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QUALITY, COST and OUTCOMES

**Meeting health
system goals** with
Nurses Specialized
in Wound, Ostomy
and Continence

A White Paper
by Nurses Specialized
in Wound, Ostomy and
Continence Canada



NURSES SPECIALIZED IN
WOUND, OSTOMY AND CONTINENCE
CANADA
INFIRMIÈRES SPÉCIALISÉES EN
PLAIES, STOMIES ET CONTINENCE
CANADA

ABOUT THIS PAPER

As healthcare spending in Canada continues to climb, pressure on healthcare administrators to deliver cost-efficient care is intensifying—and policymakers are ever-more focused on ensuring quality and system sustainability. Wound, ostomy and continence challenges are common across all Canadian healthcare settings—and their management places a financial burden on the healthcare system. Registered Nurses Specialized in Wound, Ostomy and Continence (NSWOCs) can help alleviate the financial strain facing administrators and policymakers through the provision of higher quality care, reduced costs and improved outcomes for patients.

CONTENTS

A SYSTEM UNDER STRAIN	2
HOW NURSES SPECIALIZED IN WOUND, OSTOMY AND CONTINENCE HELP	3
BENEFIT 1: HIGHER QUALITY CARE	5
BENEFIT 2: LOWER COSTS	7
BENEFIT 3: BETTER OUTCOMES	9
FOR A MORE SUSTAINABLE SYSTEM	11
REFERENCES	12



A SYSTEM UNDER STRAIN

Every year, Canada's provincial and territorial governments spend more than \$250 billion in total on health care (Canadian Institute for Health Information [CIHI], 2018). CIHI data suggests healthcare spending encompasses more than 35% of annual provincial/territorial budgets (CIHI, 2018).

In the next decade as the country's population ages, that spending is going to increase. Longer life expectancies and declining fertility rates are contributing to an overall older demographic (World Health Organization, 2015). With an aging population come higher rates of chronic disease (Harris & Shannon, 2008). Economic models predict that healthcare costs will rise by 1% each year between 2010 and 2036 due to population aging alone (Mackenzie & Rachlis, 2010).

THE PRESSURE ON HEALTHCARE LEADERS

To get maximum value out of every dollar, healthcare organizations across the country frequently operate under tight financial constraints while continuing to strive to deliver high-quality patient care. Administrators are continually seeking ways to optimize their human and economic resources with evidence-informed clinical decisions and cost-effective products and services.

One in four people in Canada will be **elderly** by 2036.

– Statistics Canada, 2018

The pressure to be maximally efficient is even greater in jurisdictions like Ontario, Quebec and British Columbia, where healthcare funding is tied to the numbers of patients seen and procedures done.

Administrators are also tasked with meeting the growing demand for services. With too few open beds in hospitals and long-term care facilities, patients face lengthy wait times. Moving patients from hospitals to community care is one strategy to help rein in healthcare costs and free up beds in acute-care settings (Canadian Foundation for Healthcare Improvement, 2018). This also shifts the pressure onto home care services to meet demand and control spending.

At the policy level, governments face the unenviable challenge of ensuring both high-quality care and system sustainability. They want to see favourable public reporting numbers, optimal patient access and flows, low hospital readmission rates—and balanced budgets.

HOW NURSES SPECIALIZED IN WOUND, OSTOMY AND CONTINENCE HELP

Successful management of wounds, ostomy and continence challenges requires specialty care. Common across all Canadian healthcare settings, these issues can be expensive to treat. Wounds, which can be the result of trauma, surgery or a symptom of many common and chronic conditions, alone cost Canada about \$3.9 billion a year, or 3% of the country's total annual health spending (Wound Care Alliance, 2012).

