



# Managing Military Tooth Surface Loss; An Audit of Practitioner Effectiveness

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Defence Primary Health Care



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## Introduction

Defence Primary Health Care (DPHC) is responsible for the dental welfare of UK Armed Forces military personnel. Although previous research<sup>1</sup> recognised that Tooth Surface Loss (TSL) has increased steadily within the military population since 2008, the effectiveness of DPHC Clinician diagnosis and management of this condition is yet to be realised.

## Aim

This audit aimed to evaluate the effectiveness of DPHC Dentists clinical assessment and management of patients' suffering from TSL within the UK military.

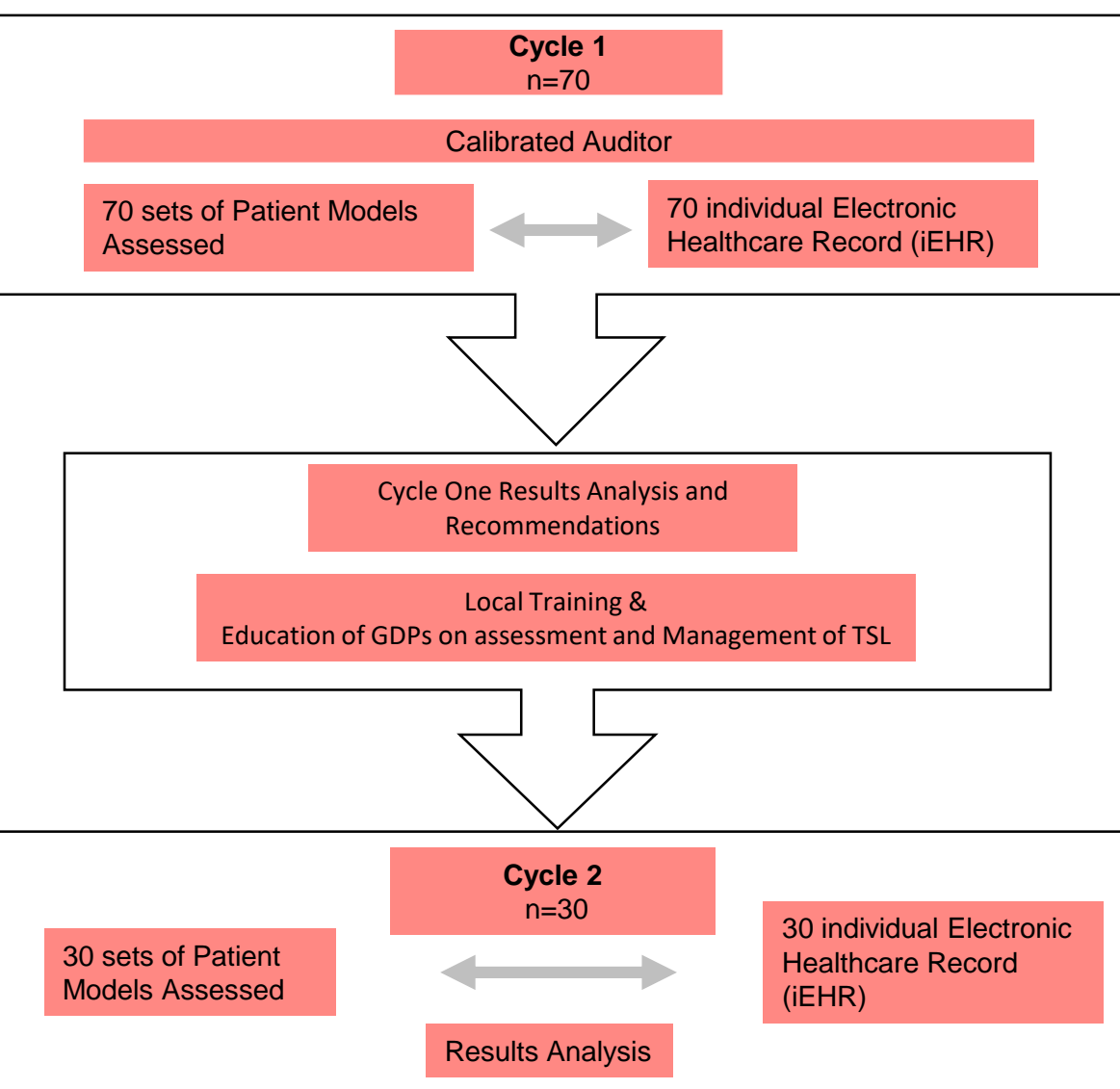
## Standards and Inclusion Criteria

Gold Standards were set using clinical guidelines adapted from the BSRD and published clinical papers<sup>2,3,4</sup>. A total of 70 patients, affected by TSL, were randomly selected for cycle 1.

