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Practical aspects of stoma management


Aim and intended learning outcomes

The aim of this article is to provide an overview of common stoma problems and their practical management. Complications can be divided into immediate (occurring within 24 hours of new stoma formation), early (during hospitalisation) and late (after discharge from hospital). This article focuses on the physical complications, rather than on the psychological aspects of altered body image. After reading this article you should be able to:

- Recognise the potential stoma complications that patients might experience.
- Describe which stoma problems might occur at certain times.
- Discuss the nurse’s contribution in caring for patients with a stoma.
- Provide possible solutions to stoma complications, with guidance from the stoma care nurse.

Introduction

A stoma is a surgically created opening of the bowel or urinary system onto the abdomen. The most common intestinal stomas are colostomies – formed from a piece of colon (large bowel); ileostomies – formed from ileum (small bowel); and urostomies or ileal conduits – formed in the urinary tract using a section of ileum. There are two main types of stomas: end stomas and loop stomas. End stomas are the simplest to create (Hughes and Irving 1999). The divided bowel is brought to the abdominal wall and anastomosed to the skin. Loop stomas are often temporary, created from a mobile loop of either ileum or colon. It is estimated that approximately 80,000 people in the UK have a stoma: 50,000 colostomies, 20,000 ileostomies and 10,000 urostomies (Coloplast 1999). More than 20,000 new stomas are created each year: 11,800 colostomies, 6,500 ileostomies and 2,300 urostomies (Coloplast 1999). Of these, 65 per cent will be permanent (Black 1997).

About 39 per cent of colostomy patients and 55 per cent of ileostomy and urostomy patients will experience problems with stoma management (Lyon and Smith 2001). Loop stomas are more prone to complications and, because of their bulk, are often difficult to manage (Hughes and Irving 1999).

There are numerous predisposing conditions for colostomy, ileostomy and urostomy formation:

- Colostomy – bowel carcinoma (most common indication), diverticulitis, Crohn’s disease, irradiation damage, bowel ischaemia, volvulus, trauma, congenital abnormalities and faecal incontinence.
- Ileostomy – Crohn’s disease (most common indication), ulcerative colitis, familial polyposis coli, irradiation damage and trauma.

Predisposing conditions

Before reading on, consider what you know about predisposing conditions for stomas. What conditions are most commonly associated with different kinds of stomas?

In brief

Author
Karen Collett RGN, is Colorectal Ward Sister, Wycombe Hospital, Bucks. Email: karen.collett@sbucks.nhs.uk

Summary
The author provides an overview of common stoma complications and their practical management. The nurse’s role in caring for these patients is also described.

Key words
Gastrointestinal system and disorders
Nurse specialist
Stoma care

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Urostomy – bladder carcinoma (most common indication), interstitial cystitis, disorders of the spinal column, for example, spina bifida and trauma. These usually occur within 24 hours of surgery. Potential problems to observe for are oedema and stoma ischaemia/necrosis.

Oedema. All stomas are swollen immediately after surgery due to handling of the bowel, but this oedema should reduce gradually over the following days. The author’s clinical experience indicates that the stoma size is usually established at six to eight weeks. Cottam (1998) reports that post-operative reduction in stoma size can be as much as 30 per cent. The stoma care nurse will teach the patient or carer how to check the bag template regularly and how to adjust it for shrinkage in size.

Stoma ischaemia/necrosis. This is caused by inadequate blood supply to the portion of the bowel used to form the stoma. Ischaemia/necrosis often occurs during surgery, although it can be caused post-operatively by restriction of the local blood supply with an incorrect bag. The new stoma will become a dusky purple colour due to impaired blood supply. Ischaemia may develop into necrosis (Figure 1), which results in a black odorous bowel (Meadows 1997). Necrotic tissue will usually slough off when the stoma is cleaned, leaving pink, healthy mucosa. However, occasionally the discolouration extends further than 2cm deep and the necrotic tissue may require surgical excision. Figure 1 shows the necrotic lateral edge of a refashioned urostomy: the necrotic tissue sloughed off after three weeks, causing slight stenosis of the stoma.

