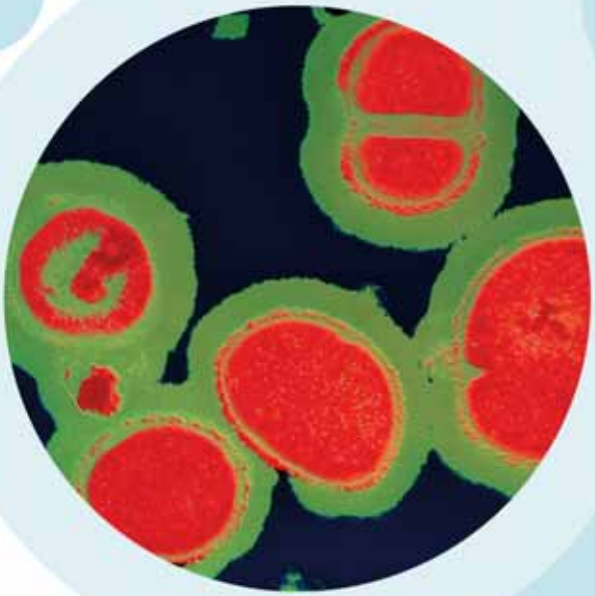

Methicillin-resistant Staphylococcus aureus (MRSA)

Guidance for nursing staff

Royal College of Nursing

wipe it out
RCN Campaign on MRSA

Royal College of Nursing

MRSA – key facts

- MRSA (methicillin-resistant *Staphylococcus aureus*) is a strain of Staphylococcus aureus which is resistant to methicillin and other antibiotics.
- So far, 16 epidemic strains of MRSA have been discovered but two particular strains (clones 15 and 16) are thought to be more transmissible than the others.
- *Staphylococcus aureus* is an organism that colonises the skin, particularly the nose, skin folds, hairline, perineum and navel. It commonly survives in these areas without causing infection – a state known as colonisation. A patient becomes clinically infected if the organism invades the skin or deeper tissues and multiplies.
- MRSA is prevalent in health care environments because individuals tend to be older, sicker and weaker than the general population, which heightens their vulnerability to infection through weakened immunity. In addition, these environments involve a great many people living and working together closely – perfect for transferring MRSA.
- The symptoms of a person with MRSA vary depending on what part of the body is infected. Common symptoms include redness, swelling and tenderness at the site of infection. Sometimes, people may carry MRSA without having any symptoms.
- In order to reduce the spread of MRSA health care staff should ensure that they wash their hands thoroughly between patients.

Note about language

The term 'patient' has been used throughout this text but this can also be understood to mean client or resident.

Published by the Royal College of Nursing, 20 Cavendish Square, London, W1G 0RN

Methicillin-resistant *Staphylococcus aureus* (MRSA)

Guidance for nursing staff

Contents

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RCN Campaign on MRSA

Foreword

MRSA and infection control in general are high on the public agenda and it gives us the opportunity to get across our positive messages about the role of nurses. The RCN has a strong track record of providing resources to help nurses achieve good practice in infection control in all health care settings and we will continue to work in partnership to help raise standards.

Nurses are just as concerned as patients and the public about infection issues. The words of Florence Nightingale; 'first do the patient no harm' are as relevant today as ever.

Infection control is everyone's business but nurses, as the largest single occupational group in health care, have a key role to play.

The RCN *Wipe it Out* campaign is providing nurses with the information and resources to promote better and safer practice around MRSA and health care associated infections (HCAIs) amongst nurses and other health professionals across the UK health services.

As well as helping nurses improve practice and reduce the risk of infection for patients, the campaign will help nurses to lobby employers, policy makers and Government.

We are calling for protected time for all health care staff UK-wide to undergo mandatory infection control training. This will raise awareness of the risks of HCAIs among all staff and help them understand how best to reduce the risk of infection.

The RCN is also calling for onsite provision of staff uniforms and changing facilities for all staff in every hospital across the UK. Uniforms have become part of the problem in infection control. Providing uniforms and changing facilities onsite will reduce the risk of carrying infection into the hospital setting.

