

Public Health Module

Venue

Duration - Date

Unit: Public Health Aspects of Child Health

Workbook

NAME:

ORGANISATION:

Written by: Ann Wylie and Lorraine Williams



Child health promotion Unit

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Introduction

This unit is one of four units forming the public health module for undergraduate or pre-registration students of health and related studies. It will explore some of the key public health questions and concerns in modern society, demonstrating that health and well-being is dependent on a range of social, economic, environmental, biological and service factors. It will allow opportunity for students to reflect on these issues and relate them to their future roles as qualified professionals and as part of the 'wider public health workforce'.

This unit provides an introduction to public health aspects of child health. It introduces the reader to the social and modifiable determinants of health influencing a child's well-being and future potential for health. Whilst these may seem familiar, even common sense, this unit will enable users to explore the evidence and rationale that underpin our knowledge base, enable or inform intervention approaches and highlight the complex nature of factors that can protect, promote and enhance health.

It is assumed that students will have some basic awareness of public health principles, concepts and methods through their undergraduate curriculum. However, for revision or recap purposes a glossary of public health terms is included at the end of the workbook and hyperlinks are provided for further information and explanation of public health methods and practices. Lists of recommended introductory texts are provided as well as a full list of references and suggested websites.

Aims

For children up to 8 years, this unit will:

- explore the determinants of health and variables associated with life expectancy at birth, including the role of screening and early interventions
- familiarise students with the effects on child health and well-being of family and parenting styles; environmental; physical; psychological and emotional issues arising in early childhood
- explore the efficacy of interventions intended to improve the health of individuals, families and/or communities

Objectives

By the end of this unit participants will:

- be familiar with the Birth to Five book and its potential contribution to well-being
- have considered the impact on later health and learning of early childhood development
- have plotted Centile charts for child growth and weight, and considered their value and limitations
- have looked at projection data for life expectancy such as ethnicity, and other demographic factors, exploring how data is collated and its limitations
- be able to identify the prevalence of selected common childhood illnesses and the impact of major risk factors on prevalence, care and management, as well as preventive strategies

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- be able to find, interpret and challenge the evidence for efficacy and ethical basis for various community based, targeted public health interventions
- be able to find, interpret and challenge the evidence for the role and impact, potential or otherwise, of population based public health programmes

Introduction WB3

What is health?

Three foci for child health:

3 key milestones of development:

- up to 1 year
- age 1-4 years
- over 4 to 8 years


3 contexts of development:

- intimate family
- extended family and neighbourhood
- wider social

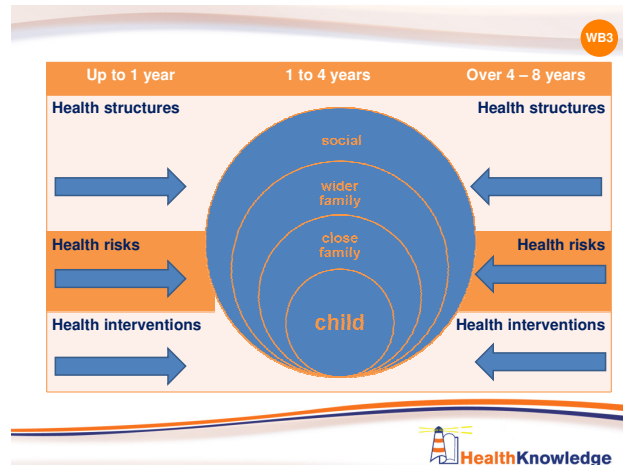
3 areas influencing health and well-being

- policy
- threats
- interventions

CWPHW/SM/UK/DH © 2009



The unit has three essential foci; the child up to age 1; aged from 1-4 years and from 4-8 years old, looking at the key milestones of development physically, emotionally and socially. In each focus, attention is paid to the child in the context of the intimate family, the extended family and the local neighbourhood.



This unit explores, within the foci of three stages of child development, how the existing health structures facilitate health, what factors might be specific risks to health and what health interventions can achieve.

The unit has three distinct sessions or phases with links to background reading - some prior reading is advisable. An introductory section on 'what is health' is presented at the beginning. This introduction is common to all units within the public health module (which includes child health, stroke, diabetes and coronary heart disease) and can be passed over if needed.

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Suggested reading/websites include:

- policy documents and statutory guidelines – these inform professional practice where public funds are available to professionals to follow specific procedures for example ‘Every Child Matters’ and ‘Tackling Inequalities’
- official reports such as Census publications, Public health reports, community and neighborhood profiles. Such material may be at national, international or local level
- materials published by Government funded agencies and commissioned third sector agencies such as The Birth to Five book (NHS) and Charity Commission
- WHO and UNICEF reports for example, the WHO report “Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health
- guidance such as NICE and the Royal Colleges
- journals and text books
- professional specific literature for example dietetics and childhood obesity prevention/management

To understand public health it is worthwhile taking some time to consider the concept of health and its determinantsⁱ.

What is health?

What is health? WB4

WHO Definition	'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'
Antonovsky:	Salutogenic model 'sense of coherence'
Seedhouse and Duncan:	Achievement of potential
Empirical	Lack of health

6 HealthKnowledge

This is a difficult question and one that should be frequently pondered not least because there is no definitive answer but, we each have a way of defining it. From a biomedical perspective, health is defined as the absence of disease - the health of a society can be measured by the [incidence](#) and [prevalence](#) of disease. However the World Health Organisation (WHO) took a more social perspective, defining health as a dynamic “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”ⁱⁱ. Each have their strengths and limitations.

ⁱ The section ‘what is health, including what is public health, is common to all units in the public health module and can be skipped if needed

ⁱⁱ Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.

Activity 1. What are the pros and cons of the biomedical/empirical and WHO definitions of health?

The question of 'what is health' has been a challenge for contemporary philosophers^{1 2 3}. Perhaps it is Antonovsky's Salutogenic model of health that poses the key questions and tries to explain using "the sense of coherence" framework. But Seedhouse and Duncan also suggest health is a value and concept, enabling us to achieve our potential. More empirical and objective ways of addressing what is health is associated with lack of health, being ill. For further information on issues around defining health see the [sociological perspective of health and illness](#) chapter in the HealthKnowledge Textbook.

Subjective measures of health

Census data in 2001 asked those to respond if they were not in good health. About 9% of UK defined themselves as not in good health but this was as high as 18% of the population in one of the most deprived areas of UK and only 4% in one of the most affluent. Though subjective, this type of data informs planning and needs and ties in well with other [epidemiological data](#) demonstrating how life expectancy at birth varies within nations and between nations, with the poor, more deprived populations usually having a shorter life expectancyⁱⁱⁱ.

ⁱⁱⁱ <http://www.statistics.gov.uk/census2001/profiles/commentaries/health.asp>.


What is public health?

WB6

What is public health?

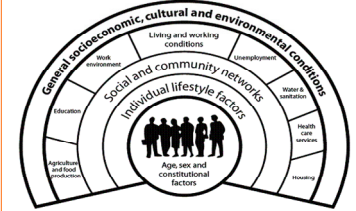
'the science and art of preventing disease, prolonging life and promoting health through the organized efforts of society'

C.E.A. Winslow, 1920


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Public health is defined as ‘the science and art of preventing disease, prolonging life and promoting health through the organized efforts of society’^{iv}. It therefore deals with preventive rather than curative aspects of health and with population-level, rather than individual level health issues. It does this by using public health methodology of [surveillance](#) of disease cases and through promoting healthy behaviour. Public health focuses on health’s wider determinants and social inequalities:

The wider determinants of health



Source: Dahlgren and Whitehead, G and Whitehead M (1991)



...and faces some difficult challenges – particularly around health behaviour:

^{iv} C.E. A. Winslow, “The Untilled Fields of Public Health,” Science, n.s. 51 (1920), p. 23

The challenge for public health



How is health measured?

Statistical description of nation's health

Census data

Health Inequalities data

Infant Mortality Rates



Gradient of inequalities in health

Health can only be understood within the wider context in which it is shaped. Poverty is a key indicator of health outcomes but it should not be viewed as singularly causal. Social determinants play an important part in understanding the gradient of inequalities, as Michael Marmot points out: "It shows that, among other things, the nature of children's upbringing, adults' working lives, or older people's experiences of ageing are critically shaped by the quality of social relationships, access to particular material resources and services, and the nature of our neighborhoods and wider environments. It may be uncomfortable and complicated and suggest a lack of magic bullets (or pills) to cure all ills but reflects a complex reality in which many of our health risks reflect lifetime exposure to a range of tolerated hazards"^v.

For further information on the Social Determinants of Health look at the World Health Organisation^{vi} and for world inequality statistics see Gapminder^{vii}.

^v <http://www.hsj.co.uk/comment/opinion/michael-marmot-on-why-health-inequalities-matter/5000345.article>

^{vi} http://www.who.int/social_determinants/en/index.html

Activity 2: Life expectancy as an indicator for health.

In one affluent area of Glasgow life expectancy is 82, in another poorer area of the same town it is 54.

- a) Think about the reliability of the data.
- b) What factors explain this?
- c) Can life expectancy be a proxy for health?

For help look at the Closing Gap Report⁴ and definitions of health previously discussed.

