

# Winning Ways



## Working together to reduce Healthcare Associated Infection in England

Report from the Chief Medical Officer

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## Introduction

Healthcare associated infection was one of the areas identified as needing intensified control measures in the Chief Medical Officer's Infectious Diseases Strategy for England, Getting Ahead of the Curve <sup>1</sup>.

Until publication of the Strategy, control of infectious diseases was an area of National Health Service (NHS) practice which had had a relatively low profile compared with many other areas of health service development. The Strategy set out to transform the status of infectious disease control as a 'Cinderella service' to bring it into the mainstream of service improvement.

The need for this has been brought home by the advent of major international events associated with infectious disease problems: the outbreaks of the Severe Acute Respiratory Syndrome (SARS) which wiped an estimated \$12 billion off the economies of the Far East; the spectre of bioterrorism with diseases such as smallpox, anthrax and botulism being used as weapons of terror; the constant fear of a new virulent strain of influenza emerging to pose a world-wide threat to health.

Against this background, healthcare associated infection has in the past not been as high a priority for action as some other aspects of healthcare. Nevertheless, information about healthcare associated infection and antimicrobial resistance has been clearly communicated by the Department of Health to the NHS over the last five years. Key requirements, some of which have been in place for some time, others more recent, are:

- the Standing Medical Advisory Committee issued a report<sup>2</sup> on antimicrobial resistance in 1998;
- guidance issued in 1998<sup>3</sup> and revised in 2003<sup>4</sup> on Transmissible Spongiform Encephalopathy agents to promote safe working and the prevention of infection;
- a health service circular<sup>5</sup> issued in 1999, which set out a wide range of actions aimed at reducing the emergence and spread of antimicrobial resistance and its impact on the treatment of infection;
- a controls assurance standard<sup>6</sup> on infection control, first produced in 1999, which provided a checklist of measures for acute hospitals to ensure that the environment is managed so as to minimise the risk of infection to patients, staff and visitors;
- a health service circular<sup>7</sup> issued in 2000, which set out a comprehensive range of action for the NHS to manage and control infection in hospitals in England;
- a health service circular<sup>8</sup>, also issued in 2000, set out requirements for the effective decontamination of medical devices;
- further detailed guidelines<sup>9</sup> on the prevention and control of hospital acquired infection published as a journal supplement;
- mandatory surveillance scheme for serious (bloodstream) infections caused by *Staphylococcus aureus* including methicillin resistant *Staphylococcus aureus* (MRSA) started in 2001, with plans to include certain other infections resistant to antibiotics<sup>10</sup>;
- guidelines<sup>11</sup> produced by the National Institute for Clinical Excellence (NICE) in 2003 on the prevention of healthcare associated infection in primary and community care settings; Introduction
- guidance<sup>12</sup> produced by the Medicines and Healthcare products Regulatory Agency (MHRA) in 2003 on the decontamination of medical devices;
- incorporation of two new performance management indicators related to healthcare associated infections in the Star Ratings system for acute hospital NHS Trusts in July 2003<sup>13</sup>.

A range of national advisory structures and expert committees also contributes, including:

- The Healthcare Associated Infections Surveillance Steering Group (which guided the development of the mandatory surveillance scheme);
- The Specialist Advisory Committee on Antimicrobial Resistance;
- The Microbiology Advisory Committee;
- The Advisory Committee on Dangerous Pathogens;
- The Spongiform Encephalopathy Advisory Committee.

