

Polihexanide and betaine (PSGX) containing, solution versus saline for the treatment of leg ulcers: A comparative cost analysis using real-world data from England

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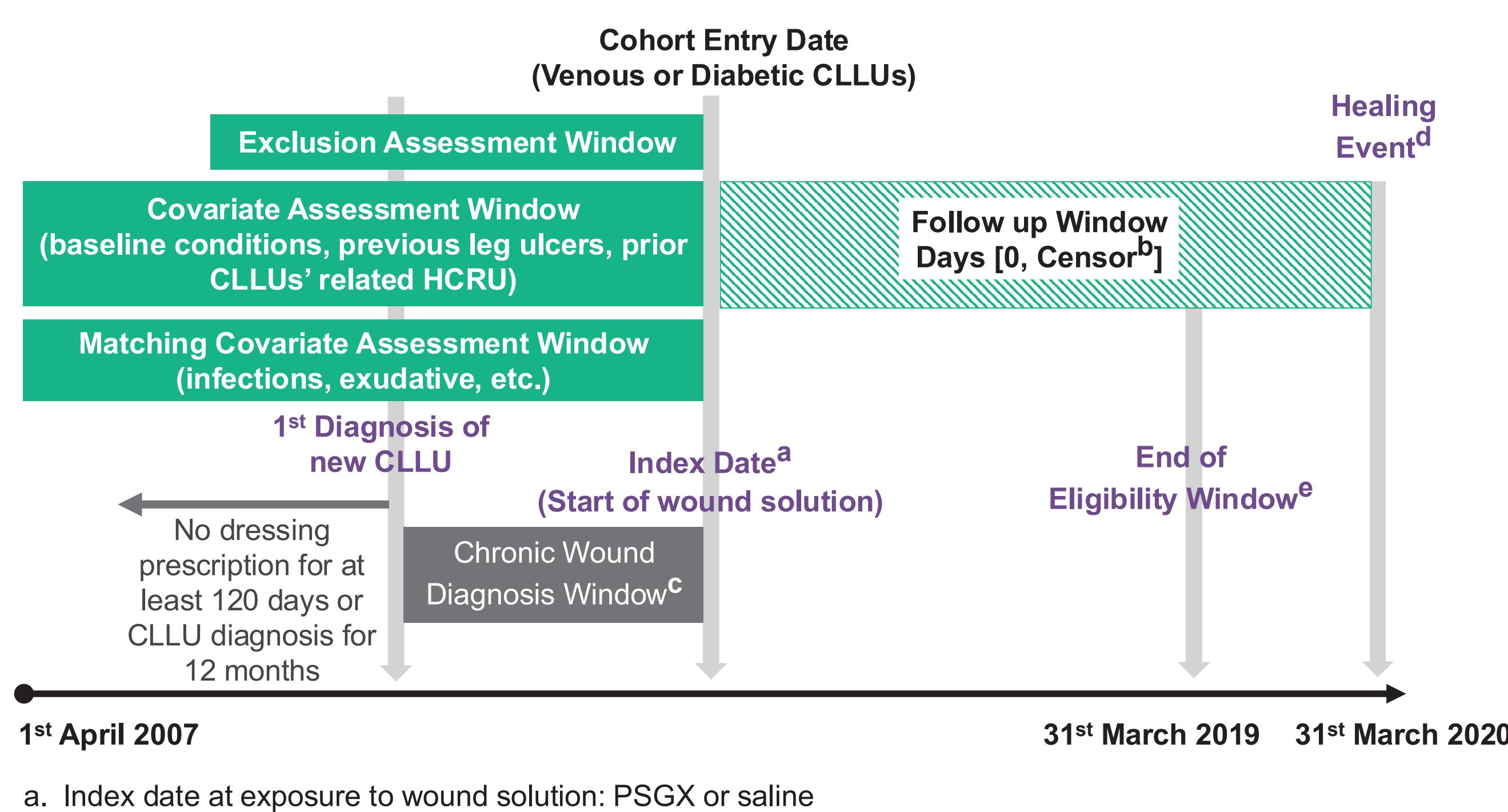
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Background

Chronic lower limb ulcers (CLLUs) are associated with substantial clinical and economic burden. A polihexanide and betaine (PSGX) containing cleanser and gel is a well-known alternative to saline and water for wound bed preparation / wound cleansing in clinical practice. This study explores further its health economic impact.

Objectives

To estimate the difference in healthcare resource use (HCRU) and cost between patients initiated on PSGX compared to saline solution.



