Chapter 6. Dental Care Models: A Range of Options

Chapter Description

This chapter will describe a variety of models for providing clinical care in the community to young children, including examples of programs. Models include community clinics (both with and without a medical component), hospital-based programs, private practice-linked systems, mobile vans and trailers, portable dental equipment, and teledentistry. Indications for their use, benefits and limitations, cost issues, and logistics will be covered.

Chapter Overview

The goal of any dental care delivery model is to get an appropriate mix of quality services to those who need them in a timely manner. A secondary goal is to reduce care-seeking for dental problems at inappropriate places such as hospital emergency rooms.

Many places in the US, particularly rural communities, lack coordinated systems of care that are linked to other community services. Yet today there are more options for financing, new preventive services and dental materials, and different modes for delivering care than in any other decade.

The models of dental care delivery described in this chapter should not be considered as "all or none" options. Each has its advantages and disadvantages for different communities and populations, and they can be used in combination. For example, a private practice office might use portable equipment to provide a certain level of care in the local nursing home or to place sealants in a school setting. A community clinic might use a mobile van to outreach to isolated areas or to migrant farmworker camps.

The key to creating a successful and coordinated dental care system is to carefully assess the needs of the different population groups in your area; consider the geography and climate; decide which needs are not being met; assess your financial and personnel resources; determine what system(s) can best meet those needs; and identify what realistically can be done with existing and new resources.

Demographic variables are important but sometimes difficult to predict, e.g., influx of retirees, young people leaving to work in urban areas, business closures that cause an out-migration or increased numbers of families on welfare, immigration of non-English speaking populations because of job opportunities.

Self-Assessment: Inventory of Existing Populations and Dental Care Models

Any needs assessment of a community should include an inventory of the existing populations and the dental care models. Plotting these by location will help in analyzing any gaps in coverage. Location of services, alone, however, does not indicate availability of services to all populations. The type of practice and financing mechanisms also need to be assessed (see chapter 10 for financing options). List the resources in your area using the self-assessment Plotting Existing Clinical Resources. Then analyze these resources for apparent gaps using the Worksheet: Identifying Gaps in Dental Services.

Types of Programs

Private Practice Office

Ninety percent of dental professionals in the US practice in private practices because of the desire to be an independent practitioner. Of the approximate 23,000 active dentists in California, about 81% are in general practice (do not formally limit their practice to a specialty). Most practices are dentist-owned, and they operate as any other private business. Overhead costs for equipment, supplies and staff are high, usually 60-75% of total income, much higher than physicians' offices. Some private dentists have formed group practices where there is a mix of general dentists and one or more specialists such as endodontists or orthodontists. See the California Dental Association website (http://www.cda.org/public/dentalcare/patguide.htm) for descriptions of these specialties and the

basic functions of staff. Staffing usually includes one or more dentists, dental assistants (DA, RDA and/or RDAEF), dental hygienists (RDH, RDHAP), and office managers or receptionists.

Care is provided in separate rooms called dental "operatories" or sometimes in an "open bay" layout without intervening walls. Because of the high overhead costs, scheduling services to maximize productivity is important. Some practitioners may block certain times for children so they can plan for that mix and level of services and the number of people sitting in the waiting room. This is an efficient way to schedule Head Start populations as a group and to allow substitutions if a child is absent from school. Some laboratory services (e.g., dentures, crowns) may be performed onsite while others are sent out to a dental laboratory and returned to the office for insertion. Financing is typically mostly private pay or insurance, supplemented with other local or state sources such as Medicaid (Denti-Cal in California) or the Children's Health Insurance Program (Healthy Families in California). In California in 2003, less than 50% of private practice dentists were active Medicaid providers (saw 1 or more patients per year).

