

## Introduction

The UK's population is ageing, explained by an increased life expectancy and fall in birth rate leading to a greater proportion within older age groups. In 2016, 11.8 million residents in the UK were aged 65 years or over. However, by 2066 this is anticipated to increase to 20.4 million<sup>7</sup>. This brings additional challenges that affect all sectors of society, such as older people residing in residential care and living with complex medical co-morbidities. Age UK estimates 400,000 older people live in care homes in the UK, with 1 in 6 of those 80+ years living with dementia<sup>5</sup>, and this is only expected to increase.

Denture wear is common within the older population and unfortunately denture loss and misplacement is equally as frequent. This is especially true for people living with dementia, residing in care facilities and during hospital visits<sup>3</sup>. It was reported in 2017 within the Kent, Surrey and Sussex trust, 695 dentures were reported lost over a 5 year period<sup>4</sup>. The true number was expected to be much higher due to many not being reported.

Loss of dentures can be very detrimental and distressing to patients, as it affects their nutrition, ability to communicate and overall wellbeing. Lack of teeth can have consequences for self image, social interaction, psychological health, dignity and ability to function<sup>4</sup>. Furthermore, many older people have worn their dentures for a number of years and struggle to adapt to replacements. Their circumstances may have changed meaning they are unable to co-operate with a dentist to allow a new set to be made<sup>3</sup>. New dentures can also be costly and without the originals available as a guide, the clinician may not be successful.

## Background

Denture marking is the process of incorporating the patients name and sometimes date of birth into a denture. This makes reuniting patients with lost or misplaced dentures much easier<sup>1</sup>, and can be particularly beneficial for those in residential care and those living with conditions such as dementia. It has also been reported that it can help with post-mortem identification of denture wearers<sup>2</sup>.

There are two types of lab-based denture marking method: surface marking and inclusion methods<sup>2</sup>. Surface marking is when the details are scratched into the cast before processing or etched into the denture after processing. Inclusion methods are when identification labels are incorporated into the acrylic resin, often at the packing and processing stage<sup>2</sup>.

## Aim

To explore the following within Cwm Taf Morgannwg University Health Board:

- Prevalence and demand of denture marking
- Attitudes to denture marking by clinicians

## Methods

Questionnaires were devised to ask questions of dental laboratories, care homes and General Dental Practitioners (GDPs) on denture marking.

- ✓ 10 laboratories, 10 care homes and 10 GDPs were asked the questionnaires
- ✓ They were selected at random
- ✓ All were based within Cwm Taf Morgannwg UHB area
- ✓ Questionnaires were carried out over the telephone

### Laboratories questionnaire<sup>2</sup>:

1. Do you offer a denture marking service?
2. Which method do you use for denture marking?
3. What is the level of demand?
4. What is the cost?

### Care home questionnaire:

1. How many of your residents have dentures?
2. How many of these dentures are marked with the residents name?
3. How often do residents lose their dentures?
4. If a denture is lost how often is it reunited with its owner?

### GDP questionnaire:

1. Are you aware of the process of denture marking?
2. Do you offer denture marking for patients as appropriate/wanted?
3. Do you feel denture marking is worthwhile?
4. Were you taught about denture marking at university?

Figure 1. Questionnaires

## Results

### Dental laboratory results:

- Do you offer a denture marking service?  
Yes -71% No -29%
- Which method do you use for denture marking?  
Inclusion method -100% Surface marking -0%
- What is the level of demand?  
High -0% Medium -14% Low -86%
- What is the cost?  
<£5 -14% £5-£10 -29% >£10 -57%

### Care home results:

- How many of your residents have dentures?  
> ½ -80% ½ -20% < ½ -0%
- How many of these dentures are marked with the residents name?  
All -0% Most -20% Not many -30% None -50%
- How often do residents lose their dentures?  
Often -50% Not often -50%
- If a denture is lost how often is it reunited with its owner?  
Often -40% Not often -60%

