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Ostomy Care and Management



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Greetings from Doris Grinspun,

Executive Director Registered Nurses' Association of Ontario

It is with great excitement that the Registered Nurses' Association of Ontario (RNAO) presents this guideline, *Ostomy Care and Management*, to the health care community. Evidence-based practice supports the excellence in service that nurses are committed to delivering in our day-to-day practice.



RNAO is delighted to provide this key resource to you.

RNAO offers its heartfelt thanks to the many individuals and institutions that are making our vision for Nursing Best Practice Guidelines (BPGs) a reality: the Government of Ontario for recognizing our ability to lead the program and providing multi-year funding; Irmajean Bajnok, Director, RNAO International Affairs and Best Practice Guidelines (IABPG) Programs, for her expertise and leadership in advancing the production of the BPGs; each and every Team Leader involved, and for this BPG in particular – Kathryn Kozell – for her superb stewardship, commitment and, above all, exquisite expertise. Also thanks to Rishma Nazarali, RNAO's IABPG Program Manager, for her intense work to see that this BPG moved from concept to reality. A special thanks to the BPG Panel – we respect and

value your expertise and volunteer work. To all, we could not have done this without you!

The nursing community, with its commitment and passion for excellence in nursing care, is providing the knowledge and countless hours essential to the development, implementation, evaluation and revision of each guideline. Employers have responded enthusiastically by nominating best practice champions, implementing and evaluating the guidelines and working towards a culture of evidence-based practice.

Successful uptake of these guidelines requires a concerted effort from nurse clinicians and their health care colleagues from other disciplines, from nurse educators in academic and practice settings and from employers. After lodging these guidelines into their minds and hearts, knowledgeable and skillful nurses and nursing students need healthy and supportive work environments to help bring these guidelines to practice actions.

We ask that you share this guideline with members of the interdisciplinary team as there is much to learn from one another. Together, we can ensure that the public receives the best possible care every time they come in contact with us. Let's make them the real winners in this important effort!

A handwritten signature in black ink that reads "Doris Grinspun". The signature is fluid and cursive, with a long horizontal stroke at the end.

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How to Use this Document

This nursing best practice guideline is a comprehensive document providing resources necessary for the support of evidence based nursing practice. The document needs to be reviewed and applied, based on the specific needs of the organization or practice setting/environment, as well as the needs and wishes of the client. Guidelines should not be applied in a “cookbook” fashion but used as a tool to assist in decision making for individualized client care, as well as ensuring that appropriate structures and supports are in place to provide the best possible care.

Nurses, other health care professionals and administrators who are leading and facilitating practice changes will find this document valuable for the development of policies, procedures, protocols, educational programs, assessment and documentation tools, etc. It is recommended that the nursing best practice guidelines be used as a resource tool. Nurses providing direct client care will benefit from reviewing the recommendations, the evidence in support of the recommendations and the process that was used to develop the guidelines. However, it is highly recommended that practice settings/ environments adapt these guidelines in formats that would be user-friendly for daily use. This guideline has some suggested formats for such local adaptation and tailoring.

Organizations wishing to use the guideline may decide to do so in a number of ways:

- a) Assess current nursing and health care practices using the recommendations in the guideline.
- b) Identify recommendations that will address identified needs or gaps in services.
- c) Systematically develop a plan to implement the recommendations using associated tools and resources.

The RNAO is interested in hearing how you have implemented this guideline. Please contact us to share your story. Implementation resources will be made available through the RNAO website to assist individuals and organizations to implement best practice guidelines.

Purpose and Scope

Best practice guidelines are systematically developed statements to assist practitioners' and clients' decisions about appropriate health care (Field & Lohr, 1990).

This guideline provides evidence-based recommendations for Registered Nurses and Registered Practical Nurses related to the assessment and management of people with colostomies, ileostomies and urostomies, including the assessment and management of the peristomal skin.

This guideline will focus on three areas of care: pre-operative, post-operative, and follow-up. All individuals with ostomies, across the continuum of care, including the needs of the family and caregiver, will be addressed.

It is intended that this guideline will be applicable to all domains of nursing including clinical, administration and education.



Summary of Recommendations

Core Recommendations

RECOMMENDATION		*Level of Evidence
1	Develop a therapeutic relationship with the client and family.	III
2	Perform a comprehensive assessment of the client/family that includes: a) history and physical; b) psychosocial (coping and adaptation, altered body image, impaired quality of life, sexuality and sexual concerns); and c) cultural, spiritual and religious norms.	III
3	Consult with interdisciplinary team members for assessment and intervention as needed for all clients requiring, or who already have, an ostomy.	IV
4	Design a mutually acceptable plan of care between the client/family and all health-care providers, which optimizes health and self-efficacy in ostomy management.	III

Practice Recommendations: Pre-Operative Phase

RECOMMENDATION		Level of Evidence
5	Pre-operative education should be provided to all clients and families requiring ostomy surgery.	Ib
6	Stoma site marking should be performed on all clients undergoing ostomy surgery.	IIa
7	Explore the potential impact of ostomy surgery on intimacy and sexual functioning with the client/partner.	Ia
8	Progressive Muscle Relaxation Therapy (PMRT) should be offered to clients undergoing ostomy surgery as part of routine care.	Ib

*See page 11 for an interpretation of evidence.

Practice Recommendations: Post-Operative Phase

	RECOMMENDATION	Level of Evidence
9	Assess the stoma immediately post-operatively and the stoma/peristomal skin condition with each appliance change using a validated classification tool to monitor for complications.	IV
10	Identify risk factors that influence stomal and peristomal complications.	III
11	Review the client's medication profile to ensure that maximum absorption and effectiveness will be achieved in relation to the type of ostomy.	IV
12	Avoid insertion of a glycerin suppository into a colostomy in order to aid evacuation of effluent.	Ib
13	Counselling by a Registered Dietician should be performed for clients with an ostomy who are at risk for, or who develop, nutritional complications.	IIa
14	Prepare the client and family by teaching the minimum skill set specific to their needs prior to discharge from hospital.	IV
15	Discharge the client and family with home care support.	Ib
16	Ensure that the ostomy plan of care is individualized to meet the needs of the client and family.	IV
17	Assessment and follow-up by an Enterostomal Therapy Nurse (ETN) are recommended for the client and family after ostomy surgery to decrease psychological distress, promote optimal quality of life and prevent complications.	IIb
18	Educate client and family members to recognize complications affecting the stoma and peristomal skin.	IV
19	Colostomy irrigation may be implemented as a safe and effective method for the management of descending or sigmoid colostomies for select adult clients.	III

Education Recommendations

RECOMMENDATION		Level of Evidence
20	Ostomy education for all levels of health-care providers should be a systematic, client-centred process, provided in both academic and workplace venues.	IV
21	Consult ETNs in the development of ostomy educational programs that target appropriate health-care providers, clients, family members and caregivers.	IV

Organization & Policy Recommendations

RECOMMENDATION		Level of Evidence
22	Organizations should utilize a credentialed ETN for policy development and program management.	IV
23	All clients with ostomies, and their families, should have access to comprehensive education.	IV
24	A mechanism must be in place for the transfer of information between care settings to facilitate continued education and clinical support of the client.	IV
25	Practice settings must have access to an interdisciplinary team of knowledgeable and skilled health professionals to address quality care in ostomy management.	IV
26	<p>Nursing best practice guidelines can be successfully implemented only where there are adequate planning, resources, organizational and administrative support, as well as appropriate facilitation. Organizations may wish to develop a plan for implementation that includes:</p> <ul style="list-style-type: none"> ■ An assessment of organizational readiness and barriers to implementation, taking into account local circumstances. ■ Involvement of all members (whether in a direct or indirect supportive function) who will contribute to the implementation process. ■ Ongoing opportunities for discussion and education to reinforce the importance of best practices. ■ Dedication of a qualified individual to provide the support needed for the education and implementation process. ■ Ongoing opportunities for discussion and education to reinforce the importance of best practices. ■ Opportunities for reflection on personal and organizational experience in implementing guidelines. 	IV

Interpretation of Evidence

Levels of Evidence

Ia	Evidence obtained from meta-analysis or systematic review of randomized controlled trials.
Ib	Evidence obtained from at least one randomized controlled trial.
IIa	Evidence obtained from at least one well-designed controlled study without randomization.
IIb	Evidence obtained from at least one other type of well-designed quasi- experimental study, without randomization.
III	Evidence obtained from well-designed, non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.
IV	Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.

Adapted from SIGN 50: A Guideline Developer's Handbook (2008)

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Background Context

Ostomy refers to a surgical procedure resulting in the external diversion of feces and urine through an abdominal stoma. The most common ostomies are a colostomy and ileostomy for feces, and a urostomy for urine. These procedures are performed on all age groups from the neonate to the elderly. Statistics regarding the exact frequency of ostomy surgery in Canada are not readily available; however a cross-sectional survey conducted by a private research group in 1999–2000 revealed that approximately 13,000 ostomy surgeries had been performed during that period. The provinces reporting the highest number of annual procedures were, respectively, Ontario, Quebec then British Columbia. The most frequently performed ostomy is the colostomy (55%); followed by ileostomy (31%); and urostomy (14%). Ostomies can be either temporary or permanent and are performed for a number of etiologies such as, but not limited to: colorectal cancer (36%); inflammatory bowel disease (15%); bladder cancer (12%); diverticulitis (11%); necrotizing enterocolitis, congenital anomalies, Hirschsprung’s disease and other cancers and conditions such as obstruction, perforation and trauma (The Oryx Group, 2001). Colorectal cancer resulting in an ostomy is seen more in males, whereas ostomies as a result of abdominal cancers are noted more in females. A urostomy for bladder cancer is predominately associated with males; ostomies related to inflammatory bowel, such as Ulcerative Colitis and Crohn’s Disease, are experienced equally by males and females (Colwell, Goldberg & Carmel, 2004).

The profile of health care in Canada has changed dramatically. An aging population, the increasing incidence of cancers (Canadian Cancer Society/National Cancer Institute of Canada, 2008) and the associated health demands of caring for multiple, simultaneous diagnoses results in “lifelong caring.” The Health Council of Canada has focused its attention on prevention and management of chronic conditions to encourage discussion of the changes to public policy, health-care management and health services delivery required to improve health outcomes for Canadians (Broemeling et al., 2008). Chronic conditions affect at least one third of Canadians and this percentage increases with age. As many of the diagnoses behind an ostomy are chronic, clients with ostomies, whether temporary or permanent, form part of this chronic health condition profile.

In all settings, from acute care to long-term care/residential or home, a client with an ostomy requires specialized care and management that promotes independence and quality of life for the client, family and caregivers. In Canada, an Enterostomal Therapy Nurse (ETN) is a Registered Nurse who has advanced knowledge and clinical skill preparation from a recognized educational certificate program in the management of ostomies, wound and incontinence (see Appendix B). As a nursing specialty recognized by the Canadian Nurses Association (March 2007), ETNs provide clinical expertise and supportive care to clients and family members throughout the life span. By promoting a standard of excellence in ostomy care through expert consultation, education and evidence-based best practice, clients benefit from the consistency and continuity of care delivery from all interdisciplinary team members.

The provision of specialized ostomy care begins pre-operatively, continues through the post-operative and rehabilitative period – in fact, throughout the life of a client with an ostomy. Due to the nature of a client ‘living with an ostomy for life,’ ostomy care and management is supported by the availability of outpatient ostomy clinics and community care nursing agencies. Ongoing stoma and ostomy appliance sizing, the treatment of peristomal skin complications, ostomy appliance modifications, access to ostomy products and financial assistance, dietary consultation and emotional support are just a few of the health management issues required by a client at any time. Client support can also be found through The United Ostomy Association of Canada (UOAC) which has 48 chapters countrywide and more than 3,200 members. The UOAC “is a volunteer based organization dedicated to assisting all persons facing life with gastrointestinal or urinary diversions by providing emotional support, instructional and information services through the membership, the family, associated caregivers and the general public” (United Ostomy Association of Canada, Personal Communication, September 22, 2008).

There are approximately 250–300 ETNs (The Canadian Association for Enterostomal Therapy, 2008) across Canada, yet the demand exceeds the availability for this nursing specialty. Although the development panel has made every attempt to provide the best of the research to support the recommendations, it is acknowledged that the science behind the practice of evidence-based ostomy care and management is limited. Therefore, the level of evidence often reflects expert opinion and reference to ‘grey-literature,’ which is reference to unpublished documents, opinion papers and conference material as examples (University of British Columbia, Searching for Grey Literature, Accessed July 31, 2008). Registered Nurses, Registered Practical Nurses and non-regulated health-care providers who also provide ostomy care in all settings will be able to refer to and use this guideline knowing that it represents the best in the ostomy health-care literature to date and excellence in a standard of care.

This guideline is divided into practice phases in order to present the complexity of the care issues and needs of the client in a logical manner. The development panel would like to impress upon the reader that the care and management of clients who have ostomies is not linear, and that the frequently changing needs of the client must be reflected in a highly flexible, yet comprehensive plan of care delivery. The phases represent the client’s unique journey, and often overlap.

Core Recommendations

Core recommendations are those that provide guidance across the continuum of care, in the pre-operative and post-operative periods and at every interaction with the client.

RECOMMENDATION 1

Develop a therapeutic relationship with the client and family.

Level of Evidence = III

Discussion of Evidence

A therapeutic relationship is grounded in an interpersonal process that occurs between the nurse and the client/family. The therapeutic relationship is a purposeful, goal-directed relationship that is directed at advancing the best interest and outcome of the client (RNAO, 2002).

Professional nursing organizations have identified that a therapeutic relationship, or helping relationship, is a central aspect of nursing care and has embedded qualities of the nurse/client relationship in many statements on practice (College of Nurses, 1999; RNAO, 2002).

The qualities of the therapeutic relationship include active listening, trust, respect, genuineness, empathy and responding to the client's concerns (RNAO, 2002).

The nurse requires specific knowledge about the client having ostomy surgery and the needs of the client so that the therapeutic relationship can be effective.

The nurse needs to know the:

- condition or disease process impacting the client
- reason for surgery requiring a temporary or permanent ostomy
- type of ostomy
- expected care requirements based on client need
- client's understanding and perspective of life with an ostomy
- available support network from family, significant other and community resources

Therapeutic relationships begin pre-operatively to establish a rapport and obtain accurate information about the client's interpretation and feelings about their disease, body image, the proposed surgery, home life, family circumstances and roles and relationships.

Haugen et al. (2006) used the Ostomy Adjustment Scale (OAS) to measure long-term ostomy adjustment in 146 adult clients with permanent colostomies, ileostomies or urostomies. Adjustment scores on the OAS were higher when the client found pre- and post-operative education helpful. Scores were also higher when ostomy education was augmented by the presence of an ETN.

Persson and Larsson (2005) administered a questionnaire that measured satisfaction with care following ostomy surgery to 49 patients undergoing ostomy surgery. They also found that receiving satisfactory information regarding ostomy care was weighted as the most important indicator of quality care following ostomy surgery. These results are similar to an earlier study reported by Persson et al. (2005) that compared predictors, or satisfaction versus dissatisfaction, in 91 clients who underwent ostomy surgery six months or longer prior to data collection. Satisfaction was associated with the opportunity to communicate with the ETN about their health and life situation, and dissatisfaction was associated with presence of ostomy-related complications and lack of opportunity to communicate with the ETN about their health and life situation.

Marquis, Marrel and Jambon (2003) measured quality of life in 4,739 clients who had undergone ostomy surgery for a variety of cancer-related and non-malignant conditions, such as inflammatory bowel disease. Respondents who indicated that the nurses who provided ostomy care, and who had a genuine interest in the respondent as a person, had higher quality-of-life index scores than those who indicated a poor relationship with the nurses who provided their ostomy care.

Erwin-Toth (1999) reported an ethnography of 10 young adult subjects who recalled their experiences adjusting to an ostomy when they were between six and 12 years-of-age. All of the informants stated that families were influential in adjustment to ostomy surgery. Parents were identified as the most important source of support and siblings were identified as an important secondary resource. Informants who were separated from a parent reported difficulty achieving a sense of normalcy following ostomy surgery not reported by those who were raised with parents and siblings. All respondents reported learning to care for their ostomy “soon after surgery” and all reported parents actively participating in ostomy management.

Olejnik et al. (2005) studied 30 parents whose children (up to two years-of-age) underwent ostomy surgery. All received stoma care instruction prior to surgery and during the initial hospital stay, 93% of parents recalled receiving adequate information to care for the ostomy during the initial hospital stay, 53% reported receiving adequate information within 24 hours following surgery, and an additional 40% reported receiving adequate information to manage their child’s ostomy by the time of hospital discharge. Eighty three percent of parents stated that ostomy education provided by the nurse was understandable. The age and educational level of parents was associated with the likelihood of finding the nurse’s instructions understandable and applicable to ostomy care; younger and more highly educated parents were more likely to understand teaching than were older and less educated parents.

These data suggest that parents are the most important source for children as they learn to manage and cope with an ostomy. Parents, in turn, rely on nurses to provide initial education about the ostomy following surgery, and the vast majority (93%) are successfully taught to begin caring for their child’s ostomy during the initial hospital stay. Older and less educated parents are likely to require more intensive education and support than younger and more educated parents.

These findings provide substantial evidence that formation of a nurse/client therapeutic relationship, complemented by consultation with an ETN, is important for satisfaction with care following ostomy surgery, for long-term adjustment to the ostomy and for learning the skills needed for self-management of the ostomy.

RECOMMENDATION 2

Perform a comprehensive assessment of the client/family that includes: a) history and physical; b) psychosocial (coping and adaptation, altered body image, impaired quality of life, sexuality and sexual concerns); and c) cultural, spiritual, and religious norms.

Level of Evidence = III

Discussion of Evidence

a) History and physical

A pre-operative history and physical assessment provides information that will serve as baseline data for developing a comprehensive plan of care. A consensus of expert opinion supports that this assessment should include:

- demographic data including age and gender
- diagnosis and client's presenting problem
- history of client's problem
- prognosis: curative or palliative
- surgical plan including type of ostomy (ileostomy, urostomy, colostomy); and expected duration (temporary, permanent)
- clients' and families' interpretation of prospective surgery
- psychological preparedness of client and family
- clients' and families' interpretation of life with an ostomy
- social history including occupation, interpersonal relationships, sexuality, cultural and spiritual practices and financial considerations related to ostomy supplies
- physical and cognitive challenges and environmental/living conditions that could impact learning and self-care
- functional assessment focusing on cognitive and psychomotor skills needed for ostomy self-management, including identification of patients with specific physical needs such as impaired dexterity, sight, or hearing
- abdominal assessment for stoma site marking

Modified from Borwell, (1996)

Ostomy surgery radically alters urine or fecal elimination, forcing the client to learn new physical skills in order to manage the ostomy itself, fecal or urinary effluent produced by the ostomy and the peristomal skin (Persson & Helstrom, 2002). Clients with a new ostomy must master multiple psychomotor skills to remove their pouch, clean the ostomy and peristomal skin and empty and dispose of effluent from the pouch.

b) Psychosocial

Ostomy surgery is associated with multiple psychosocial challenges that negatively influence quality of life (QOL) (Gooszen et al., 2000; de Gouveia Santos, Chaves & Kimura, 2006; Holzer et al., 2005; Karadag et al., 2003; Krouse et al., 2007; Ma et al., 2007; Marquis, Marrel & Jambon, 2003; McVey, Madill & Fielding 2001; Nugent et al., 1999; Ross et al., 2007; Scarpa et al., 2004; Wu, Chau & Twinn, 2007). McVey, Madill and Fielding (2001) explored psychological challenges associated with stoma surgery and living with an ostomy using a mixed design that included semi-structured interviews with eight subjects and administration of various validated instruments in 16 additional subjects. They identified the phenomenon of “lowered personal control” as the major psychological challenge facing persons undergoing stoma surgery and learning to adjust to an ostomy. Results of their research indicate that ostomy surgery and diagnosis of the underlying disease leading to its creation initially creates an uncomfortable dependency associated with distressing emotions, including depression and anxiety and prompting multiple defensive strategies. Enabling factors, including education and support from nurses and emotional support and encouragement from families, assist the patient to recover a partial sense of autonomy. Education before and after surgery needs to be an ongoing process (Persson & Hellstrom, 2002). Long-term recovery is characterized initially by taking control of ostomy care, followed by seeking to recover a sense of normalcy and re-establishing work-related and social activities. The desire to regain a sense of normalcy also emerges as a major theme of recovery in Erwin-Toth’s ethnography (1999) of young adults who underwent ostomy surgery as children.

Coping and adaptation

Reynaud and Meeker (2002) administered a modified Jaloweic Coping Scale that queried 60 coping methods in 27 adults with ileostomies or colostomies who were age 50–84 yrs. Confrontive coping strategies that focused on self reliance in ostomy management were most commonly used to adjust to living with an ostomy associated with cancer or inflammatory bowel disease. Carlsson et al. (2001) also found that a confrontational coping style was most commonly employed in their study of 21 subjects with ileostomies owing to inflammatory bowel disease. Wu, Chau and Twinn (2007) administered a Chinese version of the SF-36 and Stoma Self-Efficacy Scale to 96 subjects from two acute care facilities in China. They also found a positive correlation between higher self-efficacy and health related QOL. De Gouveia Santos, Chaves and Kimura (2006) compared coping styles in 42 subjects with temporary ostomies to 72 subjects with permanent ostomies, using the Lazarus & Folkman Coping Strategies Inventory and the Ferrans & Powell QOL Inventory. Subjects with temporary ostomies tended to use escape/avoidance strategies to cope with their ostomies, while those with permanent stomas tended to use a confrontational style, focusing on planned problem solving and self-reliance.