Early complications

Mucocutaneous separation. This occurs when the stoma edge comes away from the surrounding skin, leaving a shallow or deep wound cavity (Figure 2). It may affect the complete stoma suture line or just part of it. Obese patients are most prone to this condition. Mucocutaneous separation occurs as a result of insufficient bowel mobilisation at operation, causing undue tension on the stoma sutures which anchor it to the skin. If the resulting cavity is deep but clean, resutting may be considered. To promote healing, gels or stoma pastes can be used in the wound and the stoma bag should be measured to incorporate the additional cavity. Patients should be warned that leakage problems might be experienced initially and stenosis (narrowing of the stoma opening) can be a later complication. Figure 2 shows an example of poor suturing of a colostomy. A wound gel was used to fill the cavity, before a colostomy bag was applied. The wound healed completely in three weeks.

Non-function of stoma. Colostomies produce haemoserous fluid for one to three days post-operatively. Liquid stool and flatus are then passed, before stools become formed. Patients having emergency surgery with no pre-operative bowel preparation may pass stool immediately post-operatively. Patients are then usually allowed to increase their oral intake and progress to a light diet. However, medication such as morphine, which may be administered via a patient-controlled analgesic pump, or codeine can decrease gut motility. Laxatives should be avoided for at least seven days post-operatively. However, after this time medical staff might prescribe suppositories and/or enemas to stimulate bowel function.
Ileostomy patients can experience a flux of bile-stained fluid immediately post-operatively. These patients need careful fluid and electrolyte management to avoid dehydration and excessive loss of sodium and potassium. They might need to continue intravenous therapy and urinary sodium should be checked daily. A urostomy bag and night drainage bag may be needed to collect the large volumes of fluid produced.

If an ileostomy stops functioning for more than 12 hours once the patient is over the initial post-operative period, he or she should be given intravenous fluid replacement until the ileostomy starts to work again. This is usually caused by a food blockage. The ileostomy might appear tense and oedematous. Patients often experience abdominal pain and liquid stoma output immediately before loss of function. Foods to be avoided for patients with ileostomies prone to such blockages include mushrooms, sweetcorn, nuts, raw fruit skin and tomatoes. Non-function of an ileostomy can also be caused by adhesions, which may require surgical intervention, although this is more likely to occur months later. Other causes are para-ileostomy herniation or recurrent disease, for example, stricture formation in the ileum.

Colostomy and ileostomy patients may experience paralytic ileus post-operatively, as a result of bowel handling during surgery. In this instance, the bowel is ‘rested’ by restricting oral intake to sips of water and restarting intravenous fluids. Patients with continued vomiting might need a nasogastric tube until the ileus resolves and bowel function is restored.

Late complications

Late complications usually occur once the patient has been discharged from hospital. Such complications can result in patient anxiety and a lack of confidence in stoma care management.

Contact dermatitis

Contact dermatitis is an inflammation or eczema caused by leakage of stomal output onto the peristomal skin. Approximately 19 per cent of stoma patients will experience difficulties caused by effluent leakage (Lyon 1995). It is more common in urostomy and ileostomy patients, whose output is liquid and damages the skin on contact. Gut enzymes, particularly protease and amylase found in ileostomy output, cause faecal irritant dermatitis, which damages the horny protective layer of the skin. This in turn promotes an inflammatory reaction (Lyon 1995). Prolonged contact of the skin with urine will lead to maceration of the peristomal skin. There are many causes of effluent dermatitis:

- Incorrect bag aperture
- Poor technique
- Incorrect bag aperture
- Poor technique
- Incorrect bag aperture
- Poor technique

Incorrect bag aperture

This can either be due to reduction in stoma size as post-operative oedema subsides, or poor cutting of the bag aperture. The patient or carer will be shown by the stoma care nurse how to check the template regularly. Patients who have difficulty cutting can have their bags pre-cut or customised (many home delivery services offer this free of charge). The stoma care nurse will advise on ordering specific sized bags initially, to ensure products are not too large as the reduction in stoma size continues.

Poor technique

Patients with large abdomens or pendulous breasts may have difficulty situating the bag correctly, leading to leakage of effluent onto the skin. It might be better for patients with impaired vision or who lack manual dexterity to use a two-piece system and ask a relative or carer to apply the flange base plate two to three times a week. The patient may then be able to apply and remove the bag independently.

