

Development of a Learning Resource Manual for Nurses on Caring for Patients

Post-Stoma Surgery

by © Andrea Morgan

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Abstract

Background: There are many illnesses of the bowel that may result in stoma surgery. Unit Six East at St. Clare's Mercy Hospital in St. John's, Newfoundland and Labrador is a major general surgery unit where patients are cared for following such stoma surgeries. Stoma surgeries result in either a temporary or permanent stoma, which redirects the process of defecation for the patient. This can have adverse psychological effects and it requires physical skill to properly care for the stoma and ostomy. Nurses are in a vital position for the assessment, teaching, care, support, and discharge planning of patients undergoing stoma surgery. Caring for these patients requires a special set of knowledge and skills. **Purpose:** The purpose of this practicum project was to develop a learning resource manual for nurses working on Unit Six East to enhance their knowledge and skills related to caring for stoma surgery patients. **Methods:** An informal needs assessment, literature review, and consultations with key informants were completed. **Results:** Based on the findings from these methods, under the guidance of adult learning principles and principles of designing effective instruction, a learning resource manual was created. **Conclusion:** No evaluation of the implementation of the learning resource manual has been completed to date; however, verbal feedback will be sought out by the writer in order to make any additional changes to the manual. Quizzes were provided at the end of each chapter for learners to test their self-knowledge.

Keywords: stoma, stoma surgery, nursing, learning resource manual

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Stoma surgery involves major physical and psychological challenges for the patient. Nurses are in an optimal position to help enhance the recovery, education, and support for stoma surgery patients. In this document, I present a final report of my practicum project on the development of a learning resource manual for nurses caring for patients who have undergone stoma surgery. In the following sections of this final report, I discuss the rationale and background for this project, practicum goals and objectives, and each of the major processes involved in creating the learning resource manual (i.e., conducting a literature review and consultations, as well as using frameworks to guide this project).

Background

There are many illnesses of the bowel that could result in bowel surgery requiring a stoma. Colorectal cancer is the third most commonly diagnosed cancer in Canada (Canadian Cancer Society, 2015a). It was estimated in 2015 that 25,100 Canadians would be diagnosed with colorectal cancer that year, which equates to approximately 69 new diagnoses each day (Canadian Cancer Society, 2015a). Cancer of the small intestine is less prevalent than colorectal cancer. Most recent statistics show that 740 Canadians were diagnosed with cancer of the small intestine in 2010 (Canadian Cancer Society, 2015b). In addition to these cancers, one in every 150 Canadians lives with either Crohn's disease or ulcerative colitis (Crohn's and Colitis Canada, 2014). This statistic is among the highest worldwide (Crohn's and Colitis Canada, 2014). Not all, but many patients undergoing surgery for these illnesses will consequently have a new stoma, which will

require proper assessment of the abdomen and gastrointestinal system after surgery, as well as proper stoma and ostomy care.

Assessment of patients who have undergone bowel surgery and ostomy care are basic level skills required by Registered Nurses (RNs) working on Six East. At the time this practicum project began, no specific resource was available to the RNs working on this unit. Currently, the main source of learning about stoma care is via the assistance and guidance of coworkers. This project is important as a resource for nurses new to general surgery was created in order to enhance their confidence and competence when caring for stoma surgery patients.

Rationale

When I started this practicum project, I had worked for 2 years on Unit Six East, which is the general/thoracic surgery unit, at St. Clare's Mercy Hospital in St. John's, Newfoundland and Labrador (NL). I completed a clinical rotation in my second year of nursing school on the general surgery unit at the Health Sciences Centre in St. John's, NL. I had also worked as a Personal Care Attendant at a long-term care facility in St. John's throughout nursing school, where I frequently cared for residents with stomas. While caring for residents with ostomies in long-term care, I depended on other staff to show me how to empty, clean, and change the appliances. When I began working on Unit Six East, I also relied on coworkers to guide me in the proper assessment of patients who had undergone stoma surgery.

Prior to starting this practicum project, I completed an informal needs assessment through consulting with the Division Manager of Six East, the Program Coordinator for Regional Surgical Services, and the Enterostomal Therapy (ET) Nurse. I also discussed the potential topic of stoma surgery and the role of the nurse with my coworkers on Six East. All parties agreed that a learning resource manual regarding caring for patients post-stoma surgery would be beneficial for nurses working on Six East, as no comprehensive resource manual of this nature existed at the time.

Practicum Project

Resource

For my practicum project, I decided to create a learning resource manual regarding stoma surgery and the role of the registered nurse (RN). This learning resource manual could be used by orientating nurses, seasoned nurses who wish to refresh their knowledge base, nursing students, any nurse new to Six East (including float nurses who may not routinely care for stoma surgery patients), and any other staff members who are interested in learning more about the nursing care of stoma surgery patients.

Contact Person

Initially, I had contacted three people: the Division Manager of Six East; the Program Coordinator for Regional Surgical Services; and the ET Nurse for the St. John's region of Eastern Health. Throughout my practicum project, the Program Coordinator for Regional Surgical Services went on leave from her position; therefore, my main contacts for the entirety of my practicum were the Division Manager of Six East and the ET nurse.

Both of these contacts were supportive of the project idea. I kept them updated during the entire project and received feedback from them throughout.

Ethical Approval

The Health Research Ethics Authority (HREA) Screening Tool was used to determine if this project would require submission to HREA for ethical approval. Through the completed Screening Tool, it was determined that ethical approval was not necessary for this practicum project (see pp. 82-83) for the completed Screening Tool). Verbal permission from the Division Manager of Six East to interview key informants was obtained, and because no patient information was used, no additional permission was required. Key informants were given a letter inviting them to voluntarily participate in this project (see p. 84 for the invitation letter to key informants). All invited key informants gave verbal consent to participate in the practicum project.

Practicum Goals and Objectives

The main goal of this practicum project was to develop a learning resource manual for nurses regarding caring for patients post-stoma surgery. The practicum objectives were:

1. Assess the learning needs of nurses caring for patients post-stoma surgery;
2. Assess the appropriateness of a manual to meet the learning needs of nurses caring for these patients;
3. Develop a learning resource manual if deemed appropriate; and
4. Demonstrate advanced nursing practice competencies.

The main goal of this practicum was to create a learning resource manual for nursing staff working on Unit Six East at St. Clare's Mercy Hospital in St. John's, NL. Goals specific to the resource manual included:

1. To increase the nurses' self-reported knowledge on how to care for patients post-stoma surgery;
2. To enhance the self-reported confidence levels of nurses new to caring for patients post-stoma surgery; and
3. To enhance the assessment skills of nurses caring for patients post-stoma surgery.

Overview of Methods

Two fundamental methods were utilised to discover what information would be pertinent for this manual. The first of these was an integrated literature review. There was an environmental scan completed as part of the literature review, which confirmed that no comprehensive manual of this nature currently existed at that time for nurses working on Unit Six East, or within the city hospitals in St. John's, NL. The literature review focused on the experience of stoma surgery for the patient, as well as the role of the RN. Principles of the Adult Learning Theory were researched and it was found to be an appropriate framework to guide this project. The second fundamental method used was a series of consultations with four key informants associated with Unit Six East: the Division Manager, the ET nurse, and two senior RNs working on Unit Six East.

The results from these two main methods are discussed further in this report. For a complete copy of the literature review, consultation report, and completed learning resource manual, please refer to Appendices A, B, and C, respectively.

Summary of Literature Review

Environmental Scan

The clinical educator of the surgery program at St. Clare's Mercy Hospital was informally consulted as the main part of the environmental scan. She determined that a general orientation manual existed for nurses on Unit Six East, which briefly covered information regarding different bowel surgeries, but it did not include ostomy application or assessment skills. The ET nurse for the city hospitals within Eastern Health was contacted, and she also determined that no comprehensive manual existed. The ET nurse for Western Health, NL was also contacted, and she forwarded a discharge checklist that RNs use within that health authority to ensure that no aspect is overlooked for patients following stoma surgery. An online scan was also completed, where resource manuals mainly directed at stoma surgery patients were found that were relevant for other health jurisdictions.

Search Methods

To complete a literature search for the integrative literature review, two databases were used to find research articles pertaining to the topic: CINAHL and PubMed. Search terms such as "stoma surgery," "role of the nurse," and "patient experience" were used. All articles retrieved were then reviewed for appropriateness for use in the literature

review. Quantitative studies were assessed using the Public Health Agency of Canada (PHAC) quality-rating tool, and qualitative studies were assessed according to their methodology, rigor, and thus, scientific merit. Two major themes evolved from the review of the articles, which were (a) the experience of stoma surgery and (b) the nurse's role in stoma adjustment and ostomy care.

The Experience of Stoma Surgery

Much of the research obtained from the literature review dealt with the various aspects of the experience of stoma surgery. Main topics related to the experience were: altered body image, adjustment to having a new stoma (physical and psychological), social concerns, relationships, and sexuality (Andersson, Engstrom, & Soberberg, 2010; Beitz, 1999; Bekkers, van Knippenberg, van Dulmen, van den Borne, & Berge Henegouwen, 1997; Lim, Chan, & He, 2015; McVey, Madill, & Fielding, 2001; Persson & Hellstrom, 2002; Simmons, Smith, Bobb, & Liles, 2007; Swan, 2011; Thorpe, McArthur, & Richardson, 2009). Among these, an altered body image was a highly prevalent theme in the literature (Andersson et al., 2010; Beitz, 1999; Bekkers et al., 1997; Lim et al., 2015; McVey et al., 2001; Simmons et al., 2007; Swan, 2011; Thorpe et al., 2009). An altered body image was associated with a lack of confidence and self-esteem, brought about by disrupted bodily function (Thorpe et al., 2009). Adjustment to having a stoma was correlated with interpersonal relationships: Positive interpersonal relationships increased confidence and self-efficacy, while those with problematic interpersonal relationships could potentially have a negative impact on their adjustment (Simmons et al., 2007). Feelings of restriction while trying to resume a normal lifestyle

were recognized in the literature (Andersson et al., 2010; Lim et al., 2015; Simmons et al., 2007). This included a restriction of activities, such as basic movements, showering, household chores, and physical exercise, and feeling restricted in social situations. A fear of public embarrassment was also identified, due to the possibility of passing flatulence and/or appliance leakage (Andersson et al., 2010; Simmons et al., 2007).

The Nurse's Role in Stoma Adjustment and Ostomy Care

The role of the RN in the pre- and post-operative stages of stoma surgery is vital. Teaching should begin pre-operatively and carry into the post-operative stage. Teaching the patient about her/his ostomy and participating in ostomy/stoma care is important for optimal adjustment for the patient (Burch & Slater, 2012). Once the patient has a good understanding of the stoma and ostomy care, their sense of control is typically increased, along with confidence and self-efficacy (O'Connor, 2005). The nurse is in a key position to teach, encourage, and advocate for the patient, as well as play a key role in discharge planning so that the patient may cope optimally at home following stoma surgery.

Summary of Consultations

The purpose of the consultations with key informants was to gain insight into what topics would be beneficial to include in the learning resource manual and the literature review. In addition, the consultations determined if there were any specific issues in caring for stoma surgery patients on Unit Six East. Originally, the four key informants chosen for consultations were the Division Manager of Six East, the ET nurse, one senior RN working on Six East, and a general surgeon affiliated with Six East.

During consultations, due to scheduling conflicts, the general surgeon was unable to complete the consultation. Therefore, in consultation with my supervisor, it was agreed that replacing the general surgeon with another senior RN on Six East would be beneficial to the purpose of this project. Data were collected during four semi-structured, individual interviews in a classroom located on Six East. Although the interviews were semi-structured, the key informants were encouraged to provide additional comments or elaboration as they deemed necessary. Notes were taken during the interviews and typed into an encrypted, password-protected Word document immediately following each interview that I only had the password for.

During the consultations, it was determined that a learning resource manual would be beneficial to Six East, especially since post-operative stoma surgery patients require complex and highly specialized care. In addition to the topics found in the literature review, key informants felt that the following topics would be beneficial: different types of stomas, irregularities (i.e., color, prolapse, retracted stoma, and how to detect when something is wrong with the stoma), and ostomy products (i.e., different products available and when to use them).

All of the key informants agreed that learning how to properly assess a postoperative stoma surgery patient was also an important topic for the manual. This included a physical assessment of the abdomen, the stoma itself, common illnesses/issues with the stoma and/or bowel, and an assessment of how the patients are doing psychologically (i.e., how they are coping with body image issues and sexuality). Specifically, the key informants felt that common physical complications that should be

included were: necrotic stomas, mucosal dermal (MC) junction separation, dermatitis/allergic reactions for peristomal skin, stoma prolapse, stoma retraction, infection, high stoma output, little or no stoma output (including constipation and ileus), difficulty finding appliances that fit properly, perforated bowel, and anastomotic leak.

The data collected during consultations provided pertinent information and implications for the creation of the manual. Since most of the literature found pertaining to this topic investigated the experience of the patients and the fact that nurses are in an optimal role to teach, encourage, and advocate for patients, the information collected from frontline nurses and management had great merit in finding specific topics to cover that would be beneficial for those working on Six East and their patients.

Learning Resource Manual

Theoretical Frameworks

It was determined that two different theoretical frameworks would be appropriate to guide the development of the learning resource manual. The first was principles of adult learning and the second was the model of instructional design. Both of these frameworks are discussed in relation to the learning resource manual below.

Principles of adult learning. Five principles of adult learning were outlined by Bryan, Kueter, and Brownson (2009): (a) adults need to know what they are learning, (b) adults are motivated to learn by the need to solve problems, (c) the adult's previous experience must be respected and built upon, (d) learning approaches should match the adult's background, and (e) adults need to be actively involved in the learning process. In

summary, these principles state that adults dedicate more time and energy when they have a purpose and/or a specific problem to solve. Furthermore, relating learning material to what the adult already knows can facilitate the learning process.

Adults are frequently self-directed by nature; therefore, including them in the learning process can increase their willingness to learn (Bryan et al., 2009). These principles were applied by having informal consultations prior to the start of this practicum project. This gave frontline RNs, the manager, and the ET nurse a chance to share ideas and feedback with regard to what information was included in the learning resource manual.

Nursing is a profession that requires ongoing education throughout the entirety of the nurse's career. It was determined that a learning resource manual would be most appropriate for the setting and topic chosen, as it is a form of self-directed learning that accommodates shift work and various work schedules (Abbasi, Hazrati, Mohamadi, & Rajaeeford, 2013).

Model of instructional design. The development of the learning resource manual was guided by the framework outlined by Morrison, Ross, Kalman, and Kemp (2013) in *Designing Effective Instruction*. Morrison et al. (2013) maintained that designing instruction is a systematic process that is based on learning theories, information technology, systematic analysis, educational research, and management methods. The systematic process involves nine steps that are outlined in relation to the creation of the learning resource manual below.

Instructional problems. The first step in instructional design is identifying an instructional problem, which could be completed through a needs assessment (Morrison et al., 2013). The instructional issue was initially identified as a felt need, as no current comprehensive learning manual existed specifically for nurses caring for patients following stoma surgery on Six East. Through completing an informal needs assessment, key stakeholders associated with Six East at St. Clare's Mercy Hospital identified this need.

Learner characteristics. Analyses of the learners and context are necessary so the instructional design can optimally suit the target audience (Morrison et al., 2013). Six East is a general/thoracic surgery unit, where nurses work various shifts and have different levels of experience. It was determined via both informal and formal consultations that a learning resource manual would be appropriate to meet the needs of different schedules and experience levels. Nurses can choose which parts of the manual they find personally beneficial and read it on their own time and at their own pace.

Task analysis. This analysis is necessary for determining what knowledge is needed in the target population and how the learners may best master the objectives (Morrison et al., 2013). Three different types of task analysis are outlined by Morrison et al. (2013): (a) topic analysis, (b) procedural analysis, and (c) the critical incident method. Topic analysis identifies what content will be the main focus of the instruction (Morrison et al., 2013). Procedural analysis identifies the steps required to complete a procedure (Morrison et al., 2013). The critical incident method involves analysing content related to interpersonal interactions and attitudes (Morrison et al., 2013). Topic analysis was

deemed most appropriate in relation to this practicum project, as topics for the learning resource manual were sought out during consultations with key informants.

Instructional objectives. Instructional objectives provide a measurable outline that learners are intended to master (Morrison et al., 2013). Specific objectives were outlined earlier in this report. As well, specific learning objectives were listed before each chapter in the learning resource manual.

Content sequencing. Content sequencing is concerned with how to optimally present information to the learner (Morrison et al., 2013). This was decided once the topics for the manual were chosen. The topics were presented in a logical sequence according to the writer and the key informants. For example, an introduction to the gastrointestinal system, and an overview of different types of bowel surgeries were discussed first. This information was followed by an assessment of the stoma surgery patient, application of the ostomy and ostomy products, potential stoma surgery complications/abnormalities, and discharge planning/resources.

Instructional strategies. Strategies include determining how to purposefully or creatively present the information to the learner (Morrison et al., 2013). This was determined throughout the process of consultations and informal feedback from key informants during the creation process of the manual. For example, pictures of stoma surgery complications are included so the reader may have a visual depiction when assessing patients for abnormalities. Also, there were several ostomy products that were

presented in a table with photos and bullet points, so the learner would have a visual picture and a concise description of what the product was and what it was best used for.

Designing the message. After instructional strategies, the focus shifts to designing the message (Morrison et al., 2013). This could include choosing appropriate text and graphics (Morrison et al., 2013). The goal is to design the message in such a way that it helps maximize the learner's understanding (Morrison et al., 2013). In relation to the practicum project, pictures were chosen of different ostomy products and presented in a table with brief descriptions for quick reference. In addition, there was a lot of information presented in point form rather than paragraphs on every page, in order to address key points efficiently.

Development of instruction. This step involves pulling the analysis, strategies, and information together to create the final product (Morrison et al., 2013). This step in relation to the practicum project included piecing together the final product of the learning resource manual and PowerPoint presentation.

Evaluation instruments. Evaluation instruments are used to evaluate the final product and/or the learners' mastery of objectives (Morrison et al., 2013). For this practicum project, the learning resource manual was shared with two of the four key informants to review for feedback. They stated that upon reviewing the manual, the layout was logical, and the topics covered were informative and relevant. They believed that all of the pertinent topics they had suggested were fully covered. With the exception

of the last section, each chapter of the manual ends with a chapter quiz. Learners may test their knowledge of the information included in the manual.

Learning Resource Manual Content

Using the principles of the adult learning theory and *Designing Effective Instruction*, the learning resource manual was divided into six main chapters, with subsections in each. The six main chapters included:

- Anatomy and Physiology of the Bowels;
- Illnesses of the Bowel and Stoma Surgeries;
- Assessment, Types of Ostomies, and Diet Recommendations;
- Ostomy Products and Ostomy Application;
- Physical and Psychological Complications of Stoma Surgery; and
- Discharge Planning and Resources

Implementation and Evaluation Plan

Implementation

The final product of the learning resource manual will be presented to key stakeholders of Six East: the manager, clinical educator, ET nurse, and two of the senior RNs who completed the consultations. Once approved by the manager, implementation of the manual will occur. This will involve having the learning resource manual available on the unit for current staff, new/orientating staff, and/or

staff who are floated to Six East, and any other staff members who are interested in learning more about the nursing care of stoma surgery patients.

Evaluation

Once the learning resource manual is implemented on Six East, I will seek out verbal feedback from the staff working on Six East who use the manual. Any suggestions for changes to the manual will be discussed in consultation with the manager, and changes may need to be made accordingly.

