

# HEALTH ECONOMICS OF A GEL WITH BETA-GLUCAN\*

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## Introduction

A gel containing Soluble Beta-glucan (SBG), a natural polymer, is intended to be used on stalled dermal wounds where standard of care has failed.

The aim of this presentation is to report on:

1. A Markov cost-effectiveness analysis of a 60 DFU patient RCT
2. A 12 week clinical evaluation of 26 patients' wounds where a topical Soluble Beta-glucan (SBG) gel was applied to wounds that had stalled healing

## Study 1:

### Method

The data from an RCT of 60 DFU patients (Zykova 2016) was used to populate a Markov simulation cost-effectiveness model where two treatments were compared:

- i. Standard of care (SoC) plus SBG
- ii. SoC plus hydrogel (methylcellulose)

Control and experimental dressings were applied 3 x weekly, up to 12 weeks in 54 patients, 27 in each arm.

### Results

- The proportion of ulcers healed at 12 weeks was 56% (SBG) and 37% (methylcellulose)
- Patients treated with SBG required 2.13 weeks less treatment (3.96 [SBG] v. 1.83 [SoC])
- Mean treatment cost per patient over 12 weeks was £1459.80 (SBG) and £1358.90 (SoC + hydrogel)
- Incremental cost of SBG £100.90 per patient
- Incremental cost per additional week healed £47.37

Data was extrapolated to an annual time horizon to provide a view on annual cost impact.

	Ulcers healed	Weeks healed	Weeks of treatment	Cost	Incremental weeks healed	Incremental cost	Incremental cost per additional week healed
	Percent	Mean per patient	Mean per patient	Mean per patient	Per patient	Per patient	ICER
<b>SBG</b>	94%	34.37	17.63	£3190.6	+9.73	-£503.20	Dominates
<b>Standard care (methylcellulose)</b>	78%	24.65	27.35	£3693.8	-	-	-

- Over annual budget cycle, SBG is expected to heal 94% of wounds compared with 78% (SoC/hydrogel)
- SBG healed wounds more quickly. The mean 'expected weeks healed' was 34.37 (SBG) v. 24.65 (SoC/hydrogel)
- The mean 'weeks of treatment' with SBG was 17.63 v. 27.35 for SoC/hydrogel with an incremental benefit of 9.73 weeks
- Over 12 months, SBG gel is expected to be cost saving, £503 per patient - dominant treatment option

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## Study 2:

26 patients who had received standard care and who had a variety of stalled wounds were recruited to a 12 week evaluation where treatment was changed to a gel containing Beta-glucan (King et al 2017).

### Method

- The data from the 12 week clinical evaluation was used to calculate the wound response (change in surface area) and cost of care
- The analysis compares costs and outcomes for the treatment period with a gel containing Beta-glucan against a historic control where the wounds had not progressed under standard care

### Results

- At baseline: all wounds had been treated with SoC for at least 4 weeks
- Prior treatment mean - 50 weeks
- Mean baseline wound area 8.1cm<sup>2</sup>
- At 4 week timepoint: average wound surface area reduction 41%, 1 wound healed, 19 decreased in size, 4 wounds remained static, 2 increased in size (Figure 1)

