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# Effective management of acute faecal incontinence in hospital: review of continence management systems

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This paper reviews the scientific literature regarding current systems available for the management of acute faecal incontinence (FI) in hospital patients. The review searched Medline from 1950 to October 2009 using the adapted search strategy, as devised by the Cochrane Incontinence Group, in order to identify studies relevant to this review, yielding 197 records. Ten studies fitted the inclusion criteria with none of the studies being randomised control trials. Characteristics identified from the studies included: duration of the management devices, cost implications, length of patient stay, contraindications and patient assessment. The management of acute FI in acute settings is a relatively ignored problem, with little available evidence to support a standardised approach to its management. The review highlights the need for early identification of contraindications when FI management systems are being used, particularly in patients administered antithrombotic drugs such as aspirin.

## Introduction

The management of acute faecal incontinence (FI) in acute settings is a relatively ignored problem, with little available evidence to support a standardised approach to its management.<sup>1,2</sup> FI is defined as the inability to control gas or stools, ranging from mild difficulty with gas control to complete loss of control over liquid and formed stools.<sup>3</sup> This could be debilitating and intensely embarrassing to those affected and in many cases it has a profound impact on the patient's quality of life,<sup>4</sup> outcomes and their dignity. FI could be caused by differing aetiology or artificially induced through paralysis. Although medically derived interventions are used to deal with FI, including drug therapy, it is often nursing practice which provides direct patient care and management.<sup>5-8</sup>

FI has been explored from the perspective of chronic conditions with associated aetiology of a variety of disorders.<sup>4</sup> Prevalence data are difficult to determine from the chronic perspective, as it relies on patient self-reporting, and as patients with FI suffer embarrassment, shame and depression, it is often under-reported.<sup>9</sup> Other epidemiological studies have reported varying prevalence due to different populations sampled, differences in data collection and no standard definition.<sup>4</sup> Reported prevalence ranges from 4.4%<sup>10</sup> in the community population to 18.4% in outpatient settings.<sup>9</sup> In the UK, the Department of Health estimated that in institutional care, the prevalence of regular FI is as high as 25%.<sup>6</sup>

FI in hospital patients is often the result of multiple factors, or the result of another treatment that cannot be discontinued.<sup>11</sup> FI is one of the associated problems with prolonged immobilisation, especially among the elderly and critically ill. Nursing care of bedridden patients with FI is more labour intensive and increases the risk of perianal wound infection.<sup>12</sup> Indeed, FI related problems have the potential to influence length of stay in hospital, gaining hospital infections and increasing the amount of nursing interventions required.<sup>13</sup>

The incidence and prevalence of FI has received very little attention, particularly in acute settings, despite the implication to healthcare resources. To our knowledge, no systematic reviews have been undertaken in FI management systems.

## Objectives

The aim of this paper is to provide clinicians with an updated and thorough review of the scientific literature about current systems available for the management of acute FI in hospital patients.

## Methods

### Inclusion criteria for the review

All studies describing patients who required the management of acute FI during their stay in hospital.

Primary outcomes:

1. Safety of FI management systems
2. Infection control measured by pathology reports.

Secondary outcomes:

1. Compliance of FI management systems
2. Prolonged stay in hospital
3. Cost of FI management systems.

Selection of studies

The reviewer group (KO and WG) screened the abstracts of all identified articles. All relevant studies were assessed for inclusion by both reviewers independently based on the selection criteria. Conflicts were resolved by a third reviewer (SL).

Appraisal and data extraction

The identified studies were appraised using standardised criteria to assess the study. Relevant studies were included in the data analysis; characteristics of each study were summarised alongside the main outcomes.

### Search methods for identification of studies

Electronic searches

This review searched Medline from 1950 to October 2009 using the adapted search strategy, as devised by the Cochrane Incontinence Group, in order to identify studies relevant to this review (see appendix 1, available online).<sup>14</sup>

Additional searches

The reference lists of all articles obtained as full reports were reviewed to identify any further studies not retrieved by the electronic search. Personal communications, conference abstracts and unpublished studies from book chapters on FI management systems were sought. In addition, the authors reviewed internet websites, including the National Institute for Health and Clinical Excellence, and the Bladder and Bowel Foundation. The review did not apply any language restrictions.

The search strategy yielded 197 records which were screened by reading the title and abstract. Forty-three studies were considered eligible and were reviewed as full text. The authors did not retrieve any unpublished studies.

