood by placing emphasis on social support, self-efficacy and preparedness to help prevent postnatal depression and other mental health issues (see figure 3).



by the National Childbirth Trust found that among 296 new fathers, 38% were concerned about their mental health while a separate study of 13,228 fathers in England found that severe postnatal depression was associated with emotional and behavioural problems in their children.

City-wide Anti-stigma Campaign

Launched on World Mental Health Day in October 2015 in partnership with the national 'Time to Change' campaign, the city wide anti-stigma campaign raised awareness of mental health issues in Southampton. The focus was on adult mental health and reducing the debilitating isolation that can result from suffering a mental health problem.

The Father's Mental Health

There is a tendency to focus on the mother and child in both raising mental health and strengthening attachment, however evidence is emerging of the impact on fathers. A recent survey



Figure 3: Schematic – promotion of maternal perinatal psychological wellbeing

Launched on World Mental Health Day in October 2015 in partnership with the national 'Time to Change' campaign, the city wide anti-stigma campaign raised awareness of mental health issues in Southampton.



Recommendations of the Director of Public Health

- ♥ Evidence based approaches should be embedded within services (and innovative approaches assessed) to improve mental health during pregnancy
- ♥ Health professionals should take every opportunity to prevent and identify mental health issues at the earliest stage, pre-pregnancy, during pregnancy and in the early years of life
- ♥ The Health and Wellbeing Board should ensure that community resourcefulness is promoted and is a key principle in future strategies
- ♥ All pregnant mothers and their partners should be able to access antenatal and postnatal support with a strong focus on the quality of the interaction between the parent/s and the child
- ♥ Recording of mental health and attachment should be included as indicators of the quality of maternity and health visiting services

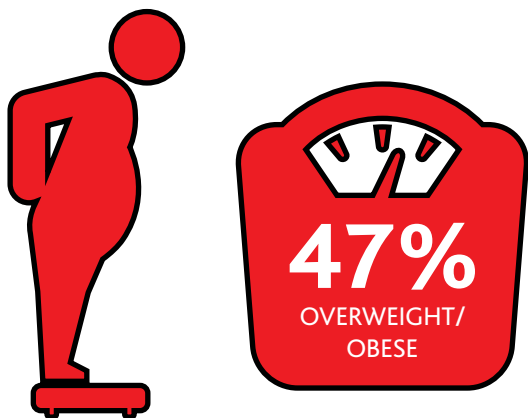
Diet and the first 1,000 days



Why is this issue important?

A mother's health, influenced by her diet, can have long term effects on her future child's health. This begins before conception, during pregnancy and in early feeding, and continues through weaning and beyond when healthy eating habits become established for the long term. All nutrients are important for a child's development but the role of certain nutrients in early development is well known:

- **Folic acid** is a B vitamin that has a protective effect before pregnancy and up to the first 12 weeks and reduces the risk of the baby developing neural tube defects
- **Iron** deficiency anaemia has been linked to low birth weight babies which in turn increases the risk of cardiovascular disease, hypertension and diabetes in adult life. The rate of low birth weight babies in Southampton is similar to England at around 3 per 100 births
- **Vitamin D** is absorbed from the diet (found in oily fish, eggs and fortified breakfast cereals) or made in the skin when exposed to sunlight during April to mid-October. A mother's vitamin D status is linked to both her child's bone development and birth weight



In 2014/15 47% of pregnant women in Southampton were classified as overweight or obese at their first appointment with the midwife.

Diet and brain development

The brain develops rapidly in early life and by the age of 2 years it will be about 80-90% of its final weight. All nutrients are important for brain development, especially in the key last trimester and the early post-natal period. Studies show a link between early diet and IQ suggesting that fatty acids found in breast milk may have important benefits in terms of IQ and memory scores in children.

The effect of obesity in pregnancy

Around two thirds of the adult population in the UK is either overweight or obese, which increases the risk of a range of health problems. In 2014/15, 47% of pregnant women in Southampton were classified as overweight or obese at their first appointment with the midwife. In pregnancy, obese women are more likely to suffer from problems such as gestational diabetes, hypertensive disorders, induction of labour, post-partum haemorrhage and are more likely to have a caesarean section. The risk of these complications increases with increasing BMI (Body Mass Index).

What is currently being done or can be done in Southampton?

The importance of a healthy diet before and during pregnancy cannot be emphasised enough as it can lay the foundations for good health in the long term.

Healthy Start

The national Healthy Start scheme aims to improve the health of pregnant women and families on a low income or receiving benefits. The scheme provides discount vouchers which can be used to buy cow's milk, infant formula or fruit and vegetables as well as vitamin coupons to swap for Healthy Start maternal supplements. In Southampton uptake of the vouchers in 2014/15 was 73%, however uptake of vitamin tablets was low at only 1%.