The exact number of patients living with acute and chronic wounds in Canada is unknown, as there is no accurate national database. Based on prevalence, the number is high and growing with the aging population. It is known, however, that an estimated 70,000 people in Canada are living with an ostomy, and thousands more each year undergo some form of ostomy surgery (a colostomy, ileostomy or urostomy; Ostomy Canada Society, n.d.). People who have an ostomy often experience significant complications that require extensive management and treatment beyond the body-altering initial surgery, adding to patient stress and already substantial care costs.

Incontinence is a highly prevalent condition that involves the accidental leakage of urine or feces—and is often mistakenly considered a natural part of aging. Over one million incontinence cases (urinary or fecal) have been reported in Canada, and estimates put the true number closer to 3.5 million—almost 10% of the Canadian population (Taylor & Cahill, 2018). Incontinence is also one of the main reasons cited for admission to long-term care facilities. Excess moisture and bacteria associated with continence challenges can contribute to dermatitis and other skin problems that add to care needs and reliance on the healthcare system. Proactive management strategies are not available to most people living with continence challenges. The costs of body-worn containment products and urinary catheters to the system are also significant and will continue to grow as Canada's population ages and chronic disease rates climb.

Wound care alone costs Canada **\$3.9 billion a year**, or 3% of total annual health spending.

– Wound Care Alliance, 2012

Wound, ostomy and continence challenges will continue to be significant drivers of care needs and expenses as Canada's population ages. The challenge for administrators is to meet these needs through effective and cost-efficient care. A nurse with a tri-specialty—opposed to a general practice, non-specialized nurse—offers a unique advantage for healthcare organizations to meet these challenges.

Nurses Specialized in Wound, Ostomy and Continence (NSWOCs) are registered nurses trained specifically to design and implement meticulous, evidence-informed care plans for patients with wound, ostomy and continence challenges. NSWOCs contribute to care effectiveness and cost-efficiency through:

- Leadership on interdisciplinary healthcare teams, promoting current, evidence-informed methods and cost-efficient care decisions to resolve wound, ostomy and continence challenges
- Use of advanced and specialized approaches to guide the assessment, treatment and/or management of wound, ostomy and continence challenges
- Education of patients and their families to improve self-engagement and informed care
- Contributions to research including guidelines and policies, products and priority areas for future research

The combination of these practices leads to higher-quality care, lower costs and better outcomes for patients.

THE PATH TO TRI-SPECIALIZATION IN CANADA

NSWOCs receive a competency-based education through the Wound, Ostomy and Continence Institute. The Institute's Wound, Ostomy and Continence – Education Program (WOC-EP) is designed for registered nurses with at least two years of clinical experience (Wound, Ostomy & Continence Institute, n.d.). The WOC-EP teaches advanced knowledge in the tri-specialty areas with a focus on quality clinical and cost outcomes, and prepares nurses to write the Canadian Nurses Association (CNA) certification exam in wound, ostomy and continence. CNA certification grants the CNA WOC(C) credential, which indicates that core competencies in the three specialty areas have been met with knowledge updated every five years.

INDIRECT CONTRIBUTIONS TO WOUND, OSTOMY AND CONTINENCE CARE

NSWOCs have developed and participated in numerous national and provincial best practice guidelines and recommendations for wound, ostomy and continence challenges that help healthcare professionals make better decisions and prioritize care plans. Examples include NSWOC's (2018) Nursing Best Practice Recommendations for Enterocutaneous Fistula and Enteroatmospheric Fistula, Wounds Canada's (2017)

Best Practices for Skin and Wound Management, the Registered Nurses' Association of Ontario's (2019) Ostomy Best Practice Guidelines, best practice recommendations for intermittent catheterization, and several guidelines for the prevention and treatment of skin tears (International Skin Tear Advisory Panel, n.d.). This work promotes evidence-based practice and higher-quality wound, ostomy and continence care delivery in practice settings across the country.

About **70,000 people** in Canada are living with an ostomy, and thousands more each year undergo some form of ostomy surgery.

– Ostomy Canada Society, n.d.

