Access to Dental Care Among Older Adults in the United States


Abstract: Oral health is essential to an older adult’s general health and well-being. Yet, many older adults are not regular users of dental services and may experience significant barriers to receiving necessary dental care. This literature review summarizes national trends in access to dental care and dental service utilization by older adults in the United States. Issues related to geriatric dentistry and concerns about access to dental care include the increasing diversity of the older adult population, concerns about the degree to which the dental workforce is prepared to meet the oral health needs of older patients, and the adequacy of the future workforce, including concern about training opportunities in gerontology and geriatrics for dental and allied dental practitioners.

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Oral health is essential to an older adult’s general health and well-being. Yet, many older adults experience significant barriers to obtaining necessary dental care. Such care is especially important for older adults who are at greater risk for oral conditions and diseases related to age-associated physiologic changes, underlying chronic diseases, and the use of various medications.

Adequate access to medical and dental care can reduce premature morbidity and mortality, preserve function, and enhance overall quality of life. One broadly accepted definition of access to care was presented by the Institute of Medicine (IOM) as “the timely use of personal health services to achieve the best possible health outcomes.” This definition incorporates the concepts of service utilization as well as health outcomes as the measure of whether or not access has been achieved. This IOM report on access also noted that:

Access is a shorthand term for a broad set of concerns that center on the degree to which individuals and groups are able to obtain needed services from the medical care system. Often because of difficulties in defining and measuring the concept, people equate access with insurance coverage or with having enough doctors and hospitals in the geographic area in which they live. But having insurance or nearby health care providers does not guarantee that people who need services will get them. Conversely, many who lack coverage or live in areas that appear to have shortages of health care resources do, indeed, receive services.

In the access to care literature, the likelihood and frequency of health care are measures of realized access, or success, in obtaining care. Access is influenced by many factors, including facilitators of and barriers to care. Having a regular source of care, defined as a doctor or other health care provider, or a specific site where care is provided is one of the strongest determinants of access to health care. Barriers to receiving health care can also include cultural, linguistic, financial, and structural or physical barriers from the patient’s standpoint as well as attitudes of the health care provider. Lack of insurance or ability to finance care out-of-pocket can impede an older person’s efforts to obtain dental care. Difficulties getting to a health care provider or long waiting times for appointments are examples of structural obstacles for older adults.

cians" published in 2003, and "Improving the Oral Health Status of All Americans: Roles and Responsibilities of Academic Dental Institutions" as reported by the American Dental Education Association's President's Commission in 2003. This review article builds on these previously published reports and provides an updated summary of trends in access to dental care and dental service utilization by older adults in the United States.

### The Changing Demographics of the United States

Important demographic changes in the U.S. population will continue to shape future efforts to improve health and health care. Major changes in demographic characteristics include the growth of the elderly population and increasing racial and ethnic diversity. During the past fifty years, the U.S. population has grown older, and the percent of elderly increased from 8 percent to 12 percent. Approximately one in five Americans will be sixty-five years of age or over by 2050. During the twentieth century, life expectancy at birth increased from forty-eight to seventy-four years for males and from fifty-one to seventy-nine years for females. Life expectancy at age sixty-five rose from twelve to sixteen years for men and from twelve to nineteen years for women. The gap in life expectancy between the sexes and between the black and white populations has been narrowing. The recent Future of Dentistry report raised concerns about having an adequate dental workforce to meet the oral health needs of the nation. While the number of active dentists and private practitioners increased during the 1990s, their growth rates were slightly less than the growth in the population. Thus, the report indicated that the dentist-to-population ratio started declining around 1995 and has continued to decrease.

In addition to the graying of America (and America's dental workforce), other important demographic shifts are occurring. The racial and ethnic composition of the United States is changing. In 2000 more than one quarter of adults and more than a third of children identified themselves as Hispanic, black, Asian or Pacific Islander, or American Indian or Alaska Native. In 2000 the overall percent of Americans living in poverty dropped to 11.3 percent, the lowest level since 1973. However, in 2001, the overall percent of Americans living in poverty increased to 11.7 percent, reflecting the recession that started in the spring of 2000. Before 1974, the elderly were more likely to live in poverty than people of other ages. With increasing dependence of the elderly on inflation-adjusted government social insurance programs such as Social Security and Supplemental Security Income, the poverty rate among the elderly declined rapidly until 1974 and has continued to decline gradually. However, in 2001 the percent of persons living in poverty continued to differ significantly by age, race, and ethnicity. At all ages, a higher percentage of Hispanic and black persons than non-Hispanic white persons were poor or near poor.