The main reason for the exclusion of a study was that they were not carried out in a hospital setting. Ten studies were included for this review (see appendix 2, available online).

### Description of included studies

Characteristics of selected study

None of the studies were randomised control trials.

Most of the studies (n=7)<sup>11 15–20</sup> were prospective cohort studies, with one case study<sup>12</sup> and one case

series<sup>21</sup> study identified. One study did not describe their research methodology.<sup>13</sup>

Five studies<sup>11 16 18 19 21</sup> utilised less than 50 patients (range 1–42); only two studies<sup>17 20</sup> utilised >100 patients.

The age range of patients varied, with the majority classified as older adults. Four studies<sup>11 12 15 21</sup> were carried out in intensive care units and three in burns units.<sup>16–18</sup>

## Results

### Management

One study<sup>16</sup> used both Zassi and Flexi-seal management systems. Three studies used Zassi,<sup>15 17 18</sup> three used Flexi-seal,<sup>11–13</sup> one used a 'rectal trumpet'<sup>21</sup> and two used incontinence pads<sup>19 20</sup> to manage FI in immobilised patients.

### Duration

Five studies reported prolonged length of inpatient stay as ranging from 1 to 152 days.<sup>11 15 16 19 20</sup> Two studies<sup>15 16</sup> reported mean length of stay as 80 days in hospital.

Three papers<sup>16 18 21</sup> reported a delay in the use of a faecal management system ranging from 72 h to 10 days. One paper<sup>21</sup> provided a reason for the delay; the previous use of a perianal pouch that had failed.

Eight studies<sup>11–13 15–18 21</sup> provided information on the duration of the FI management systems being in situ during the period (range 36 h to 70 days). One study stated the mean duration of rectal intubation as being 35 days (range 6–70 days)<sup>16</sup> using both the Flexi-seal and Zassi systems.

### Cost implication

Three papers<sup>17–19</sup> reported a reduction in the number of bed linen changes, soiling episodes and staff costs in patients with FI management systems. In a prospective study of 29 patients, costs of incontinence pads and bed linen changes were estimated at \$49 (Australian) per 24 h; however, this was a combined analysis of urinary and FI.<sup>19</sup> Retrospectively, Echols *et al* determined that in burns patients, using a bowel management system was more cost effective than hygiene and bed linen change, over time. They estimated that after the initial higher unit cost of the bowel management system application, the costs reduced to virtually zero with continuation of use.<sup>17</sup> No direct costs were estimated in a prospective study completed in 20 faecal incontinent patients who had a bowel management system in situ but there was a significant reduction in bed linen and wound dressing changes, suggesting cost reduction.<sup>18</sup>

### Contraindications

Only one paper<sup>12</sup> reported medication as antithrombotic therapy, including aspirin, resulting in rectal bleeding in patients while the FI management system was in situ.

### Patient assessment

Three papers<sup>11 15 16</sup> used digital examination and four<sup>12 13 17 21</sup> excluded patients if they had a dilated sphincter,

prolapsed, ulceration, rectal bleeding or previous bowel surgery.

The majority of the studies (n=8) did not provide information regarding stool modification but one study used laxatives<sup>16</sup> and another used daily irrigation.<sup>17</sup> Nine<sup>11-13 15 17-21</sup> studies reported daily evaluation of the FI management system. Four studies<sup>11 13 18 21</sup> reported good tolerance in patients while using the FI management system, one study<sup>16</sup> reported discomfort in one of the patients in the study and one study<sup>12</sup> reported rectal bleeding. It is generally accepted that utilisation, when correctly indicated, of a FI management system can improve the dignity of patients suffering with acute FI and has the potential to improve their psychological well being.

## Discussion

FI in hospital patients is often overlooked with the management of the problem being given a low priority.<sup>22</sup> This review was carried out in partnership with the intensive therapy units within two National Health Service District General Hospitals in the UK. We wished to investigate the evidence based practice underpinning the use of FI management systems as, to our knowledge, no such review had been undertaken in the UK.

