



Royal College
of Nursing

Tools of the trade

RCN guidance for health care staff on glove use and the prevention of contact dermatitis



This publication is supported by the pharmaceutical industry



Acknowledgements

The Royal College of Nursing would like to thank the following for their contribution to this publication:

Claire Kilpatrick, Infection prevention and control expert

Julie Storr, Infection prevention and control expert

Dr Neil Wigglesworth, Nurse Consultant

Diane Romano-Woodward, Occupational Health Advisor

Martin Bruce, Senior Infection Control Nurse

Deborah Matthews, Occupational Health and Safety Manager

Rose Gallagher, RCN Nurse Adviser for Infection Prevention and Control

Kim Sunley, RCN Senior Employment Relations Adviser

Health and Safety Executive

We would also like to express our thanks to the following who provided critical reading during the development of this resource:

Members of the RCN IPC Network, RCN Safety Representatives and the NHS Supply Chain.

Supported by an unrestricted educational grant from Basilea.



RCN Legal Disclaimer

This publication contains information, advice and guidance to help members of the RCN. It is intended for use within the UK but readers are advised that practices may vary in each country and outside the UK.

The information in this publication has been compiled from professional sources, but its accuracy is not guaranteed. Whilst every effort has been made to ensure the RCN provides accurate and expert information and guidance, it is impossible to predict all the circumstances in which it may be used. Accordingly, to the extent permitted by law, the RCN shall not be liable to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by what is contained in or left out of this information and guidance.

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

© 2012 Royal College of Nursing. All rights reserved. Other than as permitted by law no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without prior permission of the Publishers or a licence permitting restricted copying issued by the Copyright Licensing Agency, Saffron House, 6-10 Kirby Street, London EC1N 8TS. This publication may not be lent, resold, hired out or otherwise disposed of by ways of trade in any form of binding or cover other than that in which it is published, without the prior consent of the Publishers.

Foreword

There are a number of skin conditions that can be caused or made worse by work or that affect a health care worker's ability to work in a health and social care environment. This guidance focuses on contact dermatitis, the main work-related skin condition affecting the hands of health care workers; glove use; infection prevention and control practice; and the importance of considering glove use from a holistic perspective.

Protection of health care workers' hands is crucial for both their own protection and the protection of patients. It lies at the heart of a holistic approach to infection prevention, occupational health and health and safety policies and strategies.

The guidance highlights the importance of using a risk assessment process to decide when to use gloves and the type of glove required. It also draws attention to biological hazards in the form of micro-organisms and chemical hazards, such as those present in disinfectants, and the relevant quality standards required to support purchasing and availability of gloves.

The close relationship between glove use and infection prevention and control has been emphasised in this resource, as inappropriate glove use (over or under use of gloves) can place staff or patients at risk of contact dermatitis, infection and missed opportunities for hand hygiene. Glove use is widespread throughout health care, and an estimated 1.5 billion pairs of gloves are issued across the NHS in England every year. Creating a culture of appropriate glove use creates opportunities to avoid unnecessary financial costs through unwarranted use and preventable risks to patients.

We have developed the guidance for RCN members and safety representatives, but it is relevant to all health care staff across the UK, including those who work in non-hospital settings such as the community and patients' homes. We hope the resource will provide readers with the necessary information to support the prevention, recognition and management of contact dermatitis.

The RCN recognises this guidance represents a first step in addressing glove use issues in a holistic way, and that further work is required to understand the behavioural aspects affecting glove use and the impact on staff and patient outcomes.

The term health care worker is used generically throughout this document to indicate staff that provide direct patient care who may need to use gloves – for RCN members this includes registered nurses, health care assistants, midwives and nursing students. A glossary of terms used in this publication has been included on [page 27](#).

Rose Gallagher, Nurse Adviser for Infection Prevention and Control, RCN.

Kim Sunley, Senior Employment Relations Adviser, RCN.

Contents

| | | | |
|--|-----------|---|-----------|
| 1. Introduction and recommendations | 5 | Glossary | 27 |
| 2. Understanding the role and function of skin | 6 | 8. Appendices | 29 |
| Skin structure | 6 | Appendix 1: Comparison of current national and international guidelines for glove use | 29 |
| Understanding the causes of dermatitis | 9 | Appendix 2: Applying a multi-modal improvement strategy to manage glove use | 30 |
| How big a problem is it? | 10 | Appendix 3: Glove pyramid | 31 |
| 3. Introduction to using gloves in health care | 11 | Appendix 4: Skin care plan | 32 |
| Gloves used as personal protective equipment (PPE) | 11 | Appendix 5: Your 5 moments for hand hygiene | 33 |
| European standards for gloves | 12 | Appendix 6: Case study | 34 |
| Which type of glove to wear | 12 | Appendix 7: Putting in place a skin surveillance programme for contact dermatitis | 36 |
| Gloves used to handle chemicals and hazardous drugs | 13 | Appendix 8: Tips for selecting and buying gloves | 37 |
| When to use gloves | 13 | | |
| 4. Glove use and infection prevention and control | 14 | Notes | 38 |
| Clarifying standard and contact precautions | 14 | | |
| Glove use and hand hygiene | 15 | | |
| Good practice points for glove use | 16 | | |
| Glove selection and latex sensitivity | 18 | | |
| Glove disposal | 18 | | |
| Taking a multi-modal approach to managing glove use | 19 | | |
| 5. Prevention and management of occupational dermatitis | 19 | | |
| Prevention of dermatitis and hand hygiene | 20 | | |
| Responsibilities of the individual employee | 21 | | |
| 6. References | 24 | | |
| 7. Resources and further reading | 25 | | |

1

Introduction and recommendations

For health care workers protecting the integrity of the skin on their hands is critical. Damaged or non-intact skin places both the patient and the health care worker at risk because it prevents effective hand hygiene. It also provides opportunities for micro-organisms to be transferred between patients and staff, and for skin lesions to become colonised by bacteria, potentially leading to infection.

Current estimates reveal that around one in five (80,000) nurses in Britain report work-related skin problems (HSE, 2011). Prevention of this condition is therefore critical to protect staff and patients – and to retain health care staff and skills. Staff who are unable to perform hand hygiene will not be allowed to work in clinical environments and may be relocated from their usual workplace, reducing staffing in that area.

Historically the importance of glove use has been associated with preventing contact with blood and body fluids, excreta/secretions and potential disease causing micro-organisms. However, it is equally important to protect health care workers' hands from chemicals and hazardous drugs. Although the importance of protection has always been acknowledged through risk assessments (COSHH, 2002), the increased use of chemicals in clinical settings (eg environmental disinfectants such as chlorine releasing agents and chlorine dioxide) and in particular the use of pre-prepared disinfectant wipes exposes staff to a cocktail of chemicals and substances that could increase the risk of work related dermatitis if not managed carefully. This, combined with increased emphasis on hand hygiene compliance and financial scrutiny on consumables such as gloves, soap and hand towels requires both staff and managers to manage all elements and risks in a holistic way.

Glove use as an element of infection prevention and control practice is at the heart of the RCN's *Principles of nursing practice*, enshrined in *Principle C: nurses and nursing staff manage risk, are vigilant about risk, and help to keep everyone safe in the place they receive care*. The principles provide an overarching framework for achieving quality nursing care, and clarifying nursing's contribution to

improving health care outcomes and patient experiences (Currie et al., 2011).

How to use this guidance

The glove use resource comprises two documents: a short quick reference guide and a longer guidance document, which covers the content in more detail and provides appendices and case studies to support readers with further information.

Although this document can be used to support the development of local policies and guidance, readers must be aware of, and comply with their organisational or employer policies.

Recommendations

As a result of developing this guidance the following recommendations have been made to identify current gaps in knowledge and support improved use of gloves in clinical practice.

1. Hand hygiene education should include information to support staff maintain the integrity of skin as a result of work-based activities. This should include the importance of skin care and skin surveillance, the importance of good hand hygiene techniques and the use of hand moisturisers.
2. Gloves should never be used as an alternative to hand hygiene and organisations must make clear their expectations regarding glove use and misuse through policies and procedures, education and audit.
3. Skin surveillance should be undertaken monthly, using visual checks to determine if signs of dermatitis are present among staff. Annual questionnaires may be suitable to support skin surveillance programmes, but should not be considered a substitute for regular visual checks.
4. Organisations' glove use policies should include information on local skin surveillance programmes purpose, requirements and report results.
5. Cases of occupationally-acquired dermatitis and trends in skin surveillance results should be reported and discussed locally at health and safety/infection control committees. Concerns should be escalated through local governance systems.

2

6. A national validated glove use audit tool is required to support the auditing of glove use to complement evaluation of hand hygiene practice in health care.
7. Further work is required to understand the behavioural aspects of glove compliance.
8. Research is required on the best methods to deliver education and assure compliance with glove use by clinical staff.
9. The importance of local partnership working relating to the supply and use of gloves in practice should be emphasised between procurement, infection control, occupational health and health and safety.
10. Further work is required to address glove use by non-clinical staff in relation to risks in health care.

Understanding the role and function of skin

The skin is a complex organ and has several functions including temperature regulation, sensation and synthesis of vitamin D. The main function of the skin, however, is protection and if the skin is disrupted or damaged it cannot undertake this function effectively.

The protective role of the skin occurs by acting as a barrier to prevent fluid loss, preventing micro-organisms from entering the body, and also to modify the effects of pressure, radiation, heat, chemicals and trauma on internal tissues and organs.

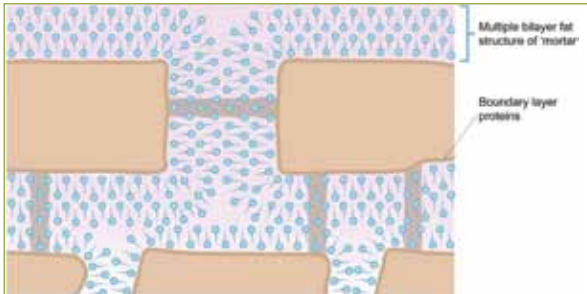
Skin structure

There are two layers to the skin:

Epidermis: composed mainly of keratinocytes (cells containing keratin). These are continually produced at the bottom of this layer and migrate to the surface of the skin as part of a continuous process of cell renewal and wearing off (shedding) of skin. This layer is normally about one tenth of a millimetre thick, but in areas such as the soles of the feet and palms can be one millimetre thick. The stratum corneum, part of the outer layer of the epidermis, is central to the skin's protective role including preventing dehydration of underlying tissues.

Keratin is a protein that helps to prevent water evaporation from the skin. It can also absorb water when the skin is exposed to moisture, which is why hands and feet can appear wrinkled after immersion such as after swimming, bathing etc. It takes approximately 14 days for skin cells to journey through the layers of the epidermis until being shed at the surface.

Dermis: contains the supporting structures for the skin, collagen fibres, blood vessels, sweat glands and hair follicles. This layer is about four times the thickness of the epidermis. The subcutaneous tissues of the skin lie beneath the dermis.