Advanced Practice Nursing Competencies

The Canadian Nurses Association (CNA; 2008) states, “core competencies for advanced nursing practice are based on an appropriate depth, breadth and range of nursing knowledge, theory, and research, enhanced by clinical experience” (p. 21). Four main categories of competencies for advanced nursing practice (ANP) are: (a) clinical competencies, (b) research competencies, (c) leadership competencies, and (d) consultation and collaboration competencies. My intention was to demonstrate all of these ANP competencies. The following is a brief discussion of how these competencies were met.

Clinical Competencies

Clinical competence involves the nurse integrating skills, research, knowledge, and critical thinking into their practice in order to best assess, assist, and educate their patients (CNA, 2008). I met this competency by integrating my own personal skills,

practice, and knowledge with research, new knowledge, and critical thinking into the creation of the learning resource manual. In addition, the learning resource manual itself will hopefully help other staff members better assess, assist, and educate post-stoma surgery patients.

Research Competencies

“Generating, synthesizing and using research evidence is central to advanced nursing practice” (CNA, 2008, p. 23). This competency has been met during this practicum by using and synthesizing research throughout the development of the learning resource manual.

Leadership Competencies

Leadership competence of ANP involves consistently exploring ways to better practice (CNA, 2008). This competency has been met throughout this practicum by identifying the learning needs of nurses working on general surgery to create a learning resource manual that will benefit nurses working on Six East. Such a manual did not exist prior to this practicum project; thus, the creation of such a resource demonstrates that I am an agent for change. I aimed to increase the knowledge and assessment skills related to post-stoma surgical care for nurses working on Six East.

Consultation and Collaboration Competencies

“Effective collaboration and communication with clients and others on the health-care team represent important aspects of any nursing practice” (CNA, 2008, p. 26).

This competency has been met throughout the entirety of the practicum by consulting with key informants, as well as my supervisor, to ensure the learning resource manual was created to meet the needs of nurses working on Six East.

Conclusion

The main goal of this practicum was met, which was to create a learning resource manual for nurses on stoma surgery and ostomy care. I assessed the learning needs of nurses on Unit Six East and the need for such a manual. I determined that a learning resource manual was appropriate to meet the learning needs of nurses working on Six East. Then, I created the learning resource manual, while demonstrating the ANP competencies.

Nurses caring for patients following stoma surgery require specific skills and knowledge in order to provide safe and competent care. It is hoped that the learning resource manual developed for this practicum will enhance the knowledge and skills required for nurses working on Six East who care for this patient population. In this final report, I discussed the rationale and background for this project, practicum goals and objectives, and each of the major processes involved in the development of the learning resource manual (i.e., conducting a literature review and consultations, as well as using frameworks to guide this project).

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Appendix A

Integrative Literature Review: Stoma Surgery and the Role of the Registered Nurse

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Individuals who undergo stoma surgery are faced with many physical and psychological challenges (Swan, 2011). Nurses working in the acute care setting are responsible for caring for these patients, which includes conducting physical assessments and providing psychological support and teaching. The purpose of completing this integrated literature review is to find what is available in the literature and other resources to compile a substantial background for the development of a learning resource manual for nurses caring for patients following stoma surgery. In this paper, I present a brief topic background and explanation of a stoma, an environmental scan, and a summary of studies on the experience and patients' perspectives of undergoing stoma surgery, as well as the various roles of the nurse in caring for these patients. A framework for instructional design is outlined, as well as an overview of principles of adult learning. Literature summary tables for the research studies are provided in Appendix A.

Background

A stoma, by definition, is an artificial opening created surgically on the surface of the body (Myers, 2006). A stoma that has resulted from bowel surgery is an opening made in the abdominal wall to create an alternate passageway for stool. Depending on the part of the bowel that is resected during surgery, the end result could be an ileostomy or a colostomy. An ileostomy is formed by bringing either a healthy end or a loop of the ileum to the surface of the abdomen. Depending on the part of the ileum that is resected and the indication for surgery, an ileostomy may be reversible in the future (Burch, 2011b). A colostomy is a surgery when a stoma is formed with a healthy part of the colon. Depending on the part of the colon that is operated on, colostomies could

potentially be reversed in the future (Black & Hawks, 2009). The reversal of a stoma means that the stoma is created temporarily, usually to allow the bowel to heal following surgery. The stoma is reversed at a later date, meaning that the individual once again secretes feces through the rectum (Black & Hawks, 2009).

There are several illnesses of the bowel that could result in bowel surgery requiring a stoma. Some of these illnesses include rectal or other types of bowel cancer, Crohn's disease, sphincter repair, ulcerative colitis, and diverticular disease (Burch, 2011b). It is estimated that 25,100 Canadians will be diagnosed with colorectal cancer in 2015, making it the third most commonly diagnosed cancer in Canada (Canadian Cancer Society, 2015a). Twenty-two thousand Canadians were diagnosed with colorectal cancer in 2011, with the highest incidence rates occurring in Newfoundland and Labrador (Canadian Cancer Society, 2011). Cancer of the small intestine is less prevalent than colorectal cancer. Most recent statistics show that 740 Canadians were diagnosed with cancer of the small intestine in 2010 (Canadian Cancer Society, 2015b). The number of people living in Canada with Crohn's disease or ulcerative colitis is among the highest worldwide, where one in 150 Canadians are living with one of the two diseases (Crohn's and Colitis Canada, 2014).

Rationale and Environmental Scan

Assessment of patients who have undergone stoma surgery and ostomy care are nursing skills that are required for nurses working on Unit Six East at St. Clare's Mercy Hospital in St. John's, Newfoundland and Labrador. This involves conducting a thorough

assessment of the abdomen and stoma, choosing the right ostomy supplies, providing emotional support, and teaching the patient how to care for his/her ostomy. Structured patient education has been shown to have positive outcomes for patients, such as a positive effect on quality of life and lower costs for ostomy supplies (Danielsen, Burcharth, & Rosenberg, 2013). Patients who have undergone stoma surgery face a multitude of physical, psychological, and psychosocial impacts, and having knowledge of these impacts enables the nurse to provide individualized, competent care to the patient (Brown & Randle, 2005).

Nurses on Unit Six East at St. Clare's Mercy Hospital expressed the need for a resource manual on caring for patients following stoma surgery. I consulted with the Enterostomal Therapy (ET) nurse at St. Clare's Mercy Hospital to find out if any learning resource manuals existed to aid nurses, who are caring for patients following stoma surgery. She did not find any resources specific for nurses, however, she had two booklets that she gives to patients. One booklet is on managing colostomies and the other is on ileostomies. Both booklets were created by Hollister (2015), a company that makes ostomy products. These booklets give an overview of what a stoma is, brief dietary information, and information regarding stomas and ostomy appliances. Although they were developed for patients, these booklets could be helpful to nurses new to ostomy care and could be used during nurse-patient teaching.

A consultation was also made with the Clinical Educator for the surgery program at St. Clare's Mercy Hospital to find out if other resources existed within health care agencies in the province. Through this consultation, I discovered that there is a general

orientation manual for nurses on Unit Six East that briefly describes each of the types of bowel surgeries, but does not cover ostomy or assessment skills for these types of surgeries. The ET nurse for Western Health, Newfoundland and Labrador, forwarded a discharge planning checklist used by nurses when discharging a patient with a new stoma. It goes through the process for discharge, starting with the day of surgery, and directs the nurse to start by explaining the ostomy change and gradually getting the patient and/or their family members involved. It mentions the different types of ostomies, peristomal skin complications, common infections at the stoma site, and different materials that the patient may need prescribed on discharge.

I also completed an online scan to determine if any such resource manual existed for nurses in other health jurisdictions. Most of the resources I found online were directed toward ostomy patients. There were two resources, in particular, that I thought were very applicable to this practicum project and they were directed towards health care workers. *Modern Medicine Network* is a Web site that is based out of North Olmsted, Ohio, in the United States. On this Web site, Dorman (2009) has an online article that is directed toward nurses and briefly touches on the physical and emotional assessment of the stoma patient, types of bowel surgeries, types of pouching systems, skin care, sexuality, and diet. The second resource is an online manual directed toward health care support workers in the United Kingdom. It covers information on stoma operations, the role of the ET nurse, effective communication, stoma assessment, teaching, and discharge (Carter, Harker, Shallow, & Waller, 2008). Since no comprehensive resource manual was found for registered nurses on caring for patients following stoma surgery, there was a

need to develop such a resource manual for the nurses on Unit Six East at St. Clare's Mercy Hospital.

The Experience of Stoma Surgery

Aside from the major physical changes that come with stoma surgery, the psychological and psychosocial impacts of having a new stoma evoke many different feelings for the stoma patient. An altered body image, adjustment to having a new stoma, social concerns, relationships, and sexuality are all topics found in the available literature that concern the psychological and psychosocial adjustment for patients with a stoma (Andersson, Engstrom, & Soderberg, 2010; Beitz, 1999; Bekkers, van Knippenberg, van Dulmen, van den Borne, & Berge Henegouwen, 1997; Lim, Chan, & He, 2015; McVey, Madill, & Fielding, 2001; Persson & Hellstrom, 2002; Simmons, Smith, Bobb, & Liles, 2007, Swan, 2011).

An altered body image was a predominant theme found in the literature (Andersson et al., 2010; Beitz, 1999; Bekkers et al., 1997; Lim et al., 2015; McVey et al., 2001; Simmons et al., 2007, Swan, 2011; Thorpe, McArthur, & Richardson, 2009). Having an altered route for defecation, whereby the waste collects in a pouch on the person's abdomen greatly changes the person's concept of their body and can also severely impact their self-esteem (Swan, 2011). The results of one study in particular showed that 47% of participants felt a lack of confidence due to their ostomy and more than half of the participants felt no one truly understood what living with an ostomy was like (McKenzie et al., 2006). A synthesis of qualitative studies on stoma surgery patients

had similar findings. A theme of lost embodied wholeness was found, whereby the disrupted bodily function brought forth by a new stoma disrupted patients' lives and decreased their bodily confidence (Thorpe et al., 2009).

Adjustment to having a stoma was investigated in multiple studies. The studies showed that patients who accepted their stoma were better adjusted in their overall psychological, social, physical, and sexual functioning (Andersson et al., 2010; Bekkers et al., 1997; Simmons et al., 2007). Patients who had supportive interpersonal relationships in their lives felt this made it easier for them to accept their stoma. As well, patients who had supportive interpersonal relationships and feelings of stoma acceptance felt more self-efficient in caring for their stomas. (Simmons et al., 2007). It was suggested by Simmons et al. (2007) that, alternatively, interpersonal relationships could have negatively impacted adjustment. Patients who reported problems with interpersonal relationships may have narrowed their opportunity for emotional disclosure, potentially having a negative impact on their adjustment. Sahay, Gray, and Fitch (2000) found that the primary source of emotional support for patients was family and friends, namely spouses who assumed the greatest responsibility and support. One study found that a patient's income was correlated with stoma adjustment, with higher income being associated with a better adjustment process (Bekkers et al., 1997). Generally speaking, the more uncertainty a patient feels following ostomy surgery, the more difficult the adaptation process is (Riemenschneider, 2015).

Feelings of dependency and a lack of control were common among stoma surgery patients (Beitz, 1999; McVey et al., 2001). Feeling dependent and lacking control for

new ostomy patients may cause feelings of fear and depression. Gradually regaining a sense of autonomy through becoming more independent with ostomy care was shown to diminish feelings of fear and depression (McVey et al., 2001). Another method for obtaining better control of ostomies was changing dietary intake to foods that were more conducive to manageable ostomy function. Dietary limitations varied for different patients (Beitz, 1999).

Sexuality and sexual activity were outlined as major areas of adjustment following stoma surgery (Andersson et al., 2010; Bekkers et al., 1997, White, 2013; Williams, 2006). As sexual self-concept is highly affiliated with body image, the presence of an ostomy can have a large impact on sexuality (White, 2013; Williams, 2006). In a study conducted by Andersson et al. (2010), women who had undergone rectal surgery as a result of rectal cancer discussed how important it was to have a good relationship with their partner and to talk about their sex life. Many of them were unable to have sexual intercourse months following the surgery due to anal scars and acute pain in the vagina. Having a supportive and understanding partner made this situation much easier to accept (Andersson et al., 2010). Another study highlighted the important role the partners of stoma patients played in providing both emotional and practical support. Some participants described controlling their emotions as a means to protect their partner and resume their normal lives following stoma surgery (Emslie et al., 2009). The development of a supportive and trusting relationship between nurses and stoma surgery patients could help decrease their feelings of vulnerability and ease discussion regarding sexuality. Discussing sexual health with patients could help them in making informed

decisions regarding their sex life and give them a chance to express their fears and concerns (White, 2013).

Returning to work proved to be a major adjustment initially following ostomy surgery due to a fear of socializing and being in a public place with an ostomy. After the initial period, the same issues regarding having an ostomy at work were not perceived to be as problematic and many were happy to have returned to a level of normalcy and familiarity with their coworkers (Andersson et al., 2010; Bekkers et al., 1997).

Feelings of restriction with regard to activities of daily living were identified (Andersson et al., 2010; Lim et al., 2015; Simmons et al., 2007). People with new ostomies felt that even previously simple activities, such as basic movements, showering, and household chores, were impeded by their ostomies (Lim et al., 2015). More strenuous activities, in particular physical exercises, were also identified as being limited (Lim et al., 2015; Nichols, 2015). Several studies showed patients feeling restricted in social situations (Andersson et al., 2010; Lim et al., 2015; Simmons et al., 2007). Fears of public embarrassment due to factors such as flatulence and appliance leakage were also noted (Andersson et al., 2010; Simmons et al., 2007). Patients who had lower levels of acceptance experienced more fear and, thus, reported avoiding social situations (Bekkers et al., 1997). Other patients described their experiences when they did go out in a social situation. They stated that they were constantly aware of where the bathroom was located and chose seating in public places where they could immediately and discretely leave the room, if their ostomy leaked. Physically hiding the ostomy appliance in social situations was also important to those with ostomies, which at times negatively impacted their sense

of freedom (Andersson et al., 2010; Beitz, 1999). Many people voiced that if there was a fecal smell present, they automatically thought it was from their ostomy. This caused feelings of stress and embarrassment (Andersson et al., 2010; Annells, 2006).

In the study by Andersson et al. (2010), although the women had underwent many negatively perceived physical changes, they also described focusing on their ostomies in a positive light. They viewed it as a new chance at life and they discussed their experience of integrating back into their regular lives. They viewed their ostomies as a means of survival. When the women viewed their ostomies with this frame of mind, they became more accepting of them. Another study had similar findings in that the patients described shifting their beliefs toward a positive life with a stoma as a helpful coping mechanism. This helped them live life to the fullest, without letting their stoma hold them back (McVey et al., 2001). Many patients found support from their partner a very strong and positive coping strategy (Andersson et al., 2010; McVey et al., 2001). De Gouveia Santos, Chaves, and Kimura (2006) found that the most frequent coping strategy used by individuals with permanent ostomies was problem solving. Individuals indicated that facing their ostomy issues head-on allowed for increased feelings of autonomy and responsibility.

The Nurse's Role in Stoma Adjustment and Ostomy Care

The role of the nurse begins before stoma surgery and it carries into the postoperative stage, with community health nursing involvement after discharge. The role of the nurse covers many different physical and psychological aspects of patient care. To

begin, in order to enhance recovery, patient teaching should begin preoperatively. The patient should understand the importance of actively participating in stoma/ostomy care and mobilizing as soon as possible following surgery (Burch & Slater, 2012).

Postoperatively, assessment of the patient and teaching during ostomy care is vital in caring for the patient, as well as for preparing for discharge home. Sahay et al. (2000) conducted a study with patients with colorectal cancer. They found that while most patients were satisfied with their treatment and education during their stoma surgery experience, some voiced that there was a lack of information regarding long-term stoma management. The results show the importance of nurses providing patients with resources for information and support following discharge, when they no longer have immediate assistance from the health care team.

The nurse's assessment of the patient's abdomen is essential following bowel surgery. The nurse assesses the abdomen for firmness, distention, and auscultates bowel sounds. It is also up to the nurse to assess the stoma site, peristomal skin, and the ostomy for flatus and stool (Black & Hawks, 2009). Healthy stomas are typically red or pink in appearance and round or oval in shape. Optimally, stomas are raised above the abdominal skin and the amount it is raised is dependent on the type of stoma and the patient (Burch, 2011a). During assessment of the stoma, the nurse should also teach the patient how to assess the mucosa of the stoma, so that she/he can better detect abnormalities, if and when they arise. Patient teaching also increases the patient's independence in preparation for discharge.

There are a wide variety of stoma appliances available. Choosing the right appliance is dependent on many factors. For example, the output of the stoma, placement of the stoma, and patient preference. There are one-piece and two-piece appliances available. Choosing which one of these works best for the patient is usually decided between the nurse and the patient (Burch, 2011b).

Like any surgery, stoma surgeries can cause unexpected or unwanted complications for patients. Sore peristomal skin is common and can be challenging since wound care treatments are close to, or directly on, the site where the ostomy is applied to the skin. Irritated skin may simply need a skin barrier applied, while broken peristomal skin may require stoma powder or an occlusive dressing. Sore peristomal skin can be quite uncomfortable for patients. Thus, the role of the nurse in assessing the stoma/ostomy site, choosing appropriate treatments, and teaching the patient are vital in the healing process (Burch, 2013).

Constipation is another possible complication following stoma surgery, which is often caused by an ileus. This may be treated by hydrating the patient with intravenous fluids, delaying oral intake, or in some cases, using a laxative. In contrast, diarrhea or high output from the ostomy may occur. High output of stool may require intravenous fluid replacements and bloodwork to check for electrolyte imbalances (Black & Hawks, 2009).

In addition to the physical care and assessment of stomas and stoma patients, Simmons et al. (2007) highlighted that psychosocial concerns should be a part of routine

stoma care. The role of the nurse in facilitating physical and psychosocial well-being following ostomy surgery is vital. Often, the psychological distress that stoma surgery patients experience can be rooted in a lack of knowledge regarding stoma management. Once they have a good grasp on the practical management skills, their sense of control is increased (O'Connor, 2005). Through teaching skills on how to care for the ostomy, the nurse can help increase the patient's confidence and certainty in caring for their ostomy. This is associated with better adjustment for the patient (Riemenschneider, 2015). The expertise of the nurse in helping the patient manage a new ostomy increases patient certainty about managing their illness and their new stoma (Riemenschneider, 2015).

Though the nurse must have knowledge and skill to care for stoma surgery patients, they also need to allow the patient to gradually gain their independence with their ostomy care so that they can regain their sense of control (McVey et al., 2001). This involves the nurse completing all of the ostomy care initially, while simultaneously explaining the process, to eventually standing by and providing verbal feedback, while the patient uses their psychomotor skills. Finally, the nurse does not partake in ostomy care at all when the patient becomes completely independent.

As discussed in the study by Andersson et al. (2010), women found it easier to accept their stoma when they shed a positive light on their ostomy by viewing it as a means of survival. This could have implications for nursing practice when the nurse provides emotional support for the patient. Encouraging the patient to view the positive factors involved with their new ostomy could ease their adjustment and attitudes toward them. Whether the ostomy is a result of bowel cancer or uncontrollable flare-ups of

Crohn's disease or ulcerative colitis, there are often positive ways to view the surgeries. As found in this literature search, many patients struggle with the psychosocial aspect of having an ostomy. The nurse's attitude can influence the patient's acceptance of a new stoma (Burrell, 2013). The nurse can play a key role by offering encouragement and emotional support and advocating for patients undergoing this life change (Di Gesaro, 2012). Nurses' confidence in providing ostomy care and teaching is increased with training and experience, and it has a positive effect on patients receiving this care (Cross, Roe, & Wang, 2014).