Supporting breastfeeding

Breastfeeding is linked to many health benefits for both the mother and baby. For the infant, it reduces the risk of a number of conditions including infections, certain allergic conditions,

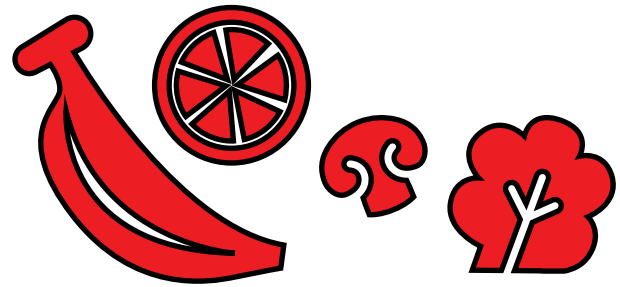
type 1 and 2 diabetes, infant mortality, sudden infant death syndrome and reduces the mothers' risk of type 2 diabetes and breast and ovarian cancer. In Southampton in 2013/14, 74.5% of mothers initiated breastfeeding (similar to England average) and 44.3% still breastfed at 6 to 8 weeks. The Breastfeeding Welcome scheme was launched in Southampton in May 2015 with 112 venues across the city joining and showing their support for breastfeeding mothers including cafes, restaurants, community centres and West Quay shopping centre.

Diet and deprivation

Research shows a clear link between deprivation and poor quality diet. Women living in the most deprived areas of Southampton are less likely to take folic acid before pregnancy and have a lower level of nutrient intake characterised by a diet low in fruit and vegetables and high in sugary food and drinks. They are also less likely to initiate breastfeeding and are likely to breastfeed for a shorter duration than mothers in areas of low deprivation.



The NCT (National Childbirth Trust) have been commissioned locally to provide a breastfeeding peer support service targeting the 30% most deprived areas in Southampton. Healthy "cook and eat on a budget" programmes are running in local Children's Centres for families affected by the welfare reforms and facing food poverty. This is being delivered alongside training for staff and volunteers in health and social care settings while experts have worked with local food banks to ensure food parcels supplied to families in need are nutritionally balanced.

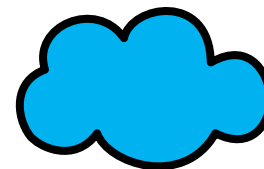


Healthy "cook and eat on a budget" programmes are running in local Children's Centres for families affected by the welfare reforms and facing food poverty.

Recommendations of the Director of Public Health

- ♥ More settings should be supported to achieve quality standards in terms of food and nutrition provision, with training provided for staff and volunteers in these settings on nutrition in the early years
- ♥ Targeted promotion, and opportunities for practical skills development is required for at risk families, especially those affected by the welfare reforms, through both health and community services. This should include promotion of breastfeeding, Healthy Start, and weaning and practical skills development for healthy eating on a budget
- ♥ To make healthier food choices easier for people in Southampton, the public health impact should feature in decisions by various sectors which shape and influence food choices including planning, licencing, economic development, transport and leisure

Smoking and the first 1,000 days



Why is this issue important?

Smoking in pregnancy puts both mothers and their babies at risk and is the main preventable cause of poor outcomes in pregnancy. Despite movement in the right direction, 14.7% of pregnant women in Southampton still smoke, considerably higher than the national average of 11.4%.

- The health risks associated with smoking during pregnancy include miscarriage, ectopic pregnancy, premature rupture of membrane, placenta praevia, abruption placenta, pre-term delivery, pre-eclampsia, low-birth weight, respiratory distress, perinatal mortality and sudden infant death syndrome
- Recent studies identify a clear link between numbers of cigarettes smoked and increased risk of still birth and the risk of having a baby who dies from SIDS (Sudden Infant Death Syndrome) trebles in mothers who smoke during and after pregnancy
- Children inhaling second hand smoke in the home or in the car can be at an increased risk of developing lung cancer, cancers of the larynx and pharynx and respiratory illnesses
- For babies and children who live in households where adults smoke, there is a greater incidence of serious respiratory infections such as bronchitis and pneumonia, asthma and problems of the ear, nose and throat

- Rates of smoking are higher in poorer communities in Southampton, exacerbating health inequalities in the population. Pregnant women are more likely to smoke if they are young, less educated, living in rented accommodation and are single or have a partner who smokes
- Smoking in pregnancy hits the poorest the hardest. 23.1% of Southampton's most deprived mothers are recorded as smoking at their first midwifery booking (compared to 5.3% amongst the least deprived) and a low-income family earning £21,000 a year where both parents smoke 20 cigarettes a day will spend one quarter of their total income on tobacco
- Estimates of costs to the NHS to treat mothers and their babies (0-12 months) with problems caused by smoking during pregnancy are between £20 million and £80 million each year

What is currently being done in Southampton?