Pancaking of closed bag

Pancaking occurs when there is no air in the bag, creating a negative pressure and thereby causing the plastic sides of the bag to stick together. The stool is then unable to pass freely into the bag and instead collects at the top of the bag or on the stoma itself. If there is sufficient accumulation of stool, the adhesive will be pushed off the skin. To minimise this risk, patients who produce little flatus are encouraged to cover the bag filter with an adhesive patch supplied with the bags. Other suggestions include putting a small piece of wet tissue into the base of the bag before
Box 1. Case study

Alfred* had a large prolapse of the distal end of a large loop transverse colostomy, formed to defunction a failed anterior resection (the bowel anastomosis broke down post-operatively) (Figure 4). The only suitable appliance was a 100mm wound bag, with an inspection window. Alfred was too ill for a third anaesthetic due to cardiac problems, and manual reduction of this prolapse was impossible. Instead, osmotic therapy as described by Fligelstone et al (1997) was used. This treatment is based on the principle that fluid shift across the bowel wall is dictated by osmotic gradients. It involves applying fine granulated sugar to the oedematous stoma and allowing 30 minutes for the reduction in stoma size. Once the oedema subsided, the surgeon was able to reduce the oedema. Patients with prolapses use a right drainage bag to keep the stoma bag empty at night. Colostomy patients will usually renew the bag one to three times a day depending on output. Bag left on too long bags that remain in position for longer than necessary will cause skin irritation and leakage (Myers 1996). It is recommended that a closed one-piece bag is changed at least daily. However, a drainable or ostomy one-piece bag need only be changed every two to three days, because it can be emptied between changes. Generally, patients are advised to change the flangebase plate every two to three days. However, some patients leave the flange on for up to seven days. This is acceptable as long as there is no seepage of effluent under the bag. This is especially important in urostomy patients, whose skin can quickly become soggy and excoriated. Patients must be discouraged from ‘patching up’ early leaks by putting extra tape on the adhesive. It is important to recognise patients who hate their stoma and ignore it, thereby leaving the bag on for as long as possible. These patients require sensitive handling and may need the expert help of a specialist psychotherapist (Myers 1996). Water output of colostomy. Unless infective diarrhoea is suspected, the stool can be thickened by the careful use of bulking agents such as codeine phosphate or drugs that affect gut motility, for example, loperamide.

Excessive weight gain or loss Alteration in the patient's weight can cause skin creases and dips. Excessive weight gain or loss can quickly become ‘soggy’ and excoriated. Patients often have short stoma spouts that cause great leakage problems. Some stomas are formed flush with the skin and effluent seepage under the bag causes severe skin excoriation at times. These patients need careful guidance from the stoma care nurse in the use of convex bags and ostomy pastes and seals. Surgeons who repeatedly form short spout stomas may be unaware of the difficulties that these cause. Nurses are in an ideal position to highlight these difficulties and request a longer spout.

Prolapse This is when a length of bowel protrudes from the abdomen. It more commonly occurs with loop colostomies, especially large transverse stomas, where the incidence could be as high as 20 per cent (Stoddart 1996). In a loop stoma, the prolapse can be from the proximal or distal end of the stoma or both (Goligher 1984) (Figure 3). Black (1997) found that prolapse is more common in the distal segment. Stomal prolapse frequently occurs in paediatric colostomies.
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Prolapse can be very alarming for patients, who will need reassurance and careful explanation of what is happening (Taylor 1995). Patients with loop stomas should be pre-warned of the risk of prolapse. For many, this often huge protrusion will cause body image problems. Cleaning the stoma and skin can be very difficult and the bowel is also difficult to handle. Often a much larger bag and template is required.

The prolapsed stoma can usually be manually reduced when the patient is supine, but it will always prolapse again as the patient resumes mobility. Rarely, a massive stoma prolapse may result in gross oedema. Refashioning the stoma may be necessary for ease of stoma care. If the prolapse shows any signs of discolouration or necrosis, refashioning or even reversal of the stoma is indicated immediately. Box 1 describes osmotic therapy for an oedematous stoma to reduce the loop of bowel. The stoma in this case was subsequently reversed.