This review assessed the use of FI management systems within an acute hospital setting. A total of 10 articles were identified, with the majority having a small sample size. Studies included were mainly cohort studies, none was a randomised control trial, and therefore it was not possible to compare the effectiveness and cost effectiveness of the different FI management systems. It is important to note that three papers<sup>17-19</sup> reported costing of FI management systems. Despite the initial cost of the system, they proved to have a cost saving effect compared with changing bed linen.<sup>17</sup> When FI management systems were used, there was a significant reduction in the mean bed linen change in patients<sup>18</sup> and a reduction in staff costs.<sup>19</sup>

One of our main interests was the prolonged length of stay in hospital which could lead to perineal complications due to acute FI; two studies<sup>15 16</sup> reported the average stay in hospital as 80 days. Traditional strategies for managing FI, such as incontinence pads and linen changes, can be arduous and time consuming for health care professionals. Prolonged exposure to acute FI can increase length of stay in hospital, with a potential for an increase in the risk of infection, exposure to wetness, exposure to faeces in the bed linen and odour that will cause discomfort and embarrassment for the patients.<sup>11</sup> FI management systems divert faecal matter into a containment unit away from patient's skin and wounds and therefore it is reasonable to assume that there may be a reduction in the spread of infectious diarrhoea to other patients or staff. Additionally, containment of FI can promote the wellbeing and the dignity of patients while in hospital.

This review highlights the need for early identification of contraindications when FI management systems are being used, particularly in patients being administered antithrombotic drugs such as aspirin. There is a single case report of rectal bleeding associated with a faecal containment system in a patient receiving antithrombotic agents.<sup>12</sup>

It is recommended that digital examination be undertaken prior to the insertion of the FI management systems, and this should be recommended as good practice to health care professionals. Patients who have suspected or confirmed rectal mucosa impairment, recent large bowel surgery or rectal surgery within the past year, sensitivity or allergies to any of the materials used in the device, rectal or anal injury, severe rectal or anal stricture or stenosis, faecal impaction, poor rectal tone, rectal/anal tumour and severe haemorrhoids should be excluded from the use of FI management system, as there is a risk of damage to the bowel and other local tissues.

Additionally a bowel/faecal management system is not suitable for spinal cord injury patients due to the high risk of autonomic dysreflexia that usually occurs in people with a spinal cord lesion above the level of the sixth vertebra. Autonomic dysreflexia can have damaging outcomes such as cerebral haemorrhage, seizures and cardiac arrest.<sup>23</sup> Therefore, a bowel/faecal management system is not suitable for spinal cord injury patients due to the high risk of autonomic dysreflexia.<sup>24</sup>

Daily assessment and evaluation of the patient's condition should be undertaken while FI management systems are in place to ensure early detection of possible adverse events. A small number of papers reported delay in the use of FI management systems with only one reason being identified, that of the failure of the previous FI management system, a perianal pouch.<sup>21</sup> Therefore, it is important that a concise record of reasons for delay in the use of a system be recorded.

## Limitations and implications for practice and research

The limitations of this review are consonant with the paucity of published studies identified in FI management. None of the studies included in the review used RCT methodology and generally had limited information on: the prolonged stay in hospital, delay in the use of FI management systems, medication information, contraindication process, reduction in the spread of infectious diarrhoea to other patients, or staff or stool modification.

It is recognised that the unit cost of FI management systems are high but it has been identified<sup>17-19</sup> that there are significant savings on linen changes, soiling episodes and nursing time when using such devices. Maintaining and promoting the dignity of patients is significant when using a FI management system. In this review there is some evidence presented that using a faecal collection system can reduce cross infection

### What is already known about acute faecal incontinence/what this paper adds

Faecal incontinence (FI) in hospital patients is often overlooked, with management of the problem being given a low priority. This review highlights the need for early identification of contraindications when FI management systems are being used, particularly in patients being administered antithrombotic drugs such as aspirin. It is recommended that digital examination be undertaken prior to the insertion of FI management systems and this should be recommended as good practice to health care professionals.

rates; it seems that their use can assist in the prevention of spread, particularly when removing soiled linen from the patient's bed area.

There is also a possible recommendation for resource managers in that one study demonstrated a lower cost by using a faecal collection system assessed against workload and time saved.<sup>19</sup> However this needs further evaluation to establish true costs and effectiveness. Despite recent policy interest in the management of acute FI within the hospital setting, there remains little guidance on the most effective and appropriate approach for practitioners to manage this condition. The authors currently await the publication of the National Infection Control Initiative in 'showcase' hospitals' exploring the case for using faecal collection devices to reduce infection rates.

