Treatment Barriers Eliminated: Innovative Negative Pressure Wound Therapy System Increases Staff Confidence and Reduces Wound Volume

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INTRODUCTION

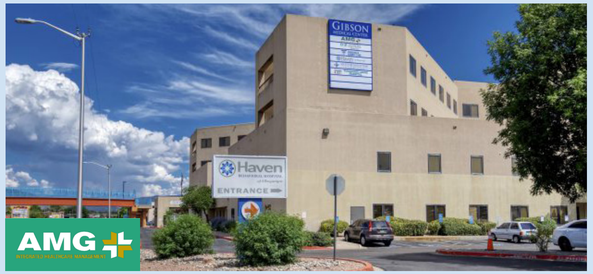
Negative Pressure Wound Therapy (NPWT) has become the go-to standard of care for complex wounds. Fournier's gangrene (FG) affects 1.6 out of 100,000 people[1]. Treatment of FG includes aggressive surgical debridement and antibiotics; followed by negative pressure wound therapy (NPWT)[2].

Long-Term Acute Care Hospitals (LTACH) play a significant role in treating complex wounds, including Fournier's gangrene (FG). According to Arnold, the goal in LTACH's is not always complete healing. Alternate goals include decreased wound volume and increased granulation tissue to facilitate patient discharge to rehab or home health[3].

Published benefits of NPWT include: decrease in valuable staff time, length of stay, pain medication, as well as improved patient comfort, quality of life and mobility[4].

NPWT requires a solid dressing technique skill set, especially for complex wounds[5].

NPWT was often abandoned at our LTACH when treating complex wounds due to barriers such as seal maintenance, copious exudate, difficult anatomical locations and staff ease of use. Furthermore, patient's had difficulty ambulating with a bulky NPWT system.



METHOD

To evaluate the effectiveness of using an Innovative NPWT System‡ that dynamically adjusts to fluctuating wound exudate volume and/or viscosity applied together with an ostomy barrier ring in a case series of 10 complex wounds including FG, stage 4 pressure injuries and a fistula.

RESULTS

This Innovative NPWT System‡ and dressing technique eliminated previous treatment barriers experienced at our LTACH. Patient mobility and ambulation improved due to the light weight of the system. NPWT was uninterrupted allowing mechanisms of action to be realized.

Average wound volume reduction = 88%; average length of treatment 4.9 weeks.

CONCLUSION

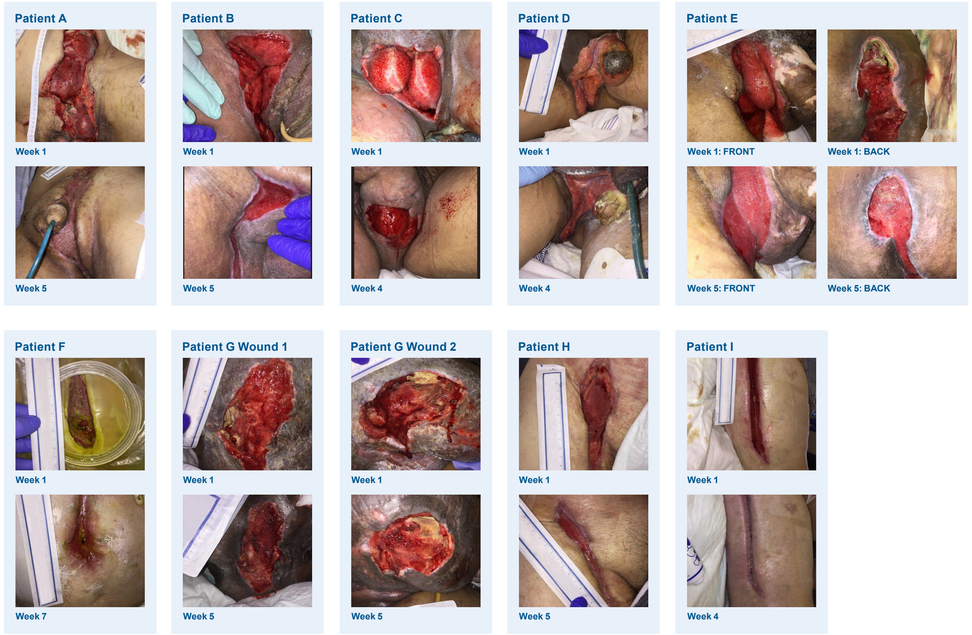
Goals of complex wound treatment in LTACH's include decreased wound volume and granulation tissue[3]. We were able to achieve these healing goals on extremely complex wounds, plus remove barriers to NPWT treatment with implementation of key dressing techniques and an Innovative NPWT System‡. Nursing staff reported easier NPWT management, dressing seal maintenance, reduction in alarms and easier patient ambulation.

Adopting an Innovative NPWT System‡ that adjusts to changing wound conditions along with use of ostomy barrier rings to maintain a seal has reduced early abandonment of NPWT in our facility.

TABLE 1

Description	Patient	M / F	Age	Weeks on NPWT	Initial Measurements (cm)	Final Measurements (cm)	Volume Reduction
Fournier's Gangrene	A*	Male	53	5	46.0 x 27.0 x 5.0	13.0 x 9.0 x 0.1	100%
Fournier's Gangrene	B	Male	77	5	17.0 x 4.0 x 5.0	13.0 x 2.0 x 1.0	92%
Fournier's Gangrene	C	Male	44	4	10.0 x 8.0 x 6.0	4.0 x 2.5 x 0.3	99%
Fournier's Gangrene	D	Male	42	4	18.0 x 5.0 x 3.3	13.2 x 3.0 x 3.0	60%
Fournier's Gangrene	E	Male	49	5	35.0 x 23.0 x 9.0	30.0 x 12.0 x 0.3	85%
Wound with Fistula	F	Male	62	7	11.0 x 3.0 x 2.0	4.0 x 4.0 x 0.5	88%
Pressure Injury Coccyx	G Wound 1	Female	44	5	16.0 x 8.0 x 4.0	7.0 x 5.0 x 2.5	83%
Pressure Injury R Thigh	G Wound 2	Female	44	5	13.0 x 10.0 x 3.0	7.2 x 7.0 x 1.2	84%
Surgical Dehisced	H	Male	66	5	13.2 x 5.2 x 1.0	8.8 x 3.6 x 0.1	95%
Surgical Dehisced	I	Female	58	4	29.0 x 2.3 x 3.0	23.0 x 0.8 x 0.8	93%
				4.9 Average			**88% Average**

**Closed with skin graft. Once the skin graft was placed, NPWT was discontinued.*



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‡Invia® Liberty™ NPWT System; Medela AG Presented at the SAWC Spring April 7-9, 2022.

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