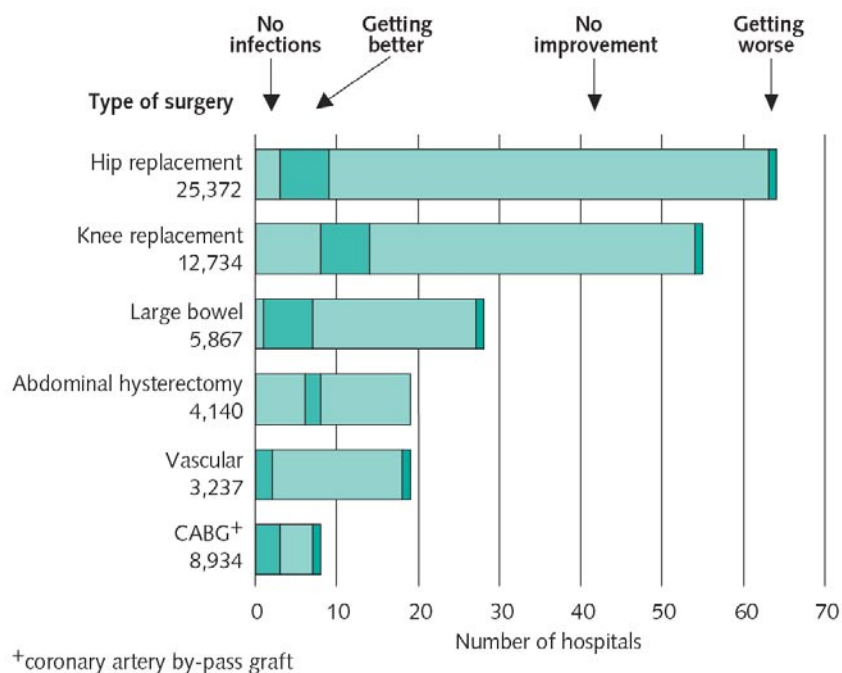
In recognition of concerns that standards of cleanliness in some hospitals were not as good as patients and the public had the right to expect, the Government has invested substantial sums in improving the patient environment. Programmes are under way to improve hospital food and standards of cleanliness, to modernise ward environments and to introduce ward housekeepers. Staff in charge of wards are now able to control their own environment budgets in recognition that they are best placed to decide what is needed to improve their own wards. The newly designated 'Modern Matrons' also have an important role to play in ensuring high standards of infection control and cleanliness. The Commission for Health Improvement reports on cleanliness and infection control standards as part of its regular review visits of acute hospitals. Annual inspections of hospitals are undertaken by Patient Environment Action Teams.

The National Audit Office<sup>14</sup> (NAO) published a report on The Management and Control of Hospital Acquired Infection in Acute Trusts in England in 2000. This highlighted the importance and cost of hospital acquired infection. The NAO investigation focussed mainly on hospital infection control teams and their work. Its conclusions and recommendations included that:

- infection control was not high enough on the agenda of NHS Trust Chief Executives: they should be responsible for ensuring that there are effective arrangements for infection control;
- hospital acquired infection cannot be prevented completely: it is important therefore that it is readily detected and dealt with;
- there needed to be improvements in surveillance and feedback of information to clinicians;
- there was further scope for improvement in education, training and audit of compliance with infection control guidelines.

Despite the extent of the guidance issued to the NHS, such data as are available show that the degree of improvement has been small. For example, analysis of trends in surgical site infection (i.e. infection after operations) using data from over 60,000 operations in six categories of surgery shows that whilst 12% of hospitals had reduced their rates of surgical site infections, 2.5% had increased. The vast majority (72%) had shown no improvement, although most of these had low levels of infection in the first place (see Graph 1).

**Graph 1: Trend in surgical site infection rates in participating hospitals over three or more periods of surveillance (1997–2001)**



Source: National Nosocomial Infection Surveillance System

This report sets out for the local NHS a clear direction on the action necessary to reduce the relatively high levels of certain healthcare associated infections and to curb the proliferation of antibiotic resistant organisms.

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## The Present Position

Modern healthcare has brought unprecedented benefits to generations of patients and their families. Lives can be saved, diseases can be cured, survival can be prolonged and quality of life can be enhanced, all on a scale that could not have been foreseen over 50 years ago when the NHS was established.

Today's healthcare, though, brings risks as well as benefits. No risk is more fundamental than the risk of infection. Florence Nightingale understood this when she published 'Notes on Nursing' in 1860 and placed great emphasis on the importance of hygiene, cleanliness and standards of care. She dramatically cut the death rates from infection in a military hospital in the Crimea. Yet, infection in hospitals and other healthcare settings is once again a major problem for health services around the world, including the NHS. It cannot be completely eliminated because it is, in part, the price we pay for advances in medical technology and treatment. But it can be substantially reduced.

The present position is as follows:

- infection of patients during their care and treatment is common and in some cases lifethreatening;
- whilst the problem is world-wide, the NHS in England does not perform as well as some other European countries;
- evidence-based countermeasures of known effectiveness are not being implemented consistently or rigorously in the majority of hospitals;
- escalating antibiotic resistance is making many infections very difficult to treat;
- the emergence of strains of multi-resistant bacteria ('super-bugs') – three in particular: MRSA, vancomycin resistant enterococci, penicillin resistant *Streptococcus pneumoniae* – pose particularly high risks for some patients;
- insufficient past emphasis on surveillance has meant that good information (the cornerstone of infection control) has not been available to clinical teams or patients.

Many other countries have similar levels of healthcare associated infection, so the problem is a challenge to health services world-wide. However, rates of MRSA are higher in England. The situation is by no means hopeless, nor impossible to turn around. Major improvements have been made in some countries – notably Scandinavia and the Netherlands – and in some parts of the NHS here in England.

