

## Introduction

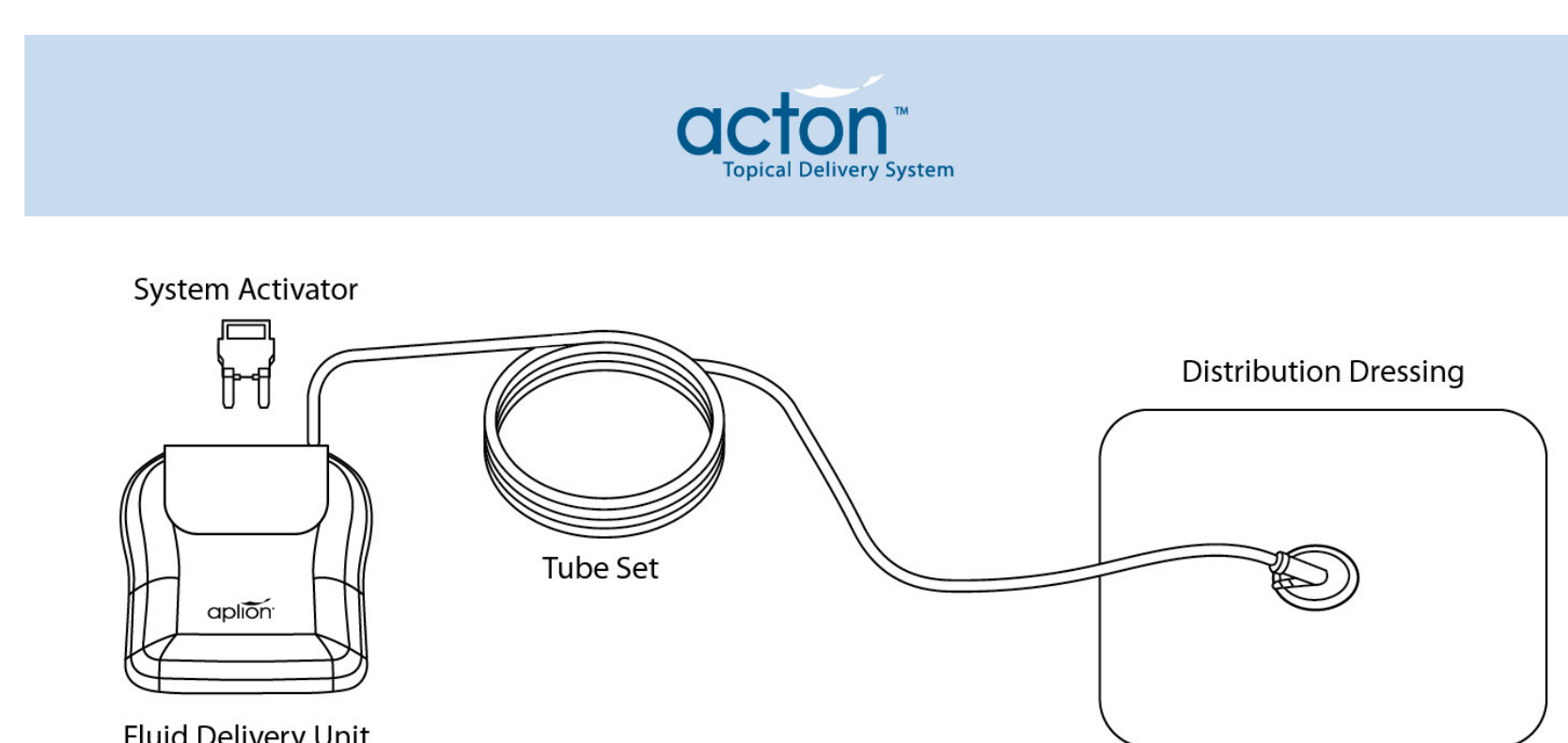
- Venous leg ulcers (VLUs) possess their own environmental characteristics that interrupt the wound healing process.
- These local factors include moisture balance, bacterial burden and failed extracellular matrix among others.
- We reviewed our experience with a two part strategy based upon the utilization of the Acton Topical Delivery System™ (ATDS) and multilayer compression wrap to aid in the closure of VLUs.

## Objectives

- To assess the bacterial burden in chronic venous leg ulcers with the use of the ATDS.
- To assess the response of continuous delivery of dilute betadine or dakins solution on the wound bed.

## Methods

- The ATDS provides very small amounts of topical solutions to the wound bed over the course of a week.
- We performed a retrospective review of four patients with chronic non-healing VLUs of greater than 52 weeks.
- Two cases utilized Dilute Betadine and two cases utilized ¼ strength Dakins solution delivered by the ATDS. The ATDS was applied underneath a multilayer compression dressing that was changed weekly. Weekly culture swabs were obtained for all the patients to assess bacterial burden.