### Special Considerations When Studying Older Adults

Because of the great variability in physical, medical, and mental health status among people over the age of sixty-five years, it is not appropriate to use a chronological age criterion to identify "geriatric patients." It is more appropriate to discuss the health needs of older adults according to their health and functional status, rather than by their age. The Bureau of Health Professions defined "elderly" to mean "a population with health care conditions and needs which differ significantly from those of younger people, which are often complicated by the physical, behavioral, and social changes associated with aging. This would include all persons over sixty, but may include slightly younger people who are subject to similar physical and/or mental conditions." Ettinger and Beck described elders as being independent, frail, or functionally dependent. Health status is dynamic, and older individuals may be "independent" at one point in time and then become frail or functionally dependent after suffering an acute ailment or the exacerbation of a chronic condition. Likewise, elders can recover from acute illness to regain their independence.

Most older adults reside in the community and are functionally independent. In fact, only a relatively small subgroup of elders (estimates range from 5 to 10 percent, and the prevalence increases with age) is functionally impaired and requires long-term care. Thus, this report considers issues related to access to care and dental service utilization first using national data describing noninstitutionalized elders followed by reports describing older adults who are homebound or reside in long-term care facilities.
Table 1. Summary of selected national health surveys with dental data

<table>
<thead>
<tr>
<th>Survey</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Health and Nutrition Examination Survey III (NHANES III), CDC</td>
<td>A nationally representative survey of the prevalence, trends, and risk factors for selected diseases. Dental examiners conducted oral assessments.</td>
</tr>
<tr>
<td>National Access to Care Survey (Sponsored by the Robert Wood Johnson Foundation)</td>
<td>Self-reported information from a representative sample of the U.S. civilian, noninstitutionalized population. The 1997 survey included items related to “supplementary health care services” including prescription drugs, eyeglasses, dental care, and mental health care or counseling.</td>
</tr>
<tr>
<td>National Health Interview Survey (NHIS), CDC</td>
<td>A broad, nationally representative sample that monitors trends in illness and disability and tracks progress towards national health objectives.</td>
</tr>
<tr>
<td>Medical Expenditure Panel Survey (MEPS), AHRQ</td>
<td>A nationally representative survey of health care use, expenditures, sources of payment, and insurance coverage. Data are collected through in-person, telephone, and mailed surveys. Providers are contacted to verify and supplement reported events.</td>
</tr>
<tr>
<td>Behavior Risk Factor Surveillance System (BRFSS), CDC</td>
<td>A state-based random telephone survey of the prevalence of the major behavioral risks associated with premature morbidity and mortality among adults. Provides state-specific estimates.</td>
</tr>
<tr>
<td>National Nursing Home Survey (NNHS)</td>
<td>A continuing series of national sample surveys of nursing home residents, homes, and staffs.</td>
</tr>
</tbody>
</table>

Source: Modified from Table 1 in Oral health: dental disease is a chronic problem among low-income populations. United States General Accounting Office Report to Congressional Requesters. GAO/HEHS-00-72, 2000.

Table 1 summarizes national health surveys with dental data. It is important to recognize that different surveys produce somewhat different results for similar questions. Thus, differences in survey design, collection methods, timing, and other factors affect survey findings. Also, most national health surveys exclude institutionalized persons; thus, national data about this subgroup of elders is limited. However, despite survey limitations, important trends and health disparity information tend to be consistent across the available data.

Access to Care for Noninstitutionalized Elders

Findings from the National Access to Care Survey sponsored by the Robert Wood Johnson Foundation (RWJF) provided interesting insight into Americans' perceptions about whether or not they have received the care they need. Results were based on a national probability sample weighted to be representative of the U.S. civilian, noninstitutionalized population. Unlike previous surveys conducted in 1976, 1982, and 1986, the 1994 National Access to Care Survey included items related to “supplementary health care services” including prescription drugs, eyeglasses, dental care, and mental health care or counseling. This survey found that 16.1 percent of respondents—representing more than forty-one million Americans—were unable to obtain at least one service they believed they needed. The highest reported unmet need was for dental care, with 8.5 percent of the population, or more than 22 million people, reporting that they were not able to obtain the dental care they needed. About 3.6 percent of adults over the age of sixty-five years reported an unmet need for dental care as compared to 2.4 percent with an unmet medical or surgical need. Furthermore, the proportion of older Americans with unmet dental needs was most likely underestimated because the survey excluded institutionalized persons.

Recent oral health policy debates have focused on the needs of children and have resulted in some innovative programs such as S-CHIP and expanded Medicaid coverage for children in some states. Thus, adults were more likely than children to have unmet health needs. Likewise, 30 percent of respondents who reported their overall health as fair or poor were unable to obtain care. Respondents with higher incomes and a usual source of care were less likely to have unmet health care needs. The survey results were consistent with the long history of health services research that has shown the problems of access ex-
Utilization of Dental Services

During the past fifty years, the oral health and use of dental services among older adults in the United States have improved. This trend is expected to continue as the population of older adults grows and increasingly maintains their natural teeth. Continued improvement is also dependent on access to appropriate dental care.

