



## Dental Public Health Activities & Practices

**Practice Number:** 28006  
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### SECTION I: PRACTICE OVERVIEW

**Name of the Dental Public Health Activity:**

Elks Mobile Dental Program – Dental Care for People with Special Needs in Rural Missouri

**Public Health Functions:**

Assurance – Population-based Interventions  
 Assurance – Building Linkages and Partnerships for Interventions  
 Assurance – Access to Care and Health System Interventions

**Healthy People 2010 Objectives:**

21-1 Reduce dental caries experience in children  
 21-2 Reduce untreated dental decay in children and adults  
 21-5b Reduce periodontal disease among adults  
 21-10 Increase utilization of oral health system  
 6-10 Increase the proportion of health and wellness and treatment programs and facilities that provide full access for people with disabilities.

**State:**

Missouri

**Federal Region:**

Midwest  
Region VII

**Key Words for Searches:**

Mobile dental services, public private partnership, dental services for disabled patients, access to care. Developmental disabilities, special health care needs, special needs

**Abstract:**

The Elks Mobile Dental Program began nearly 40 years ago. The program delivers free dental services to children and adults with developmental disabilities and/or mental retardation throughout the state of Missouri using three mobile clinics. The program is a partnership between the Missouri Elks Association, the Bureau of Special Health Care Needs of the Missouri Department of Health and Senior Services, and Truman Medical Center. Basic dental services (diagnostic, preventive, restorative and oral surgical) are provided to clients from all 114 counties of the state at 43 sites. The sites were selected to be familiar and easily utilized by the clients; they include state schools for the disabled, regional centers, sheltered workshops, and Elks lodges. The annual cost of the program is approximately \$485,000. The majority of operating revenue, approximately \$383,000 comes from the state Bureau of Special Health Care Needs (Title V Block grant funds); and approximately \$102,000 comes from the Missouri Elks. The program has made a tremendous difference in the lives of people with special needs who formerly lacked access to dental care because of their medical condition, rural location, and/or insurance status.

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## SECTION II: PRACTICE DESCRIPTION

### History of the Practice:

The program began in 1969 when the Missouri Elks Association approached the Missouri Department of Health and offered to help support a health project as part of its philanthropic program, the Missouri Elks Benevolent Trust. The lack of dental care for handicapped children who lived in rural areas was identified as the most-pressing need at the time, and the program was established with the purchase of four trailers. Two of these trailers were designed as waiting rooms and two as dental offices (each with two dental operatories). A waiting room trailer and a dental office trailer were towed to each treatment site, which at the time were limited to regional centers for people with disabilities. The program received funding primarily from the Elks Association and the Bureau of Children with Special Care Needs of the state Title V Program; however, day-to-day program management was done by the state Bureau of Dental Health.

In 1974, the program expanded when state Department of Mental Health provided additional funds to add a new self-powered mobile van that could be driven to the site without being towed. In 1977, the state Department of Health transferred management of the program from the Bureau of Dental Health to the Washington University School of Dentistry in St Louis. The University purchased an additional dental van and operated the program at 28 locations throughout the state as a means of providing community-based experiences to dental students. The University made its faculty available to provide clinical services and for student supervision. In 1979, the University reduced its participation in the program and responsibility to provide services in the western half of the state was contracted to Truman Medical Center in Kansas City. In 1983, Washington University withdrew from the program completely and responsibility to operate the program state-wide was assigned to Truman Medical Center, which still operates the program today.

In 1985, plans were undertaken to improve the design of the mobile units, to make them more user-friendly, and to overcome some mechanical problems such as malfunctioning wheelchair lifts and water lines that were prone to freezing in winter. The first of these re-designed vans was delivered in 1990; a second was delivered in 1992; and a third in 1995. These three vans are still used today.

### Justification of the Practice:

The major justification for the program is the difficulty experienced by people with special needs living in rural areas to obtain dental services. That was the justification for establishing the program nearly 40 years ago, and it is still a valid justification today. While access to dental care is a problem for many people with special needs, it is more acute for people who live in rural areas where there are fewer dentists, fewer specialized dental resources such as pediatric dentists and dental clinics based in children's hospitals, and where travel distances are much greater than in metropolitan areas.