Reducing smoking during pregnancy, in particular among young women, is a key priority in Southampton's Tobacco Control Plan. Through the commissioning process in partnership with key stakeholders, recommendations from the Smoking in Pregnancy Challenge Group have largely been achieved as outlined below.

Developing Local Insight

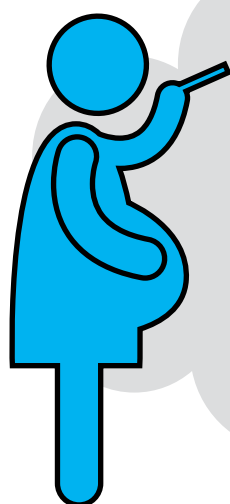
Two focus groups were carried out to develop local insight into the thought processes of women who smoke during pregnancy and the how best to support them to quit. The findings were used to inform the commissioning of services and recommendations.

Antenatal CO (Carbon Monoxide) Screening

Routine carbon monoxide screening in pregnancy was introduced locally in Southampton during 2014-15. All women in the city are now offered a routine CO screen as part of their antenatal care at their first booking appointment with the midwife.

Reducing Smoking in Younger Mothers

A joint project targeting parents under 20 has been developed with the FNP (Family Nurse Partnership) which will involve CO screening and intensive support for parents aged under 20 to quit smoking alongside a trial smoking group for young pregnant women.



14.7%
of pregnant women
in Southampton still
smoke, considerably
higher than the
national average
of 11.4%.



Promotion of Smoke Free Environments

To raise awareness with families of the dangers associated with second-hand smoke a range of activities have been delivered to promote smoke free environments including training for health visitors and Children Centre staff, provision of 'Chemical Soup' resource packs for each Children Centre cluster and the promotion of national campaigns in all Children Centres.

Electronic Cigarettes

There has been a significant increase in recent years in the number of people using Electronic Nicotine Devices (ENDS) – more commonly known as e-cigarettes. These are now cited as the number one quitting aid used by smokers. A report in September 2015 from PHE (Public Health England) concluded that e-cigarettes are significantly less harmful than tobacco and have the potential to help smokers quit. However, there is still considerable debate in the BMJ (British Medical Journal) and other journals. pregnant women who want to stop smoking are still advised to use licenced nicotine replacement therapy and not ENDS, since these are currently not licenced products.



Recommendations of the Director of Public Health

In line with national guidance including the recommendations of the latest report from the Smoking in Pregnancy Challenge Group published in October 2015, the key recommendations for action from the Director of Public Health are:

- ♥ Commissioners and maternity services should support the extension of CO screening across the whole antenatal pathway including health visitors, and all agencies working with young families, to ensure this is systematically and sustainably implemented across the system in a joined up approach by end of 2016
- ♥ Commissioners and maternity services should review the outcomes of the FNP work to consider longer term investment to reduce smoking in young pregnant women, with particular focus on areas of deprivation
- ♥ Local agencies should work together to support the delivery of a Smoke Free Homes campaign by Children's Centres/FNPs and Health visitors during 2016

Substance misuse in the first 1,000 days

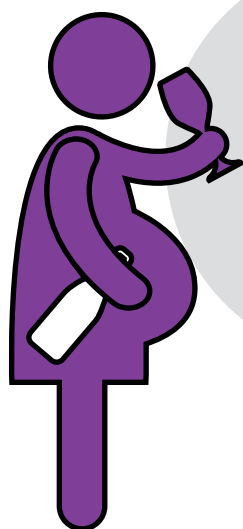


Why is this issue important?

Experimentation with drugs and drink usually starts in teenage years and may continue through the period when men and women are at their most fertile. Nationally, about a third of adults have misused substances at some point during their lifetime, and there are between 250,000 and 350,000 children of problem drug users. About a quarter of those presenting to substance misuse agencies are women of child-bearing age, so a significant number of women misusing substances are likely to get pregnant. The use of illicit drugs has harmful long term effects on infant growth, behaviour, attention, cognition, language, achievement and delinquent behaviour, which can extend into adolescence.

