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Inequity in Oral Health Care for Elderly Canadians: Part 3. Reducing Barriers to Oral Care

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Abstract

Older adults in Canada face financial, behavioural and physical barriers to oral care. This final article of a 3-part series puts forward suggestions to overcome these barriers. For example, the current multi-provider system of private dental insurance could be transformed into a universal single-provider plan, similar to the existing plan for medical care, without much additional investment from government funds. Consolidating dental insurance under a single provider would not only create equity in oral care for older Canadians, but would also be more cost-efficient than the current system in rehabilitating oral health and functions. Other suggestions include a call for socially responsible contributions from the dental professions to meet the needs of frail people, and changes to enhance perceptions of oral health as integral to general health in an aging population.

Inequity in Oral Health Care: Series Overview

This 3-part series of papers began¹ with a description of the oral health concerns of Canadians 65 years of age and older, an age group that will constitute about one-quarter of the Canadian population by 2036.² Part 2 of the series³ described the financial, behavioural and physical barriers to oral care for older people, and now Part 3 recommends that governments and dental professionals work together to implement financial, socially responsible and educational strategies to reduce the inequities in access to oral health care faced by older Canadians.

Overcoming Financial Barriers

Canadian governments have been repeatedly called upon to assume greater responsibility for the oral care of less advantaged communities.⁴⁻⁷ In our view, implementing tax incentives for dentists to treat socially marginalized groups⁸ would only shift the inequity from one minority group

(older people) to another (dentists). Moreover, we believe that removing the tax exemption on the employment-based benefits⁸ currently carried by half the population would be inadequate to cover the cost of oral care for the other half of the population (i.e., those without dental insurance). Other calls for public funding of dental care⁹

might require governments to allocate funds from their budgetary reserves. However, many fear this would simply compromise other sectors of the nation's economy,¹⁰ although data for the period 1995/96 to 2003/04 shows that increased spending on health care caused no decrease in spending on social or educational services.¹¹ In 2009, public and private dental expenditures accounted for only 7% of the total health care budget in Canada (including physicians' fees, hospital costs and prescription drugs).¹² Nonetheless, we believe that in the current climate of restrained government spending on health care, a new government-funded dental program for all will have little or no political appeal.

Fragmented Coverage

Medical services in Canada are financed through public funds, while dental services are financed directly by patients—either directly to dentists or indirectly through multiple private insurance companies. The relatively small dental insurance market in Canada is dispersed among multiple private insurers, and collectively accumulates higher overhead and administrative costs than it would be if administered by a single provider.¹³ Consequently, the premium rates for dental insurance remain out of range for most low-income people. Publicly financed dental plans are available to households on social assistance in some Canadian jurisdictions,¹⁴⁻¹⁶ but they are typically associated with low remuneration and complicated paperwork for dentists, and the patients are often noncompliant to appointment schedules or treatment recommendations.⁸

Consolidation

We recommend a government-administered system of dental insurance as a tax-deductible plan across the country for all Canadians. Employers would contribute to the premiums of their employees, as they do now, and everyone else could contribute individually to the plan. Governments would subsidize the premiums of people receiving social welfare. It is important to recognize that this plan is more akin to a pension plan than a government tax. Each provincial and territorial government would act as local underwriters to finance and invest the premiums.

Given that administrative costs and expenditures per capita in the Canadian publicly administered medical insurance system are about half the corresponding costs for the mix of public and private health care financing in the United States,^{17,18} we expect similar savings for a government-sponsored dental plan. Current employer-sponsored dental insurance benefits are not taxed (except in Quebec), a situation that in 2006 amounted collectively to a loss in tax revenue of about \$2.6 billion.⁵ With this universal dental plan, the pooled contributions would generate financial interest to offset this loss in tax revenue and defray most of the administrative costs, thereby sustaining the system with little or no impact on government reserves.