BENEFIT 1: HIGHER QUALITY CARE

High-quality care improves outcomes for patients and care providers. This includes shorter stays and reduced care costs through lower rates of hospital-acquired conditions such as pressure injuries (Boyle, Bergquist-Beringer, & Cramer, 2017). Rates of hospital-acquired conditions are an important indicator of overall performance, which makes minimizing these a key priority for healthcare administrators.

CARE BASED ON EVIDENCE AND SUPPORTED BY TRUST

A literature review examining NSWOCs' impact in home care for patients with wounds identified numerous benefits when an NSWOC was involved directly in administering care or as a consultant to other care providers (Baich, Wilson, & Cummings, 2010). Benefits included greater healing success, faster healing times, increased interest in wound care education among other nurses, and the introduction of standardized protocols for wound care (Baich et al., 2010). Benefits of NSWOC care have also been observed in the other tri-specialty areas (Westra, Bliss, Savik, Hou, & Borchert, 2013; Taneja et al., 2017).

NSWOCs tend to be dedicated patient advocates, ensuring patients receive the most appropriate care for their circumstances. This helps build trust between patient and provider, which is a critical role given the intimate nature of wound, ostomy and continence conditions. As Baker (2001) put it, an NSWOC "... acts as an advocate when she [or he] enhances the patient's sense of personhood, self-worth, and dignity."

NSWOCs also contribute to the quality of care as educators of patients and other practitioners (Boyle et al., 2017).

Pressure injuries occur with a mean prevalence rate of **26%** across Canadian healthcare settings.

– Woodbury & Houghton, 2004

An NSWOC treating a patient who needs an ostomy, for example, can play a significant role in helping patients and their families adjust to life after the surgery (Baker, 2001). They often share their knowledge with interdisciplinary team members and other staff who can then apply it in their own roles. By developing quality-enhancing procedures, guidelines and protocols, NSWOCs inform the selection of suitable, cost-effective supplies and equipment (Boyle et al., 2017).

PREVENTING HOSPITAL-ACQUIRED CONDITIONS

Pressure injuries—also known as bedsores, pressure ulcers, and decubitus ulcers—can occur when an area of the body is subject to prolonged pressure, such as when a patient is bedbound, and are usually preventable. Research suggests patients who develop hospital-acquired pressure injuries experience more pain and a lower health-related quality of life, and have a higher chance of dying during a hospital stay (Boyle et al., 2017).

A review of Canadian healthcare settings suggests pressure injury prevalence rates of 25% in acute care, 30% in non-acute care, 22% in mixed health settings and 15% in community care—adding up to a mean prevalence of 26% (Woodbury & Houghton, 2004). Some health

authorities consider hospital-acquired pressure injury rates as an indicator of nursing quality (Ayello, Zulkowski, Capezuti, Jicman, & Sibbald, 2017).

There are numerous strategies for pressure injury prevention, including risk assessment, delivering routine skin assessments and appropriate skin care, conducting nutritional screening, and ensuring appropriate nutrition and the proper repositioning of patients (Ayello et al., 2017). The effectiveness of a nurse's pressure injury education, prevention and management can be directly linked to patient outcomes and care quality (Ayello et al., 2017).

NSWOCs' specialized education prepares them to take a leadership role in preventing pressure injuries and, when they occur, implementing effective treatment plans. One study found lower rates of hospital-acquired pressure injuries in U.S. acute-care settings that employed more nurses certified in wound, ostomy and continence (Boyle et al., 2017). Serious cases of hospital-acquired pressure injuries also occurred at half the rate in hospitals employing nurses with the tri-specialty.

Urinary tract infections are one of the most common hospital-acquired infections (Canadian Patient Safety Institute, 2016), and more than 80% can be linked to catheter use (Institute for Healthcare Improvement, n.d.). NSWOCs are well prepared to help prevent catheter-associated urinary tract infections (CAUTIs), and incontinence-associated dermatitis as well as manage fistulas (Medley, 2014). Trained in the latest best practices for preventing these issues, NSWOCs help support patient safety and improve patients' care experience.