Alcohol

National data suggests that around 9% of women continue to drink alcohol while pregnant, placing the unborn child at risk of a number of birth defects. Alcohol exposure can cause a range of problems including growth restriction, abnormal facial features and central nervous system damage. Different people are affected in different ways, therefore a range of clinical syndromes have been described called fetal alcohol spectrum disorders (FASD). These disorders include fetal alcohol syndrome (FAS) in which people have all of the defects mentioned above, but also other syndromes in which there may be more subtle central nervous system damage or structural problems. There is no cure for FASD and the effects are lifelong.



There is no safe level of alcohol use in pregnancy

The Chief Medical Officer (CMO) released new alcohol guidelines on 8 January 2016. The new guidelines bring in:

- A single guideline for men and women: this will now be 14 units a week for both men and women (a weekly guideline, rather than daily)
- An additional recommendation not to 'save up' 14 units for one or two days – but instead to spread them over 3 or more days
- A 'protective effect' of lower amounts (one or two glasses of red wine) does not prevent heart disease
- There is no safe level of alcohol use in pregnancy
- New evidence about the clear links between alcohol consumption and cancer

Cannabis

Cannabis is the most widely used illegal drug in England. Fetuses exposed to cannabis during pregnancy are more likely to have low birth weight, which can result in serious lung problems and other medical issues later in life.

Cocaine and amphetamines

Powdered cocaine is the second most commonly used illicit drug in England. Cocaine quickly crosses the placenta and can cause placental abruption (bleeding), which may be fatal. It can also cause premature rupture of the placental membrane, resulting in premature birth. Fetuses exposed to cocaine during pregnancy may be more likely to have low birth weight, show delay in cognitive development and have difficulty in concentrating as they grow older.

Heroin and other opiates

Babies exposed to heroin will almost always develop neonatal abstinence syndrome, where the baby becomes heroin-dependent along with the mother. This causes huge distress to the baby and has knock on effects to the mother, who may become anxious, stressed and depressed, finding it hard to form an emotional attachment with her baby.

Other risk factors

There are many other risks associated with substance misuse in pregnancy including the dangers of infection through sharing needles and presenting late to antenatal services. People who use drugs are also more likely to have a poor diet and are at a higher risk of physical abuse.

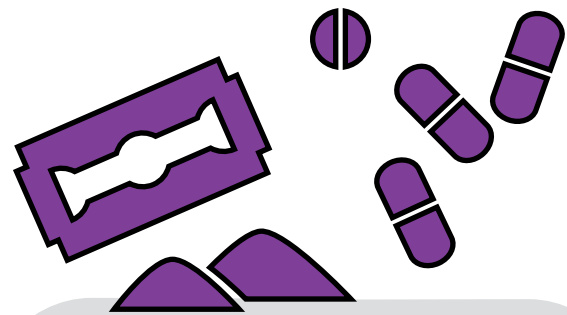
What is currently being done or can be done in Southampton?

Data from maternity services in Southampton suggests that there were 33 pregnant women who used substances while pregnant between May 2014 and April 2015: 19 used crack/cocaine, 12 used opiates, and 2 used amphetamines. Of these 33 women, 26 engaged with local substance misuse services (including those outside Southampton city). Those who did not engage with local substance misuse services also did not engage with maternity services until birth.

Local intelligence suggests suggest that a high proportion of mothers are at a higher risk of substance misuse in pregnancy are not identified or managed in a proactive way. Better engagement could improve the outcomes of pregnancy, but how to achieve this requires a multifaceted approach. The interventions could include:

- Education on the risks of substance misuse in the pre-conception period for all potential parents (designed to achieve conception and pregnancy entirely free of harm from alcohol or drug misuse)

- Active case finding and management at the antenatal booking and throughout pregnancy to reduce harm from substance misuse is needed
- Proactive support and referral of women who use drugs to ensure earlier engagement with antenatal care, targeting interventions at parents who are most at risk
- Review policies and protocols to safeguard infants born to mothers and their partners struggling with addiction to avoid the most serious risk
- Parenting support to target families where substance misuse presents increased risk to the infant and any future pregnancies



Local intelligence suggests that a high proportion of mothers who are at a higher risk of substance misuse in pregnancy are not identified or managed in a proactive way.

Recommendations of the Director of Public Health

- ♥ The data collection methods and referral pathway for maternity and substance misuse services should be reviewed to understand the scale of the problem posed by substance misuse in pregnancy and identify ways to improve outcomes.
- ♥ The training of healthcare staff involved in the clinical management of women who misuse substances during pregnancy should be reviewed to ensure appropriate health knowledge is available for prevention and management.
- ♥ Midwives should extend questions about alcohol use in pregnancy to a modified version of the AUDIT tool and be trained in brief advice or extended brief interventions.
- ♥ Alcohol's harmful effects in pregnancy should be emphasised more in schools delivering sexual health education.
- ♥ Women of reproductive age who are consuming risky levels of alcohol should be signposted to contraceptive services by drug and alcohol services.
- ♥ Women using GUM services who are found to be consuming high levels of alcohol are warned about the risks of FASD and should be signposted to the appropriate drug and alcohol services.
- ♥ The new guidance on alcohol should be widely promoted, emphasising the important change to advice during pregnancy.