Theoretical Frameworks

Principles of Adult Learning

Bryan, Krueter, and Brownson (2009) outlined five principles of adult learning, which were (a) adults need to know what they are learning, (b) adults are motivated to learn by the need to solve problems, (c) adults' previous experience must be respected and built upon, (d) learning approaches should match adults' background, and (e) adults need to be actively involved in the learning process.

Adults devote more time and energy when they have a purpose for learning and/or a specific problem to solve. Relating material to what is already known can facilitate the learning process and this should be taken into account, as all adults have their own personal and work experience. Likewise, adults possess diverse backgrounds that may call for multiple methods of delivering information. Adults are often self-directed by nature (Bryan et al., 2009). Thus, including adults in the learning process can allow for

more motivation to learn, as opposed to having no choice in how or what they learn (Bryan et al., 2009). With regards to my practicum project, creating the manual will build on what the registered nurses already know, as they already work with patients following stoma surgery. These principles of adult learning are applicable to my practicum project. I will involve key informants, such as staff nurses, in the development of the resource manual for nurses caring for patients following stoma surgery.

Nursing is a profession that requires continuous education. Self-directed learning modules are beneficial to nurses as it suits their varying work schedules, while still providing an opportunity for them to learn (Abbasi, Hazrati, Mohamadi, & Rajaeefard, 2013; Riley-Doucet, 2008). Self-learning modules such as pamphlets and learning resource manuals offer convenience and allow adults to choose their time and place for learning (Abbasi et al., 2013). Researchers Abbasi et al. (2013) completed a quasi-experimental study, which showed that self-education was equally successful in adults gaining knowledge as conventional teaching methods.

Model of Instructional Design

The development of the learning resource manual for this project will be based on the framework put forth by Morrison, Ross, Kalman, and Kemp (2013) in *Designing Effective Instruction*. According to Morrison et al., instructional design is a systematic design process that is based on learning theories, information technology, systematic analysis, educational research, and management methods. Instructional design is used when a performance issue is identified and instruction is the most fitting solution. It is

based upon the needs of the learner, focusing on what strategies are most appropriate for teaching objectives, what technology and resources are available, what support is required for the learner, how achievement of objectives will be measured, and what revisions may be required. An overview of instructional development involves nine steps that are outlined under the subheadings below.

Instructional problems. Identifying an instructional problem is the first step in instructional design (Morrison et al., 2013). This can be done through a needs assessment, which can identify different types of needs (Morrison et al., 2013). In the case of this project, the end product is aimed towards meeting a felt need. I aim to increase the knowledge level of the target audience (i.e., nurses on Six East at St. Clare's Mercy Hospital) in the realm of taking care of patients who have undergone stoma surgery, as there is no such comprehensive resource that currently exists. This instructional issue began as a felt need. Upon completing an informal needs assessment, it also became an expressed need. Through speaking with the Division Manager, Clinical Educator, ET nurse, and nursing staff on Unit Six East via an informal needs assessment, they agreed that a resource manual for nurses caring for patients undergoing stoma surgery would be beneficial to nursing practice on this unit.

Learner characteristics. Learner and contextual analyses are completed so that the instructional design can be created to suit the target audience (Morrison et al., 2013). The context and general characteristics are already known. Six East is a general/thoracic surgery unit in an acute care hospital with nurses of many different levels of experience. Specific entry characteristics, such as how comfortable nurses feel currently caring for

patients undergoing stoma surgery will be sought when consultations are completed.

Learning styles will also be investigated through consultations.

Task analysis. Task analysis involves determining what knowledge is needed in the instruction and how the learner will best master the objectives (Morrison et al., 2013). This can include three different techniques for analysing knowledge and tasks, which are (a) topic analysis, (b) procedural analysis, and (c) the critical incident method (Morrison et al., 2013). Topic analysis is best suited to determine the content that will be included in the learning resource manual. Topics will be determined in consultation with the key informants.

Instructional objectives. Instructional objectives outline what is intended for learners to master. They also serve as a quality check when the learner's knowledge is measured in accordance with the objectives (Morrison et al., 2013). Specific objectives will be determined after the topic analysis is completed and will be presented at the beginning of the learning resource manual, as a guideline for what the manual is intended to teach.

Content sequencing. Content sequencing involves figuring out how to optimally present information to the learner. For example, choosing a logical order for the content so that it is clear and makes sense to the learner (Morrison et al., 2013). This will be decided when all relevant information for the learning resource manual is obtained.

Instructional strategies. Instructional strategies involves designing creative ways to deliver the information to the learners. For example, new content will be integrated

with concepts that the learners already have a good grasp on. It can involve analogies or greater innovation, such as simulation (Morrison et al., 2013). This will be considered once the information to present is determined.

Development of the instruction. Having completed the analysis, the strategies, and the message, this stage is when everything is put together to produce the final instructional product (Morrison et al., 2013). In the case of this practicum project, this would involve piecing together the learning resource manual and PowerPoint presentation.

Evaluation instruments. The final instructional product will still require evaluation and possible reevaluation. Evaluation instruments are used to measure learners' mastery of the instructional objectives (Morrison et al., 2013). For this practicum project, the first draft of the manual will be given to key informants for feedback and revisions will be made accordingly.

Conclusion

This literature review has highlighted many important implications to consider while developing the learning resource manual for nurses working with stoma surgery patients. First and foremost, adequate nursing skills and knowledge are essential in providing optimal care for these patients. Patient education is also vital, as well as encouragement and emotional support. The literature review also outlined important adult learning principles to take into consideration while developing the manual. These

principles provide a solid framework to guide the development and implementation of the manual.

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Name, Author, Date, Study Objective	Sample/Group (Size, Setting, Characteristics)	Design and Methodology	Key Results and Findings	Strengths/ Limitations	Conclusion and Rating
<p>Study title: A chance to live: Women's experiences of living with a colostomy after rectal cancer surgery.</p> <p>-Andersson, Engstrom, and Soderberg (2010).</p> <p>-Study objective: The aim of the study was to portray women's experience of living with a colostomy after rectal cancer surgery.</p>	<p>-Sample size of five women.</p> <p>-Inclusion criteria included: 1) being a woman who had undergone rectal surgery resulting in a colostomy, and 2) were still at work.</p> <p>-Setting: Northern Sweden</p> <p>-A secretary in the hospital contacted six women who fit inclusion criteria and asked them to participate in the study. Five women were interested and contacted by one of the researchers.</p> <p>-Interviews were conducted to collect the data.</p>	<p>-Interviews were based on a narrative approach, and an interview guide was used.</p> <p>-The women decided where the interviews would take place (in the participants' homes n=2, in the hospital (n=2), and over the phone (n=2).</p> <p>-A thematic content analysis was used to analyze the text from the interviews, which were reviewed several times and identified five categories. The transcripts were read a last time to ensure validity of themes and categories.</p>	<p>-There were two main themes found through data saturation, and each had categories:</p> <p>1) Insecurity about life</p> <p>a) Cancer is frightening</p> <p>b) Feeling restricted by the colostomy</p> <p>2) A bridge to life</p> <p>a) A chance to survive</p> <p>b) Being able to work again</p> <p>c) Receiving good information</p> <p>-Overall results showed that though women underwent many negative changes, they viewed their ostomies as a means of survival.</p>	<p><u>Strengths:</u></p> <p>-Interview transcripts read several times to ensure accuracy.</p> <p>-Ethical approval was obtained.</p> <p><u>Limitations:</u></p> <p>-The interviews were transcribed verbatim after the interview took place.</p> <p>-The sample was restricted to former patients from a specific hospital.</p>	<p>-The study is relevant to practice and it describes the major adjustments women undergo when trying to integrate back into their lives previous to stoma surgery. This gives healthcare workers a better understanding so they may be able to better support these patients.</p> <p>-The aim of the research was met by thoroughly describing the women's experiences.</p>
Name, Author,	Sample/Group	Design and	Key Results and	Strengths/	Conclusion and

Date, Study Objective	(Size, Setting, Characteristics)	Methodology	Findings	Limitations	Rating
<p>Study title: The experience of flatus incontinence from a bowel ostomy: A hermeneutic phenomenology.</p> <p>-Annells (2006).</p> <p>Study objective: To find possible meanings from the experience and impact of people experiencing flatus incontinence from their bowel ostomy.</p>	<p>-Purposive sampling of six persons with bowel ostomies (Four had colostomies and two had ileostomies).</p> <p>-Age range 50-83 years old.</p> <p>-Setting: A city in Australia</p>	<p>-Hermeneutic phenomenology guided by a Gadamerian perspective.</p> <p>-Data was gathered through unstructured, in-depth interviews.</p> <p>-Interviews were conducted at a place chosen by each participant.</p> <p>-Interviews were videotaped so that conversation and non-verbal cues could be recorded.</p>	<p>-Nine themes emerged: 1) I am undignified, 2) I am a secret, 3) I am always with gas, 4) I am not myself alone, 5) I am without choice, 6) I am a seeker of control, 7) I am the smell, 8) I am not normal, and 9) I am living a life – sort of.</p> <p>-Persons experiencing flatus incontinence from their bowel ostomies can negatively impact their social interactions, self-image, sexuality, social activity, and psychological well-being.</p>	<p><u>Strengths:</u></p> <p>-Ethical approval was obtained.</p> <p>-Reflexivity journal and methodological log were used to create an audit trail to help ensure trustworthiness.</p> <p><u>Limitations:</u></p> <p>-Recruitment strategies were vague, however it was stated that they were “ethically acceptable” (p. 519).</p> <p>-The setting was vague, however this could be due to the study topic and ethical concerns.</p>	<p>-This study is relevant to practice as it creates an in-depth understanding of the experience of patients experiencing flatus incontinence from their bowel ostomies. Nurses need to be aware of the major psychological impact this can have on patients so that they can empathize and be sensitive in their nursing practice.</p> <p>-The study appropriately met the study objective that was stated.</p>

Name, Author, Date, Study Objective	Sample/Group (Size, Setting, Characteristics)	Design and Methodology	Key Results and Findings	Strengths/ Limitations	Conclusion and Rating
<p>Study title: The lived experience of having an ileoanal reservoir: A phenomenological study.</p> <p>-Beitz (1999).</p> <p>-Study objective: To understand the experience of persons who have had construction of an IAR.</p>	<p>-Purposive sample of 10 participants belonging to an IAR support group in a hospital in a major east coast city.</p> <p>-Inclusion criteria: 1. Current ileoanal reservoir (IAR) or in the process of getting an IAR. 2. Absence of diagnosed mental health problems currently being treated. 3. Ability to communicate in English.</p> <p>-Setting: Interviews conducted in a private setting (healthcare facility, school, or participant's home).</p>	<p>-Phenomenology, grounded in the phenomenological approach of Van Manen.</p> <p>-Data was collected during face-to-face interviews that lasted 1-2 hours. Interviews were then audiotaped and transcribed.</p> <p>-Data analysed using phenomenological analyses proposed by Van Manen – this process was thoroughly described. Audiotapes were textually transcribed by a contract transcriber. Several reviews of the interviews were conducted.</p>	<p>-Ten major thematic categories that emerged from the data were: 1. Restricted life world 2. Living with uncertainty and fear 3. Seeking control 4. Vicious cycles: crisis and normalcy 5. Seeking and giving support 6. Alienation from the body 7. Living with body alterations 8. The gift of time 9. Role and relationship changes 10. The end of the tunnel but relative results</p>	<p><u>Strengths:</u> -Ethical considerations were discussed. Written, informed consent was sought.</p> <p>-Researcher acknowledged risk for bias as she completed phenomenological research and was very self-aware (bracketed her assumptions before doing the research).</p> <p><u>Limitations:</u> -May be difficult to generalize findings</p>	<p>- Study is of high quality and relevance to practice as it indicates many psychological effects that come with the experience of having an IAR.</p> <p>-The research question was answered via appropriate methods; data was analysed using appropriate qualitative methods.</p>

Name, Author, Date, Study Objective	Sample/Group (Size, Setting, Characteristics)	Design and Methodology	Key Results and Findings	Strengths/Limitations	Conclusion and Rating
<p>Study title: Survival and psychosocial adjustment to stoma surgery and nonstoma bowel resection: A 4-year follow-up.</p> <p>-Bekkers, van Knippenberg, van Dulmen, van den Borne, & van Berge Henegouwen (1997).</p> <p>-Study objectives: 1. To describe psychosocial adjustment 4 years following bowel surgery, and 2. Compare short-term adjustment of patients who completed both studies vs. patients who dropped out after the first study.</p>	<p>-Sample of 68 patients (28 stoma patients and 40 non-stoma patients).</p> <p>-This was an extension of a previous study (study I) which was a longitudinal control group study into psychosocial problems 1 year after major bowel surgery. The sample in study I was 123 patients (59 stoma patients and 64 non-stoma patients). Study I ended with 99 patients (46 stoma patients and 53 non-stoma patients).</p> <p>-Setting: The Netherlands.</p>	<p>-Data were collected 4 years post-operatively using 68 patients.</p> <p>-Longitudinal prospective, two group comparative study.</p> <p>-The Dutch Psychosocial Adjustment to Illness Scale, a self-report questionnaire (PAIS-SR) was used to measure patients' adjustment to major bowel surgery.</p> <p>-Data were analysed using the covariance procedure.</p>	<p>-Both the stoma and non-stoma patient groups experienced the same level of psychosocial problems 4 years following surgery.</p> <p>-Patients with poor early adjustment scores in study I (4 months after surgery) were significantly more likely to drop out. There were no difference in drop-out rates with stoma vs. non-stoma patients.</p> <p>-Higher income was significantly associated with better adjustment process (Pearson's $r = 0.26$, $p = 0.02$).</p>	<p><u>Strengths</u> -At this point in time, it was the first longitudinal prospective investigation into the long-term psychosocial issues following major bowel surgery.</p> <p><u>Limitations</u> -From the beginning of study I to the finish of study II many participants dropped out, however these drop-outs were accounted for with reasoning (i.e. refusal, death, terminal status). These were also accounted for by comparing demographic data to those who didn't drop out (no significant difference).</p>	<p>-This study is relevant to those trying to understand psychosocial impacts of having major bowel surgery (stoma vs. non-stoma – though more studies of this nature are needed).</p> <p>- This was a controlled group study of a particular population. This is a moderate study design and would be rated moderate quality overall.</p>
Name, Author,	Sample/Group	Design and	Key Results and	Strengths/	Conclusion and

Date, Study Objective	(Size, Setting, Characteristics)	Methodology	Findings	Limitations	Rating
<p>Study title: Patients' experiences of performing self-care of stomas in the initial post-operative period.</p> <p>-Lim, Chan, and He (2015).</p> <p>-Study objective: To investigate patients' experiences of performing self-care of stomas in the initial postoperative period.</p>	<p>-Twelve participants were included in the study. Inclusion criteria for patients were: 1) had undergone elective colorectal resections (included both laparoscopic and open procedures) that resulted in a stoma and were hospitalized in the tertiary hospital used in the study, 2) were able to read and speak either English or Mandarin, and 3) were 21 years or older.</p> <p>-Setting: a colorectal ward in a hospital in Singapore.</p>	<p>-Qualitative approach using the interpretive paradigm.</p> <p>-Semi-structured interviews were performed with 12 patients 1 month postoperatively.</p> <p>-The interview guide was developed after an extensive review of relevant literature.</p> <p>-Thematic analysis was used to interpret the data.</p>	<p>-Five themes were established: 1) process of acceptance and self-management of stoma, 2) physical limitations, 3) psychological reactions, 4) social support, and 5) need for timely and sufficient stoma preparation and education.</p> <p>-The study highlighted the vital role health professionals play pre and postoperatively, specifically in helping patients adjust to the presence of a stoma.</p>	<p><u>Strengths:</u> -Ethical approval was obtained and appropriate ethical measures were taken.</p> <p>-Rigor was addressed using criteria by Lincoln and Guba in the areas of credibility, dependability, transferability, and confirmability.</p> <p><u>Limitations:</u> -The study was secluded to one hospital ward. Thus the generalizability of the findings is questionable. -All participants were from a Chinese ethnic group and cultural values were not taken into account.</p>	<p>-The study identified implications for practice that discussed the type and caliber of assistance/support needed by patients in the postoperative phase following a stoma and thus, is highly relevant to nursing practice involving these patients.</p> <p>-The research question was answered appropriately, using appropriate methods and rigor.</p>
Name, Author,	Sample/Group	Design and	Key Results and	Strengths/	Conclusion and

Date, Study Objective	(Size, Setting, Characteristics)	Methodology	Findings	Limitations	Rating
<p>Study title: The relevance of lowered personal control for patients who have stoma surgery to treat cancer.</p> <p>-McVey, Madill, and Fielding (2001).</p> <p>-Study objective: To explore the experience of patients who had stoma surgery to treat cancer in order to find out why problems associated with stoma surgery are not decreasing, despite technical improvements in stoma care.</p>	<p>-Participants were a purposive sample of five men and three women who had been diagnosed with cancer that required stoma surgery.</p> <p>-They were recruited by specialist stoma nurses working in a large hospital in the U.K.</p> <p>-Eight participants started out in the study but only four finished at the 3 month post-operative mark (50% retention rate).</p>	<p>-Longitudinal, qualitative design. Data collected using semi-structured protocol at three points in time: 1) 1-2 weeks before surgery, 2) 1-2 weeks after surgery, and 3) 3 months after surgery.</p> <p>-Data were analysed using the procedures of grounded theory. This entailed developing categories from the data and linking them together to form a theoretical understanding of participants' experience.</p>	<p>-The main theme found in the data was lowered personal control.</p> <p>-Three main perceived causes for lowered personal control were identified: 1) mitigating factors, 2) strategies used to manage this experience, and 3) the consequences of these processes.</p> <p>-Three recommendations were made based on the results that improvements could be implemented in the psychological aspects of stoma care.</p>	<p><u>Strengths:</u></p> <p>-Ethical approval was obtained by the appropriate agency (hospital where study was being performed).</p> <p>-Data were thoroughly analysed/discussed. Tables and graphs were used to display data clearly and concisely.</p> <p><u>Limitations:</u></p> <p>-Only 50% of participants completed the study.</p>	<p>- The research question was answered using appropriate techniques for the methodology chosen, however, the study had important limitations.</p>
Name, Author,	Sample/Group	Design and	Key Results and	Strengths/	Conclusion and

