

# MANAGEMENT OF FAECAL INCONTINENCE

A GUIDELINE FOR THE HEALTHCARE PROFESSIONAL

Continence UK



## CONTINENCE UK MANAGEMENT OF FAECAL INCONTINENCE SUPPLEMENT

## CONTENTS

|   |    |
|---|----|
| INTRODUCTION  | 4  |
| <i>Alison Bardsley</i>                                    |    |
| FAECAL MANAGEMENT SYSTEMS IN ACUTE AND CRITICAL CARE      | 5  |
| <i>Rachel Binks</i>                                       |    |
| GUIDELINE FOR THE MANAGEMENT OF ACUTE FAECAL INCONTINENCE | 10 |
| <i>Compiled by the Expert Panel</i>                       |    |
| BEST PRACTICE IN CLOSTRIDIUM DIFFICILE MANAGEMENT         | 13 |
| <i>Martin Kiernan</i>                                     |    |
| FAECAL INCONTINENCE AND ITS EFFECT ON SKIN INTEGRITY      | 16 |
| <i>Pauline Beldon</i>                                     |    |

**This supplement was produced with the support of the following experts:**

Alison Bardsley – Continence Advisor and Continence Services Manager, Witney Community Hospital, Witney, Oxfordshire  
 Pauline Beldon – Nurse Consultant, Tissue Viability, Epsom and St Helier University Hospitals NHS Trust  
 Rachel Binks – Nurse Consultant, Critical Care, Airedale NHS Trust, West Yorkshire and Chair of the RCN Critical Care Forum  
 Martin Kiernan – Nurse Consultant in the prevention and control of infection, Southport and Ormskirk NHS Trust  
 Jo Myers – Burns Rehabilitation Ward, Mid Essex Hospitals Services NHS Trust  
 Julian Spinks – General Practitioner, Strood, Kent  
 Professor Mark Wilcox – Professor of Medical Microbiology, Institute of Molecular and Cellular Biology, University of Leeds Teaching Hospital

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# MORE GUIDANCE ON ACUTE FAECAL INCONTINENCE IS A PRIORITY

Alison Bardsley

Faecal incontinence is a stigmatising and under-reported condition often neglected by professionals who can feel inappropriately skilled to provide appropriate care for sufferers. The management of faecal incontinence is a priority in both acute and community care settings in order to reduce the risk of perineal dermatitis, skin breakdown and transmission of infection. Studies indicate that chronic faecal incontinence affects between 1–10% of the adult population and that 0.5–1% experience regular incontinence affecting their quality of life (National Institute for Health and Clinical Excellence [NICE], 2007).

The recent NICE guidance on faecal incontinence (NICE, 2007) emphasises the need for patients to have access to healthcare professionals with relevant training, skills and experience. However, many healthcare professionals do not have the expertise in diagnosis and treatment of faecal incontinence and may only provide management advice and product provision. Also, although the guidelines cover chronic faecal incontinence, they neglect the management of acute problems such as faecal incontinence associated with infections such as *Clostridium difficile*.

*C. difficile* is a spore forming, anaerobe that is found in a small proportion of healthy adults (less than 5%). Its normal habitat is in the large intestine, where it is kept in check by the 'good' bacteria of the intestine. *C. difficile* causes diarrhoea, which can result in severe illness including ulceration, bleeding from the colon

(colitis) and perforation of the intestine leading to peritonitis. Generally, *C. difficile* can only do this when the healthy intestinal bacteria have been destroyed by antibiotics. This allows the bacteria to multiply and produce two toxins (A and B) that damage the lining of the intestine resulting in diarrhoea. *C. difficile* usually affects older patients with serious underlying conditions following gastrointestinal surgery or a long stay in healthcare settings. Most infections occur in inpatient settings but it can also feature in the community.

In most cases *C. difficile* develops after cross-infection, either through direct patient-to-patient contact via healthcare staff or via a contaminated environment. Patients with *C. difficile* diarrhoea excrete large numbers of spores in their liquid faeces. These spores not only contaminate the general environment around the patient's bed, but also affect toilet areas and sluices as well as equipment such as commodes, and bed pan washers. The spores can survive for a long time and be a source of hand-to-mouth infection for others who have been treated with antibiotics (Department of Health, 2007). Infection with *C. difficile* leads to loss of dignity for patients, skin breakdown, increasing costs and risk of cross-infection for professionals who have to deal with soiled pads and bedding.

Surveillance of *C. difficile* associated disease (CDAD) has been included in the Health Protection Agency's (HPA) mandatory healthcare-associated infections (HAI) surveillance system for acute trusts in England since January 2004. Over the past 10 years HAIs have been on the increase and cases of *C. difficile* infection in patients aged 65 years and above increased by 17.2% in England

over the past year (HPA, 2006).

In order to increase the awareness of acute faecal incontinence among healthcare professionals, Continence UK, supported by ConvaTec, recently formed a working group consisting of experts in infection control, intensive care, dermatology and continence.

The aim was to produce a guideline for the management of acute faecal incontinence, which brings together the latest evidence on managing acute faecal incontinence. This supplement includes:

- ▶▶ Diagnosis and treatment
- ▶▶ Reducing cross-infection through appropriate containment of faeces
- ▶▶ Maintaining skin integrity
- ▶▶ Promoting patient dignity
- ▶▶ Monitoring fluid balance
- ▶▶ Health economic data and cost effectiveness
- ▶▶ Management options.