Infections in the first 1,000 days

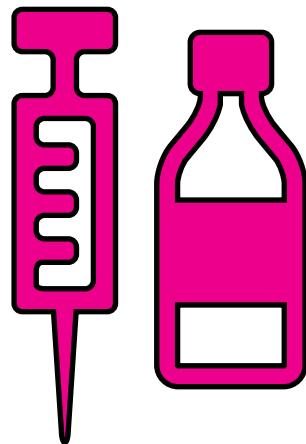


Why is this issue important?

Infections impact on the first 1,000 days of life in a number of different ways. Some may be life threatening to both the mother and the baby (for example puerperal sepsis) while other infections may affect them separately. Maternal deaths in the UK are now rare but infection plays a part in 25% of those that do occur.

Maternal health, universal access to obstetric and perinatal care and good infant nutrition in the womb and the first few months of life play a crucial part in reducing the risk of infections. Breastfeeding also protects against infections during and after lactation as well as providing some protection against immunologic diseases, including allergy.

Research has highlighted how important it is that pregnant women have the seasonal flu vaccine.



Pregnancy

Viral infections may cause major problems during pregnancy. Many cause only minor problems in later childhood or adults, but if the infection is acquired at critical points during pregnancy, the prognosis for both the mother and baby may be serious.

- **German measles (Rubella)** is most dangerous if caught during the first 20 weeks of pregnancy when it can cause miscarriage, stillbirth or birth defects in unborn babies. During antenatal checks, women are offered a Rubella immunity blood test as part of routine antenatal screening. The MMR (Measles Mumps and Rubella) vaccination is routinely offered to children

- **Chickenpox (and Varicella infection in the new-born)** is uncommon in pregnancy as 9 out of 10 women in the UK are already immune. The risk is higher for those that have grown up in tropical or sub-tropical regions and have moved to the UK. Varicella infection is much less common in adults than in children and is associated with greater morbidity in adults causing pneumonia, hepatitis and encephalitis
- **The Influenza pandemic** in 2009 enabled researchers to investigate the effect of swine flu on pregnant women. Women with swine flu were found to have a significantly higher rate of adverse events than uninfected pregnant women. This included a fourfold increased rate of stillbirth and fivefold increased rate of neonatal death (when the baby dies within 28 days of life). The research highlighted how important it is that pregnant women have the seasonal flu vaccine

The first two years

Childhood mortality has decreased enormously due to the prevention and treatment of infectious diseases but infection remains a major cause of mortality in children aged up to 5 years. Some European countries now have childhood mortality rates 30% to 40% lower than that of the United Kingdom, so more can be done to reduce this.

- **Neonatal Tuberculosis (TB)** is a risk in babies born in England who have regular visits by relatives from areas where TB is endemic, or who travel to these areas. A targeted programme in the UK aims to immunise at risk neonates with the BCG vaccine shortly after birth. Reported cases of adult and younger persons with TB have increased in recent years in Southampton
- Each year in the five years prior to 2012 there were on average nearly 800 confirmed cases of **Pertussis (whooping cough)** in England with 270 babies admitted to hospital and four deaths. The Department of Health announced that Pertussis immunisation would be offered to pregnant women from 1st October 2012 to protect infants from birth whilst disease levels remain high

What is currently being done or can be done in Southampton?

Vaccination programmes and the education of pregnant women about prevention of infections and the early identification and appropriate treatment of infectious disease during pregnancy remain important strategies for protecting maternal and infant health.

- The dissemination of the NICE guidelines on management of the febrile child should be encouraged to reduce the delays in diagnosis and management

European countries now have childhood mortality rates 30% to 40% lower than that of the United Kingdom, so more can be done to reduce this.