Examples of Programs

- Some providers "adopt" a local Head Start program to provide needed care to those children.
- Some dental offices take a family approach and will only see children if their parents are patients; this provides a focus for education and continuity of care.
- A number of programs provide a referral and case management approach (see Chapter 5), asking local dentists to see a limited number of children and matching their criteria to specific children's needs. Share the Care Program in San Diego conducts a very successful program where volunteer dentists are matched with children needing urgent dental care. See their website at http://www.sharethecaredental.org/website/getting_involved/index.html Another example is the Donated Dental Services Program. In this program, volunteer dentists agree to accept a certain number of needy patients each year who are disabled, medically compromised or elderly to treat in their offices where they can work more efficiently with their own equipment, supplies, and staff. Although the focus generally is on older patients, this could be a resource for young children with special health care needs (see Chapter 5 for more details.)
- In some states, dental schools or dental hygiene programs place students in private practices as an extramural rotation, with the dental care providers acting as mentors and adjunct faculty. Often these students will see young children, especially those who are eligible for Medicaid or other public assistance. The University of Colorado is one state where this has been used extensively in the past with both dental students and dental hygiene students.
- Many dental societies ask their members to provide free or reduced care on a certain day or during one week each year. Give Kids a Smile is a national program held annually, sponsored by the American Dental Association and others, that works primarily through private dental practices to examine and treat children who "fall between the cracks" in healthcare. "The overarching concept of the initiative is to create a national umbrella for the numerous charitable education, screening, prevention and comprehensive treatment programs already in existence by having as many of them as possible occur on the same day. At the same time, the campaign will provide a framework for identifying, cataloging and recognizing the many access programs that take place throughout the year." View a description of the program at http://www.ada.org/prof/events/adaevent/kidssmile/kidssmile2.html. Thousands of California dentists signed up to participate in this program in 2003 and 2004.

Community Clinic

Community clinics serve as the primary "safety net" for uninsured and underinsured individuals. They can be established and funded in a number of ways. Start-up costs for constructing and equipping a 3-operatory clinic are about $437,000. A fixed facility-a stationary building--generally is a preferable place to provide care

because it is an integral part of the community and often can be co-located with other health and support services. It also provides space for records and storage of supplies. Continuity of care is easier to achieve since services are provided in one place. A fixed facility, however, may not be accessible to isolated populations, especially if transportation is a problem or if families can't take time off work to

access care. Clinics generally are built similar to private practices, with dental operatories or an open-bay design. They may, however, share a waiting room, record room or receptionist with other health or social services.
The Community Health Center (CHC) Program is a Federal grant program funded under the Public Health Service Act to provide for primary and preventive health care services in medically-and dentally underserved areas throughout the US and its territories/jurisdictions. CHCs can have special designations and funding for migrant, homeless, and rural care. The Migrant Health Program (MHP) of the HRSA Bureau of Primary Health Care provides grants to community non-profit organizations for a broad array of culturally and linguistically competent medical and support services to migrant and seasonal farmworkers (MSFW) and their families. The MHP currently provides grants to 125 public and private non-profit organizations that support the development and operation of 400 migrant clinic sites throughout 40 states and Puerto Rico. In 2001, Migrant Health Centers served over 650,000 migrant and seasonal farmworkers. To learn more about this program, go to http://www.bphc.hrsa.gov/programs/MHCProgramInfo.htm.

CHCs can be a "catalyst for economic development, generating jobs, assuring the presence of health professionals and facilities in underserved areas, and utilizing local services.

In FY 2000, the CHC investment generated over $3 billion in revenues for impoverished underserved communities across the country." In 2000 only 25% of CHCs in California had a dental component, but that is increasing with the Bureau of Primary Health Care's new initiative on comprehensive care.

The Indian Health Service funds clinics to care for American Indians and Alaska Natives in rural areas or on reservations. They usually are staffed by federal and tribal employees. Tribally run clinics also use similar clinic models. Payment for many of these services is subsidized by the Indian Health Service or the tribe, and supplemented with fees or third party payments.
Federally funded clinics are reimbursed on an "encounter system" vs. a fee-for-service system and are sometimes limited to how many types of procedures can be done in one visit. They generally are required to collect and track information on their patient services and thus have a good idea of the demographics of their entire patient population. Their mission and operation are based on a population approach, with varying levels of service and, it seems, an ever-expanding pool of eligible patients.
Other types of community clinics may be funded by city, county or local government; operate as satellites of dental schools; or may be run by non-profit organizations and funded from multiple sources. These programs usually start off as small clinics (2-3 chairs) and expand as demand increases and additional funding is sought. Some of these organizations establish full or part-time satellite clinics that function under one umbrella organization, and may rotate staff among the sites.

When planning for a community clinic, try to envision if expansion will be needed when you are constructing or renovating a facility.

