

# Access to care – what can the United States learn from other countries?\*

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Abstract – This paper briefly describes the US system for dental care services; asserts that there is much to be learned by considering the experience of other countries; identifies a few lessons that may be learned from comparisons with England, Australia, and other nations; and encourages the monitoring of outcomes associated with innovations in financing and delivery of services elsewhere. Oral health is affected by more factors than access to dental care. Because so many factors at the individual, environmental, and delivery system levels affect oral health, interpreting the findings from international studies is difficult. Furthermore, the findings of these international studies are confounded by significant intra-country variation in outcomes and expectations. While public funding and the public provision of services (such as programs in schools or community health centers) can be powerful instruments of change, they have their limitations. Examination of all types of public subsidization of dental care may reveal inadvertent distributions that may increase disparities. The discovery of best practices and lessons learned in the financing and organization of dental care may begin by comparing US experiences with those of other countries.

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The US is not the only country struggling to meet the challenges of insuring equity in access to dental care. The earlier presentations in this symposium have described reforms in England and policy options under consideration in Australia to address challenges in those countries (1, 2). Because policy changes under consideration in the US have been described at previous sessions of this conference, I need not summarize them here. Instead, this presentation will briefly describe the US system, assert that there is much to be learned from the experience of other countries, identify a few lessons we might learn from comparisons with other nations, and encourage the monitoring of outcomes associated with innovations in financing and delivery of services occurring outside of the US.

While the assertion that public health policymakers and the dental profession in any one country can learn from experiences in other nations is no doubt generally true, even learning how others have examined their nation's dental care system may provide useful insights. If key features of the systems are similar, we may discover successful policies or practices that we might implement in the US. We also need to understand key differences between health systems of countries, however, and be mindful when they limit the lessons that can be applied from the experiences of others.

### Dental care and oral health in the US

For purposes of comparison with the oral healthcare delivery systems of England and Australia, a very simple description of the US system is sufficient. In brief, access to dental services is primarily determined by ability to pay (either personally or through a third party), and consumption of available services is driven in large measure by willingness to pay, a function of individual perceptions of need and the acceptability of care. There is little public funding, and its level as a percentage of all expenditures for dental care has not been increasing. Provision of care is dominated by private providers and private funding. Public funding alone does not guarantee access to care and services, as some practitioners will not accept public insurance (3).

Health care receives much attention from policymakers in the US, but policy options are driven primarily by widespread concerns about cost, with relatively less concern about access to care. Growth of both medical and dental expenditures have generally exceeded the growth of the overall economy, but over the past 40 years the dental proportion of total healthcare expenditures has declined from 7.3% to <5% (4, 5). The share that is publicly funded is small, only 6% (5). In terms of federal expenditures, only 1.5% of Medicaid (a program jointly funded by the states and the federal government) and <0.1% of Medicare (the federally funded program of health care for the elderly) expenditures are for dental care (6). Because dental services account for such a small proportion of public expenditures for health services, dental care receives less attention from policymakers as a problem to address or from researchers in health services as a problem to more fully understand. Furthermore, 'solutions' to health care concerns do not distinguish between general medical and oral health needs or between medical and dental care, and thus may actually make some oral health problems worse. For example, Medicaid programs have been targeted for cuts, even while almost all available data indicate that spending through this program is inadequate to meet the dental needs of Medicaid-eligible people (7).

In the US, the prevalence of decay and the mean number of decayed, missing, or filled (DMF) teeth are both lower today than a decade ago in every age and income group. Furthermore, the number of teeth present is higher, and the prevalence of edentulousness is lower in every age group (8). Even so, reducing the disparities in oral health status between certain populations remains a challenge. Only one of 12 children aged 6–19 years in families with income greater than 200% of the federal poverty level (that is people of modest socioeconomic status or higher) has any untreated decay (8). Unfortunately, more than twice as many lower-income children (1/5) have untreated decay and many whose parents are aware of the need for care have difficulty accessing it (7–9).

These recent findings, of course, were anticipated with the publication of 'Oral Health in America: A Report of the Surgeon General' (4). The general themes of this US report are applicable to England and Australia as well. Although details of our oral health status and care delivery systems are different, these two countries as well as the US took note of the Surgeon General's affirmation that oral health is essential to general health and well-being. The Report confirmed that preventive measures were effective and quite widely applied, but it noted that they had not yet reached all segments of society.