Regular dental visits allow dental health professionals to provide preventive services, early diagnosis, and treatment. The U.S. Public Health Service recommends annual oral examinations for all adults. The American Cancer Society recommends annual oral examinations for persons aged greater than or equal to forty years, and the U.S. Preventive Services Task Force recommends regular dental visits for persons aged greater than or equal to sixty-five years. In 1991, Healthy People 2000 established a national objective of increasing the percentages of people who receive oral health care each year (50 percent for edentate persons and 60 percent for persons age sixty-five years and older). Based on the state-based BRFSS data collected between 1995 and 1997, less than half of the states achieved the Healthy People 2000 objective of increased use of oral health care services among residents aged greater than or equal to sixty-five years. The findings from the BRFSS reaffirm what other reports have concluded: older people continue to underutilize dental care services.

Healthy People 2010 objectives include the goal of increasing the proportion of children and adults who use the oral health care system each year (from 41 percent in 1996 to 56 percent in 2010) and increasing the proportion of long-term care residents who use the oral health care system each year (from the baseline of 19 percent in 1997 to 32 percent in 2010).

The National Health Interview Survey (NHIS) and Medical Expenditure Panel Survey (MEPS) provide data related to the utilization of dental service in the United States. However, these large national studies exclude institutionalized adults and, thus, underrepresent the special needs of subgroups of older adults. The National Center for Health Statistics has conducted the NHIS since the late 1950s. Field work for this national survey of health practices, knowledge, illness levels, and health care use has been conducted by the U.S. Bureau of the Census, and the data are compiled, analyzed, and published by the National Center for Health Statistics.
According to the 1957-58 NHIS, only 16.2 percent of noninstitutionalized adults age sixty-five years and over reported a dental visit in the previous year. This proportion increased over time, with 25.8 percent reporting a visit in 1970, 34.6 percent in 1981, 47.2 percent in 1991, and 54.0 percent in 2002.¹¹

**Trends in Dental Insurance and Financing of Dental Care**

Wall and Brown reviewed trends in dental insurance and the impact on dental service utilization from the 1970s to the present.³² They noted that more than 95 percent of dental costs were paid directly by patients until the early 1970s. Employer-based private insurance grew rapidly in the 1970s and 1980s. By the early 1990s more than 40 percent of all Americans were covered by some form of private dental insurance. In their analysis of data from the 1989 and 1999 NHIS, they noted that the percentage of the population with a dental visit rose from 57.2 percent in 1989 to 64.1 percent in 1999. At the same time, the percentage of those surveyed with private dental insurance fell from 40.5 percent to 35.2 percent. People with private dental insurance were more likely to report a dental visit than were those without private insurance in both years. The percentage of people with a dental visit increased in all age groups surveyed in 1989 and 1999, and the percentage with private dental insurance declined statistically significantly in all age groups except for those sixty-five years of age or older, who remained relatively constant at 15 percent (15.0 percent in 1989 vs. 14.5 percent in 1999). The ten percentage point increase in utilization rates for the elderly from 1989 to 1999, despite the relatively low percentage with private dental insurance, was considered partly related to the decline in edentulism.³²

Wall and Brown suggested that the increase in utilization rates may be related to the average increase in net worth and discretionary income in this age group.³² They also hypothesized that as more people keep their natural teeth when they get older, they are more likely to continue a pattern of regular dental visits. This hypothesis is supported by the work of Eklund et al.³³ who studied an insured population in Michigan from 1980 to 1995. Their findings suggest that, in those older than fifty years of age, there is a clear pattern of increased emphasis on maintaining a functional dentition. Even in the oldest age group studied, they reported that the need for full dentures was declining rapidly as older adults retained and maintained their dentition. They suggested that these trends were found in a study population who had high levels of dental insurance for a long period. There is considerable evidence that those without dental insurance are less likely to receive dental care on a regular basis and, on average, are in greater need of dental care.³⁴

Douglass et al.³⁵,³⁶ recently challenged the informed speculation among prosthodontists, dental educators, and health policy researchers that the need for dentures will decrease markedly in the future. The assumptions about decreased need for denture care reflect the epidemiologic survey data, indicating that edentulism has declined by 10 percent every decade and that only 90 percent of edentulous adults obtain and wear complete dentures. However, Douglass et al. reminded us that when the number of adults in each age group is multiplied by the percentage that need dentures, the results suggest that the adult population in need of one or two complete dentures will increase from 33.6 million adults in 1991 to 37.9 million adults in 2020, exceeding the supply of service for the foreseeable twenty-year future.³⁵ They concluded that practicing dentists will find a sizable minority of the population who continue to need fixed and removable partial denture services.³⁶ These findings have important implications for dental education as well as for policymaking in both the public and private insurance sectors.