Assumptions about what is necessary to move from the status quo have been simplistic. Handwashing by healthcare staff is vitally important in the control of infection. However, it is widely believed that the failure of healthcare workers to wash their hands between each patient contact is due to laziness or carelessness. Moreover, it is assumed that exhorting them to behave more responsibly and punishing them when they do not is the action that is required. The research evidence, as well as experience elsewhere, points away from such an approach. A large number of barriers to proper hand hygiene have been identified – some do relate to the individual healthcare worker (e.g. poor knowledge of guidelines or lack of education) – but other important factors are inadequate facilities, lack of time and a paucity of hand hygiene agents. Only by tackling all these factors will the problem of low levels of handwashing be successfully resolved.

The Present Position More generally, the best evidence suggests that because of the complexity of the change required to combat healthcare associated infection, the most effective solutions will be those that direct action at the problem on many different levels. This is the case with almost all quality improvement activities in the NHS. There is seldom any quick fix. Concentrating on creating the right culture within local NHS organisations, ensuring that strong leadership is in place, sustaining high quality information to track progress and identifying the interventions shown by evidence to be effective are the actions which will produce transformation.

What will not work is simply continuing with the present style of implementation, which has failed to deliver results for the NHS as a whole.

What is needed is a new approach, which will:

- ensure uncompromising commitment from managerial and clinical leaders nationally and locally;
- make healthcare associated infection a visible and unambiguous indicator of the quality and safety of patient care;
- apply rigorously and consistently the measures known to be effective in reducing the risks of healthcare associated infection;
- enable the provision of high quality information for the public and patients, as well as clinical teams, so that the risks associated with the performance of certain procedures are transparent.

## The Nature of the Problem

No single factor explains the growth in the number of patients who acquire infections during the course of their treatment and care by the NHS or other healthcare systems around the world.

The factors which have driven, and continue to drive, the worrying increase in healthcare associated infection are multiple but they are well known. Some are to do with patients – for example, the increase in the number of people with more serious illnesses (such as cancer) which heighten their vulnerability and susceptibility to infection through weakened immunity. Some are therapeutic – the need for indwelling devices that breach normal defence mechanisms. Some are organisational – high bed occupancy, increased movements of patients and poor staff to patient ratios plus the tendency of hospitals to admit patients with a wide range of serious illnesses from a large geographical area so that different pools of patients are mixing within the care environment. Some are behavioural – poor compliance with hand washing and other hygienic practices by health staff. Some are structural – numbers of single rooms and hand basins. Some are environmental – dirty instruments, floors and walls in clinical areas. Some go far beyond the healthcare institution – profligate and inappropriate use of antibiotics in medicine and agriculture around the globe.

The cost of hospital acquired infection is high – the National Audit Office estimated it at £1 billion per year. Assessment of the cost of control programmes to reduce infection versus benefit shows major savings can be achieved. Good data are available from the United States (Graph 2). They show that the costs of maintaining one hospital bed for a year would support a full hospital infection control programme in a 250-bedded hospital.

Graph 2: Estimated annual cost of infection control compared with a 32% reduction in baseline rates of hospital acquired infection

Source: Nettleman MD. Cost and cost benefit of infection control. In: Wenzel RP, ed. Prevention and control of nosocomial infection, 4th Edition. Philadelphia: Lippincott, Williams and Wilkins, 2003: p.33-41.

Healthcare associated infection affects an estimated one in ten NHS hospital patients each year. However, infection can complicate healthcare in any setting and the growth of treatment in primary care and community facilities means that the settings in which patients can acquire such infections is now very diverse. The two strongest risk factors linked with healthcare associated infection are the degree of underlying illness, which often prolongs the length of hospital stay, and the use of medical devices.

The commonest sites of healthcare associated infection are:

- urinary : 23%
- lung : 22%
- wound : 9%
- blood : 6%

Source: Emmerson AM, Enstone JE, Griffin M, Kelsey MC, Smyth ETM. The second national prevalence survey of infection in hospitals – overview of results. J Hosp Infect 1996; 32: 175-190.

The important role of medical devices is emphasised by the 80% of urinary infections that are traced to

indwelling urinary catheters. These infections arise because catheters traumatise the urethra as well as providing a pathway for bacteria and other organisms to enter the bladder. The longer such catheters are in place, the higher the risk of infection.

Similarly, over 60% of blood infections are introduced by intravenous feeding lines, catheters or similar devices. This is because micro-organisms on the patient's skin (either those naturally present or those acquired whilst in hospital) can gain entry to deeper tissues or the bloodstream when a cannula or catheter is inserted into a vein.