^{vii} <http://www.gapminder.org/>

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Another statistic more frequently used to define a nation's health is that of infant mortality rates. A nation that cares for its citizens, regardless of the individual family income will probably report lower infant mortality rates or very little gap in the infant mortality rate between families. These data matter - a nation's wellbeing is linked to the care and investment to its infants and the need to have an up and coming economically active generation.

Poor health is easier to measure. Public health economists can quantify the costs on a nation's health care system and the potential burden of poor health if it persists, especially where there is little or no health infrastructure.

Session 1: The child up to age 1



Child up to 1 year WB9

Aim:

To explore:

- Our understanding of health
- The structures that influence health
- The identifiable risks to health
- Interventions to promote health and address threats

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The aims of the session are to explore the structures that influence health for a child up to age one, the potential identifiable risks to health and what public health interventions are deployed to promote health and address potential risks.

Health Structures

Structures supporting child health in pregnancy and around birth



Health Structures WB9

- Before conception
- During pregnancy
- Around birth
- Early months

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Long before the infant takes his or her first breath the health system and infrastructure have been influencing the child's health^{viii}.

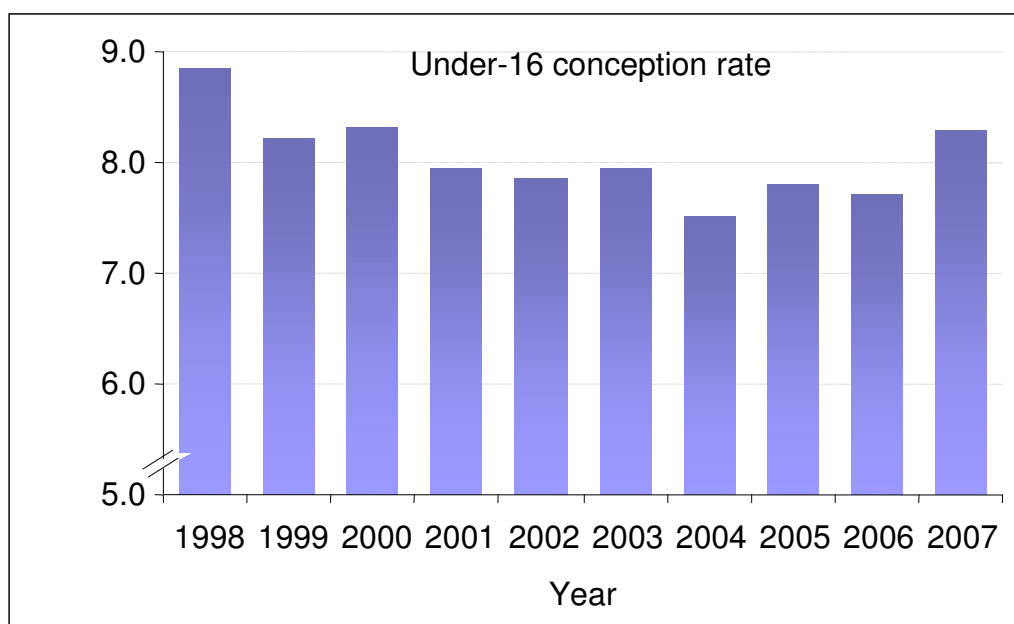
The mother's health before, at and during conception is important. It is influenced by a number of factors such as: her genetic predisposition; educational attainment; her own health knowledge and behaviour; her income; diet; social and personal environment and sexual health.

The increasing importance of schemes such as the UK's National Healthy Schools schemes facilitates health related content in curricula. For older pupils this includes sex and relationship courses with the aim of encouraging sexual activity when mature enough to understand what consent means, the value of a meaningful relationship and an awareness of potential outcomes^{ix}.

Government funded sexual health services are freely available in the UK for all who are sexually active. Though service standards vary within UK Countries^x.

Teenage pregnancy as a risk to child health

A key public health issue in England is the rate of teenage pregnancy, which, despite a recent downward trend, is now rising and continues to be the country with the highest teenage pregnancy rate in Europe.



Source: Office for National Statistics and Teenage Pregnancy Unit, 2009. Rate per thousand females aged 13-15. 2007 data are provisional

^{viii} http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_074920 See also the *Pregnancy Book NHS*

^{ix} <http://www.teachernet.gov.uk/doc/13030/SRE%20final.pdf>

^x <http://www.ffphc.org.uk/admin/uploads/ServiceStandardsSexualHealthServices.pdf>

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Teenage pregnancy has been shown to be a public health issue as it leads to^{xi}:

- **Poor child health outcomes**
Children born to teenage mothers have 60% higher rates of infant mortality and are at increased risk of low birth-weight which impacts on the child's long-term health.
- **Poor emotional health and well-being experienced by teenage mothers**
Teenage mothers are 3 times more likely to suffer from post-natal depression and experience poor mental health for up to 3 years after the birth.
- **Teenage parents' poor economic well-being**
Teenage parents and their children are at increased risk of living in poverty.

Activity 3: Think about why England has high rates of teenage pregnancy and what might be done to reduce them (use footnote reference – Every Child Matters to help)

Supporting health in pregnancy

Note: The following activities (5 6 7 and 8) are around specific aspects relating to structures supporting pregnancy in the UK and can be completed individually outside of the class or in pair/groups within the class time allocated. Some will require prior reading or preparation/access to resources, e.g. Internet. Use the notes pages at the end of the workbook for your answers.

Activity 5: Screening (individual activity – Birth to Five Book good source)

What screening is usually done and what are the consent challenges?
What are the 4 possible outcomes of screening and antenatal testing?

Activity 6: Antenatal care (group activity – Birth to Five Book good source)

What is the purpose of AN care and how do women access it? – what are the barriers to access?

Another possible debate is that of folic acid and neural tube defect. The UK suggests/advises women have healthy diets and supplements to reduce risk but in USA staples such as bread and cereals are by law fortified

Activity 7: Supplementing folic acid (pairs or group activity)

Think about the folic acid debate and the USA and UK public health approach. What are the pros and cons of each approach? Explore this further with your colleagues.

Inequalities: Child mortality

^{xi} <http://www.dcsf.gov.uk/everychildmatters/healthandwellbeing/teenagepregnancy/teenagepregnancy/>

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For many women there are few options for maternity care, with pregnancy and childbirth being a major health risk. For example in countries with high levels of maternal deaths and infant mortality, the lack of provision of basic health care and birth attendants is only part of the problem. Lack of transport infrastructure, isolated villages, poor sanitary conditions and few resources for non complicated let alone complicated deliveries, adding to the child mortality risk^{5 6}. A newborn in need of a Special Care Baby Unit is unlikely to survive in such poor circumstances.

Activity 8: Child mortality (individual/paired activity – access to internet required)

Compare the United Nations 2009 figures supplied for the under 5 mortality rates between the UK and Sierra Leone^{xii}. Discuss reasons for differences – how might the gap be lessened?

Infant nutrition

The benefits of breastfeeding for the health and wellbeing of infants and mothers are well documented. WHO breast-feeding initiatives^{xiii} and provision of Vitamin K are standard practice in many nations. But successful implementation of breastfeeding and sustained breastfeeding for 6 months is proving more difficult for some health authorities than others and similarly between nations.

Note: For a discussion on benefits of breastfeeding from a global perspective see Unicef website^{xiv}

Activity 9: Infant nutrition (paired/group activity – can be allocated by question)

Consider the importance of adequate nutrition to the health and well-being of the infant and the structures that support this. Consider:

- How much input should policy have and how much is this down to the individual parents and guardians?
- What are the pros and cons of breastfeeding?
- Breastfeeding has been shown to be beneficial, how can we best promote it?
- What impact does advertising, cultural norms and the commercial influences of formula feed producers have?
- Could the UK do more in controlling formula feed promotion and easy availability?
- Why is formula feed a bigger threat to families in poorer countries than affluent countries?
- What is the relationship between 2005 rates of breastfeeding and age, education and socio-economic status in the UK^{xv}?

xii <http://data.un.org/Data.aspx?d=MDG&f=seriesRowID%3A561>

xiii <http://www.babyfriendly.org.uk>

xiv http://www.unicef.org/nutrition/index_24824.html

xv http://www.ic.nhs.uk/webfiles/publications/breastfeed2005/InfantFeedingSurvey190506_PDF.pdf

Discuss (either one or more questions) in pairs or small groups and put key points from the discussion in the space below

Tips for above question on question f: As well as infection from poor hygiene and lack of clean water, the tendency to dilute and concentrate the feed persists - dilution to make it go further in poorer communities and the possibility of poor regulation/quality control leaving infants malnourished and vulnerable. Higher concentrates, by adding more formula than required, can lead to obesity and other health problems and is frequently associated with early and suboptimal weaning. In the UK the Health Visiting service and the postnatal child development clinics advise but is tighter regulation called for?

Screening

Early Screening – in the UK within a few days of birth infants are given a full physical examination including screening for possible abnormalities (e.g. heart, hips, eyes and hearing) and, by law, all births must be registered. Blood tests (through a heel prick) are taken to screen for phenylketonuria, congenital hypothyroidism, sickle cell anaemic and cystic fibrosis. A stillbirth or premature birth that results in death is also registered. A newly born infant is highly vulnerable. Midwives provide support to the mother and infant during the early postnatal period, and up to six weeks following delivery. As well as the infant's general health, the mother is monitored on how well she is coping, what additional support may be needed and how her post natal recovery is progressing.

