1. **INTRODUCTION**

1.1 **Standard Precautions**

Standard precautions, originally known as universal precautions, are essential components in preventing the transmission of infectious diseases in the healthcare setting from recognised and unrecognised sources of infection. Universal precautions consider all blood and body fluids to be potentially infected, whereas standard precautions also take into account the risk of contact with patients’ intact skin and the possibility that the immediate environment, materials and equipment, may be potentially contaminated with pathogenic micro-organisms.

A person becomes infected with a micro-organism when a unique chain of events occur. The chain of infection is made up of six different links, these being the pathogen, reservoir, portal of exit, means of transmission, portal of entry and the susceptible host. Each link has a unique role in the chain and each can be interrupted, or ‘broken’, through various means.

![Chain of Infection Diagram]

Standard precautions are infection prevention and control (IPC) precautions that should be applied as standard principles by all healthcare staff for the care of all patients at all times.

1.2 **Healthcare Associated Infections**

Despite progress in recent years in the treatment of many diseases and conditions, Healthcare Associated Infections (HCAIs) continue to threaten the advances that are being made in modern medicine (Loveday et al 2013). HCAIs are infections that develop in patients following medical care or treatment and can occur in a variety of settings including within hospital or within the patient’s own home (Public Health England {PHE} 2014). HCAIs can be caused by endogenous factors whereby patients are already colonised by microorganisms that are present in or on their own body, or exogenous factors where transmission occurs due to external influences, such as health care workers hands or contact with the environment (World Health Organisation {WHO} 2011). HCAIs do not just affect patients
and can affect health care workers, support service staff and visitors too.

The impact of HCAIs on patients has been well documented and WHO estimates that HCAIs cause 16 million extra days of hospital stay and are accountable for 37,000 deaths within Europe each year (WHO 2011). The patient who is affected by a HCAI may have to stay in hospital longer and suffer the anxiety that is associated with developing an infection (Weston 2013). In some cases the infection may lead to long term disability or even death.

The Health and Social Care Act 2008 Code of Practice on the prevention and control of infections and related guidance requires all healthcare providers to have systems in place to minimise the risk of HCAIs to patients, staff and visitors.

1.3 Surveillance

Surveillance of organisms is required to understand the extent, cost and effects of HCAIs and is the foundation for good IPC practice and improvement of patient care. Surveillance forms the basis of IPC interventions, education and policy development and includes:

- Monitoring the incidence of infection
- Providing early warning and investigation of problems and subsequent planning and intervention to control infections
- Monitoring trends, including the detection of outbreaks
- Examining the impact of interventions

Enhanced surveillance captures many details including: patient demographics, likely source of the infection and whether the infection was acquired in a hospital or community setting.

IPC is an important part of the Trust’s effective risk management programme to improve the quality of patient care and the occupational health of staff.

The Trust’s system and arrangements for prevention and controlling HCAIs are available to patients and public in the following ways:

- Reporting of the audit results from PLACE assessments.
- Reporting of infection rates for the Trust via the IPC annual report which is available on the Trust’s public website
- By the display of posters including hand washing and cleanliness standards
- Through information leaflets in clinical areas.

Risk assessment for HCAI must be undertaken for patients on admission to all healthcare settings by using a paper form (appendix 2) or the electronic form on the electronic care records system.
1.3.1 Multi Drug Resistant Organisms

Multi drug resistant organisms (MDROs) are a growing concern for infection prevention and control and it is imperative that patients who have or are suspected of having one are managed safely and appropriately.

Antibiotic resistance occurs when bacteria develop the ability to defeat the drugs designed to kill them. When bacteria become resistant, antibiotics are not effective and the bacteria can multiply.

MDROs are clinically significant because:

- They are resistant to many antibiotics commonly used in hospitals
- Treatment may require second line antibiotics which may be less effective or have more side effects
- Delays in identifying the causative organism as a MDRO result in significant morbidity
- Depending on the species they may colonise the environment for long periods of time
- They may colonise patients and eradication may not be possible
- Strains exist that are resistant to all known antibiotics
- Multi-resistance in these organisms limits the therapeutic options available when they cause serious infections such as septicaemia and post-surgical sepsis
- They have been implicated in outbreaks of infection