Cross section of the skin showing epidermis; bricks and mortar concept (image © HSE)



Reddening of skin after hand washing (image © HSE)

When things go wrong: dermatitis

When the skin's barrier defences are not effective, the skin reacts and the most common symptom is inflammation. This is known as dermatitis, which is a type of eczema. The signs and impact of dermatitis are described in table below. It is important to note that not all these symptoms will occur at the same time.

Table 1: Signs of dermatitis and associated impact

| Symptom/indication | Rationale or impact |
|---|---|
| Redness and warmth. | Blood vessels in the hands are dilated. |
| Formation of swelling and tiny blisters. | Leakage of plasma from the blood vessels occurs and the skin may 'weep'. |
| Itching. | Disrupted functioning of the nerves in the skin. |
| Infection with potential thickening of the skin, crusting and bleeding. | Colonisation of the skin – bacteria and fungi may enter the skin via open areas and cause infection to develop. |

Some people have an inherited tendency to dermatitis known as atopic dermatitis, which is a group of skin conditions that results in dry, irritated skin. It mainly affects children but can continue into adulthood. It is often associated with other conditions such as hayfever and asthma, and can be triggered by environmental factors such as pollen and animal fur. Individuals with atopy may be more at risk of allergic skin conditions following exposure to certain substances in the workplace such as natural rubber latex.

Atopy is not a barrier to employment as a nurse or health care worker, but work conditions or exposure to certain substances may aggravate the condition.

Contact dermatitis – understanding different terminology

People who experience dermatitis may do so naturally without any contact with substances that provoke a skin reaction. However, if the dermatitis is due to exposure to substances outside of the body, the condition is known as *contact dermatitis*.

If a substance acts as an irritant to the skin this is *irritant contact dermatitis*. As well as causing a general inflammation of the skin, it is possible for some substances to cause an allergic over-reaction of the body's immune system in the skin. The substance is then known as an allergen or sensitiser, and the skin condition is called *allergic contact dermatitis*. Sensitisation of the skin may occur at the first contact, or it may be many months or years of contact before it happens. This can lead to a sense of complacency because the process of sensitisation over time does not appear to change the skin, so health care workers may not realise that harm is occurring.

It is perfectly possible to have both irritant and allergic dermatitis at the same time, and it is often impossible to tell what type is occurring from just looking at the skin.

It is important to acknowledge that not all dermatitis is work-related, and exposure to substances outside work such as domestic chores and hobbies may contribute to the condition. It has been shown that there is an increased risk of dermatitis in people who have children under the age of four, and who wash dishes by hand. These factors may increase the susceptibility to work related dermatitis (Nilsson et al., 1985).

Allergic dermatitis

There are two types of allergic dermatitis, and they tend to appear over different time spans. For both conditions there must have been previous exposure to the substance and sensitisation, which then led to an immune reaction. Once sensitised, exposure to even very small amounts of the substance may cause an allergic reaction. The reaction is likely to occur for the rest of the person's life. For example, a person sensitised to natural rubber latex from glove use may have a severe reaction if in contact with latex balloons. Allergic contact dermatitis is often more difficult to manage and treat than irritant contact dermatitis. It is important that the difference between the two types of allergic dermatitis (type I and type IV reactions) are understood, recognised and managed appropriately.

Allergic dermatitis

Urticaria type I: immediate hypersensitivity reaction
Occupational contact urticaria develops rapidly after exposure to a substance, often a sensitiser. The name urticaria comes from the Latin name for the stinging nettle, and most people are familiar with the wheal (bump) and flare (reddened skin) of nettle rash. Once sensitised, immunoglobulin E (IgE) cells react with the sensitiser to cause the release of substances such as histamine by mast cells. This results in changes in the blood vessels of the skin and the reddened raised appearance of the skin.

It is also possible to get urticaria when exposed to some irritants.

Type IV: delayed hypersensitivity

This reaction occurs when the sensitiser enters the skin and combines with immune cells called Langerhans cells. These leave the skin and travel to nearby lymph nodes. Here they react with T-lymphocytes (or T-cells), which reproduce and form memory cells that remember the structure of that particular sensitiser. In the second phase of the reaction when the substance is encountered again, the T-cells recognise the sensitiser and multiply. This leads to the release of substances such as histamine and inflammation. The second phase can happen many hours after the contact and is considered a delayed response.



Irritant dermatitis from excessive hand washing
(image © HSE)



Dermatitis showing crusting/thickening of skin
(image © HSE)

Understanding the causes of dermatitis

There are a number of irritants and allergenic substances that people come into skin contact with, depending on the type of work they carry out. Examples include detergents, metals such as nickel, perfumes and even some plants.

Friction, rubbing the hand against the allergen or irritant can also make the condition worse. In addition to contact with irritant and allergenic substances, repeated contact with water can have an effect on the skin. Cold weather and low humidity can also have a drying effect on the dermis and can lead to an increased risk of skin problems.

Table 2 Substances that could provoke a skin reaction

| Substance | Examples of use in health care | Allergen or irritant |
|---|--|-----------------------|
| Accelerators eg thiurams, carbamates | Used in glove manufacturing | Allergen |
| Aldehydes | Formalin used as a preservative in pathology specimens | Allergen and irritant |
| Diphencyprone | Used to treat alopecia | Allergen |
| Enzymatic detergents | Used to clean equipment such as endoscopes | Irritant and allergen |
| Topical steroids or topical antibiotics | Treatment of patients | Allergen |
| Soaps | Hand washing | Irritant |
| Solvents | Acetone (nail varnish remover) | Irritant |
| Antibiotics | Antibiotic solutions prepared at local level | Allergen |

The effect of water on the skin

Preventing dehydration of underlying tissues of the skin is important. Water retention is supported by substances in the skin called natural moisturising factors (NMFs). If the moisture content is too high or too low, it can affect the skin's barrier properties (HSE, 2012a). If the water content of the skin is too low (as in low humidity environments) or too high (over exposure to wetness), the skin may lose its effectiveness as a barrier.

Prolonged contact with water or wearing gloves for extended periods prevents sweat evaporation, and can lead to skin becoming over hydrated or soggy. This causes the production of fewer NMFs, which disrupts the intact skin and its barrier function.

Certain jobs or occupations are characterised by prolonged exposure to water *wet work* or prolonged glove use. Hairdressers and health care workers are among these groups, and for this reason are thought to be at greater risk of skin disruption.

In the UK, wet work is defined as work that involves hands being wet for significant periods during the working day; as a guide – more than two hours a day or about twenty to forty hand washes a day (HSE, 2008). However, guidance has been developed in Germany that gives an insight into the type of situation or exposures, which may put skin at risk. For example, where staff spend:

- a large part of their work time, that is more than one-quarter of the daily shift (two hours) with their hands in wet environments
- a corresponding amount of time wearing moisture-proof protective gloves, or must frequently clean their hands.

The epidermis layer of skin also is generally acidic, which assists in protecting the body by neutralising contaminants such as micro-organisms that are usually alkaline in nature. If the skin is repeatedly washed with alkaline soaps, then this pH balance can be disturbed resulting in a reduction of its protective ability.

Why is occupational dermatitis an issue in health care?

Health care workers are often exposed to a cocktail of irritants and allergens. Frequent exposure to soaps and cleaners, *wet work*, glove use, hazardous agents found in gloves, disinfectants, preservatives and fragrances present risks to health care workers' skin.

The nature of health care work means that there may be exposure to more than one irritant and more than one sensitiser at any one time. At times there is a clue to the cause of the problem because of the distribution of the rash. For example, sometimes with glove-related dermatitis there may be a clear demarcation at the wrist where exposure stops. But, this is not always the case. When the substance is not directly in contact with the skin such as when the irritant is a fume, eyelids may be affected.

With all these potential variables, it is essential to get expert advice in identifying the offending substance(s) and how to avoid future exposures.

How big a problem is it?

It is likely that dermatitis in health care workers is under reported. There are few formal health surveillance schemes in operation where workers are routinely asked if they are having problems with their skin, and have their skin inspected. Perceptions may also result in an acceptance that irritated skin is part of the job and is not important.

It is estimated that each year in the UK, 1,000 health care workers develop work-related contact dermatitis (HSE, 2012a), and are reported to have an incidence of diagnosable work-related contact dermatitis and may represent the tip of the iceberg. This is nearly seven times higher than the average for all professions. Additionally, international research has shown that about 50 per cent of health care workers will experience dermatitis each year (Smith et al., 2005 and 2003). For example, the following countries have reported levels of dermatitis in health care staff:

- Australia 43.2-59.3 per cent
- USA 55 per cent
- Japan 48 per cent.

Therefore, half of all health care workers may experience dermatitis in any year. Does it matter “it is just a bit of red skin”? It does matter, for several reasons. For some individuals dermatitis can be a painful condition with cracked bleeding skin that may prevent them from undertaking normal day-to-day personal and work activities. It also makes them more susceptible to pick up infections in the open areas of skin as the protective function of the skin is broken. Depending on where they work, health care workers may have to take time off work to recover because the cracked or open skin on hands from dermatitis can prevent hand hygiene.

This has an impact on clinical care because staff will be unable to work with patients or in other clinical areas. It also reduces staffing levels in the workplace. Additionally, dermatitis may make the person affected miserable and withdrawn if their dermatitis is evident to others. Psychological distress is a known issue for people with dermatitis. In the worst cases, dermatitis may go on to become a chronic condition that does not resolve even if exposure to the substance causing it is removed.

Under health and safety law an employer has a legal duty to protect employees and others (agency workers, contractors) from the risks of workplace injuries and ill health including occupational dermatitis. Further information on the employer’s duties can be found in [Section 4 on page 14](#).

3

Introduction to using gloves in health care

Glove use in health care originated within surgery over 150 years ago with the emphasis of use on protecting the surgeon from infection. As the understanding of micro-organisms and infection increased, notably to reflect the work of Lister on antiseptics in surgery, recognition of patient protection and how this might be achieved through contact with sterile sites or transfer of germs improved.

Today, gloves are considered a control measure for protecting both patients and health care staff. Examples of patient protection may include (but is not confined to) the prevention of infection as a result of surgery, aseptic procedures or where the transfer of micro-organisms from staff, patients or the environment needs to be prevented. The protection of staff includes preventing exposure to disease causing micro-organisms, as well as hazardous chemicals and drugs.

This section explores the definition of personal protective equipment (PPE) in relation to examination and protective gloves, and looks at the current standards required to ensure that gloves are fit for purpose. The relationship between glove use and hand hygiene and indications for glove use is also discussed.

Glove use is a central part of standard precautions, and they are one element of what is known as personal protective equipment (CDC, 2007; Pratt et al, 2007; HPS, 2009). Gloves act as a physical barrier to prevent contamination by blood and body fluids, chemicals and micro-organisms. The integrity of any glove cannot be taken for granted, and staff should be aware that complete protection or contamination prevention of their hands cannot be guaranteed.