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After 10 days the Health visitor service is available, although in recent years re-organisations of health services have had a decimating impact⁷. Although the NHS requires that the child be also registered with a GP, women have access to a range of health information and care systems such as NHS Direct and in some areas “Walk in” services.

Economic impact of childbirth

Any new addition to the family will have some impact on the household's finances. In the following activity consider what this might be. For example, what additional income is available? What is means tested and what is universal? Can this be justified and does it reduce inequalities. What is the evidence?

Activity 10: Financial support for pregnancy and childbirth (individual or paired activity – internet access required). Find out what current statutory financial provision is available for pregnancy and childbirth in the UK for pregnancy and the first 12 months following delivery. Look at the Child Poverty Action Group details and discuss whether we need to do more, keep things as they are, do less and/or change and rethink.

For mothers living in disadvantaged and deprived areas much of the health visitor provision has been directed through the Sure Start schemes⁸. Sure Start “brings together childcare, early education, health and family-support services for families with children under 5 years old. It is the cornerstone of the Government's drive to tackle child poverty and social exclusion working with parents-to-be, parents, carers and children to promote the physical, intellectual and social development of babies and young children so that they can flourish at home and when they get to school”^{xvi}.

^{xvi} <http://www.dcsf.gov.uk/everychildmatters/earlyyears/surestart/whatsurestartdoes/>

Activity 11: Sure Start

Consider what benefits Sure Start may bring to a family unit and to a community. Look at one community profile (perhaps one where you intend to work). Think about how, in your professional capacity, the community might benefit from this provision.

Childcare

Childcare sooner or later may well be a consideration given that many parents and guardians may have to return to or seek work. How this is organised and what options are available vary considerably in the UK. However in recent years there has been a growth of formal crèche, child minder and nursery provision. The level of statutory regulation has increased for both formal settings and informal ones, for example through nannies or au pairs. The health and safety of the child is paramount and it is no longer left to vetting by parents alone. All staff looking after children are now required to be checked by the Criminal Records Bureau. The environment should meet health and safety standards, the activities should be age and ability appropriate and there should be a set ratio of staff to children.

However, for some families in the UK, the use of unregulated childcare, through extended family, friends or others, remains an economic or cultural choice.

Activity 12: Childcare – who is responsible?

Think about how you might support families who need to go back to work as soon as possible. What provision is needed for parents/carers who might struggle financially with childcare? Make some notes in the space below.

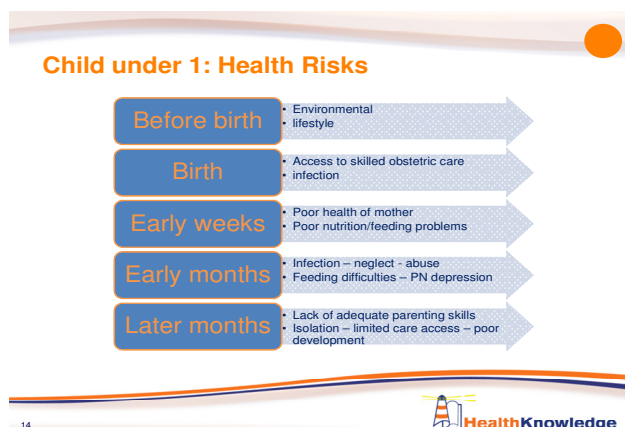
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Exercise 1: Structures to support child health

Look at the table below on structures supporting the child up to 1. Working in pairs or groups, complete the blanks in the slide – discuss:

Time period	Potential health risks	Ideal outcomes	Structures to support -	public health issues
Pre-conception		Understanding own health and well-being	General/health education National Healthy Schools Scheme	
Around conception/ sexually active	Risks to potential child health Teenage pregnancy		Sexual health service	• Unplanned pregnancies?
Pre-natal and early pregnancy		Ensure pregnancy is healthy, potential risks are reduced	Pregnancy service (screening) Welfare structure Income policies	• Access of antenatal care • Screening: consent challenges and outcomes • Folic acid and neural tube defect debate
Around birth		Healthy birth outcome	Adequate birth care and support	
Post natal	Infection (child/mother) Fail to thrive, poor development (inadequate nutrition) Mental health (PN depression)	Healthy mother/family (child thriving and developing normally)	Breast feeding support / Vit K postnatal support services (HV, B/F Counselling) Screening for development	• Rate of b/f nationally – why rates low? – reliability of data • Support for disadvantaged (Sure Start etc) – impact on household income (means tested support)
Early years			Appropriate childcare	• lack of awareness of care provision

Health Risks



A baby is vulnerable to disease, disability and poor outcomes and risks to his or her well-being come from many sources. The common health risks that health care professionals need to be aware of are highlighted in the next section with interventions that may address these risks.

1. In pregnancy

Teratogenic pollutants, chemicals, x-rays and certain high-risk activities likely to cause trauma before birth can cause birth defects, impair growth and development, cause disability and are possibly fatal. In a similar way deficiencies such as a lack of folic acid can be a risk. Workplace health and safety legislation should be in place to protect mothers or those likely to be pregnant.

The thalidomide problem is a reminder that most drugs can carry some level of risk. Care needs to be taken to quantify the risks and benefits when giving advice. Some over the counter drugs (OCD) can also be potentially harmful^{xvii}.

Activity 13: information about ‘over the counter’ medicines (individual activity – use of internet required)

Look on the web for advice for Aspirin, Paracetamol and Lemsip. How easy is this information to interpret, what is the evidence?

^{xvii} <http://www.patient.co.uk/health/Pregnancy-and-Medication.htm>

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There is also a need to quantify risk in those with long term conditions, where medication is essential such as asthma and insulin dependent diabetes.

Those working with chemicals or high-risk radiation, including ancillary staff, are especially vulnerable.

Environments pollutants such as lead and mercury can be a concern. Environmental disasters can be insidious and there is often little that pregnant women can do, such as in the Bhopal disaster.

Smoking, drug and alcohol usage – this well known risk to the foetus remains a concern and those working in health care with pregnant women and their families should support strategies to help women (and their partners) to stop. Another legal and social chemical risk is alcohol. In excess this is dangerous (e.g. links to intrauterine growth retardation and fetal alcohol syndrome) but there remains uncertainty about how much is too much. The recent generic advice is to avoid alcohol altogether during pregnancy (though again, there is controversy about the public health message^{xviii}). Illicit drugs, and the associated additional risks of infection if injected, are of particular concern among pregnant women undertaking risky health behaviour.

Food and microbial infections such as listeria in soft cheeses^{xix}, toxoplasmosis from raw meat, cat and dog faeces, as well as contact with people harbouring rubella virus in non-immune mothers can result in poor outcomes for the child.

STIs in particular, gonorrhoea and HIV, can be screened for and treated or managed to reduce potential harm.

Immune conditions such as Rhesus incompatibility^{xx} is also a risk and screened for early in pregnancy.

Poor nutrition, obesity - maternal obesity during pregnancy is associated with many complications risking the health and well-being of the mother and child (such as higher incidence of operative deliveries, macrosomia, gestational hypertension, pre-eclampsia, gestational diabetes mellitus and fetal death/possible birth defects)⁹. Children of obese mothers are more likely to become obese adults and develop diabetes in later life^{xxi}.

2. Birth

Sometimes considered the most high-risk journey we each make. In developed countries with access to skilled health professionals it can still result in poor outcomes – fetal distress, oxygen deprivation, infection/sepsis and birth trauma. In poorer countries lack of skilled health workers, poor hygiene, maternal distress, poor post partum care, lack of medication, and many other issues present potential problems.

^{xviii} See drink aware <http://www.drinkaware.co.uk/alcohol-and-you/pregnancy>

^{xix} http://www.amm.co.uk/files/factsabout/fa_list.htm

^{xx} <http://www.midwivesonline.com/parents/parents1//121>

^{xxi} Sebire, NJ (2001) Maternal obesity and pregnancy outcome: a study of 287 213 pregnancies in London, International Journal of Obesity, August 2001, Volume 25, Number 8, Pages 1175-1182

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Travel is also a risk as babies and children are most vulnerable in an RTA. See recent BMA articles¹⁰.

Establishment of breast feeding can be difficult for a number of reasons, for example if the mother has trauma, is in pain, is severely malnourished or is dehydrated. Other problems with feeding could be related to the infant, for example physical difficulties due to cleft palate; exposure to adverse environmental conditions; infection or prematurity.

In the first few weeks infections, such as those causing diarrhoea, can quickly lead to serious risks to health if not recognised and dealt with.

