

A Community-Based Dental Program for Older Adults

W. Paul Lang, DDS, MPH*

Department of Community Dentistry

Wendy E. Kerschbaum, RDH, MPH

Department of Dental Hygiene

Karen M. Kerns, RDH

Department of Community Dentistry

School of Dentistry

The University of Michigan

Ann Arbor, MI 48109-1078

Abstract

The planning and implementation of a community-based outreach program for older adults is described. Objectives of the program were to provide dental health education to older persons at their place of residence, to improve access to dental care for that population, and to increase the number of older adults treated at a dental facility administered by the Department of Community Dentistry, University of Michigan. Data collected during encounters with participants are reported to supplement the description of the program. In the first year, 98 older adults (mean age 71.3 years) participated in the outreach program which was directed by a dental hygienist. Of those persons whose initial encounter was with the outreach program, 47 percent eventually contacted the dental care facility and 36 percent completed treatment. Persons who elected to seek treatment averaged 3.9 encounters with the hygienist during the program; persons who did not seek treatment averaged 2.2 encounters. Strengths and weaknesses of the program are discussed.

Key Words: older adults, health education, community dentistry.

Introduction

In many communities, obstacles still exist which impede persons from seeking and obtaining dental care. The elderly, the indigent, and the working poor frequently must overcome economic, geographic, and psychologic barriers to gain access to treatment (1). From the vantage point of the traditional practice setting, dentists and hygienists may possess limited awareness of these barriers. One method of gaining awareness is to interact with persons in *their* environment. Dental professionals can then apply their knowledge in the environment of the elderly to improve oral health and to facilitate the entry of persons into a dental care system.

The purpose of this report is to describe a home visitation program for older adults which provided oral screenings, instruction in preventive care, and

referrals for dental treatment. The rationale for such a program, the types of services rendered, associated costs, and strengths and weaknesses of the program will be discussed. Data collected during encounters with participants are reported to supplement the description of the program.

Review of Literature

The oral health needs of older adults have been documented (2-9). Of interest is the absence of preventive care and education about oral hygiene which is suggested by elevated levels of debris and calculus (3, 6), increased prevalence of periodontal disease (4, 9), and the self-reported preventive needs of these individuals (6-8). The latter suggest that routine examinations, prophylaxes, examination of abnormalities and ill-fitting prostheses, and maintenance of prostheses were considered necessary services by older persons. These findings support the notion that periodic examinations of the oral cavity and regular preventive activities are needed for all older adults, including those who are edentulous. The American Dental Association reports, however, that utilization of dental services by those over age 60 is the lowest of any age group (10). The barriers which keep this group from receiving care are numerous and diverse (8, 11-13). The inability of older persons to transport themselves to providers and to pay for care is noted frequently. Older adults also appear to attach less importance to dental treatment and prevention. Concurrently, there may be less inclination by professionals to treat this group because providers may hold negative stereotypes of older adults (12, 14, 15) and because reimbursement for dental care for older adults may be limited (10, 13).

Descriptions of programs which address concerns such as stimulating interest in oral health, attending to the preventive needs of older adults, and facilitating access to care have not appeared frequently in the literature. Programs for older adults that are reported often are for the debilitated older adult who is homebound or in a nursing home (16-20). Price and Kiyak (21) suggest, however, that even the best institutions may be unable to provide preventive care, and they contend that older adults living alone may be even more removed from information and facilities needed to establish preventive dental care. Further, these authors suggest that noninstitutionalized older adults can be successfully assisted with oral hygiene procedures by paraprofessionals in community settings. Awareness of the need for a different approach to

*Correspondence and reprints

This project was supported by a grant from the Ann Arbor Area Foundation.

health education for older adults has been present in the literature for some time (22).

Wesson (23) described the provision of oral health care instruction to older adults who participated in a county nutrition program. Geriatric nurse practitioners included oral health screening as part of a health maintenance plan. This activity resulted in increased requests for oral screening, and increased awareness of the need for preventive behavior. The method for arranging referrals for treatment was not described in this report.

The concept that a dental hygienist might be the logical professional to provide preventive services to older adults has also been supported in the literature (24). Marinelli (25) reported that a group of older adults identified a strong educational role for the dental hygienist and that prevention was of significant interest to that group.