Data from the Medical Expenditure Panel Survey (MEPS)³⁷ provide nationally representative estimates of health care use, expenditures, sources of payment, and insurance coverage for the U.S. civilian noninstitutionalized population. In this report, insurance coverage refers to general health insurance coverage and does not necessarily reflect the presence of dental benefits. In 2000, less than half (41.6 percent) of the civilian noninstitutionalized population of the United States obtained care from a dentist, dental technician, dental hygienist, dental surgeon, orthodontist, endodontist, or periodontist. More than 14 million adults age sixty-five years and older reported a dental visit in the previous year, and the mean expense per person with a dental visit was $522. Older adults who received dental care during the year reported a mean of 2.8 visits per year. More than three-fourths of dental expenditures among older adults were paid out-of-pocket, 14.9 percent were paid by private health insurance, Medicaid paid 0.4
percent, and 7.9 percent were paid by other sources. These findings are summarized in Table 2.

Although the majority of older adults have Medicare, this support provides only a basic level of access to the health care system. Older adults who do not supplement Medicare with private coverage are at the greatest risk of having unmet health care needs. According to the MEPS data, people with private insurance were more likely to have at least one dental visit during the year. For people age sixty-five years and older, 49 percent of the elderly with private insurance in addition to Medicare had at least one dental visit, while 34 percent of those with Medicare only and 17 percent of those with public insurance in addition to Medicare received any dental care in 2000. Comparisons of mean expenditures and sources of payment from 1996 through 2000 are shown in Table 2.

## Public Support for Geriatric Dental Care

Oral Health America (OHA) issued its first national report card on oral health in 2000. In 2003, OHA reported findings from a state-by-state assessment of the oral health of older Americans in “A State of Decay.” This report reviewed adult Medicaid dental coverage in the fifty states and the District of Columbia, saying that “as many severe dental problems accumulate over time, looking at dental cover-

<table>
<thead>
<tr>
<th>Year</th>
<th>Population with a Visit in Thousands</th>
<th>Percent with a Visit</th>
<th>Mean Expense per Person with a Visit</th>
<th>Out of Pocket</th>
<th>Private Health Insurance</th>
<th>Medicaid</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>13,709</td>
<td>40.3</td>
<td>$438</td>
<td>75.1</td>
<td>8.4</td>
<td>*0.8</td>
<td>5.7</td>
</tr>
<tr>
<td>1997</td>
<td>13,464</td>
<td>39.4</td>
<td>431</td>
<td>70.3</td>
<td>20.0</td>
<td>*1.4</td>
<td>8.3</td>
</tr>
<tr>
<td>1998</td>
<td>13,577</td>
<td>39.6</td>
<td>485</td>
<td>79.1</td>
<td>14.8</td>
<td>*0.4</td>
<td>5.6</td>
</tr>
<tr>
<td>1999</td>
<td>14,591</td>
<td>42.1</td>
<td>483</td>
<td>76.1</td>
<td>17.6</td>
<td>*0.9</td>
<td>5.3</td>
</tr>
<tr>
<td>2000</td>
<td>14,076</td>
<td>40.5</td>
<td>522</td>
<td>76.7</td>
<td>14.9</td>
<td>0.4</td>
<td>7.9</td>
</tr>
</tbody>
</table>

### Table 2. Dental services for persons over the age of sixty-five years: mean expenses per person with a visit, percent distribution of sources of payment by selected population characteristics, United States, 1996-2000

*Includes the Department of Veterans Affairs; CHAMPUS or TRICARE (Armed Forces-related coverage); Indian Health Service; military treatment facilities; federal, state, or local programs other than Medicaid; and other kinds of insurance not specified.

*Relative standard error is greater than or equal to 30 percent.

Note: Percents may not add to 100 because of rounding.

age in the adult Medicaid populations provides as accurate a measure as possible of the oral health of our most vulnerable older Americans and special care populations. The authors assigned a final grade of “D” for the nation, illustrating many gaps in oral health coverage and access for older Americans.

At the time of the survey, most states provided emergency services through their dental Medicaid program, but only ten states provided full or comprehensive dental benefits to Medicaid-eligible adults. Six states offered no adult dental Medicaid benefits. In addition, state Medicaid programs reimbursed dentists for basic services at rates below customary fees, and many states required pre-authorization for dental procedures and other administrative barriers to providing care. The authors concluded that “there are significant structural problems in our oral health care system, and the problems are getting worse due to demographic trends, workforce trends, public health infrastructure inadequacies, and the increasing number of children, adults, elderly, and special populations not covered by Medicare or Medicaid.” Anecdotal reports indicate that the number of states with full or comprehensive dental benefits for Medicaid-eligible adults has declined since the time of the survey due to economic pressures and competing priorities within states.

Since the inception of the Medicare and Medicaid programs in the mid-1960s, access to dental care among the elderly has improved. However, Medicare has no provisions for preventive dental care or routine dental procedures and only provides limited service deemed “medically necessary,” including a dental examination prior to kidney transplantation. The Committee on Medicare Coverage Extensions recently provided evidence for the Institute of Medicine study examining the cost to Medicare of expanding preventive dental services for five diseases and conditions (Table 3). Based on a review of the available data, the authors suggested that it was reasonable to expand Medicare coverage to include preventive preradiation and routine postradiation preventive services for head and neck neoplasms. A dental examination, dental prophylaxis, and treatment of acute infections were considered necessary for patients with leukemia. However, in terms of organ transplantation, lymphoma, and heart valve repair and replacement, there was insufficient evidence to recommend dental services. Unfortunately, despite this informed study, it seems unlikely that the Medicare program will expand to include these services that would improve access to dental care for these subgroups of elders.