Pooling of Risk

Private insurers prefer to cover healthy rather than unhealthy people, and tend to favour those who are relatively affluent.^{19,20} Premiums usually increase with advancing age because of a presumed greater health risk. In addition, some private insurers adjust for risks with a diversity of options, which adds further to their administrative complexity and cost.²¹ Consequently, many people cannot or choose not to maintain their private dental insurance upon retirement.²² Thus, the private insurance system consistently exhibits a strong income-utilization gradient, as they tend to exclude low-income people,²³ a trend that was identified by the Royal Commission on Health Services in 1961 (which led to the 1966 Medical Care Act),²⁴ and again by the recent Canadian Health Measures Survey (2007–2009).²⁵ Apparently, access to dentistry has not improved much over the past half-century despite the growth of private insurance.

Within our proposal for a universal and publicly administered dental plan, all Canadian residents, except those who wish to opt out, would be covered at financially affordable rates, regardless of age, health or employment status. After retirement, people could continue to contribute to the plan, according to personal capacity. This sharing of financial risk would eliminate the adverse selection that occurs when the insured group consists mostly of people at higher risk to disease.²⁶ It also allows distribution of the cost of oral care justly and affordably across the population. The 2003 Canadian Community Health Survey estimated

that dental insurance for low-income Canadians would reduce the inequity associated with preventive dentistry by about one-third.²⁷ Dental insurance for all Canadians would further lessen the inequity in services currently afflicting the frail elderly population.

Cost-Effectiveness of Disease Prevention

Dentistry is widely perceived as expensive, and many people on low income are predisposed to use emergency rather than preventive services.²⁸ In one province, these emergency treatments, which were mostly preventable, cost Ontario residents about \$16 million a year in 2006, without much address to the underlying dental problems.²⁹ Indeed, the amount of money spent on dental services by people without dental insurance is quite similar to that spent by those with insurance.¹² We believe, therefore, that a universal dental plan to all citizens, including older people, will eliminate this inequity by helping to maintain oral health awareness, encourage preventive care, and reduce emergency and other costly dental treatments as frailty increases.³⁰⁻³²

Private vs. Public Care System

Proponents of a dual public and private health care system believe that subsidized public services inevitably suffer from a chronic shortage of care providers and lengthy wait-times. They also believe that competition from the private systems helps to improve the efficiency and quality of care, by attracting care providers through higher reimbursement fees.^{33,34} Nonetheless, the overall effect elevates the cost of care and erodes confidence in the public system,³⁴ which prompts some jurisdictions to prohibit overlapping coverage for physicians and necessary hospital services and to regulate the fees of physicians who opt out of the public plan.³⁵ Reform of the Veterans Health Administration in the United States has demonstrated that a public system can guarantee better access and better clinical outcomes than private systems.³⁶ We believe that older people in Canada can benefit from this experience when applied to dentistry.

Solidarity in Care

Private dental insurers in Canada and elsewhere typically recognize preventive services,

extractions, complete dentures and prophylactic removal of wisdom teeth as “basic” care covered by their insurance policies, whereas rehabilitative treatments, such as endodontics, periodontics and fixed prosthodontics, are considered personal responsibilities not covered by the insurance.³⁷ However, there is no universal consensus on the scope of basic oral health care for any age group. While most dentists in Canada would consider endodontics, periodontics and uncomplicated fixed prosthodontics as part of the routine basic care they offer to their patients,³⁸ insurers’ influence on patients’ treatment decisions could sometimes conflict with professional recommendations.³⁹ Furthermore, the scope of care varies with changing expectations of the community. But the provision of maximal benefit to the least advantaged in society is an essential principle of any just and egalitarian distribution of health care. Only then will the less well-off have a reasonable opportunity to access the necessary health care of a civilized society.³⁷ We also support the principles that everyone should be free to select their care providers, but that the provision of care must be monitored responsibly by a regulatory body representing care recipients, care providers and policy-makers. This regulatory surveillance, which exists in all Canadian jurisdictions, should help prevent unnecessary inflation of fees or other abuses.

Overcoming Physical Barriers

Remote Communities

Dental services in rural areas are limited,⁴⁰ largely because dental professionals with minimal personal or professional experience in rural dentistry generally prefer to live in urban communities.⁴¹ Consequently, elderly people in remote communities face major barriers related to isolation and transportation, which predispose them to serious personal and oral care neglect.⁴² Mobile dental clinics have served many remote communities and long-term care facilities throughout Canada.⁴³⁻⁴⁵ However, they are difficult to staff and maintain.⁴⁶ Universal dental insurance for all Canadians would not necessarily bring oral care to remote areas, but it would offer a financial incentive for oral care providers to move to smaller and more remote communities and encourage elderly

people in remote communities to access care wherever they find it.