The preceding review of the literature provides some rationale for the program about to be described. An outreach program for older adults that was coordinated by a dental hygienist was developed. The hygienist performed dual roles: health educator in a "community" setting and health professional in a traditional treatment setting. The purpose of this arrangement was to encourage a continuum of care. The following discussion describes planning, implementation, and evaluation of the outreach program.

Description of the Program

Sponsorship and Funding

The outreach program for older adults is one of several activities of the Community Dental Center (the Center), a facility sponsored by the Department of Community Dentistry, School of Dentistry, University of Michigan and the City of Ann Arbor, Michigan. The purpose of the Center is to provide dental care to the community, with emphasis upon treating individuals whose access to care may be limited by financial or physical conditions. Persons living in the community who meet income guidelines may have from 25 to 80 percent of the cost of treatment paid by the city. The Center provides a full range of services to patients of all ages.

The outreach project was funded by a local foundation. Expenditures for the first year were \$12,000 and were distributed among three categories: personnel, supplies, and fee subsidies. The grant funded a dental hygienist's position for 12 hours a week, divided between clinical activities (four hours) and outreach activities (eight hours). Personnel costs including some travel money, amounted to \$7,335. Oral hygiene devices, health education literature, and an ultrasonic scaler comprised the supplies for the program and cost \$2,254. The remainder of the funds, \$2,411, was available to provide fee subsidies for older adults who participated in the outreach program, and then wished to pursue treatment at the Community Dental Center. These funds were used to pay the remainder of any fees incurred during an initial visit that were not

reimbursable from other sources: dental insurance, Medicaid, or the City of Ann Arbor. If individuals had treatment needs which required substantial copayments (e.g., partial or complete dentures), Center staff determined if foundation funds would cover treatment costs on an individual basis.

Objectives

As conceived, the outreach program was intended to benefit the community and the Center. The program would provide preventive services to a unique population while increasing public awareness of the City/University-administered treatment facility. Increasing community visibility was important because the Center was relatively new (three years old) and needed to move toward self-sufficiency as its public funding base declined. Because few older adults were being treated at the Center, that population seemed an appropriate target for an outreach program.

"The hygienist performed dual roles: health educator in a 'community' setting and health professional in a traditional treatment setting. The purpose of this arrangement was to encourage a continuum of care."

It should be noted that students from the School of Dentistry did not formally participate in the outreach program, although sophomore students periodically provided health education presentations in the independent living centers. The complexities of scheduling students' time away from the dental school prevented the outreach program from using students effectively.

Given these considerations, the following objectives were formulated:

1. To develop an outreach program for older adults which focused on prevention of dental disease.
2. To improve access to dental care for older adults in the community.
3. To increase the number of visits to the Center by older adults.
4. To provide reduced dental fees to older adults during the program year.

Outreach Sites

Outreach activities occurred primarily in independent living centers for older adults. These centers are apartment buildings, publicly or privately owned, where eligibility for residency is determined by established federal criteria. The primary criterion, and hence the name, is that persons must be able to live independently: to care for themselves without assistance. Persons must be able to enter and leave their residences, maintain their apartments, and transport themselves in the community, without aid. To be eligible for admission to public housing, persons must be at least 62 years of age, earn no more than \$12,500 per year (single person), and not have assets (stocks,

savings, property) that exceed \$27,200. To be eligible to live in privately owned housing, the minimum age is also 62 years, but the maximum allowable income for a single person is \$17,650, and there is no ceiling on assets. These residency criteria appeared to contribute to a stratification of the population by socioeconomic status with more low-income persons residing in public housing. Forty-eight percent of program participants lived in publicly owned housing; 31 percent lived in privately owned housing. The remaining individuals (21 percent) lived in private residences.

Implementation of Program

Implementation of the program required coordination of activities with other agencies serving older adults. Center staff consulted with the local Visiting Nurses Association (VNA) as that agency operated successful visitation and screening activities in all of the outreach sites. The VNA was able to suggest which living centers would be more receptive to the program and how to plan visits. One of the nurses described the population at each living center and provided introductions to residents. She acted as a liaison between administrators of the living centers and the hygienist, and helped to publicize the program. Visits by the hygienist were scheduled to coincide with the nurse's visits whenever possible to maximize interaction with residents. Initially, the program began in two living centers (one publicly owned and one privately owned) that were close to the treatment facility. Presentations were made by the hygienist who described the program to the residents and staff at the two centers. Health education was provided, and oral screenings were performed. Eventually, the program was expanded to four living centers in the community.