In his proposed framework for action, the Surgeon General asserted that action at all levels of society, from individuals to communities and the nation as a whole, was needed to maintain the health and well-being of Americans already enjoying good oral health and to address the disparities in oral health status. This affirmation of a broader societal responsibility for oral health challenges beliefs that oral health is solely a family or personal responsibility. Perceptions of societal responsibility for oral health differ among countries. We will examine one measure of societal responsibility (public subsidy) later in this presentation.

## Learning from other countries is difficult

## Oral health is affected by more than access to care

We are often quick to focus on modifying the financing and delivery of dental care as the means to improve oral health. However, good oral health, our ultimate goal, may not be achieved if we focus only on providing access to dental care. While many models have been developed to explain the determinants of health status, we must remember that oral health can be affected by many different factors. These range from self-care (oral hygiene) and lifestyle practices to use of dental services. Furthermore, conditions of both the environment (social and physical) and the oral healthcare system can influence these individual behaviors and thereby determine oral health (4). It is within this context, appreciating that oral health does not depend solely on dental care, that we seek to promote a system in which dental care makes important contributions.

The lack of direct correlation between access to care and oral health makes the study of dental care systems in different countries difficult. Two International Collaborative Studies, commonly referenced as ICS I and ICS II (10, 11), both coordinated by the World Health Organization and both receiving significant financial support from the US, have been conducted as an effort of participating countries to examine their systems for effectiveness and efficiency and to share this knowledge. These studies were conducted from 1973 to 1980 and approximately in 1990, respectively. In light of the multiplicity of factors influencing oral health, the studies collected data on a broad spectrum of variables. A specific comparison will illustrate how complex the issues are relative to oral health status and provides insight into interpreting international comparisons. Financing and organization of oral health care have been central topics in this symposium. However, as the comparison will show, even when these differ a great deal between countries, other explanations for different outcomes must also be considered.

Baltimore, Maryland, is the only US study site that was common to ICS I and ICS II. Dental care in urban and suburban Baltimore was provided by private practitioners practicing at the location of their choice, with care purchased fee-for-service out-of-pocket, by dental insurance, or by Medicaid reimbursement for certain eligible persons (mostly children). In New Zealand, which also participated in both ICS I and ICS II, coverage was universal and comprehensive, provided by dental nurses in schools and by dentists working on salary in government-funded public clinics, who were also free to provide care in private practices under feefor-service (11).

New Zealand's program in the schools has been in place a long time, and thus it may be surprising to learn that Baltimore adolescents had (among all countries in ICS I and ICS II) the lowest number of DMF teeth and the second- or third-lowest number of decayed teeth (10, 11). While Baltimore did not have an organized school program, most adolescents there had enjoyed access to fluoridated drinking water their entire lives, and use of fluoridated toothpaste was widespread. The investigators concluded that near-universal access to effective preventive interventions was reflected in Baltimore's low number of DMF teeth, and New Zealand's universal school program was reflected by the finding that <4% of the DMF teeth were decayed. In comparison, 29% of the DMF teeth in Baltimore had untreated decay (11).

# Complexities revealed by international studies make interpreting these studies difficult

While the findings from ICS I and ICS II may have led to discussion and debate in academic settings, I have seen little evidence that they have been studied by the dental public health community or those who advise policymakers or that they have been translated into policy-relevant conclusions for leaders of US dentistry or public health. In contrast, New Zealand explicitly used the findings from ICS I to set policies to promote more prevention and to attend to oral health issues of its citizens after they leave school, and was able to demonstrate progress by ICS II (10, 11).

Difficulty in applying study findings in the US may reflect a concern that the findings from these studies are often counterintuitive and frequently seem to be inconsistent with each another. This likely reflects the absence of information about an important explanatory factor through study design or our incomplete understanding of the interrelationships between relevant factors.

Among the key findings of ICS I were the following:

- School-based systems were effective in childhood but did not show a long-term impact when the children became adults.
- Oral health status was apparently not related to availability and accessibility of services.
- Except for those living in poverty, the primary barrier to receiving dental care appeared to be perceived lack of need and a belief that available services were not acceptable.
- For adults, social position was the single most valid determinant of oral health.
- While not specifically studied, perceptions by patients of the value of retaining teeth and the preventive orientation of dental health professionals emerged as possible important determinants of oral health status (10).

We can note that the reforms being introduced in England and discussed by Professor Bedi relate to the last finding (1). These reforms are intended to not only improve access to care but also to improve the morale of National Health Service (NHS) dentists and enable them to focus on prevention and improving quality of care (1). Even without awareness of the ICS findings, there has been a significant shift of emphasis of US dental practices from treatment to prevention. The public has both responded to this shift and helped drive it through interactions with the dental care system (12). Effective primary measures (e.g. fluoride) and secondary prevention (including timely restorative care) have led to improved oral health, as measured by untreated caries or loss of teeth. Improved oral health, and the promise of even better oral health, have led to increasing acceptance of the concept that the natural dentition could and should be maintained for life, and to demand for preventive measures that can be carried out at home or in the dental office (12).