### Table 3. Summary of dental services currently covered and not covered by Medicare for selected diseases or conditions

<table>
<thead>
<tr>
<th>Disease or Condition</th>
<th>Dental Services Currently Covered Under Medicare</th>
<th>Services Not Reimbursed by Medicare But Supported by IOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head and neck neoplasms</td>
<td>Extraction of teeth prior to radiation</td>
<td>Oral examination</td>
</tr>
<tr>
<td></td>
<td>Oral examination if extractions are to be performed</td>
<td>Preventive care to reduce risk of caries (e.g., fluoride trays, supplemental topical fluoride)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatment of radiation-associated caries</td>
</tr>
<tr>
<td>Leukemia</td>
<td>Management of mucositis, hemorrhage, and related side effects of underlying disease</td>
<td>Oral examination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dental prophylaxis</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>Management of mucositis, hemorrhage, and related side effects of underlying disease</td>
<td>Insufficient evidence to support</td>
</tr>
<tr>
<td>Organ transplantation</td>
<td>Management of infection following transplantation</td>
<td>Insufficient evidence to support</td>
</tr>
<tr>
<td>Heart valve repair or replacement</td>
<td>None</td>
<td>Insufficient evidence to support</td>
</tr>
</tbody>
</table>

Only 2 percent of the total Medicaid budget is currently allocated to oral health care. The Healthy People 2010 Objective 21-14 calls for an increase in the proportion of local health departments and community-based health centers, including community, migrant, and homeless health centers that have an oral health component. At baseline in 1997, only 34 percent of local jurisdictions and health centers had oral health programs. Because such a small proportion of U.S. elders have private dental insurance and Medicare and Medicaid's coverage of oral health care is minimal, the dental care needs of underserved older Americans will not be met without significant changes in health policy related to dental care for older adults.

### Access to Dental Care by Homebound and Institutionalized Elders

#### Adult Limitation of Activity

Measuring limitations in everyday activities due to chronic physical, mental, or emotional problems is one way to assess the impact of health conditions on self-care and social participation. Limitation of activity in adults includes limitation in handling personal care needs, activities of daily living (ADLs), and routine instrumental activities of daily living needs (IADLs). A limitation is considered to be present if assistance from another person is needed for someone to do an activity. The number of ADL limitations may be viewed as a risk indicator for the need for long-term care, with limitations in three or more ADLs generally triggering the need for admission to a long-term care facility.

Limitations in ADLs among noninstitutionalized adults are more common among the elderly than among adults of working age. Less than 1 percent of adults eighteen to forty-four years of age report an ADL limitation as compared to almost 10 percent of persons seventy-five years of age and older. Among persons seventy-five years of age and over, nearly one-fifth of adults report needing the help of other persons to do routine activities such as household chores and shopping (IADLs), and nearly one-half say their activities are limited in some way due to a chronic physical, mental, or emotional problem. Limitations in ADLs, IADLs, and any activity are higher among poor elderly persons than nonpoor elderly persons.

Unique issues have long been recognized when considering access to care for impaired homebound and institutionalized adults. Common barriers to oral health care, such as cost, lack of perceived need, transportation difficulties, education, and attitudes of health care providers, have been identified. Physical frailty and functional limitations are also risk factors for not visiting the dentist. Dolan et al. prospectively examined the relationship between functional health and dental service use, taking into account sociodemographic characteristics, general and dental health status, and prior dental utilization behavior. Data from a randomized trial of a comprehensive geriatric assessment and prevention program in community-dwelling adults age seventy-five years and older were analyzed. Declines in functional status were negatively associated with dental service use. When additional measures of general health, dental health, and socioeconomic status were introduced, the effect of functional status was mitigated but remained significant. Even in this relatively well-educated group of older persons living in southern California with higher than average dental service use, impaired functional status was associated with lower levels of dental service use over time.