It is our aim that this supplement will provide a reference for healthcare professionals when dealing with patients with acute faecal incontinence in order that they can provide best practice to this particularly vulnerable patient group. **CUK**

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Alison Bardsley is a Continence Services Manager, Witney Community Hospital, Witney, Oxfordshire, and Clinical Editor of *Continence UK*

# FAECAL MANAGEMENT SYSTEMS IN ACUTE AND CRITICAL CARE

Rachel Binks

Historically, the management of faecal incontinence has been problematic within acute and critical care settings. The nursing workload required to maintain patients' comfort and dignity and ensure the optimum skin care is often at variance with the resources available in these busy healthcare environments. This article evaluates the use of a faecal management system in acute and critical care and looks at both patient and staff satisfaction as well as any design improvements. Patients in this review found the system beneficial in both improving their comfort and in maintaining their dignity.

## Key Words

Faecal incontinence  
Acute care  
Dignity  
Faecal management system

For many years, acute and critical care nurses have been trying to manage faecal incontinence in a way that maintains patient dignity, enables tissue viability issues to be properly addressed and ensures the optimum and most cost-effective use of nursing time.

The use of faecal collection bags, Foley catheters and flatus tubes have all been tried with little success. However, in recent years various manufacturers have been developing faecal collection devices and bowel management systems and their use in the acute sector is increasing. This article presents the findings of an evaluation of one such faecal management system (Flexi-Seal®FMS, ConvaTec, Ickenham), which took place between June–July 2007 in a small District General Hospital in Yorkshire.

Rachel Binks is a Nurse Consultant in Critical Care, Airedale NHS Trust, West Yorkshire; and Chair of the RCN Critical Care Forum

## NICE guidance

The recently published National Institute of Health and Clinical Excellence (NICE) faecal incontinence guidelines (NICE, 2007) fail to address the issue of acute incontinence, which is particularly unfortunate given the rising incidence of healthcare associated infection (HAI) rates. The guideline does, however, suggest that 'healthcare professionals should consider a faecal collection device for people in intensive care settings and people receiving palliative care with faecal incontinence and associated loose stools' (NICE, 2007).

## Causes of acute faecal incontinence

The two most prevalent causes of acute faecal incontinence are *Clostridium difficile* infection (Tonna and Welsby, 2005) and complications secondary to enteral feeding (Wiesen et al, 2006).

Many patients in the acute care setting have enteral feeds *in situ* and *C. difficile* is becoming more prevalent. Faecal incontinence has also been recognised as being a significant contributing factor to pressure ulceration and therefore its management, together with good skin protection, is essential (Calianno, 2000).

## Management of acute faecal incontinence

The faecal management systems currently on the market address both of these issues as faecal fluid is

contained, and consequent contact with the patient's skin avoided. A secondary but extremely important aspect of the collection of liquid and/or semi-liquid stool is the ability to guarantee the achievement of far more accurate fluid balance measurement. This is a vitally important issue in the assessment and management of the acutely ill patient.

## Case studies

The author carried out an evaluation of a faecal management system on four patients admitted to either a critical care unit or an acute medical or surgical ward. Each of these patients had acute faecal incontinence, which either began during their admission to hospital or was a presenting symptom on admission.

The evaluation of this product was recorded on a form, which included details such as the reason for the faecal incontinence, the skin condition prior to the use of a faecal management system and time spent by nursing staff on managing the system. The nurses caring for the patients filled in these forms and the author collected and collated the results, which have been summarised in *Table 1*.

## Case report I

In May 2007, Ms P, a 60-year-old female patient, was admitted to an intensive care unit following a hemi-colectomy, which was carried out to treat her

Crohn's disease. Due to her very poor physical condition on admission, she had long-term care needs during a complex post-operative recovery.

During her recovery, Ms P experienced faecal incontinence and was passing liquid stool more than seven times a day. Her sacrum was red and excoriated, although not yet broken down. Nurses assessed the time taken to manage her faecal incontinence as amounting to four hours in every 24-hour period and three nurses/healthcare assistants were required. The costs were estimated at £105.64 each day and were based on a requirement of two band five and one band two nurses/healthcare assistants – see *Table 2* for calculation. The savings made in laundry costs were not calculated.

A faecal management system was inserted on 14 June. The ease of insertion of the faecal management system, the retention of the device, the ability to divert and contain faeces, the measurement of output and the ease of changing the collection bag were all evaluated as very good. The system's ability to minimise contamination and odour were evaluated as satisfactory (*Table 1*).

Bag changes were required daily and the nursing time needed to manage Ms P's faecal incontinence was reduced to 20 minutes in every 24-hour period (the cost for one band two healthcare assistant was £2.07 per day). Ms P's skin greatly improved.

### Case report 2

Mr M was a 93-year-old man who was being nursed on an acute elderly medical ward due to deterioration in his general condition and a very poor dietary and fluid intake. A faecal management system was inserted on 16 July 2007 due to numerous episodes of liquid faecal incontinence. He exhibited extensive redness of the skin in the sacral area but no breakdown.