Maternal and infant mental health are important aspects of child health. Describing the infant's brain as unfinished at birth, Sue Gerhardt explains in detail 'why love matters'^{xxii}. Early experiences of love, nurturing and care shape the brain's development and patterns become soft-wired, or built-in. Conversely, negative handling or if the child is neglected, not experiencing love and attention or if physically harmed, he or she has little in the way of defence, and the long-term impact on the developing brain is profound. The ability of parent(s) and infants to bond is an important factor in this nurturant behaviour. The possible onset of postnatal mental illness, from mild 'baby blues' to more serious, needs to be diagnosed and managed to reduce the risk of harm to the baby, mother and significant others' mental health by looking after themselves. This includes taking gentle exercise, taking time to rest, getting help with caring for the baby, talking to someone about their feelings and ensuring they can access social support networks'^{xxiii}. *Again the Birth to Five book provides useful information.*

Safeguarding health and well-being

The lack of parenting skills, to budget and access funds, the potential isolation of the parent and or being in an abusive situation is a health risk to both the parent and the baby. Poor advice, limited health care access and poor housing are all risks¹¹. According to Gilbert et al¹², child maltreatment remains a major public health and social welfare problem in high-income countries. Every year, about 4–16% of children are physically abused and one in ten is neglected or psychologically abused. During childhood, between 5% and 10% of girls and up to 5% of boys are exposed to penetrative sexual abuse, and up to three times this number are exposed to any type of sexual abuse. However, official rates for substantiated child maltreatment indicate less than a tenth of this burden, with figures in England as shown in Table 1. The long term outlook for infants and children who experience abuse is of poorer mental and physical health, as well as a higher risk of poor educational outcomes and social exclusion.

xxii Gerhardt S: *Why Love Matters: how affection shapes a baby's brain*. Routledge, London, 2004

xxiii NICE Guidelines, *Routine Postnatal care of women and their babies* (2006) p95, paragraph 26

Table 1. Children at risk in England

11 million children live in England. Of these....	
200,000	live in households where there is a known high risk case of domestic abuse and violence
235,000	are 'children in need' and in receipt of support from a local authority
60,000	are looked after by a local authority
37,000	are the subject of a Care Order
29,000	are the subject of a Child Protection Plan
1,300	are privately fostered
300	are in secure children's homes

Source Laming 2009^{xxiv}

The child development milestones should be assessed by the parent(s) or guardian and appropriate health practitioner - see *Birth to Five book*. As the child progresses to being a toddler, parents and guardians need to be aware of safety issues to prevent injury, of changing dietary needs and to manage socialisation. Inappropriate management of behaviour, lack of awareness of interactive development such as speech, coordination, play and sleep patterns are all potential risks to child health and wellbeing.

Health Interventions

Child under 1: health interventions to promote child health

Type of Intervention(s)	examples	Impact / issues
Law based	Employment, fiscal policies and health and safety law	Have improved for AN and PN women in UK But fear of job loss might delay informing employer of pregnancy
Health Care provision	Smoking cessation provision - Teenage pregnancy services - STI clinics - vaccination	<ul style="list-style-type: none"> • Most interventions complex – awareness change/attitude change • Sure Start – some success • Screening has limitations and ethical dilemmas • Confusion messages about risk e.g MMR
Social Programmes	Breast feeding self help groups, parenting skills	Range of interventions for parents and toddlers extensive – challenge of web-based information

xxiv Gilbert R, Widom C, Browne K, Fergusson D, Webb E, Janson S (2009). Burden and consequences of child maltreatment in high-income countries *The Lancet*, 373(9657), 68-81 The Lord Laming. The protection of children in England: A progress Report. TSO, London 2009

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Employment law, health and safety regulations, and statutory provision should help protect the unborn and young child in many EU and similar countries. Additional widespread information and warnings also provide advice where determinants can be modified, such as the use of folic acid in early pregnancy or the dangers of smoking in pregnancy.

However major public health programmes are still needed to protect some of the most vulnerable and poor communities. Often it is charities such as Barnardos^{xxv} NSPCC^{xxvi} and Child Accident Prevention^{xxvii} that can be most effective in helping create favourable and sustainable conditions for child health. Others are related to medical situations such as cot deaths^{xxviii} and specific illnesses such as meningitis^{xxix}.

Some of the more common interventions are discussed that relate to health care professionals.




Child under 1: health interventions

Interventions often multiple foci:

- Social and community interventions
- Welfare and fiscal changes
- Service provision
- Skills for behavioural change

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Health promotion programmes




Health Interventions

Ideals – Ottawa Charter (WHO 1986):

- Evidence based
- Adequately Resourced and sustained
- Collaborative
- Have sound rationale
- Have an integrated evaluation plan

Also – using Wylie’s definition of health promotion

- *Should be based on need, felt need, normal need and expressed need and reflect what is modifiable with regards to determinants of health (Wylie, A (2004); Wylie & Thompson (2007))*

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^{xxv} <http://www.barnardos.org.uk>

^{xxvi} <http://www.nspcc.org.uk>

^{xxvii} <http://www.capt.org.uk>

^{xxviii} <http://fsid.org.uk>

^{xxix} <http://www.meningitis-trust.org>

Workbook: Public Health Aspects of Child Health

As suggested by Tones, public health interventions should be designed ideally to make the healthy choice the easy choice¹³. Health promotion programmes may have multiple foci - social and community interventions, welfare and fiscal changes, service provision and skills for behavioural change. In principle they should reflect the ideals of the Ottawa Charter¹⁴, be evidenced based, adequately resourced and sustained, be collaborative, have sound rationale and have an evaluation plan integrated.

They should be based on need (felt need, normative need and expressed need) and reflect what is modifiable with regard to determinants of health^{15 16 17}. In reality interventions are frequently more about pragmatism than theory and either way complex interventions prove difficult to evaluate and attribute. Three books give good basic guidance, Naidoo & Wills¹⁸, Ewles and Simnett¹⁹ and recently Talbot and Verrinda²⁰.

Health promotion interventions

In the UK, interventions around smoking cessation^{xxx}, services for teenage pregnancy^{xxxi} and STI^{xxxii} clinics have all increased and been targeted. However apart from measuring very specific outcomes such as reduction in STIs or smoking behaviour, effective interventions should demonstrate raised awareness, attitude change and engagement. Health promotion interventions tend to be complex, using multiple strategies and operating at multiple levels. As stated before, due to the nature of their complexity, these are often difficult to evaluate. A recent complex intervention for the young disadvantaged child and its family is Sure Start²¹ which reports some success.

The National Institute for Clinical and Healthcare Excellence (NICE) offers comprehensive evidence based guidance on a variety of interlinked public health and behaviour change interventions^{xxxiii}, ^{xxxiv}. Another initiative, called HENRY (Health, Exercise and Nutrition for the Really Young), is designed to tackle childhood obesity before it becomes a problem, by training those who work with infants and young families to help develop healthy eating and activity patterns from the start. Their [website](#) is an excellent resource, full of colourful ideas and activities.

^{xxx} <http://smokefree.nhs.uk/smoking-and-pregnancy>.

^{xxxi} <http://www.dcsf.gov.uk/everychildmatters/healthandwellbeing/teenagepregnancy/teenagepregnancy/>

^{xxxii} <http://www.dh.gov.uk/en/Publichealth/Healthimprovement/Sexualhealth/index.htm>


^{xxxiii} <http://guidance.nice.org.uk/PHG/Wave20/1>

^{xxxiv} <http://www.nice.org.uk/guidance/index.jsp?action=byTopic&o=7376>

WB22

Child under 1: health interventions to promote child health

Type of intervention(s)	examples	Impact / issues
Law based	Employment, fiscal policies and health and safety law	Have improved for AN and PN women in UK But fear of job loss might delay informing employer of pregnancy
Health Care provision	Smoking cessation provision - Teenage pregnancy services - STI clinics - vaccination	<ul style="list-style-type: none"> • Most interventions complex – awareness change/attitude change • Sure Start – some success • Screening has limitations and ethical dilemmas • Confusion messages about risk e.g MMR
Social Programmes	Breast feeding self help groups, parenting skills	Range of interventions for parents and toddlers extensive – challenge of web-based information

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Screening and immunisation

Screening provision has also expanded, both for the health of the woman and child in pregnancy and following birth. But screening also has limitations and ethical dilemmas, such as screening occurring too late in some cases^{22 23} or for its risk of false positives. There is also confusing information, often media led, around the evidence and risks of childhood vaccination. With the recent rise in measles and the subsequent risks when herd immunity^{xxxv} is compromised, the Department of Health is adopting a more proactive response, seeing to use modern means of communication to strengthen its reach, such as via the web and by mobile texts. For a schedule of UK immunisation for infants see [immunisation](#) link.

Social programmes

Help with breastfeeding through self help groups^{xxxvi} and other interventions, such as engaging in physical activity and social interaction, are well documented as essential for a child's health and wellbeing development^{xxxvii xxxviii}. In the UK, early years programmes have moved from one of choice to becoming a social norm for most children and could be cause for concern if parents and children are not engaging with these provisions.

^{xxxv} **Herd immunity** (or **community immunity**) describes a type of [immunity](#) that occurs when the [vaccination](#) of a portion of the [population](#) (or herd) provides protection to unprotected individuals. Herd immunity theory proposes that, in diseases passed from person to person, it is more difficult to maintain a chain of infection when large numbers of a population are immune. The higher the proportion of individuals who are immune, the lower the likelihood that a susceptible person will come into contact with an infected individual.

