Report to the New Mexico Department of Health
Public Health Division
Health Systems Bureau

New Mexico Dental School Feasibility Study

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Executive Summary

Introduction - We present the results of a four month study of the feasibility of establishing a new State-supported School of Dental Medicine (SODM) that will reduce dental access disparities. We reviewed previous reports on State dental access disparities and demographics. We obtained utilization data for children covered by the Medicaid and Delta Dental of New Mexico dental insurance programs. We also looked at the number and distribution of Federally Qualified Health Centers and Indian Health Service dental clinics and school-based prevention and treatment programs.

We reviewed current dental education programs in the State, including the State supported WICHE program, the characteristics of New Mexico students applying and enrolling in dental schools, the residency program in general dentistry at the University of New Mexico (UNM) and dental hygiene training programs. We spent considerable time talking to key stakeholders who had an interest in dental access disparities and dental education and worked with consultants to estimate the capital and operating budgets for the proposed school.

Background - The State ranks 49th in the nation in the number of dentists per 100,000 population, and most counties have one or more dentist shortage areas. The analyses indicate that privately insured children have adequate access to care, but no claim-based Medicaid utilization data were available for comparison. The limited oral health information showed wide disparities in oral health status by family income group. The State does have an access problem.

Of the 1.9 million people in the State, 25 percent are covered by the Medicaid or State Child Health Insurance Plan programs. Medicaid fees (2008) are about 50 percent of national private sector market fees (70th percentile). The federal government pays about 79 percent and the State 21 percent of the Medicaid program.

Federally Qualified Health Centers operate 41 dental clinics with 209 dental operatories and 78 FTE dentists. The Indian Health Service has about 21 separate dental clinics. There are 887 dentists in active practice in New Mexico, and the UNM runs a general dentistry residency program (Advanced Education in General Dentistry) that trains 10 residents per year. The State subsidizes the dental education of about 36 New Mexico students in the WICHE program at a cost of $802,999 per year. In 2009, 42 State students applied to dental school, and 20 were enrolled. The State has 850 dental hygienists in practice and will soon graduate about 80 per year.

Major changes are taking place in the clinical training of dental students. Most dental schools operate their patient care clinics as teaching laboratories. In this model, students see relatively few patients, and the clinics require large subsidies. The other major health professions (e.g., medicine, pharmacy) have students provide care in “real” delivery systems (e.g., outpatient clinics) that schools do not own. Here, faculty practice while they teach, students gain much more clinical experience, and the delivery system covers most expenses associated with clinical education. Following the other health professions, many dental schools are moving some of their third and fourth year clinical programs to community-based

dental clinics and private practices that provide care to underserved patients. In addition to reducing access disparities and improving education, this new education model is much less expensive to establish and operate.

Recommendations – We propose a five part strategy:
Dental School - We recommend a class of 40 dental students recruited mainly from disadvantaged and rural backgrounds. Students will spend the first two years taking the basic medical sciences at the UNM. Starting in the summer between their second and third years, students will begin intensive training in the dental clinical sciences and preclinical technique. They will spend approximately half of the third year providing care to patients under close faculty supervision in a dental school clinic located in Albuquerque. Students will then be assigned to dental safety net clinics and private practices for half of the third year and most of the fourth year. During this time, junior and senior students will come back periodically to Albuquerque for didactic classes and rotations in Albuquerque dental clinics. The School will expand to 25 residents in the AEGD program from the current 10, and begin residency programs in Pediatric Dentistry and Oral and Maxillo-Facial Surgery.

Working in partnership with FQHCs, the School will build four regional multi-chair FQHC dental clinics in rural areas of the State and one in the Albuquerque area, where community-based faculty, residents and students provide care to underserved patients. The clinics will serve as regional FQHC hubs for primary and specialty dental services. Clinic space and equipment will be leased to the FQHCs, all the staff will be FQHC employees, and the FQHCs and dental school will work out a mutually agreeable approach to clinic management. The capital budget for facilities and equipment comes to $30 million and the annual operating budget is $18 million. The State will need to contribute $6 million to the operating budget.