While these expectations no doubt influence public and professional behavior, ICS II found that personal characteristics, such as perceptions and behaviors, often fail to explain variations in oral health outcomes of individual people. Findings regarding the role of the care delivery system were no more straightforward. ICS II found that:

- Systems for organization and delivery of dental care were related to utilization.
- In most settings, a usual source of care was critical to promoting regular use of oral health services.
- Even so, having a usual source of care was not associated consistently with better health status in children or with better periodontal status of adults (11).

These somewhat contradictory or counterintuitive findings indicate that we may need a better understanding of the determinants of oral health, including the relative effectiveness of dental treatment for conditions with multifactoral causes. Because of the development of effective caries prevention regimens using fluorides and advances in restorative treatment, both ICS I and II were able to assess variation in caries-related health outcomes that was associated with care. In comparison, the effectiveness of interventions to prevent and control periodontal disease has been less well understood, which could explain why periodontal status was not associated with having a usual source of care. We have only recently begun to appreciate the role of smoking in the progression of periodontal disease, and this factor may not have been fully accounted for in the ICS II analysis of the relationship between the usual source of care and better periodontal status in adults. Today we may be on the brink of new knowledge (genetic targeting) or therapeutics (antimicrobial, anti-inflammatory) to revolutionize the control of periodontal diseases, which might also make access to care a

much more significant determinant of periodontal status in the future. With this in mind, we may wish to design our policies on the financing and organization of care to enable the widespread application of more effective treatments as they are developed.

As difficult as it is to interpret findings from the international studies, we would do well to examine how all the factors that contribute to oral health were measured in these studies. Lately, there seems to be some enthusiasm for applying approaches from the business world to assess the performance of government programs and policies. Perhaps, the most important contributions of the international studies will prove to be their demonstration of 'metrics' that can or should be used to provide for valid measurement of the effectiveness, efficiency, and outcomes of oral health care.

## *Intra-country variation confounds comparisons with other countries*

If, as suggested earlier, the driving concern is not so much the average oral health status in the nations highlighted today but rather disparities within them, another caution must be considered; we should insure that the metrics used to describe oral health in those countries include measures of the variation in outcomes between different populations or communities within the country, especially if they are attributed to programs and policies in force across the country in question. Meanwhile, we should strive to learn as much from the study of variation within the US as we believe we can learn from other countries.

One might expect the most extreme differences in expectations for oral health and in approaches to the delivery of care between countries. Even so, there can be significant variation in public expectations within countries, driven by experiences that have been socially, economically, or culturally mediated. Retention of natural teeth has strong face validity to US dental professionals as a measure of oral health outcomes, and the prevalence of various levels of retention has been surveyed in every state. The percentage of older adults in the US who have retained most of their natural teeth has increased steadily, but rates vary substantially by state and by selected characteristics. In 2002 the lowest rate, 27%, belonged to West Virginia, while Utah's rate was well over twice as high, 64% (13). Large differences in edentulousness were also observed, with less than 20% of older persons edentulous in 12 states, while more than

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40% were edentulous in two states (West Virginia and Kentucky). Analysis of characteristics of persons participating in this survey revealed a positive association between tooth retention and educational attainment (13), which may reflect differences in access to preventive and restorative dental services and in attitudes toward oral health. Racial and ethnic differences were also found in the prevalence of tooth loss, which may reflect varying disease experiences, cultural differences in attitudes toward oral health and dentistry, or socioeconomic status, which can influence use of dental care and type of treatment received (13).

The two international collaborative studies (ICS I and ICS II) chose a site within each country that would be representative of that nation's delivery system and social and environmental circumstances (10, 11). Neither aggregate data for an entire country nor information about one site provides information on the distribution of expenditures, services, and needs among various groups of the population. An exception to the single site sampling strategy was the US, where four sites were selected for participation in ICS II, consistent with the notion that the US was less like a 'melting pot' than it was a 'mosaic' of populations and care delivery systems. Including the sites of urban and suburban Baltimore, urban San Antonio, and rural American Indian populations in South Dakota and Arizona provided an opportunity not only to compare the US situation internationally but also to better understand differences within the US (14). This analysis of multiple US research locations demonstrated that methods and findings from the two international collaborative studies could be examined to select metrics that may be useful for both within-nation analyses and new international studies.

