New and Expectant Mothers at Work

Best Practice Guidance

Version 1 January 2007

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New and Expectant Mothers at Work

Introduction

MRC Policy is to provide a safe environment and to employ best practice to ensure health, safety and welfare within the workplace. This document sets the expected standard for best practice for the management of new and expectant mothers under MRC Health and Safety Policy. The MRC requires that Directors ensure that their duty of care to new and expectant mothers is fully met and provide the necessary controls to prevent harm to the health of the employee or her child.

Many working women who become pregnant wish to continue working for as long in their pregnancy as they remain able to. In most cases this will be possible, but a review of the working practices and working environment of each individual is required to ensure their continued health and safety at work.

All risk assessments wherever women of childbearing age are employed, regardless if any one or more of them is pregnant at any one time, must consider the potential risks to these persons and their unborn or newborn children. The risk assessment review process should identify if any work practices require modification to accommodate a pregnant worker or new mother, or in rare cases, to indicate if any work should not be done by these persons.

This guidance is designed to assist those who manage risks and manage women of childbearing age. It also provides guidance for the new and expectant mothers.

Definitions

In this document, whenever ‘employee’ is used, it means a contracted individual and ‘member of staff’ incorporates all those under the management control of the MRC.

A ‘new or expectant mother’ is a woman who is pregnant, has given birth within the last six months or is breastfeeding.

‘Given birth’ is described in the Management of Health and Safety at Work Regulations 1999 (the Management Regulations) as having ‘delivered a living child or, after 24 weeks of pregnancy, a stillborn child’.
Directors’ Summary

All MRC activities are subject to health and safety risk assessment. In some areas there are requirements to conduct specific risk assessments. Included in these are two requirements that relate to women of childbearing age and expectant and new mothers.

Firstly, as part of your establishment’s generic risk assessments, where a woman of child-bearing age is employed, all risk assessments should be reviewed to see if any activity presents additional risk of harm to a woman who is pregnant, the unborn child, or a woman who is breast-feeding and consequently the nursing infant.

The second requirement is that when a member of staff formally informs the employer that she is pregnant or has recently given birth, a personal risk assessment has to be made.

This document provides guidance on the risk assessment process for those female members of staff that are of childbearing age, those who are pregnant and those who have recently given birth. The assessments must address any substance or activity that might present a significant risk to the mother, unborn or newborn child.

Requirements

• Establishments are required to ensure that all work activities are reviewed to identify any risks that may be significant for women of childbearing age.

• Where such risks are identified, establishments must ensure that measures are in place to eliminate or minimise exposure to harm

• Establishments must ensure that a) those that have been charged with the responsibility for ensuring risk assessments are in place and b) all women members of staff of child-bearing age are informed of the contents of this document.

• Where a member of staff informs the MRC (preferably through her line manager) formally that she is pregnant or has recently given birth, the establishment must conduct a personal risk assessment as soon as is practicable and then follow the guidance included in this document

• The MRC establishment has full responsibility to undertake the risk assessments, both generic and individual, for members of staff. Where the member of staff is not employed by the MRC, it will be necessary to inform the legal employer as soon as possible with respect to entitlement to maternity leave, etc. Local arrangements will determine if the notification should be made by the member of staff or by the MRC
establishment. Arrangements should also be in place to ensure collaboration between occupational health services.

- Both the employer and the member of staff are bound by the findings of any risk assessment relating to an expectant mother or woman who is breastfeeding.

There is additional advice on pregnancy and risk assessment within other MRC Best Practice Guidance, e.g., ‘Reproductive hazards, carcinogens and mutagens’, ‘Manual handling’ and ‘Working with biological agents’.
Guidance

In many workplaces there are risks that may affect the health and safety of new and expectant mothers and of their child. Working conditions normally considered acceptable may no longer be so during pregnancy and while breastfeeding.

The employer is required to assess the risks that might harm any of their employees and to do what is reasonably practical to control those risks. In MRC establishments this responsibility extends to all members of staff.

