

## NPWT from hospital to home: providing clinical efficacy, increasing quality of life and saving costs

Northern Devon Healthcare   
NHS Trust

Natalie Bonds, Tissue Viability Nurse, Northern Devon Healthcare NHS Trust

### Introduction and Aims

The Talley VENTURI® Negative Pressure Wound Therapy (NPWT) system has been used in the Northern Devon Healthcare NHS Trust for six years for the treatment of complex acute and chronic wounds alike.

**13/08/15:** A 49 year old female was admitted to North Devon District Hospital with abdominal pain, and a chest x-ray showed free air below the diaphragm. An emergency laparotomy was performed on the day of admission which confirmed the diagnosis of a perforated bowel. The perforation was repaired in theatre, in addition to the formation of an end colostomy in the left iliac fossa, with closure using three tension sutures and clips to the skin. The patient was transferred directly to the intensive care unit following surgery.

**21/08/15:** A referral was made to the Tissue Viability Team due to the presence of infection within the wound and lack of healing to the wound edges. Systemic antibiotics were commenced for infection and distal and proximal clips were removed, leaving central clips in place for support. The wound measured 27cm in length, 7cm in width and 6cm in depth (area: 189cm<sup>2</sup>, volume: 1134 cm<sup>3</sup>) (see Figure 1.).

**28/08/15:** All clips were now removed and, due to concern over bowel involvement, the wound was dressed with daily hydrofiber, foam and film dressings. The plan was to commence NPWT, with the aim to increase granulation tissue, decrease wound size and manage exudate levels with a view to wound closure by secondary intention.



FIGURE 1.

The patient's wound on 21/08/15

### Method

Prior to the commencement of NPWT, hydrofiber, foam and film dressings were used to dress the wound daily, taking approximately 30 minutes of nursing time. The patient's wound at this time is depicted in Figure 2.



FIGURE 2.

The patient's wound on 08/09/15

**09/09/15:** The VENTURI® COMPACT NPWT system from Talley (Figure 3) was applied using a large roll of gauze as a wound interface and a portal drain. Continuous therapy was selected, with an initial therapy level of -60mmHg, which was gradually increased to -80mmHg, with twice weekly dressing changes.



FIGURE 3.

VENTURI® COMPACT  
Negative Pressure Wound Therapy system

**14/09/15:** The patient was now well enough to be discharged home with a VENTURI® COMPACT pump to continue with wound closure in her own home environment. Dressings took approximately 30 minutes of nursing time.

## Results

The wound continued to decrease in size during NPWT in the patient's home and by 29/12/15 the wound measured 6cm in length and 3cm in width and was superficial at skin level (area: 18cm<sup>2</sup>, volume: 0cm<sup>3</sup>), at which point NPWT was concluded.

The clinical aim of a decrease in wound size was met with the final stages of wound healing able to take place with conventional dressings.

The progress of the patient's wound since her discharge into her home environment is depicted in Figure 4 and Figure 5.

The cost of using NPWT dressings was beneficial compared to the conventional dressings used prior to NPWT commencement (see Table 1).

FIGURE 4.  
The patient's wound on 22/12/15



FIGURE 5.  
The patient's healed wound on 15/03/16



TABLE 1.  
Cost data for wound dressings

	CONVENTIONAL DRESSINGS*	VENTURI® DRESSINGS**	COST SAVING USING NPWT
Weekly Dressing Cost	£129.50	£56.00	£73.50
Total Weekly Dressing Cost Including Labour***	£179.55	£70.30	£109.25
Total Cost During Treatment Duration (16 weeks)	£2,872.80	£1,124.80	£1,748.00

\* Dressing cost per day = £18.50. Daily dressing changes at 7 x £18.50 = £129.50 per week.

\*\* VENTURI® COMPACT Canisters £115.00 for 10 + Large Portal Drain Pack £165.00 for 10 = £280.00 = £28.00 per dressing change. 2 dressing changes per week = £56.00.

\*\*\*For the purpose of this costing exercise, labour costs are given at 1 hour of a top band 5 nurse of £14.30.

Compared to the cost of using conventional wound dressings, the use of NPWT over a sixteen week treatment period offered a cost saving of £1,748.00. The use of NPWT over this period resulted in significant reductions in wound area and volume.

## Discussion / Conclusion

This patient was able to be discharged home to complete wound healing using the same NPWT system that she had during her stay in acute care, providing continuity into a familiar environment.

NPWT is sometimes considered to be a costly wound care therapy. However, compared to some advanced wound care dressings the therapy is proven to be both clinically efficient and cost effective, whilst ensuring the patient is receiving appropriate treatment.