

# How We Decreased the Costs of Wound Care Supplies at a Hospital and Long-term-care Home

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In institutional health care, we are now working in an environment of restricted financial resources. Wound management is one area where attempts are being made to understand true costs. Costs may include:

- Dressings
- Interprofessional care time (including physicians, nurses and other allied professionals)
- Inpatient days<sup>1</sup>

At Baycrest, we decided to look into the costs of our dressings over the period 2010 to 2014, as this seemed a logical place to start. The plan is to assess other areas later on.

## Background

Baycrest is a geriatric teaching hospital, long-term-care facility and research facility associated with the University of Toronto in Toronto, Ontario. The hospital has about 250 beds, which

include high-intensity and slow-stream rehabilitation, behavioural neurology, mental health, and complex continuing care, along with palliative and transitional care wards. The long-term-care section, Apotex Jewish Home for the Aged, has 472 beds. Our patients have a variety of wounds including pressure injuries, venous stasis wounds, arterial ulcers, diabetic foot ulcers, iatrogenic wounds, skin tears and others.

In 2010, we calculated the costs of our dressings and found we spent \$147,859 in both the hospital and long-term care home for that year. We realized that we had a large variety of dressings available on our wards, and our nurses were often asking for help determining which dressings to use. We wondered what would happen to our yearly costs if we were able to streamline our inventory of dressing supplies and build on the knowledge and abilities of our ward nurses.

Over the next four years, treatment plans were



developed by advanced practice nurses, bedside nurses, physicians, families and patients, as well as other team members as needed.

### **Treatment and Product Selection**

Our education and treatment planning corresponded to many of the guidelines for healing wounds. Plan of care goals should include healing the wound when the patient has the physical capacity to heal.<sup>2</sup> For non-healing wounds, where the patient has the physical capacity to heal but is either making choices that are inconsistent with optimal wound healing and/or the health-care system cannot support optimal healing at this time, goals of care must reflect this.<sup>2</sup> For non-healable wounds, where the wounds cannot heal due to co-morbidities, medications or other circumstances, supportive goals must put be in place.<sup>2</sup>

Once healability is determined, especially by

the assessment of blood supply to the wound, we consider the etiology and factors leading to the wound and make necessary corrections. For example, many of our wounds are pressure injuries, and in those cases, we consider offloading with the appropriate mattresses/chair surfaces and positioning. This is similar for the venous- and lymphedema-related leg ulcers, where we treat the underlying edema issues. Diabetic and arterial wound-related issues must be considered and treated. We also identify quality-of-life issues such as pain control, functional status and well-being.<sup>2</sup> Only once all these issues are addressed do we determine the appropriate dressings.

Products were chosen and made available in supply closets on wards for regular use. Other products were still easily available by special request to one of the advanced practice nurses, though not kept on the ward. Wound care supplies on wards were chosen based on cost, access-

# Prevalence

Prevalence measures the proportion of a defined set of people with a pressure injury at a moment in time.

$$\text{Prevalence} = \frac{\text{Number of patients in the population studied with a pressure injury at a particular moment in time}}{\text{Total number of patients in the same population studied at the same moment in time}} \times 100$$

ibility, ease of use and their wound management properties. Review articles, best practice guidelines and our own experience guided these decisions.<sup>3,4</sup> We set a goal to increase the knowledge of wound care by all involved rather than restrict the availability of products. We wanted the ward nurses to be able to determine the dressings needed in a given situation. Discussions about the treatment of wounds aimed to expand the knowledge and abilities of the ward nurses occurred both in classrooms and on wards.

## Measuring and Documenting

To determine the costs of the supplies, we quantified our wound care supplies purchased for use in the long-term-care home and hospital for that year. The quantities were multiplied by the cost for each product that year based on our contracts. Items included in the cost analysis were limited to products that were on that year's wound care dressing formulary. Cost analysis did not include basic wound care products such as gauze for cleaning, saline, or dressing trays, as these came out of a different budget.

Unfortunately, even

though we treat a variety of wounds in both our hospital and long-term-care home, and our wound care supplies are used on all types of wounds, the only prevalence studies that are regularly performed are for pressure injuries. This is standard at most facilities.

To determine the prevalence of our pressure injuries, we conducted a full review of all patients over 24 hours. Only pressure injuries were recorded.

## What We Discovered

The costs of the wound care supplies in our hospital and long-term care were calculated for each year of the study (Table 1).

Using 2010 as our baseline costs of wound care supplies, we determined that we had been able to achieve yearly savings of \$65,818 (–44.5%) in 2013. Our yearly savings increased in 2014 to \$82,538 (–55.8%) (Table 2).

The only wound care quality marker we assessed from 2011 to 2014 was prevalence of pressure injuries. We used the prevalence of pressure injuries stages 2 to 4, as these require the use of bandages, to estimate our number of wounds yearly.





Our prevalence too was calculated yearly. Yearly results were similar (range of 2.5%). Our numbers fell within the range of what is considered to be acceptable prevalence in Canada.<sup>5</sup>

## Implications of These Studies

The retrospective look at our costs of wound care supplies shows that we reduced the costs of wound care supplies at our institution by up to 56%, freeing money that could be used in other areas of health care or pressure injury prevention.

We do not know if our reduction in wound care supply costs affected the care of the patients. The only marker we currently have is our prevalence rate of pressure injuries, which has remained similar over the four years it has been evaluated. We hypothesize, based on using pressure injuries as the marker, that this means we are treating the same number of wounds with evidence-based practice and by using less costly dressings. However, we also treat venous stasis, arterial, diabetic foot ulcers, skin tears, surgical wounds and others. These were not evaluated or tracked. Only



pressure injuries are traditionally monitored, being considered a quality-of-care indicator.

## What Now?

This is only the beginning of our study into wound care issues at Baycrest. Evaluating this endeavour created more questions than answers. It also identified the need to create a Wound Care Stewardship Committee to organize and promote leadership in

the responsible use of wound care products and wound treatments. If we can show that our quality of care improves or remains the same, other institutions may be inspired to look at the costs of their own wound care supplies. We realized the need to look for quality of care markers beyond the prevalence of pressure injuries, and we are working toward this. Our 2017 prevalence study was expanded to investigate the numbers of other wounds we treat as well. 🩹

## References

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**Table 1:** Costs of Wound Care Supplies in 2010, 2013 and 2014 (Canadian dollars)

Area	2010	2013	2014
Long-term Care	\$43,423	\$27,067	\$26,508
Hospital	\$104,434	\$54,972	\$38,811
Summary	\$147,857	\$82,039	\$65,319

**Table 2:** Cost Savings Achieved (2010 as baseline)

Year	Total Costs of Wound Care Supplies	Difference from Baseline	% Difference from Baseline
2010	\$147,857	N/A	N/A
2013	\$82,039	\$65,818	–44.5%
2014	\$65,319	\$82,538	–55.8%