

ALTERNATIVE OPTIONS FOR A BROKEN DENTAL CARE SYSTEM IN CANADA

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“It is recognized by all that dental care is an absolute necessity in the life of every child. Many parents unfortunately cannot pay for this attention, and it is the duty of the ...state to come to their assistance.”

- Dr. John Robb, *Ontario Minister of Health (1931)*

ABSTRACT

Dental care in Canada is one of most highly privatized components of the Canadian health care system. Canada ranks among the lowest of OECD countries in terms of its public share of total dental care expenditures, while experiencing oral health outcomes which are considerably lower than the average for OECD countries. This paper examines three major deficiencies of the current Canadian dental care system that weaken the country’s oral health outcomes relative to other OECD countries, including its manifest inequality, its failure to promote or encourage preventive care as a means of improving oral health outcomes, and its inability to account for structural problems and the social determinants of oral health. The model relies heavily upon market forces and fails to acknowledge the limitations of that type of system for providing dental care to all. In order to offer practical solutions for improving the current Canadian dental care system, this paper considers models which have been previously employed by some of Canada’s provinces, and examines several models offered by other OECD countries.

INTRODUCTION

In November 1964, the Royal Commission on Health Services recommended that the Canadian federal government establish a universally-accessible, publicly-funded health care system. The immediate priority was to eliminate all financial access barriers to medical care in Canada, and so the body suggested that the costs of preventative health and hospital care ought to be borne by a joint federal-provincial system. As well, the Commission envisioned the gradual integration of long-term care, home care, prescription drug coverage, and dental care into the publicly-funded health care system (Marchildon, 2011: 20). The analysis at hand is concerned with the latter element of the Commission's report: publicly-funded dental care.

Generally speaking, there are two primary policy approaches for providing all citizens with access to dental care. First, there are schemes centred on providing public funding for those who are economically or socially vulnerable to improve their access to dental care. Such programs, known as "Denticaid," target subsidies towards the poor and other vulnerable groups, and do not provide public funding to the remainder of the population on the presumption that they are economically capable of financing their own dental health. The second approach, known as "Denticare," is more universal in scope, providing public funding to all or most individuals in society irrespective of their socio-economic status (Yalnizyan and Aslanyan: 2011: 7).

Although the OECD countries vary in the degree to which they publicly finance dental care, Canada has consistently ranked lowest in terms of public expenditure as a proportion of total dental care costs, ahead of only the United States (Quiñonez, 2009: 1). Canada also scores below the average of OECD countries in the DMFT index, a measure which indicates the mean number of decayed, missing, and filled teeth for a given population (a lower DMFT index is generally indicative of a better oral health status). Another concern is that the gap between the proportion of Canadians who refuse to consult a *dentist* due to cost, relative to the proportion of Canadians who refuse to

consult a *physician* due to cost, is also the highest among OECD countries (Birch and Anderson, 2005: 243c). Given Canada's poor showing in this area relative to other OECD countries, a number of organizations, dentists and scholars have called upon Canadian governments to re-evaluate their oral health care policies (Leake, 2006; Quiñonez et al., 2008; Quiñonez, 2006; Birch and Anderson, 2005; Leake and Birch, 2008; Yalnizyan and Aslanyan, 2011).

THE IMPORTANCE OF ORAL HEALTH

The importance of dental care is difficult to overstate. First, there is a growing body of evidence linking poor oral health care to higher rates of diabetes, cardiovascular disease, and pneumonia (Yalnizyan and Aslanyan, 2011: 7). Therefore, addressing oral health care deficiencies may reduce government's medical costs in the long-run by addressing structural issues within the health care system. Second, poor oral health has a clear economic impact. In 2010, for instance, there were 2.26 million school days and 4.15 million working days lost due to emergency dental visits and dental sick-days (Clovis, 2011: 15). These figures represent lost economic potential and productivity, problems that may be avoided with preventive dental treatment. Third, recent research indicates that dental health can affect the functional, psychological, and social dimensions of an individual's overall health status (Gift and Atchison 1995: NS 57-72). As a result, insufficient access to, or delivery of, dental services can detrimentally impact an individual's well-being, self-esteem, confidence, and inhibit her from reaching her full potential. Given that poor oral health can amplify into an expensive problem for the state, there is a clear incentive for governments to undertake policy reform with the objective of improving oral health outcomes.

This paper examines three major deficiencies of the current Canadian dental care system that weaken the country's oral health outcomes relative to other OECD countries. The first weakness of the Canadian dental care system is that it is manifestly unequal. The current model allows middle-

and upper-class Canadians access to better and less costly oral health services, while denying such benefits to those citizens of lower socio-economic status. Second, the current model fails to promote preventive care as a means of improving oral health outcomes. The third weakness of the current model is that it virtually ignores structural problems and the social determinants of oral health. The model relies heavily upon market forces and fails to acknowledge the limitations of that type of system for providing dental care to all. In order to offer practical solutions for improving the current Canadian dental care system, this paper considers previously-existing Canadian dental care models and examines the models offered by other OECD countries.

PUBLIC FINANCING OF DENTAL CARE IN CANADA

Under the *Canada Health Act*, medical and hospital care in Canada is socialized, financed through taxes and premiums collected by governments, which is then redistributed to physicians and hospitals. The collection of funds through a progressive taxation system and the distribution of services to all regions of Canada is considered by most Canadians as being equitable (Leake, 2006: 317a). Conversely, dental care in Canada is delivered by private, for-profit practitioners, and is funded primarily through private financing, either as out-of-pocket payments or by private insurance (Birch and Anderson, 2005: 243).