Examples of Programs

- San Ysidro Health Center (SYHC) has been providing quality, low-cost, primary health care services to South Bay residents for over 32 years. In addition to the main health center in San Ysidro, SYHC maintains satellite clinics in Chula Vista and National City that are conveniently located and easily accessible using the public transit system - bus or trolley. SYHC offers an extensive array of family-oriented primary health care services, including dental services. Since 1999 the Health Center has partnered with the UCSF Department of Pediatric Dentistry to conduct research on oral health needs and the best preventive services for children and their families.
- Dientes! Clinc, Santa Cruz, CA is a private non-profit community dental clinic that was established in 1994 to provide dental care for low-income residents of Santa Cruz County. Their full service clinic and mobile programs bring services directly to the patients who need them most: those who live in poverty, who lack insurance, the homeless, patients with HIV, migrant farm workers, children and others who lack access to care. View an article on the clinic at http://www.cda.org/member/pubs/journal/jour598/dientes.html.
- The Open Door Community Health Center's Burre Dental Center opened in October 2002 and quickly had to establish a waiting list due to the demand for services. The Dental Center provides dental care for Humboldt and Del Norte county families who have limited or no dental

insurance or who are eligible for Healthy Families or Medi-Cal. Free clinics for Head Start children take place once a month and are funded by grants from the Union Labor Health Foundation and the Humboldt Area Foundation.

Resources

Communities that are contemplating establishing a dental clinic have a number of resources to inform them.

- The Ohio Department of Health, in cooperation with the Association of State and Territorial Dental Directors and the Indian Health Service, has developed an online Safety Net Dental Clinic Manual (http://www.dentalclinicmanual.com) that highlights all aspects of dental clinic development as well as ongoing operations. Five chapters cover 1) Partnerships and Planning, 2) Facility Design and Staffing, 3) Financing, 4) Clinic Operations, and 5) Quality Improvement. There are links to websites and interactive worksheets, as well as tips, photos, floor plans, sample policies, and much more.
- Volunteers in Healthcare (http://www.volunteersinhealthcare.org/) is a non-profit organization that assists communities that are organizing or expanding volunteer-led medical and dental services for the uninsured. The organization offers technical assistance, seed grants, educational opportunities, and other services. The website is a resource for news, notes from the field and case studies, tips, publications, and grant opportunities. Many of these resources relate to dental clinics and issues in rural areas. The California Primary Care Association serves as a catalyst and representative for more than 500 member clinics and health centers. CPCA provides training and technical assistance, information systems support, educational and networking opportunities for clinicians, and a CFO network. View more information at http://www.cpca.org. The website includes a membership directory, job bank and discussion groups.

Hospital-Based Clinic

Dental providers need to have special permits in California as well as have hospital privileges to provide advanced behavioral management or surgical services in hospital clinics. Each hospital establishes their own privileging requirements, first to affiliate and then to practice within their jurisdiction.

See the information for special permits required in California on the Dental Board of California website at http://www.dbc.ca.gov/lic_info.htm. A separate application form is used for each permit and can be accessed on the website or by calling the appropriate permit program unit. This includes use of conscious sedation or general anesthesia services. Children with chronic medical conditions such as HIV, kidney disease, heart disease, organ transplants, blood disorders/dyscrasias, or congenital anomalies such as cleft palate often benefit from a multidisciplinary team approach and family support that a hospital can provide. Children's hospitals or medical centers connected with a dental school or residency program are excellent resources for such treatment, but usually are located in urban areas. Currently there are 10 children's hospitals in California (see http://www.aapca1.org/aapca1/kidhosp.html for links to their websites.) Not all of them have a dental component that is obvious via their website. In addition to these advanced services, some hospitals provide outpatient dental services and outreach programs in the community.

Examples of Programs

- The Anderson Center at Children's Hospital and Health Center, San Diego is a good example of a hospital that provides a variety of care within the hospital and in the community to young children and children with disabilities (http://www.chsd.org/body.cfm?id=35&action=detail&ref=8).
- In 1998, Redwood Coast Regional Center purchased and installed dental equipment in local hospitals to enhance access to dental care for consumers who require anesthesia. The St Joseph Hospital Based Dental Service treats 65 children per year and has a coordinator funded by the Circle of Smile Partnership.