Ease of insertion of the faecal management system was documented as being very good, as was the ability to minimise odour (*Table 1*). Although the faecal management system collection

bag needed to be changed daily, the time required to manage Mr M's incontinence was reduced to only 10 minutes in each 24-hour period (cost £1.04). This is based on a requirement of one band two nurses/healthcare assistants spending 10 minutes per day on the faecal management system, as opposed to two band five and one band two nurses/healthcare assistants spending 90 minutes per day at a cost of £39.61 before insertion.

Mr M's skin condition continued to improve until his peaceful death on 19 July. His family felt he was much more comfortable following insertion of the faecal management system.

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### Ease of insertion of the faecal management system was documented as being very good, as was the ability to minimise odour.

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### Case report 3

Mr T was admitted to the intensive care unit with acute sepsis and a history of diarrhoea and vomiting of unknown cause. He was very dehydrated and was passing liquid stool. While not broken, the skin on his sacrum was excessively red and he was experiencing more than seven episodes of faecal incontinence in each 24-hour period. In order to preserve his skin integrity, manage his fluid balance and contain what was thought to be infective diarrhoea, a faecal management system was inserted.

The ease of insertion of the faecal management system, retention of the device and ability to measure output were rated as excellent (*Table 1*). Containment and diversion of faeces and collection bag changes were rated as very good. However, in this case the faecal management system was not found to be effective in minimising odour.

However, nursing time and cost was significantly reduced and the condition of Mr T's skin was greatly improved. The

cost of the nursing time required for the management of Mr T's incontinence was reduced to £2.07 (one band two nurse/healthcare assistant for 20 minutes per day) after insertion of the faecal management system. Before insertion, the staff cost was estimated at £130.56, based on two band five and two band two nurses/healthcare assistants for four hours per day.

Mr T's faecal management system was removed on day nine as he was bleeding from the rectum. Unfortunately, a flexible sigmoidoscopy was not carried out and it could not therefore be ascertained if there was any excoriation of the anal canal or rectal mucosa due to the system.

However, it should be noted that Mr T had shown signs of gastro-intestinal haemorrhage before insertion of the faecal management system (both melaena and coffee ground vomit) and before it was removed it allowed the multidisciplinary team to more accurately measure any blood loss (*Table 1*).

Following the provision of two units of blood, Mr T experienced no further episodes of bleeding and was discharged from the critical care unit. He was subsequently discharged home having made a full recovery.

### Case report 4

Ms L was admitted to the high-dependency unit on 16 July, 2007 with fulminant hepatic failure. She had also tested positive for *C. difficile*. Although Ms L was initially able to use a bed pan, she was having more than seven episodes of liquid stool each day and was becoming increasingly exhausted. With her consent, a faecal management system was inserted on day two of her admission.

Ms L was able to tolerate the system for two days but as she became more encephalopathic, she was unable to retain it. She became confused and 'wanted to push it out', which she eventually did. However, during the system's insertion, Ms L's skin integrity and the use of nursing time were evaluated as being greatly improved (*Table 1*). After insertion of the faecal

**Table 1**
**Evaluation of results**

| Evaluation  | Case 1   | Case 2   | Case 3   | Case 4  |
|---|--|--|--|---|
| Reason for faecal incontinence                              | Crohn's disease and sepsis   | General deterioration in medical condition, palliative care        | Diarrhoea and vomiting, acute sepsis   | Clostridium difficile   |
| Skin condition before insertion of faecal management system | Extensive redness/no breakdown   | Extensive redness/no breakdown                                     | Extensive redness/no breakdown   | Patchy redness  |
| Stool consistency   | Liquid   | Liquid   | Liquid   | Liquid  |
| Stool frequency per day                                     | Seven plus   | Five to six  | Seven plus   | Seven plus  |
| Nurse time spent on management of incontinence              | Four hours (cost £105.64 for two band five and one band two nurses)                      | One hour (cost £39.61 for two band five and one band two nurses)   | Four hours (cost £130.56 for two band five and two band two nurses)  | Four hours (cost £105.64 for two band five and one band two nurses)   |
| Number of nurses  | Three  | Three  | Four   | Three   |
| Management before insertion of faecal management system     | Incontinence pads and very frequent hygiene care and sheet changes                       | Incontinence pads and very frequent hygiene care and sheet changes | Incontinence pads, very frequent hygiene care and sheet changes, as well as Metanium® cream  | Incontinence pads, very frequent hygiene care and sheet changes, as well as Metanium® cream   |
| Insertion date  | 14/06/2007   | 16/07/2007   | 11/07/2007   | 16/07/2007  |
| Ease of insertion   | Very good  | Very good  | Excellent  | Excellent   |
| Retention of device   | Very good  | Excellent  | Excellent  | Satisfactory  |
| Diverts and contains faeces                                 | Very good  | Excellent  | Very good  | Excellent   |
| Minimises contamination                                     | Satisfactory   | Excellent  | Satisfactory   | Excellent   |
| Measure output  | Very good  | Excellent  | Excellent  | Very good   |
| Minimise odour  | Satisfactory   | Excellent  | Poor   | Satisfactory  |
| Changing bag  | Very good  | Excellent  | Very good  | Very good   |
| Frequency of bag change                                     | One  | One  | One  | One   |
| Time spent on faecal management system                      | 20 minutes   | 10 minutes   | 20 minutes   | 15 minutes  |
| Condition of skin after faecal management system used       | Greatly improved within two days   | Improved   | Greatly improved   | Improved  |
| Reason discontinued   | Diarrhoea episode resolved   | Patient died   | Bleeding per rectum  | Expelled by patient   |
| Use again   | Yes  | Yes  | Yes  | Yes   |
| Comments  | Patient felt very comfortable and much happier as she was not being constantly disturbed | Very easy and efficient  | Flexible sigmoidoscopy not carried out so unable to show if the system caused erosion of rectal mucosa. Unlikely as patient had previous melaena and coffee ground vomit | Patient did not like it and felt she needed to 'push it out'. However, her skin did improve and far less nursing time was spent lifting her on and off the bedpan |