Prolonged use of gloves can increase the risk of occupational dermatitis because of exposure to the substance or chemicals used to manufacture gloves. Also if skin becomes over-hydrated ([see section 1 on page 7](#)) it can cause soggy skin.

Glove use has risen dramatically since recommendations were made following the discovery of HIV/AIDS in the mid-1980s, and the development of standard precautions – a term that evolved from universal precautions. Standard precautions work on the basis that all patients blood and body fluids and excreta should be considered a potential source of harmful micro-organisms.

Gloves used as personal protective equipment (PPE)

What is PPE?

Where a risk to workers' health and safety cannot be controlled adequately in other ways, employers have a duty to provide personal protective equipment. In health care exposure to micro-organisms and chemicals cannot be completely removed, therefore protective equipment such as gloves are provided in order to manage this risk.

PPE is defined as:

- all equipment that is intended to be worn or held by a person at work and which protects them against one or more risks to health or safety.

This includes safety helmets, gloves, eye protection, and safety footwear.

The Control of Substances Hazardous to Health Regulations (COSHH, 2002) requires PPE to be:

- suitable
- maintained and stored properly
- provided with instructions on how to use it safely
- used correctly by employees.



As one element of PPE, gloves help to protect the wearer from biological and chemical hazards. Gloves worn as PPE must meet certain standards, comply with the Personal Protective Equipment

Regulations (1992) and carry a CE mark. The European Commission CE marking directives ensure free movement in the European market of products that conform to the requirements of EU legislation. This includes safety, health and environmental protection, and is a key indicator of a product's compliance with legislation.

It is important however to note that gloves used for patient protection are not classified as PPE, and are certified under medical devices regulations. In practice, this means that health care staff may wear gloves both as PPE and as a method of protecting patients during their work.

Health care staff must understand the subtle differences in glove types and their intended purpose otherwise they may be lulled into a false sense of security, and could assume that all gloves protect them from all hazards when this is not necessarily the case.

European standards for gloves

Gloves used in UK health care fall into two main categories, and are covered by two different European directives to ensure that they meet the necessary quality standards. It is important to understand the differences between the two standards, and the purchasing and availability implications for your workplace.

EU standard EN455

- Examination gloves or medical examination gloves come under the Medical Device Directive, which is concerned with *protecting patients*. The European standard for medical gloves for single use in EN455. Gloves manufactured to EN455 are tested for protection against liquid penetration and micro-organisms so are suitable for protection against blood and body fluids. EN455 *does not test for chemical permeation* and only provides minimal protection against very dilute chemical solutions. For advice on whether or not gloves are suitable for use with chemicals in the workplace (eg hypochlorite solutions for environmental cleaning or managing spillages of blood and body fluids, chlorine dioxide or pre-prepared disinfectant wipes) ask the glove manufacturers, which publish data on breakthrough times for chemical permeation and degradation.

EU standard EN420

- Protective gloves come under the Personal Protective Equipment Directive, which is concerned with *protecting the wearer*. The main European standard for protective gloves is EN420. Gloves meeting standard EN420 also comply with standards preventing chemical permeation on to user's hands.

Not all gloves meet both standards (EN455 and EN420), and therefore it is important staff are aware of which gloves in their workplace are suitable for which activities. For example, not all examination gloves suitable for patient protection that meet EN455 may be suitable to prevent permeation of chemicals on to skin if used for disinfection of the workplace or patient equipment. This places the wearer at risk of exposure to chemicals and contact dermatitis.

It is crucial to carry out a risk assessment to decide whether, and which type of glove to use.

Which type of glove to wear

In health care, gloves are usually made of latex or a non-latex material such as nitrile, neoprene or vinyl. All gloves are disposable, single-use items and can be sourced sterile or non-sterile. Polythene gloves are not suitable for clinical use.

The effectiveness of different glove materials has recently been reviewed in the UK and Canada (Canadian Review, 2011). They suggest that latex may offer increased barrier protection compared with non-latex alternatives *in a surgical context*. However, no evidence was found to suggest differences in allergy potential, cost-effectiveness, effectiveness to prevent pathogen transmission, or recommended duration of use of latex versus non-latex gloves. In addition, the Canadian review concluded that vinyl gloves are not suitable for use when exposure to cytotoxic agents is possible.

The Health and Safety Executive (HSE) has produced guidance on glove selection to minimise the risk of latex glove allergy to health care staff. The RCN supports the evidence-based approach taken by the HSE.

Key issues to consider when deciding on the choice of gloves include the following, and form the basis of a risk assessment for glove use:

- task to be performed
- anticipated contact and compatibility with chemicals and chemotherapeutic agents
- latex or other sensitivity
- glove size required
- your organisation's policies for creating a latex-free environment.

Gloves used to handle chemicals and hazardous drugs

Where health care workers are exposed to chemical solutions or other hazardous substances, the employer must carry out a COSHH assessment. The employer must assess the risks of exposure to the substance in question, and see whether the risks can be reduced and contact with the skin avoided. Where contact cannot be avoided, for example, manual cleaning or drug preparation, gloves and other protective equipment such as goggles may be necessary.

Examples of chemicals where protective gloves will be needed include those listed below. However, any chemical exposure, even if not considered hazardous should be assessed to ensure that the right glove is provided (eg chlorine releasing disinfectants, chlorine dioxide, etc.):

- enzyme-based cleaning solutions eg for cleaning endoscopes prior to disinfection
- diphencyprone for treating alopecia
- cytotoxic drugs used in chemotherapy treatments.

It is vital that the right type of glove is selected to protect staff, and this is central to the COSHH assessment by the employing organisation. Some chemicals may leak or break through examination gloves making them unsuitable for use. Always seek advice from manufacturers of chemicals and gloves to ensure the right type of glove is provided.

The Health and Safety Executive provides further information on glove selection see the resources and further reading in [section 7, on page 25](#).

When to use gloves

In health care there may be many occasions when health care workers may need to consider whether or not to wear gloves. This can result in confusion about when exactly to use gloves, and can lead to the potential risk of over-use, rather than under-use occurring as staff attempt to manage risks by being over cautious. Reinforcing messages that there are multiple situations in health care where gloves are not required can be equally complex. A detailed summary of indications based on current national and international recommendations has been included in [Appendix 1](#).

Non-adherence to glove use policies includes failing to wear gloves at the right times, and wearing them too often and/or for too long.

Inappropriate glove use also represents a potential waste of financial resources, as well as resulting in less effective infection prevention and control. The estimated number of pairs of gloves issued across NHS England is around 1.5 billion per annum, at a cost of somewhere between £56m and £57m each year. The 2.5 per cent VAT increase on gloves has also added in the region of £1.32m to expenditure. Although these figures relate to NHS England information they are relevant to all health and social settings including the independent sector.

To support health care staff make the right decision on when to use gloves, the following table has been developed based on current World Health Organization (WHO) literature.

Table 4: Indications for glove use (adapted from WHO, 2009)

| | Indication |
|------------|---|
| Gloves on | <ol style="list-style-type: none"> 1. Before an aseptic procedure. 2. When anticipating contact with blood or another body fluid, regardless of the existence of sterile conditions and including contact with non-intact skin and mucous membrane. 3. Contact with a patient (and his/her immediate surroundings) during contact precautions. 4. When anticipating contact with chemical hazards such as disinfectants or preserving agents. <p>Note: any cuts or abrasions present on hands should be covered (eg plaster) prior to donning gloves.</p> |
| Gloves off | <ol style="list-style-type: none"> 1. As soon as gloves are damaged (or non-integrity suspected). 2. When contact with blood, another body fluid, non-intact skin and mucous membrane has occurred and has ended. 3. When contact with a single patient and his/her surroundings, or a contaminated body site on a patient has ended. 4. When there is an indication for hand hygiene. 5. When contact with chemicals has ended. |

The above indications table does not specify the type of glove required, and staff are responsible for undertaking a risk assessment to ensure the correct glove choice. This includes the decision as to whether sterile or non-sterile gloves are required. WHO has developed a *glove pyramid* to help inform health care staff about when it is appropriate to use gloves (WHO, 2009a) – see [appendix 3 on page 31](#).

4

The importance of protecting health care workers' hands from exposure to hazardous substances (eg chemicals and hazardous drugs), and the potential need for protective gloves must also be considered.

Glove use and infection prevention and control

Clarifying standard and contact precautions

In health care, decisions on when to wear gloves are often associated with the need to consider standard or contact precautions. Glove use in these circumstances should be considered a control measure for patient protection, and as part of the process for managing biological risks to staff related to patient care.

Standard precautions

Standard precautions are a set of principles to support safe practice, and are designed to prevent transmission of micro-organisms (and therefore potential infection) and to minimise risks of exposure of health care workers from potentially infectious or offensive material (i.e. blood and body fluids and excretions such as faeces, etc.). Standard precautions apply to *all* patients' blood and body fluids regardless of their suspected infection status, and should be implemented in all health care settings.

Glove use however represents only one part of standard precautions. PPE is used in conjunction with other practices such as hand hygiene and prevention of sharps injuries to ensure that standard precautions are effective at all times. It is the responsibility of the health care worker to decide on which practices are required at any particular moment, based on the potential level of exposure to blood, body fluids and excretions.

Contact precautions

Contact precautions are implemented for individual patients only, or occasionally for a group of patients (for example, those in a cohort area). This applies when there is potential for, or an actual outbreak of, infection that could be spread through contact.

Contact precautions are one way to interrupt the spread of potentially harmful micro-organisms that are important because of their impact in health care settings. They are usually associated with patients in source isolation. Examples include infections such as: norovirus; *Clostridium difficile*; colonisation/infection with multi-resistant organisms such as multi-resistant acinetobacter (MRAB); MRSA and glycopeptide-resistant enterococci (GRE). However, this will be determined locally in line with your organisational policies.

In such circumstances gloves and aprons are the main components of PPE for contact precautions. They should be put on before entering the patient or patients' room/bay, and disposed of into the appropriate waste bin when leaving.

It is important to remember that gloves may need to be changed between different care activities for a particular patient while contact precautions are in place to prevent distribution of bacteria from one body site (eg groin) to another (eg face), which could potentially result in infection.

Confusion over whether contact and standard precautions are one and the same may contribute to inappropriate glove use. The importance of standard precautions is well recognised and intended to promote safe, appropriate and rationale use of PPE. However, the adoption of a wider principle of considering all patients *potentially infectious* is not supported by evidence. This may contribute to increased glove use, and has also in been shown to reduce compliance with hand hygiene requirements (Fuller et al., 2011).

Glove use and hand hygiene

Gloves are not a substitute for hand hygiene and do not provide a failsafe method of preventing hand contamination. Glove use must be coupled with appropriate and timely hand hygiene to prevent spread of micro-organisms between patient contacts and staff. Health care workers should either wash their hands or use an alcohol hand sanitiser immediately after taking off gloves. If alcohol hand sanitisers are used they must be allowed to evaporate completely before new gloves are put on (HSE, 2012b).