# Public funding and improvement of the oral healthcare system

While the international studies reinforce the need for awareness that there are other determinants of oral health besides dental care, the availability of trained dental care providers and existence of reimbursement systems that encourage effective and appropriate use of services remain important. Financial barriers to access are significant in explaining how much desired dental care is actually received in the US (9). Consequently, further discussion of observations related to experience with public funding in England, Australia, and the US is warranted. The first observation is that the amount of public funding influences the degree of leverage available to the government to promote or institute change. Secondly, limitations in the incentives provided by public funding to insure reach of the private delivery system to all needing care justifies some targeted, alternative ways of delivering care, such as school-based programs and community health centers. However, finding the right balance between public and private provision of care is a challenge. Thirdly, substantial public subsidization of dental care does not insure that health policy objectives are met.

## Public funding as a lever to promote change

The descriptions provided at this symposium have allowed primarily qualitative comparisons. An informal, but much more quantitative, comparative analysis of these countries has been conducted by Birch and Anderson of Canada (15). Using data for 1990 to 2000, they found that US per capita dental spending exceeded spending in the United Kingdom or Australia by at least 50%. The proportion of that care that was publicly funded, however, was just 5% in the US but 16% in Australia and 48% in the UK (15, 16).

Today we have heard examples offered by dental professionals in the US and Australia of proposals for change in funding, incentives for prevention, and composition of the workforce, each relying on a mix of actions at state and federal/commonwealth levels. These proposals do not have consensus of all stakeholders and they lack clear national endorsement or budgetary commitments. In contrast, policy options being put into practice in the UK's NHS have the government's backing and include workforce recruitment, increasing funding for dental care by 19%, and converting the contracts of 25% of the NHS dentists to local commissions (1, 17). Because public funding comprises such a large proportion of total spending for dental care in England, reform of the system there can be government-driven. Perhaps, the dental care system in the US, with its record of prevention, does not need as great a practice transformation as does England. Regardless, because public funds account for a relatively small percentage of dental expenditures in the US, any governmentsponsored efforts to improve the delivery system will have less leverage to influence real change.

There are no easy solutions. The autonomy of dental practitioners is highly valued in all three countries being discussed today. As a result, public reimbursement of private providers, by itself, may not provide adequate incentives to allow all those who need care to obtain it. In some cases, programs backed by public funding have been established to overcome this deficiency, for example, schoolbased dental sealant programs. To use resources more efficiently, school programs have typically targeted communities with the greatest need. Although these programs increase access to effective preventive care (18), they still have limitations. For example, targeting high-risk schools, as opposed to individual students, results in the provision of care to some low-risk students attending high-risk schools and missing some high-risk students attending low-risk schools. Another imperfection of school programs is the need for informed consent. While evolving medicolegal and ethical standards may require this, special efforts may be needed to reach out to children whose parents are less educated or do not speak English (19). Without consent, such children may be 'denied' care, regardless of need.

Other examples of public provision of care are interventions to address the geographic maldistribution of oral health care resources. Even in the UK, NHS dentists are free to choose their practice setting, which has led to some communities being underserved. The establishment of more than 60 new NHS Dental Access Centres, targeted at communities where access is most difficult (20), parallels an approach that has been used to provide culturally appropriate care in the US for 40 years. Community health centers, receiving grants from the federal government to provide care to underserved populations leverage resources from many different sources and use sliding fee schedules to offer care to relatively broad segments of their communities (21). In all, more than 1000 community health centers serve 15 million people, and there is an initiative by President Bush to expand the program to serve an additional 6 million (21). At present, however, federally funded centers provide dental care to only 2 million persons annually (22). Furthermore, a total of 20 million people live in the nearly 1000 low-income American counties that lack even a single community health center, even though 42% of the residents there are low-income earners (21). Dental services

provided at community health centers have been referred to as part of America's 'safety net.' They are a key component of strategies to address problems of access to health care. Considering the large number of people with need for dental care, however, the question becomes whether they are also serving as a 'pressure release valve' – relieving pressure that might otherwise encourage policies to uncap the substantial reserve capacity of the private delivery system and provide more universal access, for example through higher Medicaid reimbursement rates or more efficient use of allied health personnel (23).

### Distribution of the public subsidy

In the previous section, public funds referred to direct outlays. In fact, lost revenues resulting from tax breaks also can be considered government spending. This kind of spending, 'tax expenditures,' can take many forms, such as a tax credit or a tax deduction or an exemption from taxable income (e.g. when an employer provides healthcare benefits with funds that are not considered personal income). Unlike other government spending, however, these tax expenditures are not subject to any formal 'results' or 'performance' review. In other words, there is no built-in opportunity to assess the effectiveness of these 'spending' programs.