- Poisson Dental Facility at Catholic Medical Center in Manchester, NH is expanding from a 2-chair to a 4-chair clinic; they have good support from a number of community groups. http://www.catholicmedicalcenter.org/services/dentalfacility.php

Resources

- The American Association of Hospital Dentists, consisting of about 1,000 members, will 1)"Assist you in gaining and maintaining clinical skills and knowledge to treat special patients in your office and in increasingly new areas, such as ambulatory care and surgical centers, urgent care centers, dialysis centers, extended care facilities, and hospice care settings; 2) Provide education to help you assess and treat the needs of patients who have complex medical conditions, are elderly, are victims of child abuse, are severely diabetic, suffer from hemophilia, or are developmentally or otherwise disabled; 3) Give you practical assistance to improve the organization and management of your dental practice; 4) Work to develop new sources of payment and greater levels of reimbursement for dental care to special patients; 5) Work to expand the opportunities for postgraduate training in the care of special patients." This group, in conjunction with the Academy of Dentistry for Persons with Disabilities, and the American Society of Geriatric Dentistry conduct an Annual National Conference on Special Care Issues and publish a journal Special Care Dentistry. More information is available on the Special Care Dentistry website at http://www.scdonline.org.This group also is developing Clinical Guidelines for Providing Dental Treatment under General Anesthesia for People with Special Needs that includes care for young children with special needs.
- UCLA sponsors courses such as Certification in Pediatric Oral Sedation (3-day course) and a one-day re-certification course. Other universities also sponsor such courses.

Mobile Clinics

Mobile clinics are usually either:

- a self-propelled, self-contained motorized van driven by clinic staff or a hired driver to different locations

- a trailer that is hauled or towed by a truck to set-up at a location for a specific time period
- equipment that is transported by a truck and set up in a facility as a dental operatory.

Indications for mobile vans include areas where populations can be served at a community site such as a school or Head Start Center where services are not available locally to needy populations. Limitations include difficulties in mountain terrains, inclement or extremely hot or cold weather, large enough space to park it and access utilities, secure storage facility, availability of a driver who may need a commercial license, different set of regulations and different insurance, increased coordination and a system to assure continuity of care. A system is also needed for identifying, gaining consent for, and scheduling patients, including for follow-up care or specialty referrals.
This option can have expensive initial start-up costs, averaging around $336,000 to order a new van and the equipment and supplies needed. Most vans require electric and water hook-ups (shorepower). Annual operating costs then include maintenance costs for the equipment and the vehicle itself. It would probably not be cost efficient to use the van only for very young children, unless the population numbers warranted it. In California a special permit is needed to practice dentistry in a mobile clinic (call 916-263-2300, ext 2332)
Those considering this option should talk extensively with people who use this delivery mode, and work closely with the mobile van manufacturer on design elements. Most people strongly recommend against converting an existing RV to a dental van. The Association of State and Territorial Dental Directors has been funded to develop an online resource manual on mobile and portable dental care systems (www.mobile-portabledentalmanual.com); it will probably be available in late fall 2004. The manual will cover important questions and decisions; provide tips, worksheets, and samples; and include links to websites and other resources. In the meantime, you can view some comparisons of fixed clinics vs. mobile vs. portable systems in the Safety Net Dental Clinic Manual, Chapter 1, Section II (i) and Chapter 2, Section I(a) at http://www.dentalclinicmanual.com.