Gloves can act as a vehicle for the transmission of micro-organisms, and this has been highlighted in health care literature. However, the impact of glove use on hand hygiene has not yet been definitively established (WHO, 2009).

Recent research into glove wearing and compliance with hand hygiene in the UK (Fuller et al., 2011) has revealed a decrease in compliance. This is important because contemporary observational audits are focusing on reporting rates of hand hygiene compliance. Many organisations do not audit glove use as an integral component of hand hygiene compliance. This, combined with a lack of validated audit tools, means that the impact of glove use on hand hygiene compliance is not yet fully understood within the UK.

Glove use and hand hygiene: the specifics

It is clear from available evidence and literature that the impact of glove use on hand hygiene compliance requires further study. The following bullet points highlight some key best practice for glove use and hand hygiene:

- hand hygiene involves hand washing *or* using a hand sanitiser such as an alcohol hand rub whether gloves have been, or are intended to be worn. The choice of hand hygiene method may be influenced by patient-specific conditions such as caring for patients who have or are suspected of having *Clostridium difficile*, norovirus or other infections where alcohol gel is not recommended
- carry out hand hygiene before putting gloves on, for example, when about to perform an aseptic procedure such as line insertion
- gloves are not a substitute for hand hygiene. When gloves are worn, hand hygiene must be performed after the gloves are removed, in line with the indications for hand hygiene (see Table 4).
- staff should be reminded to change gloves between multiple patients where contact precautions are in place (eg in an isolation ward or caring for a group of patients), and to perform hand hygiene each time gloves are removed. Failure to do so places patients at risk from potentially harmful micro-organisms
- health care workers must perform hand hygiene when an indication (see Table 4) occurs while they are caring for the same patient and are already wearing gloves. For example, before undertaking another task such as moving from emptying a urinary catheter bag to performing mouth care. Under such circumstances gloves should be removed between tasks because blood/body fluid exposure risk has occurred. After hand hygiene new gloves should be worn as appropriate for the next task
- hand hygiene should never be performed while wearing gloves.

Glove use and WHO 5 moments for hand hygiene

Some of the points above are in line with indications for hand hygiene as recommended by WHO's *Your 5 moments for hand hygiene* (Sax et al., 2007). A summary can be found in [Appendix 5](#).

Placement of gloves

Health care staff must consider how and where easy access to the right type and size of gloves and alcohol hand sanitisers can be ensured by having them available in an appropriate place at all times, eg glove boxes placed on trolleys. They should also ensure supplies are replenished when low.

Good practice points for glove use

The following good practice points have been identified to support health care workers to practise safely and efficiently:

- gloves are single use items and should be disposed of after each task is complete in line with local waste policies
- the type of glove selected must be fit for purpose and well fitting to avoid interference with dexterity, friction, excessive sweating and finger and hand muscle fatigue
- double gloving is not recommended for non-surgical procedures or practices (eg manual evacuation of faeces). Double gloving does not obviate the need for hand hygiene
- the supply of gloves must include a choice of glove size eg small, medium or large
- expiry dates/lifespan of gloves should be adhered to and according to manufacturers' instructions
- follow manufacturer and local recommendations to store gloves to avoid contamination and to ensure health and safety
- staff must be trained in how to put on and remove gloves.

Responsibilities for ensuring safe glove use

The appropriate use of gloves depends on the clear delineation of individual and organisational responsibilities.

Table 5: Roles and responsibilities for glove use (adapted from HPS, 2009)

| Roles and responsibilities in relation to glove use | |
|---|---|
| All health care staff providing direct care | <ul style="list-style-type: none"> • Apply the principles of standard precautions to ensure patient and health care worker safety. • Help all colleagues working in their practice setting adhere to appropriate glove use (this may form part of glove use monitoring and feedback). • Explain the reasons for, and importance of appropriate glove use to colleagues, including patients and visitors if asked/required. • Report any issues related to inappropriate glove use including incidents, lack of supplies and lack of knowledge so that future training and education can be targeted and effective. • Consider own role in appropriate glove use and hand hygiene and role-modelling these aspects of clinical care as part of continuing professional development/performance reviews. • Reporting any personal ill health issues relating to skin or respiratory system that may be related to glove use. • Comply with local occupational health surveillance requirements. • Report concerns regarding glove leakage or tearing to manager and infection prevention control (IPC) adviser. |
| Managers | <ul style="list-style-type: none"> • Ensure that all staff are offered and receive instruction/education on the use of gloves and hand hygiene. • Undertake risk assessments to ensure the correct standard of glove is available for staff, and liaise with local infection prevention and control teams as required. • Ensure and monitor the availability of gloves to attain the recommended indications. • Support staff to understand and improve their practices following failures to adhere to the indications described, or incidents. • Ensure staff participate in any health surveillance programmes. • Provide support to staff with any skin or respiratory issues in relation to work activity. |
| Infection prevention and control staff | <ul style="list-style-type: none"> • Provide specialist education for staff and management. • Act as a resource for guidance and support when advice on glove use is required. • Work collaboratively with occupational health staff to provide advice on individual risk assessments for glove use and purchasing decisions. • Contribute to reports for senior management on glove use, including patient and health care worker safety and cost savings. |
| Occupational health staff | <ul style="list-style-type: none"> • Provide advice on safe glove selection and risk assessment on latex glove use. • Introduce and facilitate health surveillance programmes. • Provide guidance on hand care. • Work collaboratively with infection prevention and control, management and procurement staff. |
| Health and safety representatives or staff | <ul style="list-style-type: none"> • Encourage employees to follow local policies on glove use. • Ensure that you are consulted on risk assessments and glove selection. • Raise any concerns on glove use and PPE to managers or via local risk register. • Liaise with local infection prevention and occupational health staff as required. |
| Procurement staff | <ul style="list-style-type: none"> • Work collaboratively with occupational health, users and infection prevention teams on purchasing decisions and product reviews. • Liaise with national or local suppliers regarding product selection and pricing. • Respond to any concerns on behalf of the organisation regarding glove quality and safety eg MHRA (Medicines and Healthcare products Regulatory Agency) notifications. |

Glove selection and latex sensitivity

Prolonged or over use of latex gloves can also put a health care worker at risk of contact dermatitis. Much of the earlier research into the hazards of gloves centred on natural rubber latex and powdered gloves. But, it is now recognised that accelerators and chemicals contained in many different types of gloves can also cause problems. So, it is even more important to select the correct type of glove for the substance being exposed to/handled and the task being carried out.

The Health and Safety Executive (HSE, 2012c) recommend that employers consider the risks carefully when selecting gloves to use in their workplaces by:

- deciding whether or not protective gloves are required at all to perform the task (follow local policies)
- providing suitable gloves for the intended purpose. This means there is a requirement for employers to provide adequate protection against the hazard, and that gloves are suited to the wearer, the work and the environment in which they are used. To ensure suitability, employers must consider the work (substances handled, other hazards, type and duration of contact), the wearer (comfort and fit) and the task (eg need for dexterity, sterility issues).

If the employer's assessment is that latex is the most suitable glove type for protection against the hazard, then the following should be in place:

- single use latex gloves should be low-protein and powder free
- individuals with existing allergy to natural rubber latex proteins should be supported by employers to take latex avoidance measures and should not use single use or reusable gloves that contain latex (eg reusable rubber gloves used for washing up dishes). Employers may need to provide gloves in an alternative material
- where the use of gloves could result in direct or indirect exposure to a member of the public, the employer must undertake an assessment of the risks of exposure and adopt suitable measures to ensure the health of the public is protected.

These actions are essential to ensure that individuals with existing allergy to NRL are protected as a result of their work duties.





Latex glove allergy

Proteins present in natural rubber latex can cause allergies either through direct contact with the skin, or by inhalation from powdered latex gloves. True latex allergy is a type I hypersensitivity reaction. Sometimes the chemical accelerators in latex (or non-latex) gloves can cause a type IV delayed hypersensitivity reaction and this can be confused as being a latex allergy when it is not. It is very important to know if you are truly allergic to latex for your own health and safety particularly if undergoing health care or dental treatment so as to avoid inadvertent exposure during your own treatment.

Glove disposal

After use gloves must be disposed of in line with local policies for waste management. Depending on the purpose for which the gloves have been used, a number of disposal methods may be used. The following table/diagram illustrates possible options for disposal based on *The safe management of health care waste* (DH, 2011).

Note: *The safe management of health care waste* is relevant to all four UK countries. However, some countries have adapted the guidance to suit their devolved health systems and developed different practices and waste bag colour coding.

| Glove use summary | Disposal option | Colour coding |
|--|---|---|
| Gloves exposed to blood body fluids where infection is assessed as present or suspected. | Infectious waste for alternative treatment. | Orange.  |
| Gloves exposed to blood or body fluids (eg urine, faeces, blood from a screened population, ie screened maternity patients) where risk assessment identifies no infection present. | Offensive. | Yellow and black stripe.  |
| Gloves used for routine cleaning (non-outbreak conditions) or protection from chemicals (eg general purpose cleaning of equipment with wipes/hypochlorite solutions). | Municipal. | Black.  |
| Gloves exposed to chemicals as part of a disinfection process (eg laboratories, endoscopy and theatre environments). | Infectious waste for incineration. | Yellow.  |

5

Prevention and management of occupational dermatitis

Occupational dermatitis can, and should be prevented by following this three-step approach *Avoid–Protect–Check*.

Avoid direct contact between unprotected hands and hazardous substances and/or wet work where this is sensible and practical.

Protect the skin if you cannot avoid contact.

Check hands regularly for the first signs of itchy, dry or red skin.

By following the *Avoid, Protect and Check* principles employers and employees can work together to reduce the risks of occupational dermatitis.

Employers have specific legal duties to ensure that the risks of developing occupational dermatitis are managed. Under the Health and Safety at Work Act (1974) employers have a broad duty to protect the health of employees, and others who may be affected from work activities such as contractors or agency staff. The COSHH regulations also place specific duties on employers to assess the risk of exposure to substances hazardous to health including chemicals and biological agents in the workplace. The regulations require employers to carry out a COSHH risk assessment to establish what could be hazardous, and how workers could be exposed to the hazards (eg through skin contact or inhalation).

The employer's main responsibility is to consider how to prevent exposure to harmful substances. The best way to prevent exposure is to eliminate the use of the harmful substance. For example, an employer could substitute the harmful substance with something less harmful such as replacing powdered latex gloves with low protein powder free alternatives.

Where exposure to the hazardous substance cannot be eliminated or substituted, the next step for the employer is to

The RCN is publishing *Guidance on the management of waste arising from health, social and personal care* (RCN, 2012) later in 2012.

Taking a multi-modal approach to managing glove use

Multi-modal strategies are commonly used in health care to support change in behaviour and improve outcomes. They do this by tackling a number of issues or obstacles (including human behaviour) at the same time. A well-known multi-modal approach to improving hand hygiene is used and promoted by WHO to improve compliance with hand hygiene worldwide. Appendix 2 provides an example of a multi-modal approach to glove use by focusing on five areas in order to achieve safe and appropriate use of gloves in practice.