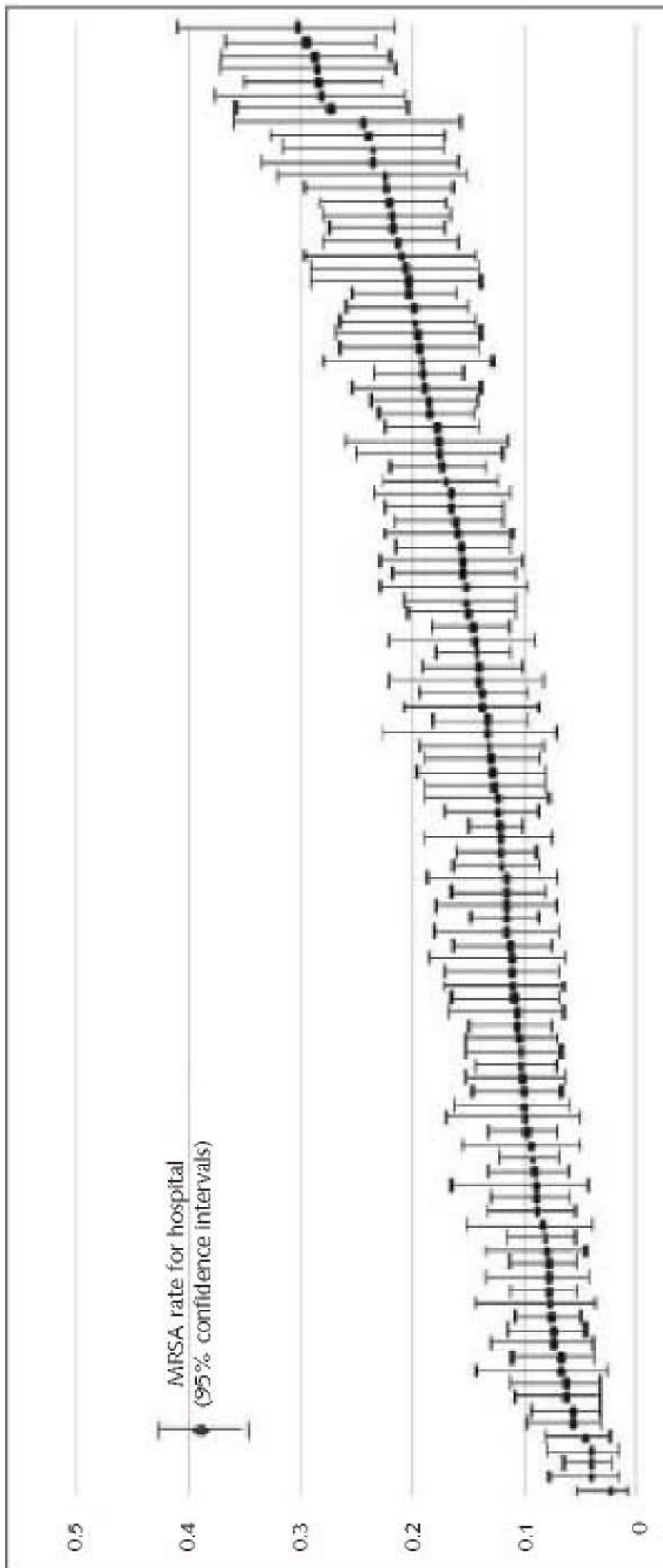
Pneumonia contracted in hospital occurs most frequently amongst patients who have been ventilated (their breathing assisted by a tube or machine), though such patients are also usually in intensive (critical) care and therefore sicker and more vulnerable to infection.

Infections at the site of operations are more likely with complex surgery, where the patient is weaker or more vulnerable or when an operation is prolonged. The main sources of surgical site infections are: organisms on the patient's own skin; organisms on the skin or clothing of operating theatre staff; organisms in the environment at the time of operation; operating on a contaminated site (e.g. bowel); incompletely sterilised surgical instruments; and unhygienic wound care in the post-operative period. Increasingly, with short hospital stays, many surgical site infections become evident in the community following discharge.

The growth in the frequency of infections that are resistant to the common antibiotics has been well documented and is worrying. One of the striking aspects of the problem of MRSA is the extent to which it varies between different categories of NHS hospital: specialist NHS Trusts have the highest rates, single speciality the lowest and general acute NHS Trusts intermediate levels. Even within this last category there is identifiable inter-hospital variation (Graph 3).

For a person to be infected whilst they are in hospital, an essentially simple process has to operate. There has to be a source or reservoir of the bacteria, virus or other organism that can cause the infection and there has to be a vector or means of transmission. Control measures aim to eliminate the source/reservoir or break the chain of transmission.