**Table 1**

**Calculation of nursing costs**

| Nurse required for patient management | Annual basic salary lowest pay point 2006/7 | Divide by 52.14 then by 37.5 to get hourly rate |
|---------------------------------------|---|---|
| Band five – nurse                     | £19,730                                     | £10.09  |
| Band two – healthcare assistant       | £12,177                                     | £6.23   |

management system, there was a reduction in nursing time spent from four hours of two band five and one band two nurses/healthcare assistants at a cost of £105.64 per day, to 15 minutes of band two nurses/healthcare assistants' time at a cost of £1.56.

**Discussion**

The response from patients, relatives and staff was very encouraging and all were in favour of our continued use of these systems. Patients and their families felt that dignity was better maintained and staff could see positive effects on skin integrity, nursing workload, fluid balance and infection control.

As part of the Trust's ongoing strategy for infection control, it is in favour of the continued use of these systems and a strict protocol has been written to prevent misuse and ensure cost-effectiveness.

Many trusts across the UK are beginning to use these systems to manage outbreaks of HAIs as the benefits of containment cannot be underestimated. The general focus on reducing HAIs across the country has led to trusts being much more willing to look at new, cost effective solutions to preventing cross infection in hospital wards.

The containment of spore-forming pathogens must be part of this strategy as must the prevention of dermatitis and ulceration of the sacrum. Ineffective faecal incontinence management has been shown to lead to serious skin breakdown, which can increase a patient's hospital stay by four days (Zahn and Miller, 2003). Miller also reported that HAIs can add \$39,000 to the cost of care.

The Flexi-Seal®FMS faecal management system was evaluated by the Health Protection Agency Rapid Review Panel (2007) and received a level 1 recommendation. It should help in both the quality and cost efficiency of health care provision for acutely ill patients.

**Recommendations**

Healthcare staff and patients both suggested improvements in the design of the faecal management system, which include:

- ▶▶ An odour filter similar to that used in stoma bags
- ▶▶ Opaque bags to prevent the contents being easily viewed.

**Conclusion**

A system which diverts and contains the bowel contents and prevents the patient lying for any time in a pool of faecal fluid must be beneficial to patient care. Poorly managed incontinence will lead to moisture lesions and sacral ulceration, which is expensive to manage and causes unnecessary pain and discomfort to patients (Cooper, 2002).

In this evaluation, the apparent high cost of a single faecal management system was offset by the huge savings to be made in terms of nursing time as well as the quality benefits of improving patient comfort and dignity. **CUK**

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- ▶▶ Intensive care staff: Lorraine Hills, Jill Hocaniuk, Lisa Banks
- ▶▶ Ward staff: Tracey Day, Denise Smith.

**Key Points**

- ▶▶ Faecal incontinence is difficult to manage in acutely ill patients.
- ▶▶ The nursing workload involved in maintaining patients' skin integrity is high.
- ▶▶ Moist skin lesions lead to sepsis and unnecessary pain.
- ▶▶ Containment systems may be beneficial in preventing the spread of spores in *Clostridium difficile* infection.
- ▶▶ Many trusts across the UK are beginning to use these systems to manage outbreaks of HAIs as the benefits of containment cannot be underestimated.
- ▶▶ In this evaluation, the apparent high cost of a single faecal management system was offset by the huge savings to be made in terms of nursing time.

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# Management of Acute Faecal Incontinence Guideline

## PATIENT PRESENTS

Acute diarrhoea characterised by more than one episode of faecal incontinence in a two-hour period. Bristol stool chart type 6–7.

If patient is known to suffer from chronic faecal incontinence, refer to NICE guidelines on management of faecal incontinence.

If patient is suffering from acute diarrhoea and severe skin loss to buttocks/perianal area, insert faecal management system to prevent faecal contamination.

Send sample for culture and isolate patient if practical. Instigate local infection control policies. Commence stool chart.

Consider cause, for example:  
Foreign travel  
Length of stay before episode  
Medication  
History of *Clostridium difficile*.

Instigate further investigations, including:  
Rectal examination  
Blood tests  
X-ray.

Exclude impaction with overflow. Inform doctor or continence specialist.

### Management options include:

- Insertion of a faecal management system
- Loperamide (if no infection is present)
- Use of external containment devices
- Refer to local tissue viability/ pressure relief policy and consider the maintenance of skin integrity
- Consider potential for patient dehydration and options for measurement of fluid balance, electrolytes, albumin and white cell counts (if infection present)
- Monitor (including abdominal examination as a minimum) for evidence of colitis and/or toxic megacolon.