These data strongly suggest that ostomy patients must deal with the psychological challenges associated with lowered personal control, especially during the immediate post-operative recovery. The most common coping styles used with this psychological challenge are confrontational strategies designed to regain autonomy in ostomy management and re-establish a sense of self-efficacy. McVey, Madill and Fielding (2001), Reynaud and Meeker (2002) and Wu, Chan and Twinn (2007) all observed that nursing interventions that enable clients to increase self-efficacy in ostomy management act as enablers as they struggle to re-establish a sense of normalcy following ostomy surgery.

Altered body image

Body image is defined as the individual's perception of physical appearance and physical function. Clients with an ostomy consistently report a change in body image as a direct result of their surgery (Holzer et al., 2005; Krouse et al., 2007; Marquis, Marrel & Jambon, 2003; Notter & Burnard, 2006; Persson & Helstrom, 2002; Piwonka & Merino, 1999; Ross et al., 2007). Brown and Randle (2005) systematically reviewed the literature and noted that women tended to report that body image factors were the most negative aspect of stoma surgery. Impaired body image is associated with symptoms of weakness, fragility, unattractiveness and feelings of stigma. Persson and Helstrom (2002) reported a phenomenological study of nine subjects who emphasized the initial shock and emotional distress they experienced when the stoma was first visualized. A classic study addressing this issue noted that impaired body image may persist for as long as 10 years following creation of an ostomy (Orbach & Tallent, 1965).

Impaired quality of life

Findings from existing research consistently demonstrate that undergoing ostomy surgery initially impairs health-related QOL (Gooszen et al., 2000; Holzer et al., 2005; Karadag et al., 2003; Krouse et al., 2007; Ma et al., 2007; Marquis, Marrel & Jambon, 2003; McVey, Madill, & Fielding 2001; Nugent et al., 1999; Ross et al., 2007; Scarpa et al., 2004; Wu, Chau & Twinn, 2007). Marquis, Marrel and Jambon (2003) administered a validated QOL instrument to respondents with colostomies, ileostomies and urostomies at hospital discharge, and at three, six, nine and 12 months following discharge. Analysis revealed that QOL scores steadily rose during the first year following ostomy creation, but the only statistically significant difference occurred between hospital discharge and three months. Ma et al. (2007) evaluated the effect of age on QOL over the first 12 months following ostomy surgery in a group of 49 subjects (median age 64 years, range 23–86 years) at hospital discharge, and again at six and 12 months. Adults age 70 years and older tended to have initially higher QOL scores than did younger adults, but they did not experience the gradual gains in QOL over the first post-operative year. These findings provide a compelling rationale that administration of a validated condition-specific or generic QOL instrument is recommended to establish the immediate effect of ostomy surgery on QOL, and to enable longitudinal measurement as the patient adjusts to living with an ostomy.

Sexuality and sexual concerns

Existing research consistently reveals that clients with ostomies experience anxiety and express concerns about sexual issues (Campo et al., 2003; Carlsson, Berglund & Nordgren, 2001; Cheng, 2001; Erwin-Toth, 1999; Karadag et al., 2003; Krouse et al., 2007; Nordstrom & Nyman, 1991; Nugent et al., 1999; Persson & Hellstrom 2002; Piwonka & Marino, 1999; Prieto, Thorsen & Juul, 2005; Ross et al., 2007; Salter 1992). Brown and Randle's (2005) systematic review reported sexual dysfunction in 45% of persons undergoing colostomy and erectile dysfunction in 90% of men undergoing radical cystectomy and urostomy. Richbourg et al. (2007) stated that 26% of colostomy patients, 17% of ileostomy patients and 40% of urostomy patients experienced sexual problems following ostomy surgery, yielding a prevalence rate of 26% in all persons with an ostomy. Sexuality is an integral part of quality of life and closely linked with body image. Persson's group (Persson & Larson, 2005; Persson et al., 2005) reported that nurse's concern about client's sexual problems is a component of their perceptions of satisfaction with care. This data provide rationale for evaluating sexual problems following ostomy surgery.

c) Cultural, spiritual and religious norms

The Transcultural Nursing Society defines culture as norms and practices of a particular group that are learned and shared and guide thinking, decisions and actions. Culturally diverse nursing care is defined as the variable approaches needed to provide culturally appropriate care that incorporates the client's cultural values, beliefs and practices including sensitivity to the individual's environment and the environment to which the individual may ultimately return (Leininger, 1991).

Spirituality is differentiated from religion: religion is the social institution of belonging, beliefs, rites and customs (Zinnbauer et al., 1997) while spirituality is the individual's personal state of well-being, optimism, purpose and belief in the meaning of life (Miller & Thoreson, 2003; Zinnbauer et al., 1997). Baldwin et al. (2008) in a qualitative study, describe the influence of living with an intestinal stoma on the spiritual quality of life using the City of Hope QOL Ostomy Measure (<http://prc.coh.org/pdf/Quality%20of%20Life%20Ostomy.pdf>). Participants were limited to male U.S. Veterans, and as such, the results cannot be applied to the general population. However, the results indicated that these individuals varied greatly in their responses to items that were within the spiritual domain, such as “sense of inner peace,” “feeling hopeful” and a “reason to be alive” as well as describing their support in “spiritual activities” like meditation or prayer, or “religious activities,” defined as attending church or temple. The authors provide two examples of the significant variance in responses: one individual in the high quartile response expressed “positive changes” as an opportunity to “change my life for the better” (in the time that was left) as opposed to a respondent in the lower quartile range who described the surgical procedure as a “crowning negative positive thing” that assisted with waking up to “what life was all about.”

Several religious and spiritual factors may influence the individual's response to ostomy surgery, including religious beliefs, degree of religiosity and specific religious and spiritual customs observed in daily life. Further research is needed to better our understanding of how these responses may change after ostomy surgery (Baldwin et al., 2008).

Holzer et al. (2005) administered a validated QOL instrument to 257 persons living with an ostomy in 13 sites in Europe and the Mediterranean. Although their research was designed to evaluate differences based on geographic region, they reported that persons with an Islamic cultural heritage had lower QOL scores than other respondents, regardless of geographic origin. Kuzu et al. (2002) studied QOL in 178 Muslim patients undergoing treatment of rectal cancer. A significantly higher portion of subjects who underwent abdominoperineal resection and creation of a colostomy reported that they felt compelled to stop praying and fasting than did subjects treated by sphincter saving colonic resection or anterior resection. However, Kuzu et al. (2002) found that for those individuals who stopped praying in mosques or alone following their ostomy surgery, social activity was significantly impaired compared to those who continued to do both ($P < 0.05$).

Although existing evidence is sparse, these data suggest that cultural considerations influence adjustment to an ostomy and that assessment of a client's cultural heritage is an essential component of a comprehensive nursing evaluation. They recommend that individuals of the Muslim faith be counselled pre- and post-ostomy surgery, regarding religious life alteration.

RECOMMENDATION 3

Consult with interdisciplinary team members for assessment and intervention as needed for all clients requiring, or who already have, an ostomy.

Level of Evidence = IV

Discussion of Evidence

Effective communication and teamwork among the interdisciplinary team is essential to enable clients and their families to receive appropriate and consistent information. For example, Notter and Burnard (2006) and McVey, Madill and Fielding (2001) advocate formal counselling or psychological support prior to or after surgery. Tseng et al. (2004) recommend ongoing consultation with members of the medical oncology team when clients with stomas undergo additional treatment for malignant tumours, such as chemotherapy or radiation therapy. Gray, Colwell and Goldberg (2005) recommend referring patients with peristomal hernia to a surgeon to evaluate the feasibility of surgical repair.

RECOMMENDATION 4

Design a mutually acceptable plan of care between the client/family and all health-care providers, which optimizes health and self-efficacy in ostomy management.

Level of Evidence = III

Discussion of Evidence

In a systematic review by Brown and Randle (2005), there was evidence between client involvement in the decision-making process and a faster physical recovery due to perceived control. Information, positive feedback and support by the nurse helps to develop self-confidence, thus allowing the client to become engaged in their care (Brown & Randle, 2005). Piwonka and Merino (1999) found that, “self-care is the most important variable predicting positive adjustment” in both males and females.

The client and the nurse should develop a plan of care that will have attainable goals and which can be adjusted, dependent on the needs of the client (Brown & Randle, 2005). Nurses need to promote and work towards self-independence for the client (Ma et al., 2007). Allowing immediate family members to become involved with the action plan facilitates the client’s adjustment to an ostomy (Brown & Randle, 2005; Pittman et al., 2008; Piwonka & Merino, 1999).

Practice Recommendations:

Pre-Operative Phase

RECOMMENDATION 5

Pre-operative education should be provided to all clients and families requiring ostomy surgery.

Level of Evidence = 1b

Discussion of Evidence

Due to changes in surgical technique and shorter hospital stays, Colwell and Gray (2007) argue that pre-operative teaching is essential if clients are to perform even simple ostomy management tasks such as emptying and changing a pouch following hospital discharge. Increasingly brief hospital stays restrict teaching time and, most importantly, limit the time allowed for the client and family to assimilate knowledge and psychomotor skills required for successful ostomy management.

Colwell and Gray (2007) systematically reviewed the literature and identified a single randomized clinical trial, a comparison cohort study (group assignment method not specified) and a cross-sectional study that evaluated the efficacy of pre-operative education. Based on findings from these studies, they concluded that limited evidence exists suggesting that pre-operative education by an ETN improves health related QOL and skill acquisition during the immediate post-operative period and long-term adjustment to an ostomy.

Chauduri et al. (2005) compared a structured program of pre-operative education delivered in a community setting to a traditional post-operative program delivered during the immediate post-operative period in an acute care setting in a randomized clinical trial involving 42 subjects undergoing colostomy or ileostomy for management of colorectal cancer. When outcomes were measured six weeks later, subjects randomized to the pre-operative teaching intervention had significantly greater proficiency in time required for pouch changes, shorter post-operative hospital stays and fewer unplanned hospital admissions as compared to subjects receiving traditional post-operative teaching.

Haugen, Bliss and Savik (2006) reported on findings from the Ostomy Adjustment Scale (OAS), a validated instrument that measures long-term adjustment, in a group of 147 respondents with permanent stomas. Multi-variate analysis revealed that pre-operative teaching by an ETN was associated with higher scores on the OAS, indicating positive adjustment to life with an ostomy. Olejnik et al. (2005) reported that parents who initially reported difficulty adjusting to their child's ostomy stated that information provided by the nurse was more likely to be perceived as understandable and useful than information provided by the surgeon.

These findings provide evidence that pre-operative teaching promotes the short-term skill acquisition needed to manage an ostomy, and it suggests that this benefit exerts a positive effect on long-term adjustment to a permanent stoma. See Appendix E for a Sample Ostomy Teaching Record, pre- and post-surgery.

RECOMMENDATION 6

Stoma site marking should be performed on all clients undergoing ostomy surgery.

Level of Evidence = IIa

Discussion of Evidence

Colwell and Gray (2007) systematically reviewed the literature and identified three studies that compared post-operative outcomes in clients who received pre-operative stoma site marking to clients who did not undergo site marking. One was a non-randomized comparison cohort group and two were retrospective reviews. Park et al. (1999) retrospectively reviewed stoma complications in 1,616 clients with intestinal stomas. Logistic regression analysis revealed that pre-operative stoma site marking reduced the likelihood of post-operative ostomy complications. Stoma site marking is jointly recommended by the American Society of Colorectal Surgeons and the Wound, Ostomy, Continence Nurses Society (2007).

Stoma site marking should be performed by an ETN or a health-care professional who has been trained in the principles of stoma site marking and is aware of the implications of ostomy care and poor stoma site marking. For the pediatric patient, many stomas are created within the first hours of life and are done in an emergency setting, so they may not be sited prior to surgery.

Although evidence is limited, existing research strongly suggests that stoma site marking by an ETN or health-care professional trained in principles of this procedure reduces stomal and peristomal complications. This evidence is augmented by the clinical experience of surgeons and ETNs, resulting in the joint recommendation promulgated by the WOCN Society and American Society of Colorectal Surgeons. Therefore, all clients undergoing elective surgery expected to result in stoma creation should undergo stoma site marking.

RECOMMENDATION 7

Explore the potential impact of ostomy surgery on intimacy and sexual functioning with client/partner.

Level of Evidence = 1a

Discussion of Evidence

Undergoing ostomy surgery, whether the ostomy is temporary or permanent, can have a profound impact on intimacy and sexuality. Although sexual function may be altered, sexuality cannot be destroyed (Junkin & Beitz, 2005). Altered sexual function in men can result from damage of the prostatic nerve plexus and the autonomic nerves that are close to the rectum during colorectal or bladder cancer surgery, resulting in sensory loss and erectile failure. In women, there may be nerve, vascular and tissue damage resulting in dyspareunia, damage to the vagina, altered vaginal lubrication, problems with engorgement, reduced vaginal space and possible prolapse of the vaginal wall or bladder (Black, 2004).

In a systematic review conducted by Brown and Randle (2005), it was found that patients worry about sexual issues, they feel less sexually attractive and report problems with their sex lives, including impotency and loss of erectile function for men, and dyspareunia, vaginal dryness and loss of desire among women. Kilic et al. (2007) examined the effect on sexual function due to a permanent ostomy resulting from a gastrointestinal malignancy or inflammatory bowel disease on 40 individuals, comparing their experiences with 20 controls (no ostomy). Using the Golombok-Rust Inventory of Sexual Satisfaction, women had a higher rate of sexual dysfunction compared to men. Vaginismus and anorgasmia scores were higher in the colostomy group compared to those with an ileostomy, which was statistically significant. Impotence decreased over time, sexual dysfunction was significantly more pronounced in the ostomy group compared to the control group, and those with a better body image had better sexual functioning.

In a Danish study comparing patients with and without a stoma as a result of colorectal cancer surgery, Ross et al. (2007) found that during the two-year follow-up interview sexual function, sexual enjoyment and female sexual problems were not significantly affected by the presence of a stoma, but male patients with a stoma had significantly more sexual problems than non-stoma patients. Symms et al. (2008) examined the sexual health and QOL among male veterans with and without an ostomy following a bowel resection using a modified City of Hope QOL-Ostomy Questionnaire and focus groups. Of the 481 participants, 224 had an ostomy. Results showed that 44% of ostomates who were sexually active before their ostomy surgery were inactive post-operatively, compared to 17% of those without an ostomy. A greater proportion of ostomates changed from having no erectile problems to having erectile problems after surgery, compared with controls (62% vs. 27%). Those with an ostomy who resumed sexual activity and were satisfied with their activity enjoyed life more, were more satisfied with their appearance, had less interference with social activities and isolation, less difficulty adjusting to the ostomy and with personal relationships and less interference with their ability to be intimate.

Krouse et al. (2007) mailed City of Hope QOL ostomy questionnaires to individuals with a colostomy due to cancer or non-cancer surgery. Of the 599 respondents (most of whom had cancer), there was no statistically significant difference for questions related to sexual function between both groups. Roughly half of the participants in both groups did not have sexual relations after surgery. Erectile dysfunction occurred in 79% of cancer patients and 76% of the non-cancer group. Cheng (2001) adapted a QOL scale to determine what factors may influence QOL of those with a colostomy in Hong Kong: 28% of participants stated they were not engaging in sexual activity due to age, wound pain, worry about hurting their stoma or post-operative impotence. Nugent et al. (1999) sent out a questionnaire to patients with an ostomy (250 had a colostomy, 141 had an ileostomy): 43% of patients with a colostomy who responded had problems with their sex lives, with 17% being impotent (20% were impotent pre-operatively); 45% of patients with an ileostomy who responded had sexual problems, with 32% being impotent. Of 19 females, 15 suffered from dyspareunia (two had this problem prior to surgery).

Although most of the literature to date focuses on the individual undergoing surgery, their partners can be impacted as well. Persson et al. (2004) explored spouses' perceptions of living with a partner diagnosed with rectal cancer, resulting in an ostomy. Nine spouses were interviewed during two focus group sessions. Five themes emerged from this study, one of which included "the altered body." Spouses stated their relationship changed; they refrained from intimate contact and some had difficulty discussing altered sexual functioning with their partner.

Health-care providers have an obligation to address sexual health and intimacy concerns with patients (Symms et al., 2008). For nurses to deliver holistic comprehensive care, sexuality and sexual health concerns must be included in the plan of care (Junkin & Beitz, 2005). Persson and Larsson (2005) examined ostomy patients' perceptions on numerous quality-of-care issues in a prospective, descriptive study. Most of the respondents felt the items about participation were important, however 74% of those with a colostomy and 53% of those with an ileostomy were dissatisfied with the opportunity to talk about their sexual life with ETNs. Spouses of partners with an ostomy found there was a lack of information from caregivers about sexual problems resulting from ostomy surgery (Persson et al., 2004). Kilic et al. (2007) examined the effect on sexual function due to a permanent ostomy resulting from a gastrointestinal malignancy or inflammatory bowel disease on 40 individuals, comparing their experiences with 20 controls (no ostomy). Using the Golombok-Rust Inventory of Sexual Satisfaction, 40% of ostomy patients did not think they were adequately informed about surgery and its outcome.

Nurses need education about how to assess and handle questions about sexuality in order to provide information, support and practical advice more effectively to patients with an ostomy (Persson et al., 2005; Symms et al., 2008). They need to understand the type of surgery and the effect it may have on patients, to know when to refer the patient for additional help and to understand his/her limitations in discussing sexual matters (Black, 2004). The PLISSIT model (Permission, Limited Information, Specific Suggestion and Intensive Therapy) as cited in Junkin and Beitz (2005) is a framework for nurses and other health-care providers to follow when assessing and determining interventions related to sexual health. Giving permission for the client/partner to discuss intimacy and sexuality is critical. Providing information and specific suggestions on how to address or deal with client-specific concerns is within the nurse's scope of practice, provided they have a solid knowledge base and comfort level to deal with client specific concerns. Those clients requiring more help (intensive therapy) should be referred to other health-care professionals (psychotherapist, sexual health clinic). In a study examining the impact of home visits during a six-month period, patients were followed monthly (experimental group) or at three and six months (control group). There was no decrease in sexual problems between both groups (Addis, 2003). It was hypothesized that this lack of success may have resulted from difficulty discussing sexual matters in a Turkish society and/or the researcher was unable to provide specific advice related to sexual difficulties.

Ostomy surgery can significantly affect sexual function, thereby impacting intimacy and sexual relationships, not only for the client but for their partner as well. The opportunity to listen, support and encourage open dialogue with clients and their partner is critical. See Appendix F for additional tips on intimacy and sexuality.

RECOMMENDATION 8

Progressive Muscle Relaxation Training (PMRT) should be offered to clients undergoing ostomy surgery as part of routine care.

Level of Evidence = Ib

Discussion of Evidence

PMRT is a behavioural technique based on progressive relaxation of 10 major muscle groups and controlled breathing. Cheung, Molassiotis and Chang (2003) compared anxiety levels and health-related QOL in a randomized clinical trial of 59 subjects. Subjects randomized to the control group received traditional care following ostomy surgery, and those randomized to the experimental group received traditional care plus PMRT, begun post-operatively, on day five. Subjects randomized to PMRT had significantly lower-state anxiety scores, and significantly higher QOL scores, on a generic QOL instrument after 10 weeks. No differences were found when groups were compared using a condition-specific QOL instrument. No adverse side effects were reported. These findings support routine PMRT for clients undergoing ostomy surgery beginning post-operatively, on day five, as a means of improving QOL and reducing anxiety during the early post-operative phase following creation of an ostomy. Additional research about this and other behavioural-based interventions for improving QOL and reducing anxiety in this population is needed.

Practice Recommendations: Post-Operative Phase

RECOMMENDATION 9

Assess the stoma immediately post-operatively and the stoma/peristomal skin condition with each appliance change using a validated classification tool to monitor for complications.

Level of Evidence = IV

Discussion of Evidence

The stoma and peristomal skin need to be assessed during the immediate post-operative period (see Appendix G for a Sample Assessment Form). This assessment is used to monitor progress toward healing and for future comparison, should complications develop.

In a systematic literature review, Salvadalena (2008) points out inconsistencies in operational definitions of complications, inadequate reporting of subject attrition and missing data when reporting the incidence of complications resulting in gaps in our knowledge of the prevalence and incidence of ostomy-related complications, and gaps in our knowledge of risk and protective factors. Colwell and Beitz (2007) reported a content validation study of definitions for complications associated with ostomies based on the responses of 686 wound, ostomy and continence nurses. Complications were divided into two broad categories – stomal and peristomal complications. Stomal complications affect the ostomy itself, and peristomal

complications affect the skin immediately surrounding the stoma. Stomal complication definitions validated in this study were: 1) parastomal hernia, 2) prolapse, 3) necrosis, 4) mucocutaneous separation, 5) retraction, 6) stenosis, 7) fistula, and 8) trauma. Peristomal complication definitions validated in this study were: 1) varices, 2) candidiasis, 3) folliculitis, 4) mucosal transplantation, 5) pseudo-verrucous lesions, 6) pyoderma gangrenosum, 7) suture granulomas, 8) irritant contact dermatitis, and 9) trauma.

The systematic literature review supporting this best practice guideline also uncovered variability in operational definitions of stomal and peristomal complications. In addition, available research was limited to several of the more common and problematic stomal complications, retraction, peristomal hernia, prolapse and necrosis. Peristomal skin problems tended to be lumped into a single category. Definitions for these common stomal complications are provided in Table 9-1. Some of the studies reviewed evaluated problems associated with coping and adaptation to an ostomy. While psychosocial adjustment is a central concern to nurses caring for clients with ostomies, these issues are discussed in Recommendation 2.