### GDP results:

- Are you aware of the process of denture marking?  
Yes -88% No -12%
- Do you offer denture marking for patients as appropriate/wanted?  
Yes -12% No -88%
- Do you feel denture marking is worthwhile?  
Yes -75% No -25%
- Were you taught about denture marking at university?  
Yes -38% No -62%

Questions were answered by all 10 care homes, however out of the 10 dental laboratories that were contacted within the specified area, only 7 were available or prepared to answer the questions. Similarly out of the 10 GDPs that were contacted, only 8 answered the questions asked.

This limitation in the results was taken into consideration when interpreting them, as it only provides a limited insight into the current situation.

## Discussion

It can be seen from the results the demand for denture marking is low, as reported by 86% of the laboratories surveyed. Together with 80% of the care homes reporting that not many or none of the dentures within the care home are marked and 88% of GDPs not offering denture marking as standard, it indicates denture marking is not standard practice within the CTM UHB area.

60% of care homes stated it is 'not often' that a lost denture is reunited with its owner. The biggest problem reported was inability to identify whose it was, as it is often lost away from the patients room e.g. found within bedsheets in the laundry. Alongside 50% of nursing homes reporting that dentures are lost often, it can be argued there is a demand for denture marking that is not being met.

One could question a lack of knowledge in clinicians could be the reason for the low incidence of denture marking, but 88% of GDPs asked had heard of the process. This knowledge was not necessarily explained by undergraduate teaching as 62% of those asked were not taught the process at university. This could potentially affect the prevalence of denture marking within the denture construction stages, as the process and its benefits are potentially not explained and embedded at undergraduate level.

88% of GDPs asked do not offer denture marking to patients, pointing to lack of patient awareness being an issue. This was interesting as 75% of those surveyed said they believed denture marking to be worthwhile. Cost could be a potential barrier, with 57% of laboratories charging over £10 for the service, the highest two quoting £20-£25.

## Action and Recommendations

The benefits of denture marking can be clearly seen in the literature, with denture loss potentially being very damaging to a patients quality of life.

With the proportion of older people within the UK's population set to increase, the practice of denture marking will become ever more valuable.

Despite the limitations of this research, it can be seen the service is not routinely undertaken within clinicians in the CTM UHB area and the reasons and barriers for this need to be researched and explored further.

Education is evidently necessary in affecting change and needs to be experienced by students, clinicians and patients alike. Through raising awareness of the denture marking process and its benefits across all settings, the negative impacts of denture loss will be experienced by fewer people within the community.

## References

1. Ashley M. *How to mark a denture*. Available: <https://www.futurelearn.com/courses/mouth-care-matters/1/steps/845180>. Last accessed 11th Nov. 2020.
2. Kalyan A, Clark R K F, Radford D R. (2014). Denture identification marking should be standard practice. *British Dental Journal*. 216, p.615-617.
3. Alzheimer's Society. *Dentures*. Available: <https://www.alzheimers.org.uk/get-support/daily-living/dentures>. Last accessed 11th Nov. 2020.
4. Mann J and Doshi M. (2017). An investigation into denture loss in hospitals in Kent, Surrey and Sussex. *British Dental Journal*. 223, p.435-438.
5. Age UK (2019). *Later Life in the United Kingdom 2019*.
6. Dyer, P. (2018). *Disappearing dentures: A simple way to ensure dentures don't get lost in hospital*. Available: <https://bda.org/news-centre/blog/disappearing-dentures-a-simple-way-to-ensure-dentures-dont-get-lost-in-hospital>. Last accessed 11th Nov. 2020.
7. Office for National Statistics. (2018). *Living longer -how our population is changing and why it matters*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing/articles/livinglongerhowourpopulationischangingandwhyitmatters/2018-08-13#how-is-the-uk-population-changing>. Last accessed 24th Nov 2020.