### Conclusion

The management of acute FI requires the development of clear, evidence based guidelines that assist in promoting infection control measures, protecting the skin and supporting patient dignity. This review offers some important implications for clinical practice. Given that there is little published evidence, locally derived guidelines, utilising this review, audit data and expert consensus may currently be the best way forward to provide good safe management of FI in acute settings. From the findings of the review, it appears that when considering using a faecal collection device or system, there are a number of contraindications and safety precautions to be aware of. Therefore, it is appropriate to propose that each patient with FI is competently assessed before a management option is commenced.

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### References

1. Steele RJ, Campbell KL. Managing faecal incontinence. *BMJ* 2005;330:207–8.
2. Norton C, Thomas L, Hill J, *et al.* Management of faecal incontinence in adults: summary of NICE guidance. *BMJ* 2007;334:1370–1.
3. Baxter NN, Rothenberger DA, Lowry AC. Measuring fecal incontinence. *Dis Colon Rectum* 2003;46:1591–605.
4. Madoff RD, Parker SC, Varma MG, *et al.* Faecal incontinence in adults. *Lancet* 2004;364:621–32.
5. Roper N, Logan WW, Tierney AJ. *The elements of nursing: a model for nursing based on a model of living.* Edinburgh: Churchill Livingstone, 1996.
6. Department of Health. Good Practice in Continence Services, 2000.
7. Walsh M, Watson JE. *Watson's clinical nursing and related sciences.* Edinburgh: Bailliere Tindall, 2002.
8. Faecal incontinence: the management of faecal incontinence in adults. London: NICE, 2007.
9. Johanson JF, Lafferty J. Epidemiology of fecal incontinence: the silent affliction. *Am J Gastroenterol* 1996;91:33–6.
10. Faltin DL, Sangalli MR, Curtin F, *et al.* Prevalence of anal incontinence and other anorectal symptoms in women. *Int Urogynecol J Pelvic Floor Dysfunct* 2001;12:117–20.
11. Padmanabhan A, Stern M, Wishin J, *et al.* Clinical evaluation of a flexible fecal incontinence management system. *Am J Crit Care* 2007;16:384–93.
12. Page BP, Boyce SA, Deans C, *et al.* Significant rectal bleeding as a complication of a fecal collecting device: report of a case. *Dis Colon Rectum* 2008;51:1427–9.
13. Marín Vivó G, Calixto Rodríguez J, Rodríguez Martínez X. [Fecal control system Flexi-Seal FMS]. *Rev Enferm* 2008;31:16–20.
14. Grant AM, Cody DJ, Glazener CMA, *et al.* (eds). Cochrane Incontinence Group. The Cochrane Collaboration (Cochrane Review Groups), 2007.
15. Benoit RA Jr, Watts C. The effect of a pressure ulcer prevention program and the bowel management system in reducing pressure ulcer prevalence in an ICU setting. *J Wound Ostomy Continence Nurs* 2007;34:163–75.
16. Bordes J, Goutorbe P, Asencio Y, *et al.* A non-surgical device for faecal diversion in the management of perineal burns. *Burns* 2008;34:840–4.
17. Echols J, Friedman BC, Mullins RF, *et al.* Clinical utility and economic impact of introducing a bowel management system. *J Wound Ostomy Continence Nurs* 2007;34:664–70.
18. Keshava A, Renwick A, Stewart P, *et al.* A nonsurgical means of fecal diversion: the Zassi Bowel Management System. *Dis Colon Rectum* 2007;50:1017–22.
19. Morris AR, Ho MT, Lapsley H, *et al.* Costs of managing urinary and faecal incontinence in a sub-acute care facility: a "bottom-up" approach. *Neurourol Urodyn* 2005;24:56–62.
20. Palese A, Regattin L, Venuti F, *et al.* Incontinence pad use in patients admitted to medical wards: an Italian multicenter prospective cohort study. *J Wound Ostomy Continence Nurs* 2007;34:649–54.
21. Grogan TA, Kramer DJ. The rectal trumpet: use of a nasopharyngeal airway to contain fecal incontinence in critically ill patients. *J Wound Ostomy Continence Nurs* 2002;29:193–201.
22. Dorman BP, Hill C, McGrath M, *et al.* Bowel management in the intensive care unit. *Intensive Crit Care Nurs* 2004;20:320–9.
23. NPSA. Patient Safety Information, 2004.
24. Johnston A. Evaluating Flexi-seal FMS: a faecal management system. *Wound UK* 2005;1:110–14.