### Services Available in Nursing Homes

The National Nursing Home Survey (NNHS) provides national data about nursing homes, most recently for 1997 and 1999. The NNHS is a continuing series of national sample surveys of nursing home residents, homes, and staff, and it provides information on the proportion of nursing homes with dental and oral hygiene services available within the facility. Despite federal legislation enacted in 1987 mandating that nursing homes provide access to dental care, only 80 percent of nursing homes reported having dental services available, with a higher proportion being present in proprietary or voluntary homes rather than government homes (Table 4). Oral hygiene services, usually provided by nursing staff, were reported to be almost uniformly available (97 percent) in the nursing homes. Yet, most clinical studies of nursing home residents report widespread inadequate oral hygiene and associated dental, gingival, and periodontal conditions.
Table 4. Number and percent of nursing homes by selected services provided and ownership status: United States, 1997 and 1999

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>All Ownership</th>
<th>Proprietary</th>
<th>Voluntary Nonprofit</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year</td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>All facilities</td>
<td>1997</td>
<td>17,000</td>
<td></td>
<td>11,400</td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>18,000</td>
<td></td>
<td>12,000</td>
</tr>
<tr>
<td>Dental services</td>
<td>1997</td>
<td>14,000</td>
<td>82.3</td>
<td>9,400</td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>14,400</td>
<td>80.0</td>
<td>9,600</td>
</tr>
<tr>
<td>Help with oral hygiene</td>
<td>1997</td>
<td>16,100</td>
<td>94.7</td>
<td>10,700</td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>17,500</td>
<td>97.1</td>
<td>11,700</td>
</tr>
<tr>
<td>Medical services</td>
<td>1997</td>
<td>16,500</td>
<td>96.9</td>
<td>11,100</td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>17,300</td>
<td>96.1</td>
<td>11,400</td>
</tr>
<tr>
<td>Nutrition services</td>
<td>1997</td>
<td>16,900</td>
<td>99.2</td>
<td>11,400</td>
</tr>
<tr>
<td></td>
<td>1999</td>
<td>17,800</td>
<td>99.2</td>
<td>11,900</td>
</tr>
</tbody>
</table>


Despite the reported availability of dental services in the nursing home, only 26 percent of residents had received care within the past thirty days, as reported in the 1999 NHHS (Table 5). Medical and nursing services were almost uniformly provided, while dental and mental health services were provided much more infrequently. The use of dental services varied by ethnicity: 25.3 percent of white residents had received dental care within the past thirty days compared to 32.6 percent of the black only residents and 31.7 percent among people with mixed black and other races. The reason for these differences is unknown and may reflect differences in oral status upon entry to the nursing home among residents or may reflect differences in ability to pay for services or other barriers to receiving care experienced differentially by the various racial and ethnic groups. There were no such differences by gender. Also according to the 1999 survey, only 13.2 percent of all residents who were discharged from a nursing home in 1999 received dental care. This was an increase from the 1997 NHHS survey for which 9.1 percent were billed for dental care within the year. Although differences by race were small, a higher proportion of blacks (12 percent) received dental care compared to 9 percent of white discharged residents.

Because of poor access to dental care from dentists and other dental staff, older persons may rely on their primary physicians or nurses to diagnose and treat oral conditions. Some evidence suggests that the diagnosis of oral conditions by physicians may result in unrecognized conditions or misdiagnosis.\(^4\) The oral health training provided to physicians, nurses, and nurse aides who have regular contact with homebound and institutionalized residents is limited, suggesting that oral health needs may go undetected.\(^1,2,4,5\)

Dental examinations were not conducted and clinical needs were not assessed as part of the NHHS surveys. However, of the 2.23 million residents aged sixty-five and older who were discharged from the nursing homes, 0.98 million, or 44 percent of the residents, used full or partial dentures.\(^3\) The proportion of older adults with dentures increased with increasing age: 40 percent of the people age sixty-five to seventy-four; 43 percent of those age seventy-five to eighty-four; and 47 percent of people age eighty-five years or older reported having dentures (Table 6). Women were more likely to have dentures than men (43 percent compared to 38 percent). Differences were apparent by race, with a higher proportion of whites (43 percent) having dentures compared to 27 percent of the black only and 27 percent of the black and other elders.\(^5\) The NNHS provides a comparison of the number of people at discharge with selected services (Table 6). The proportion of all residents with dentures greatly exceeded those with hearing aids (12 percent) and was almost as high as those using wheelchairs and eyeglasses, two aids commonly associated with older, institutionalized adults.\(^4\) These data could be used to establish a
baseline level of need for older adults. Federal agencies should be encouraged to collect additional oral health information or more completely analyze existing data collected as part of the NHHS in order to better understand the needs of nursing home residents at the national level.

**Did OBRA ‘87 Improve Access to Dental Care Within Nursing Homes?**

Federal requirements for nursing homes receiving Medicare and Medicaid funding were issued through the Omnibus Reconciliation Act of 1987 (OBRA ‘87) with the goal of addressing the inadequacies of nursing home care. This legislation required that each facility implement a comprehensive uniform health assessment of nursing home residents known as the Minimal Data Set (MDS). Any positive response regarding the resident’s oral health in the MDS required a follow-up protocol for further assessment known as the Resident Assessment Protocol, or RAP. A plan of care for each patient was then needed as a result of the MDS and RAP assessments. While these regulations were a step in the right direction, critics point out that OBRA ‘87 did not provide adequate training on how to perform an oral assessment or the necessary accountability to ensure the effectiveness of the new regulations.