The *Canada Health Act* requires that “the health care insurance plan of a province... entitle one hundred per cent of the insured persons of the province to the insured health services provided for by the plan on uniform terms and conditions” (*Canada Health Act*, 1984: 6). There is no such provision for oral health care in Canada. As a result, large disparities exist in the mechanisms by which Canadians are insured for oral health care. Sixty-two per cent of Canadians rely on private insurance for dental care coverage, while 32 per cent of Canadians remain uninsured (Health Canada, 2010). The remaining five or six per cent of Canadians (namely Aboriginal peoples and

some children and seniors, depending upon provincial laws) are covered to varying degrees by public financing (CDA Board of Governors, 2010: 3, 6-7).

Tradition, politics, and values all play roles in influencing the pattern by which oral health care services are financed and organized in Canada (Holm-Peterson et al., 2005: 991). Stamm et al. provide the framework through which the dental care system cutbacks occurred in the 1980s and 1990s:

“Canada has undergone a period of economic difficulty in recent years. As a result, governments...began to look for areas where greater economic restraint could be exercised. Considerable pressures have been placed on health care programs because they represent relatively large expenditures... Dental public health programs are luxuries to politicians and nuisances to fee-for-service dentists... [They] are the last to expand when the budgets rise and the first to be cut when they fall” (Stamm et al., 1986: 1).

This assertion is supported by the trends illustrated by *Figure 1*, which details national trends in public expenditure on dental care as a proportion of total dental care spending in Canada since 1975. In 1981, government funding for public dental care peaked at 15.1 per cent nationally, although Saskatchewan (1983), Québec (1981), and Newfoundland & Labrador (1983), had maximum public expenditures of 31.0 per cent, 31.7 per cent, and 37.7 per cent, respectively – the three highest provincial proportions of public expenditure on dental care in Canada’s history (Yalnizyan and Aslanyan, 2011: 32-33).

The last three decades, however, have seen significant reductions in the amount of publicly provided dental care in Canada. The 1980s and 1990s were marked by government cutbacks in many social programs, and dental care appears to have been considered a luxury by governments. Today, public expenditures vary by province. Saskatchewan and Manitoba provide the highest proportions of public expenditure, at 13.8 per cent and 10.8 per cent, respectively, while Ontario provides the

lowest at 1.3 per cent annually. As of 2010, national public expenditures as a percentage of total dental care costs are 4.9 per cent, the lowest proportion in Canada's recent history (Yalnizyan and Aslanyan, 2011: 32-33).

AN UNEQUAL DISTRIBUTION OF COSTS AND BENEFITS

The current arrangement benefits higher income individuals of Canadian society. Dental insurance coverage is highly correlated with household income, and may reflect benefits that are offered through employment. At the highest income level (\$60,000 or more), the rate of dental coverage is approximately 70 per cent in Canada. Conversely, the lowest income level (\$20,000 or less) observes a rate of only 23 per cent in Canada (Millar and Locker, 1999: 58). This data suggests that less affluent, uninsured Canadians are much less likely to receive regular dental care than their middle- or higher-income, insured counterparts. Moreover, dental insurance coverage increases the likelihood of *deciding to receive* oral health care services, not simply the regularity of visiting a dentist each year. The mean number of annual dental visits is higher for individuals who are either insured or earn a higher household income, as well as for married individuals and Canadians with higher levels of formal education (Bhatti, Rana, and Grootendorst, 2007: 57-57b). This fact contrasts with the statistic that almost three times as many poorer Canadians do not see a dentist, due exclusively to cost barriers, than those in higher income households (Birch and Anderson, 2005: 243c).

Poor oral health is concentrated within low income and other disadvantaged groups, such as new immigrants, and those without dental insurance coverage (Locker and Matear, 2001: 24). Furthermore, individuals with poorer oral health are less likely to receive dental care. Indeed, the higher the need for dental care, the lower the utilization rate (Leake, 2006: 317e). According to Bhatti, Rana, and Grootendorst, Canada's oral health care system has gradually developed a "socioeconomic gradient" in terms of use and accessibility. Health care needs *eventually* dominate

socioeconomic factors, and dictates use among individuals who do choose to receive care, even for poorer individuals (Bhatti, Rana, and Grootendorst, 2007: 57g).

However, this “gradient” still has a tremendously damaging impact on economically-disadvantaged and uninsured persons in Canada. Dental care costs per capita have risen from \$145.59 in 1975 to \$398.90 in 2010. However, the share of public funds has lagged, rising from \$10.82 in 1975 to only \$19.54 per capita in 2010 (Yalnizyan and Aslanyan, 2011: 38). The trends in total dental costs per capita, and the public expenditure per capita since 1975, are represented in *Figure 2* and *Figure 3*, respectively.

As illustrated by *Figure 2*, real costs for dental care services per capita have almost tripled since 1975. These rising costs are attributable to more than just a lower supply of qualified and licensed dentists, or a rising number of people demanding and accessing dental services. The financial incentives for dentists to charge increasingly higher premiums have been “reinforced by...the expectations of anxious patients, the prestige associated with costly technological care, [while] the third-party reimbursement system... requires annual growth in profit-margins for insurers” (Enthoven, 1978: 652-53).

Meanwhile public funding for individuals, which has been targeted at a wide range of vulnerable groups in Canada, has not experienced similar growth as illustrated by *Figure 3*. As a result, those who are not insured, either publicly or privately, or who have only partial coverage, have become increasingly disadvantaged by the current oral health care system in Canada. When contextualized with the observation that poorer individuals are more likely to have poorer oral health, and are less likely to receive dental care services due to cost, the current model is clearly inequitable and highly prejudicial to vulnerable segments of society.

There are clear inequities in utilization rates and health outcomes, due to both price and socioeconomic factors. Arguably more significant is that the current oral health care model in

Canada propagates and reinforces income inequality through its financial structure. Under current tax law, Canadians do not pay federal or provincial income tax on health care insurance premiums paid by employers. In addition, Canadians can claim dental expenses over and above three per cent of their income as deductions when filing income taxes. The Royal Commission on the Future of Health Care in Canada estimated that these tax breaks and exemptions amounted to “roughly \$3 billion annually given up by governments in not taxing private insurance premiums, and a further \$1 billion for the tax credits for individual health costs” (Romanow, 2002: 5).

