

# A guide to treatment planning in complex older adults

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## Key points

Highlights that patients are retaining natural teeth and living longer so there will be greater challenges in providing care for older people over time.

Highlights that many older patients can be treated in a routine manner, though some are more complex to treat due to factors such as frailty, multi-morbidity, or dementia.

Suggests that for complex patients, treatment is not always essential in the absence of symptoms and the risks and benefits of treatment should be carefully balanced.

There are a growing number of older patients who are retaining their natural teeth. Though the majority of these patients remain independent, many are affected by frailty, multi-morbidity or dementia. The complexities associated with dementia have led to guidelines being produced by the FGDP, *Dementia friendly dentistry*, although other features of ageing can similarly increase the risk of dental disease and the consequent complexity, safety and suitability of providing treatment. Prevention of dental disease is crucial for older patients as the features of ageing may make the risk of treatment greater than that of younger patients. Conscious sedation or general anaesthesia, typically provided by a specialist dental service, may be required to facilitate treatment, though these approaches may have significant short and long-term impacts on older patients. Clinical guidelines and legislation are available to assist in decision-making for patients who may lack mental capacity, yet for patients who are able to consent for treatment, a comprehensive discussion as part of an informed consent process remains crucial to determine the most appropriate approach to care provision.

## Introduction

There are currently over 11 million people in the UK aged over 65, with this projected to rise by over 40% to over 16 million (a quarter of the population) by 2040.<sup>1</sup> Alongside this change, the proportion of dentate adults is increasing with edentulousness having reduced from 28% to 6% since 1978.<sup>2</sup> An increasing number are retaining a 'functional dentition'<sup>2,3</sup> which may include complex restorative treatments including endodontically treated teeth, crowns, bridges (as shown in Figure 1) and osseointegrated implants. Consequently, older patients

are more likely to experience dental pathology and failing dentistry than previous generations, presenting diverse challenges for dental teams.

A range of complex factors may result in oral hygiene deterioration with age, and the resultant dental diseases can adversely affect patients' quality of life.<sup>4-7</sup> The majority of adults remain independent, with less than 10% receiving social care support in 2013-14 with disability-free life expectancy increasing.<sup>8</sup> Despite this, oral diseases persist in older people and delivery of dental care can be complex. This article will discuss core issues affecting older people as well as relevant aspects of care provision to help guide when or what intervention may be appropriate for complex older adults.

which increases the risk of adverse outcomes.<sup>9</sup> It is increasingly prevalent with age<sup>10</sup> with the current prevalence 14%. While 93% of those classified as frail experience difficulties with mobility, 57% struggle with daily activities.<sup>10</sup> In addition, there is a large proportion of older adults affected by diseases common in later life such as osteoporosis, osteoarthritis or stroke which can result in physical disabilities. Guidelines for treating patients affected by these conditions provide useful overviews for the dental team,<sup>11,12</sup> though older patients with frailty or other disabilities may hold different attitudes towards dental care,<sup>13</sup> and need to be assessed in a comprehensive and holistic manner. In both frailty and physical disability, there is increasing dependence on carers and challenges with access to surgeries and the process of transferring to dental chairs. Suitable access with wheelchair ramps and equipment to facilitate patients' transfer to dental chairs such as hoists or wheelchair tippers should be available for those patients who are unable to mobilise independently.

## Frailty and physical disabilities

Frailty has been defined as 'a dynamic state affecting an individual who experiences losses in one or more domains of human functioning (physical, psychological, social), which is caused by the influence of a range of variables and

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## Multi-morbidity and polypharmacy