Retraction

This occurs when the stoma recedes into the abdominal wall and does not protrude above skin level. It is caused by the bowel being under tension – usually due to inadequate bowel mobilisation at operation or in obese patients. Also, a tension-free stoma may be impossible to create in patients who have had pre-operative radiation (Myers 1996). Retraction can also be due to poor fixation of the stoma to the surrounding skin, premature removal of the supporting rod/bridge in a loop stoma or anchoring sutures dissolving too quickly. Most sutures dissolve after seven-to-ten days. Those remaining longer should be removed with a stitch cutter to prevent them poking into the peristomal skin, as the stoma oedema reduces. A retracted stoma is often sunken or in a skin dip (Taylor 1995). Patients may need to use a filler paste, seals or a convex bag to compensate for the ‘moat’ effect around the stoma and create an adequate bag seal. The stoma care nurse is best placed to advise on a specific product.

Stenosis

Stenosis occurs when the lumen or opening of the stoma narrows (Figure 5). It often occurs in retracted stomas or those with mucocutaneous separation, as non-elastic scar tissue forms around the stoma. Scar tissue is also produced as healing takes place in a partially necrotic stoma, where the affected area has sloughed away (Taylor 1995). Abdominal pain can occur, as the narrowed stoma has difficulty expelling the stool. Meadows (1997) describes patients passing painful ‘ribbon-like’ stools. Colostomy patients are advised to maintain a soft stool.

Figure 5. Stenosis

Figure 6. Retracted stoma due to obese abdomen and insufficient bowel mobilisation at surgery

Figure 7. Poor stoma site caused leakage problems

Figure 8. Newly refashioned colostomy
Figure 9. Large parastomal hernia, distorting the end of the colostomy

Box 2. Case study

Margaret* had an emergency Hartmann’s (reversible colostomy) procedure in 1996 for Duke’s B adenocarcinoma of the rectum. Figure 6 shows retracted stoma due to obese abdomen and insufficient bowel mobilisation at surgery. The bag aperture was made slightly larger than the wound and excoriated peristomal skin was treated with a skin protectant powder. The poor position of the stoma site caused leakage problems (Figure 7). Therefore a convex closed bag was used. Stenosis occurred in the cavity surrounding the retracted stoma as it healed (Figure 5), despite daily digital dilation of the colostomy and the stool softeners. Five months after surgery, the stoma completely obstructed. Figure 8 shows the newly refashioned colostomy.

*Patient’s name has been newly refashioned colostomy. Obstructed. Figure 8 shows the surgery, the stoma completely obstructed and the stool despite daily digital dilation of the stoma as it healed (Figure 5), surrounding the retracted stoma. Eventually, stenosis completely obstructed the stoma and the colostomy was then successfully refashioned.

Parastomal herniation

This occurs when the peritoneum bulges through the weakened muscle wall, causing anything from a slight bulge around the stoma when the patient coughs to a large uncomforable mass that never reduces in size (Figure 9).

Taylor (1995) suggests that a parastomal hernia in an older person may be larger than in a younger person, due to loss of muscle tone through the ageing process. It is estimated that 2-3 per cent of all patients with a stoma will develop a parastomal hernia (Lyon and Smith 2001). Patients with an end colostomy have a much higher incidence, at 20-25 per cent (Devlin 1982). Siting the stoma within the rectus abdominus (Devlin 1982). Siting the stoma within the rectus abdominus muscle is thought to reduce the risk of herniation (Kelly 1995).

Patients often complain of a ‘dragging’ discomfort on the affected side of the abdomen—many automatically place their hand on the hernia to support the weight. Patients with a parastomal hernia may have difficulty coping with this alteration in body shape and many have to adjust their clothing styles to disguise the hernia.

Large parastomal hernias may require surgery, but there is no guarantee of success when the hernia is repaired and many fail or become infected (Everingham 1998). The majority are treated by relieving the weight of the hernia. Patients can try panty girdles or corsets, which can be made to measure, with a hole cut out for the stoma bag. Alternatively, the ‘sash’ belt was specifically developed by a patient with a colostomy to be worn by patients with a small parastomal hernia as a discreet support belt.

Bowel obstruction within the hernia is always a risk, therefore patients are advised to report any colic immediately.

Figure 9 shows a large parastomal hernia, distorting the end of the colostomy. This patient had a successful local repair of the hernia three weeks later.