Other Strategic Initiatives – 1) The School will work with rural FQHCs to establish a telemedicine system, so safety net and private practice dentists can bring patients for specialty consultations; 2) Through the integration of currently operating dental sealant and school clinic programs and the establishment of FQHC operated school dental programs, dental access disparities will be substantially reduced; 3) The School and the New Mexico Primary Care Association will establish an organization to assist safety net clinics establish new or expand existing dental clinics, recruit and train staff, etc. More effective management systems will result in large increases in the capacity of safety net clinics to care for more patients; and 4) FQHCs can play a major role in attracting more private sector dentists to rural areas of the State by offering them part-time positions, providing access to dental specialists and continuing education programs, and serving as centers for telemedicine.

The proposed School will provide an outstanding education to dental students and residents and will have a significant impact on reducing access disparities. The State's capital investment and operating subsidies to the School will be relatively modest, especially compared to traditional dental schools.

I. Introduction

In this report we present the results of a four month study of the feasibility of establishing a new state-supported School of Dental Medicine (SODM) in New Mexico. The goal of the study is to provide the State "…a comprehensive evaluation and include an exploration of innovative models of dental education and their applicability in New Mexico, as well as the ideal location(s), timeline for establishment and estimated costs for establishing and maintaining a school. A final report based on the study will include an in-depth analysis that will provide the necessary information required to make decisions regarding the design and establishment of a dental school."

The feasibility study must address the following issues (see Attachment A for a more detailed description of the issues):

1. Scope of Services
2. Dental Education
3. Dental Students
4. Dental Education Funding
5. Dental Student Service to the Community
6. Relationship to Existing Dental, Medical, and Public Health Education in New Mexico

In essence, the State appears primarily concerned with dental access disparities and is interested in developing a dental school that will reduce these disparities.

The report is divided into seven sections: Methods, Background Information, Recommendation, Timeline, Other Considerations, Program Impact and Conclusions.

II. Methods

We reviewed previous reports on dental access disparities in New Mexico and the feasibility of establishing a dental school.[1-7] We also examined data on the New Mexico population and dental delivery system available from the Center for Disease Control,[8] the Kaiser Family Foundation,[9] the American Dental Association,[10] the Center for Medicare and Medicaid Services,[11] the Health Resources and Services Administration[12] and the Bureau of the Census.[13]

To get a better understanding of the State's dental access problem, we obtained utilization data for children (<21 years of age) covered by the Medicaid and Delta Dental of New Mexico dental insurance programs. The Medicaid data came from two sources: the EPSDT (Early, Periodic Surveillance, Detection, and Treatment) program[14] and a report from the managed care companies that administer the dental Medicaid program for the State.[15] The EPSDT and Medicaid data were for the whole state, and the Delta data was at the county level.

We measured utilization in terms of the percentage of the eligible child population receiving at least one dental service in 2009. For Medicaid enrollees, the population

included all members enrolled for at least one month. The children receiving care under the Delta plan were enrolled continuously for 12 months. Thus, the Medicaid and Delta data were not fully comparable.

To assess the dental safety net system in the State, we obtained data on the number and distribution of Federally Qualified Health Centers (FQHC)[16] and Indian Health Service (IHS) dental clinics.[17,18] For most delivery sites, this included the number of operatories, dentists, hygienists, and other staff. Other community dental clinics are not included in these counts.

Because of their potential to reduce oral health disparities, we examined dental preventive and treatment programs based in public schools.[19,20] The preventive programs (e.g., sealants) are a decentralized operation run by many different organizations, and there is no centralized data source except for schools with fixed dental clinics. The New Mexico Department of Health has an Office of School Health that oversees school-based health clinics, so there is a central data base on this operation.

We sought information on current dental education programs in the State. This included the State supported WICHE (Western Interstate Commission for Higher Education Professional Student Exchange Program in Dentistry) program that subsidizes the cost of dental school for some New Mexico students.[21] We also received information from the American Dental Education Association on the number, ethnicity and qualifications of New Mexico students applying and enrolling in dental schools.[22]

In addition, we obtained data on the general dentistry residency (Advanced Education in General Dentistry, AEGD) program at the University of New Mexico (UNM), School of Medicine (SOM).[23] We also collected data on dental hygiene training programs in the State.[24, 25]

We spent considerable time talking to key stakeholders who had an interest in dental access disparities and dental education. Attachment B lists the people interviewed and their organizational affiliations. Of special note, we had discussions with senior leaders from the New Mexico State University and the University of New Mexico SOM about their interest in a SODM.