Social Responsibility

Government leadership in oral health care does not eliminate individual responsibility to enable and promote basic health care equity. A universal public dental plan might appear to some as a simple shift of inequity from the older population (15%) to the working population (85%). Nonetheless, aside from fulfilling the social responsibility to care for vulnerable members of society (as Rawls argued) any of us can be cast among the least advantaged in society and might one day benefit from this principle of distributive justice.⁴⁷ With the current system—where employment-sponsored dental insurance is terminated upon retirement—most people lose their

premium contributions, as well as the potential gains from preventive oral care. Although the benefits of periodic recall examinations are unclear,⁴⁸ we believe that regular examinations would benefit older people, especially when they grow frail and increasingly more dependent on others.

Overcoming Behavioural Barriers

Health Promotion and Skill Development

Educational and dental public health programs help to increase awareness about oral care and can alleviate the anxiety associated with dentistry.^{49,50} Although nurses in care facilities are often overwhelmed by competing priorities, they can be motivated to convey their own personal hygiene values to their patients.⁵¹ Safe techniques for rendering oral care to confused or defensively aggressive elderly patients are challenging and should be made familiar to all care providers in care facilities.⁵² Specially trained dental auxiliaries, such as dental assistants and therapists, could help champion oral care routines.⁵³ Educating caregivers, including family members, in oral care can improve the general health of frail people and reduce hospital admissions and health care expenses.^{54,55} One conservative estimate indicated that engaging one dental assistant to offer an oral care program in each long-term care facility in the United States would save a total of about \$300 million annually by reducing the incidence of aspiration pneumonia by 10%.⁵⁶ A similar program could lead to a meaningful reduction in Canada's health care costs.

Quality Assurance

Continuous commitment to quality assurance and a regular audit of interventions in care facilities are needed to reduce inconsistencies in oral care, even when staff are well trained.⁵⁷⁻⁶⁰ A well-run facility should engage all of its staff to view "quality" broadly, provide quantitative and qualitative evidence of its oral health promotion activities to assure continuous maintenance of care.⁵⁸ We believe that an oral care protocol in every care facility in Canada would go a long way toward translating didactic knowledge into daily practice.⁶¹

5 Strategies to Reduce Inequity in Oral Care

- 1 **Encourage a government-administered universal dental plan** supported financially by redirecting the premiums currently paid for private dental insurance in each province and territory
- 2 **Promote oral health care** widely to increase awareness and enhance the skills of care providers responsible for older people
- 3 **Establish official guidelines for standards** of oral care within all care facilities to reduce complications from oral diseases and improve quality of life among residents living in the facilities
- 4 **Develop and expand educational programs** in dental geriatrics for dental professionals interested in expanding their scope of practice in the care of people who are elderly and frail
- 5 **Review the admission criteria for dental and dental hygiene programs** to promote the selection of applicants with mature social and humanistic values suitable for managing chronic disease and disability in an aging population.

Professional Training

Some dentists feel ill-prepared and overwhelmed when confronted with the medical and social problems associated with frailty, and they struggle with the moral considerations of benevolence and nonmaleficence in treatment plans.^{62,63} Frequently, dental treatment performed on frail elderly patients is little more than a “patchwork” effort toward symptomatic relief.⁶⁴ Questions about choice of restorative materials, preservation of natural teeth and level of oral hygiene can raise large ethical dilemmas for which there is much uncertainty.^{65,66}

Geriatrics is taught in almost all dental schools in North America, although principally as a didactic rather than a clinical subject.^{67,68} Obstacles to teaching dental geriatrics in undergraduate education include overcrowded syllabuses, compounded by lack of funding and personnel. Only about one-third of the dental schools in the United States and half of those in Canada offer their students clinical exposure to geriatric patients.^{67,68} Moreover, there are very few formal programs (fellowship or specialty) available worldwide for post-graduate clinical and research training in geriatric dentistry.⁶⁷ Similarly, advanced training programs for dental auxiliaries to expand their scope of services to elderly people are similarly scarce.⁵³

