Caring for the Patient with a Fecal or Urinary Diversion in Palliative and Hospice Settings: A Literature Review

Charles Tilley, MS, ANP-BC, ACHPN, CCRN

**Abstract**

The number of people requiring palliative or hospice care who have a fecal or urinary diversion is increasing, but the literature about the number of persons with a stoma receiving end-of-life care, or research to help guide that care, is very limited. A broader review of the literature and clinical experience indicate that several progressive changes will affect the ability of persons with a stoma to provide self-care, including motor, sensory, vision, and cognitive deficits. It is important for the wound ostomy continence nurse (WOCN) to anticipate these changes and take steps to address them. The latter may include simplifying the equipment or accessories used and identifying and teaching caregivers how to manage the stoma or empty a continent diversion or neobladder. A thorough assessment and stoma care adjustment also are needed when peristomal complications such as a change in the abdominal plane, mucocutaneous separation, or caput medusa are observed. Medication absorption and its effect on fluid and electrolyte balances must be considered at all times, especially in persons with an ileostomy, and the elimination side effects of commonly used medications in the palliative and hospice care environment must be monitored and addressed. The Advanced Practice WOCN with knowledge about end-of-life care can help prevent complications and improve patient quality of life. Research is needed to increase understanding about the scope of these problems and best practices to address them and to understand the experience of patients with a stoma at end-of-life.

**Keywords:** ostomy, palliative care, hospice, complications, advanced practice nursing

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**Potential Conflicts of Interest:** none disclosed

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After an average lifespan of 77 years, most Americans will experience a slow, debilitating, progressive chronic disease that lasts an average of 3 years for women and 2 years for men until death. During this time, palliative care provided by skilled clinicians will help alleviate suffering.

The World Health Organization's (WHO) definition of palliative care is generally accepted: “Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual.” Palliative care is not dependent on prognosis and can be delivered concurrently curative treatment. This distinguishes palliative care from hospice care; the latter is a philosophy focused on terminally ill patients—ie, people no longer seeking curative treatments who have a life expectancy of 6 months or less.

The National Consensus Project for Quality Palliative Care contends the continuum of palliative care starts at the “Diagnosis of Serious Illness,” continues with “Life-Prolonging Therapy,” and concludes with initiation of the “Medicare Hospice Benefit” and death. It is imperative to appreciate this potentially lengthy gamut of care; many practitioners and laypeople perceive palliative care as a service reserved only for the actively dying.

Davis et al emphasized this central point: “Palliative care is integral throughout the course of advanced illness and is not reserved only for the brief care of the imminently dying.” This means that for millions of Americans, palliative care may be offered to lessen the impact of incapacitating illness and to improve quality of life at any point in their existence. Given this probability, there are future implications not only for advanced practice nurses in palliative care and hospice, but also for wound, ostomy, and continence specialists from...
all areas of practice who will likely care for clients at the end of their life in a variety of settings.

Information about the incidence of patients with an ostomy or continence-related problem in hospice is scarce. The 1999 National Home and Hospice Survey (conducted in 1996) reviewed 59,000 current and 393,000 discharged hospice patients to discern the presence of a urinary catheter, stoma, or incontinence issue. The numbers were staggering: 60% of the current and 80% of the discharged patients had incontinence, a urinary catheter, an ileostomy, or a colostomy.

Considering these statistics and the fact that the first of the 78 million baby boomers turned 60 years old on January 1, 2006, it is easy to see that these numbers may have doubled or tripled since 1996. At the same time, no published research specifically addresses the current prevalence, management, or quality-of-life aspects related to ostomy issues in men, women, and children facing life-limiting illness.

The implications for life-changing contributions by wound ostomy continence nurses (WOCNs), a newly recognized subspecialty within the American Nursing Association, to the rapidly expanding field of palliative care are at the same time infinite and daunting. The number of WOCNs currently practicing in hospice is unknown. The majority of WOCNs in the US practice in acute care, with numbers ranging from 35.6% in New England to 60.8% in the West North Central regions. Per the 2008 WOC Nursing Salary and Productivity Survey, outpatient and home care are the next largest practice sites identified; hospice and palliative care were not included as a survey choice. The very likely limited number of WOCNs in hospice and palliative care, coupled with the projected increase in this population over the next decade, is unsettling.