The program is also justified as an innovative approach to meeting the needs of this underserved population. A mobile program is specifically designed to allow a small number of dentists to reach patients located over a much larger geographic area than would be possible with a fixed facility. In 1990 the Missouri Rural Health Consortium recognized the Elks Mobile Dental Program for its innovative approach for bringing dental services to people who would not otherwise receive care.

Furthermore, the program is justified by its track record of success. The primary funders, the Missouri Elks Association and the state Title V program, have provided support for nearly 40 years.

### Inputs, Activities, Outputs and Outcomes of the Practice:

#### Inputs

The major program inputs are staff and equipment. Clinical staff consists of three dentists and three dental assistants, all employed full-time. Administrative staff consists of a full time Program Manager, a full time clerk, and a part time Dental Director.

The major equipment is three mobile dental vans, each of which contains two dental chairs and a small waiting area. Each dental van contains the same dental equipment that is required for any traditional dental office, including patient chairs, dental units, handpieces, x-ray, sterilization, etc.

Another input is the local assistance provided by members of the Elk lodges and staff of local programs for people with special needs. These local resources are contacted prior to the van's arrival, to assist with such functions as securing a suitable location for the van to park, dissemination of information about the van's arrival, advance scheduling of patients, and help with patient transportation.

### Activities

A great deal of advance planning is required before clinical services can be provided by the program. This planning is made more complex because each of the three dental vans operates independently; each has its own staffing, equipment and supply requirements, and each has its own schedule of communities to visit. However, because the program has operated for so many years, protocols are well-established to assure smooth operation.

Planning begins with the creation of an annual schedule for each van (see: <http://www.trumed.org/tmc/Portals/HH/Unit%20I%20Schedule%202006.pdf>). The schedule identifies each community a van will visit, the length of the visit, and the visit sequence. Communities are selected based on the expected number of patients to be served, the availability of a site that can provide adequate parking space for the large van and hook-ups for water, electricity and waste, and the willingness of local organizations to provide assistance. The length of the visit is based on the number of expected patients; it is adjusted each year based on past experience. Currently, community visits range from 2 to 9 weeks. The sequence of visits is determined with the goal of minimizing the distance traveled. For each van, a central "home base" is identified and each subsequent "stop" is then selected so that travel times are as short as possible. This process results in each van making 14-15 stops each year, in a roughly circular path around the home base.

Working on a mobile van in communities that are sometimes far from the home base presents special challenges for the staff. When the van is in communities that are more than 75 miles from the home base, staff members receive a per diem allowance to cover the cost of food, lodging and incidentals. In recognition of individual needs, staff members are given the option of securing lodging locally or of traveling back and forth from their home.

Prior to arriving at the site, the Program Manager works with local partners to disseminate information about the van's visit and to schedule appointments. Partners may include members of the local Elks lodge, staff of the regional centers for people with disabilities, local health department staff, and administrators of group homes or sheltered workshops. As a result of this process, patients are identified and daily schedules are prepared in advance of the van's arrival.

The dental services that are provided include basic preventive and restorative care as well as limited specialty services such as oral surgery, crowns and root canals. Because many patients are fearful or have difficulty in cooperating with their treatment, behavior management techniques such as patient restraint are sometimes used, but only with the consent of the parent/caregiver or guardian. Sedation is not used because of the lack of space for a recovery area and the lack of medical backup. When required treatment cannot be provided in the van, referral is made to either local specialists or to the dental clinic at Truman Medical Center in Kansas City. Because the mobile program is an episodic care provider rather than a "dental home" that is accessible to patients year-round, realistic treatment plans are developed that can be completed during the duration of the van's visit.

### Outputs

Each year, the three vans combine to provide approximately 4,000 visits to approximately 2,000 individual patients in 43 communities across the state. The program serves approximately 44% adults and 56% children. The great majority of these patients reside in rural areas. Approximately two thirds of the communities that are visited are located in officially designated rural areas. The other third of the communities are located in officially designated metropolitan areas, but since each "stop" serves patients from a 4-6 county area, many rural residents travel to metropolitan locations for care.

The program also provides approximately 15 community-based oral health education programs each year. These programs include in-service presentations to the staff of regional centers and group homes as well as oral health education classes for individuals with special needs.

### Outcomes

One outcome of the program is that the oral health of patients has improved over time as evidenced by a reduction in the average number of dental appointments required to complete treatment for each patient. Many of the patients have received services in previous years, so the clinical staff has been able to observe a reduction in unmet dental needs over time.