NSWOCs IN ACUTE CARE

THREE SPECIALTIES IN ONE NURSE

The advantage of NSWOCs' tri-specialization is especially clear when patients frequently have needs that require more than one area of specialty. Some patients have needs in two areas—or all three, which was the case with one patient treated at a hospital in Toronto. The patient needed abdominoperineal resection (APR) surgery. Outcomes of that surgery included wound complications, continence challenges and a permanent colostomy.

The NSWOC on the care team was able to deliver high-quality, evidence-based care for the patient's wound, ostomy and continence needs. The NSWOC was involved from the beginning, including in stoma marking and preoperative patient and family education. Care continued after the operation, with the NSWOC monitoring and attending to this patient's complex needs even post-discharge. Thanks to a tri-specialty in wound, ostomy and continence, the nurse had the knowledge needed to provide optimal care to this patient.

BENEFIT 2: LOWER COSTS

Controlling costs is critical across every facet of the healthcare system. The growing prevalence of wounds and high expenditure for wound management across all healthcare settings have made wound care a particular budgetary focus in Canada and around the world. NSWOCs are trained to assess and treat many types of complex wounds with evidence-based strategies that can help prevent complications.

Savings through effective wound management can be substantial: the average cost of treating a diabetic foot or leg ulcer in 2007 was \$8,000 USD—versus \$17,000 USD to treat an *infected* diabetic wound or ulcer (Kruse & Edelman, 2006). Applied consistently, advanced wound care practices can translate into big savings. One report estimated that Ontario could reduce costs by 66%—for savings of \$338 million—by adopting best practices for the treatment of patients with diabetic leg and foot ulcers (Shannon, 2007). Lower rates of infection and amputation would account for \$24 million in savings.

Similar savings are attainable through the application of NSWOCs' tri-specialization to patients who have ostomy or continence challenges. Peristomal skin problems (when the skin around the stoma becomes irritated or infected) affect one-third of colostomy patients and two-thirds of urostomy and ileostomy patients (Williams, 2012). This complication can drive up care costs substantially. One study found a higher likelihood of readmission and healthcare costs that were approximately \$80,000 USD higher in patients with peristomal skin problems. NSWOCs have the expertise to identify peristomal skin problems early or prevent them entirely, avoiding higher care costs than necessary.

By adopting best practices for the treatment of diabetic leg and foot ulcers, Ontario could save **\$338 million**, cutting care costs by **66%**.

– Shannon, 2007

CONTROLLING COSTS IN COMMUNITY CARE

Community care budgets are ballooning. Major portions of community health budgets are spent on wound dressings, which makes careful selection and proper application of these products key to cost-efficiency. Nearly half of all nursing visits in the community involve wound care (Canadian Home Care Association, 2012).

Why are wounds so prevalent in community and home care settings? Mainly because most home care clients are older and many patients with chronic, palliative and rehabilitation needs are in their own homes (Sinha & Bleakney, 2015). Both older age and chronic disease increase the risk of developing wounds and impair the healing process (Baich et al., 2010).

NSWOCs within community settings lower care costs by accelerating patient healing and reducing the number of visits they need. The results of one study suggest the more NSWOCs involved in wound management,

NSWOCs IN COMMUNITY AND PRIVATE CARE

DATA-INFORMED CARE DELIVERY

Home- and community-care budgets benefit when fewer nursing visits are needed to treat a patient. NSWOCs can significantly reduce nursing visits — by virtue of their tri-specialization and also through their role in tracking outcomes metrics and statistics.