Date, Study Objective	(Size, Setting, Characteristics)	Methodology	Findings	Limitations	Rating
<p>Study title: Adjustment to colostomy: stoma acceptance, stoma care self-efficacy and interpersonal relationships.</p> <p>-Simmons, Smith, Bobb, and Liles (2007).</p> <p>-Study objectives: 1) Examine adjustment and its relationship with stoma acceptance and social interaction, 2) Examine the relationship between stoma care self-efficacy and adjustment in the presence of acceptance and social interactions.</p>	<p>-Participants recruited on admission; 70 patients approached over two year period of which 51 participated. All patients had colostomies.</p> <p>-Participants were recruited from two district hospitals in the U.K.</p> <p>-Inclusion criteria included: 1) The patient was undergoing bowel surgery resulting in a colostomy, and 2) could read and write English. Exclusion criteria: 3) Those clinically diagnosed with a mental illness.</p>	<p>Over a two year period (2000-2002), demographic and clinical data were collected, as well the 51 participants completed questionnaires that measured acceptance of the stoma, relationship with others and stoma care self-efficacy 6 months following surgery.</p> <p>-Data were analysed using the Statistical Package for the Social Sciences (SPSS); multiple regression analysis was the main approach used (with a confidence level of $P \leq 0.05$).</p>	<p>-Stoma care self-efficacy, stoma acceptance, interpersonal relationship and stoma location were strongly associated to the adjustment of having a colostomy.</p> <p>-The study addressed implications for practice, namely that psychosocial concerns should be part of the routine care for stoma patients.</p>	<p><u>Strengths:</u> -Adequate sample size.</p> <p>-Appropriate statistical methods were used.</p> <p>-Ethical approval was obtained.</p> <p>-The study summarized what was already known on this topic and what this study added.</p> <p><u>Limitations:</u> -The study was unable to confirm a causal relationship between adjustment and the psychosocial variables investigated.</p>	<p>-In accordance with the PHAC quality-rating tool, this study is of moderate overall quality and has a weak study design. However, given the topic, this study design is appropriate and highly ethical.</p> <p>-The aim of the study was two-fold and both objectives were addressed in the results and discussed in the article.</p>
Name, Author,	Sample/Group	Design and	Key Results and	Strengths/	Conclusion and

Date, Study Objective	(Size, Setting, Characteristics)	Methodology	Findings	Limitations	Rating
<p>Study title: Uncertainty and adaptation among adults living with incontinent ostomies.</p> <p>-Riemenschneider (2015).</p> <p>Study objective: Examine the relationship between uncertainty and adaptation among individuals undergoing surgery resulting in an incontinent ostomy.</p>	<p>-Sample taken from patients undergoing incontinent ostomy surgery</p> <p>-Setting: Albany Medical Center in Albany, NY.</p> <p>- Inclusion criteria: 1) greater or equal to 18 years of age, 2) able to read, write and speak English, and 3) received Wound and Ostomy Care (WOC) nursing pre and post operatively.</p> <p>-Exclusion criteria: 1) patients with a diagnosis of mental illness, and 2) patients who were not living in a community dwelling.</p>	<p>-Descriptive correlational study.</p> <p>-Adaptation was measured by assessing patients' psychosocial adjustment and ability to restructure lifestyle and sexual roles using the Ostomy Adjustment Scale (OAS).</p> <p>-Uncertainty was measured using the Mishel Uncertainty Illness Scale (MUIS).</p> <p>-Potential participants were found using medical records. One hundred sixty-one surveys were mailed out and 51 were returned.</p>	<p>-The MUIS scale found that patients were neither certain nor uncertain about their illness experience.</p> <p>-Pearson product correlation showed that the more certain patients were about their ostomies, the easier adaptation was for them.</p> <p>-No demographic variables were significantly associated with adaptation or uncertainty.</p>	<p><u>Strengths:</u></p> <p>-The OAS was tested for internal consistency. Mean-to-mean correlation of 0.43 and Cronbach alpha = 0.90.</p> <p>-Operational definitions given for key terms investigated, such as adaptation and uncertainty</p> <p><u>Limitations:</u></p> <p>-Response rate of 32%.</p>	<p>-In accordance with the PHAC quality-rating tool, this study has a weak design and a moderate overall quality.</p> <p>-The objective of the study was clearly met.</p>
Name, Author,	Sample/Group	Design and	Key Results and	Strengths/	Conclusion and

Date, Study Objective	(Size, Setting, Characteristics)	Methodology	Findings	Limitations	Rating
<p>Study title: A qualitative study of patient perspectives on colorectal cancer.</p> <p>-Sahay, Gray, and Fitch (2000).</p> <p>Study objective: Explore the patient perspective on the psychosocial impact of colorectal cancer.</p>	<p>-Participants were recruited from a gastrointestinal follow-up clinic at Toronto-Sunnybrook Regional Cancer Centre.</p> <p>-Participants were aged 48-87 years, with the mean age being 65 years.</p> <p>-Eleven of the 20 participants ended up with a colostomy (permanent colostomy n=9; temporary colostomy n=2).</p> <p>-Inclusion criteria: 1) patients had to be at least six months post-diagnosis, and 2) speak English.</p>	<p>-Qualitative, descriptive study.</p> <p>-Data collected during interviews. Interviews were conducted over the phone.</p> <p>-Interviews consisted of open-ended questions, were recorded on audiotape, and lasted less than one hour.</p> <p>-Researchers met to agree upon coding categories, then a single researcher coded the transcripts.</p>	<p>-Patients were satisfied with their treatment in general (e.g., the information they received, quality of healthcare, and their level of involvement in decision-making).</p> <p>-Some patients expressed dissatisfaction with information when it came to long-term management of their illness.</p> <p>-Those with colostomies had added difficulty to their experience of colorectal cancer.</p>	<p><u>Strengths:</u></p> <p>-The researcher coding the transcripts did periodic double-coding of transcripts to ensure consistency.</p> <p>-Ample opportunity was given to interested participants to ask questions before the study began.</p> <p><u>Limitations:</u></p> <p>-Though the study had 20 participants who were diverse in demographics, the findings may not be generalizable.</p> <p>-Interviews were conducted via telephone, not giving the opportunity for the researcher to pick up on non-verbal cues.</p>	<p>-The study findings appropriately address the original goal of the research study.</p> <p>-Though rigor was not specifically discussed, measures were taken to ensure accurate presentation of the data.</p> <p>-The findings are applicable to nursing practice as it discusses the difficulties that patients had with lack of information; nurses are in a position to advocate for this. Also, it discussed all of the positive parts of their journey, which nurses play a role in as well.</p>
Name, Author,	Sample/Group	Design and	Key Results and	Strengths/	Conclusion and

Date, Study Objective	(Size, Setting, Characteristics)	Methodology	Findings	Limitations	Rating
<p>Study title: 'Getting through' not 'going under': A qualitative study of gender and spousal support after diagnosis with colorectal cancer.</p> <p>-Emslie, Browne, MacLeod, Rozmovits, Mitchell, & Ziebland (2009).</p> <p>-Study objective: To compare men and women's experience of 'spousal support' after a diagnosis of colorectal cancer.</p>	<p>-33 married or cohabiting respondents with colorectal cancer (married n=30, cohabiting n=3).</p> <p>-17 men and 16 women aged 29-76 years at time of diagnosis.</p> <p>-Study took place in the UK.</p>	<p>-Researchers completed a secondary analysis of narrative interviews. Interviews were originally completed for the DIPex project (now called 'healthtalkonline'). This website has full-depth interviews available for secondary analysis.</p> <p>-Transcripts were read repeatedly. Raw data were recoded thematically by one researcher and discussed with the other researchers. QSR NVivo 2.0 used to aid in the analysis of themes and systematic comparisons.</p>	<p>-Both men and women felt that their spouse played a vital support role.</p> <p>-Both men and women described controlling their emotions to both protect their spouses and continue with a 'normal' routine.</p> <p>-Some traditional gender roles differed, such as women ensuring childcare and household duties were covered when they were ill, whereas some men focused on ensuring their families were financially secure when they were ill.</p>	<p><u>Strengths:</u> The website used present interviews that were conducted by experienced qualitative researchers using rigorous methods, and was also approved by the UK Multi-centre Research Ethics Committee.</p> <p>-Very thorough description of transcription and coding methods were discussed.</p> <p><u>Limitations:</u> -Majority of respondents were 50+ years of age and had traditional gender roles. The findings may differ with younger participants.</p>	<p>-The study findings appropriately address the original goal of the research study.</p> <p>-Though it was a secondary analysis, methods were rigorous and researchers were diligent in describing the process.</p> <p>-Findings are applicable to nursing practice as it focuses on what role identities patients may struggle with after discharge. Though traditional gender roles are not generalizable to everyone, it presents the idea that discussing role identity after colorectal cancer may be important to the patient.</p>
Name, Author, Date, Study	Sample/Group (Size, Setting,	Design and Methodology	Key Results and Findings	Strengths/ Limitations	Conclusion and Rating

Objective	Characteristics)				
<p>Study title: Bodily change following faecal stoma formation: qualitative interpretive synthesis.</p> <p>-Thorpe, McArthur, & Richardson (2009).</p> <p>-Study objective: To answer the question: “How has the experience of bodily change following stoma formation been explored and interpreted through existing qualitative research?” (p. 1778).</p>	<p>-AMED, ASSIA, CINAHL, EMBASE, MEDLINE, and PsycINFO databases were searched from November 2007 to April 2009 for qualitative research.</p> <p>-144 papers were found and 11 were selected for review.</p>	<p>-Interpretive review methodology for qualitative research synthesis was used.</p> <p>-Researchers used the concept of embodied self to aid in the synthesis of categories.</p>	<p>-Three broad themes were found: 1) loss of embodied wholeness, 2) awareness of a disrupted lived body, and 3) disrupted bodily confidence.</p>	<p><u>Strengths:</u></p> <p>-No conflict of interest was identified.</p> <p>-The study identified what was already known about the topic, what the paper adds, and implications for practice and/or policy.</p> <p>-Broken-down summaries of each study were offered in a clear, concise table in the article.</p>	<p>-The study findings appropriately address the original goal of the study.</p> <p>-Implications for practice are included in the discussion.</p> <p>-Findings are applicable to nursing practice as nurses need to be aware of the great psychological and psychosocial effects that stoma surgery has on patients, so that they may take this into consideration when providing care.</p>
Name, Author, Date, Study	Sample/Group (Size, Setting,	Design and Methodology	Key Results and Findings	Strengths/ Limitations	Conclusion and Rating

Objective	Characteristics)				
<p>Study title: Experiences of Swedish men and women 6 to 12 weeks after ostomy surgery.</p> <p>-Persson & Hellstrom (2002).</p> <p>-Study objective: To describe patients' experiences, specifically on body image, 6 to 12 weeks following stoma surgery.</p>	<p>-Nine patients from an acute care hospital in Goteberg, Sweden participated.</p> <p>-Participants were expected to have a colostomy, ileostomy, or urostomy for at least 6 months following surgery.</p> <p>One of the researchers approached patients and asked if they were interested in participating in the study (specifically a voluntary, open-ended interview that would be tape-recorded).</p>	<p>-Interviews conducted during a 2 month period within 6-12 weeks of the patient's operation.</p> <p>-Interviews were 30-60 minutes in length.</p> <p>-Qualitative design with a phenomenological approach used. Analysis included four steps: 1) data read to form comprehensive view, 2) themes in everyday language identified, 3) language transformed into disciplinary language, and 4) lived experience expressed from perspective of the discipline.</p>	<p>-Seven themes were found: alienation from the body, altered body image, influences on sexual life, uncertainty, influences on social life, influences on sports and leisure activities, and physical problems.</p>	<p><u>Strengths:</u> -Ethical approval was sought, as well the study was reviewed by the Head of the Department of Surgery in the Swedish hospital.</p> <p><u>Limitations:</u> -The interviewer was known to the patients before this research study, thus the researcher may have had preconceptions going into to study. As well, participants may have felt some sort of obligation to participate in the study (even though it was explained that it was completely voluntary, etc.).</p>	<p>-The study findings appropriately address the original goal of the study.</p> <p>-Findings are applicable to nursing practice as they discuss themes very important to persons with new ostomies regarding body image. Psychological impact such as body image cannot be underestimated for persons undergoing stoma surgery.</p>

Appendix B

Consultation Report: Stoma Surgery and the Role of the Registered Nurse

By: Andrea Morgan

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Project Background

Six East is a general and thoracic surgery unit at St. Clare's Mercy Hospital (SCMH) in St. John's, Newfoundland and Labrador. Various surgeries of the gastrointestinal tract and thoracic cavity are performed on patients who are admitted to this unit each day. One of the most common surgeries performed on this unit is stoma surgery. There are several illnesses of the bowel that could result in an individual to require stoma surgery, some of which are colon cancer, cancer of the small intestine, and individuals suffering from Crohn's disease or ulcerative colitis, just to name a few. Registered Nurses (RNs) working on this unit are responsible for the overall assessment, stoma assessment, and stoma/ostomy care of these patients post-operatively.

A literature review was completed for this project and found several topics that patients who have undergone stoma surgery have struggled with, including an altered body image, adjustment to having a new stoma, social concerns, relationships and sexuality (Andersson, Engstrom, & Soderberg, 2010; Beitz, 1999; Bekkers, van Knippenberg, van Dulmen, van den Borne, & Berge Henegouwen, 1997; Lim, Chan, & He, 2015; McVey, Madill, & Fielding, 2001; Persson & Hellstrom, 2002; Simmons, Smith, Bobb, & Liles, 2007; Swan, 2011). The role of the nurse was also investigated in the literature review, and found that nurses can enhance patients' adjustment to their new stoma through teaching and support (Riemenschnieder, 2015). Nurses are responsible for assessing the overall physical aspects of the patient's body, and specifically assessing the abdomen and stoma. They are also responsible for both providing ostomy care and actively teaching the patient about ostomy care. In addition to the physical aspects of

care, it was found that the nurse should include psychosocial concerns as a part of routine stoma care (Simmons et al., 2007).

An environmental scan was also completed as part of the literature review and it was found that no current, comprehensive manual existed for nurses working on Six East. Informal consultations were made with staff working and/or associated with Six East, and there was a general consensus that a learning resource manual for nurses working with patients following stoma surgery would be beneficial. As a result of the many aspects of care highlighted in the literature review, in combination with the environmental scan and informal consultations, a learning resource manual for nurses working with patients post-stoma surgery was chosen as the topic for my practicum project.

Consultation Purpose

The purpose of the consultations was to gather information from key informants in addition to the literature review. The consultations with staff working on Six East helped me determine what information should be included in the learning resource manual and what issues regarding the assessment of a patient who has undergone stoma surgery/ostomy care should be addressed. The consultations also gave staff working with these patients the opportunity to participate in the development of the manual, which may make them more motivated to learn, according to the adult learning theory (Bryan, Kreuter, & Brownson, 2009).

Participants

In the original practicum outline, I had stated that I would do consultations with four individuals: a senior nurse on Six East, the Division Manager of Six East, a surgeon, and the clinical educator for the surgical program at SCMH. Throughout the completion of my literature review, I consulted with the clinical educator, who helped me complete an environmental scan to find existing resources for stoma surgery patients and nurses caring for these patients. I also had a brief, informal consultation with the Enterostomal Therapy (ET) nurse for the city hospitals in St. John's, who believed the manual would be beneficial for nurses working on Six East. I decided that perhaps it was more appropriate to consult with the clinical educator for the environmental scan and to help find existing resources, while having a consultation for the purposes mentioned in this report with the ET nurse, who works with ostomy patients every day. Due to time constraints, it was not possible to plan a consultation with a surgeon and have it completed in time for this report. After consulting with my supervisor, it was decided that consulting with another senior RN from Six East might be helpful. Thus, I consulted with four key informants: the Division Manager of Six East, two senior RNs working on Six East, and the ET nurse for the city hospitals in St John's.

The Division Manager has been working in management for the last few years, and prior to that, worked as an experienced RN. Some of her roles include overseeing some of the orientation of nurses who are new to Six East, hiring staff on Six East, completing employee evaluations, and dealing with incident reports that occur on the unit. The Division Manager is heavily involved in helping her staff take advantage of

educational opportunities whenever the opportunity arises. She advocates for educational opportunities, such as education days, which help staff stay up-to-date on necessary training and workshops.

The RNs I consulted with have been working on Six East for several years. Both RNs are involved in the hands-on nursing care and assessment of stoma surgery patients each day at work. They are both also excellent resources for nurses new and old to Six East for knowledge, advice, and collaboration in critical thinking when caring for patients.

The ET nurse for the city hospital in St. John's is consulted for every patient that undergoes stoma surgery. She visits Six East twice a week at minimum to complete teaching with ostomy patients, choose ostomy supplies with the patients, and prepare them for discharge home.

Methods, Data Management, and Analysis

The setting for the consultations was set to be in a classroom located on Six East at SCMH. This was chosen out of convenience for the key informants and I, who all work from Six East at various points throughout the day and/or week. The classroom was offered as a place for the consultations to each key informant, or at a place of their choice. The two senior RNs completed their consultations in the classroom on Six East, while both the Division Manager and the ET nurse chose to have the consultations in their respective offices. The atmosphere in both offices were the same as that of the classroom (i.e., the consultations were quiet, uninterrupted, and comfortable).

Data were collected by conducting semi-structured interviews with the four key informants. A list of questions that guided the interviews can be found in Appendix A. I used this list of structured questions, but I also allowed for additional comments, questions, and conversation as necessary. Interviews were completed face-to-face and each lasted between 30 to 45 minutes. During the interviews, I took notes via pen and paper. Following each interview, I immediately transcribed the data into a Word Document on my encrypted, password-protected laptop.

Responses from the interviews were read and re-read by the writer and analysed for themes. Responses to each question were compared for similarities and differences, and summarized in the results section of this report. All data will be deleted 1 year following the completing of this practicum project.

Ethical Considerations

The Health Research Ethics Authority (HREA) Screening Tool was used to determine if this project would need to be submitted to HREA for ethical approval. The completed Screening Tool checklist can be found in Appendix B of this paper. Having completed the Screening Tool, it was deemed that ethical approval was not necessary for this practicum project. Verbal permission to interview key informants was obtained from the Division Manager and because no patient information was involved, no further permission was required. The key informants were given a letter of invitation to partake in the interview on a voluntary basis (see Appendix C). All key informants replied and agreed, and this was considered verbal consent.

Consultation Results

All four participants believed that a learning resource manual on the care of patients following stoma surgery would be beneficial to nurses working on Six East. Two participants explained that it would be beneficial because these patients require complex and highly specialized care. They stated that the RN must be highly skilled to care for these patients to be able to recognize when there is an issue with the stoma, and how to deal with the issues that arise.

There were themes in the topics that participants believed should be included in the manual. All participants thought it would be beneficial to include the different types of gastrointestinal surgeries that are performed on Six East. They all stated that different types of stomas, including typical sizes, irregularities (e.g., color, prolapse, retracted stoma, and how to detect when something is wrong with the stoma) are important to cover. All participants suggested to include information about ostomy products, such as the different types available and when to use certain products versus others. Two participants pointed out the importance of including aspects of the psychological distress that the patient frequently undergoes following stoma surgery.

There were a few current, available resources named for nurses working with stoma surgery patients; however, all participants stated that there was not a comprehensive guide regarding how to provide appropriate nursing care to these patients. All participants mentioned the educational patient handouts that are available on the unit. These pamphlets briefly describe bowel resection surgery to the patient and their family

and may be used by the nurse during teaching. The ET nurse places care plans on the patient kardexes, which specifies the most recent ostomy supplies that she/he has used in working with the patient. This is a helpful resource for RNs on the unit, as the products and product numbers are written here and, thus, can easily be found when a patient needs new supplies and/or an ostomy change. One senior RN did point out that although care plans are an excellent resource, there is no comprehensive guide available with all supplies listed for when a product is not working for a patient (e.g., sore peristomal skin or a leaking ostomy).