Table 9-1: Definitions of Common Stomal and Peristomal Complications

Complication	Definition
Retraction	Disappearance of normal stomal protrusion in line with or below skin level
Peristomal Hernia	Defect in the abdominal fascia allowing the gut to bulge into the parastomal area
Prolapse	Telescoping of the bowel through the stoma
Necrosis	Death of stomal tissue with impaired local blood flow
Peristomal Skin Problems	One of a variety of dermatoses affecting the skin immediately surrounding the stoma; common manifestations include irritant dermatitis, allergic dermatitis, candidiasis, folliculitis or trauma

Modified from Colwell and Beitz (2007)

A number of studies document the presence of clinically relevant stomal and peristomal complications occurring during the early post-operative period or months to years later. Salvadalena (2008) systematically reviewed the literature and identified 13 studies that measured the incidence of stomal and peristomal complications following ostomy surgery, including eight randomized clinical trials. Overall complication rates were 12% to 72%. The most common complications were stomal retraction, peristomal hernia, prolapse, necrosis and peristomal skin problems (Table 9-2).

Table 9-2: Incidence of Stomal and Peristomal Complications at 3 and 12 months

Complication	Incidence at 3 months	Incidence at 12 months
Retraction	3%–7%	10%–24%
Peristomal Hernia	0.8%	12%–40%
Prolapse	0%–3%	4%–10%
Necrosis	0%–3%	7%
Peristomal skin problems	14.7%	15%–43%

Modified from Salvadalena, (2008)

Herlufsen et al. (2006) reported a cross sectional study of 202 persons with permanent ileostomies, colostomies and urostomies. Complications occurred in 45% and were classified as mild (57%), moderate (33%) or severe (10%). Types of skin damage included erosion, maceration, erythema and irritant dermatitis. Collectively, these accounted for 77% of all complications. Peristomal skin disorders persisted for more than three months in 76% of cases, but 80% did not seek professional care. Clients with an ileostomy had the highest complication rate (57%), followed by urostomy (48%) and colostomy (35%).

Research focusing on the incidence or prevalence of stomal or peristomal complications among neonates of children was very sparse. Duchesne et al. (2002) reported on complications of eight neonates who underwent ostomy surgery for necrotizing enterocolitis (n=7) or imperforate anus (n=1). The overall complication rate for this small group was 25%. Park et al. (1999) also mentions inclusion of neonates in their retrospective review of 1,616 subjects, but complication rates are reported in aggregate form only.

Collectively, this evidence demonstrates that stoma and peristomal complications are common and affect all types of ostomies. The prevalence and adverse consequences associated with these complications reinforces the need for assessment of the stoma and peristomal skin, both during the immediate post-operative period, and at least one year following stoma surgery. Although there is insufficient evidence to support their use, expert opinion concurs that the use of a standardized assessment tool enhances diagnostic accuracy which, in turn, directs treatment. There is a need to develop and validate standardized classification tools.

RECOMMENDATION 10

Identify risk factors that influence stomal and peristomal complications.

Level of Evidence = III

Discussion of Evidence

Research reveals multiple factors associated with an increased incidence of stomal or peristomal complications. Although there is insufficient evidence to calculate relative risks, existing research nevertheless reveals multiple constitutional and potentially modifiable factors associated with an increased risk of stomal and peristomal complications.

Emergency surgery for an ostomy

Evidence concerning the influence of emergency versus planned ostomy surgery is mixed. Duchesne et al. (2002) completed a cross-sectional survey of 391 persons with colostomies and ileostomies and Mahjoubi et al. (2005) retrospectively reviewed medical records of 330 patients with end colostomies. Both groups reported that emergency surgery was not associated with an increased risk for stomal or peristomal complications when compared to clients who underwent planned ostomy surgery. Park et al. (1999) retrospectively analyzed intestinal stomas in 1,616 clients, including 1,072 whose ostomy was created during emergency surgery. Similar to Duchesne and Mahjoubi, they found no significant differences in the incidence of stomal or peristomal complications.

In contrast to these findings, two studies were identified that found statistically significant associations between stoma siting and emergency versus elective surgery. Cottam et al. (2007) reported results of a prospective, descriptive study of 3,970 clients with intestinal ostomies. They found that clients who underwent emergency stoma surgery were significantly more likely to experience problems related to stoma siting than were clients managed by elective surgery. Arumugam et al. (2003) prospectively evaluated 97 clients undergoing colostomy or ileostomy surgery. They also associated emergency surgery with a greater likelihood of stoma siting problems (defined by these researchers as a stoma sited in an abdominal crease) and a significantly higher incidence of peristomal skin problems.

Evidence from these studies suggests that while emergency surgery is not associated with an overall increase in the incidence of stomal or peristomal complications, it is associated with an increased likelihood of poor stoma siting and related pouching problems.

Stoma height

A study by Cottam et al. (2007) of 3,970 clients with intestinal ostomies identified an association between stoma height and the likelihood of stomal or peristomal complications. When ileostomies and colostomies are combined, the mean height of ostomies found to be free from complications was 15 mm, as compared to a mean height of 11.3 mm for ostomies with complications. A logistic regression model of stoma height as a predictor of ostomy problems found that heights less than 10 mm are associated with a 35% likelihood of management problems.

Gender

Existing evidence demonstrates that gender is not an independent risk factor for complications. Neither Duchesne et al. (2002), Park et al. (1999), nor Pittman et al. (2008) found that gender influenced the risk of stomal or peristomal complications. Cottam et al. (2007) reported that women were more likely than men to experience complications (38% vs. 30%), but logistic regression analysis revealed that gender interacts with stoma height and multiple other factors, including BMI and ostomy type to influence complication risk.

Age

Mixed evidence also exists concerning the influence of age on the incidence of stomal or peristomal complications. Age was associated with an increased likelihood of early stomal or peristomal complications in two studies (early complications were defined as occurring within the first month following ostomy surgery) (Mahjoubi et al., 2005; Park et al., 1999). However, Park et al. reported that this difference disappeared when only late complications were analyzed. The mean age of subjects in the Mahjoubi et al. study was 57.49 years (SD 12.28 years). Subjects in the Park et al. study were described as varying, from neonates to older adults, but descriptive statistics identifying the mean age or age range for subjects was not provided. The mean age of subjects in the Cottam et al. (2007) study was 63 years (range 15–99 years). In contrast to the findings of the Mahjoubi and Park groups, they reported that advancing age was associated with a diminished incidence of complications. Pittman et al. (2008) evaluated the incidence of three outcomes related to ostomy surgery in a group of 239 persons with ostomies, including peristomal skin problems. Subjects in this study had a reported mean age of 68.8 years (range 28–92 years). Similar to the findings of Cottam's group, they found that advancing age was associated with a reduced incidence of peristomal skin problems. Arumugam et al. (2003) evaluated 97 adults with a mean age of 65 years (SD 16 years, range 16–99 years) and reported that age was not related to the incidence of stomal or peristomal skin problems.

Based on these studies, it is not possible to reliably determine the influence of age as an independent risk factor for stomal or peristomal complications. A number of factors may account for the considerable variability in study findings, including differences in the underlying reasons for ostomy surgery in different age groups, differences in the types of ostomies created in the various age groups, differences in the number and nature of co-morbid conditions or the likelihood of seeking help when a complication is experienced.

Researchers have also speculated about the influence of factors indirectly associated with aging, such as diminished sensory perceptions, altered cognitive function or decreased fine motor skills (Mahjoubi et al., 2005; Park et al., 1999; Tseng et al., 2004), leading to recommendations that it is important to assess the impact of each of these factors on elderly client's ability to manage their ostomy and monitor for complications.

Neonatal skin

The skin of the premature neonate has been identified as a risk factor that may influence stomal and peristomal complications. Premature neonates present a diminished cohesion between the dermis and the epidermis and can be at risk for systemic toxicity (Association of Women's Health, Obstetric and Neonatal Nurses, 2008).

Obesity

Obesity (defined as a Body Mass Index $>25\text{kg/m}^2$) has been associated with stomal (retraction, prolapse and necrosis) and peristomal skin problems in multiple studies (Argumugam et al., 2003; Cottam et al., 2007; Duchesne et al., 2002; Mahjoubi et al., 2005; Richbourg et al., 2007). However, it was not found to be associated with stomal or peristomal complications in one study (Park et al., 1999).

Underlying and co-morbid diseases

Underlying and co-morbid conditions were associated with an increased likelihood of stomal and peristomal complications in multiple studies (Arumugam et al., 2003; Cottam et al., 2007; Pittman et al., 2008). Gastrointestinal disorders associated with an increased likelihood of complications included inflammatory bowel disease and diverticulitis (Arumugam et al., 2003; Cottam et al., 2007; Duchesne et al., 2002; Pittman et al., 2008). Diabetes mellitus and inflammatory bowel disease were associated with a higher incidence of peristomal skin problems (Arumugam et al., 2003; Pittman et al., 2008).

Colostomy, ileostomy versus urostomy

Existing evidence consistently supports an association between ostomy type and the incidence and type of stomal or peristomal complication. Although further research on the influence of ostomy type is needed before definitive conclusions can be drawn, existing evidence supports the following conclusions:

- 1) Ileostomies are associated with a higher incidence of peristomal skin problems than are colostomies (Duchesne et al., 2002; Herlufsen et al., 2006; Pittman et al., 2008). Cottam et al. (2007) and Park et al. (1999) reported that creation of a loop ileostomy was associated with significantly more complications than end ileostomies or colostomies.
- 2) Urostomies are associated with a higher incidence of peristomal skin problems than colostomies (Herlufsen et al., 2006).

RECOMMENDATION 11

Review the client's medication profile to ensure that maximum absorption and effectiveness will be achieved in relation to the type of ostomy.

Level of Evidence = IV

Discussion of Evidence

Clients with an ileostomy or colostomy may experience changes in medication absorption because of the shortened length of bowel as a result of ostomy surgery. This pertains particularly to the client with an ileostomy, as most medications are absorbed in the ileum. Observing residual pieces of medication in the client's ostomy pouch may suggest that consideration should be given to prescribe alternative, fast-acting formulas such as uncoated tablets, gelatin capsules, solutions or suspensions to maximize therapeutic absorption. Medications can also cause a change in odour, colour and consistency of feces. Whether the medication is prescribed or over-the-counter, the client must be educated about the medications taken and the effect it will have on the function of the ostomy. Clients who have a urinary ostomy do not experience the same concern of malabsorption because the small bowel used to construct the ileal conduit is of no consequence. However, a discolouration of the urine is the most common of medication side effects. Establishing a therapeutic relationship with a pharmacist provides the client with a source for ongoing consultation and education, which promotes independence. See Appendix H for a list of medications and ostomy function. For medicinal implications affecting the neonate/pediatric client, please consult a pharmacist and/or the Compendium of Pharmaceuticals and Specialties (CPS).

RECOMMENDATION 12

Avoid insertion of a glycerin suppository into a colostomy in order to aid evacuation of effluent.

Level of Evidence = Ib

Discussion of Evidence

McClees et al. (2004) compared fecal output, fecal volume and flatus using a glycerin suppository in a randomized crossover study of eight adults with colostomies. Subjects were randomly assigned to emptying with the aid of a glycerin suppository inserted into the ostomy daily, as compared to their usual method of emptying (pouch only for three, pouch plus irrigation for five). After two weeks, subjects were crossed over to the alternative group for an additional two weeks of data collection. Daily insertion of a suppository did not influence fecal output, fecal volume or flatus when compared to usual methods of emptying their colostomy. The lack of efficacy of the suppository was partly attributed to its failure to remain in the bowel for an adequate period of time. Although the sample size was small, this crossover randomized clinical trial provides limited evidence that a glycerin suppository does not positively influence fecal output, volume or flatus. A consensus of the expert panel concluded that the administration of suppositories in the pediatric and adult population is ineffective and not recommended in any type of stoma.

RECOMMENDATION 13

Counselling by a Registered Dietitian should be performed for clients with an ostomy who are at risk for, or who develop, nutritional complications.

Level of Evidence = IIa

Discussion of Evidence

Weight

Weight gain or loss post-ostomy creation can alter the shape of the abdomen. Leakage of feces or urine can occur if the appliance is no longer secure (Burch, 2007).

Special dietary needs

Clients who chew poorly secondary to ill fitting dentures, missing teeth or who are rapid eaters are at greater risk for maldigestion and potential for blockage (Burch, 2006). One of the main opportunities for the body to break down food begins with adequate chewing (mastication). Poorly chewed food often will appear undigested in the ostomy pouch and cause concern for the client that they are not absorbing their food (Price, 1989). If the client is unable to adequately chew their food then a diet altered in texture or the elimination of a few concerning fruits and vegetables (such as corn, popcorn, nuts, celery) may be appropriate. It is important that this is individualized for each client.

Some clients may have been following a restrictive or special diet prior to the creation of an ostomy. The ostomy, however, may alleviate the need for restrictions and in many cases a client can return to a normal diet. This is especially true for the client with ulcerative colitis whose disease has been permanently removed with a total colectomy or a surgical removal of an obstructing cancer. If there is permanent damage to the remaining bowel from radiation or active Crohn's disease, the previously prescribed diet may need to be continued or modified in relation to the ostomy.

High output and dehydration

Ileostomy output is usually 500–1000ml per day (Doughty, 2005; Gallagher & Gates, 2004). High output beyond these levels can be related to pre-existing disease, partial blockage, certain foods stimulating the motion of the bowel, medications or shortened bowel with inadequate absorptive surface. Inability to maintain oral intake with high output can lead to dehydration (see Appendix I for signs and symptoms of dehydration). Some foods may help thicken or loosen the stool, which may be beneficial or avoided for specific concerns such as high effluent in an ileostomy or constipation in a colostomy (see Appendix I for foods that loosen/thicken stool). The presence of an intact colon would absorb 250–500cc additional fluid and therefore an increase of 1–2 cups of fluids orally is required to meet hydration needs (Doughty, 2005).

Electrolyte losses can be evident with a high output ileostomy as the colon is the primary absorptive area for sodium and potassium. Daily consumption of foods rich in sodium and potassium is usually sufficient to correct or prevent this depletion. Some clinicians suggest sport drinks with electrolyte additives, however these are expensive and have no real benefit when compared to foods rich in potassium and sodium (see Appendix I for a list of high sodium and potassium food sources and sport drinks). Purposeful over-hydration (consuming excessive fluid i.e. >4litres per day) can artificially lower electrolytes and cause water toxicity. Greater water intake beyond necessary however, does not appear to increase the ileal effluent (Kramer, 1987).

Bowel obstruction/blockage

Blockage of an ostomy can be very painful and initially most clients are fearful of this occurrence. To minimize the potential for blockage during the stoma's post-operative edematous phase of about 6–8 weeks (Floruta, 2001; Gallagher & Gates, 2004) it is advisable to reduce the fibrous material in the digestive tract (i.e. that which is resistant to breakdown) for a short time, especially with an ileostomy (Floruta, 2001). A food blockage can occur when insoluble fibre becomes lodged proximal to the stoma (Doughty, 2005). A questionnaire to 604 ostomy clients (Floruta, 2001) revealed that although 88% stated they were not following a special diet, 61% indicated that they avoided certain foods due to the potential for ostomy blockage. Appendix I lists foods that are commonly avoided during this post-operative time and general instruction on diet related to obstruction.

Constipation

Constipation is primarily an issue related to a distal colostomy. Adequate fluid intake for adults or children should alleviate hard stools, along with the inclusion of highly fibrous food choices.

RECOMMENDATION 14

Prepare the client and family by teaching at least the minimum skill set specific to their needs prior to discharge from hospital.

Level of Evidence = IV

Discussion of Evidence

Traditionally, clients were taught how and when to empty the ostomy pouch, the procedure for removing and applying a new pouch, peristomal skin care, the effects of diet on the ostomy, self-monitoring for stomal or peristomal complications and effects on appearance of clothing during the immediate post-operative period and before hospital discharge. However, advances in surgical technique have dramatically reduced mean hospital stays. For example, the mean hospital stay following sigmoid colon resection resulting in creation of a colostomy is five days and the mean stay for laparoscopic proctocolectomy with creation of an ileostomy is 4.3 days (Colwell & Gray, 2007). As a result, nurses are challenged to accommodate the educational needs of a client with a new ostomy in today's hospital setting. While no research exists to define a minimum post-operative skill set for clients with a new ostomy, a consensus conference of

Wound, Ostomy and Continence Nurses in the United States (Wound, Ostomy and Continence Nurses Society, 2007) concluded that the minimum post-operative skill set for persons with an ostomy should include: 1) ability to manipulate the pouch clip or spout if present, and 2) independently empty the pouch. Additional skills that need to be taught, whenever possible, included: 1) bathing, clothing and activity restrictions, 2) review of influence of prescription and over-the-counter medications on ostomy function, 3) influence of diet on ostomy function, 4) peristomal skin care, 5) odour control, 6) monitoring for complications, and 7) sexual counseling (Colwell & Gray, 2007).

A consensus of expert opinion among panel members defined the following information to be taught to client and family during the immediate post-operative period following creation of an ostomy:

- review of educational video/CD about stoma care
- observation of a least one complete appliance system change
- independence with emptying the pouch
- where to obtain supplies
- financial assistance for supplies (e.g., Ontario Assistive Devices Program)
- bathing, clothing and activity restrictions
- immediate dietary restrictions (if appropriate)
- review of medications – prescription and over-the-counter (if appropriate)
- general overview of ostomy literature provided at discharge
- emergency phone number for assistance

Other topics, depending on the needs of the client and family, could include:

- adjusting appliance to stoma size
- diet, long term
- general skin care
- odour control
- complications – clients should be taught how to prevent and/or recognize signs and symptoms of:
 - a. peristomal skin problems
 - b. obstruction
 - c. herniation
- sexual counselling
- travel considerations
- accessing community resources including the self-help group, the United Ostomy Association of Canada, in their area

See Appendix E and J for examples of Ostomy Teaching Flow Sheets.

RECOMMENDATION 15

Discharge the client and family with home care support.

Level of Evidence = Ib

Discussion of Evidence

Addis (2003) reported a randomized clinical trial of 50 patients with newly created colostomies or ileostomies. Subjects were randomized to receive home visits 2–5 days after discharge and monthly for the next six months. Control group subjects received home visits at months three and six following hospital discharge. Subjects receiving six home visits had significantly higher health-related quality of life scores after three months when compared to control subjects. Patients randomized to six home visits also demonstrated significantly greater independence with care at six months. Although further research is needed to elucidate the range of benefits associated with home care support, data from this randomized clinical trial demonstrate that visits from home care nurses improve both self-efficacy and quality of life in clients living with an ostomy.

Planning for discharge from hospital requires collaboration and coordination of services and resources. The nurse plays a pivotal role in designing this part of the care plan. Early consideration should be given to referrals required for community care nursing services and ETN contact, application for financial assistance to support the purchase of ostomy supplies, arrangements for an ostomy visitor, the training of other care providers in the client's ostomy care protocol and follow-up appointments with the ETN. Although the client's care requirements will evolve and change throughout the post-operative period, the importance of planning for discharge conveys care and confidence in the client's ability to return home. It also avoids 'last minute arrangements or oversights' which could have a negative impact on ensuring a client-centred discharge plan. See Appendix K for names and phone numbers of the Ontario chapter of United Ostomy Association of Canada. See Appendix L for resource information on ostomy associations, manufacturers, clothing and accessories and finances. See Appendix M for a sample Ostomy Care Form.

RECOMMENDATION 16

Ensure that the ostomy plan of care is individualized to meet the needs of the client and family.

Level of Evidence = IV

Discussion of Evidence

A consensus of expert opinion supports independent self-care of the ostomy as a desirable goal for most adults. Goals of care include an ostomy that is free of leakage, odour and complications. Wu, Chau and Twinn (2007) evaluated self-efficacy in ostomy care in a group of 96 subjects. They reported that subjects with a higher self-efficacy in ostomy care had higher health-related quality of life scores. Factors associated with lower self-efficacy in ostomy care included increasing age, lower educational levels and reliance on others to perform ostomy care, such as pouch changes. See Appendix N for care strategies for the client with special needs.

While no study was identified that compared simplicity of ostomy product use to pouch wear time, frequency of leakage, or incidence of complications, expert opinion also supports selection of the simplest possible ostomy product appropriate to meet the client's needs. Bourke and Davis (2002) reported results of a survey of 2,060 persons living with an ostomy following institution of a program providing access to ostomy supplies without direct cost to the client. More than half of women (59.9%) and men (53.7%) reported changing the type of ostomy appliance used to manage their stomas. The most commonly cited reason for changing the type of ostomy appliance was ease of use.

Therefore, it is vital that the best possible ostomy system is chosen with these goals in mind, and the specific needs and preference of the client. At this time, there are a number of companies in Canada that market numerous ostomy products and accessories. The ETN, or ostomy nurse specialist, can best assess and recommend product selection suited to the client's or family's care requirements. However, it is important that the client is involved in the decision-making process for the selection. See Appendix O for a list of ostomy products.

The following are factors which must be considered when selecting an ostomy product:

- type of ostomy: fecal or urine
- type of stoma construction
- infant, child, or adult client
- location of stoma
- characteristics of the stoma
- characteristics of the peristomal skin
- skin sensitivities or allergies
- manual dexterity and physical impairments for management
- cognitive abilities for learning
- client's personal preferences
- living situation: home, long-term care, group home
- occupational implications
- religious practices
- cost
- lifestyle
- accessibility of products
- amount and consistency of the effluent

RECOMMENDATION 17

Assessment and follow-up by an Enterostomal Therapy Nurse (ETN) are recommended for the client and family after ostomy surgery to decrease psychological distress, promote optimal quality of life and prevent complications.