^{xxxvi} <http://www.laleche.org.uk>

^{xxxvii} <http://www.dcsf.gov.uk/everychildmatters/earlyyears>

^{xxxviii} <http://nationalstrategies.standards.dcsf.gov.uk/search/earlyyears/results/nav:46528>

Session 2: The child from 1- 4 years old

From the age of 1 children rapidly develop intellectually, physically, socially and emotionally. Perhaps the most fascinating development is that of speech and language. The aims of the session are to explore what the “healthy” child experience is or could be and how health related structures support this, what potential risks to health could mar this and what interventions anticipate and respond to potential risks.

Session 2: Child age from 1 – 4 years: Health Structures WB23

From age 2 years child develops intellectually, physically, socially and emotionally.

Aim of this session, to explore:

- What the ‘health child’ experience is, or could be
- How health related structures support this
- What health threats could mar this
- What interventions anticipate and respond to threats

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Health Structures

Every Child Matters

“The aim of the Every Child Matters programme is to give all children the support they need to:

- be healthy
- stay safe
- enjoy and achieve
- make a positive contribution
- achieve economic well-being.

The Every Child Matters agenda has been further developed through publication of the Children's Plan in December 2007. The Children's Plan is a ten-year strategy to make England the best place in the world for children and young people to grow up. It places families at the heart of Government policy, taking into account the fact that young people spend only one-fifth of their childhood at school. Because young people learn best when their families support and encourage them, and when they are taking part in positive activities outside of the school day, the Children's Plan is based around a series of ambitions which cover all areas of children's lives”.

<http://www.dcsf.gov.uk/everychildmatters/about/>

Workbook: Public Health Aspects of Child Health

Without a doubt some of the most important infrastructure to protect and promote the health and well-being of young children is embedded in the Every Child Matters White Paper for England^{xxxix}. Other additional White Papers, EU directives and WHO/UNICEF^{xi} all provide a wealth of information to support and inform statutory and voluntary child care provision. For further information, explore some internet based 'case studies'^{xii} on this subject in the UK and, at a more global level^{xiii}.

WB24

Child age from 1 – 4 years:		
Risk to health	structures	Public health issues/debates
Infections, infestation, communicable diseases	Immunisation policies Regulating/Licensing of child care premises	Voluntary vs mandatory immunisation policies Herd immunity – recording of vaccination rates challenges with TB prevention impact of Media scare on measles Control of minor infestations (head lice, threadworm, impetigo (unregulated – not notifiable))
Poor development	Universal screening and health care provision	Marginalised, hard to reach groups)
Accidental injury	Trading Standards (products – regulation by Health and Safety Executive – Car and Road Safety Regulations	Recent change in public area playgrounds

HealthKnowledge

During the three years from 1 to 4 children develop speech and language, coordination and mobility, dexterity, control over the bladder and bowels, recognition of self and others, become skilled observers and interpreters and start to articulate their likes and dislikes, their preferences for food and activities, clothes and toys. Other changes, such as growth, are observed and if such anticipated changes seem suboptimal, help is sought. The Birth to Five Book provides is a good resource on child development for both parent and professional.

WB25

Development screening: Growth Charts

Exercise 2: Plotting and interpreting growth charts.

Working individually or in pairs, use the three workbook cases to plot and interpret infant growth.

HealthKnowledge

^{xxxix} <http://publications.everychildmatters.gov.uk/eOrderingDownload/CM5860.pdf>

^{xi} See UN Convention on the Rights of the Child <http://www.unicef.org/crc/>

^{xii} http://www.dcsf.gov.uk/everychildmatters/resources-and-practice/?i_RID=2

^{xiii} http://www.who.int/topics/child_health/en/

Exercise 2: Growth Centile charts

This activity includes 3 cases – use growth charts to plot and interpret

Birth to 36 months: Boys NAME _____
Length-for-age and Weight-for-age percentiles RECORD # _____

Length-for-age chart: Y-axis: Length (cm/in). X-axis: Age (Months). Percentiles: 95, 90, 75, 50, 25, 10, 5.

Weight-for-age chart: Y-axis: Weight (kg/lb). X-axis: Age (Months). Percentiles: 95, 90, 75, 50, 25, 10, 5.

		AGE (MONTHS)										
		12	15	18	21	24	27	30	33	36		
Mother's Stature _____		Gestational Age: _____ Weeks		Comment								
Father's Stature _____												
Date	Age	Weight	Length	Head Circ.								
	Birth											

Published May 30, 2000 (modified 4/20/01).
 SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>

SAFER · HEALTHIER · PEOPLE™

Date	Weight (Kg)
Birth – Boy	3.5
3 weeks	3.9
7 weeks	4.6
10 weeks	5.1
13 weeks	5.4
15 weeks	5.5
20 weeks	5.7
24 weeks	5.9

Case 1: Illness causing failure to thrive

Failure to gain weight with weights crossing two Centile lines. The child had been slightly unwell. The baby boy was born at term (i.e. after 40 weeks gestation) by normal vaginal delivery on and had no neonatal problems.

At 3 months his parents noticed that he had been mildly unwell at times. Over the next 2 months the parents noticed that he had vomited for no apparent reason on two occasions. They became increasingly worried about his relatively poor weight gain.

Plot the weights on the Centile Charts in order to start trying to identify if there is a problem and if so, what that problem might be.

Explaining Failure to gain weight with weights crossing two Centile lines.

The child had been slightly unwell. The poor weight gain indicated that further investigation was necessary. The child was found to have a UTI. In this case the weight chart was the main indication that there may be a serious problem, as there were no specific symptoms or signs of ill health. (You may give some other examples of illnesses causing failure to thrive.)

Date	Weight (Kg)
Birth – boy	4.1
2 weeks	4.4
4 weeks	5.0
6 weeks	5.4
8 weeks	5.8
11 weeks	6.3
14 weeks	7.0
19 weeks	7.9

Case 2: Normal weight gains.

A Ghanaian mother and grandmother brought this 4-month-old baby boy to the GP because they were worried that the baby was too thin and not getting enough nourishment. The dietary history indicated that the baby was feeding well and the baby looked well nourished.

Plot the weights and see if you can work out what is going on. The baby was born at Term (i.e. 40 weeks gestation) and the birth weight was 4.1kg.

Explaining the charts

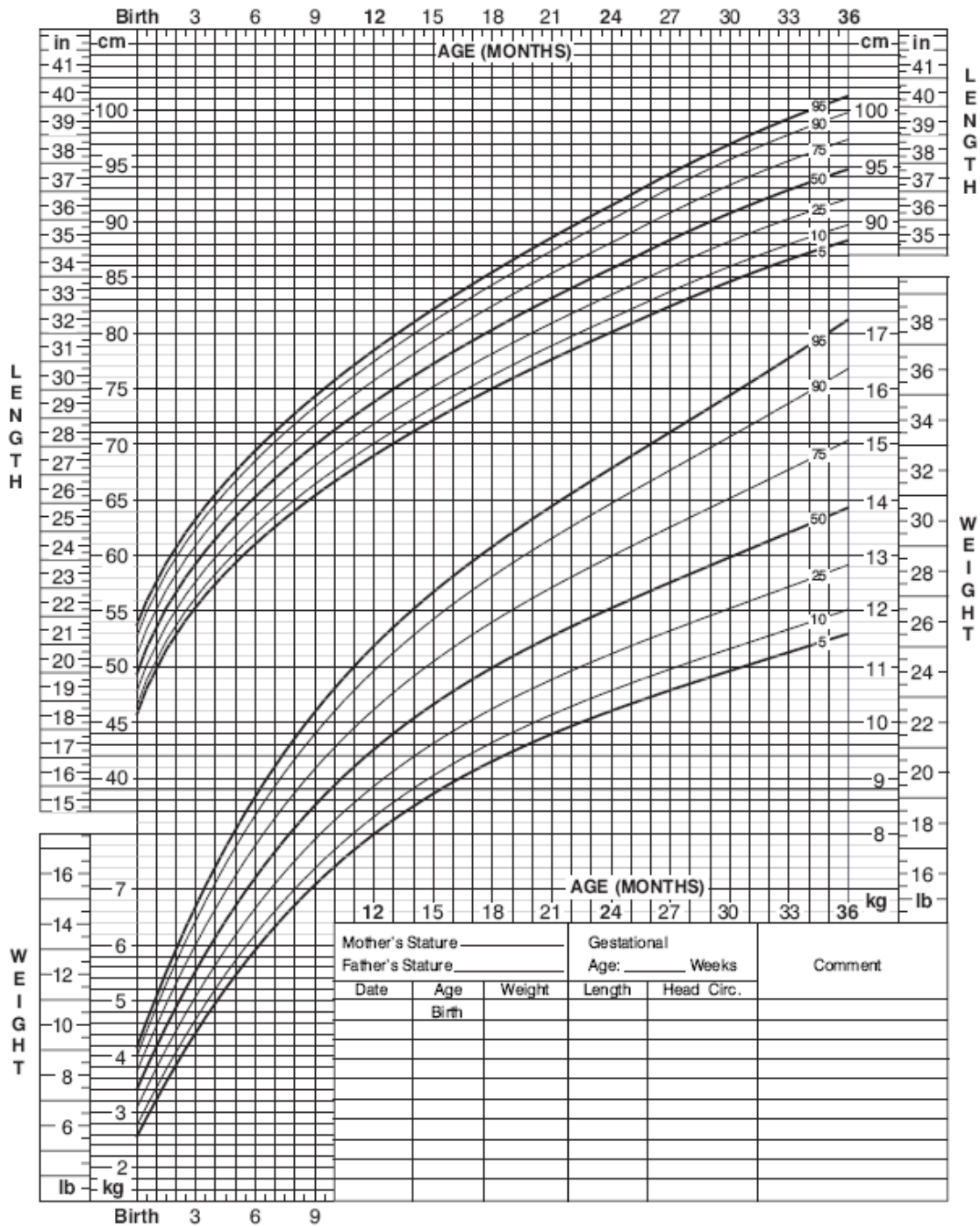
A mother 1st generation British and the grand-mother who came from Ghana brought this baby to the GP because they worried that the baby was too thin and not getting enough nourishment. The dietary history indicated that the baby was feeding well and the baby looked well nourished. The GP was able to use the weight chart to show them that the baby was gaining weight normally and was therefore being adequately nourished. Parental anxiety and family pressures were the problems. The GP suggested they see the health visitor for further advice.