The purpose of this literature review is to explore the complex and often multifactorial etiology of ostomy-related concerns in palliative care and hospice and describe specific management strategies the WOCN may employ.

### Method

PubMed® and UpToDate® databases were searched for studies and systematic reviews on ostomy prevalence, complications, and management at end-of-life using the following medical subject headings (MeSH): ostomy, palliative care, hospice. The search spanned 40 years (1970 to 2010) of English-language literature, targeting meta-analyses, randomized controlled trials, retrospective studies, and systematic reviews. No studies specifically addressing these topics were found, so more general ostomy, palliative care, and hospice-related publications were used for use in this overview.

### Ostomy Care Challenges

Pouching change procedures for either one- or two-piece pouching systems can be complex and challenging and include essential tasks such as emptying and removing the pouching system, washing and drying the skin, measuring the stoma, putting on a new pouching system, and disposing of the used pouching system. As taxing as this process can be for an otherwise “well” person with a stoma, basic ostomy care, supply ordering, pouch disposal, and trouble-shooting leakages may represent an insurmountable challenge for persons with a life-limiting illness. Specifically, palliative care ostomy challenges may include the presence of motor, sensory, vision, and cognitive deficits, as well as peristomal complications and pharmacological considerations.

Motor and sensory deficits. An overview of the chronic and often lethal diseases the advanced practice nurse (APRN) will commonly encounter in palliative care and hospice, as well as their potential effect on the person with a stoma, must begin by reiterating the importance of obtaining complete patient history and performing a physical assessment. It is essential to obtain a meticulous individualized evaluation of the patient’s history of the present illness, past or current medical or surgical treatments, medications (including herbal, over-the-counter, and homeopathic remedies), and functional level. A psychosocial evaluation and an ostomy and/or continence assessment also must be performed.

For many persons living with chronic, debilitating illness or life-limiting disease, alterations in their physiological functioning and the often devastating sequelae of their treatment regimens may lead to motor and sensory deficits. Neuromuscular illness can affect people with stomas in numerous debilitating and often painful ways (see Table 1). Progressive neurodegeneration, peripheral neuropathies (from either disease process or treatment modality), and autoimmune diseases may interfere with a person’s ability to care for his/her stoma, requiring the expertise of the WOCN to help modify the care routine or teach the caregiver how to care for the stoma if accommodation is not possible. Key to ensuring adherence to the treatment plan and stoma health, as well as to maintaining the patient’s autonomy and self-esteem is the development of a realistic plan of care for the aesthetic is the development of a realistic plan of care for the palliative care or hospice patient.

<table>
<thead>
<tr>
<th>Key Points</th>
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<tbody>
<tr>
<td>• As the population ages, the number of persons who have undergone stoma, continent diversion, or neo-bladder surgery will increase.</td>
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<tr>
<td>• Unable to identify information to help the WOCN provide optimal stoma care for patients with increasing disability and/or receiving palliative or hospice care, the author reviewed the general literature in the context of commonly observed problems in clinical practice.</td>
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**Key Points**

- As the population ages, the number of persons who have undergone stoma, continent diversion, or neo-bladder surgery will increase.
- Unable to identify information to help the WOCN provide optimal stoma care for patients with increasing disability and/or receiving palliative or hospice care, the author reviewed the general literature in the context of commonly observed problems in clinical practice.
For patients with impaired motor skills secondary to disease or treatments (see Table 1), it is important to realistically assess patient functional status, enlist the help of a caregiver or staff members if the patient is institutionalized, and recommend options that simplify ostomy care. Velcro® pouches that eliminate the need to use clips, one-piece appliances, and two-piece pouches that can be attached to a skin barrier with one hand for easy applications may be suggested. Convatec’s® (Skillman, NJ) moldable technology also may be an option for persons with minimal manual dexterity, chronic metacarpal joint pain, or polyneuropathies of the hands. These skin barrier products do not need to be cut (eliminating the need to manage scissors), and they are molded to fit snugly against the stoma, facilitating adaption to changing stoma size and shape. Co-lostomy patients may consider using a disposable, closed-end pouch, thus eliminating the need for a clip, while urostomy patients may need to try various spouts and tabs to find the product easiest for them to use. The WOCN may need to refer a patient to occupational therapy to assist in teaching manual skills and to recommend needed adaptive devices.