In countries where most care is provided by private practitioners, total tax expenditures to subsidize dental care can be considerable. Analyses conducted to guide public policy to improve oral health and dental care in Australia (16, 24) are instructive to the US and other countries with similar organization and financing of care. While only 16% of spending for dental care in Australia is in the form of direct public expenditures, this figure conceals substantial public subsidization of dental care. The total public subsidy of dental care through tax rebates in Australia is twice as large as the direct public expenditure for dental care of eligible adults. Like the US, Australia has a progressive income tax, and thus the value to the individual citizen of the tax rebate (subsidy) for dental care depends on the marginal tax rate. In Australia, low-income households received a subsidy of \$13.99 in 2002, while high-income households received a subsidy of \$64.53 (24). This analysis concluded that public funds that could be used to address problems of access are inadvertently being distributed to higher-income groups.

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How does this compare to the US? A cursory comparison suggests the following: In Australia, private dental insurance covers approximately 20% of low-income adults and 40% of other adults, but in the US it covers about 40% of all people and accounts for about 50% of spending (4, 5). Private dental insurance coverage is highly associated with income. Sixty percent of American families with an annual income of \$35 000 or more (and a relatively high marginal tax rate) have private dental insurance, but fewer than 25% of families with annual income less than \$20 000 (and a lower marginal tax rate) are insured (4). Moreover, as stated earlier, direct public expenditures constitute only 6% of total spending for dental care in the US, just threeeighths of the proportion in Australia, and almost all of it is limited to the care of children. It is likely that an examination of both direct and indirect public subsidy of dental care in the US would reveal a skewed distribution of subsidy to higherincome persons, as was noted in Australia.

Regardless of the country of interest, the basic economic realities and principles for considering solutions are the same. Resources are scarce; there are not enough to support all possible approaches to providing oral health care. Those of us who would guide public policy must recommend how the US should use available resources, which means we must also be prepared to recommend how not to use them. 'Opportunity cost' is a term used in economics to mean the cost of passing up the most valuable alternative use of resources. Benefits produced by our current strategies could be compared with benefits foregone because we have not applied resources to an alternative approach. Would using available resources in different ways generate greater value?

Tax policies and expenditures for government health programs are always a matter of choice. The justification for foregoing potential revenues from taxes, at least the principle of not taxing healthcare benefits, is as strong for oral health care as it is for general health care. This fundamental policy determination and the emergence of dental prepayment plans occurred half a century ago in the US, and the growth of such coverage is an indication of the importance Americans place on oral health and dental care, especially if provided with a modest subsidy. Any beneficial program, however, may have undesirable consequences, however unforeseen. Should clearer quantification of the distribution to higher-income groups of public monies for dental care, that could otherwise be used to address the access problems of the poor, be an element of policy analysis?

# How will we learn from other countries?

Reforms being implemented in England and questions being raised in Australia suggest that the organization and financing of oral health care in those countries may change, and thus one assumes the outcomes in the population will evolve as well. How will we monitor the changes? Who is studying those changes? How can we better share and consider findings, outcomes, and implications?

Conducting two international collaborative studies was an attempt to understand not only what could be learned by comparisons between countries but also how to measure important attributes of the environment, the system for delivering care, personal behavior, and health outcomes. We do not need another formal collaborative study to identify common metrics of health outcomes or system performance. Could we not observe and measure reforms as they occur globally by using common metrics of health status, patient experiences, and costs?

Within the US, on whom will we rely to do this? As best I can tell, virtually every dental public health worker in the US has very specific responsibilities for communities here and must 'keep her/ his eyes in the boat.' We have only limited capacity to learn what is occurring elsewhere. Can we rely on the private sector and organized dentistry to pay attention to lessons learned elsewhere? Is it reasonable to expect that the American Dental Association or the American Dental Hygienists Association would commit resources to study lessons learned globally?

The *Future of Dentistry* report authored by the American Dental Association includes two relevant recommendations (23). One was that 'the international dental profession should work to establish and maintain a strong global data bank that would capture information which helps...to promote the best clinical practices.' Another was that the profession should insure that there are sufficient persons trained in epidemiology, dental informatics, and health services research to 'effectively address emerging issues and support the movement toward best practices and health promotion.' The report expressed a vision, and it was intended to be a practical guide for the profession's next

generation (23). While the report stopped short of suggesting that these scientists and databanks might lead to the identification of best practices and lessons learned in the financing and organizations of dental care, our vision need not stop there. The first step in having that vision become reality must be taken by us.

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