Another outcome of the program is a high level of satisfaction among the financial supporters of the program who believe they are getting a good return on their investment to warrant continued funding. The achievements of the program are periodically provided to financial supporters. In the case of the Elks for example, a slide presentation was developed and 100 copies were made and distributed to local lodges across the state to inform their membership about the program and to stimulate additional contributions.

The University of Missouri-Columbia conducted a formal program evaluation in 2001. Evaluation results indicated overall client satisfaction with mobile dental unit services in the absence of competent community based dental care (Brooks C, et al. Program evaluation of mobile dental services for children with special health care needs. Spec Care Dent. 2002 Jul-Aug; 22(4): 156-60).

## **Budget Estimates and Formulas of the Practice:**

### Program Revenue

The annual program budget is approximately \$485,000. The majority of operating revenue, approximately \$383,000 comes from the state Bureau of Special Health Care Needs (Title V Block grant funds); and approximately \$102,000 comes from the Missouri Elks. Nearly all patients served by the program are Medicaid participants. Patient care revenue from Medicaid reimbursement is approximately \$15,000 per year; this revenue is retained by the state and is not available for program operations. There are threats to the program's revenue. If Medicaid coverage of adult dental services is eliminated, as has been proposed, Medicaid revenue would be reduced by about 44%. In addition, funding from the state Bureau of Special Health Care Needs may be reduced if Federal MCH Block grant support to the state is diminished.

### Program Expense

The major category of budget expense is wages and benefits which represents approximately 58% of the budget. Other major expense categories are equipment maintenance at 16% and supplies at 9%. Dentist wages is the single most costly budget item, with the typical dentist who is a recent graduate earning approximately \$80,000 per year. Dentists often qualify for state and/or federal loan repayment programs because they serve patients in rural areas. Loan repayment is an important tool for recruitment, because it makes employment in the mobile dental program more attractive. The PRIMO program (Primary Care Resource Initiative for Missouri), operated by the Department of Health with tobacco settlement funds, offers loan repayment (see: <http://www.dhss.mo.gov/PRIMO/> and <http://www.dhss.mo.gov/LoanRepayment/>).

By far, the largest single program expense is the mobile dental vans. The cost of a new van is approximately \$250,000, depending upon which upgrades are selected. The purchase expense is not allocated or pro-rated as part of the annual operating budget.

## **Lessons Learned and/or Plans for Improvement:**

### Lessons Learned

1. Self-propelled mobile clinics are subject to a variety of sub-optimal road conditions that are hard on dental equipment, requiring the implementation of a rigorous preventive maintenance program.
2. Freezing weather can shut down a treatment site because pipes freeze and burst. In the recently purchased vans, design changes were accomplished to protect vital plumbing.

3. Historically, the program dentists tend to stay with the program approximately 1.5 years. The use of loan repayment has helped to extend that to closer to 2 years over the last 4-year period.
4. Clients, especially individuals with mental retardation, will not come to the unit if they think their first appointment requires an injection. In response, patients are only scheduled for recall and cleaning appointments during the first week of a community visit.
5. The staff who work in group homes and facilities frequently do not maintain the client's oral hygiene. Setting aside time for staff in-service education has proven to be worthwhile.
6. Using direct mail to clients announcing free dental care is expensive and only partially effective. Contacting local agencies and case workers is far more effective in generating a response. Also, using postcard announcements of planned visits and posting information on the program website has been effective and reduced mailing costs.
7. Most local dentists will not accept referrals from the mobile unit because nearly all patients have Medicaid and many of them are difficult to serve. With that in mind, treatment plans include only services that can be completed during the van's stay at the site.
8. Well-trained dental assistants are extremely valuable in assuming a wide variety of tasks on a mobile unit that has minimal staffing. With proper "cross-training", assistants can assume the roles of receptionist, records clerk, and scheduler, as well as assuming the traditional role of chair-side assistant.

#### Plans for Improvement

1. Plans are being made for the gradual replacement of aging equipment. The three vans are aging rapidly; the oldest is 20 years old and the "newest" is 14 years old. Much of the dental equipment, such as x-ray machines, dental units, handpieces and sterilizers, also need replacement.
2. There are plans to convert some manual procedures to electronic format, such as preparation of Medicaid claim forms, patient records, and the use of digital X-rays.
3. There are plans to update the promotional video that was created for the Elks many years ago, to include more recent program accomplishments. Local lodges use the video to educate members and to stimulate donations.