CONSIDER  
MANAGEMENT  
OPTIONS

# Continence UK

# BEST PRACTICE IN CLOSTRIDIUM DIFFICILE MANAGEMENT

Martin Kiernan

*Clostridium difficile* is a healthcare-associated infection that is affecting increasing numbers of people each year. Although the rate of annual increase in cases has begun to slow, there were still 55,681 cases in patients over the age of 65 reported in 2006 (Health Protection Agency, 2007). In addition to the morbidity and mortality, the impact in terms of bed days lost due to increased length of stay and cost is a significant drain on NHS resources. This article examines the epidemiology of *C. difficile*, its clinical impact and the potential for cross-infection. It also outlines methods for prevention and control.

## Key Words

Faecal incontinence  
Cross-infection  
*Clostridium difficile*  
Faecal management

The bacterium *Clostridium difficile* is a gram-positive, spore-forming anaerobic bacillus that was first linked with clinical expressions of disease in 1978. *C. difficile* produces two toxins, A and B, that are the virulence factors responsible for the inflammation, fluid and mucosal secretions, and mucosal damage that leads to diarrhoea or colitis.

There are in excess of 150 strains of this organism, with type 001 being the most common in hospitals and the 010 strain featuring more often in the community. The epidemiology is changing, however, and type 106 is increasing as are reports of the highly virulent 027 strain that affected Stoke Mandeville hospital in Aylesbury. The resulting outbreak was subject to investigation by the Healthcare Commission in 2006.

Martin Kiernan, is a Nurse Consultant in the Prevention and Control of Infection at Southport and Ormskirk Hospital NHS Trust

It is generally accepted that several factors contribute to the development of *C. difficile* infection. The organism lives in the gut of approximately 2% of the population, however; this increases to 30% in elderly patients who have taken antibiotic medication or in those who have been exposed to the organism by spending time in healthcare settings.

Broad-spectrum antibiotics, which are often necessary to treat primary infections, increase the risks of infection in people aged over 65. Diarrhoea may commence within a few days of the patient receiving antibiotics, although up to two months may pass before the onset of disease. This makes the mechanism and location of cross-infection almost impossible to determine.

Other significant risk factors are listed in *Table 1* and there is now recognition of the important role that proton pump inhibitors play in reducing the pH in the gut, thereby allowing the passage of spores into the colon where they can cause disease.

## Antibiotic use and abuse

Adherence to a regularly reviewed antibiotic policy with the availability of specialist advice from a designated antibiotic pharmacist should be common practice in all healthcare settings. Clinical teams should regularly

consider the need for antibiotic therapy and the routes by which it is delivered. Challenges to inappropriate practice should be viewed by clinicians as an opportunity to improve practice. Nurses should be aware that the administration of antibiotics increases risks to patients and be vigilant for the onset of symptoms. *Table 2* shows the risk levels for *C. difficile* disease in each group of antibiotics.

## The clinical impact of *C. difficile*

Although it is possible to be asymptotically colonised with *C. difficile*, this organism is responsible for a wide spectrum of clinical features, ranging from uncomplicated diarrhoea through to pseudomembranous colitis, toxic megacolon, intestinal perforation possibly leading to sepsis, and even death. The toxin produced by the organism is internalised by the gut's epithelial cells, resulting in cellular death and fluid accumulation. In some cases the migration of neutrophils and the resulting inflammatory response causes the formation of classical plaques in the colon and pseudomembranous colitis.

The clinical impact on many patients is the onset of profuse, frequently explosive diarrhoea that has a distinctive odour. Patients frequently experience abdominal pain and reduced mobility. The diarrhoea may also cause the patient to become dehydrated and

**Table 1**

## Risk factors for *Clostridium difficile* disease

- Age > 65 years
- Antibiotic therapy, particularly cephalosporins, clindamycin
- Underlying bowel disease
- Proton pump inhibitors
- PEG feeds
- Physical proximity to a symptomatic patient

fluid balance should be monitored and recorded in order to prevent this. However, in practice this can be difficult as patients are frequently incontinent making accurate estimation of fluid loss problematic.

### Cross-infection risks

*C. difficile* is frequently associated with outbreaks of infection, with many being reported in the literature (Kyne, Merry et al, 1998; Djuretic et al, 1999; McFarland et al, 2007). The organism has a particular ability to protect itself when exposed to harsh conditions. Once placed in a dry, oxygenated environment the organism rapidly dies, leaving behind spores that can lay dormant for many months while awaiting the opportunity to contaminate and germinate within a new susceptible host.

The environment around infected patients rapidly becomes contaminated with the spores that are expelled from the body during episodes of explosive and liquid diarrhoea. These spores can contaminate items such as commodes and reusable electronic rectal thermometers. These items have been implicated in outbreaks, and providing single-use items for individual patients can eliminate this source of contamination (Brooks et al, 1992).