We are calling for round-the-clock cleaning teams to be available, especially for critical and emergency care units. We believe nurses should have the power to request cleaning staff whenever necessary.

Nurses see the effects of HCAIs including MRSA on patients every day. They carry a high cost in terms of extra resources used, as well as the pain, disability and even death which can result. Working in partnership, we can help wipe it out.

Beverly Malone RN PhD FAAN

RCN General Secretary

Introduction

Health care associated infection (HCAI) is high on the Government's agenda and features prominently in the media. The RCN believes the promotion of best practice in prevention and control of MRSA and other HCAIs amongst nursing staff and other health care workers in the NHS and independent sector is essential. The RCN has contributed to many of the working parties and groups which have been key in influencing policy.

In 1998, a national working party of the British Society for Antimicrobial Chemotherapy, Hospital Infection Society and Infection Control Nurses Association was set up. It published recommendations to control methicillin-resistant *Staphylococcus aureus* (MRSA) in hospitals. These provided the basis for local policy, giving nurses access to guidance on MRSA in all clinical settings.

Following the recommendations the RCN published *MRSA. Guidance for nursing staff* which has been updated and revised a number of times since it was first published. This new edition emphasises the importance of the nurse role in promoting best practice and the importance of good communication – not just with other health care colleagues but with patients and visitors too. There is also a new *Useful information* section with signposts to initiatives and policies being implemented around the UK. It is hoped this publication will help empower and encourage nursing staff to lobby employers in order to achieve better working practices and a safer environment.

What is MRSA?

Methicillin-resistant *Staphylococcus aureus* (MRSA)

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a feature of modern day health care across the world. MRSA is a subgroup within a group of organisms known as *Staphylococcus aureus.* The MRSA strain is resistant to treatment with commonly used antibiotics – in contrast to the remainder of the *Staphylococcus aureus* group which are referred to as methicillin-sensitive *Staphylococcus aureus* (MSSA).

Methicillin-sensitive *Staphylococcus aureus* (MSSA)

Staphylococcus aureus is an organism that colonises the skin, particularly the anterior nares, skin folds, hairline, perineum and umbilicus. It commonly survives in these areas without causing infection – a state known as colonisation. A patient becomes clinically infected if the organism invades the skin or deeper tissues and multiplies to cause a localised or systemic response, for example in septicaemia.

Outbreaks of infection with **antibiotic-sensitive** strains of *Staphylococcus aureus* (MSSA) have been well documented. The first infection control nurses were employed in the early 1960s to help control these outbreaks.

Penicillin resistance was described soon after penicillin became available. Resistance is due to the production of a penicillinase or beta-lactamase enzyme by *Staphylococcus aureus.* New penicillins became available in the 1960s that were not easily destroyed by this enzyme. Methicillin – a forerunner of flucloxacillin – was one example. Although methicillin is no longer used to treat patients, it is still used to test for susceptibility to flucloxacillin – **methicillin resistance means the same as flucloxacillin resistance.**

MRSA

> *The National Audit Office estimated that hospital acquired infection (HAI) was a primary factor in 5,000 deaths a year, and a substantial contributor to 15,000 more (NAO, 2000).*

Staphylococcus aureus has shown an ability to resist antibiotics during the last 40 years. Strains of the organism differ in their sensitivity to antibiotics. When there is resistance to methicillin, the bacterium is labelled MRSA. Some strains of MRSA – known as epidemic strains or EMRSA – are more easily spread. To date, 16 epidemic strains have been identified in the UK. So far, the most common strains to affect hospitals have been EMRSA-15 and EMRSA-16. Individuals may acquire antibiotic-resistant strains as a result of exposure to antibiotics, or from exposure to the organism, for example, by contact with a person colonised with MRSA during a hospital outbreak or increasingly in community settings. The consequences of developing a serious infection with MRSA can be severe. Should infection develop, the range of effective antibiotics is limited, costly and potentially toxic.

Therefore, it is important to take precautions to prevent transmission, especially in patient groups that are susceptible to infection.

How is MRSA transmitted?