Constipation

Colostomy patients, especially those with sigmoid end colostomies, are at risk of constipation, which can usually be treated with dietary advice and/or laxatives. If suppositories and enemas are required, they may be difficult to administer, as peristalsis and the lack of a sphincter muscle mean that they are not retained. One suggested method of administration is to insert a micro-enema followed by the suppositories. The stoma bag should then be applied quickly and the patient asked to keep his or her finger over the stoma opening for 15–20 minutes. This allows time for the suppositories to dissolve and become effective. If a larger volume of enema solution is required, or if an oil retention enema is being used, it is easier to administer this via a Foley catheter. The nurse will insert a 12-14Ch Foley catheter gently into the colostomy and inflate the balloon with 5–10ml of sterile water. This will secure the catheter in the bowel and reduce the amount of solution that is initially expelled. The catheter can be removed after 20–30 minutes, once the balloon has been deflated. A stoma bag can then be applied quickly.

High output ileostomy

Ileostomy patients who experience a high output need careful management of fluid and electrolytes to avoid dehydration and excessive loss of sodium and potassium. They may require an intravenous infusion, use of a urostomy appliance and night drainage bag to collect the high volume of fluid. Drugs to slow down gut motility and therefore transit time from mouth to bag, for example, codeine and loperamide, should be used as prescribed. Electrolyte replacement preparations also may be required.

TIME OUT 3

Write a paragraph for a patient information leaflet to advise on managing stoma flatus and odour. Ensure that your advice is positive and clearly explained. You might wish to work with a colleague, for example a dietician, to clarify specific aspects of dietary management.

Flatus and odour

Colostomy patients are particularly prone to flatus and odour problems. Noisy flatus can be extremely embarrassing for anyone, but patients with colostomies have no sphincter muscle to control it.

Flatus preparations also may be required.
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muscles and, therefore, no control over timing. Dietary advice for patients should focus on reducing the problem by avoiding certain foods and beverages, including green vegetables (particularly cabbage, broccoli and sprouts), onions, beans and pulses, beer, fizzy drinks and sparkling water. Some sigmoid end colostomy patients may try colonic irrigation to reduce troublesome flatus. Irrigation involves instilling 1-1.5 litres of lukewarm water into the colon using special equipment. Although the procedure can be time-consuming, taking up to an hour, with practice the patient can achieve good bowel evacuation by irrigating the colon only every two to three days.

Odour and the fear of smelling unpleasant are of paramount importance to the patient (Taylor 1995). All stoma bags are designed to contain odour within the bag. Reasons for odour may include poor stoma management, for example: ineffective cleaning of the ileostomy bag outlet, leaving residual effluent at the opening, bag leakage, poor bag application, or a blocked flatus filter (Taylor 1995). Some foods can also cause odour problems, for example, spicy foods and fish. Some patients use air fresheners when emptying or changing their bag, while others burn a scented candle or incense sticks. Specific deodorant sprays and capsules are available for use in the bag, which can be helpful. The nurse should help patients to be quick and efficient with bag changes and emptying, to minimise the escape of odour.

Urostomy patients often complain of an unpleasant urine odour post-operatively. This is usually caused by mucus produced by the portion of ileum used to construct the ileal conduit. The odour should decrease as secretions reduce over time. However, unpleasant smelling urine can be an indication of a urinary tract infection (UTI) and a sample should be sent for microbiology culture and sensitivity. To obtain a clean specimen of urine from a patient, the nurse must carefully insert a short 12Ch urinary catheter into the conduit to a depth of 2.5-5cm. Urine specimens must not be taken from an appliance because the contents may have been in the bag for some time and may be contaminated, which will therefore affect the result. If the patient has recurrent UTIs, the nurse should advise an increase in fluid intake, including cranberry juice, which is known to prevent such infections (Addison 1997, Busuttil Leaver 1996).

**Trauma**

Major trauma to a stoma is quite rare, but it might result from injuries during a road traffic accident, for example (Taylor 1995). Self-mutilation of the stoma may occur in ‘stomaphobic’ patients, who should be referred to a specialist clinical psychologist immediately.

Minor trauma can be caused by an ill-fitting bag rubbing on the stoma. This can lead to mucosal ulceration or even laceration. The treatment is to fit a correctly sized bag, allowing the stoma to heal naturally. Occasionally strenuous exercise, contact sports, for example, rugby and football, or wearing a tight wetsuit for water sports can cause trauma to the delicate stoma mucosa. Patients participating in such sports may benefit from wearing a plastic stoma shield and belt. Another common cause of trauma is folliculitis of the peristomal skin. This can be especially problematic in men with hairy skin. Regular peristomal hair removal by careful shaving should reduce the incidence, although in some patients shaving actually causes folliculitis.