A thorough assessment also may show that self-care is not possible. In this instance, caregiver possibilities must be explored for providing daily stoma care or, in the case of a continent diversion or neobladder, regularly-scheduled intubation. If this resource does not exist or is not available, home care agencies or long-term care placement may be necessary.

<table>
<thead>
<tr>
<th>Illness/treatment modality</th>
<th>Pathophysiology</th>
<th>Sequelae</th>
<th>General and stoma-specific considerations</th>
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<tbody>
<tr>
<td>Advanced Parkinson’s Disease</td>
<td>Loss of dopaminergic neurons and the appearance of Lewy bodies</td>
<td>Freezing, hypokinesis/akinesis, dyskinesias, and dystonia(^\text{10})</td>
<td>Careful assessment to ensure maximization of dopa-minergic agents. May necessitate collaboration with the prescribing neurologist</td>
</tr>
<tr>
<td>Multiple sclerosis (MS)</td>
<td>Multifocal plaques of demyelination within the central nervous system.(^\text{10}) If diagnosed under the age of 40 years, recurring episodes of neurologic impairment followed by periods of spontaneous remission are common</td>
<td>Spasticity</td>
<td>Spasticity is usually treated with baclofen or tizanidine. May respond to both pharmacologic and nonpharmacologic interventions. Consider caregiver training early in the disease process because recurring episodes may be sporadic and debilitating or increase in frequency with increasing age</td>
</tr>
<tr>
<td>Amyotrophic lateral sclerosis (ALS)</td>
<td>Loss of both upper motor neurons (UMN) in the motor cortex and lower motor neurons (LMN) in the brainstem and spinal cord(^\text{10})</td>
<td>Spasticity, slow movements, hyperreflexia, and poor dexterity are sequelae of UMN disease. Weakness, atrophy, reduced tone, and hyporeflexia are due to LMN involvement</td>
<td>5,000 new cases of this irreversible disease diagnosed each year, with an average lifespan post-diagnosis of 3 to 5 years.(^\text{10}) Persons with ALS and a stoma will need caregiver assistance, whether at home or in a long-term care setting, at some point in their lifespan</td>
</tr>
<tr>
<td>Stroke</td>
<td>May affect sensory or motor function and often both depending on location and extent of injury. May be ischemic (thrombotic, embolic), hemorrhagic (intracerebral, subarachnoid), or lacunar</td>
<td>Hemiparesis, Ataxia, Paresthesia</td>
<td>Presents the challenge of caring for a stoma with one, possibly the non-dominant, hand. Challenges utilizing or accessing toilet facilities. Inability to feel a clip or flange, or to recognize it as such (stereognosis)</td>
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**Table 1. Neuromuscular debilities**
### Vision Deficits

Vision deficits are common among palliative patients and are an often-overlooked complication of chronic illnesses. In ostomy care, compromised eyesight can greatly hinder the ability of the ostomate to measure the stoma for an appliance, note peristomal complications, or empty the pouch. Ultimately, the potential inability to perform self-care may encroach on the patient’s independence, which can negatively influence body image.

Diabetic retinopathy from advanced diabetes is the principle cause of impaired vision in patients between 25 and 74 years of age. Patient’s with chronic kidney disease (CKD), most commonly caused by diabetes, may suffer from diabetic retinopathy or may experience conjunctival erythema (the “red eyes of uremia”), which may be noted when corneal and conjunctival precipitation of calcium pyrophosphate is induced by high plasma phosphate levels. The WOCN also may encounter metastatic calcification in the eyes, associated