Tracking outcome data can help gauge the effectiveness of care and identify conditions before they turn into bigger, costlier issues. In the case of wound care, NSWOCs monitor a broad range of metrics including the proportion of wounds healed, time to complete healing, the percentage of wound area reduced, proportion of wounds infected and number of ulcer days averted. Analysis of these data can prompt a particular intervention or even reveal opportunities for cost savings. For instance, higher-cost solutions might be more expensive upfront but, by achieving better outcomes, could lead to savings overall compared to solutions that are less expensive per unit but more frequently applied.

the greater the cost savings and the faster the healing times (Harris & Shannon, 2008). Compared to the outcomes achieved by a group of generalist registered nurses and licensed practical nurses without a wound, ostomy and continence specialization, the NSWOC group reduced chronic wound healing times by 45 days, saving \$5,927 per chronic wound treated. Savings were even more significant for the treatment of acute wounds, with the tri-specialty nurse group reducing healing time by 95 days with a cost difference of \$9,578 per wound treated.

Continence challenges are also common among home care patients. Out of almost 300,000 episodes of home care one study looked at, 60% involved urinary or bowel incontinence (Bliss, Westra, Savik, & Hou, 2013).

The average patient with a **pressure injury** spends **three times longer in the hospital** than a patient without one.

– Jankowski, 2010

The use of specialized care strategies for continence management, such as those delivered by NSWOCs, has also been shown to reduce healthcare costs in community settings while improving clients' quality of life (Franken, Corro Ramos, Los, & Maiwenn, 2018; Wound, Ostomy and Continence Nurses Society, 2018).

SAVING THROUGH REMOTE CARE DELIVERY

Canada's federal government is responsible for delivering primary and supplementary health services to select populations, including First Nations, Inuit and Métis. When people living on a reserve or in a remote community with no hospital nearby have urgent healthcare needs, air travel is necessary. The annual costs of this to the system are considerable. In 2012–2013, the federal Non-Insured Health Benefits Program spent \$28 million on air ambulances (Government of Canada, 2018).

NSWOCs can help avoid hospital visits by delivering high-quality wound, ostomy and continence care directly to these communities. Home care patients with wounds who receive NSWOC care experience fewer emergency room visits and fewer readmissions to hospital (Baich et al., 2010).

Evidence also suggests NSWOCs can serve remote communities from a distance via telemedicine, helping to meet Canadians' expectations for equal access to healthcare in the process. One study demonstrated that

NSWOCs can promote faster healing times through more consistent wound assessments and care as well as a higher likelihood that moist wound-healing techniques would be used over gauze dressings, resulting in faster healing times, fewer visits and overall lower costs (Baich et al., 2010). As remote healthcare delivery continues to advance, and provided the right infrastructure is in place, this will become a more viable option.

BENEFIT 3: BETTER OUTCOMES

Getting patients out of acute care faster frees up beds for new cases. Through specialized treatment approaches and prevention strategies, NSWOCs measurably reduce durations of hospital stays and facilitate patient access and flow.

FASTER HEALING, LESS PAIN

Wound, ostomy and continence challenges contribute to pain and discomfort. One study compared the treatment of chronic wounds by NSWOCs and general staff nurses in home care (Arnold & Weir, 1994). Substantially more wounds were healed (78.5%) when an NSWOC provided the care versus a general staff nurse (36.3%). Another compared outcomes in home care patients with surgical wounds, pressure ulcers, urinary incontinence, bowel incontinence and urinary tract infections (Bliss et al., 2013). Those assigned to NSWOCs had more severe conditions than patients assigned to other nurses but showed significant improvement in the number of pressure ulcers and surgical wounds and frequency of incontinence.

Incidence of **incontinence is twice as high** at home healthcare agencies without a specialized wound, ostomy and continence nurse.

– Westra et al, 2013

Another study (Westra, Bliss, Savik, Hou, & Borchert, 2013) calculated that home care agencies employing NSWOCs are more likely to see improvements in conditions including pressure ulcers (nearly twice as likely) urinary incontinence (40% more likely), lower extremity ulcers and surgical wounds (20% to 40%), and bowel incontinence (14%). It found specifically that the incidence of incontinence in home healthcare agencies with no NSWOC is twice that of those with an NSWOC. Agencies employing an NSWOC were also more likely to see conditions stabilized, including urinary incontinence (2.3 times more likely), surgical wounds (50%), pressure ulcers (30%), urinary tract infections (20%) and bowel incontinence (16%).