Holistic Approach

A curriculum in geriatrics can increase knowledge and clinical skills, but typically fails to eliminate the negative stereotyping associated with aging.^{69,70} For instance, two surveys of British Columbia dentists, one conducted about 20 years ago⁷¹ and the other more recently,⁷² found a similar disinterest in geriatric dentistry. Most dentists perceived domiciliary services beyond their clinical responsibilities because of time constraints, administrative demands, meagre financial incentive and limited education. Educational efforts should focus more keenly on the social responsibilities rather than the business of clinical practice, in the hope that dentists instilled with humanistic characteristics will address the needs of disadvantaged communities.^{67,73-75} Perhaps recruiting people with empathy and altruism for admission to dental and dental hygiene programs could help

to achieve more holistic and equitable professional oral health care for the rapidly aging population.

Conclusion

Inequity in oral care arises from financial, behavioural and physical barriers, and remains a challenge for older Canadians.³ We believe that the health professions, along with Canadian government agencies, have a social responsibility to reduce this inequity for the benefit of all by implementing the following 5 strategies:

1. Encourage a government-administered universal dental plan supported financially by redirecting the premiums currently paid for private dental insurance in each province and territory
2. Promote oral health care widely to increase awareness and enhance the skills of care providers responsible for older people
3. Establish official guidelines for standards of oral care within all care facilities to reduce complications from oral diseases and improve quality of life among residents living in the facilities
4. Develop and expand educational programs in dental geriatrics for dental professionals interested in expanding their scope of practice in the care of people who are elderly and frail
5. Review the admission criteria for dental and dental hygiene programs to promote the selection of applicants with mature social and humanistic values suitable for managing chronic disease and disability in an aging population. ♦