Level of Evidence = IIb

Discussion of Evidence

Evidence from multiple studies reveals that psychological distress is prevalent following creation of an ostomy, resulting in impaired body image and self esteem, and diminished quality of life (Gooszen et al., 2000; Holzer et al., 2005; Karadag et al., 2003; Krouse et al., 2007; Ma et al., 2007; Marquis, Marrel & Jambon, 2003; McVey, Madill & Fielding 2001; Nugent et al., 1999; Ross et al., 2007; Scarpa et al., 2004; Wu, Chau & Twinn, 2007). The average period of time needed to resolve the psychological distress produced by ostomy surgery and restore optimal quality of life is not known, but existing evidence suggests that this process requires 12 months or longer. In the largest study of QOL among persons living with an ostomy published in the past decade, Marquis, Marrel and Jambon (2003) found that quality of life scores rose steadily during the first year following ostomy creation with a new ostomy.

McVey, Madill and Fielding (2001) described psychological distress characterized by acute impairment of personal control that persisted for at least three months following ostomy surgery.

Existing evidence also reveals that the negative impact of an ostomy on physical and functional status persists for a period of months to years following stoma surgery. In a systematic review of stomal and peristomal complications, Salvadalena (2008) reported that the incidence of peristomal skin problems at 12 months was 15%–43%, the incidence of parastomal hernia at 12 months was 12%–40%, and a 10%–24% incidence of retraction at 12 months. Pringle and Swan (2001) followed 112 patients with colostomies and colorectal cancer for one year. They reported that half of their subjects reported significant fatigue at one year, 10% experienced severe pain and 10% required referral to a physician for physical problems associated with their ostomy or associated disease. In their systematic review of factors affecting life with an ostomy, Brown and Randle (2005) report a study of 66 patients with urostomies who had undergone ostomy surgery at least six years prior to data collection: 65% of respondents reported current peristomal skin problems and 40% stated they had applied for disability benefits owing to stoma-related problems. Tseng et al. (2004) also noted that 37% of a group of 73 subjects with permanent colostomies had discontinued their employment, or had lost employment, owing to challenges associated with managing their ostomies.

Existing evidence strongly suggests that ongoing care by an ETN or ostomy nurse specialist ameliorates psychological distress associated with an ostomy, improves quality of life and reduces the likelihood of complications. Clients seek out ETN and ostomy nurse specialists when they experience both physical problems and psychosocial challenges associated with their ostomy. Richbourg, Thorpe and Rapp (2007) surveyed 43 persons living with an ostomy to determine difficulties experienced by clients after hospital discharge. Respondents reported that they primarily sought help from ostomy nurses when they experienced problems with their ostomy or the peristomal skin. Duchesne et al. (2002) retrospectively reviewed medical records of 204 patients undergoing intestinal ostomy surgery and found that care by an ETN pro-

vided a protective effect against stomal or peristomal complications (Odds Ratio 0.15, 95% CI 0.03-0.74). A prospective, quasi-experimental study provides additional evidence that ongoing access to an ETN or ostomy nurse specialist both enhances quality of life and reduces the frequency of ostomy appliance changes. Bohnenkamp et al. (2004) reported results of a prospective comparison cohort study that compared the influence of care delivered by home health nurses to telehealth interactions with an ostomy nurse specialist. Fourteen patients were assigned to traditional home visits or telehealth visits with the ostomy nurse specialist, group assignment was not randomized. Clients receiving telehealth interactions with the ostomy nurse specialist reported greater satisfaction with their care, higher QOL scores and used fewer ostomy pouches than did patients receiving traditional home visits.

Collectively, these findings strongly support the need for regular follow-up by an ETN for all persons living with an ostomy for a minimum of 12 months post-operatively, and as needed.

RECOMMENDATION 18

Educate client and family members to recognize complications affecting the stoma and peristomal skin.

Level of Evidence = IV

Discussion of Evidence

Ostomy education is imperative for clients in order to be able to identify the signs and symptoms of complications. Early identification and notification of a health professional are important factors to reinforce when teaching ostomy care to clients, particularly when a complication is suspected. In a study by Herlufsen et al. (2006) only 38% of individuals with a diagnosed peristomal skin disorder recognized that they had a skin disorder. Most revealing is that 80% of those who had peristomal skin breakdown did not request help from their health-care professional.

In a qualitative and descriptive study by Notter and Burnard (2006), 50 women having had a proctocolectomy with loop ileostomy were asked to describe their experiences and perceptions. Findings focused on pain and shock, body image and sexuality, the loop ileostomy and the role of the general and specialist nurses. Although not explicit, the implications to practice from this study strongly recommend that during the pre-operative period the client be exposed to the 'realities of the stoma' that is to avoid showing a picture of a stoma that is neat and clean and easy to manage. For these women, the reality was far from the truth. Inadvertently, nurses contributed to the experienced level of distress and long-term quality of life issues. These negative experiences can delay the clients' willingness to engage in self-care, which impacts the early recognition of complications. Nurses are encouraged "to see life through the eyes of the women (all clients) as they pass along the trajectory of surgery and recovery" (Notter & Burnard, 2006).

In a study conducted one to four months after surgery by McKenzie et al. (2006), 25% of clients found the disposal of used ostomy systems the most difficult part of their pouch change, and the disposal routine greatly affected their social and leisure activities. Over 40% of patients found the cleaning of the stoma to be the most time-consuming part of the change procedure. The implication to practice is the psychological impediment and potential avoidance by the client attending to the fundamental needs of their ostomy care. The choice of ostomy system, for example, a drainable reusable versus a closed end disposable

pouch, should include the client's preference. The ramifications of deferring changing a leaking pouch or avoiding cleaning the peristomal skin are risk factors. Such actions can predispose the client to mild skin irritation, which can quickly lead to severe dermatitis.

Richbourg et al. (2007) supports the strategy of clients practicing the removal and reapplication of their ostomy system in conditions simulating their home environment. Again, this reinforces the establishment of a normal bowel or urinary ostomy care routine, and the principles of fundamental inspection and management of the stoma and peristomal skin by the client and or family. It is important that the client learn what their normal stoma and skin presentation is so that comparison of suspected problems can be identified.

Richbourg et al. (2007) identified that clients need to know how to recognize and treat common peristomal skin problems and methods for preventing odour.

RECOMMENDATION 19

Colostomy irrigation may be implemented as a safe and effective method for the management of descending or sigmoid colostomies for select adult clients.

Level of Evidence = III

Discussion of Evidence

Colostomy irrigation was demonstrated to be an effective alternative for achieving colostomy continence, which had a positive impact on the QOL for 25 case reviewed patients. Significant improvements were scored in role limitations related to physical problems, social functioning, emotional problems, general mental health, vitality and body pain (Karadag, Mentis & Ayaz, 2005).

The client requires access to ETN or ostomy nurse specialists who can provide clinical assessments and the skills required to teach the client colostomy irrigation. Supplemental educational material and practice sessions serve as additional resources to enhance the client's ability to perform the irrigation procedure beyond the post-operative healing period. The cost of irrigation is significantly less when compared to daily pouching management. This may be an attraction for some clients. An outpatient facility within a hospital setting or community nursing care services become a resource for the client and family to access as the skill of irrigating is developed after discharge, over time and on follow-up as required. Pediatric irrigation is not a usual practice unless for diagnostic or other prescribed special management procedures.

Education Recommendations

RECOMMENDATION 20

Ostomy education for all levels of health-care providers should be a systematic, client-centred process, provided in both academic and workplace venues.

Level of Evidence = IV

Discussion of Evidence

Redman (2004) refers to self-management preparation as “the training that people with chronic health conditions need to be able to deal with taking medication and maintaining therapeutic regimes, maintaining everyday life such as employment and family, and dealing with the future, including changing life plans and the frustration, anger, and depression” (p.4) that accompanies a chronic condition. An ostomy is not generally labeled as a chronic condition, but living with an ostomy requires that the client learn many of the same self-management skills. However, many health-care providers lack the ostomy-related knowledge and skills to provide education and clinical support to enable clients to make informed decisions, achieve their goals and overcome barriers to effective self management.

Health care providers who teach and support clients with ostomies include, Registered Practical Nurses (RPN) and Registered Nurses (RN). Their basic professional education, taken at community colleges, or universities, is guided by global standards set out by the Ministry of Training, Colleges and Universities (www.edu.gov.on.ca/eng/general/college/progstan/health/nurse.html; www.edu.gov.on.ca/eng/general/college/progstan/health/supwork.html) and by the College of Nurses of Ontario (www.cno.org)

These standards provide a general overview of practice objectives, leaving specific learning objectives to the individual educational institution. Thus, each institution determines the areas of focus and the time given to each. For the generalist, education and practice about ostomies and ostomy care can be limited to anatomy and physiology with in-class discussion through the use of case studies; to one to two hours practicing on models in the laboratory; or to actually caring for a person with an ostomy during a field placement. Many new graduates have never cared for a person living with an ostomy prior to starting paid employment (Personal communication, Algonquin College, 2008).

All academic programs preparing nurses or unregulated health care providers (Personal Support Workers-PSW) for entry to practice should include theoretical and competency-based ostomy management principles rooted in an understanding of self-mastery techniques. Theoretical components should be taught to the appropriate skill level of the regulated or unregulated health care provider according to provider specific competencies outlined in Regulated Health Professions Act. Theoretical components taught based on the level of the healthcare provider (RN, RPN, PSW) could include some or all of the following: anatomy and physiology, disease processes leading to bowel or bladder diversion surgery, common surgeries, lifestyle changes as a result of surgery and strategies to assess client’s needs for informational, emotional and practical support to maximize their self-mastery.

During orientation to all practice environments in which clients with ostomies seek or are provided with care, the new employee should receive information about the care of the client with an ostomy. This information should be focused at helping the care provider to maximize their client's individual capacity for self-management. Expectations of the new employee and client selection must be appropriate to their legal scope of practice. Programs must address the resources necessary to support practice and how to access these resources locally, such as access to client support literature and groups, supplies and expert consultation by an ETN.

See Appendix P for recommended educational program content for specific levels of academic and orientation preparation for Registered Nurses, Registered Practical Nurses and Personal Support Workers.

RECOMMENDATION 21

Consult ETNs in the development of ostomy educational programs that target appropriate health-care providers, clients, family members and caregivers.

Level of Evidence = IV

Discussion of Evidence

Registered Nurses who hold a baccalaureate degree or higher and complete a formal, accredited Wound Ostomy Continence academic program Enterostomal Therapy Nursing Education Program (ETNEP) are Enterostomal Therapy Nurses (ETNs). ETNs, through their additional specialty training, are ideally suited to be subject matter experts and educators for ostomy educational programs. These nurses practice with advanced knowledge and skills regarding the care and teaching of clients with an ostomy, of all ages and at all developmental stages (See Appendix Q for Erikson's Stages of Development). They provide direct client care and educational and consultative support to health-care providers. In Canada, the Canadian Association for Enterostomal Therapy (www.caet.ca) sets the educational and practice competencies required to practice as an ETN, and the Canadian Nurses Association sets the standard and requirements for specialty nursing certification (www.cna-aiic.ca/CNA/nursing/certification/default_e.aspx).

See Appendix R for recognized ETN educational programs.

Organization & Policy Recommendations

RECOMMENDATION 22

Organizations should utilize a credentialed ETN for policy development and program management.

Level of Evidence = IV

Discussion of Evidence

ETNEPs, such as the Canadian Association for Enterostomal Therapy (CAET) ETNEP, are approved by the World Council of Enterostomal Therapy (WCET). The CAET-ETNEP prepares Canadian Registered Nurses academically and clinically to practice in ostomy, wound and continence management. The program centres on the application of knowledge and clinical expertise as consultants and/or in direct care of clients with ostomies, complex wounds and incontinence. Related roles include client and staff education, as well as research, policy development and administration. Upon completion of an interactive, on-line, 18-month theoretical program, which includes 225 hours of clinical preceptorship under the direct supervision of an expert practitioner, the successful ETN student receives a Certificate in Enterostomal Therapy Nursing. This certificate allows the ETN to write the Canadian Nurses Association ET Nursing Certification Examination to become a Certified ETN in Canada.

RECOMMENDATION 23

All clients with ostomies, and their families, should have access to comprehensive education.

Level of Evidence = IV

Discussion of Evidence

Clients have the right to receive lifelong expert ostomy care and management to assist them to adapt to changes in living with an ostomy (see Appendix S for the Charter of Ostomates' Rights). The design, development and implementation of such programs should reflect a continuum of care. Programs should begin with a structured, comprehensive and organized approach to self-care and the recognition and prevention of complications.

RECOMMENDATION 24

A mechanism must be in place for the transfer of information between care settings to facilitate continued education and clinical support of the client.

Level of Evidence = IV

Discussion of Evidence

Predominately post-operative client care and education takes place in the client's home (nursing home, shelters, private residence, etc.). Clients are at risk for physical and emotional challenges following sur-

gery. Therefore, the seamless exchange of information between hospital and community regarding the client's health condition, post-operative progress and ostomy education is essential to ensure optimal adjustment (See Appendix E and J).

RECOMMENDATION 25

Practice settings must have access to an interdisciplinary team of knowledgeable and skilled health professionals to address quality care in ostomy management.

Level of Evidence =IV

Discussion of Evidence

Refer to Discussion of Evidence for Recommendation #3.

RECOMMENDATION 26

Nursing best practice guidelines can be successfully implemented only where there are adequate planning, resources, organizational and administrative support, as well as appropriate facilitation. Organizations may wish to develop a plan for implementation that includes:

- An assessment of organizational readiness and barriers to implementation, taking into account local circumstances.
- Involvement of all members (whether in a direct or indirect supportive function) who will contribute to the implementation process.
- Ongoing opportunities for discussion and education to reinforce the importance of best practices.
- Dedication of a qualified individual to provide the support needed for the education and implementation process.
- Ongoing opportunities for discussion and education to reinforce the importance of best practices.
- Opportunities for reflection on personal and organizational experience in implementing guidelines.

Level of Evidence = IV

Discussion of Evidence

The Registered Nurses' Association of Ontario (through a panel of nurses, researchers and administrators) has developed the *Toolkit: Implementation of Clinical Practice Guidelines* (RNAO, 2002b), based on available evidence, theoretical perspectives and consensus. The *Toolkit* is recommended for guiding the implementation of the RNAO best practice guideline *Ostomy Care and Management*. Successful implementation of the best practice guidelines requires the use of a structured, systematic planning process and strong leadership from nurses who are able to transform the evidence-based recommendations into policies and procedures that impact on practice within the organization. The RNAO *Toolkit* (2002b) provides a structured model for implementing practice change. Please refer to Appendix T for a description of the *Toolkit*.

Research Gaps and Future Implications

The expert development panel, in reviewing the evidence for this guideline, has identified several gaps in the research literature related to ostomy care and management. In considering these gaps, the panel has identified the following priority research areas:

- Further substantive research is required to validate the expert opinion and impact knowledge that will lead to improved practice and outcomes related to Ostomy Care and Management.
- Further research is required in the area of peristomal skin management, particularly in complex presentations and Quality of Life issues related to living with an ostomy.
- The impact of simple versus complicated pouching systems on the client's success in achieving independent self-care of the ostomy to be conducted free from potential or perceived bias from industry.
- The impact of education provided by nurses directed to the client's ability to learn, implement and retain information, and the influence on the successful attainment of independent self-care of the ostomy.
- The impact of applied nursing theory on the client's success in achieving independent self-care of the ostomy.
- The effectiveness of specific educational tools and strategies designed to assist children and families adjust to living with an ostomy.
- The efficacy of internet-based resources designed to assist children and families adjust to living with an ostomy.
- The effectiveness of support groups within the client group.

The above list, although in no way exhaustive, is, however, an attempt to identify and prioritize some of the research gaps in this area. Recommendations in this guideline are based on evidence gained from qualitative or quantitative research, while others are based on consensus or expert opinion.



Evaluation/Monitoring of Guideline

Organizations implementing the recommendations in this nursing best practice guideline are advised to consider how the implementation, and its impact, will be monitored and evaluated. The following table, based on a framework outlined in the RNAO *Toolkit: Implementation of Clinical Practice Guidelines* (2002b) provides an example of how this matrix from the *Toolkit* may be used.

OBJECTIVE: Evaluate the supports needed, the process involved and the impact of the recommendations related to ostomy care and management.

Level of Indicator	Structure	Process	Outcome
	What you need	How you go about it	What happens
Organization	Policy, Procedure, Practice changes	<ul style="list-style-type: none"> ■ Examine organizational culture to identify barriers & supports for an evidence-based practice culture to develop & thrive ■ Review of existing ostomy related policies, procedures & practices 	<ul style="list-style-type: none"> ■ Organizational lead selected for evidence-based practice ■ Best Practice – a standing committee agenda item ■ Policies, procedures & practices reflect & support best practice in ostomy care
	Documentation changes	Documentation changed to include: <ul style="list-style-type: none"> ■ Discharge Information re: local (United Ostomy Association [UOA]) & local product suppliers ■ Inter-agency documentation changed to capture the degree of client self-care independence, and what barriers to mastering self-care exist (including complications) 	<ul style="list-style-type: none"> ■ Discharge & inter-agency documentation reflects UOA, suppliers, client level of independence & identified complications

Level of Indicator	Structure	Process	Outcome
	Incident/Unusual Occurrence Reporting System	<p>Surgical feedback to include:</p> <ul style="list-style-type: none"> ■ Reports analyzed at appropriate committee level – E.g.: <ul style="list-style-type: none"> • Monthly Surgical Team Committee • Client Safety Committee • Medical Advisory Committee ■ One-on-one discussion ■ Gathering of evidence for discussion with the surgeon if this is a repetitive problem 	<ul style="list-style-type: none"> ■ Increased use of ETN for pre-op education & stoma siting ■ Decreased admission rate secondary to stomal/peristomal complications ■ Increase use of ambulatory clinics for ongoing management/surveillance of complex ostomy presentations
Provider	Nurses skilled in ostomy care	<ul style="list-style-type: none"> ■ Provide training related to product, anatomy, complications, consults ■ Conduct a staff survey pre/post 	Staff report increased ability to provide care
Client	Maximize client independence	Client satisfaction survey include items that focus on mastering self-care & achieving independence, continuity & consistency of care	Survey results show increased client independence & satisfaction
Financial Costs	Money earmarked for ostomy related education	<ul style="list-style-type: none"> ■ Staff ETN or ETN consult available ■ New professional staff receive ostomy education in orientation ■ Ongoing ostomy education 	<p>Money budgeted for:</p> <ul style="list-style-type: none"> ■ ETN ■ Orientation ■ E-Learning available

Implementation Strategies

The Registered Nurses' Association of Ontario and the guideline development panel have compiled a list of implementation strategies to assist health-care organizations or health-care disciplines that are interested in implementing this guideline. A summary of these strategies follows:

- Have at least one dedicated person, such as an advanced practice nurse or a clinical resource nurse, who will provide support, clinical expertise and leadership. The individual should also have good interpersonal, facilitation and project management skills.
- Conduct an organizational needs assessment related to Ostomy Care and Management to identify current knowledge base and further educational requirements.
- Initial needs assessment may include an analysis approach, survey and questionnaire, group format approaches (e.g., focus groups), and critical incidents.
- Establish a steering committee comprised of key stakeholders and interdisciplinary members committed to lead the change initiative. Identify short-term and long-term goals. Keep a work plan to track activities, responsibilities and timelines.
- Create a vision to help direct the change effort and develop strategies for achieving and sustaining the vision.
- Program design should include:
 - target population;
 - goals and objectives;
 - outcome measures;
 - required resources (human resources, facilities, equipment); and
 - evaluation activities.
- Design educational sessions and ongoing support for implementation. The education sessions may consist of presentations, facilitator's guide, handouts and case studies. Binders, posters and pocket cards may be used as ongoing reminders of the training. Plan education sessions that are interactive, include problem solving, address issues of immediate concern and offer opportunities to practice new skills (Davies & Edwards, 2004).
- Provide organizational support, such as having the structures in place to facilitate the implementation. For example, hiring replacement staff so participants will not be distracted by concerns about work and having an organizational philosophy that reflects the value of best practices through policies and procedures. Develop new assessment and documentation tools (Davies & Edwards, 2004).
- Identify and support designated best practice champions on each unit to promote and support implementation. Celebrate milestones and achievements, acknowledging work well done (Davies & Edwards, 2004).
- Organizations implementing this guideline should adopt a range of self-learning, group learning, mentorship and reinforcement strategies that will, over time, build the knowledge and confidence of nurses in implementing this guideline.
- Beyond skilled nurses, the infrastructure required to implement this guideline includes access to specialized equipment and treatment materials. Orientation of the staff to the use of specific products and technologies must be provided and regular refresher training planned.
- Teamwork, collaborative assessment and treatment planning with the client and family and interdisciplinary team are beneficial in implementing guidelines successfully. Referral should be made as necessary to services or resources in the community or within the organization.

In addition to the strategies mentioned above, the RNAO has developed resources that are available on the website. A toolkit for implementing guidelines can be helpful if used appropriately. A brief description of this toolkit can be found in Appendix T. A full version of the document in PDF format is also available at the RNAO website, www.rnao.org/bestpractices.