To estimate the capital and operating budgets for the proposed school, we had intensive conversations with UNM administrators and faculty, and we obtained independent estimates from study consultants.

Finally, we reviewed the dental education and delivery system literature relevant to the proposed SODM. Where appropriate, these national data sources are discussed in the report.

III. Background Information

In this section we provide basic data on the State's dental access problem and current programs and institutions that address the problem. To reduce disparities, any new dental school has to fit within and build on the current delivery system. Further, graduating more dental students is only one approach to reducing disparities. As will be seen, the school will also have a significant impact on access with innovative patient care systems, built on partnerships with other public and private sector organizations concerned with dental access disparities.

Access Problem

We review three measures of access to dental care: the dentist to population ratio, utilization rates, and oral health status.

Dentist to Population Ratio

Several previous dental access disparity studies have stressed that the State ranks 49th in the nation in the number of dentists per 100,000 population (2004); 49 percent of dentists are located in three counties (Bernalillo, Santa Fe, and Dona Ana), and most counties have one or more Dental Health Professional Service Shortage Areas (DHPSAs).[1-7] With a relative paucity of dentists, the expectation is that utilization rates and population oral health status will be lower in New Mexico compared to other states.

Utilization Rates and Oral Health Status

Table 1 presents the percentage of children (<21 years of age) enrolled for 12 continuous months in a private dental insurance plan (Delta Dental of New Mexico, 2009) who had at least one visit to a dentist by county (based on submitted claims).[26] The state wide average is 59.6 percent, and the range is from 42.3 percent (McKinley) to 70.2 percent (Bernalillo). These utilization rates are generally comparable to those reported by Delta plans in other states for children (and adults).[27, 28] Thus, children with private insurance coverage do not appear to have an access problem.

No claim-based data were available on utilization of dental services by Medicaid eligible children or adults by county. The data that were available from the managed care companies and populations surveys appear to over-estimate utilization rates.[14,15, 29-33] Based on reports from other states and the national Medical Expenditure Panel Survey,[31] utilization rates for 'ever' enrolled children in the State's Medicaid program probably range from 20 percent to 30 percent and 35 percent to 45 percent for children enrolled for 12 months.[27] Adult utilization rates are probably even lower. As such, the estimation of Medicaid utilization rates for both children and adults need further attention. The data on the oral health status of the New Mexico population are also problematic, but they do indicate wide disparities in oral health status by family income group.[30, 32, 33] For a more detailed description of Medicaid utilization rates and oral health status see Attachment C.

We conclude that the State probably does have a significant access problem. The State Health Department and the Medicaid program need to undertake a detailed study of Medicaid utilization rates and oral health status. The data are needed by county, so

county specific access disparity reduction strategies can be developed, implemented and assessed.

Dental Medicaid/CHIP Program

Of the 1.9 million people in the State, 513,900 (25%) are covered by the Medicaid or State Child Health Insurance Plan (SCHIP) programs.[34] This includes 298,063 children enrolled in the Medicaid program and another 16,982 in SCHIP for a total of 315,045 children. Children up to 235 percent of the federal poverty level (FPL) and adults up to 135 percent of the FPL are covered under the Medicaid (and SCHIP) programs. Children dental benefits are relatively comprehensive and adult benefits are limited. In 2004, total dental Medicaid expenditures were $23 million, and dental services accounted for 5.1 percent of Medicaid expenditures.[35] The federal government pays about 79 percent and the State 21 percent of the Medicaid program.

Medicaid fees (2008) are about 50 percent of national private sector market fees (70th percentile).[35] Approximately, 43 percent of New Mexico dentists participate in the Medicaid program (filed at least one claim), and for the past 14 years, the State has contracted with managed care companies to administer the Medicaid plan (SALUD! Program).