Contacting Participants

A home visit by the hygienist was usually initiated by a referral from the visiting nurse or participation in a health education presentation at a living center. Some persons living in private residences came to the centers for meals, and thus learned about the dental program. If the visiting nurse identified a person with a dental complaint or recognized an existing dental problem, a referral to the dental hygienist would occur. The individual was then contacted by the hygienist, who would describe the program and schedule an appointment if the person wished to be seen. If the individual attended a health education program, an appointment could be made during a consultation time which followed the presentation.

The hygienist visited each center on specific days and scheduled appointments for patients in a "commons area." Initial encounters consisted of an oral screening, performance of several indices, and determination of the patient's dental needs. No special portable dental equipment was used for the screening.

Baseline dental indices were performed to aid the hygienist in detecting changes in oral hygiene. The presence of debris and calculus was measured using the Oral Hygiene Index-Simplified (OHI-S) of Greene and Vermillion (26). Gingivitis was measured with the

Gingival Index (GI) of Loe and Silness (27). The Prosthodontic Tissue Index (PTI) of Bloem and Razzoog (28) was used to quantify inflammation of supporting structures beneath complete dentures.

When the oral screening was completed, any suspected significant dental findings and possible treatment needs were discussed, and the person was urged to seek a thorough examination from a dentist. Various referral options (the Center, a private dentist, a local dental school) were explained to the patients, and the patients were helped to establish contact with providers of their choice. If a person decided to visit the Center, an appointment was made and confirmed by the hygienist. It was felt that this gesture facilitated entry into the treatment facility.

Finally, the patient's oral hygiene needs were assessed, and specific recommendations were made. These procedures included brushing, flossing, denture care, and care of edentulous tissue. Oral hygiene devices were provided for residents. If a patient's physical status hindered performance, the hygienist addressed this problem by modifying the hygiene technic, the oral hygiene instrument, or the frequency of hygiene activities. Patients were also questioned about their eating habits, and diet counseling was provided as needed.

Revisits

The patient's interest in scheduling additional visits was determined and the hygienist made follow-up appointments at appropriate intervals. Intervals between visits ranged from one week for persons with acute problems to three months for persons who had completed treatment at the Center and required only maintenance care.

During subsequent home visits, oral health status was reassessed and changes were noted. The appropriate dental indices were repeated and findings were shared with the individual. Oral hygiene practices were reviewed and reinforced as needed. The hygienist took time to discuss an individual's living situation to determine if oral hygiene procedures and dental treatment were being appropriately integrated into the person's life-style. When an abnormal condition such as a soft-tissue lesion was identified, the patient was urged to make an appointment with a dentist, and the condition was periodically observed by the hygienist until its resolution occurred.

Entering the Treatment Facility

If an individual decided to seek care at the Center, an appointment was arranged by the hygienist. Selecting the Center for one's treatment was advantageous for outreach participants. The facility was located near three of the four living centers, was barrier-free, and admitting procedures were simple. The presence of sliding-scale fees and foundation-supported fee subsidies significantly lowered the cost of care for older adults who sought treatment.

Foundation funds were used to supplement the Center's fee subsidies so that there was no charge for an initial visit by an older adult. The most frequently

performed services at initial visits were oral examinations, prophylaxes, adjustments or repairs to prosthetic appliances, and treatment of emergencies. During these visits, patients were informed again of their oral health status, their treatment needs, and the cost of treatment. Eligibility criteria for fee subsidies were explained to patients and their interest in commencing treatment was determined. If a patient could not pay for additional complex treatment, foundation funds were used selectively to pay for services that were not eligible for reimbursement from other sources such as dental insurance, Medicaid, or city fee subsidies.

Encounter Data

Encounter data were collected in the outreach program and at the Center and are presented to supplement the narrative. An encounter was defined as a hygienist-participant interaction, and included home visits, treatment visits, and telephone conversations. The latter were used frequently to reinforce hygiene instructions, and to stimulate continued interest in the program. Table 1 displays the distribution of persons who were participants in the program. An arbitrary lower age limit of 60 years was chosen although residency in one of the independent living centers overrode this consideration and allowed younger persons to participate. A number of younger handicapped individuals resided in one of the publicly owned living centers and a small number of these persons did use the program. The data in Table 1 do not include

persons who may have attended a health education presentation and had a casual interaction with the program.