Process for Update/Review of Guideline

The Registered Nurses' Association of Ontario proposes to update this best practice guideline as follows:

1. Each nursing best practice guideline will be reviewed by a team of specialists (Review Team) in the topic area every three years following the last set of revisions.
2. During the three-year period between development and revision, RNAO program staff will regularly monitor for new systematic reviews and randomized controlled trials and other relevant literature in the field.
3. Based on the results of the monitor, program staff will recommend an earlier revision period. Appropriate consultation with a team of members comprising original panel members and other specialists in the field will help inform the decision to review and revise the guidelines earlier than the three-year milestone.
4. Three months prior to the three-year review milestone, the program staff will commence the planning of the review process by:
 - a. Inviting specialists in the field to participate in the Review Team. The Review Team will be comprised of members from the original panel as well as other recommended specialists.
 - b. Compiling feedback received, questions encountered during the dissemination phase as well as other comments and experiences of implementation sites.
 - c. Compiling new clinical practice guidelines in the field, systematic reviews, meta-analysis papers, technical reviews, randomized controlled trial research and other relevant literature.
 - d. Developing a detailed work plan with target dates and deliverables.
5. The revised guideline will undergo dissemination based on established structures and processes.

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Appendix A: Glossary of Terms

Clinical Practice Guidelines or Best Practice Guidelines: Systematically developed statements to assist practitioner and client decisions about appropriate healthcare for specific clinical (practice) circumstances (Field & Lohr, 1990).

Consensus: A process for making policy decisions, not a scientific method for creating new knowledge. Consensus development makes the best use of available information, be that scientific data or the collective wisdom of the participants (Black et al., 1999).

Education Recommendations: Statements of educational requirements and educational approaches/strategies for the introduction, implementation and sustainability of the best practice guideline.

Organization and Policy Recommendations: Statements of conditions required for a practice setting that enables the successful implementation of the best practice guideline. The conditions for success are largely the responsibility of the organization, although they may have implications for policy at a broader government or societal level.

Practice Recommendations: Statements of best practice directed at the practice of health-care professionals that are ideally evidence based.

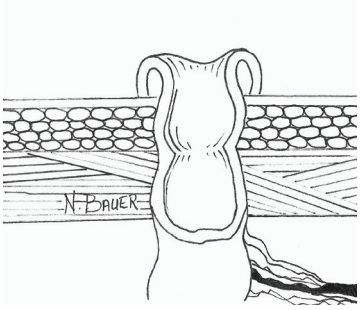
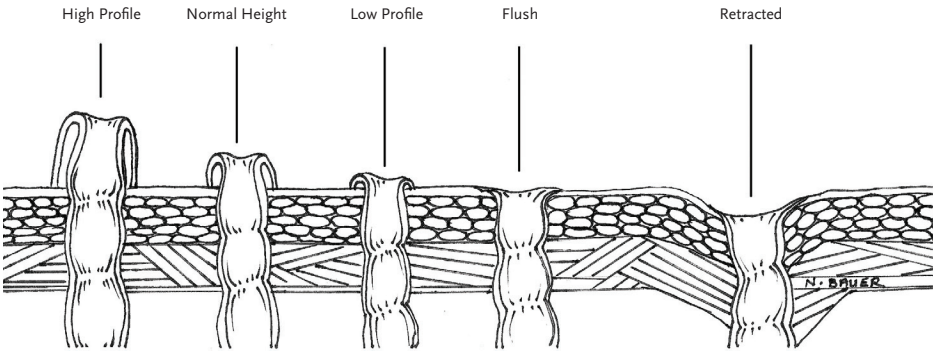
Randomized Controlled Trials: Clinical trials that involve at least one test treatment and one control treatment, concurrent enrollment and follow-up of the test- and control-treated groups, and in which the treatments to be administered are selected by a random process.

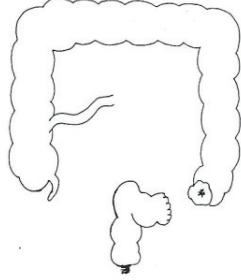
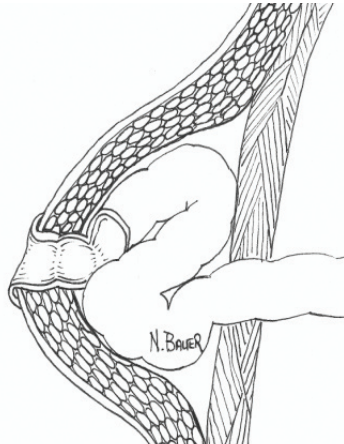
Stakeholder: An individual, group, or organization with a vested interest in the decisions and actions of organizations that may attempt to influence decisions and actions (Baker et al., 1999). Stakeholders include all individuals or groups who will be directly or indirectly affected by the change or solution to the problem.

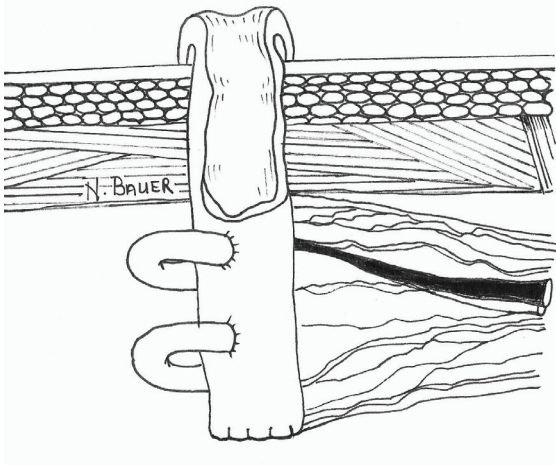
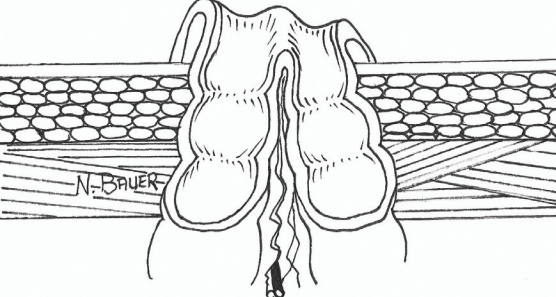
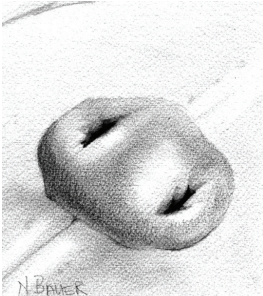
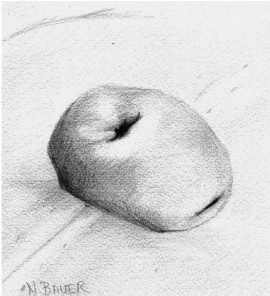
Systematic Review: An application of a rigorous scientific approach to the preparation of a review article (National Health and Medical Research Centre, 1998). Systematic reviews establish where the effects of health care are consistent and research results can be applied across populations, settings and differences in treatment (e.g., dose); and where effects may vary significantly. The use of explicit, systematic methods in reviews limits bias (systematic errors) and reduces chance effects, thus providing more reliable results upon which to draw conclusions and make decisions (Higgins & Green, 2008).

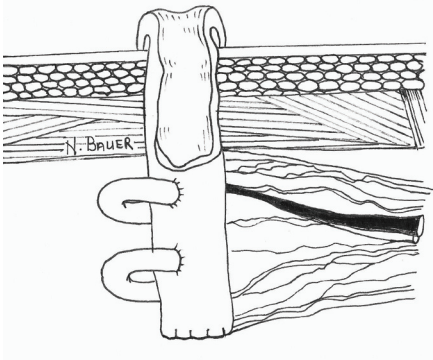
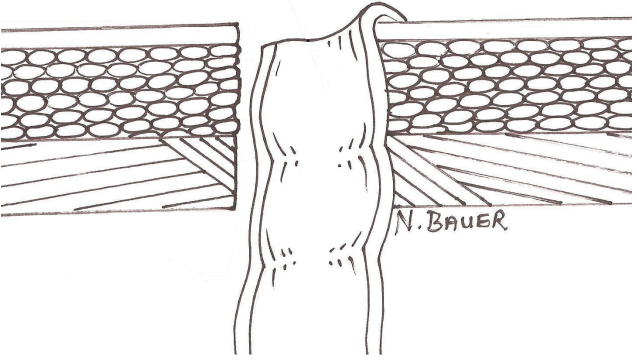
Appendix B: Glossary of Clinical Terms

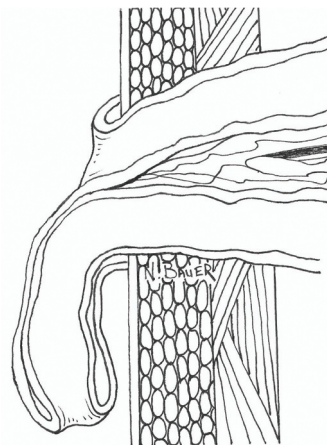
Abdominoperineal Resection (APR)	A procedure using an abdominal and perineal approach for the resection of rectal cancer. The procedure involves removal of the rectum, anus and perirectal lymphatics.
Anti-Reflux Valve	A valve incorporated in urostomy appliances. This valve stops the urine from going back into the kidneys once it has drained into the pouch.
Appliance	Also called the pouching system. See Appendix O for pouching systems and accessories.
Belts/Binders	See Appendix O for pouching systems and accessories.
Colectomy	Excision of part or all of the colon.
Colostomy	The surgically constructed opening where a portion of the colon is brought through the abdominal wall to its skin surface. Colostomies can be further defined in terms of construction, location and permanence.
Convexity	Surface that is curved or rounded outward; provides tension on the skin, flattening peristomal skin contours causing a stoma to protrude better, can be integrated (part of the barrier) or added (barrier rings). See Appendix O for pouching systems and accessories.
Crohn's Disease	Inflammation and ulceration usually of the terminal portion of the ileum and/or small bowel.
Denudement	Red, raw skin; any superficial erosion and ulcerations produced mechanically or chemically.
Dermatitis	See Peristomal Contact Dermatitis (allergic or irritant).
Diversion	Surgical creation of an alternative route for effluent of the GI tract, or of the Urinary Tract, can be described as "Continent or Incontinent"
Educational Resources	Books, magazines, videos, CDs, websites, learning devices, computer software.
Effluent	Discharge – urine or stool.
Electrolyte	An ionized salt in blood, tissue fluids and cells. These salts include sodium, potassium and chlorine.

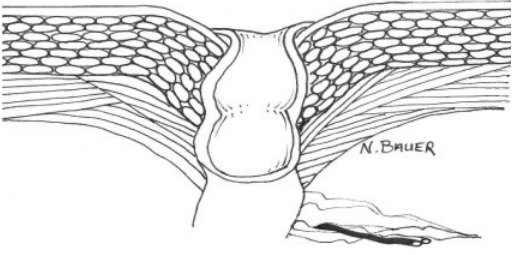
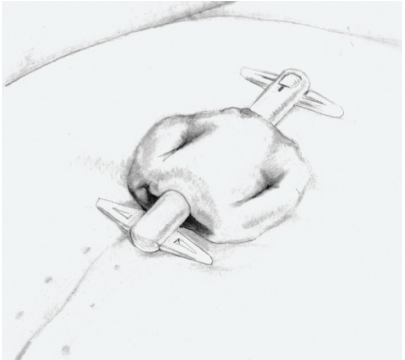
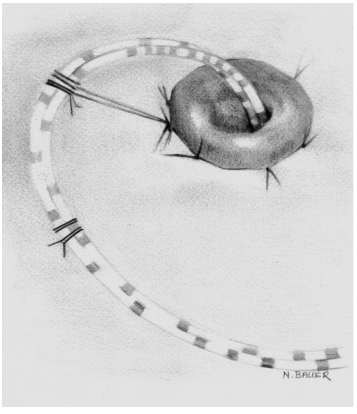
End Ostomy Construction	<p>An ostomy in which the proximal cut end of the colon is formed into a stoma and the distal colon is either resected or closed.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Enterostomal Therapy Nurse (ETN)	<p>Registered Nurse who has advanced knowledge and clinical skill preparation from a recognized educational certificate program in the management of ostomies, wound and incontinence.</p>
Financial Resources	<p>Government assistance, insurance, industrial support, associations.</p>
Flange	<p>See Appendix O for pouching systems and accessories.</p>
Flush Stoma	<p>A stoma that is level with the skin. See Appendix O for pouching systems.</p> <p>Stoma Height – Cross Sectional Profiles</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Folliculitis	<p>Inflammation of a follicle or follicles usually caused by Staphylococcus Aureus.</p>
Granuloma	<p>Presents as friable tissue, usually in small raised round shapes, scattered at the mucocutaneous junction; may result from retained or reactive suture material.</p>

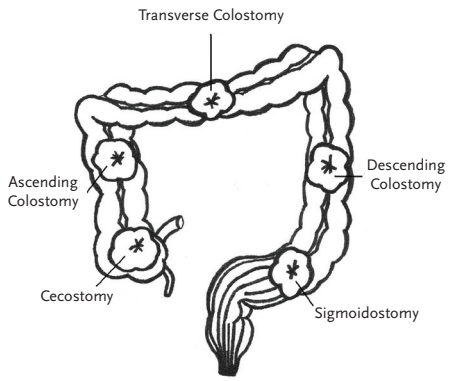
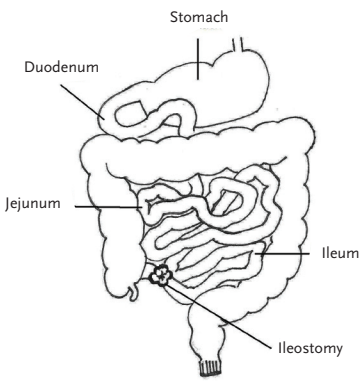
Hartmann's Procedure	<p>[Henri Hartmann, Fr. Surgeon, 1860–1952] The surgical removal of a diseased portion of the distal colon or proximal rectum with formation of an end colostomy, accompanied by over-sewing of the distal colonic or rectal remnant.</p> <p>This procedure may be the first stage of a two-part operation, in which at a later date, the colostomy and the over-sewn remnant are reconnected.</p> <p>The Hartmann procedure is most often employed in debilitated clients or in emergent circumstances in which primary anastomosis or complete distal segment excision would not be appropriate.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Hernia – Peristomal or Parastomal	<p>A parastomal hernia occurs as a defect in the fascia that allows loops of intestine to protrude into the area of weakness. During stoma creation an opening is made into the fascia to allow the intestine to be advanced. In some clients this defect can enlarge, allowing the intestine to bulge into the area.</p> <p>May be supported with a wide belt or binder; or may require surgical correction.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Human Resources	<p>Knowledge, skills, specialized expertise and talents of health practioners (Kerzner, 2001).</p>
Hyperplasia	<p>Excessive proliferation of normal cells in the normal tissue arrangement of an organ.</p>

<p>Ileal Conduit (Urostomy)</p>	<p>A method of diverting the urinary flow by transplanting the ureters into a prepared and isolated segment of the ileum, which is sutured closed on one end. The other end is connected to an opening in the abdominal wall.</p> <p>The ileal conduit procedure is the most common urostomy. The portion of bowel will produce mucous.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
<p>Ileostomy</p>	<p>A surgical passage through the abdominal wall, through which a segment of ileum is exteriorized. An end stoma or loop stoma may be created.</p>
<p>Inflammatory Bowel Disease</p>	<p>The term for a number of chronic, relapsing diseases of the gastrointestinal tract of unknown etiology. See Ulcerative Colitis and/or Crohn's Disease.</p>
<p>Irrigation of the Colon/Large Bowel</p>	<p>Procedure to instill fluid into a fecal stoma to promote the emptying of stools before a surgical procedure or as an alternative to pouching for selected clients.</p>
<p>Karaya</p>	<p>See Appendix O for pouching systems and accessories.</p>
<p>Loop Ostomy Construction</p>	<p>Usually created in the transverse colon. Loop ostomy can be constructed in the small and large bowel.</p> <p>This is one stoma with two openings; one discharges stool, the second mucous.</p> <p>Cross Sectional view</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>   <p>Surface view</p> <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>

Mucous Fistula	<p>The defunctionalized portion of the intestine brought to the surface of the skin.</p> <p>The mucous fistula generally will have a lower profile than the functioning ostomy.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Mucocutaneous Junction (MCJ)	<p>The junction between the skin and a mucous membrane such as a stoma.</p>
Mucocutaneous Separation	<p>The detachment of the stoma from the skin. It may be the result of poor healing, tension on the bowel or superficial infection.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Obstruction (Intestinal)	<p>A partial or complete blockage of the large or small intestine.</p>
Ostomy	<p>A surgical procedure creating an opening between the urinary or GI tract and the skin.</p>
Ostomy – Temporary	<p>Usually the surgical plan is to reconnect the intestine and to close the ostomy.</p>
Ostomy – Permanent	<p>Ostomy that will never be closed.</p>
Ostomy Nurse Specialist	<p>See Enterostomal Therapy Nurse.</p>
Ostomy Visitor	<p>A person with an ostomy who has completed a training program and visits people before and/or after ostomy surgery. The visitor gives support and practical advice rather than medical information.</p>

Organizational Resources	Organizational health infrastructure; hospital, outpatient clinic, community care, suppliers and industry.
Peristalsis	A progressive wavelike movement that occurs involuntarily in hollow tubes of the body, especially the alimentary canal, propelling the contents forward.
Peristomal Candidiasis	The overgrowth of a Candida organism of sufficient magnitude to cause inflammation, infection or disease on skin of the peristomal plane.
Peristomal Contact Dermatitis (Allergic)	Any inflammation of the skin believed to be due to an allergic reaction to one or more components of a product (pouching systems and/or accessories).
Peristomal Contact Dermatitis (Irritant)	Skin damage resulting from contact with fecal or urinary drainage.
Peristomal Skin/Plane	3 to 4 inches (10x10 cm) of skin surface surrounding an abdominal stoma.
Pouch (Appliance, Bag)	A waterproof receptacle that collects effluent (i.e. urine or stool).
Pouching Systems (Ostomy Pouching Systems)	Composed of a skin barrier and a collection device to collect drainage (effluent) and protect the skin. Pouching systems are one-piece or two-piece products. The pouch attaches to the skin barrier, which adheres to the abdomen, and is fitted over and around the stoma to collect stool or urine. See Appendix O for pouching systems and accessories.
Proctocolectomy	Surgical removal of the colon and rectum.
Prolapse (Stomal)	<p>A complication of ostomy surgery resulting in the “telescoping” of the bowel through the stoma. Stomal prolapse may vary in length. It is most common in transverse loop ostomy constructions. See Loop Ostomy Construction.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Pseudoverrucous Lesions	Wart-like lesion in the peristomal area.

Pyoderma Gangrenosum	<p>A rare form of the ulcerative or classic presentation of the disease. Presents as pustules surrounded by inflamed border, which rapidly progress to ulcerations with a granular or crusted base and bluish purple raised edges.</p>
Retraction (Retracted Stoma)	<p>The disappearing of the normal protrusion of the stoma to or below the skin. Can be intermittent – clients may report that the stoma disappears when they are sitting or when the bowel is functioning. See Flush Stoma – Stoma Height.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Rod	<p>Any support material or device used in the construction of a loop ileostomy. It is placed under a loop of exteriorized bowel to maintain its position on the abdominal surface. See Loop Ostomy Construction.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Social Resources	<p>Self-support groups, newsletters, conferences, camps, family, supportive others.</p>
Stent	<p>Any material or device used to hold tissue in place, to maintain open blood vessels, or to provide a support for a graft or anastomosis while healing is taking place. E.g., supports the anastomosis or prevents obstruction due to edema of the ureters at the insertion sites into the ileum following the formation of an ileo conduit.</p>  <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Stenosis	<p>The narrowing or contracting of the stoma occurring at the skin or fascia impairing the drainage of effluent.</p>

Stoma	From the Greek word 'mouth'; surgical opening for drainage of effluent.
Stoma Location	<div> <div>Colostomy</div>  </div> <div> <div>Ileostomy</div>  </div> <p>Illustration by Nancy Bauer, HBA, HB Admin, RN, ETN. Published with permission.</p>
Stomal Siting (Pre-Operative)	Selection of the ideal location on the abdomen for a stoma prior to surgery by a trained health-care professional, usually ETN or surgeon to help prevent future stoma complications and pouching problems.
Stomal Therapy Nurse (STN)	See Enterostomal Therapy Nurse.
Therapeutic Relationship	A purposeful, goal-directed relationship that is directed at advancing the best interest and outcomes of the client.
Ulcerative Colitis	Ulcerated inflammation of the colonic mucosal and submucosal layers characterized by remissions and exacerbations (flare-ups).
United Ostomy Association of Canada	A volunteer-based organization dedicated to assisting all persons facing life with gastrointestinal or urinary diversions by providing emotional support, instructional and information services through the membership, the family, associated caregivers and the general public.
Urostomy	See Ileal Conduit.
Wound Ostomy Continence Nurse (WOCN)	See Enterostomal Therapy Nurse.

Appendix C: Guideline Development Process

The RNAO, with funding from the Government of Ontario, has embarked on a multi-year program of nursing best practice guideline development, pilot implementation, evaluation, dissemination and support of uptake. One of the areas of emphasis is on nursing interventions related to ostomy care and management. This work was conducted independent of any bias or influence from the Ontario Government.

In January 2008, an international, multidisciplinary panel of nurses, and allied health professionals with expertise in practice, education and research on ostomy care and management from a range of practice settings was convened under the auspices of the RNAO. The panel discussed the purpose of their work, and came to consensus on the scope of the best practice guideline.

Subsequently, a search of the literature for best practice guidelines, systematic reviews, relevant research studies and websites was conducted. No existing best practice guidelines were found. As part of the rigorous guideline development process for the Clinical Best Practice Guidelines Program, a systematic review was conducted. See Appendix D for details of the search strategy and outcomes.