An Office of the Inspector General investigation of the quality of nursing home care examined the current status of the implementation of nursing home RAPs. The report, issued in January 2001, addressed the findings on assessment of oral health, among other indicators. The audit demonstrated a discrepancy between the auditors and the clinician/examiners in 17 percent of 406 fields describing the resident’s health status. There was a greater difference for Oral/Dental Status, with a 22 percent discrepancy between the findings in the medical record and the MDS. “Dental Care” was one of the top three areas for which RAPs did not trigger a care plan.

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**Table 5. Number and percent of nursing home residents by selected services received during the last thirty days and age at interview, 1999**

<table>
<thead>
<tr>
<th>Service Received</th>
<th>Total Residents</th>
<th>65-74 Years</th>
<th>75-84 Years</th>
<th>84 Years and Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental care</td>
<td>425.2</td>
<td>31.8</td>
<td>26.1</td>
<td>191.8</td>
</tr>
<tr>
<td>Medical services</td>
<td>1,473.9</td>
<td>177.8</td>
<td>177.8</td>
<td>1,473.9</td>
</tr>
<tr>
<td>Mental health services</td>
<td>372.6</td>
<td>124.0</td>
<td>124.0</td>
<td>132.9</td>
</tr>
<tr>
<td>Nutritional services</td>
<td>1,194.7</td>
<td>147.8</td>
<td>147.8</td>
<td>1,194.7</td>
</tr>
</tbody>
</table>

*Number in thousands


**Table 6. Selected nursing home discharges by type of aids used by age: United States, 1999**

<table>
<thead>
<tr>
<th>Aids used</th>
<th>All Discharges Age 65+</th>
<th>65-74 Years</th>
<th>75-84 Years</th>
<th>84 Years and Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentures</td>
<td>981.1</td>
<td>67.5</td>
<td>97.3</td>
<td>640.6</td>
</tr>
<tr>
<td>Eyeglasses</td>
<td>1,505.3</td>
<td>67.5</td>
<td>67.5</td>
<td>640.6</td>
</tr>
<tr>
<td>Hearing aids</td>
<td>270.1</td>
<td>194.4</td>
<td>50.6</td>
<td>522.5</td>
</tr>
</tbody>
</table>

*Number, in thousands

along with “Psychotropic Drug Use” and “Visual Function.” Much work is needed to accomplish the intent of the OBRA ’87 regulations.

The literature suggests that nursing home personnel have insufficient training in oral health examinations or recommended guidelines for examinations for the MDS process to improve the quality care for nursing home residents. Blank et al.52 determined that, before proper training, only more experienced nurses were able to determine hard tissue abnormalities and oral conditions as compared to less-experienced nurses. Neither experienced nor less-experienced nurses performed well assessing soft tissue lesions. Inadequate training is one of the reasons why nurses place a low priority on oral health care.53 Other reasons include lack of appropriate content in nursing home curricula, suboptimal staffing levels, and lack of emphasis within nursing organizations.50

Dentists are reluctant to treat elderly patients and provide care in institutionalized settings. MacEntee et al.54 reported that only 19 percent of dentists surveyed had provided treatment for patients in a long-term care facility, 55 percent indicated that they enjoyed treating elderly patients, and 37 percent showed interest in providing care to the LTC facilities if asked.55 Dentists cited pressures from private practice, concerns about inadequate training, and the small demand and poor conditions in the facilities as the reasons for lack of interest.56

Workforce Issues

The lack of appropriate access to oral health care is compounded by a shortage of skilled geriatric oral health care professionals. Geriatric dentistry is not a recognized dental specialty. Training of geriatric oral health professionals is offered at the predoctoral level within dental and dental hygiene curricula. Education at the postgraduate level for dentists is funded by the Bureau of Health Professions under Title VII authorization for the Health Resources and Services Administration (HRSA), either through Faculty Training Fellowships in Geriatric Dentistry, Postgraduate Training of General Dentists, the Advanced Education in General Dentistry (AEGD), or the General Practice Residency (GPR) Programs. However, the number of formal advanced education opportunities in geriatric dentistry is very limited, with less than ten geriatric dentistry fellowship positions funded by HRSA annually. Additional opportunities in geriatric dentistry, funded by the Department of Veterans Affairs, are no longer available. The extent to which practicing dentists learn about geriatric oral health issues through dental continuing education is unknown.

Does the dental school curriculum adequately train graduating dentists to provide care for geriatric patients? The goal of dental education at the D.M.D./D.D.S. level is to produce competent entry-level general practitioners. Treating geriatric patients offers the oral health professional the challenge of treating dental patients with the culmination of a lifetime of dental disease, more complex medical histories, the increased likelihood of multiple, interacting medications, and increased functional limitations. In recent years, dental school educators have implemented more geriatric didactic courses, clinical rotations, and faculty with geriatric dental training. For example, 75 percent of dental schools in 1994 had a required geriatric clinical component in their dental curriculum as compared to 13 percent in 1987.54 Saunders et al. concluded that lack of trained faculty, a crowded curriculum, and fiscal concerns were primary barriers to program expansion.44 A more recent survey of U.S. dental schools reported that geriatric curriculum still varied widely.55 While 98 percent of dental schools offered required didactic content, only 67 percent included a clinical component. Thus, recent graduating dentists may not feel adequately prepared to treat geriatric patients, particularly those who are frail or medically compromised.