#### **Available Information Resources:**

##### Resources about the Missouri Elks Mobile Dental Program

- Elks Program Manual (Blue Book)

A 30 page how-to guide for local Elks lodge participation in the mobile dental program. Available from Dr. Dane.

- Procedure Manual

Policies and procedures that govern the operation of the program. Available from Dr. Dane.

- Journal articles

Dane J. The Missouri Elks mobile dental program: Dental care for developmentally disabled persons. J Publ Hith Dent 50 42-7,1990.

Brooks C, Miller LC, Dane J, Perkins D, Bullock L, Libbus MK, Johnson P, Van Stone J. Program evaluation of mobile dental services for children with special health care needs. Spec Care Dent. 2002 Jul-Aug; 22(4): 156-60.

- Web resources

Program description: Truman Medical Center

<http://www.trumed.org/tmc/YourMedicalCare/HealthServices/tabid/246/Default.aspx#Elks>

Program description: Missouri Dept Health and Senior Services

<http://www.dhss.mo.gov/oralhealth/Elks.html>

Program description: Missouri Elks Association  
<http://www.elks.org/States/StateProject.cfm?vhpID=8023>

Other resources

- Brand AA, Josie-Perez A, Chikte UM, Gilbert L, Rudolph MJ. The impact of a mobile dental system on a school community. Part II--Responses of recipients and providers of care. J Dent Assoc S Afr. 1994 Oct;49(10):495-500.
- Skinner AC, Slifkin RT, Mayer ML. The effect of rural residence on dental unmet need for children with special health care needs. J Rural Health. 2006 Winter;22(1):36-42.
- Byck GR, Walton SM, Cooksey JA. Access to dental care services for Medicaid children: variations by urban/rural categories in Illinois. J Rural Health. 2002 Fall;18(4):512-20.
- Various presentations at 2005 National Oral Health Care Conference: Confluence of Research, Education and Practice held in Pittsburgh, Pennsylvania on May 2 – 4, 2005. <http://www.aaphd.org/default.asp?page=2005presentations.htm>
- (Follow links to PDFs on schedule for Sunday May 1)
- Safety Net Dental Clinic Manual. Chapter 2. Facilities and Staffing. ASTDD, Ohio Department of Health, Indian Health Service
- <http://www.dentalclinicmanual.com/>

Vendors of mobile dental vans (does not constitute an endorsement by the author)

- La Boit: <http://www.laboit.com/dental/index.php>
- Medical coaches: <http://www.medcoach.com/products/dental/index.html>
- ReachOut Healthcare America: <http://www.reachouthhealthcare.com/>

## SECTION III: PRACTICE EVALUATION INFORMATION

### **Impact/Effectiveness**

*How has the practice demonstrated impact, applicability, and benefits to the oral health care and well-being of certain populations or communities (i.e., reference scientific evidence, outcomes of the practice and/or evaluation results)?*

Over its nearly 40-year existence, the program has created a dependable infrastructure of care delivery for children and adults with disabilities in rural areas throughout the state. Families and agencies that serve people with special needs have come to depend upon the mobile program as a supplement or alternative to the level of care that is available from local dentists. The program's effectiveness is also demonstrated by the reduction in the average number of dental appointments required for patients who return for treatment. An independent program evaluation concluded that the program has a major impact on the oral health of rural children with special needs and that there is a high level of program satisfaction among patients and their families.

### **Efficiency**

*How has the practice demonstrated cost and resource efficiency where expenses are appropriate to benefits? How has the practice demonstrated realistic and reasonable staffing and time requirements? Provide unit cost analysis or cost-benefit analysis if appropriate.*

This program is very cost efficient when compared to the alternative of many rural patients traveling great distances to obtain care in metropolitan areas where there are specialized sources of care that accept Medicaid. If the mobile dental van were not available to patients close to their home, they would incur great expense related to travel and perhaps lodging in distant urban centers and some parents would undoubtedly lose income due to absence from work.

The program is also very efficient when compared to the alternative of patients delaying or even foregoing dental care due to lack of access where they live. Preventive dental care and prompt treatment of early dental disease is much more cost efficient than incurring the high treatment costs of urgent care obtained in hospital emergency or operating rooms, or of replacing teeth that have been removed.