Staphylococci are common in skin folds, such as the perineum and axillae, and in the anterior nares. They may also colonise chronic wounds, for example in eczema, varicose and decubitus ulcers. MRSA may spread in the same ways as sensitive strains of staphylococcus:

- **Endogenous spread** (or transmission)

This occurs when a person with staphylococci spreads the bacteria from one part of their body to another.

Encourage patients to wash their hands and discourage them from touching wounds, damaged skin or invasive devices. This will minimise the risk of the endogenous spread of organisms.

- **Exogenous spread** (or transmission)

This occurs when organisms are transferred from person to person by direct contact with the skin or via contaminated environments or equipment. Skin scales may contaminate all surfaces if they become airborne, for example during activities such as bed making, or if the affected person is heavily colonised, or has a condition such as eczema which causes skin shedding which will result in widespread distribution of many skin organisms. Staphylococci that are shed into the environment fall on horizontal surfaces and may survive for long periods in dust. Prevent exogenous spread by:

- hand washing before and after contact with every patient or potentially contaminated equipment
- hand washing after removal of gloves
- keeping the environment as clean and dry as possible
- thorough cleaning and drying of all equipment after use
- applying topical treatments to reduce skin carriage if clinically required.

Ethical considerations

Patients and staff colonised or infected with MRSA must be treated sensitively and fairly. Hospitals, nursing and residential homes and other care settings should have procedures in place for managing infections in general, not just MRSA. Patients should not be refused treatment, investigations, therapy or residential care because of MRSA. Nurses should not refuse to care for a person with MRSA, or indeed any other kind of infectious disease. They should have the knowledge, policy, procedures and resources to care for them safely. Likewise insurance policies that cover care homes for infectious disease should not specifically exclude MRSA. In trying to control the spread of MRSA, there may be potential breaches of confidentiality. Notices and information stickers should be discreet and the patient should be involved in any decision to pass on information about diagnosis.

National guidelines of 1998

> *'Mortality rates for deaths involving MRSA increased over 15-fold during the period 1993 to 2002.'* (Office for National Statistics, 2005)

A significant increase in the prevalence of MRSA during the 1990s led to infection control teams developing local policies and procedures for the management and control of the organism. However, wide variations in local management caused problems with both staff and patients. Many of these difficulties related to a lack of definitive evidence of effective control measures. To address this concern and to provide comprehensive guidance upon which to base local policies, an expert working party was established and guidelines developed. **Further revised guidelines are expected during 2005.**

The working party reported on factors that increase the risk of infection with staphylococci, and therefore MRSA. These factors included:

- intravenous devices
- surgical wounds
- pressure sores
- care in high risk areas such as intensive care units.

(Coella et al, 1997).

They recommended four categories of risk – each related to the potential to develop serious infection as a result of acquiring MRSA. See the table on page 5.

They advised staff to take precautions to prevent spread in high-risk areas where patients are particularly vulnerable, for example, by screening all admissions and contacts of known cases. See the Appendix for a summary of the recommendations to date.

When patients with MRSA are transferred from a low risk to a high-risk environment, or vice versa, it is important to explain fully to patients and their relatives – who will notice the change of emphasis in some infection control practice, such as isolation – why the patient has been moved and why some changes in practice might take place.

There will be variations between hospitals in the number of patients with MRSA, and in the available resources and facilities. Some will have very few cases per year, while others will identify many new cases per week. Some hospitals will have national or regional specialist centres on site, others will have an isolation unit or single rooms. Infection control teams will adapt the guidelines to suit local circumstances.

> *'Deaths involving MRSA made up 0.2 per cent of all deaths in NHS general hospitals and 0.3 per cent of all deaths in NHS nursing homes.'* (ONS, 2005)

Individuals may have specific factors, which either increase their own risk of developing infection or pose an increased risk to others. For example, in an elderly care ward (minimal risk) there may be a patient or staff member with psoriasis, or a patient with an invasive device in situ. In these situations there may be a need to take specific, targeted precautions to reduce the infection risk.