### Control measures

#### Isolation

Early recognition and prompt and effective isolation of symptomatic patients is the cornerstone of effective management of cross-infection,

preventing the environment from becoming grossly contaminated. Where isolation rooms are limited in number, early consideration must be given to cohort bays, or in extreme circumstances, whole wards. This form of prompt action meant that an outbreak of the virulent 027 strain in 2005 at the Royal Devon and Exeter Hospitals Foundation NHS Trust was brought rapidly under control. The isolation ward was subsequently re-established as a normal ward within a relatively short period of time, preventing the organism from becoming endemic in the wider hospital environment.

## Alcohol gels are not as effective against *C. difficile* spores as they are against vegetative forms of bacteria and soap and water should be used to decontaminate hands when caring for patients with this infection.

Isolation is only effective when the patient is placed in a single room. In an optimal situation any patient with diarrhoeal symptoms would be placed in a side room until the cause of the symptoms could be verified. However, in practice this is not possible in many NHS organisations due to the demands on bed capacity (Wigglesworth and Wilcox, 2006). In this case it is crucial to carry out a risk assessment and obtain specimens as soon as possible in order that any patient presenting a cross-infection risk can be rapidly identified.

### Hand Hygiene

Hand hygiene remains a cornerstone of any infection prevention programme. Johnson et al (1990) describe a case where *C. difficile* spread among patients in a surgical ward. Crucially, the index case was a patient who had a stoma and although no other cases were discovered among patients sharing the same room, other infections were discovered in those under the care of the same surgical team.

This led the authors to propose that poor hand hygiene among the medical staff was responsible for transmission of the organism. This report also demonstrates the ability of systems that keep liquid faeces from contaminating the environment to prevent cross-infection.

It is important to recognise that alcohol gels are not as effective against spores of *C. difficile* as they are against vegetative forms of bacteria and that soap and water should be used to decontaminate hands when caring for patients with this infection.

### Reducing the burden in the environment

Cleaning standards, particularly of patient equipment such as commodes and mattresses, need to be of a measurably high level with evidence of regular audit. Facilities and equipment must be fit for purpose and reviewed by infection control teams where specialist advice is required. The interior foam of mattresses may become contaminated with liquid stools, especially when there is damage to the mattress cover. There should be evidence of regular internal inspection and audit of mattresses with a planned replacement programme in place.

**Table 2**

## Relative risks of *Clostridium difficile* in antibiotic groups

| High Risk                     | Medium Risk   | Low Risk   |
|-------------------------------|---|--|
| Cephalosporins<br>Clindamycin | Ampicillin/Amoxycillin<br>Co-trimoxazole<br>Macrolides<br>Tetracyclines<br>Fluoroquinolones | Aminoglycosides<br>Metronidazole<br>Antipseudomonal penicillins<br>B-lactamase inhibitor<br>Rifampicin<br>Vancomycin |

In order to facilitate effective cleaning, there must be 24-hour access to cleaning equipment and clear guidelines and protocols should be available in order that every member of the organisation knows where the responsibility for cleaning lies, even down to individual items of equipment. Published studies on the effectiveness of disinfectants indicate that chlorine-releasing agents are likely to be effective at reducing the burden of spores in the environment (Wilcox et al, 2003).

### Faecal management

Patients who are passing frequent, liquid stools present an infection risk to other vulnerable patients as they are associated with contamination of the environment. As mentioned above, it has been shown that a patient with a colostomy bag did not cross-infect other patients in a shared room even though patients under the same surgical team were infected. This highlights both the potential for containment but also the importance of hand hygiene between patient contacts (Johnson et al, 1990).

The faecal management approach can be suitable for the patient with acute liquid diarrhoeal stools. This system also has other advantages in that it enables accurate monitoring of fluid loss, which is often a cause of significant morbidity in the acutely ill patient.

A report from the Health Protection Agency Rapid Review Panel (2007), which reviews evidence and makes recommendations to the Department of Health, has recently considered the Flexi-Seal® FMS system (ConvaTec, Ickenham). The system was given a category I recommendation, which means that 'the product demonstrated effectiveness in containing faeces and preventing faecal contamination of the surrounding environment. Clinical contraindications should be assessed before use'.

This recommendation states that basic research and development, validation and recent use in evaluations have shown that the system should be available to NHS bodies for inclusion in their cleaning, hygiene or infection control protocols.

### Conclusion

*C. difficile* reduction is achievable with a range of effective infection control interventions. Early detection of cases, timely isolation, reduction of environmental contamination and the rapid recognition of increases in case numbers resulting in enhanced infection control measures are crucial if the locally agreed reductions in *C. difficile* rates are to be achieved. The targets are worth achieving from a financial aspect alone, since a 50% reduction would save the NHS over £100m per year.

### Patients who are passing frequent, liquid stools present an infection risk to other vulnerable patients as they are associated with contamination of the environment.

However, all this is of secondary importance to the real goal, which is to reduce the risks to vulnerable patients and everybody working in infection prevention and control should be striving to achieve this. Coupled with the emergence of new, more virulent forms of *C. difficile*, such as the 027 strain, and a continually changing epidemiology, there is a considerable challenge to be faced over the next few years. **CUK**

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### Key Points

- ▶ *Clostridium difficile* is an important pathogen in the healthcare setting.
- ▶ It is responsible for considerable morbidity and mortality.
- ▶ Cross-infection is a significant cause of many of these infections.
- ▶ Effective infection control measures are required in order to limit the potential for spread of this organism.
- ▶ Environmental contamination involves a major reservoir of spores that can lead to cross-infection.
- ▶ *C. difficile* reduction is achievable with a range of effective infection control interventions.
- ▶ Early detection of cases, timely isolation and reduction of any environmental contamination are crucial.