Factors That Increase the Risk of Acquisition of MDROs

Frequent or prolonged hospitalization

- Stay in a nursing or residential home
- Immunosuppression
- Urinary catheterisation
- Previous treatment with antibiotics
- More than 60 years of age
- Transfer from other healthcare facilities
- Contact with healthcare overseas in previous 12 months
- Presence of devices e.g. intravascular catheters, percutaneous endoscopic gastronomy (PEG) tubes etc
- History of previous colonisation or infection with MDROs
- History of close contact with individual who is/has been colonised or infected with MDROs

1.4 Notifiable Diseases

Registered medical practitioners (RMPs) attending a patient **must** notify the local authority in which the patient resides when they have
reasonable grounds for suspecting” that the patient:

- has a Notifiable disease as listed in Schedule 1 below of the Notification Regulations; or

- has an infection not included in Schedule 1 which in the view of the RMP presents, or could present, significant harm to human health e.g. emerging or new infections; or

- is contaminated, such as with chemicals or radiation, in a manner which, in the view of the RMP presents, or could present, significant harm to human health; or

- has died with, but not necessarily because of, a Notifiable disease, or other infectious disease or contamination that presents or could present, or that presented or could have presented significant harm to human health.

Notifications of cases of infection, not included in Schedule 1 below, and of contamination are expected to be exceptional occurrences.

**Schedule 1 Diseases**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Schedule 1 Diseases</th>
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<tbody>
<tr>
<td>Acute encephalitis</td>
<td>Measles *</td>
</tr>
<tr>
<td>Acute meningitis</td>
<td>Meningococcal septicaemia *</td>
</tr>
<tr>
<td>Acute poliomyelitis *</td>
<td>Mumps</td>
</tr>
<tr>
<td>Acute infectious hepatitis *</td>
<td>Plague</td>
</tr>
<tr>
<td>Anthrax*</td>
<td>Rabies *</td>
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<tr>
<td>Botulism *</td>
<td>Rubella</td>
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<tr>
<td>Brucellosis</td>
<td>SARs *</td>
</tr>
<tr>
<td>Cholera*</td>
<td>Smallpox *</td>
</tr>
<tr>
<td>Diphtheria*</td>
<td>Tetanus</td>
</tr>
<tr>
<td>Enteric fever (typhoid or paratyphoid fever)*</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>Food poisoning</td>
<td>Typhus</td>
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<tr>
<td>Haemolytic uraemic syndrome (HUS) *</td>
<td>Viral haemorrhagic fever (VHF) *</td>
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<tr>
<td>Infectious bloody diarrhoea</td>
<td>Whooping cough</td>
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<tr>
<td>Invasive group A streptococcal disease *</td>
<td>Legionnaires' Disease*</td>
</tr>
<tr>
<td>Yellow fever</td>
<td>Leprosy</td>
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<tr>
<td>Malaria</td>
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The RMP must complete a notification form immediately on diagnosis of a suspected notifiable disease (appendix 1). It is not necessary to wait for laboratory confirmation of a suspected infection or contamination before notification is undertaken.

The notification form must be sent to the proper officer within 3 days. N.B. Diseases marked with an asterisk (*) in the above list should be notified urgently and verbally reported within 24 hours on 0114 321
1177 or for North/North East Lincolnshire localities call 01904 687100.

Forms should be returned using NHS.net or GCSX to the relevant email address below:

North Yorkshire & the Humber  PHE.nyhsurveillance@nhs.net
South Yorkshire  PHE.southyorks@nhs.net

In some instances ‘alert’ conditions are classed as notifiable diseases. This is a legal term denoting diseases that must, by law, be reported to the ‘proper officer’ e.g. the Consultant for Communicable Disease Control (CCDC) for Public Health England (PHE). Other specific alert organisms and alert conditions are listed in appendix 3.

Further information can be found in the Department of Health Protection Legislation (England) Guidance 2010 (www.dh.gov.uk).

1.5 Contact Information

IPC advice can be obtained from:

- The Trust IPC team on 01302 796237
- The Consultant Microbiologist for the locality the patient is in:
  Doncaster and North/North East Lincolnshire areas contact Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust (DBTHFT) on 01302 366666
  Rotherham area contact The Rotherham NHS Foundation Trust (RFT) on 01709 820000, bleep 221
- PHE on relevant number below. It will automatically re-direct staff during out of hours:
  Doncaster and Rotherham localities - 0114 321 1177
  North/North East Lincolnshire localities - 01904 687100