Table Risk category

High	Moderate	Low	Minimal
● Intensive care ● Special care baby unit ● Burns unit ● Transplant unit ● Cardio-thoracic ● Orthopaedic ● Trauma ● Vascular ● Regional, national, international referral centres	● General surgery ● Urology ● Neonatal ● Gynaecology ● Obstetric ● Dermatology	● Elderly (acute) ● General medical ● Children (not neonate)	● Elderly (long stay) ● Psychiatric ● Psycho-geriatric

Standard infection control precautions

The following measures are **essential** in preventing cross infection and should be carried out **at all times** and with **all** patients.

1 Cover all cuts, abrasions and lesions – especially those on hands and forearms – with a waterproof dressing.

2 Maintain hand hygiene:

- ✦ before and after each patient contact
- ✦ after handling blood and body fluids and items contaminated with blood and body fluids
- ✦ prior to aseptic technique
- ✦ after removing protective clothing/gloves
- ✦ before handling invasive devices
- ✦ following bed making
- ✦ before handling food.

Soap and water are usually adequate, but alcohol hand rub can be used instead if hands are socially/visibly clean. In the community, in the absence of soap and water, apply alcohol hand rub to socially clean hands. Use the six step technique (see *Hand hygiene*) to ensure all areas of the hands are thoroughly cleaned. Do not forget to include wrists and dry well using disposable paper towels if soap and water have been used.

3 Maintain cleanliness† of:

- ✦ general environment – horizontal surfaces, floors, toilets, sinks, baths (and walls if soiled)
- ✦ patient-related equipment – beds, furniture, monitors, IV pumps, underside of commodes, chairs and ambulifts
- ✦ soft furnishings – curtains, bedding.

† For frequency and method see National Standards of Cleanliness for the NHS and the *NHS Healthcare cleaning manual* www.nhsestates.gov.uk

4 Use disposable gloves and aprons when handling blood and body fluids.

5 Use disposable aprons for direct patient care, bed making and aseptic techniques.

6 Dispose of waste safely.

Hand washing technique

1 Palm to palm

2 Right palm over left dorsum and left palm over right dorsum

3 Palm to palm fingers interlaced

4 Backs of fingers to opposing palms with fingers interlocked

5 Rotational rubbing of right thumb clasped in left palm and vice versa

6 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

Do not forget to include wrists and dry well using paper towels

7 Maintain a safe staff to patient ratio.
8 Avoid overcrowding patients.
9 Avoid unnecessary patient transfers between wards.
10 Isolate patients with a known or suspected infection.

Hand hygiene

Hand washing is widely acknowledged to be the single most important activity for reducing the spread of infection, yet evidence suggests that many health care professionals do not use the correct technique. This means that areas of the hands can be missed. The diagram opposite demonstrates the hand hygiene procedure that should be followed when washing with soap and water or using an alcohol hand gel or rub.

Hands should be decontaminated before direct contact with patients and after every contact with patients, or potentially contaminated equipment or environment. While alcohol hand gels and rubs are a practical alternative to soap and water, alcohol is not a cleaning agent. Hands that are visibly dirty or potentially grossly contaminated must be washed with soap and water and dried thoroughly.

Hand preparation increases the effectiveness of decontamination. You should:

- keep nails short, clean and polish free
- avoid wearing jewellery, especially rings with ridges or stones. You should not wear jewellery or wristwatches for clinical care
- artificial nails must not be worn
- any cuts and abrasions should be covered with a waterproof dressing.

Roll up long sleeves before washing your hands and wrists. In addition, bear in mind the following points.