**Graph 3: Methicillin resistant *Staphylococcus aureus* (MRSA) blood infections in NHS General Hospitals (2002-3)**



Source: Communicable Diseases Surveillance Centre – Health Protection Agency

## Evidence and Experience

The control of healthcare associated infection and of the commonest of the multi-resistant bacteria, MRSA, is a major concern of many health services in the world.

The level of healthcare associated infection amongst patients who are hospitalised in the United States, Australasia and most European countries is between four and 10%.

### Estimated prevalence of healthcare associated infection

- USA 5-10%
- Australia 6%
- Norway 7%
- England 9%
- Denmark 8%
- France 6-10%
- Netherlands 7%
- Spain 8%

Source: European Antimicrobial Resistance Surveillance System data for 2002

Data on levels of MRSA bloodstream infections as a proportion of all *Staphylococcus aureus* bloodstream infections show that this country is amongst those with the highest levels in Europe.

### Proportion of *Staphylococcus aureus* blood isolates resistant to methicillin (i.e. MRSA)

- Denmark 1%
- Netherlands 1%
- Austria 11%
- Germany 19%
- Spain 23%
- France 33%
- Portugal 38%
- Italy 38%
- Greece 44%
- United Kingdom 44%

Source: Thames Valley University, Richard Wells Research Centre and other expert sources

Most countries are adopting similar strategies to control healthcare associated infection based upon:

- developing high quality surveillance systems;
- setting clear standards for infection control;
- majoring on clean hospital environments and good hygiene practice;
- strict antibiotic prescribing policies;
- isolating infected patients in side rooms or cubicles;
- making healthcare associated infection a key feature of quality and patient safety programmes.

Some countries have been particularly successful in controlling MRSA. Notable is the experience of the Netherlands. The Dutch strategy has been based on a policy of 'search and destroy'. This involves screening patients for MRSA and isolating those found to be positive (colonised or infected). The Dutch have been able to set aside sufficient numbers of single rooms in modern hospitals and maintain a high healthcare worker to patient ratio. As a result, this approach has been remarkably successful. The proportion of *Staphylococcus aureus* bloodstream isolates resistant to methicillin amongst hospital patients in the Netherlands is 1%.

## Action Area One: Active Surveillance and Investigation

**Key issue:** *High quality information on healthcare associated infection and antimicrobial resistant organisms is essential to tracking progress, investigating underlying causes and instituting prevention and control measures.*

### Action

- The mandatory surveillance system for healthcare associated infections will be developed further to include: bloodstream infections (caused by a number of different pathogens in addition to MRSA), surgical site infections, Clostridium difficile associated disease, serious incidents associated with infection and infections after discharge from hospital.
- The new Inspector of Microbiology and the National Patient Safety Agency will work jointly to ensure that the techniques of 'root cause analysis' and the methodology of Hazard Analysis and Critical Control Point (HACCP\*) are developed for healthcare associated infection and applied in every local NHS organisation.
- The new Inspector of Microbiology will ensure that local NHS, regional, specialist and reference laboratories are co-ordinated to provide timely, valid and useful information on the diagnosis of healthcare associated infection.
- All clinical teams will be provided with comparative data on the levels of healthcare associated infection and antimicrobial resistance within their hospitals.
- The Chief Medical Officer will publish on his website for the public a listing of rates of healthcare associated infection in each area of the country.
- A national audit of deaths from healthcare associated infection will be established and will investigate a proportion of the deaths that occur, to identify avoidable factors and lessons to be learned from them.
- Serious outbreaks of infection in healthcare settings will also now be reported to the Health Protection Agency so that it can provide appropriate advice and support for management and control of the incident.

\* A technique successfully used in the food industry to reduce food poisoning.

## Action Area Two: Reducing the Infection Risk from use of Catheters, Tubes, Cannulae, Instruments and Other Devices\*

**Key issue:** Many patients become infected because their body's natural defences are breached when catheters, tubes, drains and feeding lines are inserted as part of the process of care.

### Urinary catheters

- Urinary catheters will only be used when there is no suitable alternative, and even then kept in place for as short a time as possible.
- Where long term indwelling use is unavoidable, a catheter of low allergenicity will be used.
- Urinary catheter insertion, manipulation, washing out, urine sampling and removal will be undertaken by trained and competent staff using strictly aseptic techniques.
- Patients and carers will be educated in catheter maintenance with an emphasis on the techniques for reducing risk of infection.
- The date of insertion and date of removal of the device will be documented in the clinical record as a matter of routine.