More importantly, the tax subsidy creates enormous distortions in the benefits for socioeconomic groups. For instance, families with incomes of less than \$5,000 received a subsidy of \$0.50, while families earning more than \$100,000 received an average of \$225. For individuals with insurance, the subsidy was worth \$11 for the former income group, while the top income tier received an average of \$265 annually. This regressive pattern is illustrated in *Figure 4*, which details the effective subsidies received by a projected share of households. There are two significant trends illustrated by *Figure 4*. First, higher-income individuals receive more generous relief from governments in Canada than do lower-income individuals. Second, a greater proportion of middle- and high-income households consistently receive relief from governments in Canada than do their lower-income counterparts.

Examining the tax expenditure program in Canada also gives insight as to how the current model of oral health care delivery is unequal. There are three important ways taxation impacts inequality in dental care. First, more affluent and insured individuals receive tax-free dental care, whereas the insured have to pay in after-tax dollars. Second, all Canadians, including poor and other economically-disadvantaged Canadians, pay additional taxes (income taxes, gasoline taxes, provincial and federal sales taxes) in order to make up for the revenue governments forgo in not taxing health insurance premiums. Third, as the federal and provincial tax systems become less progressive

(Yalnizyan, 2010: 4, 17-18), lower-income and uninsured households contribute increasingly more to finance care for the insured (Leake, 2006: 317c-d). The Royal Commission on the Future of Health Care described Canadian health care values as equity, fairness, and solidarity (Romanow, 2002: Introduction: xvi). These values are contradicted in a dental health system that allows gross disparities with respect to accessibility, health outcomes, and the distribution of financial benefits.

CONSIDERATIONS FROM OTHER COUNTRIES: GERMANY AND UNITED KINGDOM

The German dental care system, in contrast, is a model whereby such disparities can be lessened. In Germany, dental care is provided by private practitioners, but the financing is embedded within the national social system. Approximately 90 per cent of German citizens belong to the national insurance system, which covers health insurance as well as a multitude of other services. The remaining ten per cent of the population are employed individuals who choose to purchase more comprehensive private insurance plans (Widström and Eaton, 2004: 162). Under the current arrangement, dental health is provided for the following procedures: extractions, apicoectomies, fillings and restorations, radiographs, biannual check-ups, and endodontics (such as root canals). For dentures, crowns, and bridges, patients co-pay 50 per cent of the costs. A bonus of ten per cent is refunded to patients who verify annual dental appointments (Holm-Pederson et al., 2005: 993-94). Dentists' fees are determined by negotiations between the dental associations and government agents (Widström and Eaton, 2004: 162).

The German system is a potentially useful model for restructuring the Canadian system for several reasons. First, all Germans are guaranteed a basic standard of service, irrespective of their financial status. Second, financing dental care through the tax system is less harmful for those in the low-income bracket, as employees and employers each contribute an equal amount towards the national health system, which provides coverage to all citizens, irrespective of employment status.

No regressive subsidies are offered, and lower-income and other economically-vulnerable individuals contribute less to the system while obtaining similar benefits to the more affluent members of German society. Third, the system is not universal as it demands partial coverage of some services, and permits rebates to people who subscribe to regular dentist appointments. This system has been effective in achieving desired outcomes: Germany ranks first among OECD countries with a DMFT score of 0.7 among children, and has seen a reduction of almost 90 per cent in the DMFT index since 1980 (OECD, 2009: 35).

However, it is important to recognize that the level of public funding is not necessarily indicative of success rates for oral health care systems. For instance, the United Kingdom provides an estimated 67 per cent of oral health care costs publicly (Widström and Eaton, 2004: 173). Dental care in the UK, however, is provided both by National Health System (NHS) dentists, and private dental practitioners. Dentists who work for the NHS are paid a set amount per item of care as well as a small capitation fee for retaining an individual as a registered patient within their practice. The fee scale is negotiated by members of the British Dental Association and the UK's Department of Health, within a strict, government-imposed financial limit. The focus from recent governments to reduce payment fees to dentists has encouraged practitioners to withdraw from the NHS to deliver services in the more profitable market, or give preference to individuals with private insurance over public insurance (Holm-Pederson et al., 2005: 992-93). The two-tier approach offered by the UK government does not provide a mechanism to retain dentists within the public system. The German model eliminates the motivation for dentists to not provide services publicly by ensuring that all citizens receive similar services at similar costs, while the UK system suffers as dentists move into the more lucrative private sector.

A PUBLIC HEALTH ACHIEVEMENT: WATER FLUORIDATION

Furthermore, the UK system provides no rewards for maintenance and prevention by patients. Prevention, or *up-stream investing*, is considered one of the key determinants for improving an individual's oral health care. There are three elements that are considered as preventive oral health care solutions: education, water fluoridation, and early treatment care for children and youth (Yalnizyan and Aslanyan, 2011: 9). Although education is clearly essential for prevention, some have suggested that only with proper access to services can education have an impact on improving an individual's oral health status (Bailey et al., 2008: 893). For that reason, improving accessibility to both water fluoridation, which improves a tooth's resistance to decay (Moreno, Kresak, and Zahradnik, 1974: 64-65), and improving overall dental services for youth and children must both be priorities for public policy-makers.

Oral health care experts have known for decades that fluoridation can prevent all cavities and tooth decay. However, 96 per cent of adults have a history of cavities (Health Canada, 2010: 4). There are many underlying, and possibly structural, issues which have created this enormous gap in outcomes, but the absence of up-stream investments and population-based strategies, like municipal water fluoridation, have undoubtedly contributed to this result. Preventive experts recognize that fluoride provided in toothpaste improves the oral health of only those individuals who frequently maintain oral health. Municipal water fluoridation, however, is more extensive, reaching all individuals in a given community, irrespective of individual behaviour (MMWR, 1999: 936). As *Figure 5* demonstrates, DMFT scores among children in various Brazilian communities are unpredictable in regions without access to water fluoridation, whereas they remain significantly lower for children in communities which provide water fluoridation. More significantly, the percentage of children with any decayed, missing, or filled teeth is noticeably higher for children without fluoridated water supplies than for those with fluoridated water supplies.

