# Evaluating the clinical acceptance of a Negative Pressure Wound Therapy (NPWT) system in accordance with standards of care in patients with a variety of wound types

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### INTRODUCTION

In the US, chronic wounds affect around 6.5 million patients a year and cost over \$25 billion to treat<sup>1</sup>. The burden to treat wounds is growing rapidly due to increasing healthcare costs, an aging population and a sharp rise in the incidence of diabetes and obesity<sup>1</sup>.

Negative Pressure Wound Therapy (NPWT) is routinely used on a variety of wound types as a standard of care to create an environment that promotes wound healing, preparing the wound bed for closure, reducing edema, promoting granulation tissue formation and perfusion, and by removing exudate and infectious material. To advance a wound to the next stage of treatment, adjunctive devices must meet or exceed accepted industry standards. In an advanced wound care clinic where over 100 patients are seen per day, easy application, easy transition to home, versatility and applicability across care settings are desirable in treating patients efficiently.

#### METHODS

- Ethics approved, Prospective, Non-randomized
- Patients screened from outpatient clinic
- Goal of therapy established at time of enrollment
- 4-week treatment period
- Debridement in clinic OR, burn OR
- Return to clinic weekly / wound assessment, photos, NPWT dressing changes performed.

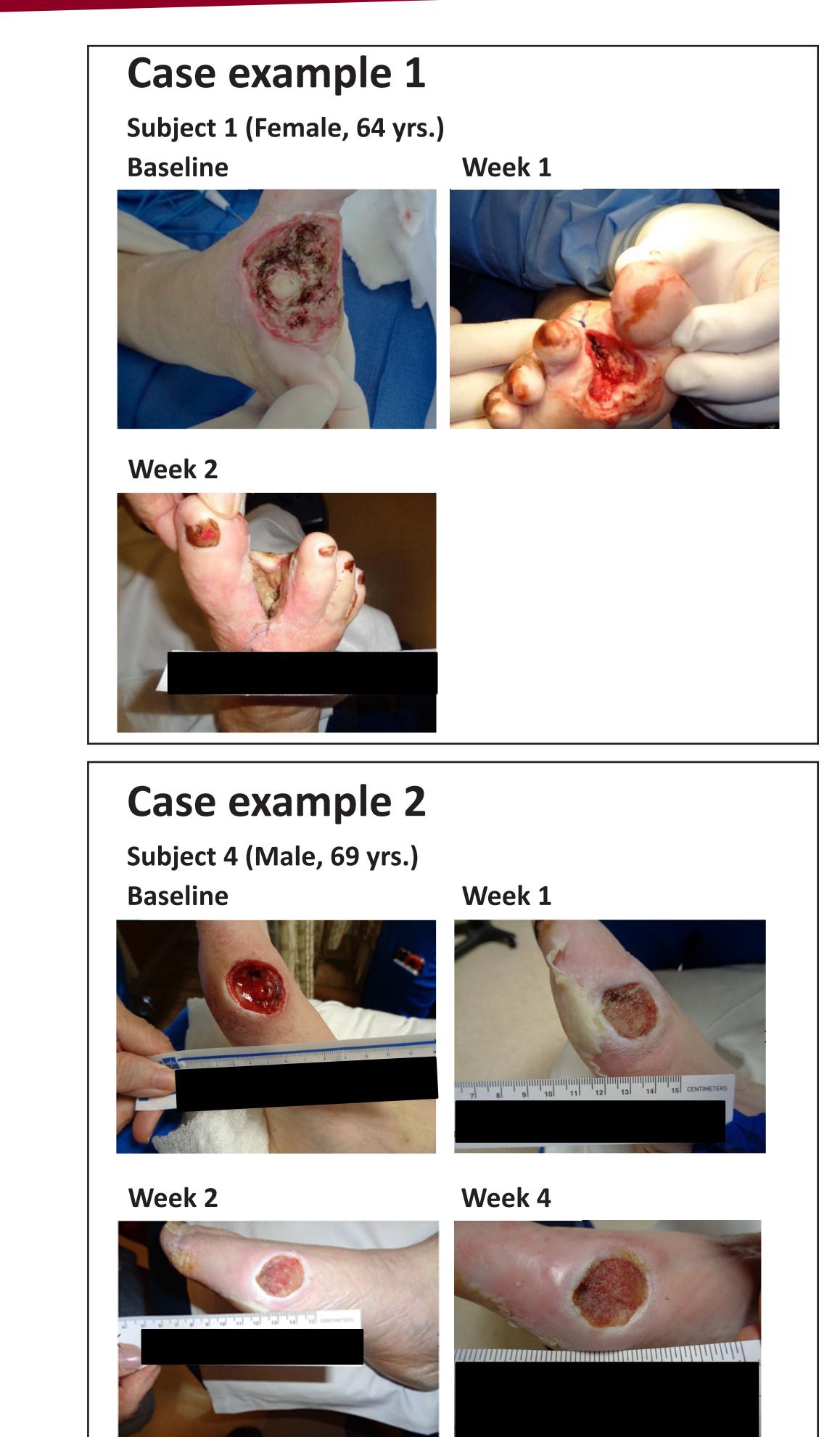
## RESULTS

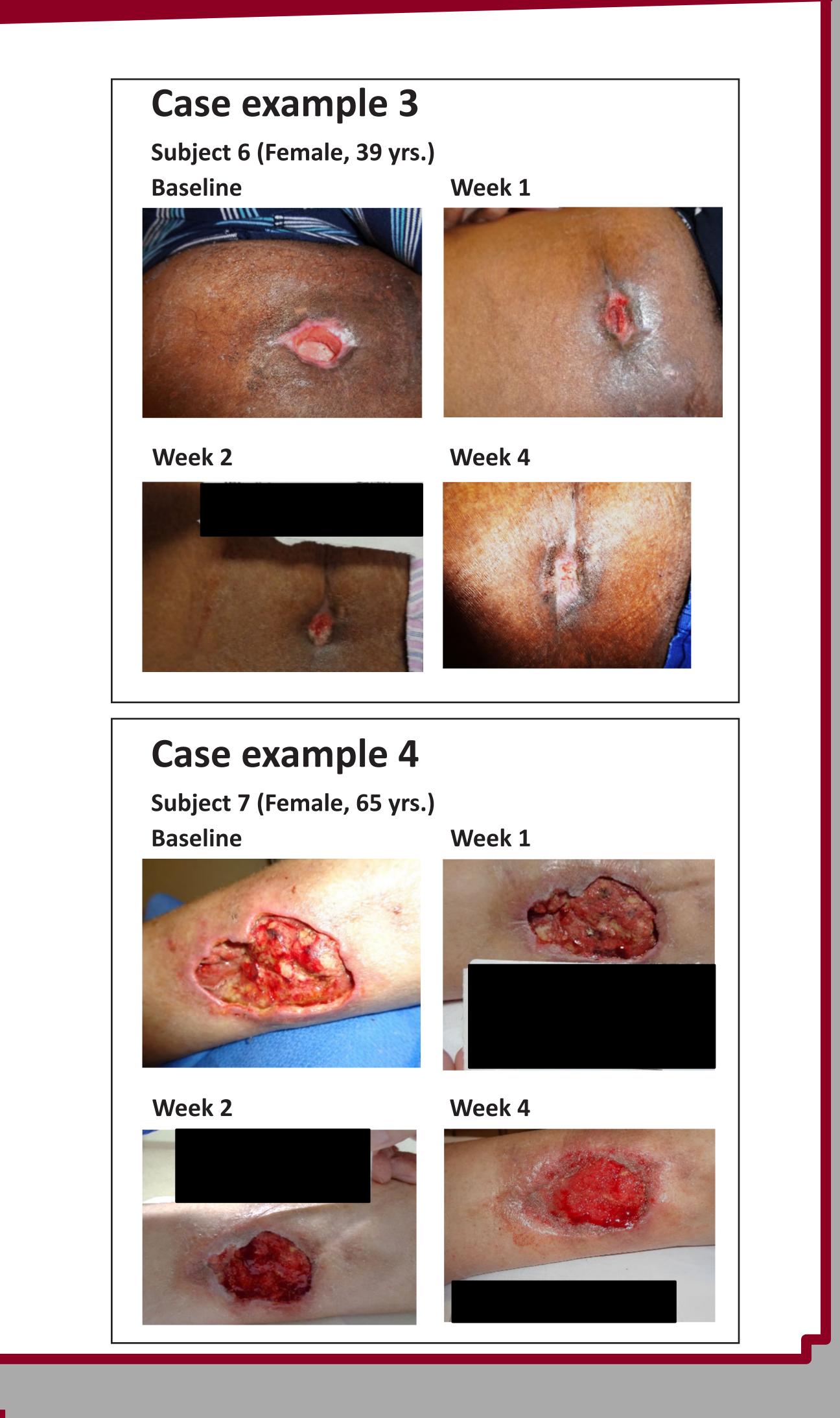
- •NPWT dressing stayed in-situ for a period between 7 24 days.
- •Outcomes were comparable to previous data using the same single-patient-use NPWT system\*2. The results were also consistent with other literature on NPWT treated patients with similar wound indications<sup>3</sup>.