- New meningococcal vaccines should be adopted as soon as possible, ensuring a high uptake among the target group. Flu immunisation for pregnant women should be encouraged, with greater awareness of the risk of influenza during pregnancy
- The risk of life threatening infection is significantly higher in more socioeconomically deprived areas. Clinicians in primary and secondary care should include this in their clinical assessment of febrile children, when deciding to investigate or refer to hospital

Recommendations of the Director of Public Health

- ♥ The awareness by clinical staff of the risk factors for serious infection, including maternal obesity and following caesarean section, should be increased to improve recognition
- ♥ BCG "catch-up" immunisation must be ensured locally, especially given the recent increase in TB notifications in the Southampton area
- ♥ The local translation of the NICE "febrile" guideline into care pathways across the Wessex area should be supported and widely promoted by service providers
- ♥ New schedules of immunisation need to be promoted actively to ensure the highest level of protection for mothers and babies, as immunisation among pregnant mothers remains the most important strategy to reduce harm to mother and baby
- ♥ The risk of chicken pox infection during pregnancy is higher in women from other countries, and local obstetric protocols need to raise awareness of this greater risk and encourage proactive diagnosis and advice

Screening and the first 1,000 days



Why is this issue important?

Screening aims to identify risk factors or actual disease in apparently healthy populations (as illustrated in figure 4). Robust screening programmes are important as evidence exists that early identification can lead to early treatment and better long-term outcomes. In the first 1,000 days of life screening activity focuses on the antenatal period and the infant.

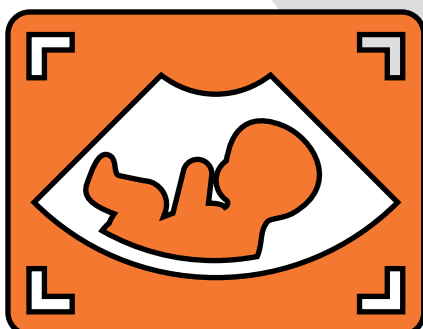
What is currently being done in Southampton?

Fetal Anomaly Screening Programme (FASP)

The fetal anomaly screening programme focuses on the use of two routine antenatal ultrasound scans that cover a number of different structural abnormalities. The first is carried out between 8 and 14 weeks and the second between 18 and 21 weeks.

The key measure for the success of FASP is the proportion of completed laboratory request forms submitted within the recommended timeframe of 10+0 to 20+0 weeks' gestation. Southampton's proportion was at just over 97% of women that have had their first scan, above the England average and at the acceptable level.

Early identification can lead to early treatment and better long-term outcomes.



New-born and Infant Physical Examination Screening Programme (NIPE)

In the NIPE screening programme, parents are given the opportunity for a healthcare professional to examine their baby within 72 hours of birth and again between 6 and 8 weeks of age. Conditions screened for include inherited heart problems, hips that fail to develop properly, inherited eye problems and undescended testicles.

Processes are being put in place to provide timely data on this programme.

New-born Blood Spot Screening Programme (NBS)

NBS screening is offered to all babies born in the UK on or shortly after the fifth day of life. A drop of blood is taken from the heel and screened for nine congenital and metabolic conditions. Early identification of these conditions can prevent serious consequences including illness and severe developmental problems.

The coverage in Southampton of babies eligible for new-born blood spot screening that have a conclusive result recorded on the Child Health Information System (CHIS) within an effective timeframe has remained relatively constant at around 98% since 2012. This is above the England average and the acceptable level of 95%.

New-born Hearing Screening Programme (NHSP)

Parents should be offered hearing screening for their baby within 4 to 5 weeks of birth or as soon as possible thereafter up to 3 months of age. Identifying hearing impairment early can optimise the development of speech and language skills and enhance the benefits of social and emotional interaction.

The proportion of eligible babies in Southampton for whom the hearing screening process is complete between 4 and 5 weeks largely exceeds the acceptable level of 95% year on year.

Sickle Cell and Thalassaemia Screening Programme (SCT)

SCT is a genetic screening programme that identifies those with and those who are genetic carriers of sickle cell disease, thalassaemia and other haemoglobin disorders. Screening is offered to all pregnant women, fathers-to-be where antenatal screening shows the mother is a genetic carrier, and all new-born babies as part of the new-born blood spot screening programme.

Southampton again exceeds the acceptable level for screening of eligible pregnant women with a conclusive result available. This has remained relatively constant at around 99%.

Overall, the screening programmes in Southampton compare favourably with the performance nationally. The performance indicators focus more on process (getting the offer of screening) but that is essential if women and their partners are to be offered the choice to be screened or not, and to benefit from the additional information. From this dataset we appear to be achieving this to a good standard.