Glove use and venepuncture

There is variation in practice between health care workers and organisations regarding whether or not gloves are used to take blood (venepuncture). The RCN recognises that the experience of staff undertaking this procedure, and the different settings in which venepuncture takes place (eg GP practices, patients' homes, A&E departments, out-patients) affects health care workers' decisions regarding when to wear gloves.

UK health departments recognise that some health care workers with long experience of performing venepuncture without gloves may prefer not to wear them to avoid a perceived reduction of manual dexterity and possible consequent increased risk of percutaneous injury. UK guidance (DH, 1998) recommends the following:

- gloves should be available to all health care workers who wish to wear them for venepuncture
- inexperienced venepuncturists, including medical students, should become accustomed to the wearing of gloves from the beginning of their training. They should not take blood from patients known to be infected with blood-borne viruses (BBVs) until trained and considered competent
- all venepuncturists, including those who are experienced, should wear gloves if there are cuts or abrasions on the hands that cannot be covered by waterproof dressings alone, or if the patient is so restless that the risk of injury to the health care workers is increased.

control exposure by designing appropriate work process. This could include providing clear guidelines on hand hygiene or introducing work equipment to reduce skin contact with the harmful substances such as enclosed automated processes for cleaning endoscopes. Where adequate controls cannot be achieved by other means, personal protective equipment such as gloves and goggles should be used. The goal of the COSHH regulations is to ensure that exposure to the substance is as low as reasonably practicable.

Employers should also provide workers with appropriate health and safety information and training. This includes: safe systems of work; the use of equipment and gloves; the correct removal of gloves to prevent skin contamination by the substances on them; and correct hand cleaning and skin care measures. This must happen when health care workers start in a job that exposes them to risk, and be repeated throughout their employment. There is clear evidence that this has an effect on the behaviour of workers and leads to improved outcomes (BOHRF, 2010).

Prevention of dermatitis and hand hygiene

Safe systems at work

If hand hygiene is not done correctly it can increase the risk of dermatitis. Hand hygiene products such as soap should be provided because they are effective in cleaning hands and minimise the risk of skin disease. However, staff should be aware that they need to wet their hands first before applying soap, and that they should rinse them in water that is neither too hot nor too cold. The optimum temperature for rinsing is 32 degrees centigrade – temperatures over 40 degrees centigrade may be too hot for some staff, and could exacerbate skin problems and prevent staff from complying with hand hygiene. This reinforces the need to install mixer taps on hand washing sinks. The most effective way of drying hands is to use soft and absorbent paper towels. Skin should be patted dry, paying attention to each finger and the skin between the fingers. Hot air dryers must not be used in clinical settings because of the risk of re-circulating micro-organisms via air currents.

Barrier creams are not effective and should not be provided. However, the regular use of moisturisers, or after work, conditioning creams should be encouraged after hand washing.

There is some evidence that workers who already have damaged skin benefit from using conditioning creams (BOHRF, 2010)(Nicholson PJ & Llewellyn D, 2010).

The containers used to dispense soap and moisturiser should be pump-operated to prevent cross-contamination. The major industrial suppliers of soap and *after work* hand conditioning cream often give advice on integrated systems and provide training materials.

Hand sanitising products (eg alcohol-based hand rubs) are available as an alternative to soap and water for hand hygiene, and provide an effective and efficient hand hygiene alternative for many indications (see [Table 4](#)). In the past these were thought to contribute to skin disruption, but improvements in formulations to include emollients mean that contraindications to the use of alcohol rubs are now very few.

[Appendix 6 A perfect storm](#) presents a real life case study that resulted in an increase in dermatitis in staff working on a neonatal unit.

Top tips for hand hygiene

- Wash hands with soap and water when visibly dirty or obviously soiled with blood or other body fluids or after using the toilet.
- Wash hands with soap and water where alcohol hand rubs are known to be less effective such as when caring for patients with known or suspected *Clostridium difficile* or norovirus infections.
- Wash hands with soap and water if alcohol-based hand rub is not available.
- Use an alcohol-based hand rub as the preferred means of routine hand hygiene in all other clinical situations.

(Adapted from WHO, 2009)

The importance of skin surveillance: secondary prevention

Secondary prevention aims to detect the disease at an early or pre-symptomatic stage. Under the COSHH regulations, employers should put in place procedures to check the skin of workers exposed to the risk of occupational contact dermatitis. Known as health surveillance, skin checks are used to identify cases of occupational contact dermatitis at an early and reversible stage. They are also used to monitor that the precautions or control measures put in place to reduce risks are working.

Some organisations carry out skin surveillance at regular intervals such as monthly or yearly. They do this by training individuals or *responsible persons* to check the hands of workers, document that they have done so and refer on to an occupational health nurse or doctor if any unusual symptoms are found. It is important that the workers take responsibility for their own health. If they identify skin problems they should inform their supervisor and seek appropriate advice, rather than waiting for the next planned health surveillance.

Employers should have a system in place to refer an affected worker to an occupational health practitioner or dermatologist with expertise in occupational skin disease to recommend appropriate workplace adjustments. Under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR, 1995) employers also have a duty to report cases of occupational skin disease. Cases must first be confirmed by a registered medical practitioner such as the person's GP or occupational health physician.

Responsibilities of the individual employee

Employees too have a legal duty to co-operate with their employer. In particular, they must follow procedures and safe systems of work and use equipment correctly, including PPE provided by the employer.

What can you do to prevent yourself from acquiring dermatitis?

Starting employment:

- if you know that you have had contact dermatitis in the past then you are at greater risk of developing it at work if your job involves, among other things, contact with irritants or allergens. Make your employer aware of this

and comply with any risk assessments under your organisation's COSHH requirements

- if you know you will be using a substance that causes occupational urticaria, and you have a history of asthma, eczema or hay fever you are at increased risk of developing urticaria, which is caused by immune response
- you must pay special attention to caring for your skin.

During employment:

- ensure you understand your employer's policies and procedures regarding glove use, including infection prevention and occupational health policies
- ensure that you attend training as required
- understand the substances that you use, handle or come into contact with and the impact of your employer's COSHH and other risk assessment findings
- understand the precautions and control measures that are in place and use them. This may include gloves for the protection of those you care for, or for the protection of your own skin
- participate in skin checks and questionnaires (health surveillance).

If problems occur:

- tell your manager as soon as possible. Most dermatitis affects the hands, so show them your hands
- follow your organisation's policies regarding skin care. If you cannot find these you may wish to contact your occupational health department and/or local health and safety adviser for further advice
- you can also get support and advice from your local RCN safety representative or steward. Contact RCN Direct on 0345 772 6100 for further information
- your employer should review your work activity and exposure to substances and seek advice from occupational health or health and safety as appropriate.

It is advisable to take pictures of your hands, top and bottom with the fingers spread out, so that the nature and distribution of the skin disruption can be seen. A photograph of your hands can be helpful if there is a delay in getting an appointment, by which time some healing may have taken place. It will also give an indication if recovery is taking place or the problem is getting worse.

The affected health care worker should contact their occupational health services as soon as possible by referring themselves, or being referred by their manager for advice.

Occupational health advisers (nurses) and doctors are the specialists. Their role is not only to provide treatment for the condition, but also to find out what is causing it and to try to prevent it from recurring. Their role is not to provide treatment for the condition, as this is the responsibility of the GP, but to help you find out what is causing it and try to prevent it from recurring. They are useful in liaising with managers if changes need to be made, such as providing alternative gloves or temporary redeployment if required to allow for healing, or to reduce the risk to those you care for..

If dermatitis occurs you must consult a health care professional such as your GP or specialist in dermatology as soon as possible. Treatment may include steroid creams and antibiotics if the skin is infected, and discussion about possible referral for further advice or treatment.

If your employer does not have access to an occupational health (OH) service, you can still ask them to refer you to an OH service. Many OH services provide a one-off consultation for advice, but your employer will need to pay for this. There are also free government-funded advice services:

- Health at Work Advice Line England (0800 077 88 44)
- Healthy Working Lives Advice Line Scotland (0800 019 2211)
- Health at Work Advice Line Wales (0800 107 0900).

If your employer will not fund an OH referral then you and your GP will need to work closely to improve the situation. Your GP may wish to contact your employer to notify them that a case of work-related dermatitis has occurred, but this should not be done without your permission. It would be beneficial for you to give your GP this permission so that management becomes aware of the issue and puts in place steps to reduce the risk to you and other employees. If you do not feel that you are getting the support you require contact RCN Direct for further advice.

Collecting relevant information about your dermatitis

Whichever health care professional you see, they will want to know some basic information. So, write down relevant information and take it along to the consultation. Here are some tips about the kind of information you may need to provide:

- if you use gloves for work, make a note of the brand, material (latex/nitrile) and if they are powdered. Take one to the consultation
- make a list of all the substances, chemicals and gloves that you come into contact with – keeping a diary for a week may be useful
- the list should include things used at home such as washing-up liquid, shampoo, liquid and hard soaps and cleaning agents, as well as cosmetics and hand cream
- note if the skin rash gets better or worse in relation to work. If you are on leave for a week or two does the eruption disappear? How quickly does it return?
- make a list of the tasks you do as part of your work, it may be that you are exposed to a substance infrequently during a task that is a small part of the job. Again a diary may help
- take along photos of your skin from the affected areas.

You will find useful information to take with you to your GP in the resources and further reading section 8 of this guidance.

If your dermatitis does not resolve with treatment and modifications at work you should insist on being referred to dermatologist for patch testing to identify, or exclude sensitisers that may be causing the problem.

Getting help from RCN safety representatives

RCN safety representatives represent the health and safety concerns of members and employees. Employers are legally required to consult safety representatives on specific matters that affect the health, safety and welfare of employees such as the introduction of new chemicals or products to the workplace.

Under the Safety Representative and Safety Committee Regulations (1977), RCN safety representatives can attend health and safety committee meetings. They may investigate accidents, near misses, and other potential hazards and dangerous occurrences in the workplace. The HSE defines accident in their publication *Successful health and safety management* (HS(G)65) (HSE, 1997) as:

‘Any undesired circumstances that give rise to ill health or injury, damage to property, plant, products or the environment, production losses, or increased liabilities.’

Therefore, it is appropriate for a safety representative to investigate cases of dermatitis whether they are discovered by health surveillance, as individual cases or due to a complaint made by an employee.