NSWOCs also contribute to better patient outcomes by reducing pain associated with certain conditions. For example, patients with superficial infections or infected chronic leg ulcers experienced significant reductions in pain by taking part in NSWOC-directed leg-functioning conditioning activities (Kelechi, Mueller, Spencer, Rinard, & Loftis, 2014).

NSWOCs IN LONG-TERM CARE

PRECISE CARE FOR HIGH-NEEDS PATIENTS

With an older demographic, long-term care facilities face challenges not as common in other healthcare settings. Older people, for instance, are more prone to complications like skin tears because skin becomes thinner with age. The likelihood of skin tears may be even higher in patients with dementia, who may be more likely to remove their ostomy pouching systems or wound dressings frequently. Many long-term care patients also experience continence challenges, which can lead to continence-related skin issues.

An NSWOC's care helps prevent complications like these. To reduce the risk of skin tears, NSWOCs can select an ostomy pouching system for the patient that will minimize irritation and discomfort. They can also inform the selection of skin friendly cost-effective supplies, including compression bandages and wound dressings.

PREVENTING OSTOMY COMPLICATIONS

Ostomy surgery alone is a life-changing procedure. But many ostomy patients experience complications that can further affect their quality of life and add to their reliance on the health system. More than 80% of people with an ostomy will experience a stomal or peristomal complication within two years of their surgery (LeBlanc, Whiteley, McNichol, Salvadalena, & Gray, 2019).

Patients with peristomal complications face a number of poor outcomes, including increased morbidity, psychosocial impairments, decreased health-related quality of life, and greater risk for hospital readmission following stoma surgery (LeBlanc et al. 2019). In one study, ostomy patients who experienced peristomal skin complications within 120 days after surgery were readmitted to hospital at a rate of 47% versus 33% for those without complications (Taneja et al., 2017).

Medical-adhesive related skin injuries, such as skin tears and skin stripping, are also common but underreported (McNichol, Lund, Rosen, & Gray, 2013). These injuries can happen when a practitioner or the patient incorrectly removes a medical device that uses adhesive. Another possible complication is dermatitis, which can occur when human waste gets trapped under the adhesive or due to certain chemicals in the adhesive.

NSWOCs help prevent such complications through effective preoperative and postoperative rehabilitative care, reducing readmission rates for new ostomy patients (Medley, 2014). NSWOCs can identify signs of peristomal skin problems early so treatment can get underway immediately. They can educate patients on what to look for so they can seek care as soon as symptoms appear. In the case of medical-adhesive related skin injuries, NSWOCs contribute to prevention by helping patients select a pouching system that's appropriate to their needs, ostomy type and abdominal skin contours (LeBlanc et al. 2019). This also minimizes skin stripping, since patients with a well-fitting pouching system will be less prone to remove it frequently.

FOR A MORE SUSTAINABLE SYSTEM

With a tri-specialization in wound, ostomy and continence, NSWOCs are helping address the challenges facing Canada's healthcare system. Employing NSWOCs is an effective strategy for controlling costs through high-quality, evidence-based care that leads to better outcomes for patients. NSWOCs bring about these benefits as care providers but also as sources of specialized knowledge for interdisciplinary healthcare teams, care consultants to other health professionals, as well as through best practice and protocol development, research and other avenues.

Visit **nswoc.ca** to learn more, or call Nurses Specialized in Wound, Ostomy and Continence Canada toll-free at **1-888-739-5072**.

ABOUT NSWOCC

Since 1981, Nurses Specialized in Wound, Ostomy and Continence Canada (NSWOCC) has united NSWOCs across the country. NSWOCC promotes high-quality care for patients with wound, ostomy and continence challenges through advocacy, education and research.



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