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</tr>
</thead>
<tbody>
<tr>
<td>Quadriplegia or paraplegia</td>
<td>Spinal cord trauma, spinal stenosis, or cord compression due to primary tumor or metastasis</td>
<td>Injuries from C4 through C7 may affect shoulder and arm musculature; C6 through C8 — forearm extenders and flexors; and C8 through T1 — hand musculature. Total cord transaction syndrome results in the loss of all types of sensation and motor function below the level of the lesion</td>
<td>May lack the physical coordination to perform majority of gross and/or fine motor skills needed to perform daily care, depending on level of injury. Focus on modifying a plan to accommodate abilities or teach caregiver ostomy care</td>
</tr>
<tr>
<td>Peripheral neuropathy</td>
<td>Common diseases causing polyneuropathies include diabetes, alcoholism, shingles, HIV/AIDS, hepatitis C, rheumatoid arthritis (RA), end-stage kidney or liver disease, and tumor invasion, as in brachial plexopathy commonly seen in metastatic lung cancer. Chemotherapy-induced peripheral neuropathy (CIPN) is a well-known side effect of cancer treatment</td>
<td>Symptoms may range in severity from minimal, transient numbness and tingling in the extremities to burning pain and lack of coordination</td>
<td>Must be diligent about pain control during acute flares or with end-stage disease. The loss of hand dexterity could impair the patient’s ability to apply and remove a clip, cut a pattern, or empty a pouch</td>
</tr>
<tr>
<td>Rheumatoid arthritis (RA)</td>
<td>Acute and chronic inflammation in the synovium associated with joint tissue destruction. Joint damage that results in disability often occurs early in disease (&lt;2 years). In one study, in less than 2 years post diagnosis, patients had joint space narrowing on plain radiographs of the hands and wrists and two thirds of patients had erosions. Although the course of RA varies and patients may have long clinical remissions or intermittent disease, the majority of patients have progressive disease that can lead to joint destruction and instability</td>
<td>Loss of joint mobility and dexterity, as well as crippling pain, accompany RA</td>
<td></td>
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with marked hypercalcemia. Rarely, the WOCN practicing in hospice may encounter patients with complete loss of sight; according to Tyler, “Profound uremia may rarely be complicated by transient cortical blindness.”

Although rare, primary brain tumors, such as ocular melanomas or optic pathway gliomas, can cause local destruction of structures in the eye or the supporting anatomy. Fungating wounds of the head and neck involving the orbit and/or eye also can be devastating. The complexity of treating both the malignant wound and the ensuing ostomy difficulties from lack of vision can be doubly challenging for the WOCN.

Therapies aimed at treating various malignancies may impair vision. Surgery, such as enucleation or local resection and brachytherapy or external beam radiation, are also possible causes of blindness. Although relatively uncommon, certain chemotherapy agents acting as either single agents or in combination therapies are known to induce ocular toxicities (see Table 2).

Secondary ocular manifestations of rheumatoid arthritis, a debilitating chronic systemic inflammatory disease, may include Sjögren’s syndrome and keratoconjunctivitis sicca (KCS). Combined motor and sensory deficits, as well as the chronic pain issues, add to the challenges of treating palliative patients. Finally, although 80% of patients with multiple sclerosis (MS) complain of vision problems, visual dysfunction often is overlooked as a source of disability. This is an important point for the APRN to remember before engaging in teaching ostomy care to someone with MS. Each client should be evaluated for the need for an eye exam before proceeding.

Table 2. Chemotherapy and resultant ocular toxicities

<table>
<thead>
<tr>
<th>Ocular toxicity</th>
<th>Chemotherapeutic agent</th>
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<tbody>
<tr>
<td>Epiphora</td>
<td>Cyclophosphamide, methotrexate, and 5-fluorouracil</td>
</tr>
<tr>
<td>Retinopathy</td>
<td>Cisplatin, etoposide, tamoxifen, interferon</td>
</tr>
<tr>
<td>Corneal or conjunctival damage</td>
<td>Carmustine, mitomycin</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>Interferon</td>
</tr>
<tr>
<td>Cataracts</td>
<td>Tamoxifen, busulphan, methotrexate</td>
</tr>
<tr>
<td>Optic nerve or oculomotor nerve damage</td>
<td>Carmustine, vinblastine, vincristine</td>
</tr>
<tr>
<td>Optic neuritis</td>
<td>Cisplatin, tamoxifen</td>
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</table>

Given the array of visual deficits and their multifactorial etiologies, where does the practitioner start? O’Shea suggests using educational materials with larger font on blue or cream-colored paper that reduces glare. Bright lights and magnifying glasses also may be needed. Audiotapes with step-by-step instructions that can be conveniently played as frequently as the ostomate or caregiver require may be employed. In the absence of peripheral neuropathy, Lemiska and Watterworth suggest focusing on the patient’s strength and keen sense of touch. Changing the ostomy appliance when the stoma is not functioning (ie, when there is no output) and utilizing a two-piece pouching system are recommended, because it is easier to center the skin barrier by feeling the stoma by touch. If the patient has an ileal conduit, he/she may be taught to wick the urine with a tampon or dental wick, both to keep the peristomal skin dry and to help center the skin barrier. Tactile aides also have been developed by Coloplast Corporation (Marietta, GA).