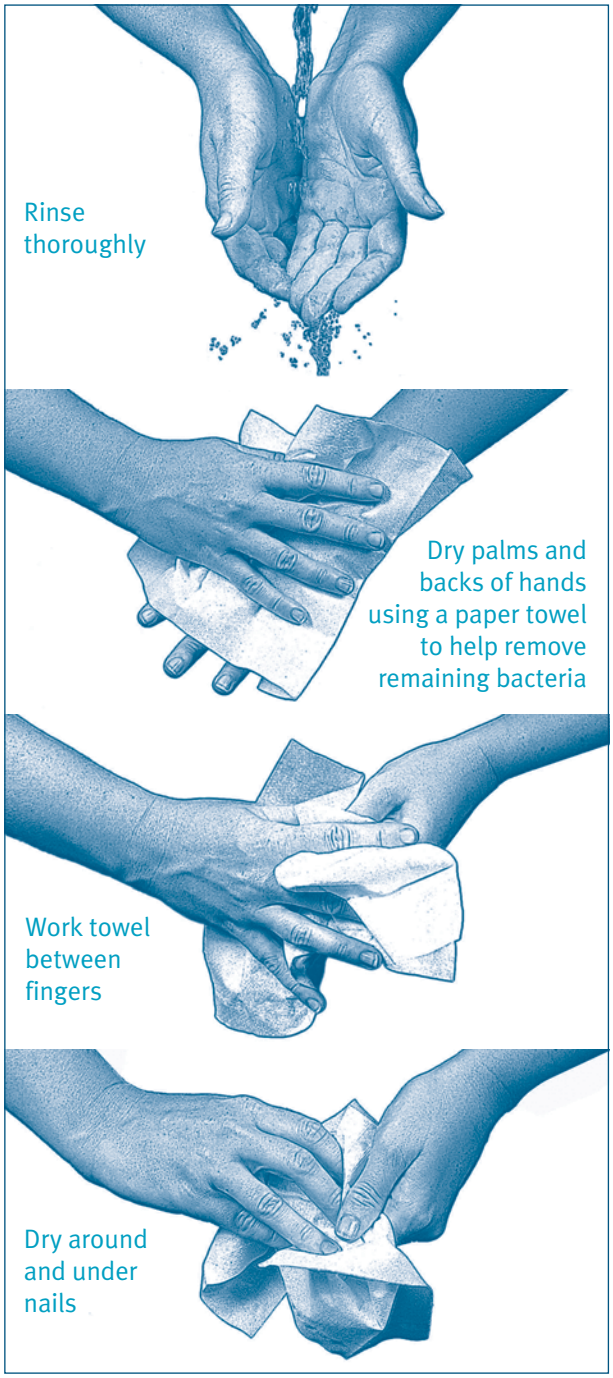
Facilities

Adequate hand washing facilities must be available and easily accessible in all patient areas, treatment rooms, sluices and kitchens. Basins should have lever operated mixer taps or automated controls in clinical areas and be provided with liquid soap dispensers, paper hand towels and foot-operated waste bins.

Hand drying

Improper drying can re-contaminate hands that have been washed. Wet surfaces transfer organisms more effectively than dry ones and inadequately dried hands are prone to skin damage. Disposable paper hand towels are the best method (the friction reduces the number of organisms).

Recommmended hand drying technique



Additional infection control precautions for MRSA

The following precautions may need to be taken to help prevent MRSA transmission. The choice depends on the specific circumstances – for example, the risk category and whether an outbreak is occurring – and

will be determined by local policy.

- Systemic antibiotics for clinical infection or topical treatment for colonised patients if clinically appropriate.
- Use of an isolation unit, ward or side-room – depending on the risk assessment.
- Keeping the isolation room door closed as much as possible, especially during bed making, wound care, suctioning or moving the patient.
- Screening* of other patients, looking at contacts, admissions, discharges and transfers.
- Screening* of staff lesions and skin sites – usually only considered in outbreak situations. Clear policies for the management of MRSA-positive staff must be in place.
- Careful deployment of agency or bank nurses.

* Screening should be carried out following advice from the Infection Control Team or as per infection control policy for your workplace.

In outpatient or specialist departments, patients with MRSA should be seen last if possible. In-patients with MRSA should not be left in crowded waiting rooms for long periods; they should be sent for immediately prior to their appointment and taken straight into the consultation/treatment room if possible. Wear gloves and aprons and clean any surfaces the patient has had direct contact with. Decontaminate hands after contact.

NHS Estates, an agency of the Department of Health, offers a wealth of advice on maintaining hospital hygiene. See the 'useful information' section at the end of this publication for more details.