- a. Index date at exposure to wound solution: PSGX or saline
- b. Patient censored on the earliest of wound healing, death, leg amputation, end of registration or end of study period
- c. 2nd CLLU diagnosis and ongoing wound dressings prescriptions at least 90 days after 1st & before wound solution
- d. Healing is defined as a code for wound healing or no further wound prescription for 120 days
- e. End of eligibility window allows at least one year of follow up before the study end date of 31/03/2020

Figure 1. Study design outline

Methods

In this retrospective cohort study, individuals with a diabetic, venous, or unspecified CLLU who were prescribed a wound cleansing solution were identified from the CPRD (Clinical Practice Research Datalink) Aurum, linked with Hospital Episode Statistics and Office of National Statistics death registrations datasets, between 01/04/2007-31/03/2020 (Figure 1). In an intention-to-treat analysis, patients initially prescribed PSGX products were propensity score matched to patients initially prescribed saline. All-cause healthcare costs and selected HCRU over the first treatment year were compared and adjusted for exposure year, region, and dressing size using multivariable generalized linear modelling with gamma family and identity link.

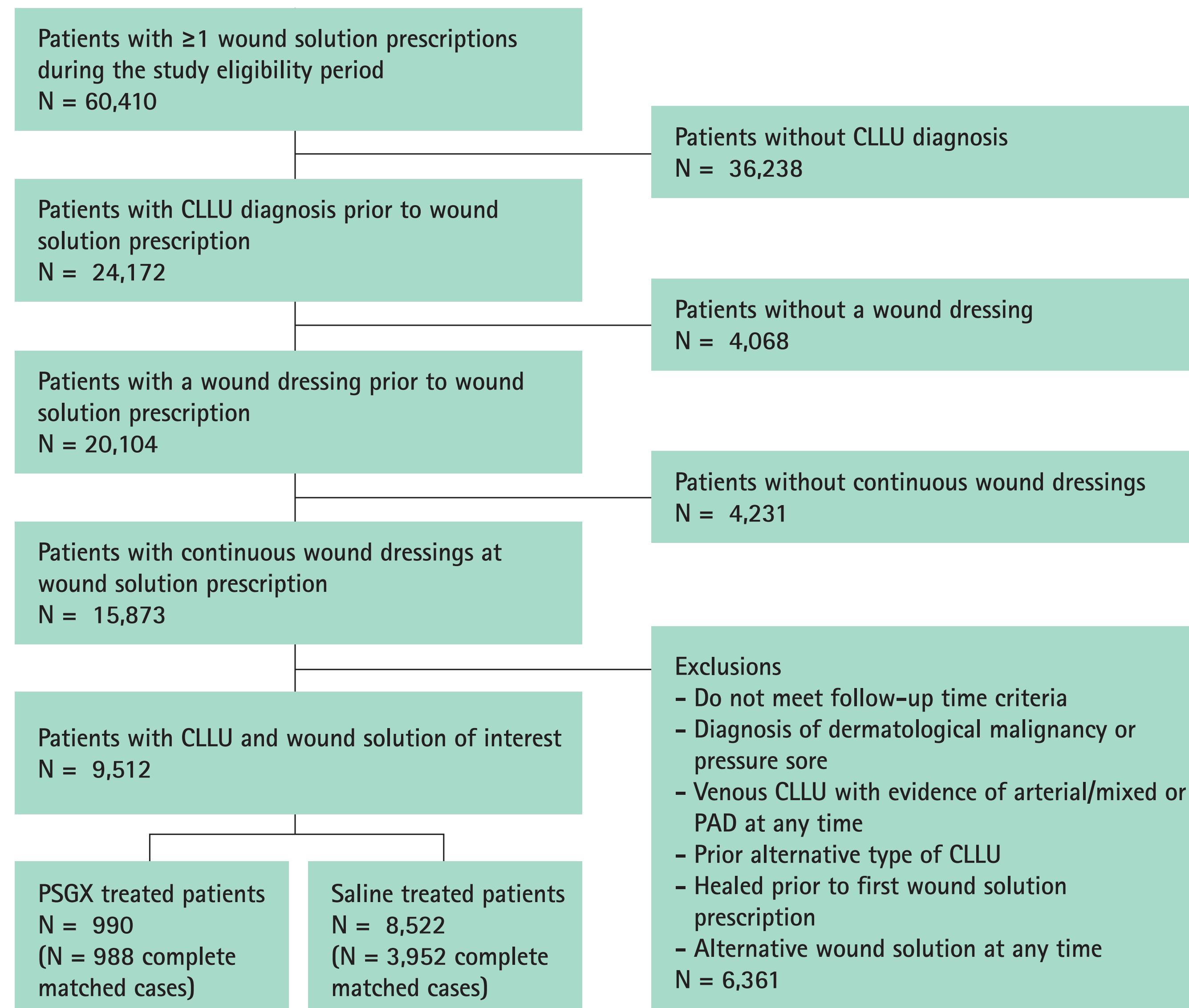


Figure 2. Study population flow diagram

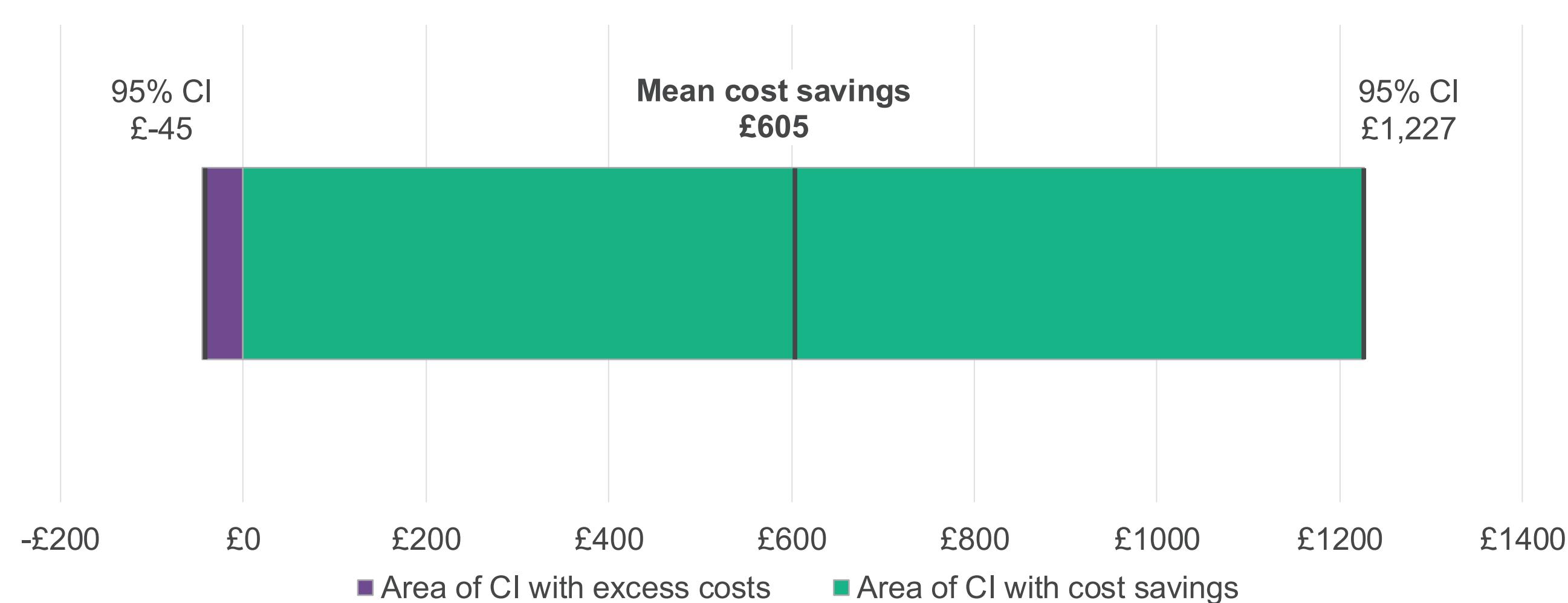


Figure 3. Mean all-cause healthcare cost savings for PSGX compared to matched saline over the first 12 months from initiation of wound solution based on generalised linear model regression adjusted for exposure year, region as aggregate, and dressing size as categorical variable

Results

Of the 60,140 patients with a wound cleansing prescription, 990 PSGX patients and 8,522 saline patients met the inclusion criteria (Figure 2). The adjusted mean all-cause cost savings were £ 605 (95% CI £ -45 to £ 1,227; $p=0.058$) for PSGX treatment compared to matched saline controls (Figure 3). On average, compared to the matched saline group, the PSGX group had 0.44 fewer inpatient admissions (-0.44; 95% CI -0.54 to -0.35; $p<0.001$), 1.1 fewer outpatient attendances (-1.1; 95% CI -1.3 to -0.89; $p<0.001$), and 2.5 fewer primary care consultations (-2.5; 95% CI -3.2 to -1.9; $p<0.001$) within the first year (Figure 4).