All participants agreed that appropriate assessment skills were highly important when caring for patients who have undergone stoma surgery. Some of these assessment skills included a complete head-to-toe assessment. This includes a psychosocial assessment, such as how they are dealing with the ostomy psychologically and if they are capable of caring for the ostomy on their own upon discharge. Also, the stoma must be assessed (i.e., the color, size, shape, if the mucocutaneous [MC] junction is intact, and peristomal skin). Two participants pointed out the importance of speaking with family members and/or finding out patient support systems as a part of the nursing assessment. This is especially vital in cases where the patient may not be fully capable of caring for the ostomy independently. All participants agreed that a thorough and skilled baseline assessment of the abdomen and stoma, as well as proper documentation, were necessary. This allows RNs to be able to quickly identify when something has changed with a patient, so that interventions can be timely and specific to the issue at hand. The two senior RNs pointed out that stoma surgery patients can get very sick very quickly, and

having assessment skills of the stoma, abdomen (typically by auscultation and palpation), and overall assessment (such as vital signs, pain rating, wound assessment, and lung auscultation) allow the RN to effectively communicate with the medical team regarding possible investigations and interventions.

Common physical complications that participants felt should be included in the learning resource manual included necrotic stomas, MC junction separation, dermatitis/allergic reactions to peristomal skin, stoma prolapse, stoma retraction, infection, high stoma output, little or no stoma output/constipation/ileus, difficulty finding appliances that fit properly, perforated bowel and/or anastomotic leak. Any of these complications would likely first be noted by the RN during a physical assessment and through speaking with the patient, which would then be passed on to the medical team in order to collaborate on appropriate interventions. As well, one senior RN pointed out that patients who undergo bowel surgery are often quite dehydrated post-operatively and are solely on intravenous (IV) fluids for a day or two, thus requiring regular bloodwork to check electrolytes and fluid balance, and sometimes requiring IV boluses. Patients can also be at risk for low hemoglobin, depending on the estimated blood loss during surgery. This is one of the reasons why complete blood count (CBC) bloodwork is so important in the immediate post-operative days of the patient. Psychological complications that were identified included psychological distress and denial, difficulty accepting the new stoma/ostomy, and depression. Interventions such as support from the RN, information about support groups for patients, and/or a consult to a Mental Health Nurse (MHN) are appropriate for the RN to intervene with.

When asked about common mistakes that occur with ostomy application, all participants agreed that improper placement of ostomies was an issue as it causes ostomy appliances to leak, and, more importantly, discourages the patient and/or family, and causes a lot of frustration for everyone involved. Common mistakes of the application of ostomies included inappropriate sizing of the ostomy, cutting the flange too big, not using the supplies properly, and not prepping the skin properly prior to ostomy application.

Each participant had a different suggestion for what else to include in the learning resource manual. One participant suggested troubleshooting tips (i.e., itch relief, leaking ostomies, and tricks for healing excoriated skin). Another participant suggested that I consider the reading level of the manual, in case it might also be helpful to patients once it is finished. Another participant suggested a section on how to correctly apply an ostomy, specifically for novice nurses, in conjunction with hands-on teaching because it should not be assumed that RNs know how to properly apply an ostomy upon starting work on Six East. Lastly, a suggestion was made to have a list of all products and product numbers somewhere in the manual, as this is how different flanges, bags, etc. are identified and found by nursing staff.

Consultation Results: Specific Questions

Divisional Manager

The Divisional Manager was asked if she received any incident reports regarding the assessment or ostomy care of stoma surgery patients. She stated she has yet to receive

one in her 1.5 years as manager of this particular unit. She was not sure if this is because there were no incidents or incidents have not been reported.

Senior RNs

Both senior RNs working on Six East stated that they learned how to perform both ostomy care and assessment of stoma surgery patients through seeking guidance and advice from senior RNs on the unit at the time of being hired. One RN had completed a work-term on Six East prior to being hired, and had re-studied basic assessment skills from nursing school, as well as sought guidance from her preceptor at the time of her work-term. She felt this helped her once she started her employment on Six East. Both RNs also stated that they learned, and sometimes continue to learn, from trial and error when it comes to ostomy care/appliance selection.

Enterostomal Nurse

The ET nurse stated that RNs on Six East most commonly ask her about what supplies to use when there are complications with the stoma, abdomen, or ostomy application. For example, if a patient has extremely high output that the appliance cannot hold, or the peristomal skin is extremely excoriated and keeps losing the seal of the ostomy.

Implications and Conclusion

The information collected during the consultations have important implications for the development of the learning resource manual intended for this practicum project.

All participants believed that a learning resource manual of this nature had great merit in the benefits it will provide for nurses both new and seasoned to Six East. I sought to find out what information staff associated/working on Six East thought would be important to include in this manual. There were many common themes found in regard to ostomy and stoma care, patient assessment, and psychosocial assessment.

One of the main goals of the consultations was to gain information in addition to the literature review. Though some information from the literature review was reiterated, such as psychosocial assessment, support, complications of new stomas, and the nurse's role, I think that the information gained through the consultations added to these topics, as well as provided new topics that did not surface from the literature review. Some new topics included common application mistakes, suggestions for a description of different available products, descriptions of various stoma surgeries, additional physical complications such as MC junction separation, infection, anastomotic leak, and the importance of the role of the RN collaborating with the medical staff during these complications. The importance of being aware of different types of stomas as well as the baseline, overall assessment of the patient was also highlighted.

As previously mentioned, throughout the literature review, many psychosocial implications were found for the patients, and it was also found that nurses can help in the adjustment process for patients with new stomas. Many patients found that more knowledge regarding ostomy and stoma care helped in this adjustment (Riemenschnieder, 2015). I believe that through speaking with RNs who are experienced in the care of stoma surgery patients, I have gained insight and invaluable information to include in this

manual to help nurses, and in turn, help support patients who have undergone stoma surgery.

In this consultation report I have discussed the background and purpose for the consultations, as well as identified key informants for the consultations. Data analysis was explained, as well as a summary of the results found from the interviews. Important information was obtained from the interviews in addition to the literature review, thus meeting my main goal for the consultations. Lastly, the consultation process has reiterated the merit of the development of this learning resource manual.

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Appendix A

General Questions for all Key Informants:

Do you feel a learning resource manual regarding the care of stoma surgery patients will be beneficial to nurses working on Six East? Why or why not?

What kinds of topics do you feel should be included in such a manual?

What resources are currently available to nurses caring for patients who have undergone stoma surgery?

In your opinion, what is the importance of a nurse's assessment of a patient who has undergone stoma surgery?

What assessment skills does a nurse need to properly assess a patient who has undergone stoma surgery?

What kinds of complications can occur in patients who have undergone stoma surgery?

In your experience, what are the most common issues for stoma surgery patients? If appropriate, what can nurses do to intervene?

In your experience, are there any common mistakes that occur with ostomy application?

What else should I consider in developing the resource manual?

Specific Question(s) for Division Manager:

Do you receive incident reports involving the assessment or ostomy care of stoma surgery patients? If so, what is the nature of the incidents?

Specific Question(s) for Enterostomal Nurse:

What are the most common questions that nursing staff on Six East ask you regarding ostomy care?

Questions for Registered Nurse working on Six East:

How did you learn how to perform an assessment on a stoma surgery patient on Six East?

How did you learn how to perform ostomy care on Six East?

Appendix B

Health Research Ethics Authority Screening Tool

	Question	Yes	No
1.	Is the project funded by, or being submitted to, a research funding agency for a research grant or award that requires research ethics review	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Are there any local policies which require this project to undergo review by a Research Ethics Board?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	IF YES to either of the above, the project should be submitted to a Research Ethics Board. IF NO to both questions, continue to complete the checklist.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Is the primary purpose of the project to contribute to the growing body of knowledge regarding health and/or health systems that are generally accessible through academic literature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Is the project designed to answer a specific research question or to test an explicit hypothesis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.	Does the project involve a comparison of multiple sites, control sites, and/or control groups?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.	Is the project design and methodology adequate to support generalizations that go beyond the particular population the sample is being drawn from?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7.	Does the project impose any additional burdens on participants beyond what would be expected through a typically expected course of care or role expectations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LINE A: SUBTOTAL Questions 3 through 7 = (Count the # of Yes responses)		0	
8.	Are many of the participants in the project also likely to be among those who might potentially benefit from the result of the project as it proceeds?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9.	Is the project intended to define a best practice within your organization or practice?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10.	Would the project still be done at your site, even if there were no opportunity to	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	publish the results or if the results might not be applicable anywhere else?		
11.	Does the statement of purpose of the project refer explicitly to the features of a particular program, Organization, or region, rather than using more general terminology such as rural vs. urban populations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12.	Is the current project part of a continuous process of gathering or monitoring data within an organization?		<input checked="" type="checkbox"/>
LINE B: SUBTOTAL Questions 8 through 12 = (Count the # of Yes responses)		4	
	SUMMARY See Interpretation Below		

Interpretation:

- If the sum of Line A is greater than Line B, the most probable purpose is **research**. The project should be submitted to an REB.
- If the sum of Line B is greater than Line A, the most probable purpose is **quality/evaluation**. Proceed with locally relevant process for ethics review (may not necessarily involve an REB).
- If the sums are equal, seek a second opinion to further explore whether the project should be classified as Research or as Quality and Evaluation.

These guidelines are used at Memorial University of Newfoundland and were adapted from ALBERTA RESEARCH ETHICS COMMUNITY CONSENSUS INITIATIVE (ARECCI). Further information can be found at: <http://www.hrea.ca/Ethics-Review-Required.aspx>.

Appendix C

Invitation Letter to Key Informants

November 10, 2015

Dear (name),

I am developing a learning resource manual for nurses working with patients who have undergone stoma surgery on Six East at St. Clare's Mercy Hospital. Currently, no such manual exists on the unit. This practicum project is part of my Master's degree in Nursing at Memorial University of Newfoundland.

I will be consulting with volunteer key informants to obtain feedback on developing the resource manual. It is anticipated that an interview will take approximately 30 minutes to complete. Interviewees do not have to answer any questions that they are uncomfortable with answering. The information provided will remain confidential. I will take notes during the interview. These notes will be kept on my encrypted, password-protected laptop that is only used by me. I will delete the notes one year after the completion of the practicum project. The information from all of the key informants will be summarized into themes with people's names removed. The findings will be presented in a final practicum report. If you are willing to be interviewed as a key informant or if you have any questions, please contact me at the phone number or email address below.

Thank you for considering this request to be interviewed as a key informant on the development of the learning resource manual.

Andrea Morgan, RN

Appendix C

Stoma Surgery and the Role of the Registered Nurse Post-Operation

A learning resource manual for nurses caring for patients post-stoma surgery.

Developed by ©Andrea Morgan, BN, RN

Introduction

Who is this learning resource manual for and how can it be used?

This learning resource manual is intended for nursing staff and/or nursing students caring for a patient who has undergone stoma surgery on the General/Thoracic Surgery Unit (i.e., Six East) at St. Clare's Mercy Hospital in St. John's, Newfoundland and Labrador. It is a comprehensive guide that provides an overview of the large and small bowels, illnesses of the bowels, different stoma surgeries, general surgical and stoma assessment, ostomy products, and resources/support for the patients. It could be used as a reference for any one of those topics, or as an overall guide to caring for these patients. It is particularly useful for nurses new to caring for patients who have undergone stoma surgery.

Why is this manual important?

Stoma surgery is an extensive surgery that involves many physical and psychological adjustments for the patient. It can be a challenging time for both the nurse and the patient, which requires specific knowledge and skills for the nurse. This manual provides an overview of the basic knowledge of stoma surgery and guidelines for ostomy products and application.

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Chapter One:

Anatomy and Physiology of the Bowels

Learning Objectives:

Upon completion of Chapter 1, you will be able to:

- identify basic anatomy of the large and small bowels
- describe the main functions of the large and small intestines

Section 1.1: Overview of the Gastrointestinal System

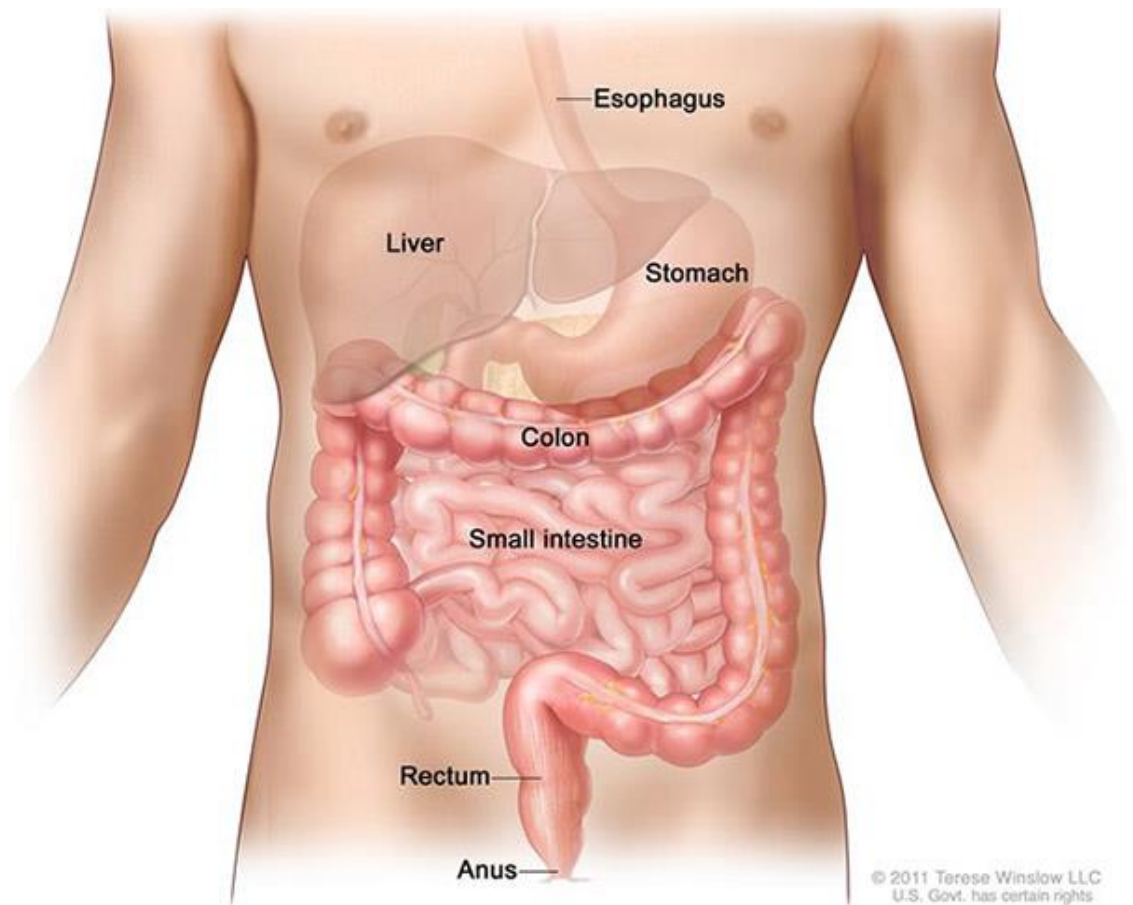


Figure 1: GI System Anatomy (National Cancer Institute, 2015).

Figure 1 depicts the major organs of the gastrointestinal (GI) system, highlighting the large and small intestines, rectum, and anus. These parts of the GI system will be the focus of this manual in relation to stoma surgery patients and the nursing care they require.

Section 1.2: Anatomy of the Small and Large Intestines

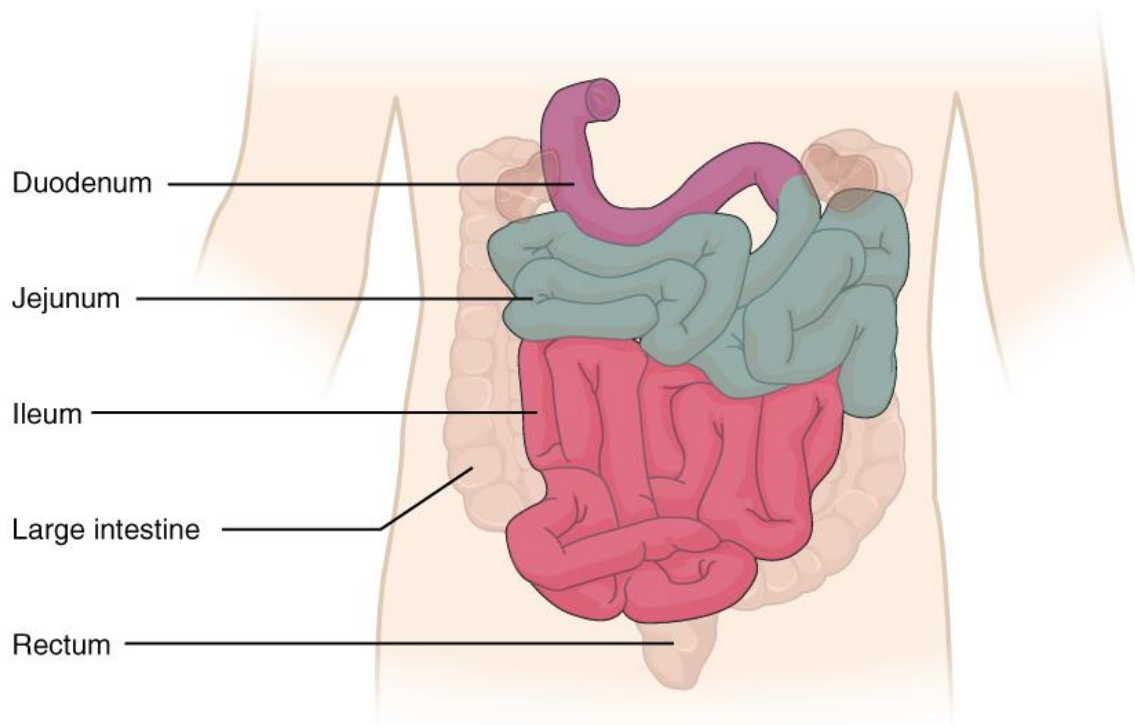


Figure 2: Anatomy of the Small Intestine (Thanos, 2016).

The small intestine measures approximately 2.5 cm in diameter and 6 m in length. It is divided into three main parts:

Duodenum – The upper part of the small intestine where the stomach attaches. It measures approximately 25 cm in length (Thibodeau & Patton, 2007).

Jejunum – The mid-section of the small intestine, measuring approximately 2.5 m (Thibodeau & Patton, 2007).

Ileum – The lower part of the small intestine, measuring approximately 3.5 m (Thibodeau & Patton, 2007).

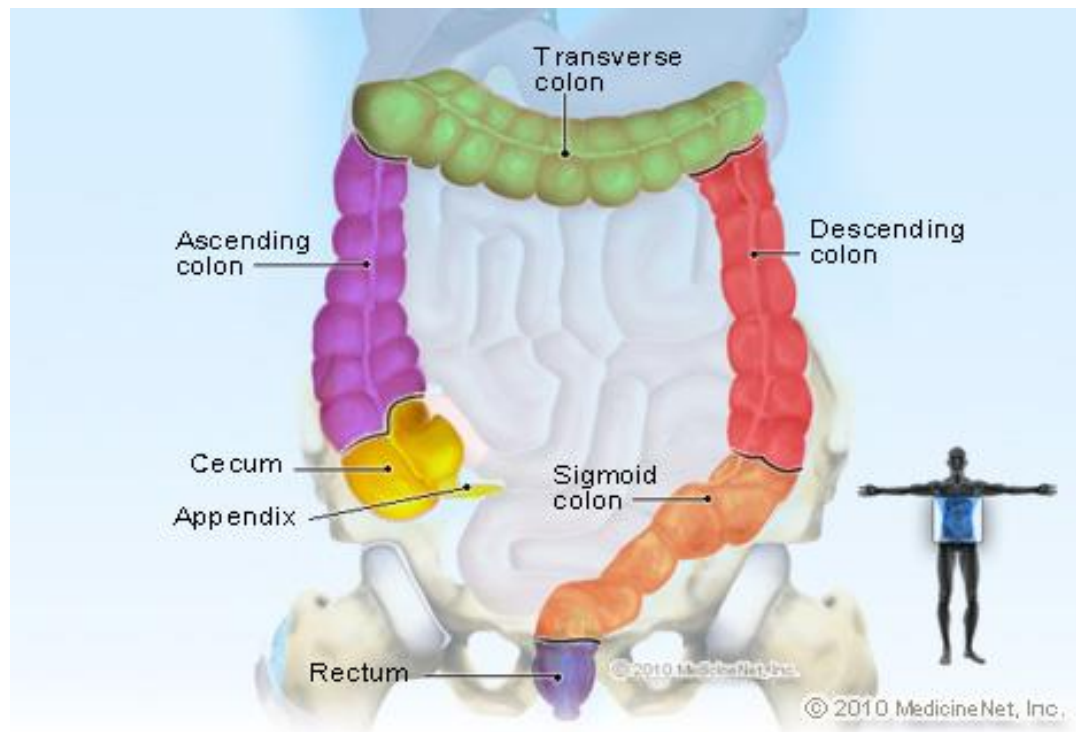


Figure 3: Anatomy of the Colon (Medicine Net, 2016).