Practical steps for safety representatives

- Find out whether COSHH assessments have been carried out on harmful substances used in the work environment.
- Ensure that you are consulted on the introduction of new chemicals, products or work processes that could affect the health of members you represent.
- Find out if regular skin health surveillance is undertaken regarding skin exposures. This may be by questionnaire and/or skin inspection.
- Access specialist occupational health providers.
- Ask for all new cases of dermatitis to be discussed in health and safety meetings.
- Ask for anonymous collective results by area to identify any hot spots and call for a review of risk assessments and health surveillance in those areas.
- Investigate any new cases and ensure contact dermatitis cases are reported under RIDDOR (urticaria is not a reportable disease). Find out what the process is for identifying cases, and who is responsible for reporting them. The requirement for reporting under RIDDOR does not override medical confidentiality, and if the employee does not wish to be named, it can be reported anonymously.
- When undertaking workplace inspections, check product labels or safety data sheets for chemicals substances in use for risk phrases: R21 harmful in contact with skin; R38 irritating to skin; and R43 may cause sensitisation by skin contact. If identified, ask to see the relevant risk assessment. Note: These symbols and phrases will change in 2015, see www.hse.gov.uk/ghs/eureg.htm
- Assist management in raising awareness about dermatitis in health care workers and remind them of their responsibility to use the control measures put into place.

Claiming industrial injuries benefit

Workers that have developed occupational dermatitis may be able to get benefit even if they are able to carry on working. They will be assessed by a doctor for the Department of Work and Pensions. If the disability is perceived to be more than 14 per cent, benefit will be payable.

Specifically mentioned substances that health care workers may come into contact with are:

- glutaraldehyde
- acrylates and methacrylates
- biocides, anti-bacterials, preservatives or disinfectants
- formaldehyde and its resins
- soaps and detergents
- antibiotics and other pharmaceuticals and therapeutic agents.

There is also a general category:

- any other known irritant or sensitising agent including in particular any chemical bearing the warning 'may cause sensitisation by skin contact' or 'irritating to the skin'.

6

References

- British Occupational Health Research Foundation (2010) *Systematic review and recommendations*, 2010, London: BOHRF. www.bohrf.org.uk/downloads
- Canadian Agency for Drugs and Technologies in Health (2011) *Disposable gloves for use in health care settings: A review of the clinical effectiveness, safety, cost-effectiveness and guidelines*, Ottawa: CADTH. Available at www.cadth.ca
- Currie L, Lecko C, Gallagher R and Sunley K (2011) Safety: principle of nursing practice C, *Nursing Standard*, 25 (30), pp.35-37.
- Department of Work and Pensions (2011) *A guide to industrial injuries disablement benefits*, London: DWP. Available at www.dwp.gov.uk/publications
- Department of Health (2011) *The safe management of health care waste*, London: DH. Available at www.dh.gov.uk
- Department of Health (1998) *Guidance for clinical health care workers: protection against infection with blood-borne viruses*, London: DH. Available at www.dh.gov.uk/Publicationsandstatistics
- European Commission CE marking directives Available at <http://ec.europa.eu/enterprise/policies>
- Flyvholm M, Lindberg M (2006) OEESC-2005 – Summing up on the theme: Irritants and wet work. *Contact Dermatitis* 55, 317-321
- Health Protection Scotland (2009) *Personal protective equipment policy and procedure – standard infection control precautions*, Glasgow: HPD. Available at www.hps.scot.nhs.uk/haic
- Health and Safety Executive (2012a) *Work Related Dermatitis in the Health Service*. Available at www.hse.gov.uk/skin
- Health and Safety Executive (2012b) *Choosing the right gloves to protect skin – a guide for employers*. Available at www.hse.gov.uk/skin
- Health and Safety Executive (2012c) *Selecting Latex Gloves*. Available at: www.hse.gov.uk/skin
- Health & Safety Executive (1997) *Successful health and safety management*, Sudbury: HSE books. Available at www.hse.gov.uk
- HSE (2008) Topic Inspection Pack. *Work related contact dermatitis*. Available at www.hse.gov.uk
- Health & Safety Executive (2004) *Medical aspects of occupational skin disease*, Sudbury: HSE books.
- Health & Safety Executive (2009) *Managing skin exposure risks at work*, Sudbury: HSE Books.
- Health & Safety Executive (2011) *Dermatitis inspection report 2008/09. Prevention and management of work-related contact dermatitis in the NHS acute sector*. Sudbury: HSE. Available at www.hse.gov.uk/healthservices
- NHS Choices (2011) *Contact Dermatitis*. Available at [www.nhs.uk/Conditions/Eczema-\(contact-dermatitis\)/Pages/Introduction.aspx](http://www.nhs.uk/Conditions/Eczema-(contact-dermatitis)/Pages/Introduction.aspx)
- Nicholson PJ & Llewellyn D (2010) *Occupational contact dermatitis and urticaria*. British Occupational Health Research Foundation. London
- Nilsson E, Mickaelsson B, Andersson S. (1985) Atopy, occupational and domestic work as risk factors for hand eczema in hospital workers. *Contact Dermatitis* 13 (4) 216-323.
- Pratt RJ, Pellowe CM, Wilson JA, Loveday HP, Harper PJ, Jones SR, McDougall C and Wilcox MH (2007) epic2: National evidence-based guidelines for preventing health care-associated infections in NHS hospitals in England *Journal of Hospital Infection*, 65, Suppl 1:S1-64.
- Royal College of Nursing (2011) *Roles and responsibilities of occupational health support workers*, London: RCN. Available at www.rcn.org.uk/publications
- Royal College of Physicians (2011) *Concise guidance to good practice 13: Diagnosis, management and prevention of occupational contact dermatitis*, London: RCP. Available at www.facocmed.ac.uk

7

Resources and further reading

Siegel JD, Rhinehart E, Jackson M, Chiarello L and the Health care Infection Control Practices Advisory Committee (2007) *Guideline for isolation precautions: preventing transmission of infectious agents in health care settings*, Atlanta: Centers for Disease Control and Prevention. Available at www.cdc.gov

Sax HB, Allegranzi B, Uckay I, Larson E, Boyce J and Pittet D (2007) My five moments for hand hygiene: a user-centred design approach to understand, train, monitor and report hand hygiene, *Journal of Hospital Infection*, 67, pp.9-21.

Smith DR, Smyth W, Leggat PA, Rui-Sheng W (2005) Prevalence of hand dermatitis among hospital nurses working in a tropical environment. *Australian Journal of Advanced Nursing* 22 (3) 28-32.

Smith DR, Ohmura K, Yamagata Z (2003) Prevalence and correlates of hand dermatitis among nurses in a Japanese teaching hospital. *Journal of Epidemiology* 13 (3) 157-161.

World Health Organization (2009) *Guidelines on hand hygiene in health care*, Geneva: WHO. Available at www.who.int/topics

Clarys P, Manou I and Barel AO (1997) Influence of temperature on irritation in hand/forearm immersion test, *Contact Dermatitis*, 36, 5, pp.240-243.

Department of Health (2009) *The Health and Social Care Act 2008: code of practice for health and adult social care on the prevention and control of infections and related guidance*, London: DH.

Health and Safety Executive committees
www.hse.gov.uk/involvement

Investigating accidents, hazards and complaints
www.hse.gov.uk/involvement

Additional information can be found on hand eczema at
www.myhandeczema.co.uk

National Institute for Health and Clinical Excellence (2003) *Clinical guideline 2, infection control: prevention of health care-associated infection in primary and community care*, London: NICE. Available at www.nice.org.uk/CG002

National Institute for Health and Clinical Excellence (2012) *Infection, prevention and control of healthcare-associated infections in primary and community care*, London: NICE. Available at www.nice.org.uk/cg139

NHS Plus, Royal College of Physicians, Faculty of Occupational Medicine (2008) *Latex allergy: occupational aspects of management: a national guideline*, London: RCP. Available at www.nhsplus.nhs.uk

Patient.co.uk
www.patient.co.uk

Royal College of Nursing (2011) *Roles and responsibilities of occupational health support workers*, London: RCN. Available at www.rcn.org.uk/publications

Royal College of Nursing (2012) *Essential practice for infection prevention and control*, London: RCN. Available at www.rcn.org.uk/publications

Royal College of Nursing (2011) *The selection and use of disinfectant wipes*, London: RCN. Available at www.rcn.org.uk/publications

Royal College of Physicians (2011) *Concise guidance to good practice 13: diagnosis, management and prevention of occupational contact dermatitis*, London: RCP.

Scrivener R, Hand T and Hooper R (2011) Accountability and responsibility: Principles of Nursing Practice B, *Nursing Standard*, 25 (29), pp.35-36.

Tanner J (2008) Choosing the right surgical glove: an overview and update *British Journal of Nursing*, Vol 17, No 12 p 740-744.

World Health Organization (2009) *Save lives: clean your hands*, Geneva: WHO. Available at www.who.int/gpsc

Further resources

Flyvholm M, Lindberg M (2006) OEESC-2005 – Summing up on the theme: Irritants and wet work. *Contact Dermatitis* 55. 317-321.

Health and Safety Executive – provides a variety of materials on glove use and related topics at www.hse.gov.uk

US National Library of Medicine National Institutes of Health at www.ncbi.nlm.nih.gov/pubmed/12749603

Net Doctor at www.netdoctor.co.uk

NHS Choices website at www.nhs.uk/conditions

Glossary

The following are definitions to use with this guidance:

Biological agent – this term is used to describe micro-organisms (bacteria, viruses and fungi) that pose a risk to patients or health care staff.

Body fluids – a term used to describe bodily fluids such as amniotic fluid, semen, vaginal fluids, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid and pericardial fluid. These fluids are associated with the potential for transmission of infection by blood-borne viruses such as HIV, hepatitis B and hepatitis C.

Chemical agent – this term is used to describe chemicals that pose a risk to staff who may come in contact with them in the workplace. The term chemical includes drugs (pharmaceutical agents) and chemicals such as those present in disinfectant or cleaning solutions.

Contact precautions – contact precautions are implemented for individual patients only, or occasionally for a group of patients when there are potential or actual outbreaks of infection that are primarily spread through contact.

COSHH – the Control of Substances Hazardous to Health Regulations 2002.

Cross infection – the transmission of infection from one individual to another

Hand hygiene – hand hygiene relates to the removal of visible soil and the removal or killing of transient micro-organisms. Hands can be washed using soap and running water or disinfected using an alcohol based hand sanitiser.

Hand sanitiser – an antiseptic that can be used instead of soap and water to disinfect hands. Sanitisers can be liquid such as gels or foam. In health care, sanitisers tend to contain alcohol to kill transient bacteria on the hands. Not all hand sanitisers are effective against bacterial spores or viruses, and when used in health care must meet certain standards of effectiveness.

Health care worker – this is used as a generic term that includes registered nurses, health care assistants, midwives and students.

PPE – personal protective equipment, a requirement under the COSHH regulations.

Protective isolation – a term used to describe the isolation of a patient from others for their own protection such as patients with a weakened immune system.

Risk assessment – a systematic method of looking at work activities, considering what could go wrong and taking suitable control measures to prevent damage or injury. This requires controls being put in place to eliminate reduce or minimise the risks. A risk assessment is not necessarily a formal process, and it can be undertaken informally and quickly in the workplace.

Source isolation – a term used to describe the physical isolation of a patient who is known or suspected to have an infection (the patient is a source of infection) that may be transmitted to others. It also refers to situations where there is a need to isolate patients physically who carry multi-resistant organisms that could be transmitted to others.