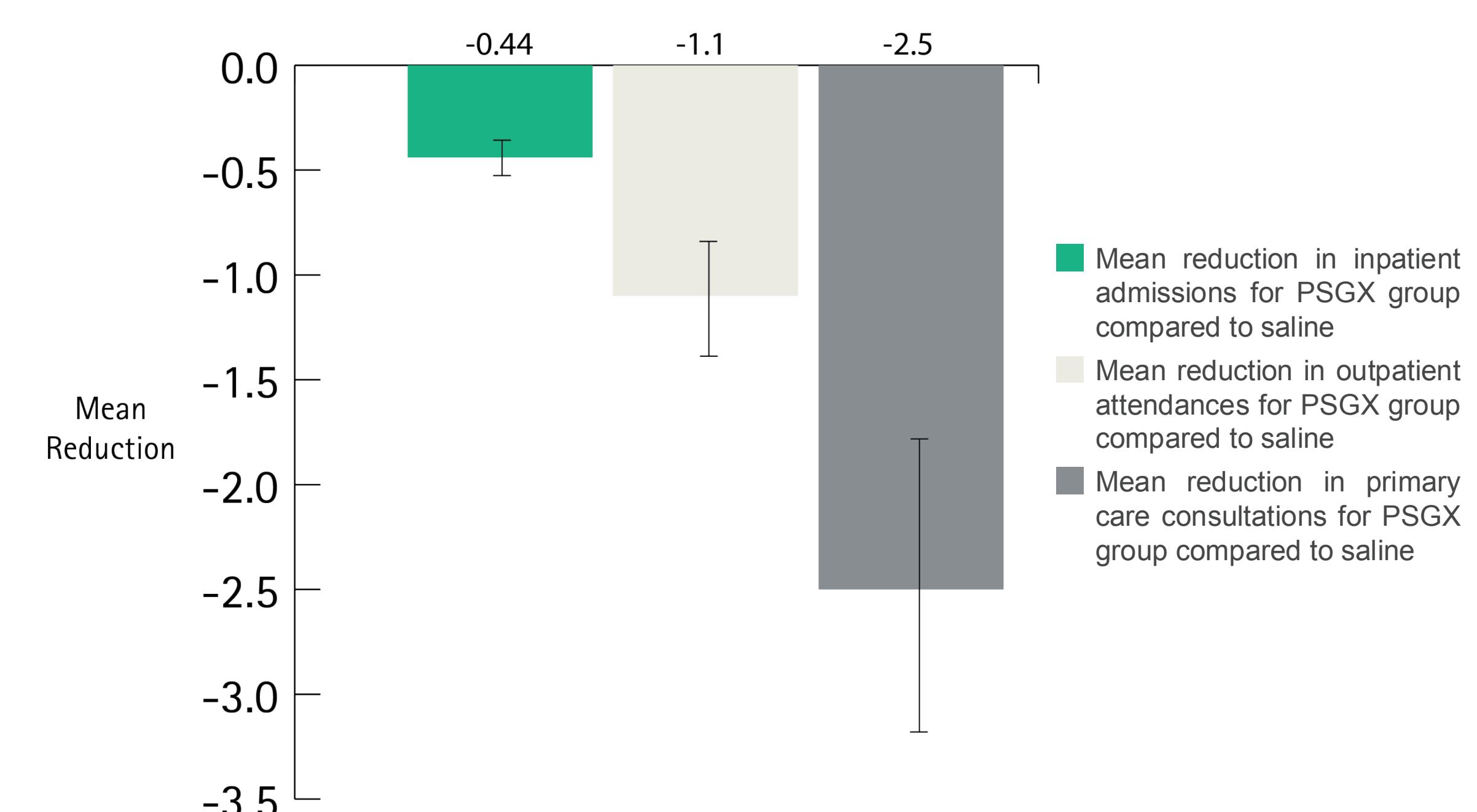


Figure 4. Estimates from generalised linear model regression for the association between solution type and HCRU over the first 12 months from initiation of wound solution adjusted for exposure year, region as aggregate, and dressing size as categorical variable

Conclusion

Adjusted mean all-cause HCRU and costs were substantially lower amongst patients initiated on PSGX compared with matched saline controls, with statistically significant differences in HCRU. This real-world study provides unique insights into the economics of CLLU treatment in clinical practice and substantiates evidence on the cost-effectiveness of PSGX.

Disclosures

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Abbreviations

- CLLU: Chronic lower limb ulcer
- CPRD: Clinical Practice Research Datalink
- HCRU: Healthcare resource use
- PAD: Peripheral artery disease
- PSGX: Polihexanide and betaine

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