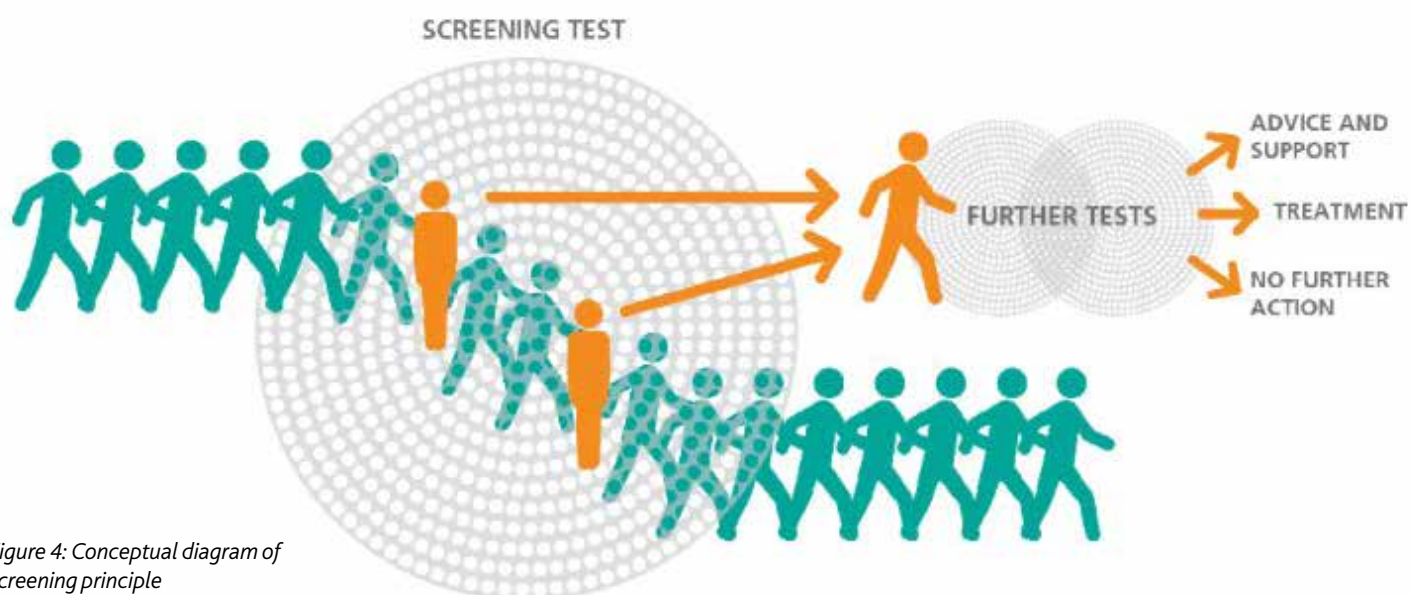
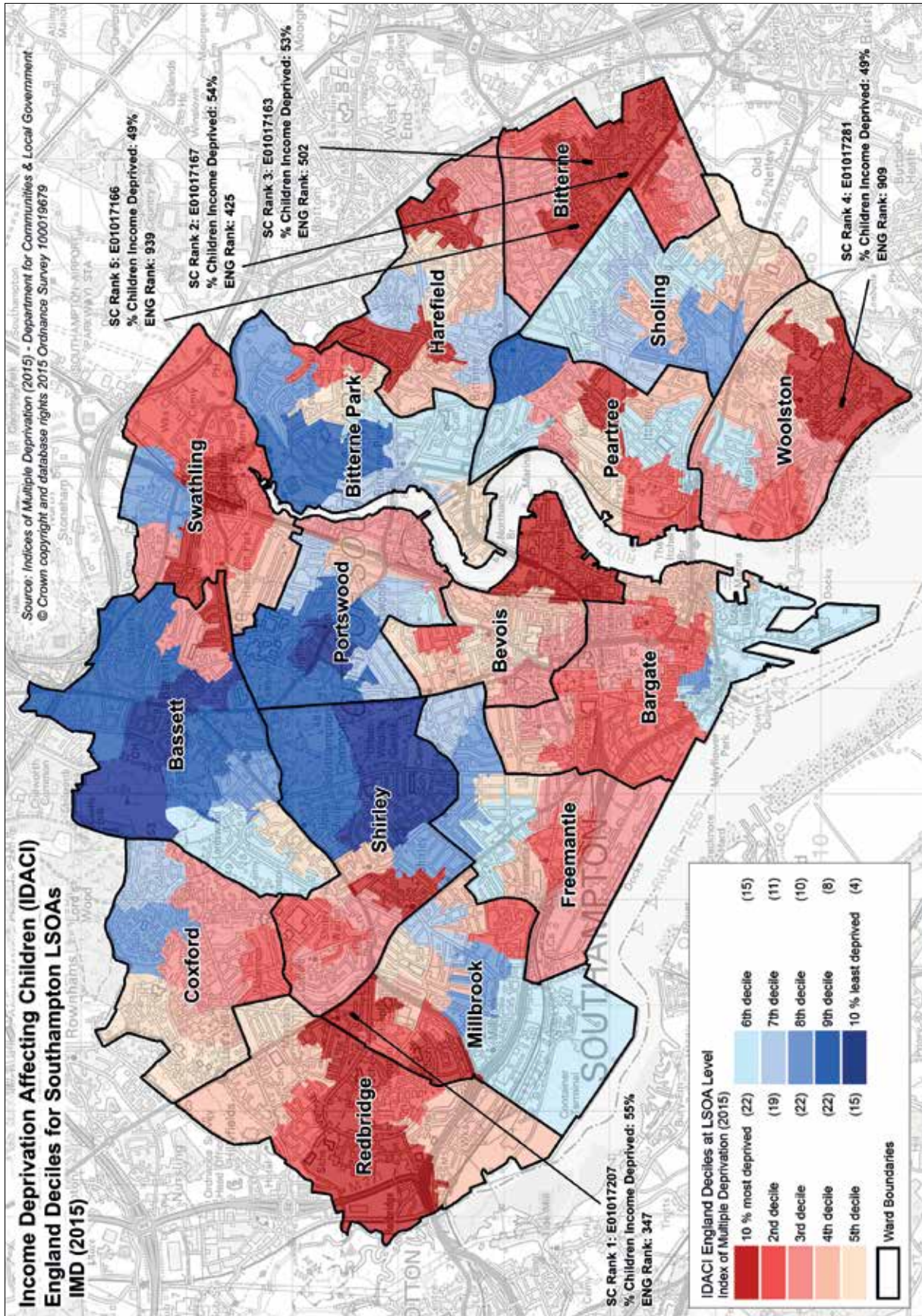