Where women of childbearing age are employed, the risk assessment must determine if there are any risks specific to or increased for new and expectant mothers. This is irrespective of whether the employer knows that they have a new or expectant mother working for them.

The types of hazards that should be considered are physical, biological and chemical agents, work processes and working conditions. Many of these hazards are already likely to be covered by specific health and safety regulations, for example the Control of Substances Hazardous to Health Regulations (COSHH).

The employer will need to keep these risk assessments for new or expectant mothers under review.

When the employer has been told in writing that a worker is pregnant, has given birth within the previous six months or is breast-feeding then certain actions must be taken. As a general rule the employer should first consider removing or prevent exposure to any hazard that has been identified.

In MRC establishments, the MRC takes responsibility for the risk management of all members of staff. Unless specifically excluded, this will include reimbursed members of staff, visiting workers and students.

The legal employer must also be informed according to your local arrangements, so he can manage issues relating to conditions of employment.
What needs to be done?

Generic Risk Assessment

A generic risk assessment of hazards to new or expectant mothers and their children should be taken if any woman of childbearing age is employed. Do not wait for an employee to inform you of her pregnancy, partum or breastfeeding.

Steps to risk assessment:

1. Look for hazards/risks

   A list of potential hazards is provided later in the guidance.

   Risk can broadly be defined as the product of severity and probability.

   **Severity** could be high (miscarriage, still birth, birth defects, premature birth, low birth weight, failure to thrive, maternal illness, etc).

   **Probability** depends on the hazard the new or expectant mother is exposed to, the extent (level & duration) of exposure to that hazard, and the activities being performed. Also risk to the foetus is greatest in the first trimester of gestation, i.e., weeks 0-13. This is usually before the expectant mother declares her pregnancy. In general, risk for breastfeeding is less than for pregnancy.

2. Decide who might be harmed and how

   This could be the new or expectant mother, the foetus or the new born child

3. Consult members of staff and inform them of any risks identified

4. Inform members of staff that it is important for them to provide written notification to the MRC and to their own employer where they are not directly employed by the MRC that they are pregnant or breastfeeding as early as possible.

What notification does a member of staff have to provide?

There are no legal requirements on employees to inform their employers that they are pregnant or a new mother. Members of staff should bear in mind, however, that even though a generic assessment will have been made, the employer is not required to take any specific action until written notification has been provided. It is therefore important for the member of staff and her child's health and safety that she advises her
establishment in writing as early as possible. Employers can also ask for a MATB1 certificate from their employee's GP or midwife stating that she is pregnant.

For members of staff not directly employed by the MRC, establishments must put systems in place to ensure the legal employer is also informed in writing.

**What actions are the MRC required to take?**

Establishments should take action to ensure that their staff who are, or in the future could be new or expectant mothers are not exposed to any significant risk.

They should inform members of staff of the importance of giving written notification of pregnancy, having given birth in the last 6 months or that she is breastfeeding, as early as possible so that the appropriate health and safety assessments can be undertaken.

**Personal Risk Assessment**

Establishments should conduct a specific risk assessment on receipt of written notification from a member of staff that she is pregnant, has given birth in the last six months or is breastfeeding. This must take into account any advice provided by the woman's health professional and the local occupational health provider.

If any risks are identified then establishments must take action to remove, reduce or control the risk. If the risk cannot be removed establishments must:

**Option 1**
Temporarily adjust her working conditions and/or hours of work; or if that is not possible:

**Option 2**
Offer her suitable alternative work (at the same rate of pay) if available; or if that is not feasible:

**Option 3**
Suspend her from work on paid leave for as long as necessary to protect her health and safety and that of her child.

Where the member of staff is not employed by the MRC, any measures taken under options 2 or 3 that may impinge on her pay and conditions would require the establishment liaising with the legal employer.

The risk assessment should be recorded and reviewed regularly throughout the pregnancy and the term of breastfeeding. An example is provided as Appendix 1.
Establishments should work with their local occupational health service to determine the individual’s fitness to perform her normal work activities. This could be especially important if a new mother returns to work within six months of delivery.

