Orchestrating the management of patients with high-output stomas

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The management of patients with a high-output stoma (HOS) can be complex and complicated. It is therefore important for all members of the multidisciplinary team (MDT) to work closely together to facilitate the optimal outcome for the patient.

When the author encountered her first such patient, it was apparent that the team was not working closely together. In the author's clinical experience, without coordination teamwork was lacking and resulted in junior doctors being unsure of what blood tests to order and when. Equally, they found the results difficult to interpret and correct medication regimes were often not prescribed as a result. However, it was not only the junior doctors who found the management of this complex group of ostomy patients difficult. Ward staff were unsure of whom to refer to and when, not keeping accurate fluid balance charts, and patients were getting mixed messages with regards to diet and fluid intake. Many of the staff were unsure of the implications of patients with short bowel, and how it had come about.

Given the lack of coordination and standardisation of the management of these patients, the author felt that there would be significant clinical benefits for them if care was standardised and delivered by the MDT. Therefore, the author felt that a clinical guideline would support this multidisciplinary working and arranged to meet with the dietetic and nutrition team members to discuss these concerns and establish some guidelines or treatment algorithms to guide the MDT.

Role of the stoma care clinical nurse specialist
The first clinical nurse specialists were in the field of stoma care, establishing independent and widespread skills. In the UK, Barbara Saunders, a ward sister at St Bartholomew’s Hospital in London, set up a stoma clinic in 1969. By 1971, she had become the first stoma care specialist nurse (Black, 2000). Until then, stoma advice was given to patients by ward staff (Black, 2000). Since that time, the role of the stoma care clinical nurse specialist (CNS) has evolved but, in principle, has remained fundamentally the same (Association of Stoma Care Nurses (ASCN), 2013).

The role of the stoma care CNS is to support patients, families, and carers using specialist knowledge. They act as educators, researchers, consultants and clinicians who offer clinical care and provide guidance on such issues as nutrition and stoma management (Royal College of Nursing (RCN), 2009). The care they deliver is essential in order for patients to adapt to, and accept, the life-changing event of having a stoma (Coloplast, 2010).

These specialists practise at an advanced level, working autonomously to deliver a high standard of care. It is a challenging and rewarding role and the care they provide is multifaceted, encompassing the physical, cultural, spiritual, social, sexual and psychological needs of patients.

As stoma care specialists support patients with a wide spectrum of diseases (e.g. inflammatory bowel disease, cancer, incontinence), they require a broad knowledge base and work with other clinical teams to support these patients. They provide holistic care which has become central to ‘enabling stoma patients to achieve a successful recovery and rehabilitation after major surgery’ (RCN, 2009: 5).

Working as an advanced practitioner, the stoma CNS is an experienced professional, performing a complex role. They manage their own caseloads and responsibilities and demonstrate leadership and problem-solving skills, having the power to act and have authority (MacMillan, 2014). The stoma CNS also embraces education and leadership of many other health professionals, including nursing staff and junior doctors (Vidiell et al, 2011). Such specialist nurses have led the way as clinical leaders in demonstrating the challenges of improving the quality of care to patients by sharing their skills and knowledge (Coloplast, 2010). They also manage clinical...
issues and have been instrumental in encouraging surgeons to develop their skills, for example, with relation to the shape and size of stomas (World Council of Enterocectal Therapists (WCET), 2010).

Definition of short bowel
Short bowel syndrome occurs when extensive resections of the intestine are carried out and can also apply to patients with a high-output enterocutaneous fistula. Such patients often present with a combination of weight loss and dehydration (Slater and Gabe, 2012).

‘High output occurs when the bowel is shorter than 100 cm or the length is adequate but the quality of the bowel is poor due to damage... thus the ability to absorb food and water is reduced. The output is considered high when it exceeds 1500 mls daily.’ (Peck et al, 2012: 32).

Living with a high-output stoma can have a huge impact on patients’ quality of life. They may have frequent hospital admissions, multiple leaks from their appliance a day, sore skin, and disturbed sleep, as well as being reliant on others for practical help. They are often unable to do normal activities of daily living such as housework or going out of the house. They frequently suffer weight loss, lack of energy, nausea and shortness of breath. Finances may be problematic as they may be relying on benefits if they are unable to work, and may be reliant on total parenteral nutrition (TPN) if they are unable to have an oral diet (Swash, 2014). Many of these challenges are owing to dehydration, hypomagnesemia and under-nutrition (Baker, 2009).

What is an orchestra?
One such definition of an orchestra is a ‘large group of instrumentalists playing together’ (ClassicalWorks, 2014).

How is an orchestra relevant to stoma care?
An orchestra is made up of different sections—strings, brass, percussion, keyboard and woodwind. Just like an orchestra, the MDT is made up of several disciplines, e.g. diettitian, nutrition team, ward staff, surgeon and pharmacist. We could also compare the musical score with the patient, and the audience with the family and friends.

All of the players in both the orchestra and MDT have an important part to play in interpreting the musical score, but many have different ideas of speed, volume and expression. Holding all the players together is the conductor who is pivotal in controlling this by bringing all the players together and reminding the orchestra throughout the performance about how he or she wishes the piece to be played.

The same applies to the MDT caring for the patient with a high-output stoma. Individually, each member knows his or her role. However, in order to facilitate good evidence-based care, it is the stoma CNS in this example who is pivotal as lead. In other cases, it could be any member of the MDT (e.g. diettitian, nutrition nurse specialist, etc) leading the team.