Workbook: Public Health Aspects of Child Health

Birth to 36 months: Girls
Length-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Published May 30, 2000 (modified 4/20/01).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.odc.gov/growthcharts>



Date	Weight (Kg)
Birth – Girl	3.8
3 weeks	4.2
5 weeks	4.7
8 weeks	5.0
12 weeks	5.2
16 weeks	5.3
19 weeks	5.6
22 weeks	6.0
24 weeks	6.7
28 weeks	8.2
32 weeks	8.6

Case 3 - Social problem causing failure to thrive:

The baby girl was born at Term (i.e. after 40 weeks gestation) to a Vietnamese mother by normal vaginal delivery and there were no neo natal problems.

When the baby was 6 weeks old her mother went back to work and the mother’s sister looked after the baby. At the beginning of August 2006 the baby’s father was off work for several weeks and was able to help look after the baby.

At various points in the time concerns were expressed about the weight gain of this baby. Plot the weights to try and establish what might have been going on.

Explanation

This was a Vietnamese baby whose mother was going out to work. The baby was looked after by the mother’s sister, who also had a disabled child and was not able to give the baby enough attention. The baby’s weight crossed down two percentile lines. When the baby’s father was off work for some time he was able to help feed the baby, and the weight improved and returned to the original percentile line. The Health Visitor, who spoke Vietnamese, identified the problem and arranged additional support for the whole family.

There are many ways in which the health related structures support the needs of the developing child and parents and this section gives more of an overview with the option for users to go into one or two aspects in more depth.

Immunisation

Health and hygiene become significant as young start to mix in communal context so a number of measures are in place to reduce the spread of communicable diseases, control infection and infestation and regulate food provision.

The UK department of health report the Measles vaccination rates are still too low.



Awareness campaign launched as measles rises

Last modified date: 31 July 2009

Measles vaccination rates are still far lower than levels needed to protect the population. This is despite the finding of a new Department of Health survey that over 90 per cent of parents are aware it is the best way to protect their child. The findings follow recent estimates that suggest over two million children in England are at risk from the disease because they have missed either their first or second MMR vaccination. And the poll comes as the Department launches a measles awareness campaign.

From 1 August the 'Measles: Is your child safe?' road show will visit 12 measles hotspots across England to give parents the opportunity to talk with health professionals and get the facts on measles and other childhood illness, including the most effective ways to prevent them.

Though preventable, measles is a highly infectious disease and can be serious. Because it spreads so easily, 95 per cent of the population needs to be vaccinated to prevent outbreaks.

Around one in 15 children who catch measles will develop more serious complications like deafness, meningitis or brain damage. One in 5000 who contract measles die.

The year before the MMR vaccine was introduced, 86,000 children caught measles and 16 died.

The road show will visit towns with high numbers of children under five who have a low uptake of the MMR vaccination.

Professor David Salisbury, Director of Immunisation at the Department of Health said:

'It is great news that the 'Measles: Is your child safe?' road show is going to be visiting so many towns and cities around the country. The number of cases of measles is on the increase and we need to warn all parents about the potential dangers of this infection. They need to be aware that if their child is not immunised and comes into contact with a child infected with measles, there is around a 90 per cent chance they will catch measles.'

http://www.dh.gov.uk/en/News/Recentstories/DH_103555

Public health programmes have struggled to counteract the impact of media scares about the MMR in the wake of a rogue study that was published in the Lancet in 1998. The immunisation schedules are widely published and parents are informed and encouraged to take up these free services. Nearly all children are registered with the NHS and a general practitioner, which in turn means good records of what the child has received. Parents are free to decide and need to consent to any vaccination but such a policy has left some communities with low herd immunity.

Activity 15: Immunisation

Attempt at least one of the following:

1. Consider the pros and cons of voluntary versus mandatory immunization policies.
2. Explore herd immunity and how vaccination rates are recorded in populations.
3. How would you respond to a parent expressing concern about the MMR vaccine and why consent is needed?

Workbook: Public Health Aspects of Child Health

Despite a successful worldwide vaccination programme leading to a dramatic fall in the number of childhood deaths from measles, it remains one of the most contagious and yet preventable diseases^{xiii}. Children coming to the UK may or may not be immunised and in many poorer countries, vaccinations provision is sporadic rather than systematic, the vaccines may poorly stored, out of date and documentation be limited or falsified.

Activity 15

1. Think about the challenges associated with targeted TB prevention rather than universal coverage.
2. Look at your local immunisation provision and number/type of reported infectious incidents

Serious GI infections, e.g. Shigella or E coli, are minimised by the quality of regulation associated with food handling as well as license procedures for childcare providers and premises. The number of adults per child varies but where children have special needs this usually increases. Such regulation is usually the responsibility of local authorities.

As well as instructions about notifying disease, guidance is issued about attending care provision, when a child has signs or symptoms of infection, to help control/minimise potential outbreaks of serious diseases. This also applies to siblings. However children can have minor infections, such as head lice, impetigo and threadworms. Formal records regarding the epidemiology are somewhat limited given these are not notifiable conditions.

^{xiii} <http://www.who.int/mediacentre/factsheets/fs286/en/index.html>.

Activity 16. Control of infections in children

Explore concerns about spread and control of such conditions

During childhood, and specifically under the age of five, UK children have easy access to health care professionals, able to check for development, and have referrals to specialist services regarding sight, hearing, gait, growth, speech, behaviour, disabilities and emerging health related problems such as asthma, autism, food intolerances and allergies. Such provision enables treatment, management and adaptation.

The risk of accidental injury is high in this active group given their limited ability to see and quantify risk. Trading standards regards retail of products and regulation by the Health and Safety executive as well as car and road safety regulations are constantly reviewed and updated but with a balance to ensure life is not needlessly restricted.

Activity 17: Public Area Playgrounds (individual – internet access required)

Public area playgrounds have changed substantially- go to <http://www.capt.org.uk> and look at the quizzes, critiquing them and consider how they, as a health professional, could be used with parents or child minders.

Health Risks

Child age 1 – 4 years: Health Risks

Structures in place in UK to support easily identifiable health risks to young children. Some children are exposed to unhealthy environments e.g. situations of emotional and/or physical neglect (including poverty and other deprivation)

UNICEF Report 2007



The range of structures referred to indicate the need to protect children and the nature of some of the potential threats. In addition we are now aware of complex situations that can have a deleterious impact on the child at this age.

Often more difficult to specify, to identify and to quantify the damage, are conditions that deny the child love and belonging, that cause neglect of the child both emotionally and physically, that potentially lead to risk of abuse and create abusive situations, that lead to poor parenting and inappropriate discipline.

In addition, the child is at risk in certain social situations where there is smoking, obesity, deprivation or high-risk environments. Poverty is a key risk factor for child health, in all countries, rich and poor. A quote for a UNICEF Report clearly articulates the link between poverty and health:

'The evidence from many countries persistently shows that children who grow up in poverty are more vulnerable: specifically, they are more likely to be in poor health, to have learning and behavioural difficulties, to underachieve at school, to become pregnant at too early an age, to have lower skills and aspirations, to be low paid, unemployed, and welfare dependent. Such a catalogue of poverty's ills runs the risk of failing to respect the fact that many children of low-income families do not fall into any of these categories. But it does not alter the fact that, on average, children who grow up in poverty are likely to be at a decided and demonstrable disadvantage'^{xliv}

The prevalence of such circumstances is noted in some specific neighbourhoods and communities, such as those where drug use is high, criminal activity is high and stable employment is low. Additional features that may potentially threaten health and wellbeing of all not just 2-5years olds are poor access to health care provision, underperforming schools and poor educational attainment of parents and child carers, poorly maintained public spaces such as parks and play areas, limited resources and transport, high levels of morbidity and disability and low income levels.

^{xliv} UNICEF (2007) Child Poverty in Perspective: An Overview of Child Well-Being in Rich Countries. Innocenti Report Card 7, P 5

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Even children living in more affluent situations may have some of the above threats to their health. For example the smoking rates have declined in many Western democracies but the UK still has nearly a third of the adult population smoking with children exposed to tobacco smoke more likely to have Upper Respiratory Tract Infections (URTI's)
For a discussion on child poverty in wealthy countries read the UNICEF Report²⁴.