[www.hpa.org.uk/infections/topics\\_az/rapid\\_review/pdf\\_june\\_07/ConvaTec\\_Flexi-SealFaecalManagementSystem.pdf](http://www.hpa.org.uk/infections/topics_az/rapid_review/pdf_june_07/ConvaTec_Flexi-SealFaecalManagementSystem.pdf) (accessed 10/9/07)

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# FAECAL INCONTINENCE AND ITS EFFECT ON SKIN INTEGRITY

Pauline Beldon

As the average age of the UK population rises, there is an associated increase in the risk of faecal incontinence due to patients' co-morbidities and prescribed medications. Whatever the cause, faecal incontinence can result in great distress to the individual and presents a problem to the healthcare professional as it has a major impact on the tissue viability of the peri-anal and sacral area. This article considers the associated symptoms, including erythema, oedema, oozing, vesiculation, crusting and secondary infection, all of which may lead to the formation of a moisture lesion.

## Key Words

Faecal incontinence  
Skin integrity  
Moisture lesions  
Management

The average age of the UK population is on the increase and the proportion of the population aged 65 years and over has risen, while the proportion of those aged 16 years and younger has decreased. The greatest increase has been in those aged 85 years and older (Department of Health [DoH], 2006). As the population ages there is an associated increase in faecal incontinence due to co-morbidity and prescribed medication.

The Royal College of Nursing (RCN) state that the incidence of patients in residential and nursing homes with faecal incontinence is one in four (RCN, 1998). However, this does not allow for the lack of reporting by otherwise independent individuals living at home or those cared for by their family.

Pauline Beldon, Tissue Viability Nurse Consultant,  
Epsom and St Helier University Hospitals NHS  
Trust, Surrey

## The ageing skin

It is worth considering the effects of ageing on the skin as these can result in a higher risk of injury. In an older person's skin, the epidermis flattens due to loss of the interdigitating papillae, which in younger skin maintains a close connection between the epidermis and dermis. As a consequence, the epidermal and dermal layers peel apart more easily and are more prone to friction/shearing forces.

In addition, the dermis reduces in bulk (Shuster et al, 1975) due to cell reduction and the number of dermal capillaries are also reduced, resulting in less oxygen, nutrients and fluids being delivered to the skin. Consequently, the skin becomes drier and more prone to injury. Epidermal turnover declines with age (Fiers, 1996). The subsequent loss of oils, reduction in subcutaneous fat and loss of elasticity mean that barrier function is reduced and there is an increased risk of skin irritation (Wysocki, 2000). The most visible sign is that of dryness and wrinkling.

## Faecal incontinence in the elderly

Faecal incontinence can affect both genders at any age and is estimated to affect 1–2% of the total population, with the prevalence rising with age. The prevalence is estimated as being as high

as 7% in adults aged 65 years or over (Soffer and Hull, 2000). However the true numbers are difficult to determine, as many adults will self-care rather than face the embarrassment of admitting faecal incontinence to a healthcare professional (Johanson and Lafferty, 1996).

In long-term care, faecal incontinence has been estimated at 29.5% (Sgadari et al, 1997), while in the hospitalised elderly faecal incontinence is estimated to affect between 17–66% of patients (Brown and Sears, 1993). As the population ages and more of the very elderly move into institutional care, it is likely that this problem will be increasingly recognised.

## The impact of faecal incontinence on skin integrity

The skin is a vital organ and is responsible for many functions, including sensation, the secretion of sebum, the excretion of sweat (cooling), vitamin D formation, the production of pigment and, perhaps most importantly, the provision of a barrier to the outside world and the protection of internal structures. Once this barrier is breached the risk of injury to the individual increases.

Healthy skin needs to maintain an acid mantle with a pH of between 4–6.8 as well as a moist surface, which is provided by the production of natural oils in the sebaceous glands. These two



**Figure 1: Incontinence dermatitis.**

elements prevent fissures and cracking of the skin, both protecting skin integrity and discouraging bacterial colonisation (Fiers, 1996).

In drier elderly skin, the reduction of natural water and fat emulsion modifies the water/protective barrier of the epidermis (Richey, 1988). Consequently, the skin becomes more prone to damage from excessive hydration. In the case of faecal incontinence, frequent watery and loose faeces will over-hydrate the skin causing it to become more permeable.

In addition, this excessive hydration causes an increase in the friction coefficient (Nach et al, 1981). This elevated skin coefficient renders the elderly skin especially vulnerable to friction/shear forces.

Faeces contain both proteolytic and lipolytic enzymes that are used during digestion and these are deactivated as faeces passes through the digestive tract. However, if faeces is not removed from contact with the skin, the ammonia released from faeces causes a shift in the acid mantle of the skin towards alkalinity.

This alkaline pH reactivates the digestive enzymes causing further skin irritation (Berg, 1986). At this stage, skin which has been frequently assaulted by loose faeces will become taut, painful and erythematous and is classed as incontinence dermatitis (Figure 1) (Keller et al, 1990).