Examples of Programs

- Ventura County's Maternal & Infant Oral Health Program, Mobile Dental Office in Oxnard, provides dental care and education services for mothers and children from birth to 3 years. Funded with First 5 monies, the 35-foot van travels to WIC sites in the county (800-698-9799). A team of dentists and a dental assistant staff the clinic.
- The Mobile Dental Center in Gonzales, CA (https://sites.practiceworks.com/exdir/site.htm) uses a non-motorized van to primarily serve children who reside in remote areas of South Monterey County and whose families are federally designated as residing in a medically underserved area (MUA). The initial target service area includes the communities of Soledad, Gonzales, Greenfield, King City, San Lucas, San Ardo, and Bradley, an area of 800 square miles. The Mobile Dental Center annually sees almost 1,000 individual patients through almost 4,000 patient encounters. The overwhelming majority (more than 85%) of these children are from farm worker and/or migrant farm worker families The Mobile Dental Center is 2 mobile homes (12 x 60 & 12 x 44, not including towing hitches) requiring water service, sewer hook-up and power. Their sister program, Children's Oral Health Program of Monterey County (http://www.cohpmc.org), uses a motorized van to provide community outreach and dental screenings.
- The Miles for Smiles Mobile Van (http://www.kindsmiles.org/mile4smile.htm) is a state-of-the-art dental clinic that provides comprehensive, quality dental care, including emergency care when necessary, to children in rural communities on Colorado's Western Slope. The custom-built 36-foot Airstream Coach features two operatories, a digital x-ray system, and an integrated sterilization center. It also includes a computer network and software package for charting patient records and scheduling, mobile nitrous oxide cart for conscious sedation of patients, laboratory/support equipment center, reception/desk station, and a wheel chair accessible lift.
- Saint Mary's-Reno has developed a mobile dental outreach program to schools and supermarket locations in Nevada for preventive and restorative dentistry. See http://www.saintmarysreno.com/mission/dental.php?d_pageID=11.
- USC sponsors a number of mobile programs using both vans and portable equipment. http://www.usc.edu/hsc/dental/community/mobile_clinic.htm
- PRASAD Children's Dental Health Program of California provides oral health education and free dental care for Alum Rock School District children ages 4-14 using a mobile van. See description at http://www.prasad.org/program_21_dental_care_cdhp_ca.html.
- Ronald McDonald Corporation funds pediatric healthcare mobile units for bringing medical and dental services and health education to children in underserved communities. They have programs in about 16 or more cities so far, including San Jose and Contra Costa County CA (http://www.rmhc.com/mission/access_healthcare/access_care_mobile/index.html)
- Apple Tree Dental has developed a dental delivery system that is designed specifically for special care populations, including providing onsite care at nursing homes, Head Start centers, and other group sites. Apple Tree combines a complex system of mobile dental equipment and digital x-ray machines that are loaded and shipped to sites via trucks with some portable equipment options. The equipment provides almost the same clinical environment and technology that is available in most dental offices. The also mobilize groups in the community to support and expand access to dental care. Approximately 75% of the patients are enrolled in Medicaid. Apple Tree has sites in 6 states, including one in San Francisco. Apple Tree offers clinical experiences to dental and dental hygiene students and educates practitioners through a mini-residency program and presentations at national meetings. They recently added a teledentistry component. http://www.appletreedental.org.

Resources

- Brooks C, Miller L, Dane J et al. Program evaluation of mobile dental services for children with special health care needs. Spec Care Dentist 22(4):156-60, 2002.
- At least two field reports on mobile vans are posted on the Volunteers in Health Care website at http://www.volunteersinhealthcare.org.

Portable Equipment

Portable equipment can generally be defined as equipment weighing less than 50 pounds that can be transported and carried into a site. Some equipment is more "portable" than others--some is cumbersome, does not come with a carrying case, or is difficult to fit into small automobiles or carry upstairs. Components generally include chairs, x-ray machines, generators, suctions, with containers also needed to carry supplies and instruments. The number of portable dental equipment manufacturers and the variety, quality and affordability of portable dental equipment have increased greatly in the past few years. Such systems provide greater flexibility to reach certain populations, but generally are not needed for screening or providing preventive services to children under age two. Dental screening and school-based sealant programs have greatly benefited from the use of portable equipment. Isolated areas in Alaska routinely transport portable equipment in airplanes, automobiles or snowmobiles to meet the needs of isolated villages. Limitations include the set-up and break-down time, reduced efficiency in some cases due to equipment capacity, separate storage needed for records and supplies, space needed within a building where there is access to appropriate utilities.

Portable equipment is best used for clinical preventive procedures or simple restorative procedures where air, water and suction are needed.

Providing care with this equipment can be ergonomically uncomfortable if done full-time, and most providers will only do it for limited periods of time. Start-up costs for two chairs with supplies averages about $20,000.