In Canada, the decision to add fluoride to drinking water is made by each municipality, in collaboration with its provincial or territorial government. Health Canada determines the maximum acceptable concentration of fluoride in drinking water (Health Canada, 2010: 2). Although water fluoridation was recognized by the Canadian Public Health Association (CPHA) as one of the twelve greatest public achievements of the twentieth century, Health Canada reported that only 45 per cent of Canadians received fluoridated water in 2009, indicating that a majority of Canadians did not (Health Canada, 2010: 1). Furthermore, since 2009, four urban municipalities – Quebec City, Lakeshore, Calgary, and Waterloo – have abandoned water fluoridation policies (Mittelstaedt, 2010; Gee, 2011).

Experts suggest that these decisions will degrade long-term oral health care outcomes, increase the prevalence of tooth decay, and impose other health care costs to future governments (CAPHD, 2012). The inadequate delivery of water fluoridation represents a clear deficiency in the oral health care system, as it limits the impact of prevention on oral health outcomes. Canada and the United States have similar models for dental care delivery to the extent that they both have elements of public financing but rely on private dental practitioners. Because both countries have similar demographics and because dental care costs in each country are roughly the same, the weaknesses in each country's system are comparable. However, the American system has a far better oral health outcome in a particular area: the US has a significantly lower DMFT score of 1.3 among 12 year olds (OECD, 2009: 35), relative to Canada's unofficial score of 2.0 (Health Canada, 2010: 10). One possible explanation to account for such a discrepancy is that the US has a 50 per cent higher rate of water fluoridation delivery to its citizens (ACDC, 2008) than Canada.

IMPROVING CHILDREN'S ACCESS TO DENTAL CARE

Although water fluoridation has been eliminated in some Canadian municipalities in recent years, there have been signs of increasing government support for alternative preventive oral health care policies. One such initiative was the commitment of \$45 million per year by the Ontario government in 2010 to assist low-income families in accessing dental care services. The funding will expand the Children in Need of Treatment (CINOT) initiative to allow children and youth under the age of 18 in low-income families to access oral health care services free-of-charge (Ito, 2011: 19). However, there is a more universal program which has previously existed in Canada (and currently exists in other industrialized nations) that is considered to be among the best programs for preventive oral health care in the world.

In 1973, the Saskatchewan government began to publicly deliver dental health care to all children through school-based programs. It consisted of trained dental therapists who provided both preventive and basic curative dental care to students aged five to sixteen (Quiñonez et al., 2008: 39). Dental therapists were paid an annual salary and administered care in school clinics. Six years after the program had been implemented, an independent study revealed that the quality of the work by dental therapists equaled or exceeded that performed by private sector dentists, and the Saskatchewan Dental Health Program began to attract both international and national attention. Manitoba emulated the program by targeting rural and remote schools. However, newly-elected governments in both Manitoba and Saskatchewan cut these programs in the 1980s in an effort to reduce spending and eliminate deficits, despite clearly defined benefits to participants (Marchildon, 2011: 21).

Today, no such programs exist. Although provinces deliver targeted dental care for low-income children (Quiñonez et al., 2008: 78), other structural issues persist. For instance, the children of less-educated parents have DMFT scores which are more than twice the DMFT scores for

children from parents with higher levels of education (Leake, 2006: 317e). A nation-wide school-based program could be beneficial for a variety of reasons. First, it eliminates financial barriers for children. Children are arguably the most vulnerable group in a given society, due to their high dependency upon others and incomplete mental and physical development. However, classifying *all* children as vulnerable for the purposes of expanding dental care would necessarily demand more short-term resources from governments. Second, a nation-wide school-based program is a method for providing preventive dental care as it fosters education about oral health. Providing comprehensive oral health care services would allow dental health practitioners to better influence children's behaviour and perception of dental care, and communicate the importance of personal maintenance and hygiene, as well as other preventive techniques.

A national school-based program, equivalent to the Saskatchewan initiative, would cost an estimated \$564 million to implement today (Yalnizyan and Aslanyan, 2011: 9). This investment could provide dividends for future governments. Long-term health care costs would fall, productivity could increase, and the psychological and functional dimensions of individuals' health may improve. The Danish dental care program for children and youth is far more comprehensive than anything available in Canada, and the evidence demonstrates that this particular program is effective.

SOLUTIONS OFFERED BY OTHER COUNTRIES: DENMARK

Dental care in Denmark is free up to the age of 18, and is usually delivered by municipal school clinics operated by salaried public dentists. All children from the age of two are automatically enrolled in the municipal dental system. This system reaches 99 per cent of all Danish children and youth and is comprehensive in nature. It includes biannual routine check-ups, extractions, radiographs, bridges, oral surgery, orthodontia, and braces (Widström and Eaton, 2004: 159). Most

children have dentists assigned to their schools who provide educational information to students, and teach children proper techniques in taking care of their teeth. In recent years, the Danish government has increased the numbers of dental therapists and hygienists in order to provide an alternative delivery of dental care, relieving time constraints felt by salaried dentists, and reducing costs for municipal governments (Widström and Eaton, 2004: 159).

Significantly, although the Danish oral health care system resembles the Canadian system in other aspects, notably fee-for-service delivery, private dentist practitioners, and targeted assistance for vulnerable groups within their society, the DMFT scores for children was 0.8 in 2006 (OECD, 2009: 35), markedly less than Canadian children. Denmark is also the only country to rank in the top four OECD countries in terms of the DMFT index that provides less than 50 per cent of total oral health care costs publicly. This model of school-based delivery of oral health care is unquestionably a major element for such a low DMFT score relative to Canada, considering the extent to which similarities persist in each model.