Cognitive deficits. Carmel and Goldberg note the successive stages of the cognitive learning process to include the acquisition of knowledge, comprehension, application (in ostomy care, the person can apply the knowledge to the ostomy procedure), synthesis, and evaluation (the person can perform the ostomy care independently and recognizes when to ask for help). The adult learner must be evaluated for the ability to achieve each component of the learning process with the goal of developing a realistic plan of care.

Although many disease processes may cause cognitive deficits in the palliative care population, a commonly encountered diagnosis is dementia. Dementia may be the result of a multitude of pathologies including Alzheimer’s disease (AD) or Lewy body dementia seen in patients with advanced Parkinson’s disease. Results of a longitudinal study by Hely et al showed that 83% of patients with Parkinson’s developed dementia within 20 years of diagnosis. Considering the projected growth rate of elderly population in the US and assuming no cure will be found, an estimated 14 million Americans will have AD by 2050. These figures have a profound impact on the advanced practice WOCN working in palliative care and hospice. Because dementia is progressive, the ostomy patient diagnosed with either of these diseases will eventually experience loss of memory and cognition skills, as well as functional impairment. The APRN will need to be vigilant about decline in any of these areas because of their impact on daily ostomy care and the eventual added caregiver burden in the later stages of the disease.

Ongoing assessment of cognitive function is critical; interventions by the WOCN must be directed at the patient’s level of functioning. Many tools exist to assess cognition and are commonly used by physicians and nurse practitioners in hospice and palliative care. The Mini-Mental Status Exam (MMSE) has a total possible score of 30; a score <20 usually indicates cognitive impairment.
The skin barrier should mirror the topography of the peristomal plane. In the case of a protruding abdomen or a peristomal plane with creases, wrinkles (as seen with excessive weight loss), or scars, a convex pouching system may be considered. This system also may be used in patients with uneven planes due to tumors; barrier paste can be used to fill in uneven areas. An extended-wear barrier, left in place for up to 7 days, may be chosen for a patient with a large abdominal tumor burden who is experiencing pain to decrease frequent changes and discomfort. Premedicating with a short-acting opioid before the wafer change should be included in the plan of care. In all cases, the back of the skin barrier should be examined during each pouch change to ascertain undermining by effluent, and the skin should be assessed for irritant dermatitis (see Figure 1).

Mucocutaneous separation. Mucocutaneous separation is the detachment of the stoma from the surrounding skin (see Figures 2 and 3). Prevalence information in the general stoma population is limited and is unknown in hospice patients. Risk factors include administration of corticosteroids, a diagnosis of diabetes mellitus or malnutrition, the presence of infection or stoma necrosis, and recurrence of malignancy or any of the chronic, debilitating diseases mentioned throughout this paper. Steroids, a mainstay in the treatment of pain, dyspnea, and cerebral edema, are used routinely in palliative care settings. Diabetes and its sequelae, coronary artery disease, stroke, and end-stage renal disease, are all common comorbidities seen in persons with chronic disease. Malnutrition and cachexia may be seen in several chronic, debilitating illnesses such as acquired immune deficiency syndrome (AIDS), chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), dementia, tuberculosis, malaria, CDK, liver disease, and rheumatoid arthritis (RA). Cachexia occurs in up to 80% of patients with advanced cancer. Infection, stoma necrosis, and recurrence of disease due to the debilitating nature of chronic illness may be anticipated.

Conservative management is key, because at end-of-life the etiology of the complication most likely will not be correctable. Colwell suggests filling the separation between the skin and stoma with an absorbent material such as skin barrier powder, hydrofiber, or calcium alginate dressing to absorb drainage as well as to prevent excessive soiling from urine or feces. The skin barrier then is fitted around the stoma and over the area to protect from effluent. If the separation heals, assessment for stenosis and retraction is suggested. A convex pouching system should be avoided because it may cause deep-tissue destruction and impaired healing at the stoma/skin junction.