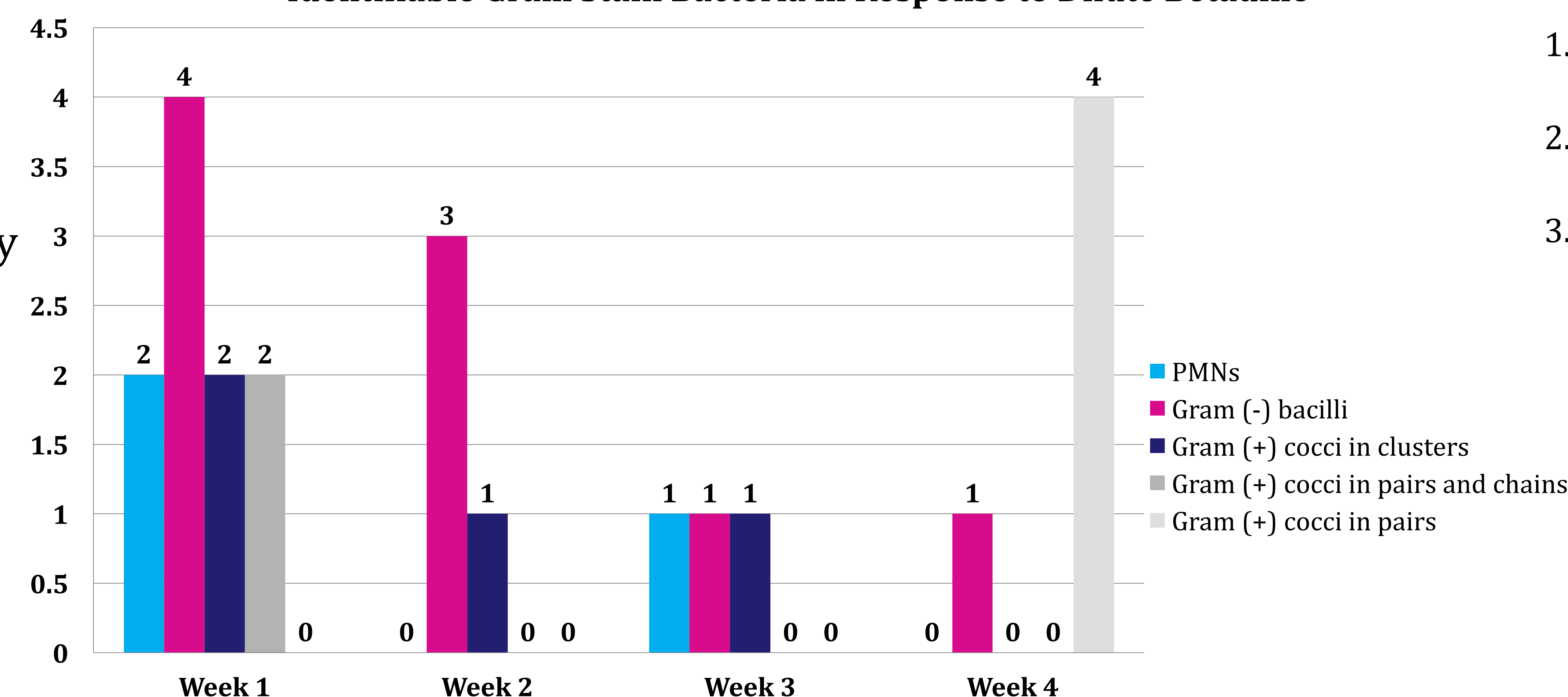
## Results

- After two weeks use, a reduction of the bacterial burden was noticed in the wound beds.
- A slight reduction in wound size was noted each week in both groups. The dilute betadine group had a higher mean reduction. (Mean: 3.24cm<sup>2</sup> weekly reduction)
- The dilute betadine-subgroup closed during the weeks following conclusion of the infusion period.
- The dakins-subgroup showed significant maceration and not as much reduction in bioburden over 4 weeks.



• **Figure A:** Venous Leg Ulcer treated with Dilute Betadine:  
• 1A) Pre-Application /1B) Post-Application Week 0, 2) Week 2, 3)Week 4, 4) Week 6

**Identifiable Gram Stain Bacteria in Response to Dilute Betadine**



## Discussion

- Based on our observations ATDS with dilute betadine, with the addition of standard compression therapy, appears to control the bacterial load in chronic venous leg ulcers.
- We observed that the ATDS provided an ideal wound environment contributing to a reduction in wound size.
- Long term follow up to look at the recidivism of these wounds is imperative to understand the potential advantages of this therapy.

## Conclusion

- Using minimal volume continuous instillation of a topical antimicrobial, in very select patients, appears to reduce bioburden thereby improving the wound bed.
- In our very limited experience we found the astringent quality of dilute betadine to be better than the dakins solution which lead to greater peri-wound maceration.
- Additional larger, randomized, prospective studies are necessary to fully evaluate the effectiveness of the ATDS in chronic venous leg ulcers.

## References

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3. Daróczy J. Quality control in chronic wound management: the role of local povidone-iodine (Betadine) therapy. Dermatology. 2006;212 Suppl 1:82-7.