Also referred to as the large intestine, the colon has an average diameter of 6 cm, with the diameter decreasing as it approaches the rectum (Thibodeau & Patton, 2007). It is made up of three main parts:

Cecum – The cecum is a pouch-like structure where the small intestine meets the colon. It measures approximately 5-8 cm in length and it is located in the lower right quadrant of the abdomen (Thibodeau & Patton, 2007).

Colon – The colon is divided into four portions: ascending colon, transverse colon, descending colon, and sigmoid colon, as noted in the figure above.

Rectum – The rectum is the last portion of the large intestine and measures approximately 17-20 cm. The opening of the rectum is called the anus, where an internal, smooth muscle sphincter and an external, striated muscle sphincter are located (Thibodeau & Patton, 2007).

Section 1.3: Physiology of the Small and Large Intestines

The small intestine is responsible for:

- Completing the digestion of food
- Absorbing nutrients
- Digesting proteins, with an enzyme called peptidase
- Digesting sugars, with an enzyme called sucrase
- Digesting polysaccharides, with an enzyme called amylase
- Absorbing water

(Thibodeau & Patton, 2007)

The large intestine is responsible for:

- Reabsorbing water and ions (the rest is waste product from digestion and cannot be used by the body)
- Forming and storing feces
- Storing and expelling feces from the rectum, through the anus

(Thibodeau & Patton, 2007)

Section 1.4: Quiz

1. The upper section of the small intestine that connects to the stomach is called the _____.
 - a. Jejunum
 - b. Cecum
 - c. Duodenum
 - d. Ileum

2. For each statement below, indicate if the statement is true or false:
 - a. The large and small intestine are responsible for the absorption of water.

 - b. The rectum measures approximately 17-20 cm in length. _____
 - c. The longest portion of the small intestine is the jejunum. _____
 - d. The large and small intestines meet at a pouch-like structure called the ileum. _____

Chapter Two:

Illnesses of the Bowel and Stoma Surgeries

Learning Objectives:

Upon completion of Chapter 2, you will be able to:

- explain five major illnesses of the bowel
- describe six types of stoma surgeries

Section 2.1: Illnesses of the Bowel

Crohn's disease

Crohn's disease is a chronic inflammatory disease of the alimentary tract. It can develop in segments; thus, the places affected could be sporadic in the alimentary tract, but rarely involves the rectum. Crohn's disease often involves the thickness of the entire bowel wall. Complications, such as perirectal fistulae, fissures, abscesses, and anal stenosis, are present in over 30% of those suffering from Crohn's disease. Each attack causes scarring, which lessens the ability to absorb nutrients (Black & Hawkes, 2009).

Ulcerative colitis

Ulcerative colitis is also an inflammatory disease of the bowel. Unlike Crohn's disease, it involves only the innermost layers of the colon and it involves the rectum. Ulcerative colitis is characterized by tiny lacerations that can cause inflammation, thickening, congestion, edema, and blood loss (Black & Hawkes, 2009).

Interesting Fact:

One in every 150 Canadians are living with either Crohn's disease or ulcerative colitis. This statistic is among the highest worldwide (Crohn's and Colitis Canada, 2014).

Diverticular disease

Diverticula, as shown in the image below, occur when the mucous layer of the colon herniates through the muscular layer. There are frequently many diverticula in the colon, with the majority usually occurring in the sigmoid section of the colon. Diverticulitis occurs when the diverticula become inflamed, and it can involve microscopic or macroscopic perforations of the diverticulum (Porth, 2004).

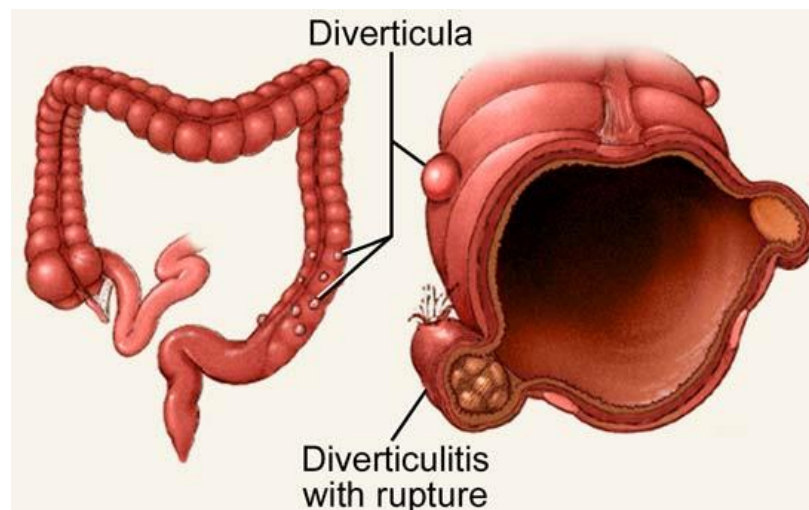


Figure 4: Diverticula (West Coast Surgical Associates Inc, 2016).

Cancer of the small intestine

The prevalence of cancer of the small intestine is substantially lower than colorectal cancer: It accounts for less than 5% of all GI cancers (Black & Hawkes, 2009). The majority of tumors are found in the ileum, with the remainder nearly equally divided between the duodenum and jejunum (Black & Hawkes, 2009).

Colorectal cancer

The exact cause of colorectal cancer is not known. Over 95% of colorectal cancers start as adenomatous polyps, also known as adenomas (Black & Hawkes, 2009). The risk for colorectal cancer is increased for those who have a family history of cancer, and for those with Crohn's disease or ulcerative colitis (Porth, 2004). Prognosis and treatment options for those with colorectal cancer vary depending on factors, such as the grade of the cancer (see below for an example of staging), the amount of penetration, and the number of lymph nodes involved.

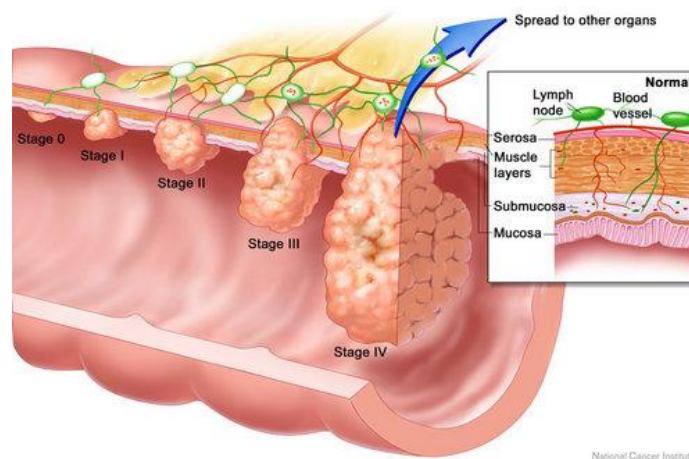


Figure 5: Cancer Staging (Queen's University School of Medicine, 2008).

Interesting Fact:

It was estimated that 25,100 Canadians would be diagnosed with colorectal cancer in 2015, which is approximately 69 new diagnoses per day (Canadian Cancer Society, 2015).

Section 2.2: Stoma Surgeries

Abdominal-perineal resection

This surgery is indicated when a rectal tumor is present. The affected colon and entire rectum are removed: The colon is excised from an abdominal approach and the rectum is excised from a perineal incision. This surgery results in a permanent or end colostomy (Black & Hawkes, 2009; Hampton & Bryant, 1992).

Lower anterior resection

This surgery is indicated for rectal cancer in the middle to upper third of the rectum. It could result in a colostomy, which may be temporary or permanent (Hampton & Bryant, 1992).

Hartman's procedure

Indications for this type of bowel surgery are various, including trauma, diverticulitis, rectal cancer (palliative), and obstruction. The result is a temporary or permanent colostomy, depending on the indication for surgery and the extent of disease (Hampton & Bryant, 1992).

Total colectomy

This surgery might be indicated for Crohn's disease and ulcerative colitis, although they are not curative. During this procedure, the colon is removed and the ileum is anastomosed to the rectum (ileorectal anastomosis). A temporary ileostomy might be indicated to protect the anastomosis (Hampton & Bryant, 1992). If the colon *and* rectum are removed, in which case the ileum is sutured directly to the anal canal, it is referred to as an ileoanal anastomosis. This procedure could also result in a temporary ileostomy (Hampton & Bryant, 1992).

Total proctocolectomy

Some indications for a total proctocolectomy include chronic ulcerative colitis, Crohn's disease, and familial polyposis. During this procedure, the colon, rectum, and anus are removed. The result is a permanent ileostomy (Hampton & Bryant, 1992).

Ileoanal reservoir

Some indications for this surgery include chronic ulcerative colitis and familial polyposis. This surgery is usually performed in two stages, with a temporary ileostomy. This surgery is an option when the colon is removed, but the anus remains intact and healthy. The distal part of the ileum is used to create a pouch called the ileoanal reservoir, where stool collects then exits through the anus (Hampton & Bryant, 1992).

Section 2.3: Quiz

1. Fill in the blanks:

- a. _____ is an inflammatory disease of the bowel that involves the innermost layers of the colon.
- b. The majority of tumors in the small intestine are found in the _____.
- c. Diverticula are typically found in the _____ section of the colon.
- d. A surgery involving both an abdominal approach and a perineal incision, resulting in a permanent ostomy is called _____.
- e. Another type of surgery that results in a permanent ostomy is a _____.

Chapter Three:

Assessment, Types of Ostomies, and Diet Recommendations

Learning Objectives:

Upon completion of Chapter 3, you will be able to:

- Explain the assessment of a post-operative stoma patient
- Describe different ostomies and their normal drainage
- Discuss diet recommendations about specific foods that affect stoma output

Section 3.1: Post-Operative Assessment of Patients with a Stoma

Respiratory Assessment

Respiratory assessment is not unique for the patient following stoma surgery, as it is part of a general post-operative assessment for any type of surgery involving an anesthetic. This is because anesthetics can decrease respiratory drive and depth (Black & Hawkes, 2009). The patient's respiratory rate should not be less than eight breaths per minute. If the patient's respiratory rate is under eight breaths per minute, **immediately** notify an anesthesiologist if the patient is on an epidural protocol or a physician.

Observe the patient's respirations: They should be unlaboured with no adventitious sounds (Black & Hawkes, 2009). Auscultate with a stethoscope the upper and lower lobes of both the right and left lungs.

An incentive spirometer should be given to the patient to help with lung expansion, as it helps keep the alveoli in the lungs opened (Black & Hawkes, 2009).

Vital Signs

Currently on Six East at St. Clare's Mercy Hospital, vital signs are checked every hour for 4 hours, then every 4 hours for 48 hours. As with any surgical patient, vital signs should be considered in light of the patient's vital sign readings in the post-anesthesia care unit (PACU) and what is normal for the patient.

A slight fever (37.6-37.9 degrees Celsius) within the first 72 hours post-operatively is common, and can usually be treated with coughing and deep breathing exercises (Black & Hawks, 2009). If the fever persists past 72 hours post-operatively, it is most likely one of the "five Ws": wind (lungs), water (urinary tract), wound, walking (clot in lower legs), and/or waste (bowel; Black & Hawkes, 2009). Inform the health care team members if the patient's temperature spikes even if it is within the first 72 hours, so that they are well-informed of the patient's status. It is also prudent to ask the physician to order parameters (i.e., if the patient's temperature is above or equal to 38.5 degrees Celsius, then call the physician) because each patient and their operation are a unique case and some patients could spike a temperature higher or faster than another patient.

Wound

Assess the patient's dressings: note the color, odor, consistency, and amount of drainage (Black & Hawks, 2009). The amount may be measured by the number of dressings soaked through (Black & Hawks, 2009). This is especially helpful as the

measurement of the amount of drainage on a dressing (i.e., small, moderate, or large amounts) can be subjective from one nurse to the next. Typically, on Unit Six East, dressings are kept on for 48 hours post-operatively, unless otherwise ordered by the physician, and then as needed. Reinforcing the dressing could help if it has a moderate amount of shadowing. If the dressing is completely soaked through, it should be changed. Once the patient has no drainage coming from the incision line, the incision may be left open to the air.

Abdominal Assessment

Following stoma surgery, the assessment of the abdomen itself follows a general abdominal assessment, with the addition of incisional and stoma assessments, which are also covered in this chapter. Assessing the abdomen first involves inspecting the general appearance of the abdomen (Penner, Fishman, & Majumdar, 2016). For example, the abdomen might be non-distended, slightly distended, or distended. General palpation of the abdomen in all four quadrants is used to assess the tenderness of the abdomen (Penner et al., 2016). Upon palpation, the softness or firmness of the abdomen is also assessed. The abdomen could feel soft, semi-soft, semi-firm, or firm, for instance.

Auscultation of the abdomen is also performed. Using a stethoscope, all four quadrants are auscultated for volume and frequency of bowel sounds (Jarvis, 1996). Bowel sounds are created by the movement of air and fluid through the bowels (Jarvis, 1996). Therefore, depending on the surgery, certain portions (or all) of the bowel sounds might be faint or hypoactive following surgery. Bowel sounds are typically high-pitched, gurgling sounds that occur anywhere from five to 30 times a minute (Jarvis, 1996). Although it is not necessary to count them, auscultation will determine whether they are hypoactive, normal, or hyperactive (Jarvis, 1996).

Stoma Assessment

General Assessment

A general assessment of the stoma includes: identifying the location of the stoma (i.e., which quadrant the stoma is located – see Figure 6 on page 21 for a visual depiction of the four quadrants of the abdomen), measuring the stoma, and assessing the mucocutaneous (MC) suture line. Sutures at the MC junction should be assessed to ensure there is no separation. More information on MC separation is located in Chapter 5 of this manual.

Color of the Stoma

A healthy stoma should be anywhere from pink to bright red in color. If the stoma is pale pink in color, this could be indicative of a low hemoglobin. If this is the case, the stoma should become pink to bright red in color as the hemoglobin level is corrected. If the stoma is purple or very dark red, this could indicate a lack of blood supply to the stoma. If it is necrotic/black in color, this indicates a definite lack of blood supply to the stoma (Vujnovich, 2008).

If the assessment is abnormal, notify the physician. Further information about necrotic stomas and nursing interventions is found in Chapter 5 of this manual.

Output

It might take several days for output from the ostomy to start. Passing flatus through the stoma is typically the first indicator that the bowel is starting to function again. When output does begin, the stool is typically liquid. It might be green in color for the first few days, indicating bile passing through, which is normal (Vujnovich, 2008). For a description of what type of output to expect from different types of stomas, see Sections 3.2 and 3.3. For diet recommendations that can affect output odor and consistency, see Section 3.4.

Rod

Depending on the type of stoma formed during surgery, there might be a rod placed in the stoma temporarily to help secure it. Rods are usually used for loop colostomies and loop ileostomies. A rod is typically made of hard plastic and it is kept in place for approximately a week or until the tissue surrounding the stoma grows enough to secure the stoma. The rod is removed by the enterostomal therapy (ET) nurse on Unit Six East, under the direction of the surgeon. This should be a painless procedure for the patient.

When assessing the rod, the stoma should be at the center of the rod, but not pushed to one end of the rod. This is important because if the stoma is pushed to one end of the rod, it can decrease or even cut off the blood supply, resulting in slough and/or necrotic tissue. If slough or necrosis is noted, contact the physician immediately (Vujnovich, 2008).

Peristomal Skin

The skin around the stoma, called the peristomal skin, should look the same as the skin on any other part of the patient's body. It is not normal for the skin to be broken, or to have rashes or sores (Turnbull, 2009). If the peristomal skin appears to have any of these complications, refer to Chapter 5 of this manual where this topic is discussed.

Overview of the Four Quadrants of the Abdomen

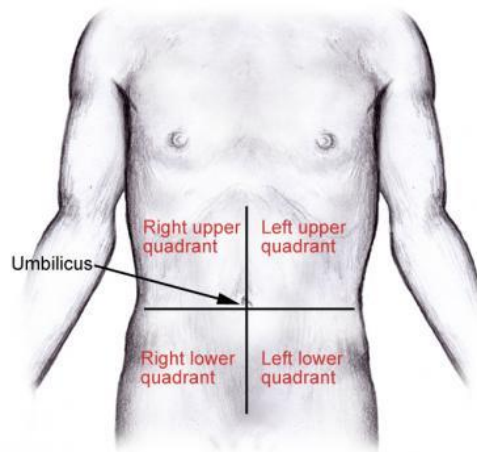


Figure 6. Abdominal Quadrants (Janz, 2013).

Right Upper Quadrant	Left Upper Quadrant
<ul style="list-style-type: none"> - Liver - Gallbladder - Duodenum - Head of pancreas - Right kidney - Hepatic flexure of colon - Part of ascending and transverse colon 	<ul style="list-style-type: none"> - Stomach - Spleen - Left lobe of liver - Body of pancreas - Left kidney - Splenic flexure of colon - Part of transverse and descending colon
Right Lower Quadrant	Left Lower Quadrant
<ul style="list-style-type: none"> - Cecum - Appendix - Right ovary and tube - Right ureter - Right spermatic cord 	<ul style="list-style-type: none"> - Part of descending colon - Sigmoid colon - Left ovary and tube - Left ureter - Left spermatic cord
Midline	
<ul style="list-style-type: none"> - Aorta - Uterus - Bladder 	

(Jarvis, 1996)

Section 3.2: Types of Colostomies

Ascending colostomy

- An ascending colostomy is located in the ascending colon (see Figure 3, Chapter 1).
- The consistency of stool is usually liquid to semi-liquid (Turnball, 2009).
- The stool contains digestive enzymes that could irritate the peristomal skin (Turnbull, 2009). Skin barrier products are found in Chapter 4.
- The pouch will likely need to be emptied four to six times a day (Turnbull, 2009).

Transverse colostomy

- A transverse colostomy is located in the transverse colon (see Figure 3, Chapter 1).
- The consistency of stool is usually liquid to semi-formed or pasty. This is because the colon has already absorbed some water from the stool (Turnball, 2009).
- The pouch will probably need to be emptied four to six times a day (Turnbull, 2009).

Descending colostomy

- A descending colostomy is located in the descending colon (See Figure 3, Chapter 1).
- The consistency of stool is usually semi-formed/pasty to formed. This is because most of the water in the stool has been absorbed by the colon (Turnball, 2009).
- The pouch will probably need to be emptied an average of one to three times a day (Turnbull, 2009).