Standard precautions – a set of principles to support safe practice designed to prevent transmission of infection and minimise risks of exposure of health care workers from potentially infectious or offensive material (i.e. blood and body fluids and excretions such as faeces, etc.). Standard precautions apply to *all* patients' blood and body fluids regardless of their known or suspected status with regard to carriage of blood-borne infections.

Glove use terminology

A number of different terms currently exist in health care literature to describe gloves used for different purposes. Gloves are most commonly used to protect patients and staff from: biological agents (micro-organisms) found in blood and body fluids; some patient environments; exposure to chemicals such as disinfectants and drugs (eg cytotoxic or tetragenic drugs).

The following terms are used in this resource:

Medical gloves – an overarching term used to describe single-use gloves used during medical or nursing procedures. Medical gloves include examination and surgical gloves.

Examination gloves – sterile or non-sterile disposable gloves. These are used for non-surgical medical or nursing procedures and are to protect the patient and/or health care worker from contamination by micro-organisms via exposure to blood/body fluids or the health care environment.

Surgical gloves – sterile gloves designed specifically to meet the requirements of users under surgical conditions.

Protective gloves – gloves used to protect the health care worker from chemical hazards such as those found in disinfectants, chemicals used in the decontamination of endoscopes or surgical instruments and drugs such as chemotherapy agents.

Note: a number of different gloves types are used in health care including surgical, examination, reusable utility (eg reusable rubber gloves used for washing up dishes or cleaning and heavy duty gloves). This resource will focus on the use of examination gloves and protective gloves. It has not been written to address issues associated with surgical and non-clinical use of gloves such as those used in general cleaning, food handling/catering or prevention of sharps injuries (i.e. gauntlet gloves). However, the principals discussed in this document may be relevant in some scenarios and non- health care settings.

8

Appendices

Appendix 1: Comparison of current national and international guidelines for glove use

Recommendations from national and international guidelines

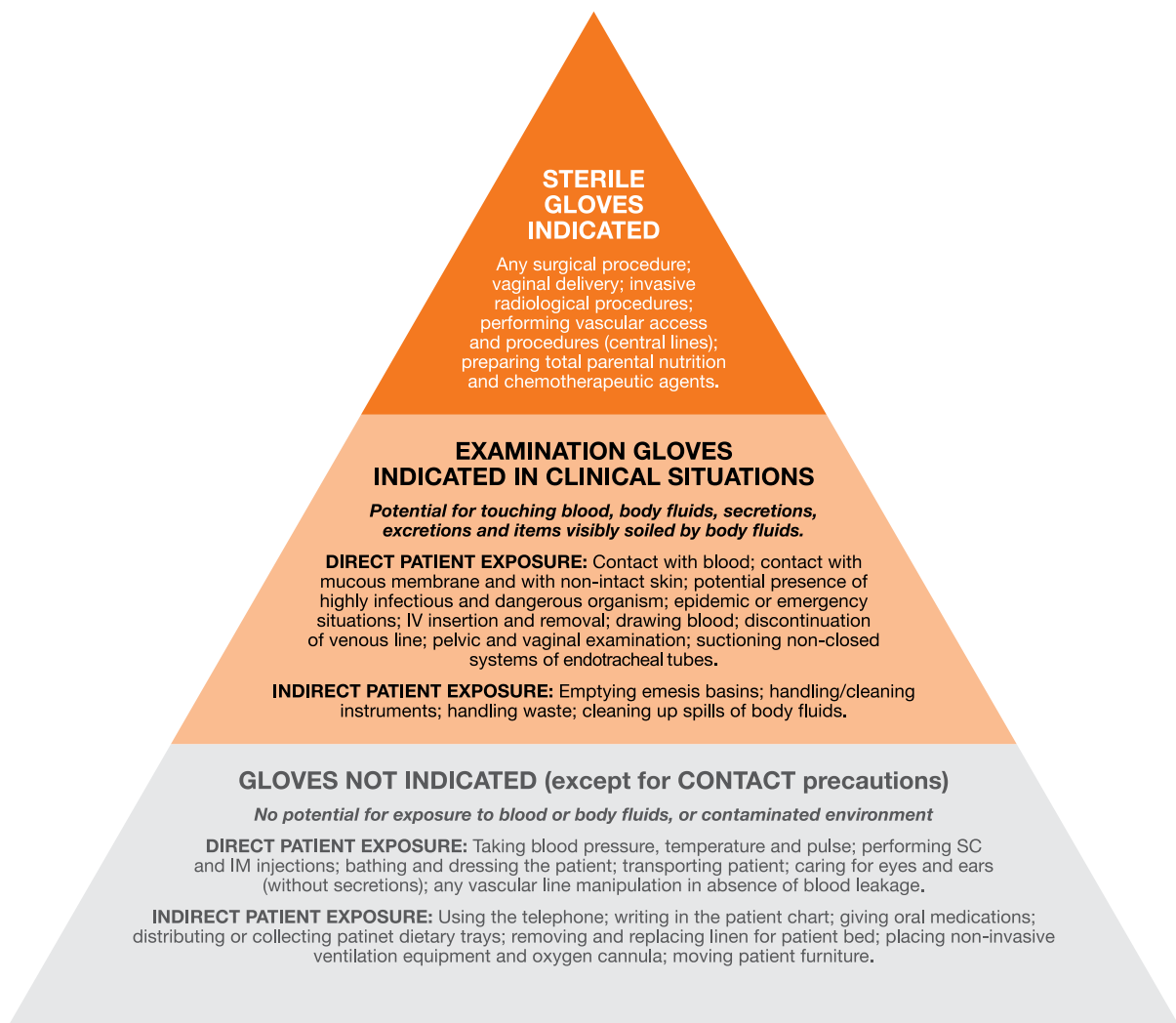
| CDC (2007) | NICE/EPIC (2003); Pratt et al., 2007) | CANADA: CADTH (2011) | SCOTLAND: HPS (2009) | WHO Guidelines on hand hygiene in health care (2009) |
|--|--|--|--|--|
| <ul style="list-style-type: none"> • It is necessary to don and change gloves during the care of a single patient to prevent cross-contamination • It may also be necessary to change gloves if the patient interaction also involves touching of associated items, such as portable computer keyboards or other mobile equipment including case records that are transported from room to room, bed space to bed space. • When gloves are worn in combination with other PPE, they are put on last. • Proper removal will prevent hand contamination. • Hand hygiene is necessary following glove removal to account for breaches in glove integrity as well as contamination through the process of removal. • Gloves should not be reprocessed. | <ul style="list-style-type: none"> • Indications relate to invasive procedures contact with sterile sites and non-intact skin or mucous membranes, and all activities that have been assessed as carrying a risk of exposure to blood, body fluids, secretions or excretions, or to sharp or contaminated instruments. • Gloves are single use items. • Gloves should be donned immediately before an episode of patient contact or treatment and removed as soon as the activity is completed. • Gloves should be changed between caring for different patients, or between different care/ treatment activities for the same patient. • Gloves must be disposed of as clinical waste and hands should be decontaminated following the removal of gloves. • Gloves conforming to European Community (CE) standards and of an acceptable quality must be available in all clinical areas. • Alternatives to natural rubber latex (NRL) gloves must be available for use by practitioners and patients with NRL sensitivity. | <ul style="list-style-type: none"> • If latex products are used in the workplace, employers should provide powder-free latex products, if such alternatives exist. Employers should particularly ensure that powdered latex gloves are not used in the workplace. • Users of latex gloves and purchasers should be aware that the risk of developing latex allergy is highest with the use of powdered latex gloves, and that examination gloves may contain more latex allergen than surgical gloves. • Those concerned with glove purchasing policy should be aware that alternatives to latex gloves may have other associated problems, particularly with failure rates, user satisfaction, and barrier effectiveness. • Those concerned with glove purchasing policy should be aware that a switch to powder-free latex gloves can be cost effective (in terms of glove costs, and compensation). • Those concerned with glove purchasing policy should be aware that a switch to non-latex gloves can also be cost effective. | <ul style="list-style-type: none"> • Gloves must be appropriate for use, fit for purpose and well fitting to avoid interference with dexterity, friction, excessive sweating and finger and hand muscle fatigue. Therefore, the supply and choice of the correct size of glove, eg small, medium or large, is important. • Never use disposable latex gloves that contain powder due to the risks associated with aerosolisation and an increased risk of latex allergies. • Gloves should be worn when contamination might occur • Gloves should be changed between patients/clients/ procedures. • It may be necessary to change gloves between tasks on the same patient/client to prevent unnecessary cross-contamination. • Do not keep on PPE, such as gloves that have been used for a procedure, once you have finished the task. Remove these immediately. • Gloves are not a substitute for employing good hand hygiene, this should be performed each time gloves are removed. • Torn, punctured or otherwise damaged gloves should not be used and should be removed immediately (safety permitting) if this occurs during a procedure. • Never perform hand washing while wearing gloves. • Never use products such as alcohol based hand rub to clean gloves or wash single-use disposable gloves. • Gloves worn for protection when exposure to blood/other body fluids may occur are single-use and should be removed and replaced as appropriate, with hand hygiene performed in between times | <ul style="list-style-type: none"> • The use of gloves does not replace the need for hand hygiene • Wear gloves when it can be reasonably anticipated that contact with blood or other potentially infectious materials, mucous membranes, or non-intact skin will occur • Remove gloves after caring for a patient. Do not wear the same pair of gloves for the care of more than one patient • When wearing gloves, change or remove gloves during patient care if moving from a contaminated body site to either another body site (including non-intact skin, mucous membrane or medical device) within the same patient or the environment • The reuse of gloves is not recommended. |

Appendix 2: Applying a multi-modal improvement strategy to manage glove use

Using a multi-modal approach to address all of the factors that are required for appropriate, safe and timely use and removal of gloves in health care

- **Accessibility to gloves (system change):**
 - the system must support placing gloves in the right place to ensure the right gloves are used at the right time, and support the cost associated with glove use. All of these factors are critical for safe patient care and protection of health care workers
 - gloves of the right type and quality must be easily available at the points of patient care and treatment as indicated.
- **Training and education:**
 - acknowledging that there is potential confusion in relation to indications for glove use (see table 4) between standard and contact precautions, robust training and education is required to ensure adherence with recommendations
 - training and education is critical for higher standards of reliable practice across all health care professionals. Further work is required to strengthen consistency and validity of training materials on glove use for clinical and non-clinical staff.
- **Monitoring and evaluation:**
 - monitoring practices will contribute to the understanding and improvement of glove use, based on the evidence that the process of auditing provides a clear understanding of compliance with recommendations.
- **Promotion and awareness raising:**
 - messages relating to glove use in local and national campaigns are important in sustaining improvements in practice
 - local and national campaigning could enhance the impact of the glove use messages presented in this guidance.
- **Organisational safety climate:**
 - leadership, role modelling and patient information have the potential to contribute to improved glove use, although this aspect has not been addressed sufficiently to date in the literature. Further research is required to explore the impact of a safety climate and adherence with glove policies
 - collective responsibility for reducing inappropriate glove use and improving patient safety is critical. Evidence suggests that a multi-modal approach holds the greatest potential for success.