In addition to caring for patients' physical requirements, it is important to check that psychological needs are being met. As a result of isolation, some patients may suffer from the lack of contact with others and from fear and stigma attached to being labelled infectious (Oldman, 1998; Gammon, 1999).

Treatment

If specimen results indicate MRSA it does not automatically mean antibiotics are required.

Treating MRSA depends on:

- clinical signs
- local policy
- the individual's risk to others – for example, where they are being nursed
- the individual's own risk factors – for example, the presence of invasive devices, the need for surgery and whether they are immunocompromised
- whether the individual is colonised or infected.

Individuals with a clinical infection will usually require a course of systemic antibiotics. The choice of antibiotic depends upon the site of infection and on the particular strain of MRSA. Some antibiotics may only be given intravenously, and may be toxic and expensive.

There should be clear local guidance for the application of topical treatment for colonised patients. Applying an antiseptic lotion, containing triclosan or chlorhexidine, may eradicate skin colonisation. To further reduce colonisation, some policies recommend applying hexachlorophene talcum powder to the axillae and groin, but this should not be used on broken areas of skin.

Applying mupirocin ointment to the anterior nares three times daily for five to seven days may eradicate nasal colonisation. Prolonged use of mupirocin can cause resistance to develop, which may limit its subsequent use to control outbreaks. Use of mupirocin should be restricted to no more than two five-to-seven day courses.

Applying topical antiseptics – such as povidone iodine, silver sulphadiazine or mupirocin – may help to eliminate wound colonisation. It is important to check that the agent used is appropriate for the wound. You should also avoid prolonged application of these topical agents. However, the value of applying topical antiseptics to chronic wounds – for example, pressure sores and leg ulcers – continues to be the subject of heated debate. Use of antibiotic creams for colonised wounds should not be used due to resistance. Local wound care policies should be followed.

The presence of an invasive device – such as a PEG tube, tracheostomy or urinary catheter – often extends the period of colonisation. Topical agents may not be appropriate here as there is a risk of degeneration of

jejunostomy tubes and continuous ambulatory peritoneal dialysis (CAPD). Use an aseptic technique when handling the device and remove it as soon as clinically possible.

Care in the community

While the risk of serious infection with MRSA is lower in the community, it still exists. It is increasingly the case that colonisation due to cross contamination with MRSA can occur in community settings. In 1996, the Department of Health issued guidelines for managing MRSA in nursing and residential homes (currently being updated). This stresses the importance of standard infection control procedures for all patients/residents. It also advises against isolating MRSA positive patients in community homes, instead recommending that patients socialise as normal. However, they should not share a **bedroom** if they have a chronic open wound or invasive device, such as a urinary catheter or with other patients with wounds or invasive devices.

In the patient's own home there should be no restrictions to a normal life and people with MRSA can work and socialise as usual. They do not need to restrict contact with friends, children or the elderly but encourage hand washing if close contact occurs. If they are admitted to hospital, where the risk of infection is increased, the ward should be informed so the patient is risk assessed, screened on admission and nursed appropriately.

Community health care workers should practise standard infection control precautions, such as aseptic technique for wound care, at all times and not just with MRSA patients. They must decontaminate their hands before and after giving care, either by using soap and water or an alcohol hand rub.

Good communication

Some health care and support staff share the concern felt by patients and visitors about MRSA. Anxiety about MRSA is often based on ignorance about the organism, the risks of infection and the precautions to prevent transmission. Nurses can do a great deal to allay fears by communicating effectively, without breaking confidentiality. For example, nurses should:

- provide information leaflets for patients, visitors, the general public and staff
- provide notices which describe the precautions needed
- talk to patients about how they can help themselves
- include support staff in team meetings during outbreaks
- tell the patient how their care might be affected by MRSA and how long precautions will be needed
- ensure that other staff understand the actions they need to take – for example, if the community nurse needs to continue care at home
- inform general practitioners on discharge or transfer if their patient has been identified as being colonised with MRSA.