### Gold Standards:

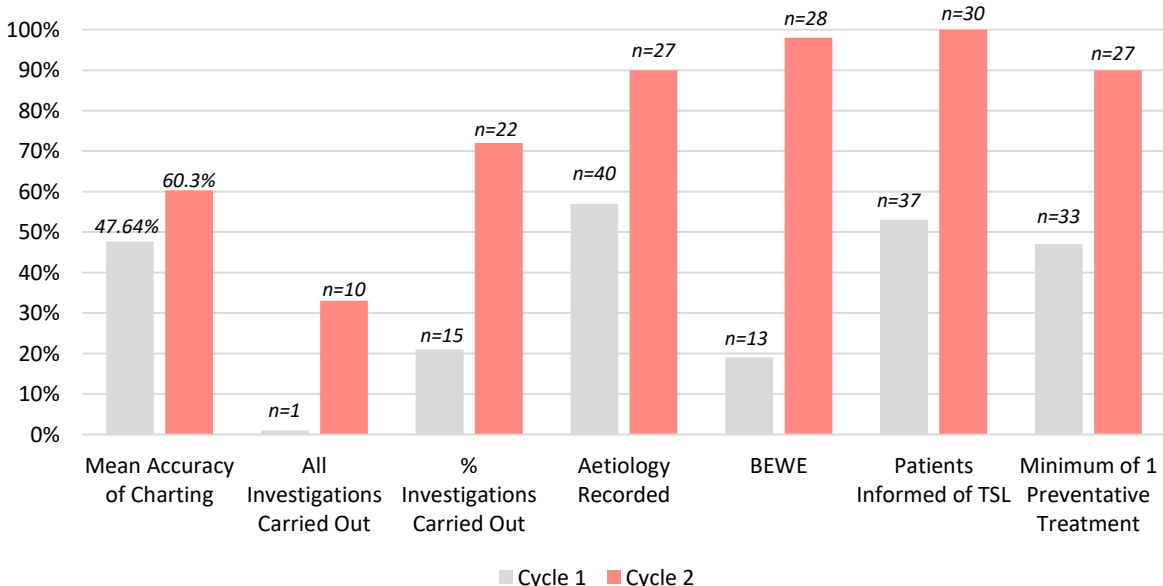
1. For 100% of TSL to be accurately charted.
2. For 100% of patients to have had the aetiology investigated.
3. For 100% of patients to have been informed of their TSL.
4. For 100% of patients to have had preventative advice/treatment provided.