THE SOCIAL DETERMINANTS OF ORAL HEALTH

However, there are more structural factors than public expenditures to consider in achieving desired oral health care outcomes. As Thomson et al. 2004 suggest:

“[t]hroughout life, adverse exposures gradually accumulate by way of ill-health episodes, environmental factors, or individual behaviours which increase the risk of disease and mortality...[additionally], the accumulation of risk occurs through a range of biological events and social experiences over time” (Thomson et al., 2004: 345).

In effect, they argue that a life-course lens is essential when designing and evaluating effective policy with respect to oral health care.

Health may change gradually throughout an individual’s lifetime based upon social and biological determinants, or there may be critical periods in which certain exposures are necessarily

more influential, either favourably or unfavourably. The resultant chain of risk or advantage enables certain experiences in early life to influence the likelihood of future events which, in turn, lead to greater or lower risk of adult disease (Ben-Shlomo and Kuh, 2002: 285). These chains of risk or advantage may be biological or social in nature. Biological factors may be hereditary elements or exposures to causal factors during gestation, early childhood, and early adulthood; social factors may be socioeconomic, cultural, behavioural, or geographical in nature (Thomson et al., 2004: 346).

Biological factors, or what Thomson et al. refer to as “constitutional vulnerability,” are an underlying determinant of an individual’s susceptibility or resistance to disease. These elements are significant in an individual’s life course, and future policies should reflect hereditary and biological predispositions to oral health. For example, genetic susceptibility is considered to play a major role in the development of periodontal disease, and oral health policy-makers must recognize that conditions such as periodontal disease are not influenced by individual behaviour or choices.

Social factors, on the other hand, provide other practical options for policy-makers. Social inequalities in oral health care have been well-documented in the dental scientific literature, providing plenty of evidence for disparities between socioeconomic groups (Thomson et al., 2004: 346). For example, the school-based program in New Zealand which provides universal access to children aged 5-18 has observed social differences in access to, and uptake of, oral health care in children under the age of 5 (Thomson et al., 2004: 351). Socioeconomic differences re-emerge in the first ten years after universal access to school-based dental care terminates. Thus, universal access to dental care may act to protectively diminish the effects of socioeconomic status, but this effect may not persist once universal access ends (Thomson et al., 2004: 351).

Those who move from one socioeconomic status to another during the course of their lives have fascinating oral health care outcomes. For instance, people who move from low to high socioeconomic cohorts remain lower in oral health outcomes than their counterparts who have

remained within the high cohort during their lifetime. Interestingly, those who move from a high socioeconomic status to a lower cohort do not differ in the incidence of cavities from their counterparts who remain in the high socioeconomic class. There is also a higher incidence of oral health disease experienced early in life predicts having greater likelihood of disease in adulthood (Thomson et al., 2004: 351-52).

Cultural and societal norms also have distinct effects on accessing or demanding oral health care. For example, immigrants often experience challenges to accessing care due to language and cultural barriers, and families may decide against oral health care due to transportation costs, insufficient childcare, or due to work commitments (Sanders, 2012: 2). There is evidence to suggest that those who do not access early oral health care are less likely to feel comfortable in a dentist's presence in adulthood due to inaccurate and socially-determined impressions of dental professionals, and they are less likely to be literate with respect to oral health.

Figure 6 illustrates a “risk chain,” which suggests that past experiences or exposures influence future behaviours and decisions. The life-course lens has implications for oral health care policy-makers. First, horizontal policy strategies may be required to address social determinants. Such strategies can take the form of poverty-reduction or removing barriers to educational and employment opportunities. Second, innovative policies may be required to deliver more effective oral health services (Thomson et al., 2004: 352). These policies may address accessibility issues by creating public dental clinics, or integrating dental clinics into larger medical clinics. They may address cost structure issues, by expanding responsibilities for dental therapists and dental hygienists to provide care, or through “tele-dentistry,” which enables dentists in remote clinics to communicate with specialists in urban centers in order to provide better diagnosis and referral (Mertz and O’Neil, 2002: 74). Third, policies must address educational deficiencies. Ideal programs would be population-targeted and concentrate their efforts on increasing education and awareness about

services, while expanding dental public health infrastructure to creatively bring those with unmet needs into a system of care (Mertz and O’Neil, 2002: 74).

CONCLUSION

Dental care in Canada is an area of health care which has become increasingly separated from public health care during the past three decades. Governments have eliminated programs oriented towards children, and increased the criteria for others to receive public funds. The recent economic downturn has resulted in thousands of Canadians losing dental care benefits, further escalating socioeconomic divides in the Canadian oral health care system.

Oral health is fundamental to improving general health care outcomes, reducing long-term costs to governments, and improving the functional, social, and psychological dimensions of peoples’ lives. In 2000, the US Surgeon General declared that dental care in the United States was a “silent epidemic” (Sanders, 2012: 1, 7) Given Canada’s poorer results in major oral health indicators, a case can be made that Canada’s system is in a lesser position.

The rising demands from an aging population, falling supplies of dental professionals, and human resource shortages in rural and Northern communities, suggests that even higher oral health care costs can be expected in the near future (Yalnizyan and Aslanyan, 2011: 10). Innovative policies and models adapted from other countries may help to combat these trends. A collaborative effort by different levels of government, and across public-private jurisdictions, may provide strategies and perspectives for achieving the desired outcomes. The trends outlined above should only be considered a threat to Canadians if no effort is made to address them. Instead, the current and future problems present an opportunity for governments, to reduce costs while improving health outcomes and addressing structural issues which have plagued the health care system in Canada for decades.