The panel members discussed the evidence summaries and key articles and came to a consensus on the best available evidence on which to base recommendations. The panel then divided into subject matter expert subgroups for the purpose of drafting recommendations for nursing interventions. This process resulted in the development of practice, education and organization and policy recommendations. The panel members as a whole reviewed the draft recommendations, discussed gaps, reviewed the evidence and came to consensus on a final set of recommendations.

This draft was submitted to a set of external stakeholders for review and feedback – an acknowledgement of these reviewers is provided on page 14 of this document. Stakeholders represented various health-care professional groups, clients and families, as well as professional associations. External stakeholders were provided with specific questions for comment, as well as the opportunity to give overall feedback and general impressions.

The feedback from stakeholders was compiled and reviewed by the development panel – discussion and consensus resulted in revisions to the draft document prior to publication.

Appendix D: Process for Systematic Reviews and Search Strategy

The search strategy utilized during the development of this guideline focused on two key areas. One was a structured website search to identify best practice guidelines published on the topic of ostomy care and management; and the second was a literature review to identify primary studies, meta analyses and systematic reviews published in this area from 1998–2008.

Part 1: Guideline Search

One individual searched an established list of websites for content related to the topic area in December 2007. This list of sites was compiled based on existing knowledge of evidence-based practice websites, known guideline developers, and recommendations from the literature. Presence or absence of guidelines was noted for each site searched as well as date searched. The websites at times did not house guidelines, but directed to another website or source for guideline retrieval. Guidelines were either downloaded if full versions were available or were ordered by phone/email.

- Agency for Healthcare Research and Quality: www.ahrq.gov
- Alberta Medical Association – Clinical Practice Guidelines: www.albertadoctors.org
- American College of Chest Physicians: www.chestnet.org/education/hsp/guidelinesProducts.php
- American Medical Association: www.ama-assn.org
- Bandolier Journal: www.medicine.ox.ac.uk/bandolier
- British Columbia Council on Clinical Practice Guidelines: www.bcguidelines.ca/gpac
- British Medical Journal – Clinical Evidence: www.clinicalevidence.com/ceweb/conditions/index.jsp
- Canadian Centre for Health Evidence: www.cche.net/che/home.asp
- Canadian Cochrane Network and Centre: www.ccnc.cochrane.org
- Canadian Coordinating Office for Health Technology Assessment: www.ccohta.ca
- Canadian Institute of Health Information: www.cihi.ca
- Canadian Task Force on Preventive Health Care: www.ctfphc.org
- Centers for Disease Control and Prevention: www.cdc.gov
- Centre for Evidence-Based Mental Health: <http://cebmh.com>
- Centre for Health Evidence: www.cche.net/che/home.asp
- Centre for Health Services and Policy Research: www.chspr.ubc.ca
- Clinical Resource Efficiency Support Team (CREST): www.crestni.org.uk
- CMA Infobase: Clinical Practice Guidelines: <http://mdm.ca/cpgsnew/cpgs/index.asp>
- Cochrane Database of Systematic Reviews: www.update-software.com/publications/cochrane
- Database of Abstracts of Reviews of Effectiveness (DARE): www.crd.york.ac.uk/crdweb
- Evidence-based On-Call: www.eboncall.org
- Guidelines Advisory Committee: www.gacguidelines.ca
- Institute for Clinical Evaluative Sciences: www.ices.on.ca
- Institute for Clinical Systems Improvement: www.icsi.org
- Institute of Child Health: www.ich.ucl.ac.uk/ich

- Institute of Health Economics: www.ihe.ca
- Joanna Briggs Institute: www.joannabriggs.edu.au
- Medic8.com: www.medic8.com/ClinicalGuidelines.htm
- Medscape Women's Health: www.medscape.com/womenshealthhome
- Monash University Centre for Clinical Effectiveness: www.mihsr.monash.org/cce
- National Guideline Clearinghouse: www.guidelines.gov
- National Institute for Clinical Excellence (NICE): www.nice.org.uk
- National Library of Medicine Health Services/Technology Assessment Test (HSTAT):
<http://hstat.nlm.nih.gov/hq/Hquest/screen/HquestHome/s/64139>
- Netting the Evidence: A SchARR Introduction to Evidence-Based Practice on the Internet:
www.shef.ac.uk/scharr/ir/netting
- New Zealand Guidelines Group: www.nzgg.org.nz
- NHS Centre for Reviews and Dissemination: www.york.ac.uk/inst/crd
- NIH Consensus Development Program: <http://consensus.nih.gov>
- NIHR Health Technology Assessment Programme: www.nchta.org
- PEDro: The Physiotherapy Evidence Database: www.pedro.org.au
- Royal College of General Practitioners: www.rcgp.org.uk
- Royal College of Nursing: www.rcn.org.uk/index.php
- Royal College of Physicians: www.rcplondon.ac.uk
- Scottish Intercollegiate Guidelines Network: www.sign.ac.uk
- Society of Obstetricians and Gynecologists of Canada Clinical Practice Guidelines:
www.sogc.org/guidelines
- SUMSearch: <http://sumsearch.uthscsa.edu>
- The Qualitative Report: www.nova.edu/ssss/QR
- TRIP Database: www.tripdatabase.com
- U.S. Preventive Service Task Force: www.ahrq.gov/clinic/uspstfix.htm
- University of California, San Francisco: www.ucsf.edu

In addition, a website search for existing practice guidelines on ostomy care and management was conducted via the search engine “Google,” using key search terms. One individual conducted this search, noting the results of the search, the websites reviewed, date and a summary of the results.

Panel members were also asked to review personal archives to identify guidelines not previously found through the above search strategy.

The search strategy described above resulted in the retrieval of no guidelines on the topic of ostomy care and management.

PART 2: Literature Review

A database search for existing evidence related to ostomy care and management was conducted by a University Health Network librarian. An initial search of the CINAHL, PsycInfo, Medline, and EMBASE databases for studies published from 1998 to 2008 was conducted in January 2008. This search was structured to answer the following clinical questions developed by the panel:

1. What physical and psychosocial needs require nurse-led interventions to prepare the neonate, pediatric or adult populations for ostomy surgery?
 - a. Pre-operative
 - b. Post-operative
 - c. Future/Follow-up
2. What nurse-led interventions are effective in improving ostomy care and peristomal skin care (e.g., reducing degree/frequency of complications, shortening healing time) in neonatal, pediatric or adult populations?
3. What nurse-led interventions are effective in promoting patient self-care of ostomy and peristomal skin in pediatric or adult populations?
4. What nurse-led interventions are effective in managing complications in ostomies and peristomal skin in neonatal, pediatric or adult populations?
5. What are the special considerations in caring for individuals with ostomies who have special needs, including blindness?
6. What are the education needs of nurses looking after individuals with ostomies?
7. What patient-focused educational interventions are effective in improving physical and psychosocial status of individuals with ostomies?
8. What resources used by nurses in ostomy care are most effective in managing ostomies (e.g., promoting healing, reducing complications)?
9. What resources used by patients in self-managed ostomy and peristomal care are most effective in managing ostomies (e.g., promoting healing, reducing complications)?

For details of the search results please refer to Ostomy Care and Management: a systematic review of the assessment and management of colostomies, ileostomies, and urostomies, including the assessment and management of peristomal skin (Mayo et al., in press).

Appendix E: Sample Ostomy Teaching Record

OSTOMY TEACHING RECORD

Client: _____

Address: _____

Before Surgery: Teaching Completed	Date & Initial
Date of surgery	
Type of surgery/ostomy	
Reason for surgery	
E.T. Nurse visit	
Stoma site selection and marking	
Stoma location and appearance	
Given teaching booklets about surgery	
Given samples of pouching system	
Purpose of pouch and skin barrier	
Knowledge of others with an ostomy	
Viewed ostomy video	

After Surgery: While in Hospital Teaching Completed	Date & Initial
Stoma (size, swelling, shrinkage and appearance)	
Type of drainage while in hospital	
Observe/assist with pouch emptying	
Independent with pouch emptying	
Observe/assist with release of gas from pouch	
Independent with release of gas from pouch	
Observe/assist with pouch and skin barrier change	
Discuss odour control options	
Signs of pouch leakage (prevention and treatment)	
Viewed ostomy video and given teaching booklet (if not done pre-op)	
Who to call if problems occur after discharge from hospital	

After Surgery: Discharged Home Teaching Completed	Date & Initial
Type of drainage at home	
Stoma (size, swelling, shrinkage and appearance)	
Independent with pouch emptying	
Observe/assist with pouch and skin barrier change	
Independent with pouch and skin barrier change	
Signs of pouch leakage (prevention and treatment)	
Skin breakdown (prevention and treatment)	
Application instructions	
Supply list/where to buy	
Care of supplies/emergency kit	
Discuss odour control options	
Nutrition/dietary instructions	
Bathing	
Activity/travel	
Clothing modifications	
Sexual function concerns	
Financial Assistance (A.D.P., DVA, Private Insurance, Social Assistance, Disability)	
United Ostomy Association of Canada Support Group	
Ostomy visitor	
Discharge instructions	

Colostomy: Teaching Completed	Date & Initial
Care of perineal wound (if present)	
Mucous drainage per rectum (if rectum left in place)	
Care of a mucous fistula (if present)	
Colostomy irrigation information	
Trial of a colostomy irrigation (optional)	
Constipation/diarrhea/gas	

Ileostomy: Teaching Completed	Date & Initial
Care of perineal wound (if present)	
Mucous drainage per rectum (if rectum left in place)	
Sodium loss and replacement	
Potassium loss and replacement	
Obstruction and management	
Fluid imbalance and treatment	
Medication	

Urostomy: Teaching Completed		Date & Initial
Connecting pouch to additional leg bag (optional)		
Connecting pouch to bedside drainage (optional)		
Care of bedside drainage container and/or leg bag		
Mucous in urine		
Fluid intake/cranberry juice		
Urinary tract infection		
Urine sample from stoma		

Nurse's Signature:

Initials

Nurse's Signature:

Initials

Reproduced with permission from ET NOW, CarePartners, Waterloo, Ontario.

Appendix F: Sexuality Information

Intimacy and Sexuality

- Assess the client's pre-operative relationship with their partner or previous relationships they may have had
- Reassure client/partner that an intimate relationship can resume once their strength is regained and they have healed from surgery
- Review with the client/partner the changes in sexual function that can occur as a result of various treatments (e.g., surgery, radiation, chemotherapy)
- Encourage client/partner to communicate their feelings with their partner or care provider
- Remind client/partner that there are many ways to express themselves sexually
- Reassure the client/partner that physical closeness will not harm the stoma
- Inform client that it is not necessary to tell others about having an ostomy unless they feel the relationship is becoming more serious or intimate

Client Tips for Intimate Situations

- Plan sexual activity for when the ostomy is less active
- Avoid foods that may increase gas/odour production
- Place deodorant drops in the pouch
- Select a pouch with a gas filter
- Consider pouches that are opaque or covered with a pouch cover or cummerbund
- Change to a smaller "mini" pouch or stoma cap
- Empty or change pouch prior to activity
- Add an ostomy belt if desired
- Ensure pouches are secure and well fitting
- Wear perfume/cologne
- Wear intimate apparel to increase one's sensuality and to camouflage the stoma
- Experiment with different, but comfortable, positions
- Play music to avoid hearing potentially embarrassing sounds
- If accidents happen, talk about feelings/emotions

Web Sites

www.ideas-na.com

www.intimatemomentsapparel.com

www.mtsinai.on.ca

www.weircomfees.com

www.meetanostomate.com

Source: Bressmer et al. (2008) Reprinted with permission.

Appendix G: Sample Assessment Form

Ostomy Assessment Record

CORE INFORMATION

Surgery: _____ Date: _____

Type of ostomy: ☐ Colostomy ☐ Ileostomy ☐ Urostomy ☐ Mucous fistula
☐ Other: _____

☐ Permanent ☐ Temporary Approximate closure date: _____

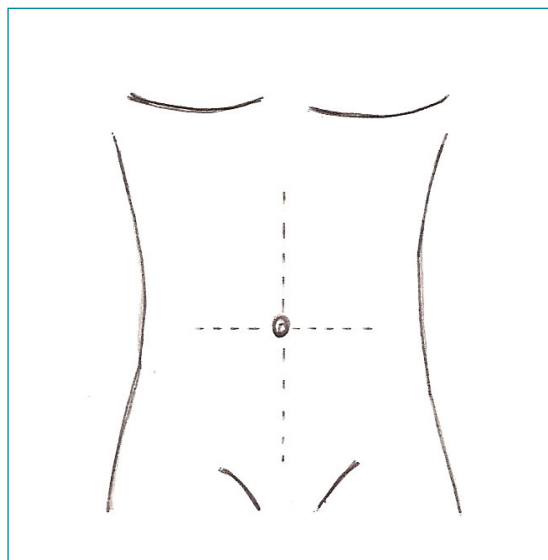
☐ End stoma ☐ Loop stoma ☐ Rod insitu Removal date: _____

☐ Urinary stents Removal date: _____

☐ Catheter

LOCATION OF STOMA

Legend:	
S	stoma
T	tubes
W	wound
MF	mucous fistula
BP	bony prominence
SF	skin fold



ASSESSMENT

Initial the appropriate assessment with each appliance change for the first 6 weeks, or whenever a problem is detected.

	Date:						
STOMA							
Size	Round (measure using stoma measuring guide)						
	Oval (measure length and width)						
Colour	Red (adequate blood supply)						
	Pale (low haemoglobin)						
	Dark red/purplish tint (indicates bruising)						
	Gray to black (ischemia – no blood supply)						
Other:							
Appearance	Healthy (shiny and moist)						
	Taut (edematous)						
	Lacerated (stoma has been cut or torn)						
	Granulomas (nodules on stoma)						
Protrusion	Normal (between 1.5 – 2.5 cm)						
	Flush (mucosa level with skin)						
	Retracted (below level of skin)						
	Prolapsed (greater than 5 cm in length)						
Other:							
MUCOCUTANEOUS JUNCTION							
Intact	(Sutures around stoma intact)						
Separated	at _____ o'clock (stoma separated from skin)						
PERISTOMAL SKIN							
Colour	Healthy (no difference from adjacent skin surface)						
	Erythema (red)						
	Bruised (purplish to yellowish colour)						
Integrity	Intact (no breakdown in skin)						
	Macerated (white friable skin, too much moisture)						
	Erosion (superficial skin damage)						
	Rash (an outbreak of lesions on the skin)						
	Ulceration (a wound through the dermis layer)						
	Other:						
Turgor	Normal (soft, good elasticity)						
	Flaccid (weak and flabby)						
	Firm (hard)						
Predisposing factors	Eczema, psoriasis						
Other:							

		Date:						
EFFLUENT								
Stool	Texture: Formed							
	Thick							
	Pasty							
	Loose							
	Passing flatus							
	Non-functioning (not passing flatus or stool)							
	Normal output (750 – 1000 mL)							
	High output (greater than 1500 mL/24 hours)							
	Low output (less than 500 mL/24 hours)							
Urine	Colour: Amber/straw-coloured							
	Pink-tinged							
	Red							
	Clarity: Clear							
	Cloudy							
	Sediment							
	Odour: None							
	Mild							
	Foul							
	Normal output (1200 – 2500 mL/24 hours)							
	High output (greater than 2500 mL/24 hours)							
	Low output (less than 1200 mL/24 hours)							
PATIENT'S PERCEPTION								
	Engages/asking questions							
	Turns away with ostomy change							
OSTOMY APPLIANCE USED								
	One piece							
	Two piece							
	Convexity							
	Paste/strips/barrier seals							
	Stoma powder							
	Belt							

Signature:

Initials

Signature:

Initials

Signature:

Initials

Signature:

Initials

The RNAO would like to acknowledge panel members Karen Bruton, RN, BScN(c), ETN, and Helen Fatum, RN, BScN, ETN, for developing this assessment form.

Appendix H: Medication and Ostomy Function

Medication Class	Medication Type	Ostomy Type	General Comments (for specific info see CPS)
Analgesic	Acetaminophen	Ileal Conduit Ileostomy	<ul style="list-style-type: none"> • Cloudy urine, hematuria, skin rash, itching • Analgesics must not be the long acting form for ileostomy • Diarrhea in overdose
	Salicylate	Ileostomy	<ul style="list-style-type: none"> • Take with meals for absorption • Avoid enteric coated due to prolonged absorption
		Colostomy	<ul style="list-style-type: none"> • Colouration of stool: pink, red may indicate intestinal bleeding
	Opiate	Colostomy Ileostomy	<ul style="list-style-type: none"> • Monitor bowel elimination pattern • Constipation; may require stool softeners for descending or sigmoid colostomy • Thickened stool, paralytic ileus
Adrenocorticosteroid	Glucocorticosteroid	Peristomal skin	<ul style="list-style-type: none"> • Thinning of skin, petechiae, hyperpigmentation, allergic dermatitis
Antacid	Note: magnesium, calcium or aluminum products	Ileostomy Colostomy	<ul style="list-style-type: none"> • Contraindicated in bowel obstruction, rectal bleeding • May cause diarrhea, constipation • Can cause discolouration or 'flecked colouring' in the stool • Chronic use may induce dependency for bowel function
Antibiotic		Ileal Conduit Ileostomy Colostomy	<ul style="list-style-type: none"> • Renal damage, nephrotoxicity • Nausea, vomiting, moderate to severe diarrhea • Enterocolitis, mucositis • Pseudomembranous colitis – rare • Peristomal skin rash
Antifungal		Ileal Conduit Ileostomy Colostomy	<ul style="list-style-type: none"> • Superinfection of GI tract with overgrowth 'black fuzz' on stoma • Foul smelling stool or urine

Medication Class	Medication Type	Ostomy Type	General Comments (for specific info see CPS)
Anticoagulant	Heparin Warfarin	Ileal Conduit Colostomy Ileostomy	<ul style="list-style-type: none"> Bleeding in stool or urine Diarrhea Increased stomal mucosal bleeding Ileostomy: normal diet intake to maintain adequate consumption of Vitamin K; may require prescription
Antidiarrheal		Ileostomy Colostomy	<ul style="list-style-type: none"> Constipation, rash, nausea, vomiting, anorexia Paralytic ileus
Antiflatulent		Ileostomy Colostomy	<ul style="list-style-type: none"> Adverse reactions of no known clinical significance or contraindications
Antineoplastic (chemotherapeutic agent)		Ileostomy Colostomy	<ul style="list-style-type: none"> Due to the wide classification of chemotherapeutic agents, it is recommended to consult with a Pharmacist who specializes in oncology pharmacy and therapeutics
			<ul style="list-style-type: none"> Diarrhea, nausea, vomiting, black tarry stools, constipation Dermatitis, mucositis, unusual bleeding from stoma, yellowing of skin
		Ileal Conduit	<ul style="list-style-type: none"> Urine colour change, hematuria
Laxatives	Bulk former Stool softener Stimulant	Ileostomy Colostomy	<ul style="list-style-type: none"> Due to the variation of products, check with the pharmacist for specific implications Not recommended for ileostomy except the use of bulk forming agents in some situations Contraindication in bowel obstruction, ulceration, impaction, abdominal pain. Not a high fibre diet substitute Long-term use causes maroon discolouration of mucosa called melanosis coli Laxative dependency over time

Medication Class	Medication Type	Ostomy Type	General Comments (for specific info see CPS)
	Hyperosmotic	Ileostomy	<ul style="list-style-type: none"> Excessive diarrhea, abdominal cramps, dehydration, electrolyte imbalance
	Lubricant	Ileostomy Colostomy	<ul style="list-style-type: none"> Cautionary use with colostomy and ileostomy Not recommended in children up to 6 years of age and the elderly as prone to aspiration pneumonia Peristomal skin irritation Interferes with ostomy system seal around stoma
	Suppository	Colostomy	<ul style="list-style-type: none"> Suppositories are not recommended
	Enema	Ileostomy	<ul style="list-style-type: none"> NEVER PERFORMED ON ILEOSTOMY or ILEAL CONDUIT
		Colostomy	<ul style="list-style-type: none"> Little benefit for ascending and transverse colostomies due to pasty stool For descending and sigmoid colostomy, may assist to remove residual stool or particulate matter post diagnostic radiography procedures May be used to cleanse small bowel mucous fistula using normal saline May be used to cleanse large bowel mucous fistula using solution of prescribed choice To minimize risk of intestinal perforation use of a cone-tip for administration is recommended
Chemical Odour Control		Ileostomy Colostomy Ileal conduit	<ul style="list-style-type: none"> Never use aspirin as a pouch deodorizer due to risk of mucosal ulcerations Read instructions carefully for administration: oral (internal use) or insertion into ostomy pouch (external use) No need for pouch deodorant, but may use diluted vinegar in bedside drainage bag prn

Medication Class	Medication Type	Ostomy Type	General Comments (for specific info see CPS)
	Bismuth subcarbonate compounds		<ul style="list-style-type: none"> • Can be oral or pouch insertion • Oral can result in black, tarry-like stools or constipation
	Chlorophyll compounds		<ul style="list-style-type: none"> • Can be oral or pouch insertion • Oral can result in greenish, loose stool and green stained tongue
Oral Contraceptives		Ileostomy Colostomy	<ul style="list-style-type: none"> • Absorbed in the most proximal part of the ileum (small bowel) with good effect • Client should be instructed to watch for any portion of the pill in the ostomy pouch indicating malabsorption • Clients with known 'short bowel syndrome' should be counseled for alternative method
Vitamins		Ileostomy	<ul style="list-style-type: none"> • Possible B12 malabsorption, monitor • Enteric coated pills may not be absorbed, therefore an alternative dose form should be used
		Ileal Conduit Colostomy	<ul style="list-style-type: none"> • Ascorbic acid in conjunction with sulpha medications is contraindicated due to crystallization in the kidney • Vitamin C may cause peristomal irritation • Generally vitamins may cause an increase in fecal and urine odour and may alter the colour of the urine

The RNAO would like to acknowledge Rob Campbell, BScPhm Manager, Ambulatory Pharmacy, London Health Sciences Centre, for his contribution to the medication chart.