**Bleeding**

The mucosal surface of the stoma is highly vascular. Mild bleeding or spotting can be common when cleaning the stoma. Patients must be reassured about this in advance, but warned against over-enthusiastic cleansing. Soft gauze swabs and warm water should be used to prevent excessive surface bleeding of the stoma, alternatives include non-abrasive quilted toilet tissue or soft wipes. Bleeding from the stoma lumen and, therefore, from within the bowel/ileal conduit is not normal and the nurses should inform medical staff immediately. Other possible causes include a GI bleed.

**Hypergranulation/granulomas**

Granulomas usually form at the mucocutaneous edge of the stoma, and internally in the ileal conduit when it is not patent. The treatment is to allow the tissue to heal by itself, but if not successful, excision is required.

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**TIME OUT 4**

A patient with a colostomy who you are looking after informs you that his colostomy is bleeding. He appears anxious:

I List the causes of bleeding at the stoma site.

II Write short notes on what actions you would take and what advice you would give the patient.

If you can, discuss this with a colleague or stoma care nurse in the clinical area.
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although they can occur on the stoma itself. They usually develop as healing takes place and often form where the sutures were inserted around the stoma. Some granulomas suddenly appear many years after surgery, possibly as a reaction to irritation of some sort (Lyon 1995). These small hypergranulated lumps often bleed profusely when touched and can be painful. Treatment is by careful cauterisation of the granulomas or by the application of silver nitrate, usually in the form of a pencil, two to three times a week. The stoma care nurse will supervise this treatment. Care must be taken to protect the surrounding skin/stoma mucosa when undertaking this form of treatment.

Cancer colonisation of the stoma
This rare condition is characterised by recurrence of cancer on or around the stoma (Figure 10). The patient will notice a change in the shape of the stoma or an unusual lump. It most commonly occurs when there is inadequate clearance of the tumour at surgery or when there are peritoneal deposits. Treatment is by local excision or irradiation to slow the growth of the tumour. Surgery is not often a viable option, as the tumour can never be completely excised. All patients will have to increase the template size of the stoma bag to incorporate the fungating tumour. Patients should be warned about excessive bleeding due to increased vascularity in this situation. Figure 10 shows local recurrence of cancer at the 11 o’clock position on the colostomy nine months after surgery. This patient had a Hartmann’s procedure in 1999 for Dukes’ C adenocarcinoma.

Urostomy oxalate crystal formation
Some urostomy patients experience problems caused by alkaline urine. Many post-operative complications are associated with this, including stoma bleeding, ulceration and strong odour (Fillingham 1999). Encrustations on and around the stoma due to the formation of oxalate crystals can cause irritation, bleeding and potential ulceration (Busuttil Leaver 1996). Effective management of oxalate crystals is simply by bathing the stoma for approximately 20-30 minutes using a solution of equal parts distilled white vinegar and warm water. Rather than doing this several times, it is equally effective for patients to pour the solution into an anti-reflux bag and allow it to wash over the stoma. Cranberry juice or capsules are also reported to restore the urine to its more acidic pH, thereby reducing the incidence of crystal formation (Fillingham 1999).

REFERENCE

REFERENCES

Conclusion
The high incidence of stoma complications experienced by patients in hospital and community settings means that nurses must be able to identify these problems quickly and effectively. The nurse should liaise with the stoma care nurse to find possible solutions. Some stoma complications will require further surgery, while others can be treated with improved patient education or altered stoma management. Early recognition and treatment of stoma problems will avoid patient distress and embarrassment, thus ensuring a better quality of life.

TIME OUT 5
Try to imagine you have recently been informed that you need to have a permanent colostomy because of rectal cancer. Write down how you would feel and make a list of your fears and anxieties. The next time you talk to a patient with a stoma, ask him or her how he or she felt when told of the need to have a stoma. Was there anything healthcare professionals could have done to help them to cope better with their feelings.

TIME OUT 6
Now that you have completed the article, you might like to write a practice profile. Guidelines to help you are on page 55.