

# Missing Links in Oral Health Care for Frail Elderly People

Michael I. MacEntee, *LDS(I), Cert Prosth, FRCD(C), PhD*

## Contact Author

Dr. MacEntee  
Email: [macentee@interchange.ubc.ca](mailto:macentee@interchange.ubc.ca)



## ABSTRACT

A national interdisciplinary strategy is needed to address the comprehensive oral health care needs of frail elderly people residing in long-term care facilities. Reasonable care within the social and personal context of frailty encompasses active prevention of disease augmented by necessary restorative treatment, provided with sensitivity to a person's propensity to seek care. Typically, dental emergencies are managed quite well in long-term care facilities, either by treating the resident on site or by transporting the resident to a local clinician. In addition, facility administrators are usually well aware of their legal responsibilities to provide diagnostic services to residents before disease or dysfunction causes irreparable damage. Consequently, many facilities have arrangements with dental hygienists, dentists or denturists for periodic clinical assessment of all residents, or they seek help at the first sign of trouble. On the other hand, effective, widely accepted strategies for assisting frail residents with daily oral hygiene are lacking, and in many regions across the country it is overly difficult for frail residents with severe oral impairment or dysfunction to receive appropriate care and treatment. A cooperative effort from many disciplines will be needed to provide these missing links in Canadian health services and to realize the principle of providing maximum benefit to the least advantaged in society.

**MeSH Key Words:** dental care; health services accessibility; quality of life; social justice

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A defining feature of today's society, at least in North America, is the increasing number of older people leading reasonably healthy lives. This demographic reality portends a significant problem for health professionals, including dentists, dental hygienists, dental assistants and denturists. As people age, they typically become more frail, and as frailty intensifies, they become more dependent on others for assistance with routine activities of daily life. Frailty is usually construed as a negative term associated with various levels of dependency, although, as in all characterizations of health and disability, the levels are indistinct.

The dominant model of frailty portrays a person coping dynamically with the usual needs of daily life but with impaired neurological control and energy levels below a critical threshold.<sup>1</sup> This model incorporates a multitude of assets (e.g., strength, wealth, social support) and deficits (e.g., chronic disease, poverty, social isolation) that either support or disturb social independence. This dynamic model raises important questions bearing on the social and psychological factors that balance the assets and deficits of the older person. It also questions the positive and negative roles of health professionals in the management of frailty. In any event, frailty has an indisputable

influence on quality of life, which is particularly evident in long-term care (LTC) facilities. This paper addresses the role and responsibility of dentistry in contributing to the health, dignity and quality of life of frail elderly people living in LTC facilities.

### Frailty and Institutional Care

Chronic illness and disability are the major health care challenges in most industrialized countries. They directly influence quality of life and indirectly raise concerns about allocation of health resources and limitations of medical interventions.<sup>2</sup> Frailty and dependency loom largest after the age of 80 years, when about one-third of the population live in the sheltered environment of a nursing home, personal care home, extended care hospital or some other form of LTC facility<sup>1,3</sup> (long-term care and the level of care provided in such facilities have different meanings, measurements and funding in each province and territory, but generally the level of care is based on the number of hours of care provided per resident in a facility where continuous on-site nursing is available [www.cha.ca/Facility\_Based\_Long\_Term\_Care.htm]). Yet despite unstable health and increasing dependency, the typical 85-year-old can look forward to at least 5 more years of life.<sup>4</sup> Cardiovascular, neurological and musculoskeletal disorders are the usual accompaniments of frailty,<sup>5</sup> but it is the less dramatic ailments, such as lapse of memory, restricted mobility, hearing loss, poor eyesight and insomnia, that cause most of the daily annoyances and threats to independence.