Appendix I: Nutritional Management Tips in Ostomy Care

Signs and symptoms of dehydration:

- Dizziness
- Light headedness
- Feeling of thirst
- Dry mouth and tongue
- Reduced urine output
- Urine dark yellow
- Feeling of agitation or restlessness

Foods that may thicken stool:

- | | | |
|----------------|-----------------|-----------|
| ■ Applesauce | ■ Peanut Butter | ■ Bananas |
| ■ Oatbran | ■ Soda crackers | ■ Pasta |
| ■ Oatmeal | ■ Rice | ■ Bread |
| ■ Potatoes | ■ Tapioca | ■ Cheese |
| ■ Marshmallows | | |

Foods that may loosen stool:

- | | |
|-----------------------------------|--|
| ■ Alcohol (beer, wine and liquor) | ■ Black licorice |
| ■ Prune juice | ■ Chocolate |
| ■ Legumes | ■ Spicy Foods |
| | ■ Caffeine containing beverages (tea, coffee, colas) |

American Dietetic Association and Dietitians of Canada, (2000)

Foods rich in sodium and approximate sodium content:

Item:	Amount:	Sodium Content:
Table salt	1 tsp	2373mg
Broth	250ml	1217mg
Vegetable cocktail	250ml	690mg
Bacon	1 slice	178mg
Cheddar cheese	2 oz(50gm)	310mg
Ham	1 slice	436mg
Canned soup	250ml	1660mg
Pickle	1 medium	833mg
Frozen pizza	100gm	555mg
Sausage	1 link	821mg
Hot dog	1	670mg
Pancake	1 medium	368mg
Cottage cheese 2%mf	125ml	485mg

Foods rich in potassium and approximate potassium content:

Item:	Amount:	Potassium Content:
Banana	1 large	487mg
Apricots dried	1/2 cup	930mg
Buttermilk	250ml	466mg
Milk 2%mf	250ml	473mg
Orange juice	250ml	500mg
Peach raw	1 medium	186mg
Tomato raw	1 medium	292mg
Baked potato	1 medium	926mg
French fries	medium portion	923mg
All Bran cereal	1/2 cup	408mg

Sodium and potassium content of sports beverage:

Gatorade 250ml	Sodium: 102mg	Potassium: 28mg
(Health Canada, 2008)		

Signs and symptoms of ileostomy and colostomy blockage:

- Cramping abdominal pain with watery or no stool output
- High output liquid stool to no stool output
- Reduced to no flatus
- Nausea and vomiting
- Abdominal distention
- Stomal swelling

Colwell, Goldberg, & Carmel, 2004

Foods that may cause blockage and commonly avoided in the first 6–8 weeks post-operatively:

- | | | |
|----------------------|-------------------|-----------|
| ■ Coarse wheat bran | ■ Sausage casings | ■ Nuts |
| ■ Chinese vegetables | ■ Dried fruit | ■ Popcorn |
| ■ Fruit pits/seeds | ■ Orange membrane | ■ Celery |
| ■ Bean sprouts | ■ Raw mushrooms | |
| ■ Whole kernel corn | ■ Raw pineapple | |

Common gas-producing foods:

- | | | |
|---------------|--------------|-------------------|
| ■ Legumes | ■ Cucumber | ■ Melon |
| ■ Eggs | ■ Broccoli | ■ Onion |
| ■ Apple skin | ■ Beer | ■ Cabbage |
| ■ Lettuce | ■ Carbonated | ■ Turnip |
| ■ Cauliflower | beverages | ■ Brussel sprouts |

Common foods that may increase malodour or discolour effluent:

- Garlic
- Fish
- Asparagus
- Eggs
- Beets – discolouration of urine may occur, causing a reddish tinge

General instructions for the post-operative ostomy client:

- Chew food thoroughly.
- Poor fitting dentures or missing teeth may require diet modification to eliminate some foods that, if not chewed well, may lead to potential blockage.
- In the initial post-operative phase, peristalsis may be increased, causing food to show up undigested in the ostomy bag. The client should be reassured that, in time, transit time will reduce, and with proper chewing, food should partially, if not fully, be broken down.
- Avoid consuming too much of one food, especially if it is a food that may cause an obstruction.
- After 6–8 weeks, most clients can return to a normal diet. However, it is advisable to consume 4–6 smaller meals per day rather than 2–3 large meals, to allow the digestive tract to better digest and absorb. This would be especially true for those with an ileostomy. Clients would be advised to decrease the evening meal if sleep is interrupted due to a full appliance bag in the middle of the night, or reduce fluid intake a few hours before sleep in the case of a urostomy.
- Avoid using straws, carbonated beverages or skipping meals as this may cause excess gas in the pouch.

Appendix J: Ostomy Teaching Flow Sheets

Ostomy – Teaching Flow Sheet - URINARY STOMAS

Knowledge Goals: Complete all steps within 6 weeks post-operatively

This chart will help the Patient and the Nurse track progress and learning needs pre- and post- operatively.

Patient understanding of this process:

A = Able to understand/describe R = Requires reinforcement Unable to understand ☐ (indicate in variance)

OR Date: _____ DISCHARGE Date: _____

Knowledge Goals	Pre-Op	In Hospital	Home Week 1	Home Week 2	Home Week 3	Home Week 4	Home Week 5	Home Week 6
1. Discussed feelings about surgery and ostomy								
2. Reviewed resources/support groups								
3. Reviewed anatomy and physiology of GU Tract before/after surgery								
4. Reviewed type of surgery and ostomy								
5. Reviewed ostomy supplies and how to facilitate funding								
6. Management and prevention of urinary odour								
7. Reviewed diet and fluid requirements								
8. Signs and symptoms of urinary tract infection								
9. How to obtain urine specimen if UTI suspected								
10. Management of night drainage system								
11. Change in stoma size x 6 weeks								
12. Peristomal skin conditions and management								
13. Bathing and showering								
14. Return to activity								
15. Socializing, returning to work/school								
16. Travelling								
17. Intimacy and sexuality								
18. Describe pouching system change regime								
Other								

Ostomy – Teaching Flow Sheet - URINARY STOMAS - Continued

Management Procedures: Complete all steps within 6 weeks post-operatively

Enterostomal Therapy Nurse/Hospital: _____ Telephone: _____

Level of patient independence: **D** = Dependent **A** = Assistance Required **I** = Independent

In-hospital: minimum requirement, independence with #1–4 prior to discharge. Ideally, #1–20 practiced with support prior to discharge
At home: maintains independence with #1–4; goal of independence with #5–20 by week 4–6

Management Procedures	Pre-Op	In Hospital	Home Week 1	Home Week 2	Home Week 3	Home Week 4	Home Week 5	Home Week 6
1. Look at/touch stoma								
2. Empty pouch								
3. Connect/disconnect night drainage system								
4. Cleanse night drainage system								
5. Gather/prepare supplies for routine change								
6. Remove pouching system								
7. Cleanse stoma and peristomal skin								
8. Inspect and describe stoma and peristomal skin condition								
9. Remove peristomal hair if necessary								
10. Measure stoma								
11. Trace pattern on back of flange or mold flange (if using cut-to-fit)								
12. Cut/mold opening in flange								
13. Add barrier rings to back of flange (if using)								
14. Check if skin is clean and dry								
15. Place flange on skin								
16. Attach pouch to flange (if using 2-piece)								
17. Close tap								
18. Attach ostomy belt (if using)								
19. Discard used supplies								
Other								

Ostomy – Teaching Flow Sheet - FECAL STOMAS

Knowledge Goals: Complete all steps within 6 weeks post-operatively

This chart will help the Patient and the Nurse track progress and learning needs pre- and post-operatively.

Patient understanding of this process:

A = Able to understand/describe **R** = Requires reinforcement **Unable to understand** ☐ (indicate in variance)

OR Date: _____ DISCHARGE Date: _____

Knowledge Goals	Pre-Op	In Hospital	Home Week 1	Home Week 2	Home Week 3	Home Week 4	Home Week 5	Home Week 6
1. Discussed feelings about surgery and ostomy								
2. Reviewed resources/support groups								
3. Reviewed anatomy and physiology of GI Tract before/after surgery								
4. Reviewed type of surgery and ostomy								
5. Reviewed ostomy supplies and how to facilitate funding								
6. Management and prevention of gas and odour								
7. Reviewed diet and fluid requirement								
8. Signs/symptoms of obstruction and management								
9. Signs/symptoms of diarrhea and dehydration								
10. Signs/symptoms of constipation								
11. Change in stoma size x 6 weeks								
12. Peristomal skin conditions and management								
13. Bathing and showering								
14. Return to activity								
15. Socializing, returning to work/school								
16. Travelling								
17. Intimacy and sexuality								
18. Describe pouching system change regime								
Other								

Ostomy – Teaching Flow Sheet - FECAL STOMAS - Continued

Management Procedures: Complete all steps within 6 weeks post-operatively

Enterostomal Therapy Nurse/Hospital: _____ Telephone: _____

Level of patient independence: **D** = Dependent **A** = Assistance Required **I** = Independent

In-hospital: minimum requirement, independence with #1–4 prior to discharge. Ideally, #1–20 practiced with support prior to discharge.
At home: maintains independence with #1–4; goal of independence with #5–20 by week 4–6.

Management Procedures	Pre-Op	In Hospital	Home Week 1	Home Week 2	Home Week 3	Home Week 4	Home Week 5	Home Week 6
1. Look at/touch stoma								
2. Empty pouch								
3. Release gas from pouch								
4. Add deodorant drops to pouch (optional)								
5. Gather/prepare supplies for routine change								
6. Remove pouching system								
7. Cleanse stoma and peristomal skin								
8. Inspect and describe stoma and peristomal skin condition								
9. Remove peristomal hair if necessary								
10. Measure stoma								
11. Trace pattern on back of flange or mold flange (if using cut-to-fit)								
12. Cut/mold opening in flange								
13. Add paste or barrier rings to back of flange (if using)								
14. Check if skin is clean and dry								
15. Place flange on skin								
16. Attach pouch to flange (if using 2-piece)								
17. Close pouch tail with clip or integrated closure								
18. Attach ostomy belt (if using)								
19. Discard used supplies								
Other								

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Acknowledgements: Toronto Central CCAC - Joanne Greco, Director, Client Services; Toronto Central CCAC - Dipti Purbhoo, Manager, Client Services; Toronto Central CCAC - Raquel Lashley, Care Coordinator; SEHC Metro Toronto - Maureen Cooling, RN, ET; Spectrum Health Care - Holly Murray, RN, BScN, WOCN; University Health Network - Debra Johnston, RN, BScN, ET; University Health Network - Claudia Ganson, RN, BScN, ET; ParaMed Home Health Care - Estrella Mercurio, RN, BScN, ET; Toronto East General Hospital - JoAnne McKeown, RN, BScN, WOCN; St. Michael's Hospital - Jo Hoeflok, RN, BSN, MA, ET, ACNP, CGN (C), Sunnybrook Health Sciences Centre - Debbie Miller, RN, BScN, MN, ET; Ostomy Toronto - Carol Roda.



Appendix K: Ontario Chapter, United Ostomy Association of Canada

Belleville, Quinte West & Area Chapter
p. 613-399-3010

Brantford & District Ostomy Association
p. 519-752-5037

Halton Peel Counties
p. 905-542-2386

Hamilton & District Ostomy Association
p. 905-389-8822

Kitchener/Waterloo Area Ostomy Chapter
p. 519-894-4573

Kawartha District Chapter
p. 705-292-9910

London & District Ostomy Association
p. 515-641-2782

Niagara Ostomy Association
p. 905-646-2228

North Bay Ostomy Association
p. 705-474-8600, ext. 2065

Oshawa & District Ostomy Association
p. 905-665-1711, ext. 558

United Ostomy Support Group, Ottawa Inc.
p. 613-447-0361

Sarnia/Lambton Chapter
p. 519-344-9060

Stratford & District Ostomy Association
p. 519-273-4327

Sudbury & District Ostomy Association
p. 705-693-3847

UOAC Sault Ste. Marie Chapter
p. 705-759-4940

Thunder Bay (Sleeping Giant)
p. 807-344-7736

Ostomy Toronto
p. 416-596-7718

Windsor & District Ostomy Association
p. 519-727-0488

For additional Chapter information (websites, contact person) refer to:
United Ostomy Association of Canada Inc. www.ostomycanada.ca

Appendix L: Resource Information

Organization	Resource Description
Bladder Cancer “Webcafe” http://blcwebcafe.org	Online resource for people diagnosed with bladder cancer and those who care for them
Canadian Association of Enterostomal Therapy 1720 ch Norway Town of Mount Royal, Québec, H4P 1Y2 p. 1-888-739-5072 www.caet.ca	Education booklets online (colostomy, ileostomy, urostomy)
Canadian Cancer Society p. 1-888-939-3333 www.cancer.ca	Educational material online (e.g., information on types of cancer; available in numerous languages)
Canadian Society of Intestinal Research p. 1-866-600-4875 www.badgut.com	Educational material online (e.g., symptoms, treatment, research, support groups available)
Cancer Care Ontario 620 University Avenue Toronto, Ontario, M5G 2L7 p. 416-971-9800 www.cancercare.on.ca	Educational material online (e.g., prevention, screening for various types of cancer; services available in Ontario)
Colorectal Cancer Association of Canada 60 St. Clair Avenue East Suite 204 Toronto, Ontario, M4T 1N5 p. 416-920-4333 www.colorectal-cancer.ca	Educational material online (e.g., screening, treating, nutrition, research)
Crohn’s & Colitis Foundation of Canada 60 St. Clair Avenue, East, Suite 600 Toronto, Ontario M4T 1N5 www.cafc.ca	Educational material online (e.g., Crohn’s Disease, Colitis, nutrition, sexuality)
Friends of Ostomates Worldwide – Canada 19 Stonehedge Park Ottawa, Ontario, K2H 8Z3 www.fowcanada.org	Non-profit organization operated by volunteers. Sends supplies and literature to countries around the world
Gay and Lesbian Ostomates (GLO) Network www.glo-uooa.org	Support group for gay/lesbian/bisexual ostomates, their partners, family, caregivers and friends

Organization	Resource Description
International Ostomy Association www.ostomyinternational.org	An international association, run by ostomates, to provide information and management guidelines to member associations, to help form new ostomy associations, and advocate on all ostomy-related matters and policies.
Krames Health and Safety Education Product Catalogue Superior Medical Limited 520 Champagne Drive Toronto, Ontario, M3J 2T9 www.superiormedical.com	Education booklets for purchase for organizations (colostomy, ileostomy, urostomy)
Mount Sinai Hospital www.mountsinai.on.ca	Information on “Pelvic Pouch Procedure”
Ostomy Toronto 344 Bloor Street West, Suite 501 Toronto, Ontario, M5S 3A7 p. 416-596-7718 www.ostomytoronto.com	Educational material online (e.g., prevention, screening for various types of cancer; services available in Ontario)
Ostomy Resource Centre Toronto, Ontario p. 416-598-7718	Offer personal support, counselling, ostomy literature and video viewing
United Ostomy Associations of America p. 1-800-826-0826 www.uoaa.org	Educational material online (e.g., continent urostomy guide; ileoanal pouch, intimacy/sexuality and ostomy)
United Ostomy Association of Canada Inc. 344 Bloor St. West, Suite 501 Toronto, Ontario, M5S 3A7 www.ostomycanada.ca	Order educational material online
World Council of Enterostomal Therapists www.wceten.org	An international association to provide an identity for those concerned with the care of people with stomas; to provide the opportunity for members to meet for the purpose of discussing common interests related to enterostomal therapy; to promote activities which will assist members engaged in enterostomal therapy to increase their knowledge and enhance their contribution to the subject of stoma therapy; and to promote increased awareness in others of the role and contribution of the WCET

Ostomy Manufacturers (Canadian Head Offices)

- Multiple resources available for nurses and clients (e.g., videos/DVDs, magazines, booklets, literature, ostomy products).
- Samples can be obtained by calling the manufacturer(s).

<p>Coloplast Canada Corporation 3300 Ridgeway Drive, Unit 12 Mississauga, Ontario, L5L 5Z9 p. 1-888-880-8605 www.coloplast.ca</p>	<p>Convatec 2365 Cote-de-Liesse Montréal, Québec, H4N 2M7 p. 1-800-465-6302 www.convatec.com</p>
<p>Hollister Incorporated 95 Mary Street Aurora, Ontario, L4G 1G3 p. 1-800-263-7400 www.hollister.com</p>	<p>Nu-Hope Laboratories, INC. www.nu-hope.com • hernia belts, ostomy products & accessories</p>

Ostomy Clothing and Accessories

<p>Colo-majic Distribution Canada Ltd. 2892 McGill Crescent Prince George, British Columbia, V2N 1Z6 p. 1-866-611-6028 www.colostomymajic.com • flushable pouch liners for non-septic systems</p>	<p>Intimate Moments Apparel www.intimatemomentsapparel.com</p>
<p>Weir Comfees 89A High Street P.O. Box 1088 Sutton, Ontario, L0E 1R0 p. 1-866-856-5088 www.weircomfees.com</p>	<p>White Rose Collection www.whiterosecollection.com</p>

Financial Resources

Northern and Indian Affairs

infoPubs@ainc-inac.gc.ca

p. 1-800-567-9604

Ontario Provincial Government

Assistive Devices Program (ADP)

p. 1-800-268-6021

p. 416-327-8804

www.health.gov.on.ca/english/public/forms/form_menus/adp_fm.html

- For permanent ostomies only
- Forms online
- Only for Ontario residents

Provincial governments

- Contact to determine what funding might be available

Private insurance plans

- Contact your provider to determine what may be covered

Veteran's Affairs Canada

p. 1-866-522-2122 (English)

information@vac-acc.gc.ca

Appendix M: Sample Ostomy Care Form

SURGERY

Surgical procedure _____
 Surgeon _____
 Date of surgery _____
 Further surgery anticipated:
 Yes ☐ No ☐ Unknown ☐

TYPE OF OSTOMY

Ileostomy ☐ Colostomy ☐
 Urostomy ☐
 End ☐ Loop ☐
 Mucous fistula ☐
 Temporary ☐ Permanent ☐
 Unknown ☐
 Rod ☐ Stents (x) ☐ Catheter ☐
 Date to D/C rod _____

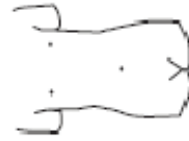
By who _____

FUNDING

ADP Form completed: Yes ☐ No ☐
 (ADP not for temporary stomas)
 Private Insurance: Yes ☐ No ☐
 Financial Support: DVA ☐ DIA ☐
 HIN ☐ ODSP ☐ Employer ☐
 WSIB ☐ Claim # _____
 Other _____

STOMA SIZE/ CONSTRUCTION

Size _____
 Protruding ☐
 Retracted ☐ Flush ☐
 Oval ☐ Round ☐
 Necrosis ☐ Stenosis ☐
 Mucosal Sloughing ☐
 Other _____



EFFLUENT

Stool: Liquid ☐ Pasty ☐ Thick ☐ Formed ☐
 Urine: Clear ☐ Mucus ☐ Sanguineous ☐

PERISTOMAL SKIN

Intact ☐ Red ☐ Moist ☐ Rash ☐
 Mucocutaneous separation ☐
 Other _____
 Interventions: _____

MUCOUS FISTULA CARE

Dressing daily ☐ Pouch ☐ # _____

FREQUENCY OF APPLIANCE CHANGE

Once/week ☐ Twice/week ☐
 Other _____

INDEPENDENCE WITH CARE

Pouch emptying:
 Independent ☐ Requires assistance ☐
 Caregiver dependent ☐
 Flange/ pouch change:
 Independent ☐ Requires assistance ☐
 Caregiver dependent ☐
 Physical Impairments/Limitations ☐

DIET

Regular diet ☐ (for Colo and Uro)
 Post ileostomy for _____ weeks ☐
 Hydrations fluids:
 Minimum 1.5 L/day ☐
 Minimum 2 L/day ☐
 Other _____

ALLERGIES TO PRODUCTS

Yes ☐ No ☐

MEDICATIONS

(for ileostomies only)
 No slow release tablets ☐
 No enteric coated tablets ☐
 No laxatives ☐

SUPPLIER

Hollister ☐ ConvaTec ☐ Coloplast ☐
 Other _____

Type: _____

1-piece ☐ 2-piece ☐

Closure type: _____

Clip ☐ Integrated ☐

Flange: _____

Flat # _____

Convex # _____

Pouch: _____

Drainable # _____

Closed end # _____

Urinary # _____

Urinary night set-up # _____

Quantity: _____

5 flanges ☐ 10 pouches ☐

ACCESSORIES

Paste # _____
 Belt # _____
 Powder # _____
 Barrier rings # _____
 Other _____

OVERALL ADAPTATION

Physical Activity:
 No lifting (over 5 lbs) /pulling/pushing
 for 6 weeks ☐
 Sexuality:
 Discussed ☐ N/A ☐

RESOURCES

Ostomy teaching booklet ☐
 Travel Tips ☐ Diet Instructions ☐
 Discharge kit ☐ Ostomy Toronto ☐
 List of retailers ☐ Resource guide ☐
 Referral to ostomy visitor ☐