Overall, many New Mexico children have public or private dental insurance coverage. The majority of low-income adults are not Medicaid eligible; those covered have access to limited benefits; and for both adults and children Medicaid fees are relatively low compared to private sector fees. Even so, 43 percent of New Mexican dentists filed one or more Medicaid claims. This participation rate is higher than the national average of 26 percent.[36]

Dental Safety Net System

Federally Qualified Health Centers

The State has one of the nation's largest networks of FQHCs. There are approximately 15 FQHCs with 92 delivery sites for medical, dental, or behavioral health services. Some 41 sites provide dental care (see Figure 1).[37]

As seen in Table 2, the total number of dental operatories across the 41 clinics is 209. Most clinics have five or fewer operatories. These clinics employ 78 FTE dentists and 21 FTE dental hygienists. The total number of dentist and hygienist patient encounters is 171,366, and assuming 2.3 encounters per patient, this is about 75 thousand patients. On a per provider basis, this comes to 1,715 visits and 745 patients.[38]

The negotiated per visit charge that FQHCs receive for Medicaid enrollees ranges from $120 to $190.[38] FQHCs also receive a 330 grant from the federal government to cover the costs of treating indigent patients who are not covered by the Medicaid program or private insurance plans.

According to the Executive Director of the New Mexico Primary Care Association, most FQHC dental clinics are able to recruit and retain adequate numbers of dentists and hygienists. He suggested that the current economic recession may account for the

increased interest of dentists in FQHCs. Also, with the large debt of most dental graduates, FQHCs provide an opportunity to reduce the debt and still make a reasonably competitive salary.[38]

The configuration of operatories, dentists, hygienists and assistants in New Mexico FQHC dental clinics is similar to those seen in other states.[39] Studies suggest that FQHC dental programs could substantially increase the number of patients treated with the use of more operatories and auxiliary staff per dentist.[40] A recent Wisconsin study reported that that the number of patient visits per dentist were 30 percent less in FQHCs compared to private general practices.[27] In large part, this resulted from FQHCs having inadequate number of operatories and allied dental health personnel per dentist.

Importantly, under the recent reform of the health care system, $11 billion was allocated to expand the FQHC system over the next five years. Thus, it is likely that the FQHC delivery system capacity in the State will increase substantially, and this includes dental clinics. Finally, the Department of Health recently established a Dental Support Center with HRSA grant funds. The Center has formed a communications network with safety net oral health providers and those in rural areas. The Center has also identified a group of dental educators to provide support and to increase collaboration and sharing of resources among safety net clinics.

Indian Health Service

There is a large Native American population in New Mexico (194,938 people). Whether living on Pueblos or urban centers, this population is eligible to receive medical and dental care in Indian Health Service (IHS) facilities, funded through the federal government. This includes five hospitals, 11 health centers and 12 field clinics.[41] Some health facilities are run directly by the IHS, and some are run by the Pueblos (638 designation). In addition, a significant number of Native Americans are enrolled in the Medicaid program (ca. 80,000).

Sixteen IHS dental clinics are described in Table 3. In total there are about 107 dental chairs, 40.5 FTE dentists and hygienists, and 65 other staff. Although the data are incomplete, each clinic treated an average of 2,124 patients or 708 patients per provider (DDS or RDH). Two clinics, ACL and Mescalero, report using part-time contractors. Overall, the IHS clinics are limited in number and size, and are similar to FQHC clinics in having relatively few operatories and staff per dentist. Data from five additional IHS clinics from northwest New Mexico (e.g., Gallup, Shiprock, Crown Point) were not available at the time this report was prepared.

Supply of Dental Services

Dentists

There are about 887 dentists in active practice in New Mexico (2008). As already noted, New Mexico has relatively few dentists per 100,000 population compared to other states, and most dentists are located in metropolitan areas where most people live (69%). In terms of age about 30 percent of dentists are 60 years or older. While access to dental care appears to be a greater problem in rural versus urban areas, only 10,342 people live in the three counties

without an enrolled Medicaid dentist. On the other hand, close to 500,000 underserved people – about 25 percent of the population - live in DHPSAs.[42]

The paucity of dentists in New Mexico is largely related to two factors: compared to other states, New Mexico has a relatively low per capita income and a large rural population. Many studies have shown that the best predictors of the number of dentists per 1,000 population are per capita income and population density.[43] This is also true within states.