Government policies in many Canadian jurisdictions promote health, safety and overall quality of life by defining the expected quality of care in LTC facilities. Typically the regulations are vague, possibly in deference to personal choice and individual rights, in recognition of the multiple sources of care available to older people and to allow administrators more flexibility in the provision of care. For example, in British Columbia, the Community Care and Assisted Living Act<sup>6</sup> requires licensed operators of LTC facilities to “ensure that a person in care is assisted in (a) maintaining daily oral health, (b) obtaining professional dental services as required, and (c) following a recommendation or order for dental treatment made by a dental health care professional.” In addition, the operators “must ensure that staff develop and implement an individualized care plan [including oral health care] for a person in care ... for two or more weeks,” and they must “encourage a person in care to obtain an examination by a dental health care professional [based on their scope of practice] at least once every year.”<sup>6</sup> (The Act itself refers to an examination by health care professionals in general;

however, the accompanying guidelines explain that an examination or an assessment must be performed according to the scope of practice of the professional, and in British Columbia only dentists and physicians can examine and diagnose oral health and disease.)

### Uneasy Dental Services for Frail Elderly People

The relatively low priority given to oral health in many LTC facilities is an ongoing cause for concern, and there is little indication that priorities have changed substantially over the past quarter century.<sup>7-9</sup> Dentistry and oral health care continue to form a relatively minor component of services in LTC facilities. Administrators and nursing staff blame the many conflicting priorities of daily care and the difficulties of getting access to helpful dental personnel.<sup>10</sup> Dentists and other dental personnel tend to justify their lack of enthusiasm for such services by identifying financial constraints, poor clinical equipment and lack of cooperation from residents, staff and administrators; they also worry about managing the physical and cognitive instability of residents in this unusual clinical setting.<sup>11</sup>

There is no ideal strategy for organizing dental services in LTC facilities.<sup>10</sup> Some facilities have explicit policies and procedures involving formal arrangements with dental personnel, whereas others operate much more informally with regard to mouth care and dentistry. Typically, the administrators and staff freely acknowledge their inability to recognize oral diseases, and they openly express concerns about the challenges of providing daily oral hygiene along with their other duties.

There is little doubt that dental personnel working on salary in an in-house clinic can provide excellent comprehensive care for residents, but unfortunately this service comes at a financial cost that most administrators cannot or will not support. Similarly, the financial viability of fee-for-service dental care is questionable for most clinical practitioners, relative to the usual returns of private practice. Quite simply, most dentists, dental hygienist and denturists see little incentive, apart from a vague and non-compelling sense of professional responsibility, for attending to the needs of frail residents of LTC facilities.<sup>7,10,11</sup>

The effectiveness of oral health care, delivered by whatever means, is influenced by the organizational context of the facility.<sup>12</sup> Therefore, a successful strategy or context for oral health care requires a plan that is clear to all, a commitment from all involved to implement the plan and an awareness of individual and shared responsibilities. Most facilities have arrangements with local dentists to manage acute problems requiring emergency treatment, but beyond that there are large voids in the dental services

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available to residents.<sup>10</sup> In recent years, administrators of LTC facilities have been engaging dental hygienists, dentists and denturists to assess and record the oral health status of new residents; however, the challenges of restorative health care and daily oral hygiene remain unresolved nearly everywhere.

Finally, and perhaps most optimistically, the presence of a “champion” for oral health care, whether an “insider” from the existing administration and staff or an “outsider” in the form of visiting dental personnel, has been an essential ingredient in successful efforts to overcome these challenges.<sup>10</sup> It is especially noteworthy that the background and professional qualifications of such champions are much less important than their enthusiasm and abilities to infiltrate the culture of the institution.

### Strategies for Specific Disorders

#### *Caries*

Dental destruction and tooth loss occur largely because of caries, either directly through surface demineralization or indirectly through endodontic pathoses and tooth fracture.<sup>13</sup> Frequent consumption of sugar in drinks and sweet foods, which most facilities provide abundantly, nourishes cariogenic bacteria, and most medications for chronic disorders disturb the flow and buffering capacity of saliva. Furthermore, all population-based preventive and management strategies for caries can be thwarted by the uneven risk of caries in this population. Some people’s teeth are resistant to caries despite irregular oral hygiene and an almost constant intake of sugar, whereas a small minority will experience rapid and virulent development of rampant caries even with daily brushing and flossing and routine dental examinations.<sup>14</sup> Fluoride in the communal water supply or supplied through higher-than-usual concentrations (about 0.2%) in mouthwashes and toothpaste will prevent or retard the spread of caries just as effectively among frail elderly people as among children.<sup>15–17</sup> Neutral fluoride is preferable to acidulated or stannous products for older mouths because of the etching effect of acids on ceramic restorations and acrylic resin; it can be applied with a sponge without risk of toxic effects to severely disabled residents.<sup>18</sup> Other agents, such as chlorhexidine<sup>19</sup> and ozone,<sup>20</sup> also show promise for inhibiting caries, but toothpaste and mouth rinses remain the mainstay of effective preventive strategies against caries in this population.