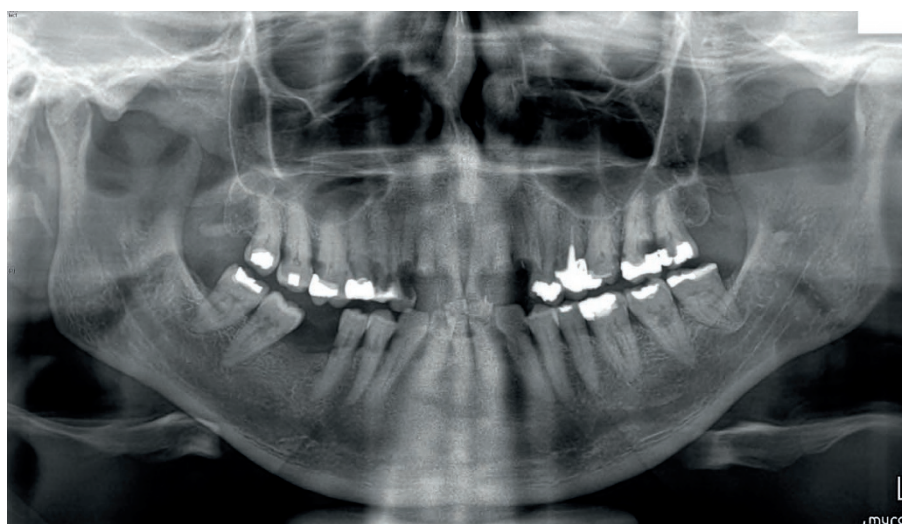
As individuals age, there is greater potential to acquire comorbidities and for these to be of greater severity. Multi-morbidity is defined as the presence of two or more chronic conditions<sup>14</sup> including mental health conditions and symptom complexes such as frailty, dementia or chronic pain. The prevalence of multi-morbidity is significant in the older population, affecting 64.9% of those aged 65–84 and 81% of those aged 85 and above in the UK.<sup>15</sup> Though most older adults remain independent, there is a small proportion whose support and care needs are significant and who may be less suitable for routine dental treatment in a general dental practice setting. Common systemic conditions include respiratory disease, coronary heart disease and type 2 diabetes with the presence or management of each potentially impacting upon the safety of dental care delivery.<sup>16</sup> Due to the coexistence of multiple long-term conditions in older patients, an increasing number of patients experience polypharmacy with 44% of patients over 65 taking five or more medications and 12% taking ten or more medications<sup>17</sup> rising to over 24% in those aged 80 or over.<sup>18</sup> As well as underlying conditions themselves, the impact of the multiple medications to manage these can have an impact on both dental health and on the delivery of care; medicines such as bisphosphonates and anticoagulant or antiplatelet drugs can commonly impact on the safety and suitability of dental treatment provision. Polypharmacy can often lead to xerostomia as well as a greater likelihood of drug interactions<sup>18</sup> leading to the need for information gathering from relevant healthcare teams and a cautiously considered approach to treatment provision.

## Dementia

Regardless of comorbidities and frailty, most older patients retain full cognitive function and are able to make informed decisions regarding their preferred approach to dental care. This ability is lost for some, due to acquired cognitive impairment, commonly dementia. Dementia is a chronic or progressive syndrome in which cognitive function declines to a greater extent than would be expected during normal ageing.<sup>19</sup> Affecting 850,000 people in the UK, the prevalence of dementia is expected to reach one million by 2025 and two million by 2050.<sup>20</sup> As a result of this, an increasing number of dentate dental patients with dementia may attend for dental care and may be affected with poorer



**Fig. 1** Clinical presentation of a 95-year-old patient with frailty showing a failing large-span lower anterior bridge, retained roots and poor oral hygiene



**Fig. 2** Radiographic assessment of a 84-year-old with fronto-temporal dementia showing a grossly neglected dentition which deteriorated rapidly after a diagnosis of dementia

oral health than those without dementia.<sup>21,22</sup> An example of substantial dental disease in a patient with dementia is shown in Figure 2.

The rate of dementia progression is unpredictable and there can be benefits in discussing and providing proactive dental disease management to prevent need for intervention at a later and more advanced stage of a patient's disease when the risks of treatment may be greater. As dementia progresses, comprehensive clinical and radiographic examination can be difficult and pain identification can be particularly challenging. Though pain scales have been studied to aid in identification of pain for those who cannot communicate<sup>23,24</sup> these are typically seen as limited and unreliable in their current form<sup>25,26</sup> resulting in reliance on less formal means to

determine pain in relation to justifying dental interventions. In advanced dementia, the decline in cognition can lead to limited cooperation with treatment under local anaesthesia and a resultant need to consider use of anaesthetist-led sedation or general anaesthesia; there is a need to strive to understand pain in order to justify these invasive approaches to treatment. Advanced care planning and anticipatory treatment planning may be prudent when it is known that cognitive impairment may progress over time.