The program also offers efficiencies compared to the alternative of constructing multiple fixed dental clinics around the state. Not only would construction costs be high, but the model would be inherently inefficient if these fixed rural dental clinics were utilized only a few weeks of the year and idle the rest of the time. Fixed clinics would be more efficient if they operated year-round to serve both special need and non-special need patients, but that alternative would require significantly more funds to implement.

Despite the efficiencies enumerated above, there are also some inefficiencies associated with this practice. There is unavoidable "down time" when the dental van travels from one site to another, although the impact is minimized when travel is done on weekends or evenings. Productivity is less than in typical dental offices because the practice serves a much higher proportion of patients who have special needs. Some of these patients require extra time to complete treatment and others may resist treatment despite the best effort of the dentist. The practice is also less efficient than many traditional fixed-site practices because it is physically much smaller and employs fewer auxiliary staff who can increase dentist productivity substantially.

### **Demonstrated Sustainability**

*How has the practice showed sustainable benefits and/or how has the practice been sustainable within populations/communities and between states/territories? What mechanisms have been built into the practice to assure sustainability?*

The program has demonstrated exceptional sustainability, being in operation continuously since 1969 for nearly 40 years. This is largely due to the public relations effort the program has made to keep its major supporters informed about program accomplishments and to demonstrate that the program is a good value. An excellent example of this is the multiple communication channels that are used with the Elks. These channels include "thank you" letters sent to the Exalted Ruler

(president) of local lodges following the van's visit to their community reporting the number of patients served and the dollar value of services rendered, the video that is provided to local Elks chapters so all members across the state are aware of the program, and the report of program accomplishments that is sent to the Elks Benevolent Association each year.

Another aspect of the program's sustainability is its public/private partnership that greatly reduces the public cost of a program that would ordinarily be the sole responsibility of the public health department. By sharing the cost with a private charitable organization like the Elks, the public health system successfully leverages its limited funds to create a program that would not likely be supported on its own.

Medicaid revenue earned from clinic services contributes to the program's sustainability. Nearly all patients served by the program are Medicaid participants and revenue from their treatment helps to offset public funds that are used to operate the program.

### **Collaboration/Integration**

*How has the practice built effective partnerships/collaborations among various organizations and integrated oral health with other health projects and issues? What are the traditional, non-traditional, public and private partnerships/collaborations established by the practice for integration, effectiveness, efficiency and sustainability?*

The program is a textbook example of collaboration among public and private entities. The major "players" that make the program possible are the Elks Benevolent Association (a private charitable foundation) that provides funding for the dental vans, dental equipment, salary support for one dentist and one assistant and recruitment incentives; the state Bureau of Special Health Care Needs (a public agency) that provides the majority of operating support; and the Truman Medical Center (a private not-for-profit healthcare system) that administers the program and provides staffing.

In addition to these major players, there are many other organizations that have a supporting role. The state Division of Mental Retardation and Developmental Disabilities makes space available for the trailer at its various Regional Centers across the state and assists with patient selection, transportation and obtaining patient health records. The Missouri Association of Sheltered Workshops schedules care for patients who are employed at sheltered workshops and makes its staff available for in-service training on preventive dentistry topics. The Mental Retardation Association helps arrange meetings with parents and caregivers.

### **Objectives/Rationale**

*How has the practice addressed HP 2010 objectives, met the call to action by the Surgeon General's Report on Oral Health, and/or built basic infrastructure and capacity for state/territorial oral health programs?*

The program addresses HP 2010 Objectives as well as the Call to Action by the Surgeon General's Report on Oral Health by increasing access to dental care for people in rural areas who have special needs. Specifically, the program addresses Objective 6-10 (increase the proportion of health and wellness and treatment programs and facilities that provide full access for people with disabilities) and Objective 21-10 (increase utilization of oral health system).

### **Extent of Use Among States**

*Describe the extent of the practice or aspects of the practice used in other states?*

It is not known if other states use mobile dental vans for the express purpose of serving people with special needs in rural areas. However, mobile dental vans have increased in popularity in recent years, not only as a public health measure to bring care to chronically underserved populations, but also to bring dental care to employees at the worksite which offers convenience and reduce time away from work. Traditional public health-oriented mobile dental programs that target underserved populations exist in many states including New York, North Carolina, Utah, Ohio, and Tennessee.