#### *Gingivitis and Periodontitis*

Food debris and plaque seem to cause less distress to frail elderly people than to people in other age groups, possibly because of reduced proprioceptive awareness and poor vision. However, how much dental plaque and food debris is acceptable on and around the teeth, and how effective are oral hygiene techniques? The answers to these questions are unclear as germ theory gives way to current

concepts of biofilms on teeth.<sup>21,22</sup> The bacteria present on teeth are protected by a surrounding matrix in the biofilm, which might explain why antimicrobial agents have had limited success in controlling periodontal disease and why mechanical plaque control and personal oral hygiene remain an integral part of periodontal therapy. Fortunately, loss of teeth because of periodontitis is unusual among elderly people, no matter how frail, and a recent systematic review of existing evidence concluded that the connections between poor oral hygiene, periodontitis and tooth loss are very uncertain.<sup>23</sup> Nonetheless, plaque continues to cause chronic marginal gingivitis, which is almost endemic in this population.

Oral malodour from poor oral hygiene and bleeding gingiva certainly disturbs social relationships, which might lead to life-threatening social isolation.<sup>24,25</sup> There might also be a relationship between bacterial plaque and aspiration pneumonia, although to date the strength of the evidence supporting this relationship is not strong.<sup>23</sup> Moreover, the long-term effectiveness of oral hygiene regimens for frail elderly people, including those involving education of the staff in LTC facilities, has been disappointing, despite some vigorous efforts by dentists and dental hygienists.<sup>26,27</sup> Clearly, the processes underlying all of these associations, however plausible, need further development.

#### *Propensity to Seek Oral Health Care*

Propensity to seek care addresses the need to consider people within the context of their physical and cognitive abilities and their overall desire for treatment and potential for benefit.<sup>28,29</sup> As frailty increases, propensity to seek treatment declines. In a study of Vancouver’s LTC facilities some years ago, for example, about one-third of the residents had a propensity to seek comprehensive dental treatment, one-tenth were unlikely to endure most dental procedures, and the others might have benefited from very limited care.<sup>28</sup> In short, preventing oral dysfunction and disease and managing disability in old age depends heavily on the ability to recognize the resiliency and fluidity of health and disability.<sup>30</sup>

#### *Professional Turf Wars*

Recently, the issue of oral health care in LTC facilities has become part of a “turf war” between the professional organizations representing the collective interests of dentists and dental hygienists. The Canadian Dental Hygienists Association contends that “restrictive provincial dental hygiene legislation that requires supervision, an order, authorization, or directions from dentists makes it more difficult to bring about change or to reduce barriers to oral health care delivery... [especially] in non-traditional practice settings, such as long-term care facilities.”<sup>31</sup> The Canadian Dental Association has countered with the view that “[d]entists are the only professionals

qualified by educational preparation to provide a comprehensive differential diagnosis of oral health status, to plan and render treatment and to prescribe or refer specific aspects of treatment,” no matter where the service is required.<sup>32</sup> Several regulatory bodies in Canada have established minimum standards of oral health care in LTC facilities. However, as explained above, the Community Care and Assisted Living Act in British Columbia specifies only that residents must be examined by a “dental health care professional” who is a member of the College of Dental Surgeons, the College of Dental Hygienists or the College of Denturists in the province.<sup>6</sup> The British Columbia Dental Association acknowledges the special needs of frail elderly people with the statement that it is committed “to finding solutions to enhance access to care for seniors through public and professional education and innovative initiatives involving public and private partnerships.”<sup>33</sup> Several initiatives have been put in place in the province, some involving attempts at interdisciplinary cooperation between dentists and dental hygienists. However, the turf war continues on many fronts, pitching principle against practice and self-interest against the public good. The overall effect is inadequate health care, as residents wait for help with bad breath, bleeding gingiva, decaying teeth, ill-fitting dentures, restricted food choice, compromised quality of life and possibly an increased risk of life-threatening pneumonia.