Health Interventions

**Child age 1 – 4 years:
Health Interventions**

Examples of interventions which appear to be working

Poverty and deprivation

- Sure Start Scheme

Adequate Care and Provision

- Increased provision for under 5's and parents/carers (for activities, social interaction, physical activity etc)

Behaviour Change interventions

- Smoking cessation programmes

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Tackling poverty and inequality

The Every Child Matters and associated publications for the UK suggest that tackling inequalities and child poverty will have important and sustainable impact of child health and well-being. Yet how effective such policies are in addressing child poverty is a concern of researchers. See the Rowntree report^{xiv}, which suggests the targets are being missed and more input is needed. But perhaps the most convincing evidence of successful intervention, albeit modest, is that cited in the Lancet^{xlvi} (regarding the Sure Start Scheme, which resonates in many aspects with both the ideals of the Ottawa Charter^{xlvii} and pragmatism of Beattie's model of health promotion^{xlviii}). In turn the UK Government's approach to improving child health by tackling inequalities has some link to Tones' assertion that public policy plus health education equals health promotion (Tones K & Tilford S. 1994).

^{xiv} <http://www.jrf.org.uk/publications/ending-child-poverty-changing-economy>.

^{xlvi} Kane P. Sure Start Local Programmes in England. The Lancet 2008 Nov 8;372(9650):1610-2

^{xlvii} World Health Organisation. Ottawa Charter for Health Promotion. 1986; Geneva: World Health Organisation; 1986.

^{xlviii} Beattie, A. (1991) Knowledge and control in health promotion: a test case for social policy and theory. In: Gabe, J., Calnan, M., Bury, M. (eds) The Sociology of the Health Service. London: Routledge/ Taylor and Francis.

Workbook: Public Health Aspects of Child Health

Already mentioned in the Health Structures section above are the regulations associated with safeguarding children and providing adequate care and provision. Look at any UK leisure centre and ask what has changed in the decade 1999-2009. The increased provision specifically for the under fives and their parents or carers is impressive as well as child care options enabling parents to take advantage of classes and sessions. Such provision may help to stem the trend in childhood and adult obesity, provide more social interaction at local level and create a critical mass that regularly engage in physical activity. Costs are usually low and now, in many areas, swimming is free^{xlix}.

The most widespread behaviour change intervention is that of smoking cessation programmes – any parent using “smoking to cope” is in need of additional support- be it related to income, child care, poor health and or smoking cessation skills^l.

Session 3: The child from 4-8 years old

Child aged 4 - 8 WB36

Wider social exposure (through starting school) brings new risks to physical, emotional and social development.

<p>Health overview</p> <p>Child has increased capacity to:</p> <ul style="list-style-type: none">• Be independent• Conform• Accommodate needs of others• Make choices• Learn	<p>Health concerns</p> <ul style="list-style-type: none">• Wider exposure to pathogens• Poor socialising• Influenced negatively by others and their habits• Increased physical needs/changes• Need supportive home environment
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The child at four in most countries will be either in or heading towards formal primary education. There is an increasing pressure to be independent, to conform, to accommodate needs of others, to make choices and to learn. It is also at school that some more specific comparisons regarding development are both evident and specifically monitored. But this new exposure to other children also means exposure to potential pathogens, problems with socialisation and negative influences from others. Physical changes such as growth, dental health and the need to have good personal hygiene influence how well adapted the child will be in this new environment, as well as whether his or her home life is conducive to a favourable school experience.

^{xlix} http://www.culture.gov.uk/what_we_do/sport/5810.aspx

^l http://smokefree.nhs.uk/?WT.mc_id=search&qclid=CNm84qmVxpwCFVUA4wodTg9HKQ


Health Structures

Child aged 4-8
Health Structures - school

WB36

Physical health	<ul style="list-style-type: none">• food guidance, lunchbox, fruit in school, water access• play and sun safety• guidance for infections and injuries• screening checks (weight, immunisation)• health referral scheme• near school premises legislation (parking, crossing, retail, adverts)• medication management
Social/emotional health	<ul style="list-style-type: none">• free school meals• bullying policies• breakfast and after school clubs

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 HealthKnowledge

Government policies and structures to ensure the health and well-being of children in education is evident.

Nutrition: The Food Standards Agency offers parents and schools nutritional guidance, including what constitutes a healthy lunchbox for a growing childⁱⁱ. Nutritional standards for school food are being implemented in all schoolsⁱⁱⁱ and free school meals are offered to families in need. National health promotion programmes, such as '5 a Day' as well as the School Fruit and Vegetable Scheme are in place to encourage healthy eating, particularly amongst this age group. For case studies on promoting healthy eating in primary schools see the TeacherNet website linkⁱⁱⁱⁱ.

Child measurement programmes are now in place nationally, all children are now having their BMI and waist circumference calculated on entry to primary school as well as in year 6.

Physical Activity: General guidance on all aspects of health and wellbeing, including physical activity, is encompassed in the Every Child Matters document. Many schools are now adopting a whole school policy relating to physical education. To promote physical activity outside of schools, a national play strategy was launched in 2008, to create safe, welcoming, interesting and free places to play in every residential community. However, despite these measures levels of childhood obesity and physical inactivity are still worryingly high.

Recent government sponsored health promotion campaigns aimed at children and families include Change 4 Life, a campaign built on Social Marketing principals.

ⁱⁱ <http://www.eatwell.gov.uk/agesandstages/children/lunchboxsect/>

ⁱⁱⁱ <http://www.teachernet.gov.uk/wholeschool/healthyliving/schoolfoodanddrink/>

ⁱⁱⁱⁱ <http://www.teachernet.gov.uk/casestudies/SubCatHome.cfm?id=88&sid=74>

Activity 18: social marketing as a health promotion tool

What is social marketing and how can it help to promote a health message? Go to the Change 4 Life website and find out about the support available for children aged 5-8 in your local area. Discuss the accessibility of the programme, any potential barriers for particular groups.

Health protection

Children are protected in schools through a variety of government policy directives and legislative procedures.

Activity 19: Child Health Protection

Consider how children are protected on their way to, in, and after school.

- a) Draw up a list of *what* and *who* children are protected against and how this is done.
- b) What more could be done?
- c) What could be done better?

Health Risks

Activity 20: Risks to child health and well-being

There are a number of risks to children and many have been mentioned earlier in the workbook. As the child now moves into a formal school setting what are the major risks to their health and well-being? List some of those you consider a main risk – how might they be addressed?

Child age 4-8 Health Risks

WB39

- poor home environs,
- sleep deprivation
- intellectual impairment,
- family traumas
- bullying
- snacking/eating habits
- RTA's and other accidents
- infections
- emergent illnesses

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Health Interventions



Child age 4-8
Health Interventions

Healthy school schemes
Obesity prevention
(walking school buses, free fruit schemes, MEND/CHALK)

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Some of the government backed Interventions to improve health and well-being for children have been described above – such as the Healthy Schools Programme and Change 4 Life. There are also a number of popular and innovative initiatives aimed at addressing some of the potential health threats to this age group. A few are described below:

- Childhood obesity – MEND, CHALK
- Walking School Buses
- Free Fruit and Vegetable Scheme

Activity 21: effectiveness of interventions

Think about these or other child health interventions you might have heard about – how effective do you think they are? If you were commissioning a health promotion service for children in your area, how would you find out how effective the intervention is?

Evidence of effectiveness of interventions: tackling obesity

Interventions to tackle childhood obesity usually take the form of a multiplicity of health promotion/behavioural change approaches, demonstrated by programmes such as MEND, HENRY or CHALK. This is probably because there is a lack of robust evidence of effectiveness of any one approach and also because the problems and solutions are multifactoral^{25 26}. Recent guidance produced by the National Obesity Observatory²⁷, on commissioning interventions to address childhood obesity^{liv}, from best available evidence of effectiveness^{28 29 30}, produced the following recommendations:

Programmes or interventions aimed at child obesity should:

- involve family and peer support
- encourage parents or carers to take responsibility for lifestyle changes in overweight and obese children and young people
- consider the influence of age, sex, socio-economic status and ethnicity
- be based on a strong theoretical framework
- have a positive emphasis on managing a healthy lifestyle, rather than tackling obesity
- have goals set that are achievable and sustainable over the longer term
- assess long term outcome measures (at least one year; preferably longer)
- examine changes in measures such as BMI Centile, or z score^{lv} rather than just focusing on weight loss per se
- evaluate cost effectiveness and sustainability^{lvi}
- be thoroughly evaluated
- align with government messages such as '5 A DAY' and the recommendation for 60 minutes of daily moderate-vigorous activity among children.
- programmes should aim to be enjoyable, engaging and easy for the target audience to access

Adapted from National Obesity Observatory (2009) Treating Childhood Obesity through Lifestyle Change Interventions: a briefing paper for commissioners

liv The evidence was from interventions aimed at children aged 2-18. Clinical definitions of overweight were used: defining overweight as a BMI of between the 91st and 97th centile and obesity is defined as BMI ≥98th centile, using the UK90 Growth Reference

lv A BMI z score or Standard Deviation score indicates how far a child's score is above or below the mean BMI value for their age group and sex, expressed in terms of the number of standard deviations from the mean.

lvi Tools to estimate the local prevalence of, and costs associated with, obesity can be found in section D of Healthy Weight, Healthy Lives: a toolkit of developing local strategies. Department of Health

Activity 22: evidence of effectiveness of interventions

Look at health promoting interventions such as MEND, CHALK, HENRY – what approaches do they use for children and families age 4-8? Which of the above NOO criteria do these interventions address (from looking at the information given on their websites). Why do you think it is difficult getting quality evidence of effectiveness for this type of approach?