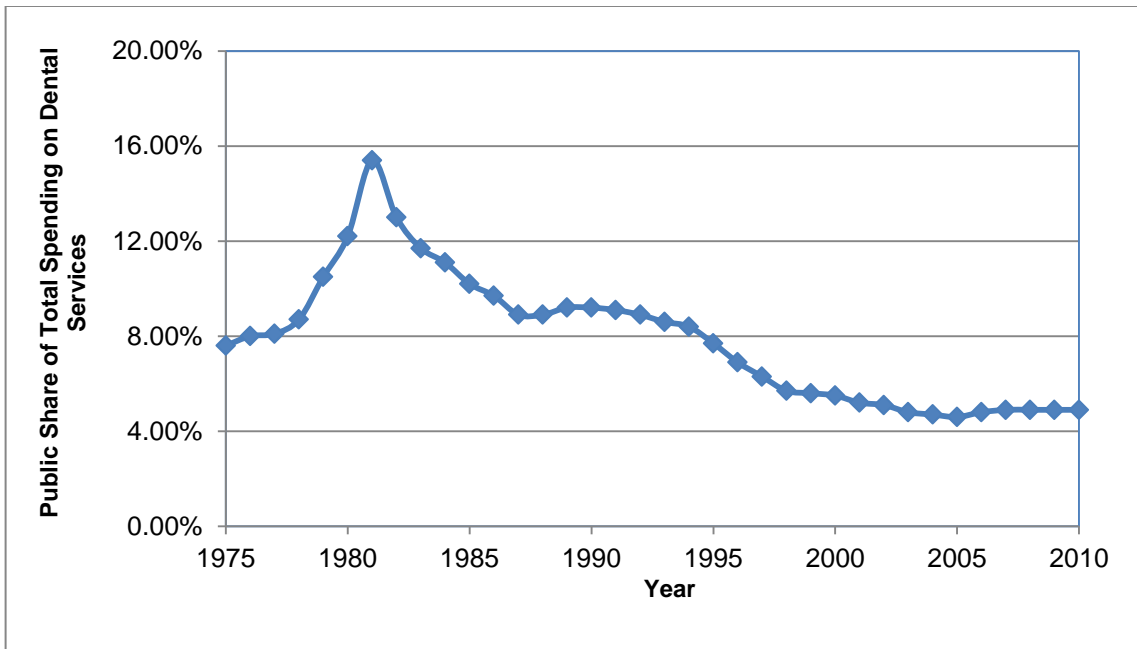


Figure 1. Graph displaying public expenditures as a percentage of total national dental care costs over time. *Data Source:* Yalnizyan and Aslanyan, 2011.

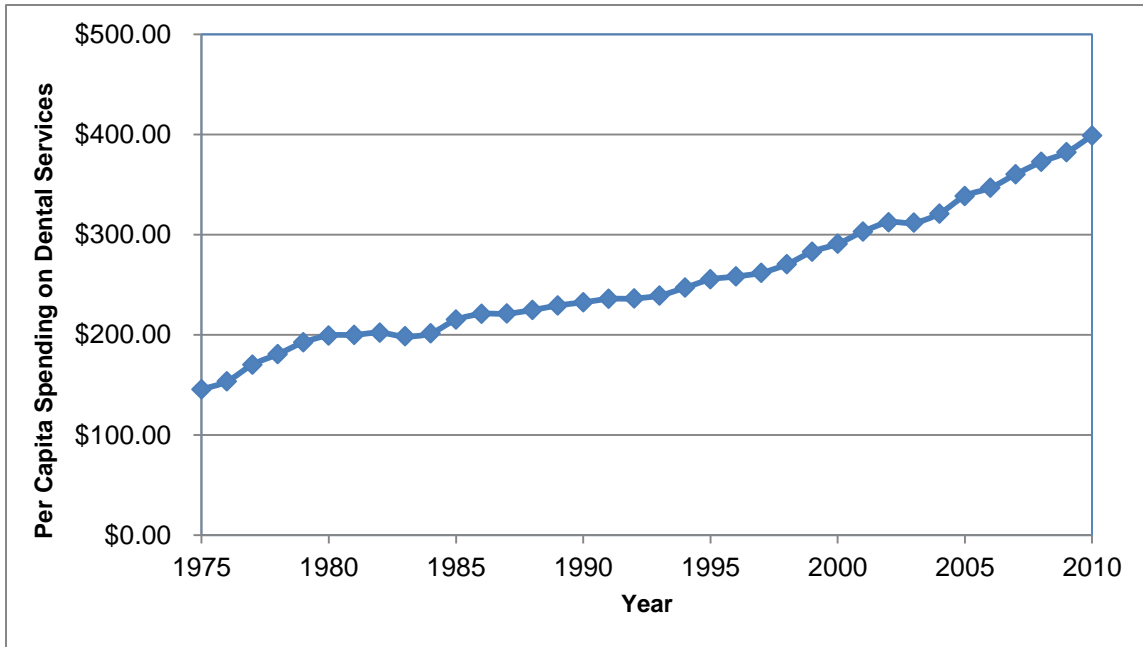


Figure 2. Graph displaying per capita spending on dental services in Canada, including both public and private expenditures, in constant 2010 dollars. *Data Source:* Yalnizyan and Aslanyan, 2011.