Reasons for the orchestra
The reasons for the orchestra are:
- To ensure all members of the MDT are involved
- To ensure the correct input for the patient, for example, blood tests, fluids, accurate fluid balance, charts, etc
- To give correct support to all staff and to facilitate evidence-based care.

It is, however, important to understand the role of each of the disciplines involved with such patients and what they should be contributing to the MDT.

Nursing staff should be carrying out vigilant and detailed monitoring of the patient’s fluid balance charts and reporting to the rest of the team, maintaining skin integrity and patient support. The diettitian, along with the nutrition team, assesses, diagnoses and treats dietary and nutritional problems and is essential in the treatment of such complex cases. Members of the nutrition team also monitor electrolytes and micronutrients and coordinate long-term follow up for such patients. Pharmacists are involved to promote the safe and effective use of medications by working with the team to ensure the best selection of medication at the correct dose and duration. The stoma CNS ensures the ongoing education of staff and patients, provides the correct appliances and accessories to aid good skin integrity and minimal leakages, and demonstrates how to continue with any prescription regimes. The CNS also delivers high-quality, evidence-based care, by liaising with the other health professionals.

Case studies
Case studies have been used to demonstrate and reflect on where the author’s team was not interacting as well as they could, and how they could build on existing strengths as well as take the appropriate actions to rectify any issues.

Both case studies discuss patients who received care after vascular injury accident to the small bowel resulting in short bowel syndrome. Both patients had stomas formed from the jejunum. This is the middle section of the small bowel and is responsible for absorption of minerals, vitamins, carbohydrates, proteins and fats. The jejunum absorbs all of the nutrients and electrolytes the body requires for cardiac function, metabolic function and for energy. As a result, it is vitally important that accurate fluid and nutritional balance charts are recorded. This is important in order to replace any deficiencies as most patients will require IV support for nutritional and electrolyte imbalances.
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Case study 1
The first patient was a 39-year-old man who underwent surgery for a small bowel perforation and anastomosis of superior mesenteric artery owing to mesenteric angina. Unfortunately, he developed an anastomotic leak and was returned to theatre for laparotomy, small bowel resection and formation of an end jejunostomy and mucous fistula. He was left with 80 cm of small bowel. He was not at all keen to listen to advice from any of the team with regards to eating, but especially drinking. He loved Scotland’s ‘other’ national drink, Irn Bru (the first, of course, being Whisky). He would drink many bottles of this drink a day. This was driving his stoma output causing dehydration. The main problem the MDT had was that they had no control over what he would eat and drink when home on pass for 24–48 hours from the ward, frequently returning with deranged bloods. He was also given mixed messages from nursing staff and medical staff as to what he could eat and drink.

As far as his care was concerned, the author was involved with stoma management education and supplying the nutrition team with some way of securing a feeding tube when the decision was taken to feed him through his mucous fistula. He managed his stoma care well with no major problems. Unfortunately, fluid balance charts were inconsistent, bleedings were not always checked regularly or acted upon and, initially, he was not referred appropriately to members of the MDT. Some 5 months after his surgery, he suffered several complications resulting in his cardiac arrest and, ultimately, his death.

Case study 2
Some two months after the patient in case study 1 passed away, the second patient presented. This 57-year-old woman was diagnosed with an embolus when she was previously admitted to the accident and emergency (A&E) department with abdominal pain. She had previous surgery for repair of an atrial septal defect and had never been prescribed warfarin. She underwent laparotomy, small bowel resection and formation of jejunostomy and mucous fistula. She was found to have extensive small bowel ischaemia and only 60 cm of her small bowel was preserved. This woman was referred to the MDT much earlier than the first case and she was soon started on TPN. Bloods were checked regularly, but the team was still having problems with staff completing fluid balance charts. The patient very quickly got to grips with her stoma care, requiring a high-output appliance, two-piece with convex flange. She also used a solidifying agent. She soon learned how to administer her TPN and was eventually discharged home. She had a few admissions as a result of line infections, but went on to have her jejunostomy and mucous fistula reversed and is now recovering well 1 year post reversal.

However, it was clear that communication issues within the team persisted. Box 1 shows what the team was working with up until this point. Having searched the internet and various journals, the author found a couple of flow charts that were of some help to work from, and to adapt to her own needs.

The flow chart in Figure 2 was compiled by the author and the chart and copies are now easily viewed in the treatment room of the intensive therapy unit (ITU), high-dependency unit (HDU) and the surgical wards. There is now a plan to make it available on the Ayrshire and Arran intranet system.

Conclusion
Since the introduction of the flow charts (Figure 1) on the wards within the author’s organisation, there has been a couple of patients with high-output stomas and the chart
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has been of great help to all of those concerned with patient care. Now with the 'conductor' leading, the team is as one; staff know where, when and whom to refer to, and errors are being minimised, with relation to medications, diet, etc. Now the team is ensuring the correct input for patients' blood tests, fluids, fluid balance charts, and any other assessments. Patients are being given the same information from all staff, and the correct support is being given to all members of staff. The flow chart appears to be facilitating good evidence-based care, and the team is playing from the same sheet music.

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**KEY POINTS**

- It is important for all members of the multidisciplinary team (MDT) to work closely together to facilitate the optimal outcome for the patient.

- Working as an advanced practitioner, the stoma clinical nurse specialist is an experienced professional, performing a complex role.

- Living with a high-output stoma can have a huge impact on a patient's quality of life, such as multiple admissions to hospital, financial problems, and being reliant on others for practical help.

- It is important to understand the role of the different disciplines involved with caring for stoma patients and what each should be contributing to the MDT.

- This article uses the analogy of an orchestra to demonstrate effective MDT working for staff who care for patients with a high-output stoma.