The RCN has produced leaflets for patients and visitors as part of its *Wipe it out* campaign. You can obtain copies of these by downloading them from the RCN website at **www.rcn.org.uk/mrsa**

Staff health issues

Infection control staff, occupational health staff, the personnel department and trade unions should work together to produce a policy on staff health, MRSA and other infectious diseases. Local policies must apply to agency and bank staff as well as permanent employees.

Nurses who are colonised or infected with MRSA will most probably have acquired the organism through their work. Nasal carriage is most common and usually

transient, in most cases lasting only a matter of hours. For this reason, routine screening of staff for MRSA carriage is not recommended. Pre-employment screening of staff for MRSA carriage is also unnecessary.

A few individuals may be persistently colonised, particularly those with chronic skin lesions such as psoriasis and eczema. Nurses should keep their skin in good condition, recognise the signs of deterioration and take action quickly. Nurses with skin conditions can help to prevent colonisation, for example by wearing a semi-occlusive dressing over lesions, or avoiding clinical care of people who have MRSA. The local infection control and occupational health departments can help to assess the risks.

If a nurse does become colonised for a long period or infected by MRSA, the condition should be seen as occupationally acquired and should be treated by the occupational health department free of charge. As such it becomes reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (1995).

Treatment is very effective in otherwise healthy individuals, so most nurses will quickly be clear of the organisms and should suffer no adverse effects. It is often unnecessary for staff to be excluded from work during treatment. However, individual risk factors will need to be determined by the local occupational health and infection control staff.

Individuals who are suspended for medical reasons are entitled to receive remuneration at normal pay levels, with no loss of expected bonus or overtime payments. Suspension should not count as sickness absence on the nurse's record. For contractual reasons, this does not apply to agency or bank nurses.

Requiring staff who are colonised with MRSA to take sick leave will lead to staff shortages and can affect the employment prospects, career opportunities and income of these staff.

Redeployment may be necessary in a few cases where eradication is not possible and where the nurse works with a high-risk client group. Nurses should not have their contract of employment terminated as a result of persistent colonisation or infection.

Conclusion

Clusters or outbreaks of MRSA may indicate problems with infection control practice within health care settings. The precautions used to control MRSA are essentially the same as those used to control other infections. Implementing these in a proactive manner will help prevent and control the spread of MRSA, as well as contain outbreaks. Adhering to standard infection control precautions and communicating effectively with all those involved, including patients and their relatives and between primary, secondary and independent care settings, will help to reduce anxiety and promote good practice.

It is hoped that this guidance will help you and your colleagues to raise awareness of MRSA and promote safe behaviour amongst health care staff, patients and visitors. Information here and on the RCN website will also help you to lobby your employer to: ensure safe infection control working practices and facilities; help nursing staff and domestic staff to work as a team to set, monitor and evaluate cleaning standards; and to provide adequate mandatory infection control training for all staff.

For further information on MRSA and infection control visit **www.rcn.org.uk/mrsa**

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Resources available from the RCN

As part of its *Wipe it out* campaign, the RCN has produced a range of leaflets and posters to help nursing staff, patients and visitors promote good practice in infection control. In addition to this MRSA guidance the RCN has produced the following:

Good practice in infection control. Guidance for nursing staff

- a series of posters
- guidance on uniforms together with a uniform checklist
- a checklist of minimum standards to lobby employers
- information on indwelling devices
- isolation unit signs
- patient and visitor information.

Central to the *Wipe it out* campaign is the RCN website which can be used as a resource for health care workers, the public, employers and anyone else who wants to find out more about MRSA and infection control – see www.rcn.org.uk/mrsa

The RCN has also produced a wealth of other information and guidance as part of its *Working Well Initiative.* Titles – including the following – are available to members by calling RCN Direct on 0845 772 6100 and quoting the publication code.