### Quality of Life Mediated by Ethics and Justice

The concepts of “quality of life” and “health-related quality of life” are laden with cultural values and influenced by personal goals, expectations, standards and concerns.<sup>34</sup> Oral health care near the end of life revolves mostly around comfort and safety. Yet conflicting views on appropriate objectives of treatment can cause disturbing misunderstandings among dental personnel, facility staff and residents. The constant struggle between ideal practice and practical treatment is complicated by the ethical conflict between autonomy and beneficence, whereby the personal or autonomous wishes of a resident differ from the beneficial recommendations of professional caregivers; at present, autonomy usually dominates.<sup>11</sup> There is, as a result, much disagreement on what constitutes reasonable oral health care, a just allocation of resources and fair financial compensation.<sup>2</sup> While official disagreement persists, there are many instances across the country where dentists, dental hygienists and denturists provide good, cooperative and devoted care in LTC facilities. Moreover, there is little rejection overall of the principle that reasonable care for frail persons demands active prevention of dysfunction augmented by restorative treatment to provide maximum benefit for those who are among the least advantaged in society. Unfortunately, the professional links that can put this principle fully into practice for frail elderly people in LTC facilities remain to be forged.

Perhaps by helping to train nurses and care aides before they begin practice and by forging cooperative interactions between organizations of dental professionals, it will be possible to restore and maintain the dignity of old age. ♦

### THE AUTHOR

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*Dr. MacEntee is a professor in the division of prosthodontics and dental geriatrics, department of oral health sciences, faculty of dentistry, University of British Columbia, Vancouver.*

**Correspondence to:** Dr. Michael I. MacEntee, Faculty of Dentistry, University of British Columbia, 2199 Wesbrook Mall, Vancouver, BC V6T 1Z3.

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### References

1. Rockwood K, Fox RA, Stolee P, Robertson D, Beattie BL. Frailty in elderly people: an evolving concept. *CMAJ* 1994; 150(4):489–95.
2. Dharamsi S, MacEntee MI. Dentistry and distributive justice. *Soc Sci Med* 2002; 55(2):323–9.
3. McCormick JC, Chulis GS. Growth in residential alternatives to nursing homes: 2001. *Health Care Financ Rev* 2003; 24(4):143–50.
4. Hill GB, Forbes FW, Lindsay J. Life expectancy and dementia in Canada: The Canadian study of health and aging. *Chronic Dis Can* 1997; 18(4):166–7.
5. Canadian Institute for Health Information. Facility-based continuing care in Canada, 2004/2005. Available from URL: [http://secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=home\\_e](http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=home_e).
6. Government of British Columbia. Community care and assisted living act. Adult care regulations. Victoria, BC: Queen's Printer; 2005. Available from URL: [http://www.qp.gov.bc.ca/statreg/reg/C/CommuCareAssisted/536\\_80.htm#section9.2](http://www.qp.gov.bc.ca/statreg/reg/C/CommuCareAssisted/536_80.htm#section9.2).
7. Weiss RT, Morrison BJ, MacEntee MI, Waxler-Morrison NE. The influence of social, economic, and professional considerations on services offered by dentists to long-term care residents. *J Public Health Dent* 1993; 53(2):70–5.
8. Hawkins RJ, Main PA, Locker D. Oral health status and treatment needs of Canadian adults aged 85 years and over. *Spec Care Dentist* 1998; 18(4):164–9.
9. Wyatt CC. Elderly Canadians residing in long-term care hospitals: Part I. Medical and dental status. *J Can Dent Assoc* 2002; 68(6):353–8.
10. MacEntee MI, Thorne S, Kazanjian A. Conflicting priorities: oral health in long-term care. *Spec Care Dentist* 1999; 19(4):164–72.
11. Bryant SR, MacEntee MI, Browne A. Ethical issues encountered by dentists in the care of institutionalized elders. *Spec Care Dentist* 1995; 15(2):79–82.
12. Thorne S, Kazanjian A, MacEntee MI. Oral health in long-term care: the implications of organizational culture. *J Aging Studies* 2001; 15(3):271–83.
13. Fure S. Ten-year incidence of tooth loss and dental caries in elderly Swedish individuals. *Caries Res* 2003; 37(6):462–9.
14. MacEntee MI, Wyatt CC, McBride BC. A longitudinal study of caries and cariogenic bacteria in an elderly disabled population. *Community Dent Oral Epidemiol* 1990; 18(3):149–52.
15. Stamm JW, Banting DW, Imrey PB. Adult root caries survey of two similar communities with contrasting natural water fluoride levels. *J Am Dent Assoc* 1990; 120(2):143–9.
16. Bader JD, Shugars DA, Bonito AJ. A systematic review of selected caries prevention and management methods. *Community Dent Oral Epidemiol* 2001; 29(6):399–411.
17. Wyatt CC, MacEntee MI. Caries management for institutionalized elders using fluoride and chlorhexidine mouthrinses. *Community Dent Oral Epidemiol* 2004; 32(5):322–8.
18. Pearson A, Chalmers J. Oral hygiene care for adults with dementia in residential aged care facilities. *JBIC Reports* 2004; 2(3):65–113.
19. Banting DW, Papas A, Clark DC, Proskin HM, Schultz M, Perry R. The effectiveness of 10% chlorhexidine varnish treatment on dental caries incidence in adults with dry mouth. *Gerodontology* 2000; 17(2):67–76.