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References

1. Yao CS, MacEntee MI. Inequity in oral health care for elderly Canadians: Part 1. Oral health status. *J Can Dent Assoc.* 2013;79:d114.
2. Statistics Canada. Projected population by age group according to three projection scenarios for 2006, 2011, 2016, 2021, 2026, 2031 and 2036, at July 1, CANSIM, table 052-0005 and Catalogue no. 91-520-X. 2010. [accessed 2012 Jul 17]. Available: <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo08d-eng.htm>
3. Yao CS, MacEntee MI. Inequity in oral health care for elderly Canadians: Part 2. Causes and ethical considerations. *J Can Dent Assoc.* 2013;79:d127.
4. Lavigne SE. The state of oral health in personal care homes: a public health issue? *J Can Dent Assoc.* 2008;74(10):899-901.
5. Leake J, Birch S. Public policy and the market for dental services. *Comm Dent Oral Epidemiol.* 2008;36(4):287-95.
6. Canadian Dental Association. CDA position on Access to oral healthcare for Canadians. May 2010. Available: http://www.cda-adc.ca/files/position_statements/accessToCare.pdf [accessed 2013 Jul 24].
7. Quiñonez C, Grootendorst P. Equity in dental care among Canadian households. *Int J Equity Health.* 2011;10(1):14.
8. Quiñonez CR, Figueiredo R, Locker D. Canadian dentists' opinions on publicly financed dental care. *J Public Health Dent.* 2009;69(2):64-73.
9. Birch S, Anderson R. Financing and delivering oral health care: what can we learn from other countries? *J Can Dent Assoc.* 2005;71(4):243, 243a-243d.
10. Hawkins RJ. The organization, financing and delivery of dental care for older adults in Canada: an assessment from a social sciences perspective. *Can J Community Dent.* 1998;13:10-24.
11. Landon S, McMillan ML, Muralidharan V, Parsons M. Does health-care spending crowd out other provincial government expenditures? *Canadian Public Policy.* 2006;32(2):121-141.
12. Canadian Institute for Health Information. National Health Expenditure Trends, 1975 to 2011. Spending and Health Workforce, 2011. [accessed 2012 Jul 26]. Available: <https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC1671>.
13. Mathauer I, Nicolle E. A global overview of health insurance administrative costs: what are the reasons for variations found? *Health Policy.* 2011;102(2-3):235-46.
14. Province of Ontario. Breaking the cycle. The third progress report: Ontario's poverty reduction strategy, 2011 annual report. Ontario. [accessed 2012 Jul 26]. Available: <http://www.children.gov.on.ca/htdocs/English/documents/breakingthecycle/2011AnnualReport.pdf>.
15. Government of New Brunswick. Overcoming poverty together: The New Brunswick economic and social inclusion plan. New Brunswick: Government of New Brunswick. 2010. [accessed 2012 Jul 26]. Available: <http://www2.gnb.ca/content/dam/gnb/Departments/esic/pdf/Booklet-e.pdf>.
16. Government of Québec. Régie de l'assurance maladie Québec. Dental services. [accessed 2012 Jul 26]. Available: <http://www.ramq.gouv.qc.ca/en/citizens/health-insurance/healthcare/Pages/dental-services.aspx>.
17. Woolhandler S, Campbell T, Himmelstein DU. Costs of health care administration in the United States and Canada. *N Engl J Med.* 2003;349(8):768-75.
18. Organisation for Economic Co-operation and Development. Health at a Glance 2011: OECD Indicators, OECD Publishing. [accessed 2012 Jul 26]. Available: http://dx.doi.org/10.1787/health_glance-2011-en
19. Morgan RO, Virnig BA, DeVito CA, Persily NA. The Medicare-HMO revolving door--the healthy go in and the sick go out. *N Engl J Med.* 1997;337(3):169-75.
20. Rodríguez M, Stoyanova A. The effect of private insurance access on the choice of GP/specialist and public/private provider in Spain. *Health Econ.* 2004;13(7):689-703.