Flow chart
The steps involved in generic and individual risk assessments are illustrated on the following page in a flow chart. Any actions taken under options 1 to 3 should be subject to periodic review throughout the pregnancy and where the mother is breast-feeding. Adjustments may also have to be made where a mother returns to work soon after delivering her child.
New and Expectant Mothers at Work

Step 1 Initial generic risk assessment including new and expectant mothers

- Inform the employees of the outcome
- Are there any hazards present?
- Assess risks, remove if possible, if not reduce
- Inform the employees of the risk and the need to inform employer of pregnancy, breastfeeding or having given birth in the last six months

Step 2 On written notification of pregnancy, giving birth in the last six months or breastfeeding

Carry out a risk assessment specific to the member of staff, based on initial assessment and any medical advice provided by GP, OH or midwife

- Regularly monitor and review
- Has a risk been identified?
- Can the risk be removed?
- Can employees working conditions/hours be adjusted?
- Adjust the hours/conditions
- Give suitable alternative work on same pay and conditions
- Option 1
  - Can employee be given suitable alternative work?
  - Option 2
  - Suspend employee on paid leave for as long as necessary to protect their health and safety and that of the child

All of the above actions should be monitored and reviewed on a regular basis
Risk Assessment

What are the hazards/risks that could be harmful to new and expectant mothers and their children?

The overall health hazards are:

- Teratogenesis – non-heritable abnormal development of the foetus
- Mutagenesis – heritable defects of the foetus or alteration to parental germ-line
- Tumourigenesis – production of tumours in the foetus or reproductive organs of the mother
- Foetal infection – transmission across the placenta by certain pathogens
- Foetotoxicity – frank poisoning of the foetus by certain chemicals
- Health effects for the expectant mother
- Foetal death (spontaneous abortion of foetus or stillbirth) – a possible consequence of the above hazards.

Also, live born infants can be harmed through transmission of agents (chemical, biological or radiological) via breast milk, or via reduction in milk production of mother, or other health and welfare effects on mother that degrade her care-giving capacity.

Hazards by Category

Working Conditions:

- Inadequate facilities (including rest rooms)
- Excessive working hours (night work etc)
- Unusually stressful work
- Exposure to cigarette smoke
- High or low temperatures
- Lone working
- Work at heights
- Traveling either inside or outside the establishment
• Exposure to violence
• Manual handling of loads
• Movements and postures
• Work with display screen equipment (VDUs)
• Work equipment and personal protective equipment (including clothing)

Generic Hazards

• Mental and physical fatigue and working hours
• Work at heights
• Working alone
• Postural problems connected with the activity of new or expectant mothers
• Occupational stress
• Standing/bending activities
• Sitting activities
• Lack of rest and other welfare facilities

Control of Exposure to Risks

Introduction

Once written notification has been given to the employer, an individual ‘personal’ risk assessment in respect of the hazards identified must be carried out as soon as possible. A copy of the completed ‘personal’ risk assessment should be given to the new or expectant mother and her line manager / supervisor. A copy should also be placed on her personnel record. If the employee suspects that she is pregnant but it is not yet confirmed, the employee is strongly encouraged to inform her manager or, where this is not practicable, an appropriate alternative person (e.g. human resources or the unit safety co-ordinator), so that the personal risk assessment can still be undertaken as soon as practicable.

Chemicals
Handling & use of carcinogens, mutagens, teratogens and cytotoxins should be avoided if reasonably practicable or exposure minimised and restricted to small amounts of dilute agent with engineering controls (e.g., fume cupboards, etc), personal protective equipment (e.g., gloves, etc) and rigorous hygiene applied as per ‘normal’ risk / COSHH assessments.

Work necessitating initial handling of larger amounts or stock solutions should be reallocated to colleagues. These restrictions do not apply to new mothers that are not breastfeeding.