Summary

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Summary

- Many factors influence child health
- Understanding child health and well-being development is important for health practise
- This unit has explored risks to health, and current structures and policies supporting child health
- Good evidence to support most public health practice for protecting and promoting child health and well-being
- Obesity is a big threat to child (and adult) health and well-being in UK
- Evidence for effective interventions for prevention and treatment of child obesity lacking

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- A child's health and well-being is influenced by a variety of physical, social, emotional and environmental factors.
- Understanding how a child develops and the potential risks to his or her health during childhood, and the impact this might have on adult health, is an important part of health practise. This includes understanding the structures that facilitate health and how interventions can help minimise disease.
- This unit has explored the public health aspects of child health, identifying the risks to health at key stages of development, and how some interventions minimise risk of disease and potential health inequalities.
- This unit has also explored the structures and policy that support child health, specifically those within the public health, education and government systems.
- There is good evidence to support common public health interventions aimed at protecting and promoting child health and well-being (such as screening, immunisation, promoting breastfeeding etc).
- Probably the biggest threat to child (and consequently adult) health in the West is the rising trend of overweight and obesity, with its subsequent risk of type two diabetes and other obesity related diseases.
- Evidence for effective interventions to prevent or treat overweight and obesity in children is lacking but best available evidence supports family focused, multifaceted health promotion/behavioural change programmes.

Glossary

Body Mass Index: a measurement which compares weight and height, defines adults as overweight (pre-obese) when their BMI is between 25 kg/m² and 30 kg/m², and obese when it is greater than . BMI is calculated as weight in kilograms divided by height in metres². BMI interpretations are different for age and sex of children and need to be interpreted using a BMI chart for boys and girls. .

diabetes (or diabetes mellitus): a metabolic disorder resulting from insufficient production or utilisation of insulin, causing high blood sugar levels and commonly leading to vascular complications.

epidemiology: the study of the causes and prevention of disease in populations or communities, making it the main source of evidence for public health decision making.

evidence-based medicine: the use of agreed-upon standards of evidence in making clinical decisions for treating individual patients or categories of patients.

herd immunity: describes a type of [immunity](#) that occurs when the [vaccination](#) of a portion of the [population](#) (or herd) provides protection to unprotected individuals. Herd immunity theory proposes that, in diseases passed from person to person, it is more difficult to maintain a chain of infection when large numbers of a population are immune. The higher the proportion of individuals who are immune, the lower the likelihood that a susceptible person will come into contact with an infected individual.

incidence: a measure of the risk of developing some new condition within a specified period of time

intervention study: comparison of an outcome (e.g. morbidity or mortality) between two groups of people deliberately subjected to different dietary or drug regimes.

mortality: rate of death expressed as the number of deaths occurring in a population of given size within a specified time interval e.g.

obesity: a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems. In the UK it is defined by a Body Mass Index (BMI) in excess of 30 kg/m².

primary prevention: is the term used for measures that avoid the development of a disease. Most population-based [health promotion](#) activities are primary preventive measures

population-wide approach: an intervention strategy that targets the population as a whole without regard to the risk levels of various subgroups; distinguished from and complementary to the high-risk approach.

prevalence: the frequency of a particular condition within a defined population at a designated time.

public health: "the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals"^{lvii}.

relative risk: the ratio of the chance of a disease developing among members of a population exposed to a factor compared with a similar population not exposed to the factor. In many cases the relative risk is modified by the duration or intensity of exposure to the causative factors.

^{lvii} C.E. A. Winslow, "The Untilled Fields of Public Health," Science, 51 (1920), p. 23

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risk behaviour: a behavioural pattern associated with increased frequency of specified health problems; for example, high salt, high fat, low fibre intake, and cigarette smoking are all associated with cardiovascular disease.

risk factor: an individual characteristic associated with increased frequency of specified health problems or risk behaviours;.

secondary prevention: are activities aimed at early disease detection, thereby increasing opportunities for interventions to prevent progression of the disease and emergence of [symptoms](#).

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Notes

References

1. Antonovsky A. The Salutogenic Model as a Theory to Guide Health Promotion. *Health Promot Int* 1996;11(1):11-8
2. Seedhouse D. *Health Promotion: Philosophy, Prejudice and Practice*. Chichester: Wiley; 1997
3. Duncan Peter. *Critical Perspectives on Health*. Basingstoke: Pgrave Macmillan; 2007
4. Commission on Social Determinants of Health. *Closing the gap in a generation: Health equality through action on the social determinants of health The Final Report of the WHO Commission on Social Determinants of Health*. Geneva: WHO; 2008.
5. Baqui AH, Ahmed S, Arifeen SE, Darmstadt GL, Rosecrans AM, Mannan I, et al. Effect of timing of first postnatal care home visit on neonatal mortality in Bangladesh: a observational cohort study. *BMJ* 2009 Aug 14;339(aug14_1):b2826
6. Joy E Lawn, Simon Cousens, Jelka Zupan, for the Lancet Neonatal Survival Steering Team. 4 million neonatal deaths: When? Where? Why? *Lancet* 2005; 365: 891–900
7. Cowley S, Dowling S, Caan W. Too little for early interventions? Examining the policy-practice gap in English health visiting services and organization. *Primary Health Care Research & Development* 2009;10(02):130-42.
8. Kane P. Sure Start Local Programmes in England. *The Lancet* 2008 Nov 8;372(9650):1610-2
9. Stotland NE. Obesity and pregnancy. *BMJ* 2008 Dec 15;337(dec15_1):a2450.
10. Watson EA, Monteiro MJ. Advise use of rear facing child car seats for children under 4 years old. *BMJ* 2009 Jun 11;338(jun11_2):b1994.
11. Rachel Crowther, Sarah Stewart-Brown. The health of children and young people. In: Stephen Gillam, Jan Yates, Padmanabhan Badrinath, editors. *Essential Public Health Theory and Practice*. Cambridge: Cambridge University Press; 2007. p. 185-206.
12. Gilbert R, Widom C, Browne K, Fergusson D, Webb E, Janson S (2009). Burden and consequences of child maltreatment in high-income countries *The Lancet*, 373(9657), 68-81 The Lord Laming. *The protection of children in England: A progress Report*. TSO, London 2009.
13. Tones K, Green J. *Health Promotion: Planning and Strategies*. London: Sage; 2004.

14. World Health Organisation. Ottawa Charter for Health Promotion. 1986; Geneva: World Health Organisation; 1986.
15. Wylie A. Health promotion in Medical Undergraduate Education; An Exploration of the Epistemology and the Challenge, King's College, London, 2004
16. Wylie A. Health promotion in general practice. In: Stephenson A, editor. A Textbook of General Practice. 2nd ed. London: Arnold; 2004
17. Wylie A, Thompson S. Establishing health promotion in the modern medical curriculum: a case study. *Medical Teacher* 2007;29
18. Naidoo J, Wills J. Health Promotion; Foundations for Practice. Second ed. London: Bailliere Tindall; 2000
19. Ewles L, Simnett I. Promoting Health A Practical Guide. Fifth ed. Edinburgh: Bailliere Tindall; 2003.
20. Ewles L, Simnett I. Promoting Health A Practical Guide. Fifth ed. Edinburgh: Bailliere Tindall; 2003.
21. Melhuish E, Belsky J, Leyland AH, Barnes J, and the National Evaluation of Sure Start Research Team. Effects of fully-established Sure Start Local Programmes on 3-year-old children and their families living in England: a quasi-experimental observational study. *Lancet*, 2008; 372: 1641–47
22. Raffle Angela, Gray Muir. Screening Evidence and Practice. Oxford: Oxford University Press; 2007.
23. Dormandy Elizabeth, Gulliford Martin C, Reid Erin P, Brown Katrina, Marteau TM. Delay between pregnancy confirmation and sickle cell and thalassaemia screening: a population based cohort study. *Br J Gen Pract* 2008 Mar 1;58(548):154-9.
24. UNICEF (2007) Child Poverty in Perspective: An overview of child well-being in rich countries
25. NICE (2006) Obesity: Guidance on the Prevention, Identification, Assessment and Management of Overweight and Obesity in Adults and Children. www.nice.org.uk
26. Lobstein (2008) Interventions to achieve healthy weight in children aged 4-11 years. The International Association for the Study of Obesity, Literature review prepared for London Teaching Public Health Network and North West Teaching Public Health Network, IASO
27. Treating Childhood Obesity through Lifestyle Change Interventions: A briefing paper for commissioners, NOO, (2009)
28. Obesity: Guidance on the prevention, identification, assessment and management of overweight and obesity in adults (2006) London: NICE
29. Healthy Weight, Healthy Lives: A toolkit for developing local strategies (2008) London: Department of Health

30. Oude Luttikhuis H, Baur L, Jansen H, Shrewsbury VA, O'Malley C, Stolk RP, Summerbell CD (2009) Intervention for treating obesity in children. Cochrane Database of Systematic 2009 Reviews Issue 1