A national study by Atchison et al.56 of the impact of postgraduate training of general dentists through AEGD and GPR programs reported that, when asked why respondents chose to participate in a postgraduate general dental program, the second most commonly stated reason was “Need more experience with special and/or medically compromised patients” (50 percent by AEGD respondents and 73 percent by GPR former residents). Thus, at least among the proportion of students electing to complete postdoctoral residency training, additional preparation was viewed as needed. Evaluation of the AEGD and GPR training suggested that residents were more likely to serve on the staff at a nursing home as compared to general dentists with no postgraduate training. Further, GPR residents were more likely to report that they treated geriatric and medically compromised patients in their private offices as compared to general dentists without this training.56

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Dental Practice Economics and Its Relationship to Access for the Underserved

Mertz and O’Neil recently published a compelling article in which they argued that “the current practice model of dentistry, which serves insured patients and those who can pay out of pocket, must be changed to include the rest of the population.” They reported that the number of dentists has been increasing for the past twenty years, but the growth has leveled off in comparison with the population growth within the United States, resulting in a declining dentist-to-patient ratio. The dentist workforce is aging, with many reaching retirement age in the next decade. The racial and ethnic distribution of the dental workforce is among the least diverse of the health professions. Only 13 percent of dentists are nonwhite, compared with 22 percent of physicians and 29 percent of the population. Practitioners in traditional delivery settings are able to sustain and increase income while working shorter hours and have little financial incentive to modify their practice. These authors cited many trends in dentistry and dental economics and concluded, “Much of the population with the greatest set of needs will continue to be underserved by fee-for-service dentistry.”

Mertz and O’Neil suggested that alternatives to the current system are needed to address this “crisis of care.” Their recommendations included: 1) alternative organizational structures, 2) increased education about programs, 3) integrating oral and primary health care, 4) using a multidisciplinary approach, 5) expanding practice for hygienists and assistants, 6) new dental school strategies, and 7) program evaluation. Similar concerns and recommendations were raised in “The Report of the ADEA President’s Commission: Improving the Oral Health Status of All Americans—Roles and Responsibilities of Academic Dental Institutions.” The commission pointed out that “much of the oral health workforce is unprepared to provide culturally competent care to racially and ethnically diverse populations, to people with complex medical and psychosocial conditions or developmental or other disabilities, to the very young, and to the aged.” They also raised the concern about regulatory considerations and other systemic barriers within the health care delivery system.

Demonstration programs are under way that provide dental care to the underserved, including oral health services being provided in pediatrics’ offices, dental therapists providing care in Alaska, and Mexican dentists becoming licensed to provide care to the underserved in California. None of these innovative programs has targeted older adults or institutionalized adults except a limited demonstration program with independent hygiene practice in California, and this project was recently abandoned. Demonstration projects are needed to explore alternative models of care delivery and to evaluate their impact on access to care issues, particularly focused on the most vulnerable populations in the United States.

Conclusion

This literature review summarizes national trends in access to dental care and dental service utilization by older adults in the United States. Findings suggest a story with both successes and looming failures. The oral health of older adults has improved in recent decades. Many adults are maintaining their natural teeth and are developing patterns of routine preventive and restorative care that will enable them to enjoy oral health throughout their lifetime. However, the burden of oral diseases and conditions is disproportionately borne by individuals with low socioeconomic status and those who are vulnerable because of poor general health or poor functional status requiring institutionalization. Additional concerns about access to dental care include the increasing diversity of the older adult population and dental workforce issues including training opportunities in gerontology and geriatrics for dental practitioners.

Of particular concern are the vast unmet dental needs of homebound and institutionalized elders. Nursing home and other long-term care facilities have limited capacity to deliver needed oral health services to their residents. Federal and state assistance programs for selected oral health services exist; however, the scope of services is limited and their reimbursement level for oral health services is low. The dentist workforce is declining in relation to the U.S. population, and there is general resistance to exploring new models of dental care delivery to vulnerable populations. Demonstration projects testing the use of appropriate high- and mid-level providers
to provide care for medically compromised, homebound, and institutionalized older adults have not been well supported. Ensuring adequate oral health for older Americans will require attention to all aspects of the problem, including access to and financing for dental services, an adequately trained workforce to provide care, and appropriate education to individuals and their care providers so that appropriate dental care is accessible to all older adults in the United States.59

REFERENCES


57. Mertz E, O'Neill E. The growing challenge of providing oral health care services to all Americans. Health Aff 2002;21(5):65-77.