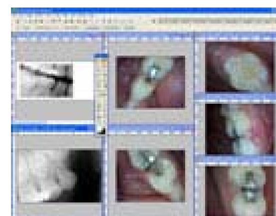
Examples of Programs

- Christian Dental Society makes available its portable equipment on a first come, first serve basis to CDS members who complete an application and want to use the equipment on a mission. They provide operative units; compressors; portable chairs, lights and x-ray units; restorative kits, surgical kits and pressure pots for sterilization. Units such as this are taken in to remote, isolated or undeveloped areas to provide care to children and adults. http://www.christiandental.org/equipment.
- With California Department of Developmental Services funding, Alta Regional Center purchased portable and stationary dental equipment surgical instruments and dental supplies for Colusa Community Hospital and Barton Memorial Hospital to enhance access to dental care for consumers who require anesthesia.
- The Virginia Dental Health Foundation launched Mission of Mercy projects in underserved areas of the state. Volunteers provide the care in cooperation with the VCU School of Dentistry and Dental Hygiene, using portable equipment for most care and performing difficult extractions in the VCU School of Dentistry mobile van. http://198.65.229.210/public/VDHF/VDHF_MOM.html.

Resources

- Murphy JE, Jr. *Mobile Dentistry*. Tulsa, OK: PennWell Books. 1996. This reference book includes information on both mobile vans and portable equipment.
- *Mobile-Portable Dental Manual*. http://www.mobile-portabledentalmanual.com .

Teledentistry



Teledentistry is an attempt to connect primary care clinicians to specialists to increase access to timely diagnosis and care for selected individuals in areas where access to dental care and specialists is a problem. This process can include new electronic advances and broadband capability to perform videoconferencing, and transfer of digital radiographs, patient history and exam information, and other clinical information.

Exchanges can be "real time" or "stored and forwarded" for review at another time, with possible visits to the area by the specialists. It has been used extensively by the US Department of Defense. Some groups are using this model to enable dental hygienists to practice in underserved areas in states where general supervision or independent practice are allowed so they can benefit from dentist consultation.

To make this a viable option requires purchase of the necessary hardware and software, high-speed access to the Internet, and relationships with specialists who are willing to participate. Issues such as licensure, accountability, liability, privacy, consent etc. are still fairly untested in law.

Examples of Programs

- Northern Sierra Rural Health Network (see http://www.nsrhn.org) links rural residents to specialists to help diagnose problems and conduct follow-up visits. This creates stronger links between local providers and specialists and more coordinated care.
- Childrens Hospital Los Angeles/USC Teledentistry project started around orthodontic consultation but has been expanding into other specialty areas. The 3-year project has received funding from the California Wellness Foundation and the Harold McAlister Charitable Foundation. This project interfaces with the USC Mobile Dental Clinic. http://teledentistry.usc.edu
- Redwood Coast Regional Center uses teledentistry and a number of other oral health strategies. http://www.redwoodcoastrc.org/specialtopics.html#health

Resources

Chang S et al. Teledentistry in rural California: A USC initiative. CDA Journal. 31(8):601-8, 2003. Includes a useful glossary of technological terms in teledentistry. http://www.cda.org/member/pubs/journal/jour0803/teledent.pdf.

Sierra Telecommunications Coalition (http://www.sierra-telecom-coalition.com) works to get broadband telecommunications in the Sierra for health care and other purposes.

Summary

The self-assessment allowed you to develop an inventory of existing populations and dental care models in your community or geographic area. The chapter reviewed the various settings for providing dental care, noting benefits and limitations, and providing examples of programs. The goal of this chapter is to help you design a comprehensive system of oral health care for your community so that access problems are minimized and resources are used in a cost-effective and appropriate manner.

General Resources

Mertz EA, Manuel-Barkin CE, Isman BA and O'Neil EH. *Improving Oral Health Care Systems in California: A Report of the California Dental Access Project*. San Francisco, CA: The Center for the Health Professions, UCSF. 2002 (http://futurehealth.ucsf.edu/dentalaccess.html).

Belt D. California's colorful quilt of care is stitched with compassion. CDA Journal. Aug 2002. View at http://www.cda.org/member/pubs/journal/jour0802/intro.html.

Evaluation

What did you learn or accomplish as a result of reading this chapter? Did it help you to organize your thoughts about dental care delivery options in your community? Were the resources and examples helpful? Complete the feedback form and tell us what was useful and not useful for you.