### Peripheral intravenous cannulae

- Intravenous cannula insertion will be carried out by trained and competent staff using strictly aseptic techniques.
- The number of lines, lumens and stopcocks will be kept to the absolute minimum consistent with clinical need.
- Peripheral intravenous cannulae insertion sites will be regularly inspected for signs of infection and the cannula removed if infection is suspected.
- Peripheral intravenous cannulae will be kept in place for the minimum time necessary and changed every 72 hours irrespective of the presence of infection.
- Administration sets will be changed immediately following a blood transfusion, intravenous feed or at 24 hours (whichever is sooner). For other clear fluids, change will occur at 72 hours.
- The date of insertion and date of removal of the device will be documented in the clinical record as a matter of routine.

\* Control measures in this action area will be kept under regular review by specialist advisers and amended from time to time as technology progresses.

### Intravenous feeding lines

- Intravenous feeding lines (parenteral nutrition) will only be used when there is no suitable alternative, and even then kept in place for as short a time as possible.
- Insertion, manipulation, and removal of intravenous feeding lines will be undertaken by trained and competent staff using strictly aseptic techniques.
- A dedicated line or lumen of a multi-channel line will be used. No other infusion or injection will go via this route. Three-way taps will not be used.
- Any additives to intravenous fluid containers will be introduced aseptically in a unit or safety cabinet designed for the purpose, by trained staff using strictly aseptic techniques.
- Intravenous feeding cannulae insertion sites will be regularly inspected for signs of infection and the cannula removed if infection is suspected.
- The date of insertion and date of removal of the device will be documented in the clinical record as a matter of routine.

## Central venous lines

- Central venous line insertion, manipulation, and removal will be undertaken by trained and competent staff using strictly aseptic techniques.
- Central venous line catheters will not be replaced over a guide wire if infection is present.
- A dedicated occlusive transparent dressing will be used to allow continuous inspection of the exit site and will be changed at no later than seven days.
- The date of insertion and date of removal of the device will be documented in the clinical record as a matter of routine.

## Respiratory support

- Ventilator tubing will only be changed when visibly soiled or malfunctioning.
- Gloves will be worn for handling respiratory secretions or contaminated objects.
- Gloves and appropriate personal protection will be used when aspirating respiratory secretions.
- Hands will be decontaminated after glove removal.
- The date of insertion and date of removal of the device will be documented in the clinical record as a matter of routine.

Decontamination of instruments and other devices

- **Devices designated for single use will not be reprocessed.**
  - Reusable devices will be decontaminated in a sterile services department with requisite facilities and expertise.
  - Endoscopes will be decontaminated according to national guidelines. 14 Winning Ways
  - If devices have to be decontaminated locally, an automated process will be used. Manual cleaning of devices will be restricted to those items deemed incompatible with these processes.
  - Staff involved in decontamination will be properly trained and wear personal protective clothing e.g. gloves, masks and aprons.
  - Staff will ensure that there is an audit trail for each recycled item.
  - Guidance on the prevention of transmission of CJD through medical procedures will be followed.

## Standards and guidance especially relevant to this area

- National Institute for Clinical Excellence. Infection control: Prevention of healthcare associated infection in primary and community care. 2003. Available at: <http://www.nice.org.uk/pdf/CG2fullguidelineinfectioncontrol.pdf>. Accessed December 2, 2003.
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## Action Area Three: Reducing Reservoirs of Infection

**Key issue:** The risks of healthcare associated infection are greatly increased by extensive movement of patients within the hospital, by very high bed occupancy and by an absence of suitable facilities to isolate infected patients.

### Action

- NHS Trust Chief Executives will ensure that Infection Control Teams work with bed managers to optimise bed use, assess the infection impact of bed management policies and implement changes to local policy to minimise the risk of infection.
- NHS Trust Chief Executives will ensure that, over time, there is appropriate provision of isolation facilities within their healthcare facilities.
- Clinical teams will ensure that visits of infected patients to other departments are pre-planned and the risk is assessed and managed.
- Surfaces and furniture will be durable and easily cleaned and carpets will not be used in clinical areas where there is a risk of spillage.
- Clinical teams will ensure that equipment is clean, maintained and fit for purpose. A piece of equipment used for more than one patient will be decontaminated according to current guidelines following each and every use.
- Infection control staff will be part of the teams overseeing plans for rebuilding or refurbishing work and setting contracts for services such as laundry and cleaning.
- NHS Trust Chief Executives will ensure that the hospital environment is visibly clean, free from dust and soilage and acceptable to patients, their visitors and staff.
- Cleaning and disinfecting programmes and protocols for environmental surfaces in patient care areas will be defined and carefully monitored to ensure high standards of cleanliness are achieved.
- The segregation, handling, transport and disposal of waste will be properly managed so as to minimise the risks to the health and safety of staff, patients, the public and the environment as set out in the relevant controls assurance standard.
- Infection control requirements will be designed in at the planning stages of healthcare facilities, including new builds or renovation projects.
- Attention will be given to the prevention of airborne infection by the use of ventilation in specialist areas and correct engineering and mechanical services.
- All healthcare settings should aim to eradicate pests such as rats, mice, ants, cockroaches, pigeons and flies.
- Contamination of the water supply in hospitals with bacteria such as legionellae will be avoided by appropriate building design and maintenance, by cleaning water storage tanks, maintaining consistently high temperature in hot-water supplies, keeping cold-water systems cold and minimising water storage.
- All catering facilities in healthcare settings will comply with current food safety legislation. This will include catering management, food handlers and premises from where food is sourced, stored, prepared or served.