Caput medusae. Varices occurring at the site of the stoma may be seen in patients with portal hypertension and end-stage liver disease (ESLD) either from malignancy or cirrhosis. This condition, often referred to as caput medusae, accounts for between 1% and 5% of all variecal
A purple hue caused by dilation of mucocutaneous vessels and profuse bleeding may surround the stoma if it is eroded or traumatized (see Figure 4). This may be observed either in the pouch itself or at the time of the wafer change. The APRN must first control bleeding by direct pressure, cauterization with silver nitrate, the use of epinephrine-soaked gauze or gel foam, or suture ligation. It is important to educate the patient or caregiver about the need to 1) avoid using a two-piece ostomy appliance (the flange may rub against engorged vessels) and 2) wear loose-fitting clothing. Convex pouching systems should be avoided as well because they may damage distended blood vessels at the stoma/skin junction and cause bleeding. Lastly, the patient and caregiver must be instructed to apply direct pressure and seek medical attention if bleeding occurs.

Palliative Pharmacology: Implications for Patients with a Stoma

Prescribing for patients with a stoma presents numerous challenges for practitioners in palliative or hospice settings. Many medications routinely used by APRNs in the general population may cause problems in a patient with an ileostomy or colostomy, be poorly absorbed and therefore subtherapeutic, cause constipation and blockage, induce diarrhea, or cause an increased propensity for altered fluid and electrolyte balances.

The length of small bowel available for drug absorption is the most important consideration when selecting medications for the person with a stoma. Patients with ileostomies or transverse colostomies associated with high output should avoid enteric-coated and sustained-release products because of their slow dissolution properties. This has profound implications for pain management; many long-acting opioids are sustained-release.
be considered in this case, with short-acting opioids in solutions or uncoated tablets for breakthrough pain. Transdermal fentanyl also has been shown to lessen the severity of constipation as compared to oral opioids and may require less laxative use.42 Someone with a distal colostomy will probably not experience medication absorption problems, so long-acting oral pain medications may still be an option.

Divalproex Na (Depakote, Abbott Laboratories, Abbott Park, IL) usage for seizure control or as an adjuvant analgesic, digoxin for class IV heart failure, and cyclosporine (CSA, Sandimmune, Novartis, Basel, Switzerland), used most often in organ transplant patients in conjunction with adrenal corticosteroids, also may have variable absorption in patients with end jejunostomies and ileostomies. Although Depakote potentially could be replaced with another shorter-acting anticonvulsant or adjuvant, therapeutic drug levels of digoxin or CSA may have to be monitored more frequently.43 All persons with a stoma must be counseled by the nurse practitioner (NP) or CNS on the potential for drug malabsorption and the need to check the ostomy pouch for drug fragments whenever a new medication is prescribed.40

Pancreatic enzymes or lansoprazole and omeprazole, medications packaged in acid-stable microspheres that disintegrate in the alkaline pH of the small intestine, may be inconsistently absorbed in people with short bowel syndrome or pancreatic insufficiency with loss of bicarbonate secretion.40 Pancreatic enzymes may be prescribed to aid with digestion in persons with advanced pancreatic cancer, while proton-pump inhibitors are routinely ordered as gastrointestinal prophylaxis in patients taking steroids, drugs that enjoy a multitude of uses in palliative care, as well as for traditional use in gastro-esophageal reflux disease (GERD).

Constipation and blockage, sometimes necessitating ileostomy lavage or colostomy irrigation, may be caused by a multitude of medications used in palliative care and hospice, nonpharmacological factors, or a combination of both. A careful history may reveal the cause, so the importance of a thorough history and physical examination cannot be sufficiently emphasized. When assessing the severity of constipation in a cancer patient, the National Cancer Institute’s Common Toxicity Criteria for Constipation44 may be extrapolated to the ostomy population and help guide management. A digital assessment of the stoma is an important and unique component of a complete physical assessment that may be overlooked by practitioners with limited stoma experience. Careful insertion of a lubricated gloved finger is needed to assess for impaction or blockage.