## CASE SERIES SUMMARY

#### Table 1: Case Series Summary

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Subject	Number of days on NPWT	Therapy Goals Reached	Diagnosis	Procedure
1 (Female, 64 yrs.)	14 days	Yes	Diabetic, chronic wound on right foot after stepping on rock. Progressive pain/swelling and cellulitis	<ul> <li>Admission to Burn Medical floor for IV antibiotics</li> <li>Toe amputation</li> <li>NPWT to assist in closing wound.</li> <li>Expected Endpoint: Decrease wound volume</li> </ul>
2 (Male, 61 yrs.)	7 days	Yes	Left lower leg, above knee amputation following motor vehicle accident/ Pressure injury, non healing wound	<ul> <li>Previous larvae application performed</li> <li>NPWT to assist wound healing.</li> <li>Long-term IV antibiotics.</li> <li>Goal: close wound with NPWT</li> <li>Expected Endpoint: Increase in granulation tissue.</li> </ul>
3 (Female, 54 yrs.)	14 days	Yes	Diabetic, neuropathy and complications. Peripheral Artery Disease with occlusion to popliteal and tibioperoneal trunk bi furcation. Post-amputation R toe	<ul> <li>Guillotine amputation of the metatarsal of the 5<sup>th</sup> toe of R foot</li> <li>Debridement</li> <li>NPWT to assist in wound closure.</li> <li>Expected Endpoint: Decrease wound volume</li> </ul>
4 (Male, 69 yrs.)	24 days	Yes	Diabetic with an Infected, chronic wound on right great toe, osteomyelitis	<ul> <li>Worsening 8 week old chronic wound.</li> <li>Admission to JMS wound center for incision and drainage.</li> <li>Long-term IV antibiotics.</li> <li>Goal: close wound with NPWT</li> <li>Expected Endpoint: Decrease wound volume and increase in granulation tissue.</li> <li>Evaluated after complaint of small bump to right thigh.</li> </ul>
5 (Male, 46 yrs.)	14 days	Yes	Diabetic, Abscess to right groin	<ul> <li>For subcutaneous incision and drainage of abscess</li> <li>Wound surgically closed after reaching goal.</li> <li>Goal: Decrease wound volume and increase granulation</li> <li>Expected Endpoint: Decrease wound volume and increase in granulation tissue.</li> </ul>
6 (Female, 39 yrs.)	24 days	Yes	Abscess of right inner thigh	<ul> <li>Admission to JMS Burn and wound clinic for evaluation of worsening abscess (1 week old)</li> <li>Goal: close wound with NPWT</li> <li>Expected Endpoint: Decrease wound size and improve wound bed appearance</li> </ul>
7 (Female, 65 yrs.)	24 days	Yes	Non healing wound on right lower leg after accident	<ul> <li>Admission to JMS Burn and wound clinic</li> <li>Evaluation of right leg wound (horse stepped on patient).</li> <li>Goal: Close wound with aid of NPWT.</li> <li>Expected Endpoint: Decrease wound volume and size.</li> </ul>
8 (Male, 70 yrs.)	24 days	Yes	Full thickness wound following dog bite on left thigh Hx of chronic venous insufficiency	<ul> <li>Worsening 8 week old chronic wound.</li> <li>Patient evaluated for surgical excision</li> <li>Goal: Decrease wound volume and increase granulation.</li> <li>Expected Endpoint: Decrease wound size and improve wound bed appearance</li> </ul>
9 (Female, 39 yrs.)	21 days	Yes	Abscess – Prior incision & drainage (I&D), Renal disease	<ul> <li>Re-evaluation of right upper extremity</li> <li>Surgical wound to right upper extremity status post infected AV fistula</li> <li>Goal: Decrease wound volume and increase granulation</li> <li>Expected Endpoint: Able to approximate or close wound</li> </ul>





#### CONCLUSION

The case series findings demonstrate that the portable NPWT system\* is easy to use and convenient for patients being treated with a single-patient-use NPWT. Furthermore, we found favorable outcomes in this small group.

Product notation:

\*Invia® Motion™ NPWT system/Invia® NPWT Dressings

Further research with an increased number of patients is needed to ascertain statistical power.

#### REFERENCES

1. Human Skin Wounds: A Major and Snowballing Threat to Public Health and the Economy. Sen et. al., Wound Repair Regen. 2009; 17 (6): 763-771. 2. Inpatient Surgical Setting Transition to Outpatient: Supportive Role of a New Personal and a Reusable Negative Pressure Wound Therapy (NPWT) System with Double Lumen. Presented at the 31st Annual Symposium on Advanced Wound Care (SAWC) Spring, April 25 - 29, 2018, Charlotte, NC, USA 3. Negative-pressure wound therapy for management of chronic neuropathic non-infected diabetic foot ulcerations - short-term efficacy and long-term outcomes. Borys et. al., *Endocrine*. 2018 Dec; 62(3):611-616

NOTES

\*\*Invia® FitPad Acknowledgements: The support of Medela AG (Laettichstrasse 4b, 6340 Baar, Switzerland) for this project is gratefully acknowledged. Trademarks: Medela, Invia and Invia Motion are registered in the U.S. Patent and Trademark Office and elsewhere.