Appendix 3: Glove pyramid




Appendix 4: Skin care plan

Great Ormond Street **NHS**
Hospital for Children
NHS Foundation Trust


“One Squirt is enough” -

How to keep hands in good condition and prevent dry/sore skin.


- ☞ Always **WET HANDS** thoroughly before washing
- ☞ Ensure water is warm (neither hot nor cold)
- ☞ Obtain sufficient soap for a hand wash by pressing **ONCE** only
- ☞ Follow the six step technique to remove contaminants from all areas of the hands:




1




2




3



4



5



6

- ☞ Washing should take at least 30 seconds to complete
- ☞ **RINSE** thoroughly with **PHYSICAL ACTION** to remove all soap residues from between fingers and the backs of the hands
- ☞ Dry hands completely by carefully patting rather than rubbing with a paper towel

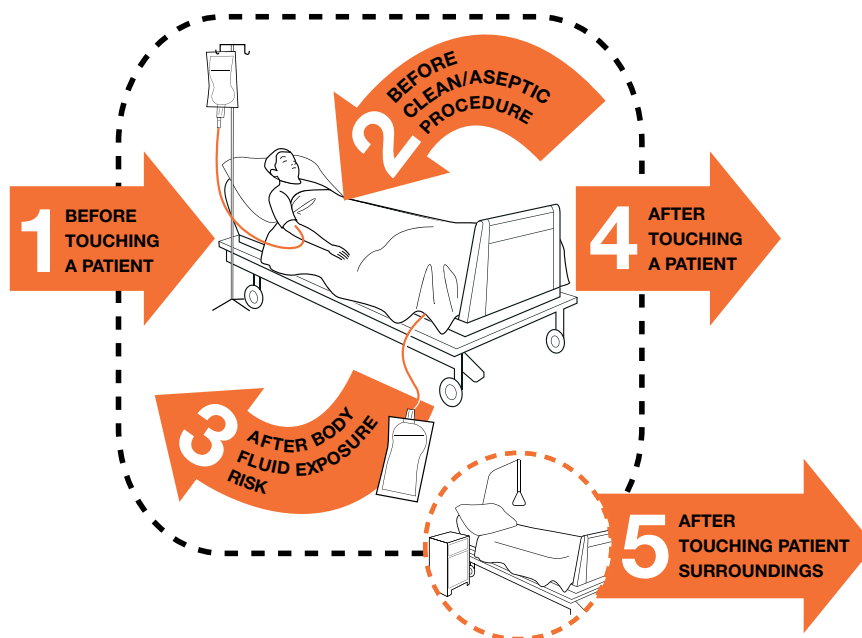
Don't Forget

- ☞ To help keep skin in good condition, apply moisturising cream before breaks and at the end of the shift
- ☞ Washing hands with soap and water before or after using alcohol gel is unnecessary and may lead to dermatitis (WHO, 2009)
- ☞ Donning gloves while hands are still wet from either washing or applying alcohol gel increases the risk of skin irritation

GOSH Infection Prevention & Control Team, 2011

Appendix 5: Your 5 moments for hand hygiene

Your 5 Moments for Hand Hygiene



| | | | |
|----------|--|--------------|---|
| 1 | BEFORE TOUCHING A PATIENT | WHEN? | Clean your hands before touching a patient when approaching him/her. |
| | | WHY? | To protect the patient against harmful germs carried on your hands. |
| 2 | BEFORE CLEAN/ASEPTIC PROCEDURE | WHEN? | Clean your hands immediately before performing a clean/aseptic procedure. |
| | | WHY? | To protect the patient against harmful germs, including the patient's own, from entering his/her body. |
| 3 | AFTER BODY FLUID EXPOSURE RISK | WHEN? | Clean your hands immediately after an exposure risk to body fluids (and after glove removal). |
| | | WHY? | To protect yourself and the health-care environment from harmful patient germs. |
| 4 | AFTER TOUCHING A PATIENT | WHEN? | Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side. |
| | | WHY? | To protect yourself and the health-care environment from harmful patient germs. |
| 5 | AFTER TOUCHING PATIENT SURROUNDINGS | WHEN? | Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched. |
| | | WHY? | To protect yourself and the health-care environment from harmful patient germs. |



World Health Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES

Clean Your Hands

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this document. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

Appendix 6: A perfect storm case study

Overview

An increase in skin problems (dermatitis, dry broken skin, exacerbation of existing eczema) was reported shortly after a change of location for a neonatal unit (NNU) from an old maternity hospital to a new-build maternity wing.

A significant increase in symptoms was observed on the NNU following the move. The NNU staff were felt to be particularly vulnerable because they were known to practice a high level of hand washing compared to other units in the wing due to high levels of invasive procedures such as line insertion, parenteral nutrition setup and glove use.

A review of this incident identified a number of factors that combined to contribute to an increase in skin problems for staff on the unit.

Change of location

As with any change of location, ward staff were unfamiliar with their new environment layout. This may have been a contributing factor to a rise in skin problems with changes to sink locations, supplies located in different places and changes to how supplies were ordered. This resulted in a change to the normal hand hygiene routine.

Soap

A new brand of soap was installed in the new unit primarily for cost and standardisation reasons. No trial of the new product was undertaken before it was introduced. The infection control team were not involved in this decision, which was made by the local capital investment and planning team. Staff initially believed this was the sole source of the problem, but since this soap was used elsewhere in the organisation without problems it was discounted.

Taps

The new unit had automatic thermostatically controlled sensor taps fitted. This represented a change in practice as manually operated elbow taps had been used in the previous location. It was observed that the timing on these taps did not allow staff as much time to rinse their hands after washing as the manual taps had allowed. This resulted in soap residue remaining on staff hands.

Also, the water temperature was set centrally not locally, preventing staff being able to select a temperature that was comfortable for them. Staff reported that the water was too hot, and that this was exacerbating already excoriated and sore skin, and adding further to the incomplete rinsing of hands. The use of alcohol gel between washes caused further discomfort.

Winter

The NNU move occurred in October when staff reports of dry and eczematous skin increase due to the cold weather.

Investigation

The occupational health team visited the NNU regularly with the trust's estates and facilities team, infection control nurses and representatives from the soap manufacturers supported staff to try to resolve the situation.

All staff identified with skin problems were seen by the occupational health team for assessment and referral as required.

Symptoms included:

- itching
- dryness
- redness
- broken skin.

Actions taken included:

- testing the water temperature
- speaking to staff and providing reassurance that the issue was being taken seriously
- the temporary use of aqueous cream for hand washing
- the provision of hand moisturisers
- restrictions from clinical duties to allow skin to heal
- hand care training by the OH team and the soap manufacturer
- change of soap brand
- continued presence of OH and IC teams to monitor the situation and for support and advice.

Reflection

Following an investigation into the incident, the infection control and occupational health teams met to evaluate and reflect on the incident.

The combination of factors outlined above was thought to be responsible for the outbreak of skin problems in the unit. The location move, unfamiliar surroundings, equipment and the impact of winter weather were felt to create a perfect storm of conditions that all contributed to an increase in hand dermatitis. The number and management of changes that occurred were considered to be responsible for the impact on staff hands that subsequently developed.

Greater consultation with the staff regarding all of the issues above may have prevented this unfortunate incident.

Outcome

Following the investigation, soap dispensers were replaced with those used in the rest of the trust and over time the problem resolved.

Appendix 7: Putting in place a skin surveillance programme for contact dermatitis

1. Use the COSHH assessment process to identify whether staff are exposed to substances or work processes that could cause contact dermatitis.
2. Where the risk of contact dermatitis has been identified, and that risk cannot be eliminated, put in place a health surveillance programme.
3. Visual skin inspections are an important part of health surveillance for workers exposed to substances that cause contact dermatitis, and should be included in health surveillance programmes.
4. The type and frequency of the surveillance programme should be determined by a medical practitioner with sufficient expertise in occupational health or an occupational health nurse.
5. The Health and Safety Executive recommend a brief weekly or monthly routine of skin inspections. An annual surveillance questionnaire can also be used to support visual inspections.
6. A responsible person should carry out visual skin checks. A responsible person can be a nominated employee with suitable training eg a registered nurse or health care assistant or occupational health support worker.
7. The role of the responsible person is to: check the skin on the hands and forearms for early signs of dermatitis; keep secure records of these checks locally; advise an employee with symptoms how to seek help; and alert the employer to any problems.
8. The responsible person should have suitable training and competence assessment by an occupational health adviser (nurse or doctor). Training should include: the causes of dermatitis; early signs and symptoms and their recognition; what to do in the event of identifying problems; and the need for discretion in recording personal information about employees.
9. Train employees at risk to recognise symptoms of contact dermatitis and report these. Photographs of damaged skin may be helpful in training staff. This could be undertaken by the occupational health adviser or responsible person in line with local protocols.
10. Results of skin inspections should be reported to occupational health service to collate and identify trends or problem areas.
11. Results of health surveillance need to be retained for a period of 40 years from the last entry.

Appendix 8: Tips for selecting and buying gloves

Decisions taken to buy gloves should exclude any cost pressures that could lead to cheap and inappropriate gloves being bought. All gloves should:

- conform to European Standard EN455 (parts 1-4 medical gloves for single use)
- must comply to European standard EN420: general requirements for protective gloves
- carry the CE mark
- be powder free.

Additional considerations

- Consider the purpose for gloves that you intend to purchase – are they for patient protection (purely exposure to blood and body fluids) only, staff protection (protection from exposure to chemicals or hazardous drugs) or both?
- Consult your organisations' infection prevention and occupational health/health and safety policies.
- Engage with local infection prevention and occupational health/health and safety teams regarding the process for selecting and buying gloves.
- Ensure the type of glove required meets the necessary EN standard.
- Do not buy powdered latex gloves – refer to your local policy on the management of latex.
- Consider undertaking a trial of different gloves that could be suitable before making a decision to buy.
- Undertake a thorough evaluation including feedback by staff and the cost-benefits of potential products.
- Work with local staff to establish:
 - intended purpose
 - comfort
 - fit
 - level of dexterity required
 - cuff fitting
 - requirements for specific tasks eg is a longer cuff required to protect wrists?

Notes

Notes



Royal College
of Nursing

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

May 2012

RCN Online

www.rcn.org.uk

RCN Direct

www.rcn.org.uk/direct

0345 772 6100

Published by the Royal College of Nursing

20 Cavendish Square

London

W1G 0RN

020 7409 3333



www.facebook.com/royalcollegeofnursing



www.twitter.com/thercn



www.youtube.com/rcnonline

Publication code: 004 224

ISBN: 978-1-908782-07-6

Supported by an unrestricted educational grant from Basilea.



PHARMACEUTICA