Sigmoid colostomy

- A sigmoid colostomy is located in the sigmoid colon (see Figure 3, Chapter 1).
- The consistency of stool is generally formed. This is because the majority of the water has been absorbed by the previous three segments of the colon (Turnbull, 2009).
- The pouch will probably need to be emptied on average one to two times a day, or once every two days (Turnbull, 2009).

Section 3.3: Ileostomies

Ileostomy

- An ileostomy is located in the lower portion of the small intestine (See Figure 2, Chapter 1).
- Since the small intestine is responsible for the absorption of nutrients, the output from an ileostomy contains a substantial amount of water, salt, and enzymes (Turnbull, 2009).
- The consistency of the stool is liquid to a thick liquid that is comparable to toothpaste (Turnbull, 2009).
- Output from an ileostomy varies from person to person. Most people have an output of at least 600 ml per day, while some will have over a litre of output a day. Ultimately, the amount a person eats and drinks will determine the amount of output (Turnbull, 2009).
- The flow of stool typically happens 1 to 4 hours after eating (Turnbull, 2009).
- It is recommended that the pouch is emptied when it is about 1/3 full (Turnbull, 2009).

Section 3.4: Diet Recommendations

Diets can vary from person to person: Certain foods can cause problems for some people with their ostomy output and are not a problem for other people. Inform the patient that if there were any foods that adversely affected them before the operation, the specific food reactions will likely continue post-operation (Turnball, 2009).

The fibers in certain fruits and vegetables can potentially cause a blockage in the small bowel following ileostomy surgery. For this reason, the following foods should be avoided for 6 weeks following ileostomy surgery: stringy or fibrous fruits and vegetables (e.g., corn, celery, asparagus, cauliflower, cucumber, melon, lettuce, tomatoes, oranges, and grapefruit); any product made with whole grain flours and/or that contains seeds, nuts, or dried fruits (e.g., certain cereals, cornmeal, rice, and crunchy peanut butter); non-digestible peels (e.g., potato skins, apple peels, tomato skins, and grape skins); legumes, lentils, dried beans, peas, soybeans, popcorn, and whole spices (Turnbull, 2009).

Foods that help thicken stool:

White rice, applesauce, bananas, creamy peanut butter, yogurt, tapioca pudding, oatmeal, pasta, and white bread (Turnbull, 2009).

Food and drink that may cause gas:

Beans/legumes, carbonated beverages, cucumbers, melons, dairy products (if lactose intolerant or allergic to milk), mushrooms, sweet potatoes, garlic, cabbage, broccoli, Brussel sprouts, cauliflower, onions, spicy foods, turnip, and asparagus (Turnbull, 2009).

Foods that may cause odor:

Asparagus, cheese, eggs, fish, some spices, garlic, broccoli, cabbage, Brussel sprouts, cauliflower, and onions (Turnbull, 2009).

Foods that may reduce odor:

Yogurt, buttermilk, and parsley (Turnbull, 2009).

Foods that may cause diarrhea:

Alcohol, fresh fruits or salad, grape juice, prunes or prune juice, and spicy foods (Turnbull, 2009).

Section 3.5: Quiz

1. Fill in the blanks:

- A patient's respiratory rate should not be less than _____ breaths per minute.
- An increased temperature after the initial 72 hours post-operatively is typically caused by one of the five Ws. Name three of the five Ws: _____
- If the stoma is pale pink in color, this could be indicative of a _____.
- Since the _____ is responsible for the absorption of nutrients, output from the _____ contains a substantial amount of water, salt, and enzymes.

2. True or False:

- Bowel sounds are typically high-pitched, gurgling sounds that occur anywhere from 20-40 times a minute. _____
- The first stool to pass through the stoma might be green in color. _____
- The peristomal skin should be different in color than the skin on other parts of the patient's body. _____

3. Match the type of ostomy with the expected type of output (stool):

Type of Ostomy	Typical type of output (stool)
1. Transverse colostomy	a. Liquid to semi-liquid
2. Sigmoid colostomy	b. Generally formed
3. Descending colostomy	c. Liquid to semi-formed
4. Ascending colostomy	d. Semi-formed/pasty to formed

4. Name three foods that may cause more gas from an ostomy:

Chapter Four:



Ostomy Products and Ostomy Application


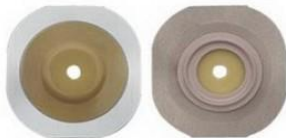


Learning Objectives:



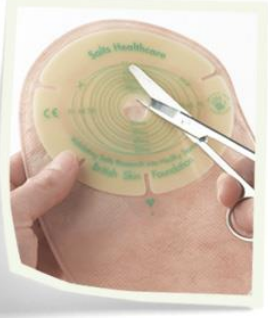
Upon completion of Chapter 4, you will be able to:




- Describe different types of ostomy products and what they are used for
- Demonstrate the basic application of an ostomy product




Section 4.1: Ostomy Products

<p>Closed-end pouch</p> <ul style="list-style-type: none"> - No opening to empty stool (Turnbull, 2009) - Ostomy product is discarded once it is full (Turnbull, 2009) - Comes in one or two piece systems (Turnbull, 2009) - Not practical for day-to-day living, but convenient for travelling or instances where emptying an ostomy is not ideal (Turnbull, 2009) 	 <p><i>Figure 7. (ConvaTec, 2016c).</i></p>
<p>Drainable pouches</p> <ol style="list-style-type: none"> 1. One-piece Pouch <ul style="list-style-type: none"> - As the name suggests, the skin barrier (adhesive piece that encompasses the stoma) and the pouch (the piece that collects stool) are attached (Hollister, 2015) - Appliance must be removed in its entirety; thus, skin barrier + pouch must be replaced with each appliance change (Hollister, 2015) 2. Two-piece Pouch <ul style="list-style-type: none"> - Consists of two separate pieces: the skin barrier and the pouch (Hollister, 2015) - Each piece contains a flange, and the two flanges snap together to create a seal (Hollister, 2015) - The skin barrier does not have to be replaced every time the pouch is changed: simply discard the old pouch and apply a new one if indicated (Hollister, 2015) 	 <p><i>Figure 8. (Cancaster, 2015).</i></p>

<p>Flat Ostomy Bag</p> <ul style="list-style-type: none"> - Skin barrier portion that adheres around the stoma is flat (Hollister, 2006) - Less bulky than a convex barrier (Hollister, 2006) - Typically used for stomas that protrude $\frac{1}{2}$ inch or more past the skin surface (Hollister, 2006) 	 <p>Figure 9. (Jameson Medical, 2016).</p>
<p>Convex Ostomy Bag</p> <ul style="list-style-type: none"> - Skin barrier portion that adheres around the stoma is convex (Hollister, 2006) - Bulkier than a flat skin barrier (Hollister, 2006) - Good for stomas that are less than $\frac{1}{2}$ inch protruded, and for retracted stomas (Hollister, 2006) 	 <p>Figure 10. (Jameson Medical, 2016).</p>
<p>Filtered Ostomy Bags</p> <ul style="list-style-type: none"> - Ostomy bags with filters inside of them that remove the odor from flatus (Hollister, 2006) - Filters are typically made up of charcoal and microscopic holes (Hollister, 2006) 	 <p>Figure 11. Different filters for ostomy systems (Chemviron Carbon, 2016).</p>
<p>Mini-Ostomy Bags</p> <ul style="list-style-type: none"> - Smaller than regular-sized ostomy bags (Hollister, 2006) - Less bulky than regular-sized ostomy bags (Hollister, 2006) - Convenient for people who have active lifestyles (Hollister, 2006) - Less capacity for stool contents (Hollister, 2006) 	 <p>Figure 12. (Vitality Medical, 2015).</p>

<p>High Output Ostomy Bag</p> <ul style="list-style-type: none"> - Empty pouch via a spout with a cap (ConvaTec, 2016a) - Very useful for those who have high output as it is quickly and easily emptied (ConvaTec, 2016a) - Ostomy must have liquid output in order to use (ConvaTec, 2016a) 	 <p><i>Figure 13. (ConvaTec, 2016b).</i></p>
<p>Pre-Cut Ostomy Bags</p> <ul style="list-style-type: none"> - Ostomies that have the flange already cut for the size of the stoma (Hollister, 2006) - Different sizing options available to choose from to best fit the individual's stoma size (Hollister, 2006) - Best used on stomas that have an even shape and are not changing in size (Hollister, 2006) 	 <p><i>Figure 14. (Express Medical Supply Inc, 2014).</i></p>
<p>Cut-to-Fit Ostomy Bags</p> <ul style="list-style-type: none"> - Ostomies where the flange can be cut to the size and shape of the individual's stoma (Hollister, 2006) - Good for stomas that have an uneven shape, are still changing in size (they may get smaller up to 6 weeks following surgery), or for stomas that no pre-cut size options fit properly (Hollister, 2006) 	 <p><i>Figure 15. (Salts Healthcare, n.d.).</i></p>

<p>Stoma Powder</p> <ul style="list-style-type: none"> - Helps create a protective barrier for excoriated skin (Hollister, 2007) - Can be used on weeping skin (Hollister, 2007) - Apply and wipe off excess powder (Hollister, 2007) 	 <p>Figure 16. (Hollister, 2007).</p>
<p>Barrier Rings</p> <ul style="list-style-type: none"> - Can act as a filler or be placed on uneven skin surfaces to prevent leakage around the stoma (Hollister, 2007) - Most are alcohol-free (unlike stoma paste, which usually contains alcohol and can sting if the skin is irritated) (Hollister, 2002) - Can be convex or flat - Prevents liquid drainage from seeping underneath the skin barrier portion of the ostomy (Hollister, 2002) 	 <p>Figure 17. (Hollister, 2012).</p>
<p>Skin Wipes</p> <ol style="list-style-type: none"> 1. Adhesive remover <ul style="list-style-type: none"> - Used to remove adhesives on the skin (i.e., skin barriers, tape, hydrocolloid dressings; Hollister, 2007) - These do not need to be used every time: If the skin is clean with no old adhesive on it, it is not necessary (Hollister, 2007) 2. Protective barrier <ul style="list-style-type: none"> - Used before the application of tape, skin barriers, and other ostomy supplies and dressings to aid in the protection of irritation, excoriation, and/or adhesive build-up (Hollister, 2007) - Also available in spray form 	 <p>Figure 18. (Med-Fair Home Healthcare Equipment, 2016).</p>

<p>Stoma Paste</p> <ul style="list-style-type: none"> - Paste is used as a caulking agent to help create a seal to the skin barrier (Hollister, 2007) - It can also be used as a filler in uneven skin (ConvaTec, 2016c) - Can increase wear-time and helps to protect the skin (ConvaTec, 2016c) - Prevents liquid drainage from seeping underneath the skin barrier portion of the ostomy (Hollister, 2002) 	 <p><i>Figure 19 (Diatric Medical, 2011).</i></p>
<p>Strip Barrier Paste</p> <ul style="list-style-type: none"> - Can be used to fill deeper gaps and gullies in the skin (Hollister, 2002) - Prevents liquid drainage from seeping underneath the skin barrier portion of the ostomy (Hollister, 2002) - Like the barrier rings, most are alcohol-free (Hollister, 2002) 	 <p><i>Figure 20. (Total Home Care Supplies, 2016).</i></p>
<p>Ostomy Belt</p> <ul style="list-style-type: none"> - Provides extra support for the ostomy - Helps hold the weight of the ostomy (Hollister, 2007) 	 <p><i>Figure 21. (Peak Medical, 2015).</i></p>

Lubricating Deodorant

- No fragrance to the product itself; it works to trap odor within the pouch (Hollister, 2005)
- Applied each time the pouch is emptied (Hollister, 2005)
- Could be used in drainable or closed end pouches (Hollister, 2005)
- De-odorizer drops also available



Figure 22. (Hollister, 2005).

Section 4.2: Applying the Ostomy Product

Preparing new ostomy supplies

It is wise to have any supplies you might need handy and ready to use during an ostomy change. Stomas can continue to excrete stool during an ostomy change; thus, the quicker the change, the better. Always take a couple of extra wipes and an absorbent pad with you. Wipes may be placed on the stoma and an absorbent pad to the side of the patient to collect any stool that seeps through the stoma during the ostomy change.

On Unit Six East, the ET nurse typically completes an initial visit with each new stoma patient, and determines what products will work best for them. She or he then places a care plan on the front of the patient kardex that depicts what supplies (product numbers included) are being used in the patient's ostomy change. If this care plan is not available, or if the products on the care plan are not working for the patient anymore (e.g., the ostomy keeps leaking or there has been a change in stoma size), use the following guidelines along with the product descriptions in Chapter 4 to help decide what should work best for the patient:

- Stomas can be varying shapes and sizes and can have a very different amount and consistency of output from person to person. Therefore, sometimes finding the best appliance and supplies for a patient can be trial-and-error. Choosing which products are appropriate (e.g., Flat or convex skin barrier? Are there dips in the skin that will require a filler?) is the first step.
- In order to select the correct size barrier, measure where the stoma is the largest (Hollister, 2006). Measuring tools come with most ostomy kits provided by the ET nurse. If they are not, they should be attainable from the supply room where ostomy products are stored. If the ostomy has a cut-to-fit skin barrier, use this measurement to cut the appropriate size. If the ostomy has a cut-to-fit skin barrier, omit the cutting step, but you still may want to measure the stoma every so often to ensure the cut-to-fit remains the correct size for the stoma. The opening for the stoma on the skin barrier should leave as little peristomal skin exposed as possible, without putting *any* pressure on the stoma, in order to avoid circulation and strangulation of the stoma itself.

Removal of old appliance

- Gently press the skin away from the skin barrier as you remove the old appliance (Hollister, 2007).
- Pulling the old appliance off too quickly or harshly can harm the skin underneath (Hollister, 2007).

- Products such as remover wipes can aid in the removal of appliances if need be (Hollister, 2007).

Application of new appliance

- Cleanse the area around the stoma with warm water. You can use a mild soap (non-oil based) if you like, but there is no need for harsh cleansers (Hollister, 2007).
- Remember that surgical incisions are cleansed in a sterile manner, but a stoma is not sterile, as it passes stool.
- You can use remover wipes if there is a build-up of paste from the old appliance (Hollister, 2007).
- Be sure to rinse off the skin after the use of any wipes, soap, or other products so as not to leave behind any residue (Hollister, 2007).
- Pat the skin dry (Hollister, 2007).
- If there is any redness or slight irritation, you may condition peristomal skin with a non-oil based cream. Use a small amount and wait for it to dry (Hollister, 2007).
- If there is a small area of broken skin, stoma powder should be applied to help prevent further breakdown. Brush off excess powder before ostomy application. Once the skin is healed, stop using the powder (Hollister, 2007).
- Paste may be lightly applied over stoma powder to seal the powder in (Hollister, 2007).
- Any dips in the skin should be filled with stoma paste or barrier strips/barrier rings. These are used as caulking agents to help create an even seal. You may apply paste directly to the skin or to the skin barrier portion of the ostomy. Strip paste may be used to fill in dips, while rings are better used when placed directly on the skin barrier appliance, ensuring that the opening of the ring is the exact size of the opening on the skin barrier portion (Hollister, 2007).
- Ensure if the ostomy is a two-piece system, both pieces are connected together to collect any immediate stool that may drain from the stoma. Remove adhesive from the back of the stoma, and place the opening of the skin barrier evenly around the stoma. Press lightly with your hand for a few minutes as the heat from your hand will help create a good seal.

Remember:

Wipes and paste contain varying amounts of alcohol. Thus, if there is any skin breakdown, they can cause the skin to sting. If there is no skin breakdown, the skin should not feel any unpleasant sensation (Hollister, 2007).

Wearing the appliance

- The pouch should be emptied when it is $\frac{1}{3}$ – $\frac{1}{2}$ full, in order to keep the seal and not put too much pressure on the skin underneath the skin barrier portion of the ostomy (Hollister, 2007).
- If the ostomy leaks underneath the skin barrier portion, the appliance should be changed as soon as possible. Fecal drainage can be very irritable to the skin (Hollister, 2007).
- If irritation develops only where the tape is on the skin, skin barrier options without tape are available and should be tried (Hollister, 2007).
- Red, itchy peristomal area with or without bumps may be a symptom of an allergy to a certain type of ostomy product (Hollister, 2007). Assess the area, if it presents like an allergy, treat peristomal skin as needed and try a different line of products. If you are unsure, consult with the ET nurse or a physician for further guidance.

Products that work for one patient might change over time, depending on a multitude of factors, such as stoma size, output, change in the size of the abdomen (e.g., weight gain or loss, parastomal hernia).

Care of the peristomal skin is very important as it will affect the comfort and integrity of wearing the ostomy appliance. Although peristomal skin issues can be treated, the first option should be to prevent skin issues. Everyone's skin is different, so different options may be successful or unsuccessful depending on the person's skin (Hollister, 2007). It is a good idea to tell the patient to continue to measure the stoma every so often to ensure that the skin barrier is a proper fit (Hollister, 2007).

Section 4.3: Quiz

1. Match the ostomy product with the correct description:

Ostomy Product	Description
1. Stoma paste	a. This product is discarded once full.
2. High output ostomy bag	b. This product is used to fill in deeper gaps and gullies in the skin.
3. Closed-end pouch	c. This product is emptied via a spout with a cap.
4. Strip barrier paste	d. This product is used as a caulking agent or filler.
5. Cut-to-fit ostomy bags	e. This product is good for stomas that have an uneven or changing shape.

2. Place the following steps in correct order of ostomy application, using the blanks to number the steps. (Please note that not every single step is listed – so please number chronologically).

- _____ Remove old ostomy appliance
- _____ Use remover wipes for excess paste removal (if necessary)
- _____ Gather supplies needed for ostomy change
- _____ Fill in any dips in the skin with paste/barrier strips
- _____ Use stoma powder, if needed, for any broken skin (wipe off excess)
- _____ Place the ostomy appliance over the stoma and create seal with heat of hand

Chapter Five:

Physical and Psychological Complications of Stoma Surgery

Learning Objectives:

Upon completion of Chapter 5, you will be able to:

- List nine complications of stoma surgery and nursing interventions for each
- Discuss psychological complications of stoma surgery

Section 5.1: Physical Complications of Stomas

Necrotic stoma

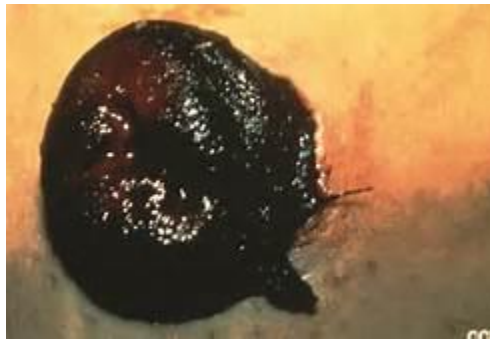


Figure 23. Necrotic Stoma (Coloplast, n.d.).

Stomas become necrotic most commonly in the early postoperative period, and necrosis is most often caused by venous congestion or insufficient arterial supply (Wound, Ostomy, and Continence Nurses Society, 2014). Often surgical revision is required. If the necrosis is limited to the stoma itself, observation of the stoma might be appropriate. If sloughing occurs, debridement by the medical team or clinical nurse specialist may be indicated (Landmann, 2015).