21. Gechert S. Supplementary Private Health Insurance in selected countries: Lessons for EU Governments? *CEISIO Economics Studies.* 2010;56(3):444-64.
22. Butler JR. Policy change and private health insurance: did the cheapest policy do the trick? *Aust Health Rev.* 2002;25(6):33-41.
23. Hurley J, Guindon GE. 2008. Centre for Health Economics and Policy Analysis (CHEPA) Working Paper Series – Paper 08-04 – Private Health Insurance in Canada. [accessed 3 Sep 2011]. Available: <http://www.chepea.org/research-products/working-papers/08-04>.
24. Canadian Dental Association. C.D.A. Answers Royal Commission on Health Services [Special Report]. *J Can Dent Assoc.* 1965;31(7):462-3.
25. Health Canada. Report on the Findings of the Oral Health Component of the Canadian Health Measures Survey 2007-2009 (Technical Report). [accessed 27 Aug 2013]. Available: <http://www.fptdwg.ca/English/e-documents.html>
26. Hussey P, Anderson GF. A comparison of single- and multi-payer health insurance systems and options for reform. *Health Policy.* 2003;66(3):215-28.
27. Grignon M, Hurley J, Wang L, Allin S. Inequity in a market-based health system: Evidence from Canada's dental sector. *Health Policy.* 2010;98(1):81-90.
28. Wallace BB, MacEntee MI. Access to dental care for low-income adults: perceptions of affordability, availability and acceptability. *J Community Health.* 2012;37(1):32-9.
29. Quiñonez C, Ieraci L, Guttman A. Potentially preventable hospital use for dental conditions: implications for expanding dental coverage for low income populations. *J Health Care Poor Underserved.* 2011;22(3):1048-58.
30. Kiyak HA, Reichmuth M. Barriers to and enablers of older adults' use of dental services. *J Dent Educ.* 2005;69(9):975-86.
31. WHO. Achieving universal health coverage: developing the health financing system. Geneva, World Health Organization, Department of Health Systems Financing. 2005. [accessed 9 Mar 2011]. Available: http://www.who.int/health_financing/pb_1.pdf
32. Moeller JF, Chen H, Manski RJ. Investing in preventive dental care for the Medicare population: a preliminary analysis. *Am J Public Health.* 2010;100(11):2262-9.
33. Brekke KR, Sørsgard L. Public versus private health care in a national health service. *Health Econ.* 2007;16(6):579-601.
34. García-Prado A, González P. Whom do physicians work for? An analysis of dual practice in the health sector. *J Health Polit Policy Law.* 2011;36(2):265-94.
35. Flood CM, Haugan A. Is Canada odd? A comparison of European and Canadian approaches to choice and regulation of the public/private divide in health care. *Health Econ Policy Law.* 2010;5(3):319-41.
36. Oliver A. The Veterans Health Administration: an American success story? *Milbank Q.* 2007;85(1):5-35.
37. MacEntee MI, Kazanjian A, Kozak JF, Hornby K, Thorne S, Kettratad-Pruksapong M. A scoping review and research synthesis on financing and regulating oral care in long-term care facilities. *Gerodontology.* 2012;29(2):e41-52.
38. Dharamsi S, MacEntee MI. Dentistry and distributive justice. *Soc Sci Med.* 2002;55(2):323-9.
39. Dharamsi S, Pratt DD, MacEntee MI. How dentists account for social responsibility: economic imperatives and professional obligations. *J Dent Educ.* 2007;71(12):1583-92.
40. *Research in Focus on Research.* What the census can tell us about Canada's dental workforce? 2008. Sudbury (ON): Centre for Rural and Northern Health Research. [accessed 26 Jul 2012]. Available <http://www.cranhr.ca/focus.html>.
41. Skillman SM, Doescher MP, Mouradian WE, Brunson DK. The challenge to delivering oral health services in rural America. *J Public Health Dent.* 2010;70 Suppl 1:S49-57.
42. Ahn S, Burdine JN, Smith ML, Ory MG, Phillips CD. Residential rurality and oral health disparities: influences of contextual and individual factors. *J Prim Prev.* 2011;32(1):29-41.