Once the barrier function of the skin has been compromised it is far more likely to be attacked by bacteria, leading to incontinence dermatitis

or a moisture lesion. Up to 60% of faecal matter is comprised of bacteria, incorporating between 4–500 species of micro-organism (Whitman, 1991). These pathogens destroy the skin's epidermal layer, effectively denuding the skin. *Candida albicans*, a yeast native to the gut, is the most common microbe found on the skin and in combination with the excessive moisture caused by incontinence, can result in intertrigo (Donovan et al, 2002). Treatment includes good skin care and the application of a topical imidazole antifungal agent.

The combination of moisture, friction and shearing, together with bacteria and enzymatic activity on ageing and thinning skin, may lead to tissue breakdown without prompt, appropriate intervention.

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**In elderly skin, the reduction of natural water and fat emulsion modifies the water/protective barrier of the epidermis and the skin becomes more prone to damage from excessive hydration.**

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#### **Skin cleansing and protection**

In general it is inadvisable for older people to use soaps as cleansers as their skin is often already dry and becomes drier due to the astringent effect of soap. A soap alternative or a low pH soap is preferable (Le Lievre, 2002). The skin should be washed immediately after every episode of faecal incontinence, again preferably without using soap since most bar soaps also have an alkaline pH and are likely to exacerbate any existing dermatitis (Nix, 2000).

In addition, the surfactants found in soaps can act as irritants and are likely to cause further injury (Bryant and Rolstad, 2001). Products that fall between a pH of 4–7 should not add aggravate poor skin integrity (Haugen, 1997).

No-rinse skin cleansers can be soothing and effective as they generally contain a gentle, non-irritant surfactant, which helps to emulsify and loosen

faeces and cleanse the skin, negating the need to rub and cause further damage (Scardillo and Aronovitch, 1999). However, plain warm water can also be used as long as the healthcare professional ensures that the skin is patted dry rather than rubbed as this causes further friction (Le Lievre, 2002). Protection of the skin using a barrier cream is necessary for some individuals, although it should be remembered that with each episode of incontinence the barrier cream should be removed to avoid layers of barrier cream and faeces forming in close contact with the skin.

The ingredients in moisture barrier creams include petroleum, dimethicone, lanolin or zinc oxide and it is useful to remember that older people can also develop skin sensitivities to these preparations. Creams are water-based preparations, while ointments are oil-based and offer greater skin protection because they are more occlusive (Nix, 2006).

Liquid barrier films consist of polymers combined with a solvent. When applied to the skin the solvent evaporates and the polymer dries to form a barrier. Barrier films must be applied as soon as faecal incontinence is suspected – if the skin is already compromised then the film may irritate the dermis, further exacerbating the problem (Donovan et al, 2002).

#### **Moisture lesion or pressure ulcer?**

The dangers associated with moisture, friction/shearing and pressure are well documented, therefore it is no coincidence that pressure ulcer risk assessment tools include the individual's continence status as a potential risk (Norton, 1975; Waterlow, 1985; Braden and Bergstrom, 1994). The European Pressure Ulcer Advisory Panel (DeFloor et al, 2005) issued a statement aimed at differentiation between pressure ulcers and moisture lesions, stating that 'due to the location of moisture lesions, these lesions are the ones most often misclassified as pressure ulcers'.

The difficulty for the inexperienced nurse is that patients and carers will

often leap to an assumption that any lesion in the sacral area must be a 'bed sore'. As always, clear communication with patients and carers is essential to ensure that they are aware that episodic diarrhoea, especially when linked to an outbreak of Norovirus or *C. difficile*, may lead to a moisture lesion in the acutely ill and immobile patient who cannot independently reach a toilet and therefore may soil themselves.

However, nurses must also be clear that a moisture lesion is equally as serious as a pressure ulcer and that steps must be taken to ensure the tissue viability of the patient. The EPUAP has devised a pressure ulcer classification self-assessment (PUCLAS) tool that all practitioners can use to determine their skill and level of knowledge (<http://www.epuap.org/puclas/index.html>).

There is also the danger that a patient may be so acutely ill that they develop pressure damage, secondary either to acute illness or a moisture lesion as pressure ulcers and moisture lesions are not mutually exclusive (Figure 2). The management of a patient with both a pressure ulcer and a moisture lesion due to episodic diarrhoea is complicated and likely to require a multidisciplinary team approach, including continence advisor, infection control nurse and tissue viability nurse.

Such patients may require pressure-relieving equipment, strict fluid balance monitoring to avoid dehydration, wound dressings, skin care, and the use of a faecal management system to avoid further contact between faeces and skin thus



**Figure 2:** Moisture lesion and pressure ulcer in sacral area.

avoiding contamination of the pressure ulcer (Beldon, 2007).

### Conclusion

Acute episodic diarrhoea presents a danger to the skin integrity of the peri-anal and sacral area, especially in the very young or very old. However, older people are likely to suffer irritant continence dermatitis or even develop a moisture lesion, which in the acutely ill, malnourished and immobile patient can lead to pressure damage.

It is vital that healthcare professionals have an up-to-date knowledge of both moisture lesions and pressure ulcers and are able to utilise the appropriate assessment tools and skin care regimes in order to prevent a bad situation from becoming worse. **CUK**

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