20. Baysan A, Whiley RA, Lynch E. Antimicrobial effect of a novel ozone-generating device on micro-organisms associated with primary root carious lesions in vitro. *Caries Res* 2000; 34(6):498–501.
21. Baelum V, Lopez R. Periodontal epidemiology: towards social science or molecular biology? *Community Dent Oral Epidemiol* 2004; 32(4):239–49.
22. Overman PA. Biofilm: a new view of plaque. *J Contemp Dent Pract* 2000; 1(3):18–29.
23. Hujuel PP, Cunha-Cruz J, Loesche WJ, Robertson PB. Personal oral hygiene and chronic periodontitis: a systematic review. *Periodontology* 2000 2005; 37:29–34.
24. House JS. Social isolation kills, but how and why? *Psychosom Med* 2001; 63(2):273–4.
25. McKeown L. Social relations and breath odour. *Int J Dent Hyg* 2003; 1(4):213–7.
26. Mojon P, Rentsch A, Budtz-Jorgensen E, Baehni PC. Effects of an oral health program on selected clinical parameters and salivary bacteria in a long-term care facility. *Eur J Oral Sci* 1998; 106(4):827–34.
27. MacEntee MI, Wyatt CC, Beattie BL, Paterson B, Levy-Milne R, McCandless L, and other. Provision of mouth-care in long-term care facilities: an educational trial. *Community Dent Oral Epidemiol*. In press, 2006.
28. Mojon P, MacEntee MI. Estimates of time and propensity for dental treatment among institutionalised elders. *Gerodontology* 1994; 11(2):99–107.
29. MacEntee MI, Hole R, Stolar E. The significance of the mouth in old age. *Soc Sci Med* 1997; 45(9):1449–58.
30. Rowe JW, Kahn RL. Human aging: usual and successful. *Science* 1987; 237(4811):143–9.
31. Canadian Dental Hygienists Association. Access angst: a CDHA position paper on access to oral health services. 2003; p. 6, 16. Available from: ULR: [http://www.cdha.ca/pdf/position\\_paper\\_access\\_angst.pdf](http://www.cdha.ca/pdf/position_paper_access_angst.pdf).
32. Canadian Dental Association. CDA position statement on delivery of oral health care. February 2005. Available from ULR: [http://www.cda-adc.ca/\\_files/position\\_statements/delivery\\_care.pdf](http://www.cda-adc.ca/_files/position_statements/delivery_care.pdf).
33. British Columbia Dental Association. Position statements. Taking care of the oral health of BC's elders. Available from ULR: [http://www.bcdental.org/position\\_statement.htm](http://www.bcdental.org/position_statement.htm).
34. Allison PJ, Locker D, Feine JS. Quality of life: a dynamic construct. *Soc Sci Med* 1997; 45(2):221–30.