### *Standards and guidance especially relevant to this area*

NHS Estates. Decontamination programme: strategy for modernising the provision of decontamination services. Leeds:

NHS Estates; 2003. Available at: [http://www.decontamination.nhsestates.gov.uk/guidance\\_information/index.asp](http://www.decontamination.nhsestates.gov.uk/guidance_information/index.asp). Accessed December 2, 2003.

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Department of Health. Controls assurance standard. Waste management standard. 2002. Available at: <http://www.casu.org.uk/standards/standard/Waste%20management.htm>. Accessed December 2, 2003.

Department of Health. Controls assurance standard. Infection control. 2002. Available at: <http://www.casu.org.uk/standards/standard/docs/Infection%20control%202002.pdf>. Accessed December 2, 2003.

Department of Health. NHS Estates. Infection control in the built environment: design and planning. London: The Stationery Office; 2001. 17 Winning Ways 18

## Action Area Four: High Standards of Hygiene in Clinical Practice

**Key issue:** *Healthcare workers are a major route through which patients become infected; micro-organisms are transmitted by staff from one patient to another or from the environment to the patient.*

### Action

- Each clinical team will demonstrate consistently high levels of compliance with hand washing and hand disinfection protocols.
- Clinical teams will demonstrate consistently high standards of aseptic technique: for instance, by ensuring that all appropriate sterile items are available, that the setting is prepared and manipulation at the affected site is minimised.
- Gloves, masks and protective clothing of an approved standard will be used in every appropriate clinical care situation and properly disposed of after use. Used sharps will be disposed of in a sharps container at the place of use.
- Clinical teams will rigorously adopt standard (universal) precautions to minimise the transmission of infection including blood-borne viruses.
- Clinical teams will ensure that if any additional infection control precautions are necessary these are documented in patient's records.
- Induction programmes for all staff, including agency and locum staff, will include local guidance on infection control and the use of aseptic technique.
- Infection control should be considered as part of the personal development plans for all healthcare staff.
- All appropriate healthcare staff will be up to date with immunisations for hepatitis B, TB, influenza and chickenpox. Occupational health departments will ensure that healthcare workers are given the necessary health assessment and advice so that those known to be infected with blood-borne viruses do not carry out procedures that pose a risk of infection to patients.

### *Standards and guidance especially relevant to this area*

National Institute for Clinical Excellence. Infection control: prevention of healthcare associated infection in primary and community care. 2003. Available at: <http://www.nice.org.uk/pdf/CG2fullguidelineinfectioncontrol.pdf>. Accessed December 2, 2003.

Department of Health. Hepatitis C infected healthcare workers. London: Department of Health; 2002. (Health Service Circular: HSC (2002) 010.)

Department of Health. HIV infected health care workers: a consultation paper on management and patient notification. London: Department of Health; 2002. Available at: <http://www.doh.gov.uk/pub/docs/doh/aids.pdf>. Accessed December 2, 2003.

Pratt RJ, Pellowe C, Loveday HP, et al. The epic project: developing national evidence-based guidelines for preventing healthcare associated infections. Phase 1: Guidelines for preventing hospital-acquired infections. *J Hosp Infect*; 2001; 47 (Suppl): S3-S82. Available at: <http://www.doh.gov.uk/hai/epic.htm>. Accessed December 2, 2003.

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## Action Area Five: Prudent use of Antibiotics

**Key issue:** *Indiscriminate and inappropriate use of antibiotics to treat infection within a clinical service promotes the emergence of antibiotic resistant organisms and the 'super-bug' strains.*

### Action

- Antibiotics will normally be used only after a treatable infection has been recognised or there is a high degree of suspicion of infection.
- Choice of antibiotic will normally be governed by local information about trends in antibiotic resistance or a known sensitivity of the organism.
- Antibiotics will only be taken by patients over the prescribed period at the correct dose.
- Prescription of antibiotics for children will be carefully considered; they are often unnecessarily prescribed for common viral infections and the child is subsequently more likely to develop a resistant infection.
- Support for prudent antibiotic prescribing in hospitals will be provided by the clinical pharmacists, medical microbiologists and infectious diseases physicians on the staff.
- Antibiotics will be used for prevention of infection only where benefit has been proven.
- Narrow spectrum antibiotics will be preferred to the broad spectrum groups.