**Biologica**

Most infection risks can usually be avoided or minimised by careful use of simple control measures. These include:

- preventing puncture wounds, cuts and abrasions, especially in the presence of blood and body fluids;

- avoiding the use of, or exposure to, sharp objects (needles, glass, metal, knives etc.) where possible. If this is not possible, take particular care in their handling, cleaning and disposal;

- protecting all breaks in exposed skin by means of waterproof plasters and/or gloves;

- protecting the eyes and mouth with a visor or goggles/safety spectacles and a mask when there may be splashing;

- avoiding people or their clothing getting contaminated by using waterproof/water-resistant protective clothing, plastic apron etc;

- making sure staff wear rubber boots or plastic disposable overshoes when the floor or ground is likely to be contaminated;

- using good basic hygiene practices in the workplace, including hand-washing, and avoiding hand-to-mouth or hand to eye contact, smoking, eating, drinking, applying cosmetics or removing/inserting contact lenses, taking medicines etc;

- controlling surface contamination by containment and appropriate decontamination procedures;

- disposing of all contaminated waste safely.
Appendix 2 gives details of suitable control measures for some specific infections.

Safe working procedures are the first line of defence against infections at work. However, in some specific cases, the risk assessment may show that immunisation (vaccination) is necessary. For example, it may be needed for certain laboratory and health care workers.

Immunisation should only be carried out under the direction of a medical practitioner. They will know when immunisation is not advisable. For example, there are some vaccines that should not be given to women while they are pregnant (seek advice from GP or Occupational Health provider).

Immunisation should be seen only as a useful supplement to safe working procedures and the proper use of protective equipment and should not replace them.

Before an employee’s pregnancy begins, it is in their interest and yours to make sure that vaccination is available and used to provide protection against any infections.

If you carry out work that exposes any employees to a risk of infection you must provide them with suitable and sufficient information, instruction and training.

Examples of where infection hazards may occur at work include those occupations where there may be contact with:

human blood and body fluids such as genital secretions, which may be infected;
infected animals;
laboratory cultures etc.;
water or food contaminated by human or animal faeces.

For details on some of the specific infections, see Appendix 2

**Radionuclides**

With unsealed radionuclides, the hazard is internal dose by ingestion or absorption via skin abrasions / puncture or inhalation, which passes to the foetus via the placenta or to
the infant via breast milk. Thus any radionuclide contamination poses a considerable risk for new & expectant mothers. The risk is all the greater given that there can be a concentration of the radionuclide in the foetus which is greater than in the expectant mother, and the foetus and infant may be more radiosensitive than an adult. In particular, comparative radionuclide concentration is high, at about 15 fold for $^{32}$P but lower at about 2 fold for $^{35}$S and $^3$H. Radionuclide concentration is generally weak for breast milk.

External dose is not usually a significant risk as $^{32}$P, $^{35}$S and $^3$H are β emitters, and even for the most energetic emitter $^{32}$P, the distance travelled by the β particle through water (and thus extrapolating to tissue) is only 0.8 mm. Foetal dose from external dose to the mother from unsealed radionuclides is thus likely to be negligible.

With closed sources, the hazard is external dose, and contamination should not be a consideration.

The legal foetal dose limit for ionising radiation is 1 mSv (from work sources, i.e., in addition to background) from when the employer is informed of the pregnancy to its end. The employer is legally obliged to ensure that foetal dose does not exceed this limit.

To this end, it should be recognised that the foetal dose from an external dose to the mother will depend on the nuclide. Generally limiting the external dose to 2mSv over the term, however, will ensure that the dose to the foetus is less than the 1mSv limit. As stated previously the employer is not legally required to take action until formal notification, but once informed, and wherever the mother has been exposed to ionising radiation, the employer should perform a retrospective dose assessment to determine the possible full term foetal dose (or likely dose from breastfeeding post birth).

For $^{32}$P, maternal ingestion/absorption of just 0.028 MBq (0.75 μCi) would give a foetal dose of 1 mSv and therefore the use of $^{32}$P by expectant mothers should be avoided wherever reasonably practicable. Where it is not reasonably practicable, the proposed procedure must be subject to a rigorous risk assessment to ensure the foetus cannot be exposed to harmful radiation.