## Access to dental settings

The aforementioned demographic changes mean that an increasing proportion of older patients will be unable to access routine primary

**Table 1** Assessment and Treatment Sections of Seattle Care Pathway. Reproduced from Pretty I *et al.*, The Seattle Care Pathway for securing oral health in older patients, *Gerodontology*, Vol. 31, 2014, with permission from John Wiley and Sons

	Level of dependency				
	None	Pre	Low	Medium	High
Assessment	Adopt appropriate recall intervals	Identify conditions threatening oral health	Identify cause of increasing dependency (for example, stroke, polypharmacy, dementia)	Participate with other medical services to assess health risks generally	Examine patients' physical cognitive and social context for barriers to emergency palliative and elective oral care
		Develop strategic oral healthcare plan to include professional and self-care	Increase frequency of recall	Reassess long-term viability of oral health-related prevention	Monitor the burden of oral care on the patient and others
					Increase vigilance for signs of elder abuse
Treatment	Routine	Consider long-term viability of restorations and prostheses. Plan treatment outcomes for easy maintenance	Identify, repair or replace strategically important teeth guided by the principle of the 'shortened dental arch', with or without implants, to maintain oral function	Repair and maintain strategically important teeth with conservative treatments (for example, atraumatic restorative technique (ART) with fluoridated glass-ionomer materials), and design oral prostheses to simplify oral hygiene and prevent infection.	Offer palliative treatment on demand from the patient to control pain and infection and maintain social contacts and activities
			Plan for ongoing maintenance, including restorative and surgical treatments, to maintain function and prevent or control infection and pain	Use prosthodontic attachments between overdentures and abutment teeth or implants to simplify hygiene and maintenance	

dental care services. Domiciliary dental care may remain an important option for certain patients (as detailed by guidelines from the British Society for Disability and Oral Health).<sup>27</sup> For all patients who are in need of dental treatment or preventative measures, a comprehensive history is as important as ever, yet can be challenging to obtain. As well as seeking medical advice from general practitioners or hospital specialists, liaison with carers, be they formal or informal, can be beneficial. Informal carers are responsible for much of the care provided, with over 1.5 million people providing in excess of 50 hours of unpaid care each week<sup>28</sup> and may be of increasing age themselves. The need for dental care can place additional demands on carers and other family members who are involved in provision of transport or additional support for relatives with complex care needs.

### Consent and mental capacity

Those with mild or early dementia may be best treated in general dental practice where the long-term relationship that has been established can be highly beneficial in detecting early cognitive change and accommodating for this during treatment. Some patients have fluctuating mental capacity and can still consent for treatment if supported to do so or approached at the right time in the right circumstances. Patients with dementia may lose the ability to comprehend treatment options and weigh up their choices regarding dental care, leading

to a lack of capacity to consent for treatment provision. The Mental Capacity Act<sup>29</sup> or applicable legislation in the devolved nations of the UK<sup>30,31</sup> provides a framework for determining whether a patient has capacity to consent for particular healthcare decisions. Practitioners must be cognisant of the Mental Capacity Act<sup>29</sup> and the implications on consent in dental settings; this process is well detailed elsewhere.<sup>32,33</sup>

### Prevention

Prevention of oral diseases should be a priority in older people, not only to prevent the development or progression of dental disease but to prevent the associated risks of pain and infection and the likelihood of needing complex treatment options in later life when there is greater risk to health and life. High levels of plaque can lead to aspiration pneumonia, leading to mortality in frail or systemically unwell individuals.<sup>34</sup> Many older people are appropriate candidates for high fluoride toothpaste, regular recalls and fluoride varnish application as a component of evidence-based practice.<sup>35</sup> Many patients will receive informal care from family members, who, like paid carers will need to be involved in preventative efforts, particularly as a person's ability to care for themselves can decrease. For those in residential care settings, NICE have produced guidelines which detail appropriate preventative approaches and propose oral care plans be available for all residents.<sup>36</sup>