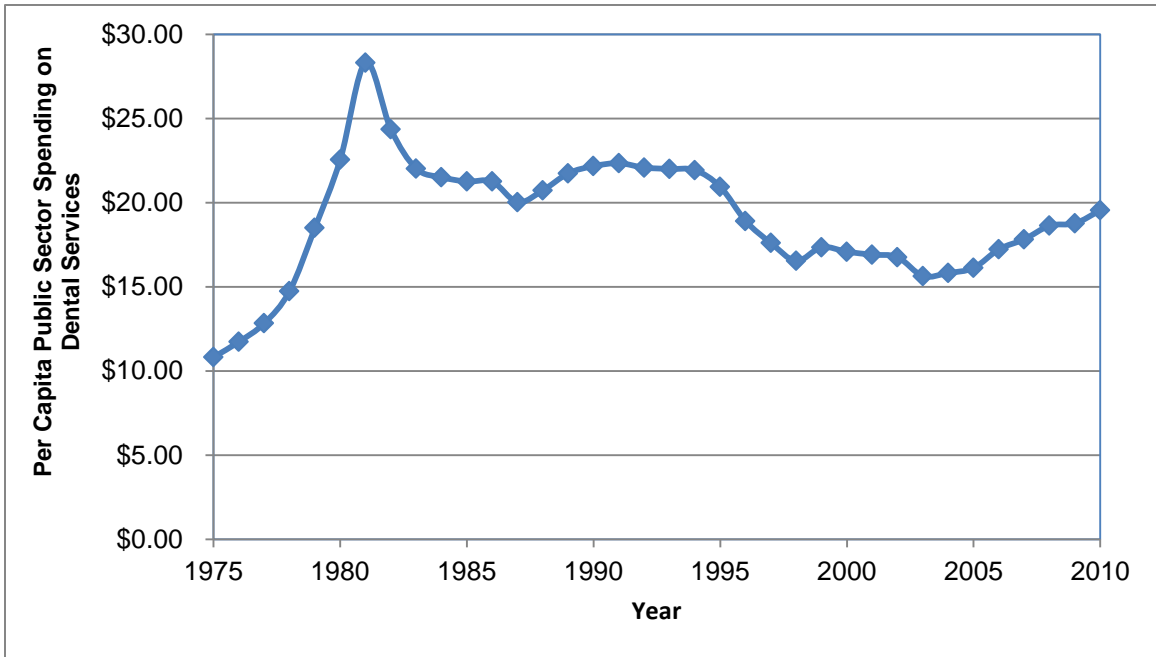


Figure 3. Graph displaying per capita public expenditures on dental services in Canada, in constant 2010 dollars.
Data Source: Yalnizyan and Aslanyan, 2011.

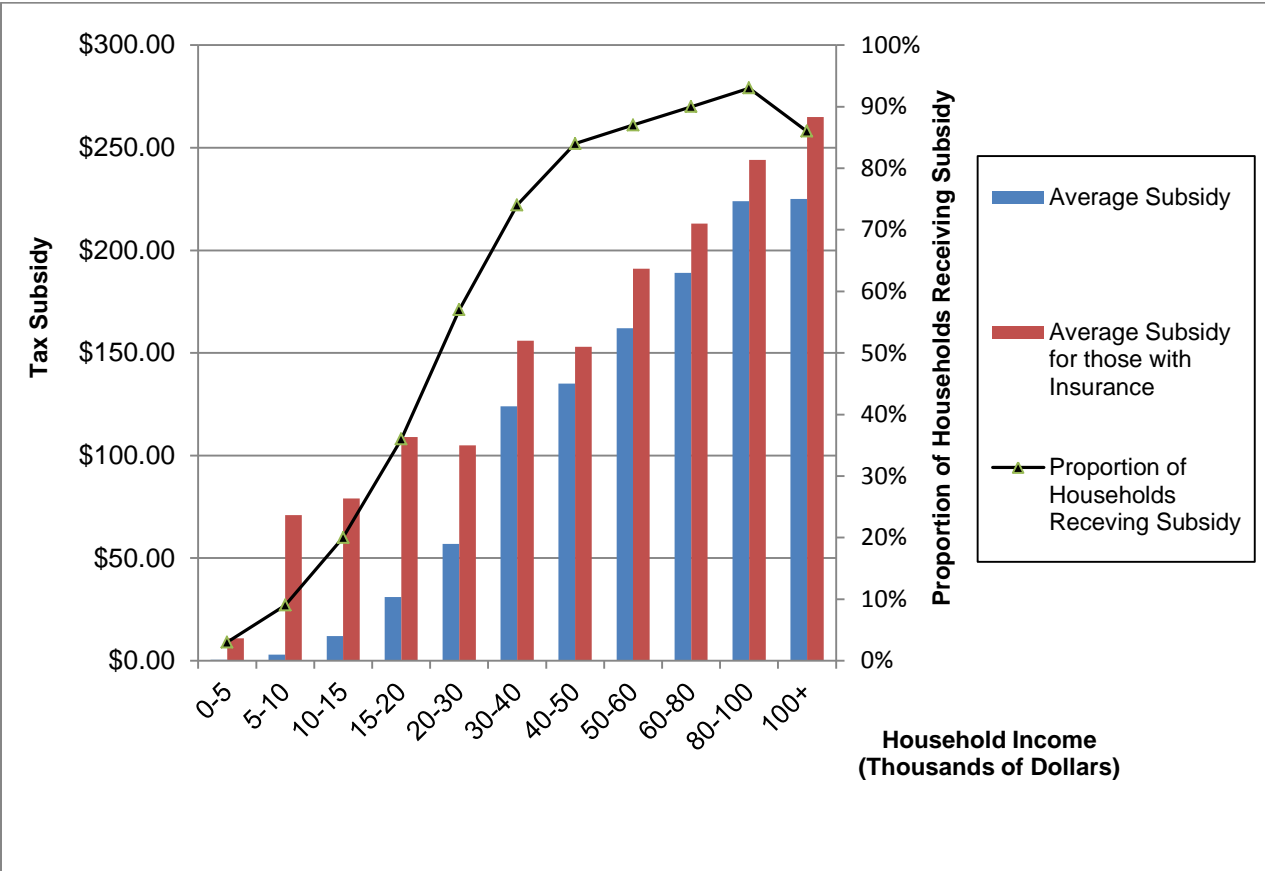


Figure 4. Graph displaying tax subsidies with respect to oral health care services, as related to each given income group in Canada. The average subsidy offered through tax breaks is illustrated by the blue bar; the average subsidy for insured households is represented by the red bar; and, the proportion of households within each income group which receives tax subsidies is presented by the trendline. *Data Source:* J.G. Smythe, 1994; J. Leake, 2006.