Patients report that opioid-induced bowel dysfunction, or constipation, is the most common and debilitating adverse effect of chronic opioid use.42 Although contraindicated in ileostomy patients, stimulant laxatives such as senna may be used in colostomy patients, along with stool softeners, to combat this common side effect. Preventing constipation is crucial, and the goal of care should include maintaining daily ileostomy and once every 1 to 2 days distal colostomy functioning. The NP may educate patients with constipation on increasing their intake of foods that can loosen stool and avoiding foods that can cause blockage or thicken the stool (see Table 3).45 Other medications that may cause constipation in persons with a stoma include tramadol (Ultram, 

Table 3. Foods that can change stool consistency

<table>
<thead>
<tr>
<th>Foods that can loosen stool</th>
<th>Foods that can block or thicken stool</th>
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</thead>
<tbody>
<tr>
<td>Fruit juices (especially apple and prune)</td>
<td>Dried fruit</td>
</tr>
<tr>
<td>Baked beans</td>
<td>Bean sprouts</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Celery</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Mushrooms</td>
</tr>
<tr>
<td>Milk</td>
<td>Nuts</td>
</tr>
<tr>
<td>Prunes</td>
<td>Bananas</td>
</tr>
<tr>
<td>Fried foods</td>
<td>Boiled Rice and Pastas</td>
</tr>
<tr>
<td>Fresh fruits</td>
<td>Creamy peanut butter</td>
</tr>
<tr>
<td>Raw vegetables</td>
<td>Tapioca pudding</td>
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</table>

Diarrhea may be caused solely by medications or, more commonly, is multifactorial in etiology. A thorough history may reveal whether the cause of the diarrhea is secretory, osmotic, mechanical, pharmacological, or a combination of factors. In assessing the severity of the symptoms in cancer patients, the National Cancer Institute’s Common Toxicity Criteria for Diarrhea, version 2.047 is a widely used tool that distinguishes between persons with and without a colostomy and may guide the practitioner in assessment and management. It is important to reiterate the importance of digitalizing the stoma as part of a physical exam because stool may leak around an impaction. In palliative care, the overuse of laxatives, typically seen when the management of constipation is suddenly stepped up, is a common cause of diarrhea. Persons with a colostomy may use laxatives as part of their bowel regimen, but this practice is not generally recommended for ileostomy patients. Other causes of diarrhea include partial intestinal obstruction, fecal impaction, pancreatic insufficiency, Clostridium difficile infection, chemotherapeutics (notably irinotecan and 5-fluorouracil), and radiation enteritis.48 The incidence of chemotherapy-induced diarrhea with combination irinotecan and fluorouracil can be as high as 30% to 80%.46

In HIV infection, infectious diarrhea is especially prevalent, commonly from offending organisms including Cryptosporidium, Giardia lambila, Escherichia histolytica, and cytomegalovirus.47 If caused primarily by a nonpharmacologic source such as infection or HIV enteropathy, adding lamivudine/zidovudine (Combivir, GlaxoSmithKline Pharmaceuticals, London, UK), a common component of highly active antiretroviral therapy (HAART), may exacerbate the diarrhea.

Given their propensity to alter normal bowel flora and cause diarrhea, the use of broad-spectrum antibiotics can be a significant problem for patients with ileostomies’.43 ACE inhibitors (ACEI), a mainstay of heart failure treatment, may cause hyperkalemia especially in persons with an ileostomy.

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because they are already at risk for fluid and electrolyte imbalances; careful monitoring by the APRN is indicated.43

Nursing’s role. The advanced practice palliative nurse’s role includes preventing, recognizing, and managing medication-induced problems and complications in the ostomy patient. The wound, ostomy, and continence NP or CNS is in a unique position to not only directly improve patient quality of life, but also to serve as a valuable resource for other members of the patient care team.

Conclusion

The inevitable increase in the number of palliative care patients with a stoma presents unique challenges for both the APRN WOCN seeing palliative and hospice patients and the Palliative Advanced Practice WOCN. Considering current trends, the need for WOCNs with indepth knowledge of palliative care concerns is clear. APRN WOCNs who are resourceful and abletomeettheoften multifactorial challenges of palliative and hospice care can profoundly affect their patients’ quality of life. Epidemiological studies to obtain information about the type and prevalence of stoma complications, as well as research to increase understanding about the lived experience of patients at end-of-life with a stoma to help improve clinician ability to provide evidence-based practice, are needed.

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