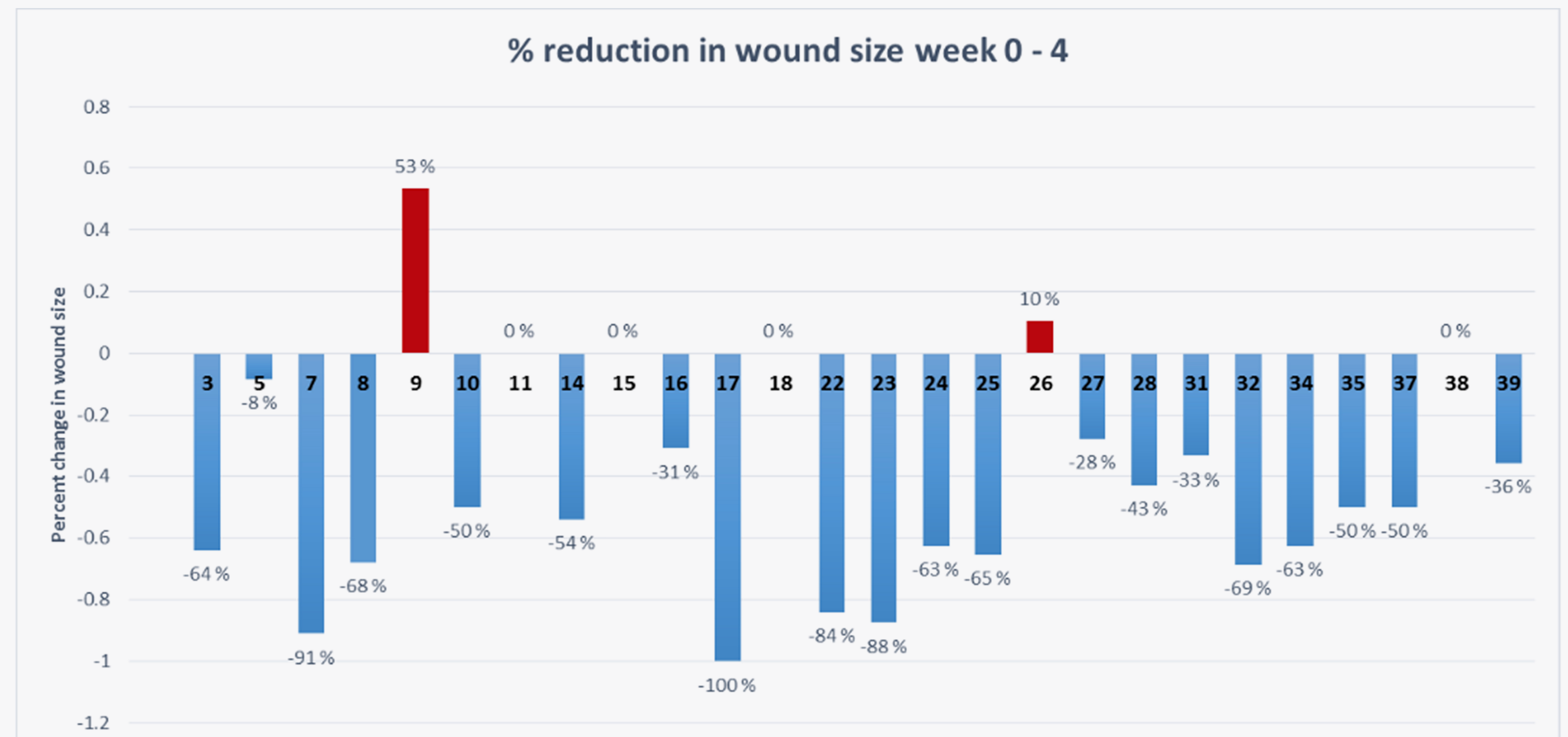


Figure 1

At the end of 4 weeks, 13 wounds reduced in size with 8 wounds showing a surface area reduction of >50%. 7 wounds healed within 12 weeks, with 3 more healing within 20 weeks.

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## Treatment in community clinics

Healed wounds (n=10)	Total cost of prior treatment	Total treatment costs until healed (Gel with Beta-glucan + SoC)	Incremental costs
	£1541	£514	-£1027
Full 26 patient cohort	Calculated 12 weeks prior costs	Cost during gel with Beta-glucan treatment period inclu SoC	
	£11443	£10430	-£1013

## Treatment in patient's homes (26 wounds)

	Prior treatment duration (mean)	Total prior treatment costs	12-week treatment cost
Historic control (pre-evaluation)	50.2 weeks	£4075 per patient	£974 per patient
Gel with Beta-glucan evaluation	-	-	£895 per patient

Average treatment costs for the gel containing Beta-glucan are £79 lower per patient when compared to 12 weeks SoC (£895 v. £974). More patients are healed earlier with the gel containing Beta-glucan and this reduces the need for continuing nurse visits.

## Conclusion

The two studies presented are complementary and provide a basis on which to assess the cost-effectiveness of a gel with Beta-glucan.

The RCT data shows that the use of SBG gives an expected annual saving of £503 per patient.

The case series data shows an average saving of £1,027 per patient if treated with a gel with Beta-glucan in community clinics, and an average saving of £2,540 per patient when treated at home.

A gel with Beta-glucan reactivates the healing process in stalled wounds resulting in faster healing and improved patient outcomes.

**\*the gel with Beta-glucan is marketed as Woulgan**  
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1. Zykova et al. Journal of Diabetes Investigation 2014;5(4):392-99.
2. King, B. et al. 2016 - JWC, 2017 May