For $^{35}$S, maternal ingestion/absorption of just 1.54 MBq (40 μCi) would give a foetal dose of 1 mSv, and so use of $^{35}$S by expectant mothers is limited to handling amounts of activity less than this. NB these figures take dose concentration effect into account. The legal dose limit for a suckling infant is 1 mSv per year (from work sources, i.e., in addition to background).
The employer is legally obliged to ensure that this dose limit is not exceeded. For $^{32}$P, this equates 0.42 MBq (11.25 μCi), and for $^{35}$S this equates to 3.08 MBq (80 μCi) (assuming maternal/infant dose equivalence). Thus, use of these radionuclides by breastfeeding new mothers is normally limited to handling these amounts of activity.

These restrictions do not apply to new mothers that are not breastfeeding.

Advice should be sought from the Radiation Protection Adviser (RPA).

**Display Screen Equipment**

A written DSE assessment must be carried out by a trained assessor for each expectant mother. This is a mandatory requirement when an expectant mother formally declares her pregnancy to the MRC. The assessment must be copied to the expectant mother, her line manager / supervisor, and her personnel record. The findings of this assessment are binding on the new or expectant mother and her line manager / supervisor. A further DSE assessment must be carried out at the start of the third trimester (i.e., ca. week 26).

**Other**

Expectant mothers must not:

- Lift/move significant loads

In addition, wherever practicable and subject to individual risk assessment, they should not:

- Travel on unit business unless unavoidable
- Work more than 3 hours per day at a microscope or microbiological safety cabinet taking a 10 minute break every hour
- Sit or stand for more than an hour without at least a 10 minute break
What facilities do employers have to provide?

The Workplace Regulations require employers to provide suitable facilities for pregnant and breastfeeding mothers to rest. They should be suitably located (e.g. close to toilets) and where necessary should include somewhere for the woman to lie down.

HSE recommends that it is good practice, for employers, to provide a private, healthy and safe environment for nursing mothers to express and store milk. The MRC expects establishments to ensure this environment is available to nursing mothers. It is not suitable to use toilets for this purpose.
Useful Contacts and Publications

HSE Information for New and Expectant Mothers

HSE’s free leaflet ‘Working safely with ionising radiation: guidelines for expectant or breast feeding women’

Guidelines on the assessment of the chemical, physical and biological agents and industrial processes considered hazardous for the safety or health of pregnant workers and workers who have recently given birth or are breastfeeding (Council Directive 92/85/EEC).

Infection risks to new and expectant mothers in the workplace - A guide for employers

Workplace (Health, Safety and Welfare) Regulations 1992 Approved Code of Practice and guidance L24

FAQs

Pregnant Employees Rights

Maternity Pay and Leave

Paternity Pay and Leave

Equality Act 2010

The following are available from HSE Books

Find your local Family Information Service (FIS)

NHS Choices – Pregnancy and Baby

There are lots of organisations offering information and support when things go wrong, including Bliss, Cruse Bereavement Care, Miscarriage Association, Sands: stillbirth and neonatal death charity and the The Lullaby Trust: cot death research and support
Appendix 1 Example pro forma for Risk Assessment

Note: This is a blank template, intended to provide an aid-memoir for those conducting a risk assessment. It should be regarded as expandable rather than for single line entry. In practice, wherever a hazard is identified, a brief description of the risk can be inserted and the control measures determined and stated.