Completed by (print)

Signature

Phone

Date

ADDRESSOGRAPH

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Appendix N: Special Needs and Care Strategies

Client with Special Needs	Care Strategy/Device/Learning Resource
Pediatric	<ul style="list-style-type: none"> • Toy or doll wearing an ostomy pouch • Photographs of other children with an ostomy • Storyboards, websites, 'chat-rooms' • Youth support groups <p>(Bray & Saunders, 2006)</p>
Impaired Vision	<ul style="list-style-type: none"> • Large print • Audio instructions • Customized lighting, stands and magnifying mirrors to visualize stoma • Two-piece pouch with 'snap' for auditory cueing of application • Tape on abdomen to mark skin barrier placement • Pre-cut ostomy skin barrier or pouch • Tactile cueing of stoma location and skin barrier placement <p>(Benjamin, 2002)</p>
Wheelchair Bound	<ul style="list-style-type: none"> • Pre-operative marking while client is in the wheelchair • Closed versus drainable pouch to manage access to the toilet • Drainage tube extensions for urostomy and high output fecal ostomy • Extended-wear skin barrier products <p>(Turnbull, 2007)</p>
Pregnancy	<ul style="list-style-type: none"> • Collaborative antenatal and postnatal care between OB/Gyn and GI • Customized lighting, stands and magnifying mirrors to visualize stoma • Flexible skin barrier and/or pouch to accommodate growing abdomen • Extra adhesive or skin barrier film to secure pouch because of 'nonstick' hormonal skin changes • Pre-cut skin barriers to avoid stoma trauma and bleeding due to increased vascularity of the stoma • Adjust skin barrier stoma opening frequently to accommodate size of stoma with growth of abdomen • Abdominal belt for additional support <p>(Aukamp & Sredl, 2004)</p>
Learning Disabled, including illiterate	<ul style="list-style-type: none"> • Makaton pictures, signs and symbols for communication www.makaton.org/about/ss_how.htm • Use of real objects and photographs to convey message • Speech pathologist, play therapists, drama therapist to assist with the translation of the information <p>(Black & Hyde, 2004)</p>

Appendix O: Ostomy Product List

Generic Categories	Description of products	Indications	Contraindications/Precautions
Pouching systems	<ul style="list-style-type: none"> • One piece – skin barrier and pouch are as one • Two piece – skin barrier and pouch adheres or snaps onto skin barrier 	<p>Factors to consider in selecting pouching system</p> <ul style="list-style-type: none"> • Type & consistency of effluent • Stoma size & construction • Manual dexterity & visual acuity • Level of physical activity • Financial resources • Preferences 	
Skin barrier	<p>Made of synthetic polymers or natural material (karaya) to protect the skin from effluent. Can be:</p> <ul style="list-style-type: none"> • Flat or convex • Regular or extended wear • With or without tape 	<ul style="list-style-type: none"> • Mandatory to protect the peristomal skin • Poorly protruding stomas: Convex barriers may be effective • Sensitive skin or skin allergies: Tapeless barrier or karaya barriers may be effective 	<ul style="list-style-type: none"> • Use convexity with caution on post-operative ostomies or parastomal hernias
	<ul style="list-style-type: none"> • Floating, stationary or no flange • Pre-cut or cut-to-fit or moldable opening • Available in size adapted to premature neonate and children • Some pediatric skin barriers are available without starter hole 	<ul style="list-style-type: none"> • New post-operative clients: Floating barriers help to reduce pressure and pain on the abdomen when attaching the pouch to the barrier • Cut to fit barrier may be appropriate with clients with poor dexterity 	<ul style="list-style-type: none"> • Precut barriers are not recommended for oval stomas • Paediatric skin barriers have a tendency to melt more rapidly; are more flexible, and less resistant
Pouch	<p>Various sizes including neonates and children's sizes</p> <ul style="list-style-type: none"> • Drainable • Closed end • High output • Clip, Velcro closure or spout • Clear, opaque • Gas filter 	<ul style="list-style-type: none"> • Dependent on personal choice • Urostomy systems have an anti-reflux mechanism to prevent urine backing up • Filters can be beneficial for clients with increased flatus • Special adaptors required for high-output and urinary pouches when connecting to straight drainage 	<ul style="list-style-type: none"> • Filters can become clogged when effluent is liquid; Filters not recommended immediately post-op • Opaque pouches not recommended immediately post-op

Generic Categories	Description of products	Indications	Contraindications/ Precautions
Powder	<ul style="list-style-type: none"> • Powder made from skin barrier material 	<ul style="list-style-type: none"> • Absorbs moisture from weepy peristomal skin to promote barrier adhesion • Assists in the removal of paste • Fills mucocutaneous separation defects 	<ul style="list-style-type: none"> • Not required on intact peristomal skin
Fillers	<ul style="list-style-type: none"> • Paste* • Strip paste • Ring • Rings: <ul style="list-style-type: none"> • Pre-cut • Moldable • Convex 	<ul style="list-style-type: none"> • Used to fill skin creases and uneven skin surfaces • Decreases leakage of effluent under the barrier • To add convexity to a barrier • * Paste is a filler, not glue 	<ul style="list-style-type: none"> • Most pastes contain alcohol; Cautious use on denuded skin • Use alcohol-free paste in premature neonates
Sealants	<ul style="list-style-type: none"> • Wipes • Sprays 	<ul style="list-style-type: none"> • In clients who have known sensitivity to adhesive products • Skin conditions such as eczema • Skin changes due to chemotherapy • Prevent skin stripping • Can be used to waterproof the skin barrier 	<ul style="list-style-type: none"> • Contraindicated with extended-wear barriers • Contraindicated on denuded skin unless alcohol-free products • Non-alcohol products are recommended on premature neonates
Adhesive removers	<ul style="list-style-type: none"> • Wipes 	<ul style="list-style-type: none"> • Build up of adhesive • Hypersensitive skin: pain with product removal 	<ul style="list-style-type: none"> • Denuded skin • Premature neonates
Belt	<ul style="list-style-type: none"> • Available in adult/pediatric sizes 	<ul style="list-style-type: none"> • To increase barrier stability • For clients who are physically active and for intimate situations if needed 	<ul style="list-style-type: none"> • Assure appropriate fit • Avoid tight fit
Hernia belt	<ul style="list-style-type: none"> • Available in different sizes 	<ul style="list-style-type: none"> • Peristomal hernias 	<ul style="list-style-type: none"> • Cautious use with convexity
Deodorant	<ul style="list-style-type: none"> • Gels • Liquids 	<ul style="list-style-type: none"> • Reduces odour of stools in the pouch • Deodorizes straight drainage systems (fecal and urine) 	<ul style="list-style-type: none"> • These products are for pouch use ONLY
Stoma protectors		<ul style="list-style-type: none"> • Contact sports • Hazardous working conditions 	

Appendix P: Recommended Ostomy Educational Program Content for Health-Care Providers

Health Care Provider	Curriculum	Orientation
Personal Support Worker (PSW)	<ol style="list-style-type: none"> 1. The following should be taught at an information level (Bloom's Taxonomy) so that the PSW can describe the effect of surgery as it relates to ostomy functioning <ol style="list-style-type: none"> a. Basic anatomy: <ol style="list-style-type: none"> i. Genitourinary system ii. Gastrointestinal system b. Basic surgical procedures resulting in an ostomy 2. The following should be taught at an information level (Bloom's Taxonomy) with the ability to report abnormalities to a Regulated Health Professional <ol style="list-style-type: none"> a. Recognition of the normal and common abnormal stoma b. Recognition of normal and abnormal stoma output for ileostomy; colostomy; urostomy c. Recognition of normal and abnormal peristomal skin d. General understanding of the effect of diet on stoma output e. General overview of types of containment products and auxiliary products such as paste, powder, skin barrier, adhesive remover, etc f. The role of the ETN, RN and RPN in ostomy care 	<p>The following should be taught at a comprehension and application level as they relate to a specific client:</p> <ol style="list-style-type: none"> 1. Describe disease and surgery leading to the ostomy 2. Predict the kind of output the client will have 3. Use pre-determined assessment tools to ensure that the appliance is the correct fit 4. Remove old appliances 5. Assess wear of appliance 6. Prepare new appliance 7. Apply appliance 8. Review procedures with client 9. Report abnormalities to a specifically designated person

Health Care Provider	Curriculum	Orientation
<p>REGISTERED PRACTICAL NURSE (RPN)</p> <p>The Registered Practical Nurse is accountable for his/her knowledge skill and judgment and works in collaboration with other members of the health-care team; cares for stable, less complex clients with more predictable outcomes.</p> <p>The Registered Practical Nurse possesses a focused or basic foundation of knowledge in clinical practice, decision-making, critical thinking, research utilization and leadership.</p> <p>The RPN will have greater autonomy when caring for a client with less complex conditions. As client complexity increases, there is a corresponding</p>	<p>3. The following should be taught at the level of application (Bloom's Taxonomy)</p> <ul style="list-style-type: none"> a. Supporting normal hygiene for client with an ostomy b. Assisting with dressing for a client with an ostomy c. Appropriate preparation of an appliance that has been predetermined by a Regulated Health Professional or client d. Removal of appliance e. Application of a pre-determined appliance f. Appropriate discarding of appliance g. How to order appliance or obtain information about ordering 	<ul style="list-style-type: none"> • The policies and procedures in the facility related to ostomy • The usual types of ostomy clients received in the facility • Documentation tools • The types of products available • How to order products on and off formulary • How to consult the ETN • Discussion of role of other care givers e.g., PSW • Hands on practice with planning and implementing the care of a client with an ostomy either through case study or client assignment
	<p>1. The following should be taught at a comprehension level</p> <ul style="list-style-type: none"> a. General surgical options for clients undergoing ostomy surgery <ul style="list-style-type: none"> i. Locate the region of the bowel ii. Discuss the expected effects on the stool depending on the region b. Describe the potential effect of diminished transit time on medications. <ul style="list-style-type: none"> i. Potential for adverse reactions to medications either being absorbed too quickly or not being absorbed <p>2. The following should be taught at an application level:</p> <ul style="list-style-type: none"> a. Match the appropriate product to the client's 	

Health Care Provider	Curriculum	Orientation
<p>increase in the need for RPNs to consult with RNs, supervisor or physicians.</p> <p>Complexity of client care needs (includes biopsychosocial, cultural, emotional and health learning needs)</p> <p>Autonomous RPN Practice:</p> <ul style="list-style-type: none"> • Care needs well defined and established • Coping mechanisms and support systems in place and effective • Health condition well controlled or managed • Little fluctuation in condition over time • Client is an individual, family or group <p>Predictability</p> <p>Autonomous RPN Practice:</p> <ul style="list-style-type: none"> • Predictable outcomes (timing and nature) (e.g., client with paraplegia whose care is well established and outcomes predictable) • Predictable changes in health condition <p>Risk of negative outcomes in response to care</p> <p>Autonomous RPN Practice:</p> <ul style="list-style-type: none"> • Predictable, localized and manageable responses • Signs and symptoms are obvious <p>College of Nurses of Ontario <i>Practice Guideline: Utilization of RNs and RPNs</i></p>	<p>needs for uncomplicated clients</p> <ul style="list-style-type: none"> b. The selection and application of a broad variety of ostomy products <p>3. The following should be taught at an analysis level:</p> <ul style="list-style-type: none"> a. The anatomy of the Genitourinary and Gastrointestinal systems <ul style="list-style-type: none"> i. Summarize the consequences of the various surgeries to normal function as a result of surgery location b. The anatomy, physiology and function of the Integumentary system <ul style="list-style-type: none"> i. Detect client specific factors affecting the integumentary system related to ostomy <p>4. The following should be taught at a synthesis level:</p> <ul style="list-style-type: none"> a. Perform a focused assessment of the stoma <ul style="list-style-type: none"> i. Differentiate normal from abnormal stoma presentation b. Perform a focused assessment of stoma output <ul style="list-style-type: none"> i. Recognition of normal and abnormal stoma output for ileostomy; colostomy; urostomy c. Perform a focused assessment of the periwound skin <ul style="list-style-type: none"> i. Differentiate normal from abnormal ii. Identify common peristomal skin reactions iii. Propose standard treatment protocols for skin reactions iv. Propose the indications for and use of integumentary products used routinely in ostomy care 	

Health Care Provider	Curriculum	Orientation
<p>Registered Nurse (RN)</p> <p>“The RN recognizes, analyzes and interprets deviations from predicted client response(s) and modifies plan of care autonomously.” The RN can “order” another RN or an RPN to perform care related to wound care. The curriculum for both RPN and RN is similar but the RN must have a deeper understanding.</p> <p><i>College of Nurses Practice Guideline: Utilization of RNs and RPNs</i></p>	<p>5. The following should be taught at an evaluation level.</p> <ul style="list-style-type: none"> a. Evaluate the effect of diet on stoma output <ul style="list-style-type: none"> i. Recommend dietary changes for diarrhea, gas, constipation b. Choose the appropriate appliances for a stable, uncomplicated client <ul style="list-style-type: none"> i. Evaluate the effectiveness of these appliances 	<ul style="list-style-type: none"> • The policies and procedures in the facility related to ostomy • The types of products available • How to order products on and off formulary • How to consult the ETN • Discussion of role of other care givers e.g., PSW • Hands on practice with planning and implementing the care of a client with an ostomy
	<p>1. The following should be taught at a application level</p> <ul style="list-style-type: none"> a. Interpret the relevance of the different general surgical options for clients undergoing ostomy surgery <ul style="list-style-type: none"> i. Locate the region of the bowel ii. Review specific surgeries and relate the anatomy to the function or loss of function (B12, affect on nutrition, etc.) iii. Predict the effects on the stool depending on the region b. Interpret the potential effect of diminished transit time on specific medications. <ul style="list-style-type: none"> i. Potential for adverse reactions to medications either being absorbed too quickly or not being absorbed <p>2. The following should be taught at an analysis level:</p> <ul style="list-style-type: none"> a. Appraise the appropriateness of the product in use related to the client's need b. The selection and application of a broad variety of ostomy products 	

Health Care Provider	Curriculum	Orientation
	<p>3. The following should be taught at a synthesis level:</p> <ul style="list-style-type: none"> a. Perform a focused assessment of the stoma i. Differentiate normal from abnormal stoma presentation ii. Perform a focused assessment of stoma output iii. Recognition of normal and abnormal stoma output for ileostomy; colostomy; urostomy b. Perform a focused assessment of the periwound skin <ul style="list-style-type: none"> i. Differentiate normal from abnormal ii. Identify common peristomal skin reactions iii. Propose standard treatment protocols for skin reactions iv. Propose the indications for and use of integumentary products used routinely in ostomy care <p>4. The following should be taught at an evaluation level:</p> <ul style="list-style-type: none"> a. The anatomy, physiology and function of the Integumentary system: <ul style="list-style-type: none"> i. Assess client specific factors affecting the integumentary system related to ostomy ii. Choose appropriate treatments for peristomal skin conditions. b. Evaluate the effect of diet on stoma output <ul style="list-style-type: none"> i. Recommend dietary changes for diarrhea, gas, constipation 	

Appendix Q: Erikson's Developmental Stages

CRISIS INTERVENTION & ERIKSON'S DEVELOPMENTAL STAGES

Stage	Crisis	Common Problems	Desired Outcome	Interventions
Infancy	Trust Vs Distrust	<ul style="list-style-type: none"> • Mother fails to bond • Father fails to join the family 	Children develop a sense of trust when caregivers provide reliability, care, & affection	<ul style="list-style-type: none"> • Teach parenting skills • Both parents involved in care
Toddler	Autonomy Vs Self-Doubt	<ul style="list-style-type: none"> • Parents become over-controlling & do not allow independence 	Children need a sense of control over physical skills & independence. Success leads to autonomy, failure results in shame & doubt	<ul style="list-style-type: none"> • Parents should encourage some child self-control • Balance limits & independence
Preschool	Initiative Vs Guilt	<ul style="list-style-type: none"> • Have difficulty playing with other children & initiating play • Overly competitive & won't share 	Children need to begin asserting control over the environment. Success in this stage leads to a sense of purpose. Children who exert too much power experience disapproval, resulting in a sense of guilt	<ul style="list-style-type: none"> • Role model at home & encourage appropriate interaction with family • Teach submission to authority without humiliating the child
Childhood	Industry Vs Inferiority	<ul style="list-style-type: none"> • Child fails to master skills 	Children need to cope with new social & academic demands. Success leads to a sense of competence, & failure results in inferiority	<ul style="list-style-type: none"> • Encourage a level of competence & praise & keep skills & tasks age appropriate
Adolescence	Identity Vs Role Confusion	<ul style="list-style-type: none"> • Parents fail to increase responsibility & teen fails to manage increase in adult-like responsibility • Fails to shift needs from parents to peers 	Teens need to develop a sense of self and personal identity. Teens need decision-making power and responsibility. Success leads to an ability to stay true to oneself	<ul style="list-style-type: none"> • Discussion centred on negotiation & compromise • Teen needs social interaction with peers & to be heard • Introduce teen to financial & physical responsibility & reality of adulthood

Stage	Crisis	Common Problems	Desired Outcome	Interventions
Young Adult	Intimacy Vs Isolation	<ul style="list-style-type: none"> • Fail to form intimate relationships • Fail economic & social independence 	Failure leads to role confusion & weak sense of self; Young adults need to form intimate, loving relationships. Success leads to relationships, while failure results in loneliness & isolation	<ul style="list-style-type: none"> • More social adaptation needed as enter adult world with adult roles & responsibilities • Parents to advise only
Middle Adult	Generativity Vs Stagnation	<ul style="list-style-type: none"> • Children leave – marriage collapses • Grand-parenting skills are poor 	Adults need to feel useful, to create & nurture things that will outlast them, often accomplished by having children	<ul style="list-style-type: none"> • Marriage counseling • Career change • Set boundaries with their children
Older Adult	Ego-Integrity Vs Despair	<ul style="list-style-type: none"> • Stops participating • Anger & shame if dependent 	Older adults look at their life feeling fulfillment. Success at this stage leads to feelings of wisdom	<ul style="list-style-type: none"> • Encourage volunteerism • Focus on the positives in life • Family therapy

(Kandel, 1999)

Appendix R: Recognized Educational Programs

Country	Website	Programs
Canada	www.caet.ca	<ul style="list-style-type: none"> • Canadian Association for Enterostomal Therapy – Enterostomal Therapy Nursing Education Program (CAET-ETNEP)
United States of America	www.wocn.org	<ul style="list-style-type: none"> • Cleveland Clinic – R.B. Turnbull, Jr. School, Cleveland, Ohio • Emory University Wound, Ostomy and Continence Nursing Education Center • Harrisburg Area WOC Nursing Education program (Wick's) • La Salle University School of Nursing • University of Texas, M.D. Anderson Cancer Center, WOCNEP • University of Virginia Graduate Program in WOC Nursing • WebWOC Nursing Education Program

Appendix S: Charter of Ostomates' Rights

This Charter of Ostomates' Rights presents the special needs of this particular group and the care they require. They have to receive the information and care which will enable them to live a self-determined and independent life and to participate in all decision-making processes.

It is the declared objective of the International Ostomy Association that this CHARTER shall be realized in all Countries of the World.

The Ostomate shall:

- Receive pre-operative counselling to ensure that they are fully aware of the benefits of the operation and the essential facts about living with a stoma.
- Have a well-constructed stoma placed at an appropriate site, and with full and proper consideration of the comfort of the patient.
- Receive experienced and professional medical support, stoma nursing care and psychosocial support in the pre-operative and post-operative period both in hospital and in their community.
- Receive support and information for the benefit of the family, personal caregivers and friends to increase their understanding of the conditions and adjustments which are necessary for achieving a satisfactory standard of life with a stoma.
- Receive full and impartial information about all relevant supplies and products available in their Country.
- Have unrestricted access to a variety of affordable ostomy products.
- Be given information about their National Ostomy Association and the services and support which can be provided.
- Be protected against all forms of discrimination.
- Receive assurance that personal information regarding their ostomy surgery will be treated with discretion and confidentiality to maintain privacy; and that no information about their medical condition will be disclosed by anyone possessing this information, to an entity that engages in the manufacture, sales or distribution of ostomy or related products; nor shall it be disclosed to any person that will benefit, directly or indirectly, because of their relation to the commercial ostomy market without the expressed consent of the ostomate.

Issued by the IOA Coordination Committee, June 1993. Revised by World Council, June 1997, 2004, 2007.

Appendix T: Description of the Toolkit

Best practice guidelines can only be successfully implemented if there are: adequate planning, resources, organizational and administrative support as well as appropriate facilitation. In this light, RNAO, through a panel of nurses, researchers and administrators has developed the *Toolkit: Implementation of Clinical Practice Guidelines* based on available evidence, theoretical perspectives and consensus. The *Toolkit* is recommended for guiding the implementation of any clinical practice guideline in a health care organization.

The *Toolkit* provides step-by-step directions to individuals and groups involved in planning, coordinating and facilitating the guideline implementation. Specifically, the *Toolkit* addresses the following key steps in implementing a guideline:

1. Identifying a well-developed, evidence-based clinical practice guideline.
2. Identification, assessment and engagement of stakeholders.
3. Assessment of environmental readiness for guideline implementation.
4. Identifying and planning evidence-based implementation strategies.
5. Planning and implementing evaluation.
6. Identifying and securing required resources for implementation.

Implementing guidelines in practice that result in successful practice changes and positive clinical impact is a complex undertaking. The *Toolkit* is one key resource for managing this process. The *Toolkit* can be downloaded at www.rnao.org/bestpractices.

Notes

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