Of the population, 74 percent was female (n=73, mean age=71.4 years) and 26 percent was male (n=25, mean age=71.2 years). Persons who eventually entered the treatment facility averaged 3.9 encounters with the hygienist while persons who did not contact the facility averaged 2.2 encounters. Of these encounters, 74 percent occurred outside the Center, consistent with the apportionment of the hygienist's time. Of the encounters, 45 percent were scheduled; the remainder were nonscheduled and usually occurred during "open" time which the hygienist scheduled at each center.

To determine if the hygienist's activities in the community stimulated persons to seek treatment at the dental facility, participant contact with the Center and phase of treatment were recorded. Table 2 displays these results by age of the participants. At the time of this report, 35 percent of the participants had not sought treatment at the Center; 65 percent of the population had contacted the treatment facility. Initial interaction with the hygienist appeared to stimulate participation by 47 percent of the population. Of the 13 patients in treatment, 11 or 11.2 percent of the population initially learned about the program through the hygienist. Of the 51 patients who completed treatment, 35 persons or 35.7 percent of the population initially contacted the hygienist. It should be noted that persons who elected not to have treatment at the Center may have received care elsewhere. Thus the number of persons who sought and received care as a result of the program may be underestimated.

Of the 34 persons who did not contact the Center, 35 percent lived in publicly owned housing, 41 percent lived in privately owned housing, and 24 percent lived in private residences. Of the 64 persons who contacted the Center, 55 percent lived in publicly owned living centers, 25 percent lived in privately owned living centers, and the remainder lived in private residences.

TABLE 1
Composition of Outreach Population by Age and Sex

	<59 yrs		60-69 yrs		70-79 yrs		>80 yrs		Total	
	N	%	N	%	N	%	N	%	N	%
Females	(5)	5.1	(25)	25.5	(29)	29.6	(14)	14.3	(73)	74.5
Males	(1)	1.0	(10)	10.2	(9)	9.2	(5)	5.1	(25)	25.5
Totals	(6)	6.1	(35)	35.7	(38)	38.8	(19)	19.4	(98)	100.0

Table 2
Phase of Treatment at Community Dental Center by Age of Patient

PHASE	<59 yrs		60-69 yrs		70-79 yrs		>80 yrs		Total	
	N	%	N	%	N	%	N	%	N	%
I	(0)	0.0	(12)	35.3	(14)	41.2	(8)	23.5	(34)	34.7
	†(1)	50.0	(0)	0.0	(1)	50.0	(0)	0.0	(2)	2.0
II	†(4)	36.4	(3)	27.2	(4)	36.4	(0)	0.0	(11)	11.2
	†(1)	6.2	(7)	43.8	(6)	37.5	(2)	12.5	(16)	16.3
III	†(0)	0.0	(13)	37.1	(13)	37.1	(9)	25.7	(35)	35.7
									(98)	100.0

I Outreach participants who have not made an appointment at the Center.

II Outreach participants who have begun treatment at the Center.

III Outreach participants who have completed treatment at the Center.

* Persons who independently contacted the Center.

† Persons who contacted the Center through the outreach program.

Discussion

As the outreach program primarily was a "service" program, some observations about data collection and interpretation should be made. The necessity of abstracting information from encounter forms suggests that these data be interpreted cautiously. The population which has been described represents a convenience sample since participation was based upon an individual's interest in the program. One could surmise that persons more predisposed to maintaining oral health would enter the program.

Data in Table 1 support some expectations that one might have about this population. The greatest number of participants were between the ages of 60 and 79 because 60 years was the lower limit of the program and because few persons aged 80 years or greater resided in the living centers. The fact that participants were predominantly female is consistent with surveys that report that females live longer than males and are

more likely to utilize the services of health providers (29-31).

Utilization patterns in Table 2 reflect similar age distributions. As the numbers of females and males who utilized the program were proportionately similar to those reported in Table 1, stages of treatment were not stratified by sex. While most persons who sought care appeared to be stimulated to do so by the outreach program, it is possible that persons who contacted the Center independently and then began to participate in the outreach program were also motivated to continue and complete treatment by interacting with the hygienist at their residences. Persons who sought treatment appeared to have contact with the hygienist almost twice as frequently as those who did not seek treatment. Having more encounters with the outreach program seemed to increase the likelihood that a person would seek care.