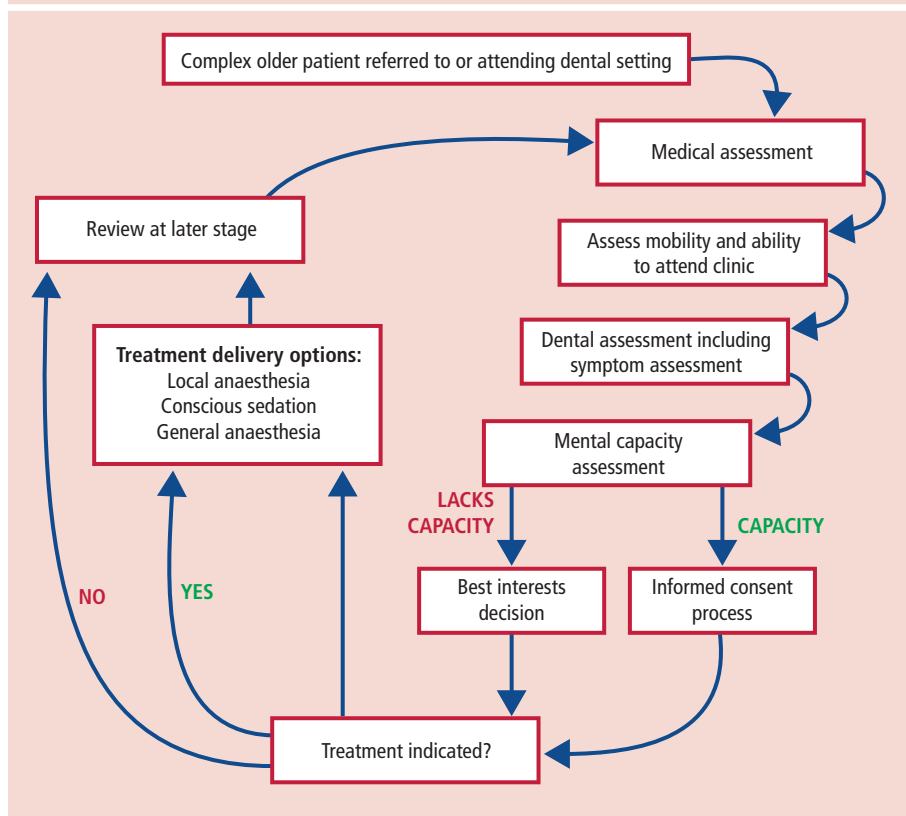
### Safeguarding

Though it should be appreciated that the role of a carer can be stressful and demanding, frail adults or those with dementia can be classified as vulnerable individuals. The World Health Organisation defines 'elder abuse' as 'single or repeated act or lack of appropriate action, occurring in any relationship where there is an expectation of trust that causes harm or distress to an older person'<sup>37</sup> and neglected oral hygiene measures may fit this definition and indicate a wider lack of care outside of the dental setting.<sup>38</sup> This topic is comprehensively detailed in other sources<sup>39</sup> yet the dental team must ensure they are aware of the local channels through which their concerns should be raised if neglect or abuse is suspected.

### Clinical guidelines

The ultimate aim for older patients is, where possible, to safely achieve a pain-free functional dentition, addressing the cosmetic needs for an individual patient while managing the risk of future disease. For older patients in general, the Seattle Care Pathway<sup>40</sup> comprehensively details how to approach care for older patients with different degrees of dependence (Table 1). Additionally, FGDP guidance<sup>41</sup> elaborates on treatment options for patients with varying stages of dementia and comprehensively details the necessary considerations and adaptations for delivery of oral healthcare for this patient group.

Fig. 3 Process of assessment and decision-making for complex older patients



Generally, for those with greater dependence (or more significant comorbidities or frailty), active invasive dental treatment becomes less appropriate due to impact of and upon these medical and social factors. When a patient is experiencing pain or infection then intervention is certainly warranted. For asymptomatic older individuals, the balance of risk and benefit shifts as intervention, or the way in which this is facilitated is of greater risk, while full mouth reconstruction is often not feasible. Even provision of basic treatment can infer minimal benefit for asymptomatic patients approaching later life.

**Minimally invasive treatment and symptomatic management**

Minimally invasive symptomatic management on a tooth-by-tooth basis is advocated for those with greater levels of dependence, and certain aspects of this may be able to be delivered in a domiciliary setting. This is often basic treatment such as smoothing off sharp or broken teeth, easing dentures or simple restorations. The atraumatic restorative technique can be highly effective in older patients where it is appropriate to leave teeth *in situ* to avoid adverse effects of extractions.<sup>42</sup> Extractions to resolve symptoms can often be completed in clinical settings, though a full risk-assessment of the procedure

and the approach used to deliver this, in light of polypharmacy and comorbidities, is paramount. It is crucial to consider that patients at the extremes of age or illness may have minimal physiological adaptability to the stressful demands of more complex dental procedures. A guide to the process of treatment planning and care delivery is shown in Figure 3.