### Standards and guidance especially relevant to this area

Department of Health. Resistance to Antibiotics and other Antimicrobial agents: action for the NHS following the Government's response to the House of Lords Science and Technology Select Committee report. Department of Health; 1999. (Health Service Circular: HSC (99) 049.)

Department of Health. Hospital Pharmacy Initiative for promoting prudent use of antibiotics in hospitals. London:

Department of Health; 2003. (Professional Letter. Chief Medical Officer: PLCMO (2003) 3.) Available at: <http://www.doh.gov.uk/cmole/letters.htm>. Accessed December 2, 2003.

## Action Area Six: Management and Organisation

**Key issue:** *Tackling healthcare associated infection cannot be left to clinical staff alone; senior management commitment, local infrastructure and systems are also vital.*

### Action

- Chief Executives of NHS Trusts and Primary Care Trusts will designate the prevention and control of healthcare associated infection as a core part of their organisation's clinical governance and patient safety programmes.
- Chief Executives of NHS organisations will be aware of factors within organisations which promote low levels of healthcare associated infections and ensure that the appropriate action is taken.
- Chief Executives of NHS organisations will be aware of their legal duties to identify, assess and control risks of infection in the workplace.
- A Director of Infection Prevention and Control will be designated within each organisation providing NHS services and will:
  - oversee local control of infection policies and their implementation; – be responsible for the Infection Control Team within the healthcare organisation;
  - report directly to the Chief Executive and the Board and not through any other officer;
  - have the authority to challenge inappropriate clinical hygiene practice as well as antibiotic prescribing decisions;
  - assess the impact of all existing and new policies and plans on infection and make recommendations for change;
  - be an integral member of the organisation's clinical governance and patient safety teams and structures;
  - produce an annual report on the state of healthcare associated infection in the organisation(s) for which he/she is responsible and release it publicly.
- The Department of Health will publish further guidance on the roles and responsibilities of infection control teams.
- The Department of Health will work with the Royal Colleges and professional regulatory bodies to ensure that strong emphasis is given to infection control in the under-graduate and post-graduate curricula of nursing, medical, dental and other healthcare students and trainees.
- The Department of Health will ensure that its expertise and specialist agencies are made available to facilitate change and improvement in local NHS facilities; the Clinical Governance Support Team, the Modernisation Agency, the National Patient Safety Agency, the new Inspector of Microbiology, the Health Protection Agency – all have key roles in this respect.
- The Department of Health (with NHS-Direct, the National Patient Safety Agency and the Patient Advice and Liaison Services) will ensure that up-to-date information is provided to the public/patients on infection control and how healthcare associated infections can be prevented.
- Strategic Health Authorities will be accountable for ensuring NHS performance management arrangements are aligned to achieve the objectives of this report. As part of their local audit programmes, NHS Trusts and Primary Care Trusts will include assessment of adherence to standard (universal) precautions to reduce the transmission of healthcare associated infections.
- The Commission for Healthcare Audit and Inspection (CHAI) will be asked to give priority to assessing NHS performance in reducing healthcare associated infection.

### *Standards and guidance especially relevant to this area*

Department of Health. Advisory Committee on Dangerous Pathogens. Infection at work: controlling the risks. A guide for employers and the self employed on identifying, assessing and controlling the risks of infection in the workplace. London: HMSO; 2003. Available at: [http://www.doh.gov.uk/acdp/infections\\_oct03.pdf](http://www.doh.gov.uk/acdp/infections_oct03.pdf). Accessed December 2, 2003.

## Action Area Seven: Research and Development

**Key issue:** High quality research and development are essential to underpin effective action and ensure that breakthroughs in the understanding of healthcare associated infection are rapidly translated into benefits for patients.

### Action

- A national research strategy will be formulated to address gaps in current scientific and clinical knowledge about how to reduce healthcare associated infections.
- The potential of molecular methods to improve infection control will be explored and exploited.
- Research funding partners will be asked to contribute to an integrated research programme.
- A research network for healthcare associated infection will be established and maintained.
- Epidemiological modelling techniques will be used more widely to assess healthcare associated infection control strategies.
- A rapid review process will be established to assess new procedures and products for which claims of effectiveness are made of their ability to prevent or control healthcare associated infection.
- A project will be established to determine the feasibility for vaccines to prevent healthcare associated infection.

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