If the residency criteria for public and private housing did create socioeconomic stratification, then it appears that persons with lower incomes used the services of the hygienist and visited the Center more frequently. These persons seemed more inclined to utilize a community-sponsored program. In two of the living centers where incomes were reportedly higher, residents appeared to have other sources of dental care that they preferred to use.

“The presence of the hygienist in the living centers appeared to stimulate some residents to seek care. Since the same health professional would treat these persons at the Center, a continuum of care for participants was developed.”

As a pilot project, the program had several noteworthy attributes. Interactions with other public agencies, as well as the management and residents of the living centers increased the community's awareness of the Center. The hygienist became a resource person for these groups and was able to dispel fears or misconceptions about dental treatment and dental providers.

Continuity of care was encouraged by incorporating a mechanism in the outreach program which could lead a person to a specific facility if that individual wished to proceed with treatment. The presence of the hygienist in the living centers appeared to stimulate some residents to seek care. Since the same health professional would treat these persons at the Center, a continuum of care for participants was developed.

Some problems were identified as the program progressed. Interest in the program developed slowly. Information about the program was disseminated through newsletters, in living centers, and in some instances, by door-to-door solicitation. Personal

communication between participants and nonparticipants was particularly helpful in stimulating interest in the program. Unfortunately, residents of the living centers are frequently solicited to participate in a variety of programs or surveys, which creates some wariness toward any new activity.

Underutilization was further abetted by the population's lack of interest in oral health. Seeking information about dentistry was not a priority for many older adults. Disinterest is understandable in light of other health and social problems that concern this group. Even with the removal of financial barriers, lack of interest or lack of perceived need kept patients from seeking care.

In the outreach component of the program, underutilization could be addressed by continuing to publicize and promote the program in concert with administrators of the living centers and other agencies. Personal testimony by satisfied participants should be encouraged. Additionally, visits could be scheduled to coincide with activities (meal programs or other health services) which attract groups of people.

To make the program less costly, health education could be provided by other personnel under the supervision of the hygienist, thus making the activity more cost-efficient. A transfer of responsibilities should be contemplated only after the program has become established.

The number of hours devoted to the program by the hygienist could be decreased. Assigning four hours of hygiene time at the Center for persons from the outreach program was not needed as those persons who did seek treatment were easily accommodated in the hygienist's regular treatment schedule. In the outreach component, judicious scheduling of visits could decrease the amount of "field" time as well. Probably four to six hours of outreach time would be adequate once the program was established.

Evaluation of the first year's activities resulted in the formulation of several recommendations for others who might contemplate establishing a similar program.

Recommendations

1. Consult established agencies which serve older adults for assistance with planning and implementation of the intended program.
2. If possible, integrate the outreach program with existing activities for older adults that occur in their residences.
3. Publicize the program vigorously and continuously through other programs, in residences and newsletters, and particularly, by personal communication among peers.
4. Focus the hygienists' time commitment on outreach activities and allow for contraction or expansion of this commitment based upon demand for services.
5. If possible, schedule outreach appointments with participants; limit the amount of "open" time spent at a residence.
6. If referrals are to be arranged for participants, have

a specific treatment facility where appointments can be made from the outreach site.