In addition, the supply of dental services is also affected by dentist productivity. Based on national data, dentist productivity is increasing 1.5 percent per year.[44] In large part, this productivity increase is associated with improvements in patient oral health, and the expansion of practices in terms of operatories and auxiliary staff, especially dental hygienists. With larger practices and more staff, dentists are able to treat more patients. Nationally, the number of two and three dentist practices is increasing, and some evidence suggests that larger practices operate more efficiently than solo practices.[45]

A review of the literature indicates relatively little relationship between the per capita number of dentists (or physicians) in an area and utilization rates for low income populations.[27] In large part, this is because low income families living in urban areas with large numbers of dentists continue to have low utilization rates. The primary cause of the access problem is not the number of dentists in an area but the lack of effective demand (i.e., the poor do not have access to adequate public or private insurance or personal wealth to purchase private sector dental services). As discussed later in the report, the lack of an association between per capita number of dentists and utilization rates suggests that just producing more dentists, and especially those from upper middle class majority families, will have limited impact on access disparities. It is well-documented that dental graduates tend to locate in middle and upper income areas, where there is adequate economic demand for their services.

A related issue is the capacity of the private delivery system to treat more patients. Based on experiences in the state of Michigan, where the children's Medicaid program in 59 rural counties was taken over by a private insurer that paid dentists competitive fees, dentists can and are willing to assume responsibility for many more patients. Without any increase in the number of dentists, 200,000 children were enrolled in this program and utilization rates for those enrolled for 12 months exceeded 50 percent.[28] Apparently, many dental practices have large numbers of patients on maintenance, and dentists have flexibility in scheduling these patients for repeat visits. This opens their practice to treating large numbers of new patients. Thus, it is reasonable to assume that many New Mexico dentists have the capacity to provide care to more low-income patients, if Medicaid fees were competitive.

Dental Residents

The UNM, SOM now runs an AEGD residency program. This one year program trains 10 dental residents (increased from five in 2009) for careers in general practice. The program receives General Medical Education (GME) support to cover the direct and indirect costs of the program from the UNM hospital. Residents receive an annual stipend of about $45,000

per year (same as first year medical residents). Of the current 28 graduates, 18 (64%) were underrepresented minorities, 19 (69%) are practicing in New Mexico, and six (21%) in rural locations.

The SOM is now interested in expanding residency training to Pediatric Dentistry and Oral and Maxillo-Facial Surgery. The 2008 State of New Mexico Strategic Health Plan also supported the development of a Pediatric Dentistry residency program.[46]

Dental Students

The State subsidizes the dental education of about 36 New Mexico students in the WICHE program or about nine students per year for the four year dental school program. Participating students usually pay resident tuition at public institutions or reduced tuition in private universities. In 2009-2010 this program cost the State $802,999 or an average of $22,305 per student. Students are enrolled in many different dental schools (e.g., state universities – Colorado, Missouri, and Oregon and private schools - University of Pacific, A.T. Still (Arizona), University of Southern California, and Creighton). For all (77) New Mexico students participating in WICHE health profession programs (Dentistry, 36, Veterinary Medicine, 41), 34 percent are from minority backgrounds. Students completing the program are contractually obligated to return to New Mexico for at least a year. From 2001 to 2005, 92 percent of dental graduates returned to practice in New Mexico.

Using 2009 data provided by the American Dental Education Association, 42 students who claimed residency in New Mexico applied to dental school, and about 20 were accepted and enrolled. Table 4 gives the characteristic of these applicants and enrollees in terms of race, grade point average (GPA), and Dental Aptitude Test (DAT) scores. As expected enrollees had modestly higher GPAs and DAT scores than applicants, and the majority of applicants and enrollees were White.

Dental Hygienists

The State has 850 dental hygienists in active full- and part-time practice. According to private and safety net clinic dentists and hygienists, the State has adequate numbers of hygienists or possibly some overcapacity. Further, the number of dental hygiene training programs is increasing from four to six. The total number of hygienists graduating from New Mexico schools is now about 58 and is expected to increase to about 80 within the next few years.

A related issue is the role of hygienists within private practices and the public health system. There is considerable discussion nationally about expanding the number and types of services that hygienists are legally able to provide. Likewise, many states, including New Mexico, now allow hygienists to provide screening and preventive services to underserved patients in schools and other public facilities under general supervision of a collaborating dentist. As a best estimate, perhaps 12 hygienists are now practicing under this collaborative arrangement.[47] Currently, dentists have to examine patients treated by hygienists at least every 12 months. Legislation is now pending that would allow hygienists to provide some preventive services without an annual dentist examination. With the increasing

employment of hygienists in safety net clinics, private practices, and school prevention programs, the planned expansion of dental hygiene training programs appears warranted.