**Routine treatment**

Many older patients are suitable for a full range of dental procedures under local anaesthetic. Where this is possible, there is no indication to deviate from standard patient-centred care delivery with informed consent, although

some patients may be more likely to experience diseases or poorer oral hygiene which may contraindicate specific treatments. Tooth retention can be of greater importance in specific situations, such as current or historic use of bisphosphonate, anti-angiogenic or anticoagulant medications where surgical procedures may be best avoided where possible.<sup>43</sup> Where oral conditions and patients' tolerance of complex procedures is adequate, routine care can be delivered as for any age group with the support of dental care professionals in prevention strategies.

**Complex management**

When treating older patients, the treatment itself and the approach by which it is provided, or the combination of these, can be complex. Due to the risk of intervention as opposed to complexity itself, there must be a clear justification for providing complex treatment or using complex approaches (Table 2). In these instances, referral to hospital or specialist settings is warranted.

Local anaesthetic should be considered as the first-line approach for treatment as this is generally safest and can enable completion of dental treatment of varying degrees of complexity. Factors such as extreme anxiety or advanced dementia may limit the suitability of local anaesthesia alone and in this situation, there is a place for conscious sedation by either inhalation or intravenous routes. As part of planning these approaches, a comprehensive and detailed history is essential which can often require liaison with a range of healthcare teams including anaesthetists for those with more significant comorbidities. Intravenous sedation can be appropriate for older patients though caution is needed with benzodiazepines to which older people can become increasingly sensitive. Inhalation sedation is appropriate for a larger proportion of adults with comorbidities, yet may be insufficient to provide

Table 2 Examples of situations in which treatment is encouraged and where this is less appropriate

Treatment indicated	Treatment less appropriate
Active pain or infection in a patient who will allow treatment	When there has been a long-term absence of symptoms and treatment provision is associated with excess risk to wellbeing or significant safety concerns
Patients who can consent for treatment and where treatment is safe and suitable	When treatment is not in the best interests of a patient, including those who cannot consent for their own treatment
When there is a high risk of future pain of infection and future treatment is expected to be a greater challenge associated with greater risk	When patients who have capacity to consent for treatment decline treatment or referral
Where the benefit of managing oral disease exceeds the risk of intervention	Situations when the risk of treatment is greater than the benefit of conservatively managing dental disease

anxiolysis for more complex treatment provision. When symptoms prevail and treatment need is extensive, general anaesthesia can be appropriate when the benefit of its use outweighs the increasing risk associated with age and the consideration that the systemic impact of general anaesthesia can be long-lasting and can include cognitive dysfunction even months after surgery.<sup>44</sup>

These risks propose a need to avoid repeated general anaesthesia which limits the range of treatments that can be provided by this approach. Treatment should be definitive and predictable, so is typically limited to scaling, extractions or simple restorations. Extensive treatment can be facilitated by this approach, yet the impact of this can be significant, with dental clearances sometimes required. The impact on future function and appearance requires due consideration and the treatment provided must always be in the patients' best interests. The decision to provide more complex approaches to treatment is not taken lightly. Decision making requires a careful balance of benefit and risk with a comprehensive consent process or suitable best interests decision for those unable to consent.

## Workforce planning

To accommodate the growing older population who are retaining greater numbers of teeth with complex restorative treatments there is a need for an adequately trained and appropriately sized workforce. Within this, dentists with additional and specialist skills will need to be accessible via clearly defined patient-centred care pathways facilitated by Managed Clinical Networks.<sup>45</sup> For these dentists, support from dental care professionals and adequate clinical time and facilities are essential to delivering appropriate preventative interventions and treatment for this group of patients.<sup>35,45</sup>

## Conclusion

The safety and suitability of active interventional treatment can vary substantially, with some older people able to entirely tolerate routine dentistry and others being highly complex either in terms of medical background, cognitive status and cooperation, or dental rehabilitation. Where local anaesthetic can be tolerated, this is typically the safest and most desirable option whether for symptomatic management or routine care delivery, yet there is still a place for conscious sedation or general anaesthesia for those where cooperation with local anaesthesia

is limited. An informed and considered decision not to offer treatment can be entirely appropriate. In all treatment options for all patients, risks and benefits of both treating and deciding not to treat must be carefully weighed up to ensure the safety of the patient while ensuring a comfortable oral status in later life.

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