7. Offer fee subsidies and discounts as incentive for older adults to visit the treatment facility.

References

1. Access programs: limits and liabilities. Chicago: American Dental Association, Council on Prosthetic Services and Dental Laboratory Relations, 1978.
2. Baird JT, Kelly JE. Need for dental care among adults. United States 1960-1962. Washington, DC: National Center for Health Statistics, 1970; DHEW publication no. (PHS)1000. (Vital and health statistics; series 11: no. 36).
3. Kelly JE, Van Kirk LE, Garst C. Oral hygiene in adults. United States 1960-1962. Washington, DC: National Center for Health Statistics, 1966; DHEW publication no. (PHS)1000. (Vital and health statistics; series 11: no. 16).
4. Kelly JE, Van Kirk LE. Periodontal disease in adults. United States 1960-1962. Washington, DC: National Center for Health Statistics, 1965; DHEW publication no. (PHS)1000. (Vital and health statistics; series 11: no. 12).
5. Szwejda LF, Wertheimer F, Tossy CV, Mehaffey HH. Michigan dental survey of residents in nursing homes and homes for the aged. *J Mich Dent Assoc* 1963 May; 45:207-13.
6. Bagramian RA, Heller RP. Dental health assessment of a population of nursing home residents. *J Gerontol* 1977 Mar; 32:168-74.
7. Stiefel DJ, Lubin JH, Truelove EL. A survey of perceived oral health needs of homebound patients. *J Public Health Dent* 1979 Winter; 39:7-15.
8. Marinelli RD, Sreenby LM, Kamen S. Perception of dental needs by the well elderly. *Special Care Dent* 1982 Jul-Aug; 2:161-64.
9. Empey G, Kiyak HA, Milgrom P. Oral health in nursing homes. *Special Care Dent* 1983 Mar-Apr; 3:65-7.
10. Utilization of dental services by the elderly population. Chicago: American Dental Association, Bureau of Economic Research and Statistics, 1977.
11. Ettinger RL, Beck JD. Barriers to dental health—are the elderly really different? *J Indiana Dent Assoc* 1980 Jan-Feb; 59:20-3.
12. Kiyak HA. Psychosocial factors in dental needs of the elderly. *Special Care Dent* 1981 Jan-Feb; 1:22-30.
13. Hehn RM. Financing and the elderly patient: A look at Medicare, Medicaid, and third-party programs. *Special Care Dent* 1981 Mar-Apr; 1:53-5.
14. Coe RM. Professional perspective on the aged. *Gerontologist* 1967 Jun; 7:114-19.
15. Miller SL, Heil J. Effect of an extramural program of dental care for the special patient on attitudes of students. *J Dent Educ* 1976 Nov; 40:740-4.
16. Kimmel H, Friedman B, Bachman R. Outreach—oral health care for nursing home residents. *New York State Dent J* 1980 May; 46:265-7.
17. Koerberr LG. The dental consultant and long term care facilities. *Mass Dent Soc J* 1981 30:23-6.
18. Jarmon P. Dentistry for the homebound: an inbound patient. *New York State Dent J* 1980 May; 46:276-8.
19. Ness JC, Kowitz MD, Campbell, JG. Prosthetic maintenance research program for the geriatric patient. *New York State Dent J* 1981 Apr; 47:193-7.
20. Duncan JL. Incorporating oral hygiene procedures in geriatric nursing homes. *Dent Hyg* 1979 Nov; 53:519-23.
21. Price SC, Kiyak HA. A behavioral approach to improving oral health among the elderly. *Special Care Dent* 1981 Nov-Dec; 1:267-74.
22. Kumiko H, Wilkins EM. Oral health care for the gerodontic patient. *J Am Dent Hyg Assoc* 1959 Jan 33:10-12.
23. Wesson SS. A preventive dentistry program for the elderly. *Special Care Dent* 1981 May-June; 1:133-5.
24. Dunham S. President's message: a beautiful smile is ageless. *Dent Hyg* 1983 Oct; 57:6.
25. Marienelli RD. Oral health care for the elderly: dental hygienists. *Dent Hyg* 1983 Oct; 57:14-17.
26. Greene JC, Vermillion JR. The simplified oral hygiene index. *J Am Dent Assoc* 1964 Jan; 68:7-13.
27. Loe H, Silness J. Periodontal disease in pregnancy. I. Prevalence and severity. *Acta Odont Scand* 1963 Dec; 21:533-51.
28. Bloem TJ, Razzoog, ME. An index for assessment of oral health in the edentulous population. *Special Care Dent* 1972 May-June; 2:121-4.
29. U.S. Bureau of the Census. Statistical abstract of the United States: 1984. 104th ed. Washington DC: US Government, 1983.
30. Mugge, RH. Visits to physicians and other health care practitioners. In: *Health, United States, 1983*. Hyattsville, Maryland: National Center for Health Statistics, 1983; DHHS publication no. (PHS) 84-1232.
31. Wilder, CS. Dental visits volume and interval since last visit: United States, 1978 and 1979. Hyattsville, Maryland: National Center for Health Statistics, 1982; DHHS publication no. (PHS) 82-1566. (Vital and health statistics; series 10; no. 138).