43. Galan D, Holtzman JM. Dentistry for the homebound and institutionalized: the University of Manitoba's Home Dental Care Program. *J Can Dent Assoc.* 1990;56(7):585-91.
44. Morreale JP, Dimitry S, Morreale M, Fattore I. Setting up a mobile dental practice within your present office structure. *J Can Dent Assoc.* 2005;71(2):91.
45. McDonagh P, McGill's commitment to dentistry outreach: transforming delivery of oral health care in Quebec. *J Can Dent Assoc.* 2008;74(7):605-7.
46. Carr BR, Isong U, Weintraub JA. Identification and description of mobile dental programs – a brief communication. *J Public Health Dent.* 2008;68(4):234-7.
47. Rawls. A theory of justice. In: President and Fellows of Harvard College, editors. *The Rationality of the parties.* Oxford: Oxford University Press; 1999. p. 127.
48. Tomar SL. There is weak evidence that a single, universal dental recall interval schedule reduces caries incidence. *J Evid Based Dent Pract.* 2011;11(2):89-91.
49. Watt RG, Marinho VC. Does oral health promotion improve oral hygiene and gingival health? *Periodontol 2000.* 2005;37:35-47.
50. Kvale G, Berggren U, Milgrom P. Dental fear in adults: a meta-analysis of behavioral interventions. *Community Dent Oral Epidemiol.* 2004;32(4):250-64.
51. Yoon MN, Steele CM. Health care professionals' perspectives on oral care for long-term care residents: nursing staff, speech-language pathologists and dental hygienists. *Gerodontology.* 2012;29(2):e525-35.
52. Kayser-Jones J, Bird WF, Redford M, Schell ES, Einhorn SH. Strategies for conducting dental examinations among cognitively impaired nursing home residents. *Spec Care Dentist.* 1996;16(2):46-52.
53. MacEntee MI. Muted dental voices on interprofessional healthcare teams. *J Dent.* 2011;39 Suppl 2:S34-40.
54. Frenkel H, Harvey I, Newcombe RG. Improving oral health in institutionalised elderly people by educating caregivers: a randomised controlled trial. *Community Dent Oral Epidemiol.* 2001;29(4):289-97.
55. Yoneyama T, Yoshida M, Ohru T, Mukaiyama H, Okamoto H, Hoshiba K, et al. Oral care reduces pneumonia in older patients in nursing homes. *J Am Geriatr Soc.* 2002;50(3):430-3.
56. Terpenning M, Shay K. Oral health is cost-effective to maintain but costly to ignore. *J Am Geriatr Soc.* 2002;50(3):584-5.
57. MacEntee MI, Wyatt CC, Beattie BL, Paterson B, Levy-Milne R, McCandless L, et al. Provision of mouth-care in long-term care facilities: an educational trial. *Community Dent Oral Epidemiol.* 2007;35(1):25-34.
58. Pruksapong M, MacEntee MI. Quality of oral health services in residential care: towards an evaluation framework. *Gerodontology.* 2007;24(4):224-30.
59. Dharamsi S, Jivani K, Dean C, Wyatt C. Oral care for frail elders: knowledge, attitudes, and practices of long-term care staff. *J Dent Educ.* 2009;73(5):581-8.
60. Yoon MN, Lowe M, Budgell M, Steele CM. An exploratory investigation using appreciative inquiry to promote nursing oral care. *Geriatr Nurs.* 2011;32(5):326-40.
61. Fallon T, Buikstra E, Cameron M, Hegney D, Mackenzie D, March J, et al. Implementation of oral health recommendations into two residential aged care facilities in a regional Australian city. *Int J Evid Based Healthc.* 2006;4(3):162-79.
62. MacEntee MI. Missing links in oral health care for frail elderly people. *J Can Dent Assoc.* 2006;72(5):421-5.
63. McNally ME, Dharamsi S, Bryant SR, MacEntee MI. Ethical considerations for the oral healthcare of frail elders. In: MacEntee MI, ed. *Oral Healthcare and the frail elder: A clinical perspective.* Iowa: Wiley-Blackwell Publishers; 2010. p. 13-30.
64. Hawkins RJ. The organization, financing and delivery of dental care for older adults in Canada: an assessment from a social sciences perspective. *Can J Community Dent.* 1998;13:10-24.
65. Nitschke I, Ilgner A, Müller F. Barriers to provision of dental care in long-term care facilities: the confrontation with ageing and death. *Gerodontology.* 2005;22(3):123-9.
66. MacEntee MI, Mathu-Muju KR. Uncertainty in oral health-care for older people. *Gerodontology.* 2013 (in press).
67. MacEntee MI. The educational challenge of dental geriatrics. *J Dent Educ.* 2010;74(1):13-9.
68. Mohammad AR, Preshaw PM, Ettinger RL. Current status of predoctoral geriatric education in U.S. dental schools. *J Dent Educ.* 2003;67(5):509-14.
69. De Visschere L, Van der Putten GJ, de Baat C, Schols J, Vanobbergen J. The impact of undergraduate geriatric dental education on the attitudes of recently graduated dentists towards institutionalised elderly people. *Eur J Dent Educ.* 2009;13(3):154-61.
70. Moreira AN, Rocha ES, Popoff DA, Vilaça EL, Castilho LS, de Magalhães CS. Knowledge and attitudes of dentists regarding ageing and the elderly. *Gerodontology.* 2012;29(2):e624-31.
71. MacEntee MI, Weiss RT, Waxler-Morrison NE, Morrison BJ. Opinions of dentists on the treatment of elderly patients in long-term care facilities. *J Public Health Dent.* 1992;52(4):239-44.
72. Chowdhry N, Aleksejuniene J, Wyatt C, Bryant R. Dentists' perceptions of providing care in long-term care facilities. *J Can Dent Assoc.* 2011;77:b21.
73. Klineberg I, Massey W, Thomas M, Cockrell D. A new era of dental education at the University of Sydney, Australia. *Aust Dent J.* 2002;47(3):194-201.
74. Baumeister SE, Davidson PL, Carreon DC, Nakazono TT, Gutierrez JJ, Andersen RM. What influences dental students to serve special care patients? *Spec Care Dentist.* 2007;27(1):15-22.
75. Loignon C, Allison P, Landry A, Richard L, Brodeur JM, Bedos C. Providing humanistic care: dentists' experience in deprived areas. *J Dent Res.* 2010;89(9):991-5.