Figure 4: Conceptual diagram of screening principle

Director of Public Health's Recommendations

- ♥ Service providers should maintain the high coverage of antenatal and new-born screening in line with the targets of the five main national screening programmes.
- ♥ The new-born and infant examination screening programme coverage should be reviewed by public health when the data becomes available in 2015/16.
- ♥ The outcome data from the various programmes should be reviewed to better understand the burden of disease affecting Southampton and the relative benefits of the screening programmes.

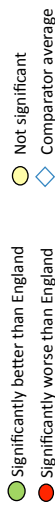
Appendix 1



Appendix 2

Public Health Annual Report (2015) indicators

Indicator	Soton value	Soton rate	Comparator* average	England average	England worst	25th percentile	England average	75th percentile	England best
1 Under 18 conception	428	39.3	34.9	27.6	85.5				9.2
2 Smoking at delivery	551	16.4	13.8	12.0	7.1				1.9
3 Low birth weight term babies	80	2.1	3.0	2.9	22.8				1.6
4 Breastfeeding initiated	2,437	73.2	74.2	74.3	27.5				47.2
5 Breastfeeding 6-8 weeks	1,403	44.3	47.0	45.8	8.4				14.2
6 Infant mortality	27	2.6	4.1	4.0	47.7				1.3
7 Newborn hearing screening	3,174	98.4	98.0	98.5	92.7				100.0
8 MMR immunisation by 2nd birthday	3,431	95.2	93.7	92.7	78.3				100.0
9 Children in care immunisations	235	68.1	80.1	87.1	27.3				68.1
10 School readiness FSM	301	48.2	46.0	44.8	31.7				99.9
11 Childhood obesity (aged 4-5)	299	11.1	9.7	9.5	99.9				5.5
12 Child Mortality (all cause) aged 1-17	16	11.0	12.4	11.9	5.8				3.0



*** Comparator group**

- Bournemouth
- Bristol
- Coventry
- Derby
- Peterborough
- Plymouth
- Portsmouth
- Sheffield
- Southampton
- Southend-on-Sea
- Stoke-on-Trent

- 1 Conception rate per 1,000 females aged 15-17 (2011-13 pooled)
- 2 % of mothers smoking at delivery (2013-14)
- 3 % of live births with a recorded weight under 2,500g (2014)
- 4 % of all mothers who breastfeed their babies in the first 48hrs after delivery (2014/15)
- 5 % of infants breastfeeding at 6 to 8 week check (2013/14)
- 6 Infant (under 1 year) mortality rate per 1,000 live births (2011-13 pooled)
- 7 % of babies eligible for screening for whom the screening process is complete within 4 weeks corrected age (2013/14)
- 8 % of children who received MMR immunisation course by 2nd birthday (2013/14)
- 9 % of children in care whose immunisations were up to date according to their age (2014)
- 10 % of children with FSM status achieving a good level of development at the end of reception (2013/14)
- 11 % of obese children aged 4-5 years (2013/14)
- 12 Rate, per 100,000 population aged 1 to 17 (2011-13 pooled)

Healthy Southampton♥