## Method

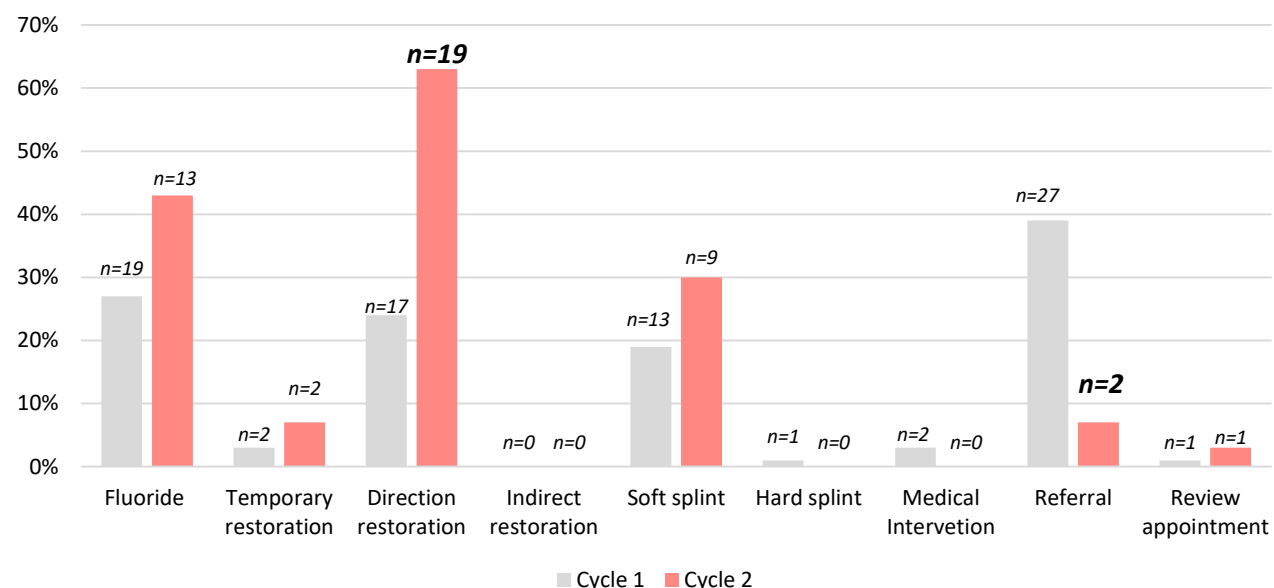


## Results

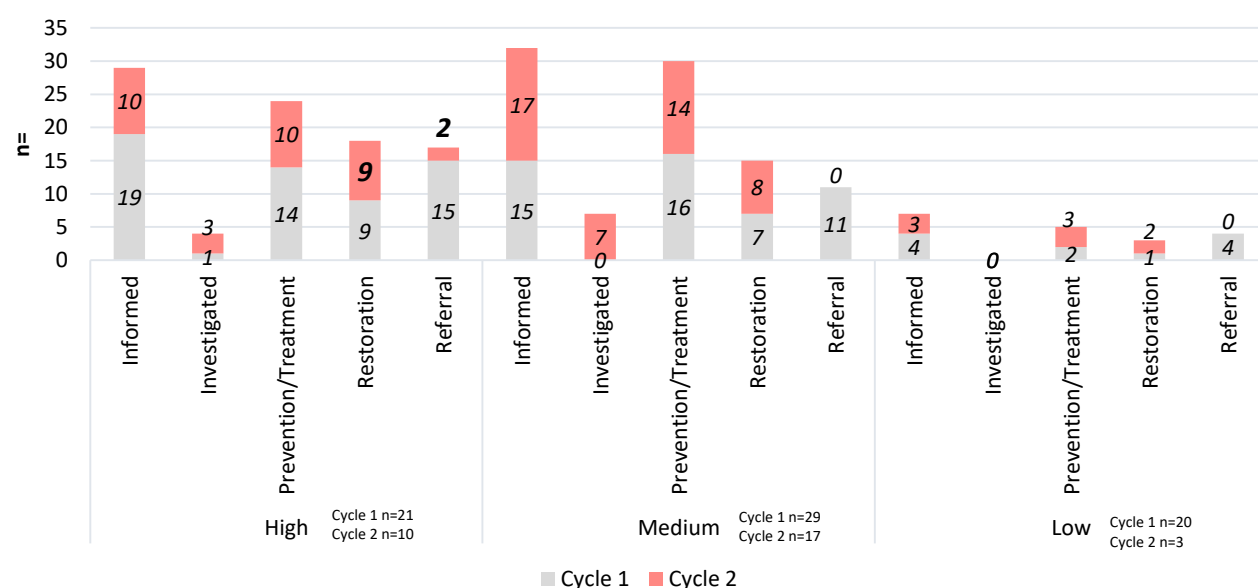
### A Comparison of Gold Standards Between Cycle 1 & Cycle 2



### Interventions Carried Out With Cycle 1 & 2



### A Comparison of BEWE in Relation to Management of TSL



- Gold Standard 1:** TSL assessment and diagnosis rose from 47.64% to 60.3% (Cycle 1 -2).
- Gold Standard 2:** There was a 43% increase in the aetiology recorded in the patients iEHR. In Cycle 1, only 21% of TSL cases were appropriately investigations, rising to 72% in Cycle 2.
- Gold Standard 3:** Gold standard met in Cycle 2 with 100% of patients being informed of their TSL.
- Gold Standard 4:** In Cycle 1, 47% of patients had a minimum of 1 treatment type for their TSL; this rose to 90% in Cycle 2.

## Discussion

This audit revealed sub-optimal diagnosis and management of TSL-affected military patients. Presently, the management of TSL is confused by there being limited published evidence to support definitive management strategies<sup>3</sup>.

The primary cause of TSL recorded for the 100 military patients was attrition, which was followed by erosion. It has been shown that, whilst the military population has decreased, TSL diagnosis has increased over the last 8 years<sup>1</sup>. It is possible that this trend could be attributed to a change in working patterns with patients exposed to more stress, with subsequent parafunction, or resulting from changing lifestyle habits, such as acidic drink consumption. Alternatively, it may be that GDPs are becoming better at diagnosing TSL within their population.

Clinical training, including the use of the BEWE tool, proved effective at improving both the diagnosis and management of TSL affected patients, although falling short of preset GS. Training also enabled increased GDP provision of restorations for severe TSL and reduced referrals to secondary care units; this may be key for more efficient management of TSL within the wider population.

## Conclusions

- TSL was not accurately recorded or diagnosed within this sample population.
- Clinical education on TSL, with the introduction of the BEWE tool, was effective at improving TSL diagnosis and management but fell short of the preset GS.
- Clinical teaching on TSL may play a role in encouraging clinicians to manage TSL within a primary care environment and reduce the referral burden to secondary care centres.

### References:

- 1.KIRMAN, S, (2016) Tooth Wear: its analysis in the United Kingdom's armed forces & utilisation of tooth wear indices to screen/monitor for non-carious tooth tissue loss (NCTTL)
- 2.HEMMINGS, K. et al. (2018) 'Tooth Wear Guidelines for the BSRD Part 1: Aetiology, Diagnosis and Prevention', (June).
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- 4.BARLETT, D., GANSS, C. LUSSI, A. (2008) 'Basic Erosive Wear Examination (BEWE): A new scoring system for scientific and clinical needs', *Clinical Oral Investigations*, 12(SUPPL.1), pp. 65-68. Doi: 10.1007/s00784-007-0181-5.