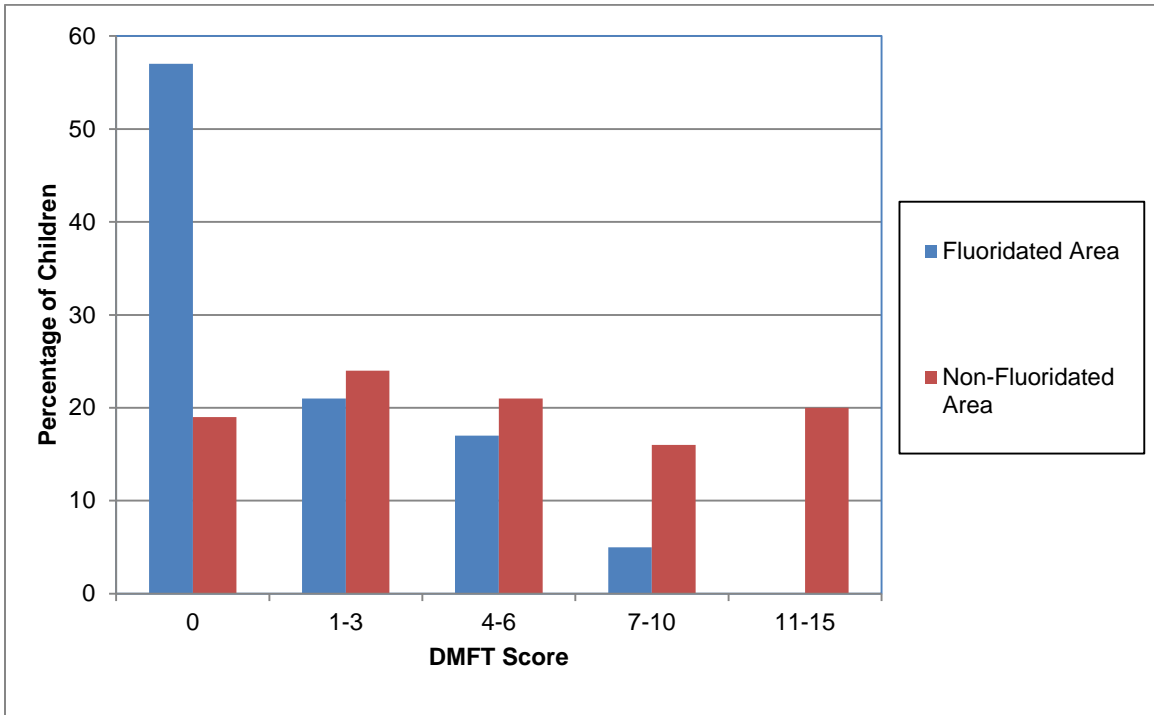


Figure 5. Graph displaying relationship between the percentage of children from regions without fluoridated water supplies and children from regions with fluoridated water supplies, and their corresponding DMFT scores. *Data Source:* Parisotto et al., 2010: 341.

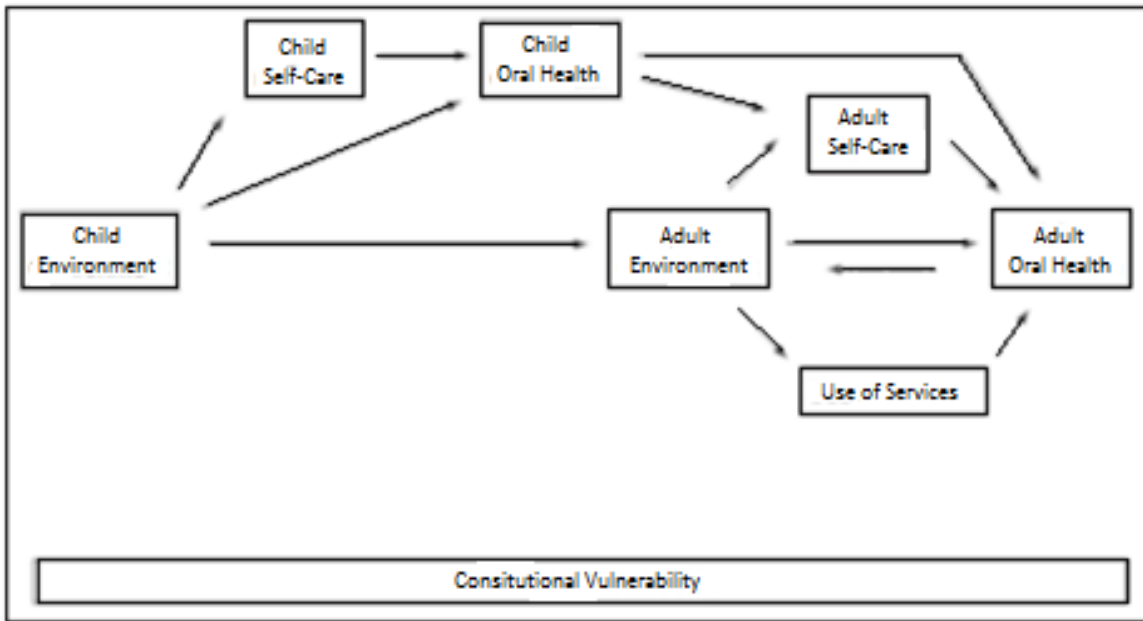


Figure 6. The life course approach to oral health care policy. Clearly, social factors influence adulthood behaviours and decisions based upon childhood experiences. "Constitutional vulnerability" indicates that no real behaviour choices exist between biological factors and life decisions an individual makes with respect to health care. *Data Source:* Thomson et al., (2004).

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