- Royal College of Nursing (1999) *Losing your touch? Avoid latex allergy,* London: RCN. Publication code: 000 948
- Royal College of Nursing (2002) *Is there an alternative to glutaraldehyde? A review of agents used in cold sterilisation (second edition).* London: RCN. Publication code: 001 362

Useful websites

You may find the following websites useful:

- The Department of Health:
  www.dh.gov.uk
- The Health Protection Agency (HPA):
  www.hpa.org.uk
- The Hospital Infection Society:
  www.his.org.uk
- Infection Control Nurses Association:
  www.icna.co.uk
- The Medical and Healthcare products Regulatory Agency:
  www.mhra.gov.uk

  In April 2003, the Medical Devices Agency merged with the Medicines Control Agency to form the MHRA. This executive agency of the Department of Health produces a variety of bulletins and alerts including advice on single use items, bench top sterilisers and the decontamination of endoscopes.
- The National Institute for Clinical Excellence (NICE):
  www.nice.org.uk

  In 2001, NICE produced *Standard principles for prevention of hospital acquired infection and in 2003, Infection control – prevention of health care associated infection in primary and community care.*
- National Patient Safety Agency
  www.npsa.nhs.uk

  The NPSA has developed the cleanyourhands campaign which targets hand hygiene as a key patient safety issue.
  www.npsa.nhs.uk/cleanyourhands
- NHS Estates:
  www.nhsestates.gov.uk

  For information on their clean hospitals programme and downloadable copies of advice, guidance and audit materials.
- NHS Purchasing and Supply Agency:
  www.pasa.nhs.uk

  This website offers guidance on safety devices.
- The Safer Needles Network:
  www.saferneedlesnow.net and
  www.needlestickforum.net

Appendix: Recommended action in an acute hospital where MRSA is endemic

Clinical risk area

Action	High	Moderate	Low	Minimal
Isolation of MRSA positive patients	Yes	Yes	If possible	No
Isolation of higher risk patients* until results known	Yes	Yes	Yes	No
Screen index case - to assess carriage sites - to assess clearance (3 negative results)	 Yes Yes	 Yes Yes	 Yes Yes	 No No
Screen patient contacts of cases	Yes	If spread to others	If spread to others	No
Screen others - on admission - on discharge	Regional units, yes Other units, higher risk patients* Transfers to other units	Higher risk patients*	Higher risk patients*	No
Consider screening staff, particularly those with skin lesions†	Yes	Yes	Yes	Yes
Eradicate carriage in patients and staff	Yes	Yes	Yes	On clinical grounds
Emphasise good infection control practice (hand hygiene, general hygiene)	Yes	Yes	Yes	Yes

* Higher risk patients: previously positive, admitted from a hospital or home with a known MRSA problem, transferred from a hospital abroad

† There must be clear policies for the management of MRSA positive staff in place if screening is undertaken.

Adapted from Working Party of the British Society for Antimicrobial Chemotherapy, Hospital Infection Society, Infection Control Nurses Association (1998) Revised guidelines for the control of methicillin-resistant *Staphylococcus aureus* infection in hospitals.

Glossary

Colonisation – the presence of the organism on the skin, or in the nose, or in the back of the throat for example, but without illness

EMRSA – some MRSA strains occur in epidemics indicated by an 'E' before MRSA , for example, EMRSA-16; EMRSA-3

Endemic – applied to diseases that are generally or constantly found among people in a particular area

Immunocompromised – describing patients whose immune response is reduced or defective due to immunosuppression. Such patients are vulnerable to HCAIs

HAI – hospital acquired infection – any infection acquired while undergoing treatment, investigation or rehabilitation in a hospital

HCAI – health care associated infection – any infection acquired while undergoing treatment, investigation or rehabilitation in any health care setting or in community care settings

Infection – invasion of the body by harmful organisms (pathogens) and causing disease/illness

MRSA – *Staphylococcus aureus* **which is resistant** to an antibiotic called methicillin are referred to as methicillin-resistant ***Staphylococcus aureus*** or MRSA. **Methicillin-resistant means flucloxacillin resistant**

MSSA – *Staphylococcus aureus* which is sensitive to methicillin and therefore sensitive to flucloxacillin.

April 2005

Published by the Royal College of Nursing
20 Cavendish Square
London
W1G 0RN

Tel 020 7409 3333

www.rcn.org.uk/mrsa

The RCN represents nurses and nursing, promotes excellence in practice and shapes health policies

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