Risk assessment for New and Expectant Mothers

Name Job Title Unit/Dept

Expected Date of Confinement

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<th>Assessor</th>
<th>Date of Assessment</th>
<th>Date to be Reviewed</th>
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<td>Hazard Category</td>
<td>Present Y/N</td>
<td>Risk</td>
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<td>Generic</td>
<td>• Mental and physical fatigue and working hours</td>
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<td>• Occupational stress</td>
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<td>• Sitting activities</td>
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<td>• Lack of rest and other welfare facilities</td>
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**Physical Agents**

• Awkward spaces and workstations
• Shocks, vibration or movement
• Noise
• Ionising radiation
• Non-ionising electromagnetic radiation
• Extremes of cold or heat
### Biological Agents:
- Agents in hazard groups 2, 3, & 4 (see [Approved list](#))
- Agents known to cause abortion or physical damage e.g. rubella, toxoplasmosis

### Chemical Hazards:
- Substances labelled H340, H350, H350i, H351, H360D, H360Fd, H361d
  Carcinogenic, Mutagenic, Reproductive hazards
- Preparations labelled on the basis of Directive 83/379/EEC or 1999/45/EC
- Mercury and mercury derivatives
- Antimitotic (cytotoxic) drugs
- Chemical agents of known and dangerous percutaneous absorption (i.e.
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| that may be absorbed through the skin). This includes some pesticides.  
- Carbon monoxide  
- Lead and lead derivatives - in so far as these agents are capable of being absorbed by the human organism  
- Chemical agents and industrial processes in Annex 1 to Directive 90/394/EEC | |
Appendix 2 Infections of concern or new and expectant mothers

**Cytomegalovirus**

**Organism:** Human cytomegalovirus (CMV).

**Sources:** Humans - particularly children. Transmission may occur through breast milk, saliva, sexual intercourse and blood.

**Disease in adults:** Usually no symptoms in healthy people. It may cause an illness with symptoms similar to glandular fever (infectious mononucleosis).

**Duration:** Acute illness in adults may last 2-3 weeks, then virus persists in a latent state.

**Effects on the unborn child:** Usually no symptoms. A small number of babies may have symptoms at birth and can suffer long-term complications including damage to the nervous system, learning disability, and deafness.

**Transmission to the baby:** Across the placenta.

**Likelihood:** In the UK about three babies in every 1000 are born with this infection. But 90% of them have no symptoms. Some 5-10% of the babies who have no symptoms later develop CMV related problems. When infection takes place, damage can occur at anytime during the pregnancy.

**Control Measures**

Pay scrupulous attention to hygiene, including hand washing. Particular care should be taken when handling nappies, excreta etc. from babies and children. No vaccine is available at present, but about 50% of women in the UK are immune because they caught the infection in early life.

**Risk statement:** A virus of low infectivity. Transmission is easily prevented if you are aware of the hazard and set up simple hygiene measures.
Hepatitis A

Organism: Hepatitis A.

Sources: Humans, and water or food contaminated by faeces*.

Disease in adults: The severity of disease is closely related to age. Severe (fulminant) hepatitis is rare. In adolescents and adults symptoms are more severe and last longer than in children, who are often asymptomatic. Common symptoms and signs include fever, headache, jaundice, loss of appetite, nausea, vomiting and abdominal pain from a tender, enlarged liver.

Duration: There is an incubation period of 15-45 days with an average of about 28 days. There is no risk of transmission one week after jaundice and darkening of the urine have appeared. There is no persistent or latent infection (carrier state).

Effects on the unborn child: Mothers may transmit the infection to their unborn baby but it is very rare.

Transmission to the baby: The virus multiplies mainly in the liver and passes into the faeces through the bile duct. Most transmission to babies is via mouth contact with faecal-contaminated objects (faecal-oral route).

Likelihood: Mother to unborn baby transmission is very unlikely to occur.

Control measures: Pay scrupulous attention to hygiene, especially hand washing. A vaccine is available for adults and children but it is not currently licensed for use in babies under 1 year old.

Risk statement: In developing countries people are usually infected in childhood and acquire lifelong immunity. In recent years in industrialised countries rates of infection have been variable and many children and adults are not immune. This is probably due to improved hygiene.

*Hepatitis E is transmitted in a similar way to hepatitis A and infections have been reported in the UK, but usually in travellers returning from abroad. The symptoms are similar to hepatitis A and there is also no persistent or latent infection (carrier state). However, there is a high death rate for pregnant women infected with the virus. There is no vaccine available.
Hepatitis B

Organism: Hepatitis B.

