**Background**

An international pressure ulcer prevalence survey found that overall costs of newly acquired pressure ulcers (FAPU) were highest in adult critical care patients in 2009 (8.8% to 10.3%), with the sacral area being one of the most commonly affected anatomical areas. Patients admitted to a surgical intensive care unit (ICU) are at high risk for pressure-related injury due to multiple risk factors, including but not limited to extended surgical procedures, immobility, increased friction and shear, and exposure to moisture or contamination. Financial analyses report each case of FAPU represented a 63% reduction in sacral FAPUs during the 90-day trial period, and cost-savings of $12,175. When subtracting the cost of the preventive devices from the estimated cost-savings, there was an estimated cost-savings of $29,400 (63% reduction in expenditures for treatment). The total cost of the 7 sacral FAPUs that developed over the course of the 90-day turn and position device trial may have been attributed to several factors:

- The design of the device ensures ease of patient repositioning and pressure offloading.
- The 30-degree foam body wedges help facilitate repositioning in the 30-degree position, as recommended by practice guidelines.
-Disposable microporous pads help prevent exposure of the patient’s skin to excess moisture.

**Methods**

Clinical setting: University Health Network is a large teaching hospital of the University of Toronto in Canada. The clinical setting for this trial was a 22-bed CVICU and Vascular Stepdown unit.

Methods: A team of licensed and trained wound care resource nurses conducted weekly skin and chart audits on all patients in the CVICU to determine the prevalence and incidence of pressure ulcers utilizing National Pressure Ulcer Advisory Panel staging methodology. To determine the effectiveness of a 90-day trial intervention with a turn and position system, we reviewed the 11 months prior to trial implementation and calculated the average number of sacral FAPUs over the historical baseline. The average monthly number of sacral FAPUs was compared with the average monthly number of sacral FAPUs during the 90-day trial period.

In order to further assess the effectiveness of the intervention, we assessed like time periods, comparing the number of sacral FAPUs that developed during the trial period with the number of sacral FAPUs that developed 90-days before.

**Results**

The original comparison of sacral FAPUs revealed during the 11-month historical baseline, the average number of sacral FAPUs among the trial was 117 patients was 1.2 per month (mean 0.15) compared to 2.3 per month (mean 0.42) during the 3-month trial (p<160). This represented a sacral FAPU incidence reduction of 60%.

The comparison of like time periods revealed that over the 90-days before the turn and position system was implemented (February, March, April 2011), 19 sacral FAPUs developed in the sacral region. A total of 7 sacral FAPUs developed over the course of the 90-day turn and position trial (May, June, July 2011). This represented a 63% reduction in sacral FAPUs during the 90-day trial (Figure 1).

The secondary cost analysis (reported in Canadian dollars) revealed the estimated cost of treatment for the 19 sacral FAPUs that developed over the 90 days before the trial was $46,550, and the estimated cost of treatment for the 7 sacral FAPUs that developed during the trial was $17,370, representing an estimated cost-savings of $29,400 (63% reduction in expenditures for treatment). The total cost of the devices was $17,125. When subtracting the cost of the preventive devices from the estimated cost-savings (12 sacral FAPUs prevented), there was an estimated cost-savings of $12,175.

**Discussion**

1. Use of a turn and position device on our CVICU resulted in a 63% reduction in sacral FAPUs over a 90-day period, and cost-savings of approximately (Canadian) $12,175. The effectiveness of the turn and position device trial may have been attributed to several factors:

- Use of the device helped caregivers adhere to best practices in patient repositioning and pressure offloading.
- The design of the device ensures ease of patient repositioning with integrated handles and a low-friction glide sheet.
- 30-degree foam body wedges help facilitate repositioning in the 30-degree position, as recommended by practice guidelines.
- Disposable microporous pads help prevent exposure of the patient’s skin to excess moisture.

**Conclusion**

Given the high risk nature of this patient population and their propensity to pressure-related injury, additional research is warranted on the impact of a turn and position system on FAPU prevention.