If a stoma is noted to have any extent of necrosis, the nurse must notify the medical team immediately. Clinical management will depend on the patient's condition and the extent of necrosis. Be sure that the documentation of the assessment of the stoma is clear and detailed. A transparent appliance should be used so that the stoma is visible and able to be assessed at all times. As well, the use of a two-piece system is optimal so that the pouch can be removed when needed for a closer assessment of the stoma. Since a common complication of necrotic stomas is stenosis, the nurse should monitor for stenosis (Wound, Ostomy, and Continence Nurses Society, 2014).

Mucocutaneous separation



Figure 24. Mucocutaneous Separation (Coloplast, n.d.).

When a stoma completely or partially detaches from the skin, it is called a mucocutaneous separation. When this happens, the detachment or separation should be visible. In most severe cases, surgical revision may be required. In less severe cases, the separation may be filled with an absorptive material, such as a calcium alginate dressing, paste, or skin barrier powder (Landmann, 2015).

If mucocutaneous separation is noted, the nurse must notify the medical team. It is important for the nurse to describe and document the location and extent of the separation. The best way to describe the location of separation is referring to the stoma like the face of a clock (e.g., the separation spreads from 1 o'clock to 4 o'clock).

Treatment of mucocutaneous separation that does not involve surgical revision includes flushing the separated area with normal saline, then filling the separated area with a product to absorb drainage (i.e., calcium alginate dressing, barrier powder, skin barrier paste, or hydrofiber). Also, a two-piece system may be more appropriate, or any system that allows access to the separation so that the appliance does not have to be removed every time the patient requires wound care (Wound, Ostomy, and Continence Nurses Society, 2014).

Dermatitis



Figure 25. Dermatitis (Hollister, 2007).

Peristomal skin irritation is common, especially for those with ileostomies due to the nature of the liquid stool. Dermatitis may also be caused by an allergic reaction, which is indicated by pruritis, erythema, and/or blistering to the area in direct contact with the appliance/product (Landmann, 2015).

Nursing interventions include checking the fit of the pouch: The phlange should be shaped around the stoma so it does not constrict it in any way, but does not expose peristomal skin. As outlined in Chapter 4 of this manual, skin barrier products are available in addition to the appliance. If an allergic reaction occurs, the brand of appliance should be changed and the peristomal skin should be assessed for the benefit of skin barrier products. As well, the patient may need a medication such as Benadryl ordered for the relief of pruritis and/or rash.

It is also possible with dermatitis that a skin infection can occur. Indications of this could include a rash-like appearance to peristomal skin, or drainage from the peristomal skin (Black & Hawkes, 2009). In this case, the medical team will need to assess the site and may order a swab of the wound to be sent for testing, or they may order antibiotic or antifungal medications or ointments.

Stoma prolapse



Figure 26. (Bhange, Gala, Sathe, & Bhansali, 2013).

A prolapse occurs when the full thickness of the bowel protrudes through the stoma site. This can happen with any type of stoma. Therefore, depending on the site, the large or small intestine will protrude. The prolapsed bowel can range from a few inches to a foot in length (Wound, Ostomy, and Continence Nurses Society, 2014).

There are two types of prolapses:

1. Fixed – permanent protrusion of a considerable length of bowel (Wound, Ostomy, and Continence Nursing, 2014).
2. Sliding – intermittent protrusion of the bowel through the stoma, typically due to an increase in abdominal pressure (for example, during the Valsalva maneuver; Wound, Ostomy, and Continence Nursing, 2014).

Nursing interventions include assessing the prolapsed bowel for trauma and/or laceration. If the bowel is healthy and not compromised by the application of an ostomy appliance, the nurse may assess the site for an appropriate appliance to use. If not contraindicated, the nurse could get the patient to lay in a reclined position and manually compress the prolapse (Wound, Ostomy, and Continence Nurses Society, 2014). If the bowel is edematous, this may be reduced by a cold compress or by putting sugar on the prolapse for 10-15 minutes (Wound, Ostomy, and Continence Nurses Society, 2014). Any sign of strangulation or incarceration of the bowel indicates the need for surgical repair – in which case, a physician should be alerted immediately (Wound, Ostomy, and Continence Nurses Society, 2014).

Stoma retraction



Figure 27. Stoma Retraction (Vickers & McEwin, n.d.).

A retracted stoma is defined as being 0.5 cm or more below the skin surface within 6 weeks of construction (Landmann, 2015). The stoma may be completely or partially retracted (Wound, Ostomy, and Continence Nurses Society, 2014).

Stoma retraction can occur for many different reasons, such as infection, mucocutaneous separation, necrosis, malnourishment, and tension of the stoma (Wound, Ostomy, and Continence Nurses Society, 2014). The most common cause of stoma retraction is obesity (Landmann, 2015).

Nursing interventions include assessing for peristomal irritation (this is quite common due to the anatomic positioning of the stoma and the effluent getting onto the skin as a result), and oftentimes using a convex ostomy appliance. The use of a belt or binder may be indicated. As with any change in a stoma, the nurse should notify the medical team. If conservative measures fail, surgery may be indicated (Landmann, 2015).

High stoma output



Figure 28. Example of a high output system (Braun, 2015).

Since many nutrients are absorbed in the small bowel, and water is absorbed in both the small and large bowels, those with high output from their stomas are at risk for fluid and electrolyte imbalances. Those with ileostomies are especially at risk for fluid and electrolyte imbalances due to high output: Ileostomies can have a litre or more of output per day (Black & Hawkes, 2009; Turnbull, 2009). The output from a new stoma should be monitored and recorded. The nurse should notify the medical team if the output is increasing significantly. A high output ostomy appliance may be indicated. These are mostly used for ileostomies as the output must be liquid in order for them to drain. Tubing connects from the pouch to a larger bag to collect the effluent. Appliances are found in Chapter 4 of this manual.

Stomal stenosis



Figure 29. Stomal Stenosis ([Coloplast](#), n.d.).

Stomal stenosis occurs when there is a narrowing of the stoma enough to impede normal function (Landmann, 2015). This complication can occur early in the postoperative period or later on (Wound, Ostomy, and Continence Nurses Society, 2014).

Symptoms of stomal stenosis include abdominal cramping, excessive flatus, passage of stool that becomes more narrow in size, and explosive passing of stool from the stoma (Wound, Ostomy, and Continence Nurses Society, 2014).

If stenosis is suspected, the nurse should notify the ET nurse or the medical team. In cases of mild stenosis, a digital exam could be performed *gently* with a glove and lubricant, to assess the narrowing of the stoma site. The medical team might order stool softeners or laxatives to aid in stool passage through the stenosis. A low residue diet is also recommended. In cases where digital examination is not possible, the medical team might perform an examination using a rubber catheter, called a retrograde contrast study. In severe cases of stenosis, surgical revision may be required (Wound, Ostomy, and Continence Nurses Society, 2014).

Anastomotic leaks

What are Anastomotic Leaks?

- Anastomosis is a procedure to connect healthy sections of tubular structures in the body (e.g. small bowel, colon, etc.) after the diseased portion has been surgically removed.
- ▶ Therefore, anastomotic leaks are defined as a defect in the intestinal wall integrity at the anastomotic site, leading to communication between intra- and extraluminal compartments.



Figure 30. Anastomotic Leaks (Sing, 2015).

An anastomotic leak is when contents of the bowel leak through the anastomosis of the bowel after surgery. The majority of anastomotic leaks present 5 to 7 days post-operatively (Boushey & Williams, 2015). However, anastomotic leaks can occur early or late in the postoperative period, highlighting the importance of proper follow-up after the patient is discharged (Boushey & Williams, 2015; Hyman, Manchester, Osler, Burns, & Cataldo, 2007). If an anastomotic leak is suspected, a CT scan is the preferred test of many surgeons (Hyman et al., 2007).

If an anastomotic leak is suspected, the nurse must notify the medical team **immediately**. Some clinical signs of a leak include pain, fever, tachycardia, abdominal pain or tenderness, a distended or firm abdomen, nausea/vomiting, feculent drainage, and/or purulent drainage (Boushey & Williams, 2015).

Clinical management of an anastomotic leak will depend on the extent of the leak, the patient, and many other circumstances. Intravenous fluids and broad-spectrum antibiotics are generally indicated and decided by the medical team. Other possible interventions include observation, bowel rest, percutaneous drainage, stenting of the bowel, and/or surgical revision (Boushey & Williams, 2015).

Parastomal hernia



Figure 31. Parastomal Hernia (Sages, 2014).

A parastomal hernia is defined as a bulge under the peristomal skin that is caused by the bowel protruding through the area underneath the peristomal skin (Wound, Ostomy, and Continence Nurses Society, 2014). It is a common postoperative complication, and many are asymptomatic and do not cause any serious complications (Landmann, 2015).

Indications of a peristomal hernia include a bulge around the peristomal area (that may decrease in size when the patient lies down, and increase in size when the patient stands up or performs any type of physical exertion), a change in size or shape of the stoma, pain to the site, and/or improper fit of the ostomy appliance (Wound, Ostomy, and Continence Nurses Society, 2014).

There are some nursing interventions for a parastomal hernia. Modifying the pouch system may be necessary and it will depend on where the bulge is, the shape of the stoma, etc. Regular assessment of the stoma should be performed, and the hernia site should also be assessed for pain (Wound, Ostomy, and Continence Nurses Society, 2014).

The medical team will decide if surgical intervention is indicated. There are different surgical approaches, such as a primary repair of the hernia, prosthetic mesh repair, or in more severe cases, relocation of the stoma (Cima, 2015).

Section 5.2: Psychological Complications of Stoma Surgery

Sexual Activity

A person's self-concept is comprised of many aspects, including sexual esteem and body image (White, 2013). While patients may not be comfortable in initiating a conversation regarding sexual health with their nurse, providing them with information will help them make informed decisions regarding their sexual health, and could give them a chance to express their feelings and concerns (White, 2013).

Some tips to offer patients regarding sexual activity:

- Encourage the patient to voice sexual concerns (Black & Hawks, 2009).
- Encourage the patient to discuss their feelings with their partner – open communication may ease the patient's concerns regarding their sexual life.
- It is recommended not to resume sexual activity until the patient has physically recovered from the stoma surgery (Turnbull, 2009).
- Completely empty the pouch prior to any sexual activity.
- If the patient is apprehensive about their partner seeing the pouch, there are specially designed underwear available for both men and women. See Chapter 4 regarding products available.
- Following removal of the rectum, it is possible that men may have erectile difficulties and women might have less vaginal lubrication (Turnbull, 2009). If this occurs, encourage the patient to seek advice from their family doctor regarding medications or lubricants respectively, once they have recovered from surgery.
- Suggest seeing a sexual therapist for further counselling and advice (Black & Hawks, 2009).

Social Life/Returning to Work/Resuming 'Normal' Activities

Many patients feel restricted in their normal activities of daily living following stoma surgery (Andersson, Engstrom, & Soderberg, 2010; Lim, Chan, & He, 2015; Simmons, Smith, Bobb, & Liles, 2007). Psychosocial support should be a routine part of stoma care (Simmons et al., 2007). Oftentimes, the psychological distress that stoma surgery patients experience is due to lack of knowledge regarding the care of their ostomy, and once they feel more comfortable with caring for their ostomy, their sense of confidence and self-control is increased (O'Connor, 2005). Therefore, the goal of the nurse in aiding the patient to ease back into their 'normal' lifestyle, the best way to do this is to:

- Teach ostomy care. The expertise of the nurse helping the patient manage a new stoma increases patient confidence and coping resources (Riemenschneider, 2015).
- Be a resource person. (You may also offer resources listed in Chapter 6 of this manual).
- Offer emotional support.
- Enable the patient to become independent with their ostomy over time. Initially, the nurse completes all of the ostomy appliance change and emptying, while simultaneously explaining what he/she is doing. Eventually the nurse stands by and provides verbal feedback. The nurse is not needed at all when the patient becomes completely independent.

Section 5.3: Quiz

1. Match the complication of the stoma to the appropriate description:

Stoma Complication	Description
1. Necrotic stoma	a. Peristomal skin irritation
2. Mucocutaneous separation	b. When the full thickness of the bowel protrudes through the stoma site
3. Dermatitis	c. Can cause a risk for fluid and electrolyte imbalances.
4. Stoma prolapse	d. Caused by venous congestion or insufficient arterial supply.
5. Stoma retraction	e. Narrowing of the stoma.
6. High stoma output	f. When a stoma completely or partially detaches from the skin.
7. Stomal stenosis	g. When the bowel protrudes through the area underneath the peristomal skin.
8. Anastomotic leaks	h. When the stoma is below the skin surface.
9. Parastomal hernia	i. When the contents of the bowel leak outside of the bowel.

Chapter Six:

Discharge Planning and Resources

Learning Objectives:

Upon completion of Chapter 6, you will be able to:

- Make referrals for stoma surgery patients
- Discuss community resources with patients for continued support after hospital discharge

Section 6.1: Discharge Planning

Discharge planning begins upon admission of the patient. There are many aspects of care to consider for those who have undergone stoma surgery. Even though every patient is different and may have differing needs, depending upon their motor skills, cognitive level, social support, etc., there are certain referrals on Unit Six East that are made for every person who undergoes stoma surgery.

Enterostomal Therapy (ET) Nurse

Every patient who undergoes stoma surgery will need a referral to the ET nurse. The ET nurse typically visits Unit Six East twice a week and as needed, to complete teaching with the patient and help select the pouch that works best for her/him. The ET nurse usually places a care plan on the patient's kardex, indicating the brand and product numbers used on each patient's ostomy. This is a great guideline for knowing what supplies to use when changing the ostomy. In between ET nurse visits, sometimes the appliance may leak or the patient's skin may become irritated, among other possible issues. It is then up to the nurse to decide whether other supplies could help (e.g., paste or powder) or whether a different appliance may work. If any of the supplies change, it should be documented on the patient care plan located on the kardex: That way communication regarding what supplies are working best for the patient can be communicated, and the nursing staff can work with the ET nurse to find out what best suits the patient.

Community Health Referral

Community Health referrals are sent on every patient who has a new ostomy. The Community Health Nurse (CHN) follows up on wound care, such as dressing changes, staple/suture removal, and maintenance of any drains. However, referrals are made even if the staples/sutures are removed and all incisions are healed. This is to ensure that the patient is coping well with ostomy/stoma care at home by providing some extra support and guidance.

Dietician referral

Each patient who has a new ostomy requires a dietician referral. The dietician will complete teaching with the patient regarding her/his diet. This is very important as there are certain foods that the patient should avoid. Furthermore, depending on how

much bowel was resected during surgery, the patient may need to take in extra nutrients and fluids in order to remain well-nourished.

Section 6.2: Resources

Canadian Association of Enterostomal Therapy (CAET)

The patient will be visited by an ET nurse while in the hospital. If the patient would like information regarding whether there is an ET nurse in their area after discharge, this information is available from CAET.

Contact Information:

CAET Office

60 Dundas East

P.O. Box 48069

Mississauga, ON

L5A 1W4

E-mail: caet@on.aibn.com

Website: www.caet.ca

Crohn's and Colitis Foundation of Canada

Crohn's and Colitis Canada is a volunteer-based charity that aims to find the cures for Crohn's disease and ulcerative colitis, and to better the lives of persons affected by both diseases.

Contact information:

60 St. Clair Avenue East, Suite 600

Toronto, ON

M4T 1N5

Telephone: (416) 920-5035

Toll-free telephone: 1-800-387-1479

Fax: (416) 929-0364

E-mail: ccfc@ccfc.ca

Website: www.ccfc.ca

Canadian Cancer Society

The Canadian Cancer Society is a volunteer-based organization whose aim is to eliminate cancer and improve the quality of life for those living with cancer.

Contact information:

10 Alcorn Avenue, Suite 200

Toronto, ON

M4V 3B1

Telephone: (416) 961-7223

Toll-free telephone: 1-888-939-3333

Fax: (416) 961-4189

E-mail: ccs@cancer.ca

Website: www.cancer.ca

Colorectal Cancer Association of Canada

The Colorectal Cancer Association of Canada is a non-profit organization made up of volunteers, members, and management. It is led by a board of directors and kept up to date on the latest research by a medical advisory board. Their aim is to promote awareness, support, and advocacy.

There are two separate sets of contact information, one based out of Toronto and one based out of Montreal. There is one toll-free telephone number and one website for the association.

Contact information:

Toll-free telephone: 1-877-50-COLON or 1-877-50-26566

Website: www.colorectal-cancer.ca

Montreal:

5 Place Ville Marie, Suite 1230

Montreal, QC

H3B 2G2

Telephone: (514) 875-7745

Fax: (514) 875-7746

Toronto:

60 St. Clair Avenue East, Suite 204

Toronto, ON

M4T 1N5

Telephone: (416) 920-4333

Fax: (416) 920-3004

Canadian Society of Intestinal Research

The Canadian Society of Intestinal Research is a charity organization committed to enhancing the lives of people with gastrointestinal and liver conditions through research, advocating for access to healthcare, and promoting health.

Contact information:

855 West 12th Avenue

Vancouver, BC

V5Z 1M9

Telephone: (604) 875-4875

Toll-free number: 1-866-600-4875

Fax: (604) 875-4429

E-mail: info@badgut.com

Website: www.badgut.com

The United Ostomy Association of Canada (UOAC)

The UOAC is a non-profit volunteer organization that promotes support, education, collaboration, and advocacy for those living with ostomies and their families.

Contact information:

344 Bloor St. West, Suite 501

Toronto, ON

M5S 3A7

Telephone: (416) 595-5452

Toll-free telephone: 1-888-969-9698

Fax: (416) 595-9924

E-mail: info@ostomycanada.ca

Website: www.ostomycanada.ca

Intestinal Disease Education and Awareness Society (IDEAS)

IDEAS aims to raise awareness of intestinal diseases through educating the public. They provide support programs for persons affected by intestinal diseases.

Contact information:

1859 Napier Street

Vancouver, BC

V5L 2N4

Telephone: (604) 255-9606

Fax: (604) 253-7889

E-mail: info@ideas-na.com

Website: www.ideas-na.com

Coloplast Care Program

This is a nurse directed program offered through an ostomy supply company, Coloplast, designed to provide support to persons after ostomy surgery.

Contact information:

Toll-free telephone: 1-866-293-6349

E-mail: ca_conspect@coloplast.com

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Appendix A: Quiz Answers

Chapter 1 – Section 1.4

Question 1

C – Duodenum

Question 2

- a. True.
- b. True.
- c. False. The ileum is the longest portion of the small intestine.
- d. False. The pouch-like structure is called the cecum.

Chapter 2 – Section 2.3

Question 1

- a. Ulcerative colitis
- b. Ileum
- c. Sigmoid
- d. Abdominal-perineal resection
- e. Total proctocolectomy

Chapter 3 – Section 3.5

Question 1

- a. Eight
- b. Wind, water, wound, walking, and/or waste
- c. Low hemoglobin
- d. Small intestine; an ileostomy

Question 2

- a. False. Bowel sounds occur anywhere from 5-30 times per minute.
- b. True.
- c. False. The peristomal skin should be the same color as the skin on other parts of the patient's body.

Question 3

- 1. C
- 2. B
- 3. D
- 4. A

Question 4

Any three of the following foods may cause extra gas: Beans/legumes, carbonated beverages, cucumbers, melons, dairy products, mushrooms, sweet potatoes, garlic, cabbage, broccoli, Brussel sprouts, cauliflower, onions, spicy foods, turnip, and/or asparagus.

Chapter 4 – Section 4.3**Question 1**

1. D
2. C
3. A
4. B
5. E

Question 2

2, 3, 1, 5, 4, 6

Chapter 5 – Section 5.3**Question 1**

1. D
2. F
3. A
4. B
5. H
6. C
7. E
8. I
9. G