Sources: Humans, contaminated needles, blood and body fluids such as genital secretions and laboratory specimens etc*.

Disease in adults: Infection may cause acute inflammation of the liver (hepatitis) which may be life threatening. A person showing no symptoms may still carry the infection (5% or less of adults have chronic infection). These people can develop severe chronic hepatitis, cirrhosis and primary liver cancer.

Duration: The severity of the illness and the extent and duration of the jaundice can vary. A small proportion of patients develop severe (fulminant) hepatitis.

Effects on the unborn child: Most babies infected at birth carry the infection, but show no obvious symptoms or the symptoms are mild and there is no apparent jaundice. Severe (fulminant) hepatitis in newborn babies has been reported but is very unusual.

Transmission to the baby: The virus does not usually cross the placenta. It is thought that the mother passes the infection to her baby during delivery and just after by exposure to her blood.

Likelihood: Risk of transmission from an hepatitis B infected mother to her baby may be as high as 90% depending on the stage of her infection. They will remain infectious and are at increased risk of developing chronic liver disease and liver cancer in later life. Hepatitis B antibodies and Hepatitis B vaccine given to a newborn immediately after birth is 85-95% effective in preventing them becoming carriers.

Control measures: Avoid injuries with sharp objects contaminated with blood and body fluids and direct contact with blood and body fluids. Use protective clothing. Ensure that all Employees who might be at occupational risk are immunised and blood tests show them to be immune.

Risk statement: Cases of occupationally acquired hepatitis have declined in recent years due to increased awareness, safe working practices and widespread use of vaccine.

*Hepatitis C and D are transmitted in a similar way and require the same precautions. Immunity to hepatitis B will also protect people against hepatitis D, but no vaccine to
hepatitis C is available. Hepatitis C infection from mother to baby has been reported but is uncommon.
**Human immunodeficiency viruses**

**Organism:** Human immunodeficiency virus (HIV) 1 and 2.

**Sources:** Humans, contaminated needles, blood and body fluids, laboratory specimens etc.

**Disease in adults**

Acquired immunodeficiency syndrome (AIDS) and related conditions.

**Duration**

Life-long, persistent infection.

**Effects on the unborn child**

Infection may lead to AIDS and other diseases.

**Transmission to the baby**

Across the placenta, during delivery and by breastfeeding.

**Likelihood**

The risk of transmission from an infected mother to baby (excluding breastfeeding) is 12-25%. Recent studies have shown that anti-viral therapy (azidothymidine AZT) given to HIV infected women during pregnancy, at delivery, and to their babies, will reduce the transmission rate.

**Control measures**

Avoid injuries with sharp objects contaminated with blood and body fluids and direct contact with blood and body fluids. Use protective clothing.

**Risk statement**

Infection at work is rare. The risk of transmission from an injury that pierces the skin involving known HIV positive blood is approximately 1 in 320 (0.3%). The risks can be reduced by awareness of the transmission route, adequate training, safe work practices and the use of simple control measures.
**Parvovirus**

**Organism**  Human parvovirus B19.

**Source**  Humans - via respiratory secretions.

**Disease**  Parvovirus causes Fifth disease (erythema infectiosum or slapped cheek syndrome). About 50% of infections show no symptoms. The most common disease is a mild upset with fever in 15-30% and a characteristic rash. It can be confused with rubella. Joint problems are unusual in children, but common in adults, especially women.

**Duration**  The incubation period is usually 4-14 days, but may be as much as 20 days. Symptoms may continue for weeks and sometimes months.

**Effects on the unborn child**  Foetal death and spontaneous abortion may occur in the second and third trimesters. In some cases, this is associated with severe fluid accumulation (less than 10% of exposed foetuses).

**Transmission**  Across the placenta.

**Likelihood**  About a third of babies of infected women are infected in the womb.

**Control measures**  Basic good hygiene. Additional control measures may be needed where pregnant women are exposed at work to infected people in whom viral excretion may be prolonged because they do not have a fully working immune system or have certain other blood disorders.

**Risk statement**  It has been suggested that the increased risk of death of the unborn baby following parvovirus infection in pregnancy is around 9%.
**Rubella**

**Organism**
Rubella virus.

**Sources**
Humans by close contact and via respiratory secretions.

**Disease in adults**
Usually mild and includes a faint reddish purple rash, sometimes accompanied by mildly inflamed eyes and joint pains.

**Duration:**
Acute illness lasts for less than 1 week in an adult.

**Effects on the unborn child**
Many infected babies have no ill effects. However, a wide range of birth defects including deafness, eye disease (cataracts), heart defects, an abnormally small undeveloped head (microcephaly) and learning disability can occur.

**Transmission to the baby**
Across the placenta.

**Likelihood**
Mass immunisation has reduced the risks of infection in pregnancy to a very low level. But if non-immune mothers catch rubella in the first 3 months of pregnancy, approximately 80% of the babies will have some rubella-associated problems. Between 12 and 16 weeks of pregnancy the risk of harm falls to about 5% and rarely occurs after that.

**Control measures**
Rubella vaccine is given routinely to all children, and adults who have not had the infection. Screening for immunity is routine in antenatal clinics, so that those that are not immune can be offered vaccination after that pregnancy.

**Risk statement**
Women from overseas may not have been immunised against rubella and have the highest risk of any group of women in the UK. Between January 1991 and June 1994 in the UK 14 infected infants were reported. Nine of the 12 mothers were from overseas. In 1996 an unusually high incidence of rubella infection in Scottish men resulted in infections in 3 non-immune pregnant women.
**Toxoplasma**

**Organism**  
*Toxoplasma gondii*.

**Sources**  
Hand-to-mouth contact with the faeces of infected cats, contaminated soil, poorly washed garden produce, and by eating undercooked, infected meat (especially beef, lamb and pork).

**Disease in adults:**  
Primary infection often has no symptoms. However, symptoms can vary from persistent acute fever with enlarged lymph glands to very rare infection in the brain, muscle and eye, leading to death. If people do not have a properly working immune system (immunosuppression) the dormant infection can return with serious consequences.

**Duration**  
Varies and may be lifelong.

**Effects on the unborn child**  
Most infected babies (90-95%) have no symptoms at birth, but some may develop eye damage in later life. Those with symptoms at birth may have accumulation of fluid in the brain (hydrocephalus), brain damage, inflammation of eyes and various non-specific signs.

**Transmission to the baby**  
Across the placenta.

**Likelihood**  
The overall risk of transmission from an infected mother to the unborn baby is about 40%. This ranges from about 15% in the first trimester to about 60% in the later stages of pregnancy. But the likelihood of an infected baby being harmed is much higher when infection occurs in early pregnancy than in later pregnancy.

**Control measures**  
Avoid handling infected meat, cat faeces, and sheep at lambing time, or wear gloves and pay scrupulous attention to hygiene, including hand washing.

**Risk Statement**  
In the UK, less than 20% of pregnant women are immune. A pregnant woman’s immunity depends on their country of birth. People born in southern Europe or Africa are more likely to be immune. It is estimated that in the UK toxoplasmosis occurs in approximately 2 in every 1000 people, but most cases show no symptoms.
Other microbes

A wide range of microbes cause infections in the human population and may also infect pregnant women. They may or may not have an adverse effect on the baby. These include:

*Borrelia burgdorferi* (Lyme disease);

*Campylobacter* spp. and *Salmonella* spp (gastroenteritis);

*Chlamydia psittaci*

*Coxiella burnetii* (Q fever);

*Listeria monocytogenes* (Listeria)

Lymphocytic choriomeningitis virus (LCM),

*Mycobacterium tuberculosis* (TB),

*Treponema pallidum* (syphilis).

*Varicella-zoster* (chickenpox)

Any severe infection, whatever the cause, may be detrimental to the health of the mother and child. You should take this into account when you set up control measures to tackle the risks of infection in your workplace.