Dental Education Programs at the UNM and NMSU

The UNM Health Sciences Center includes a School of Medicine, Colleges of Pharmacy and Nursing, a teaching hospital, and a new teaching dental clinic is under construction. UNM started a Dental Hygiene program in 1963 and offers both Bachelor's and Master's degrees in this field. Ten years ago, the UNM SOM began a dental service and in 2004, the AEGD residency program. Currently, these dental programs are part of the Surgery Department. A separate Department of Oral Medicine is scheduled to start within the next 12 months. The AEGD program is staffed by six full-time and 12 volunteer dental faculty and the hygiene program by four full-time faculty.

At NMSU there is a School of Health and Social Services (HSS) that includes Schools of Nursing, Social Work, and Community Health. NMSU is administratively part of four community colleges that have programs in the allied health professions, and this includes dental hygiene and dental assisting. The School of Nursing has a small BMS staff and also obtains BMS teaching from faculty in other departments such as Chemistry and Biology. Both UNM and NMSU are interested in having a SODM.

Dental Education Trends

As general background information, it is important to be aware of changes now taking place in the clinical training of dental students and residents. Most dental schools own and operate their own patient care clinics, where junior and senior students and residents receive most of their clinical training. These clinics operate as teaching laboratories: their primary goal is to educate students, and patient care is a secondary outcome. With this educational focus, faculty do not provide care to patients while supervising students, and students treat two to three patients per day and provide few services per visit. To attract patients under these conditions, schools set student patient fees at 50 percent of usual and customary fees charged by private practitioners.[48] Overall, schools have a limited impact on access disparities, because so few patients receive care from students and residents and because faculty only provide care a few hours per week to full pay patients.

This is an expensive educational model: student clinics run large net operating losses (ca. $40,000/dental chair) that must be made up from tuition, state funds and gifts.[49] This is the primary reason that dental students pay the highest tuition compared to other health professional students, and graduate with the highest average debt (e.g., $250,000).[50] This is also the reason that clinical dental faculty are poorly compensated compared to private practitioners and have little time to pursue their scholarly interests, the hallmark of any university-based, learned profession.

Further, dentistry is the only major health profession that uses this model of clinical education. Medicine, pharmacy and nursing have students provide care in hospitals, outpatient clinics, and pharmacies that schools do not own or run. These are "real" delivery systems in that their primary focus is patient care and not education.

This difference in objectives changes the teaching model, so that medical faculty practice while they supervise students, and the system provides the support personnel to provide care efficiently. Most significantly, the delivery system covers most of the expenses associated with clinical education. This system also provides a better education, because students learn to deliver care in an efficiently run delivery system, and as a result, gain more clinical experience.

In response to financial and educational challenges many dental schools are moving a substantial portion of their third and fourth year clinical programs to community-based dental clinics and private practices that provide care to underserved patients. In these settings students see seven to 10 patients a day and rapidly gain the skills, knowledge and confidence that come from caring for many patients.[51] Of special significance, this model results in many more underserved patients obtaining care, and a small but significant number of students seeking careers in safety net clinics. Thus, if schools base most dental student and resident education in community clinics and practices, following the model of the other health professions, they can have a significant impact on reducing access disparities.

The financial implications of this educational model are also significant. In terms of initial construction costs, the size of the clinical facility is much smaller, reducing construction and equipment costs by about a third.[52] In terms of operational costs, as previously noted, most schools run a deficit of about $40,000 per dental operatory per year. So, the annual difference in operating costs between dental schools with 100 senior chairs versus 30 chairs is about $2,500,000.

Recently, several schools have negotiated with community clinics to share some of the net revenues generated by students and residents, after the clinic's marginal expenses are paid. For example, the University of Michigan, School of Dentistry now receives close to $1,000,000 from clinics and practices for student and resident provided services. Thus, in addition to reducing operating costs, community-based education programs have the potential to generate significant new revenues.[53]

The real test of the community model is the behavior of existing and new dental schools. Several established dental schools have operated with the community model for many years. This includes some of the nation's premier dental schools, including Harvard, Colorado, Boston, Michigan and North Carolina. Further, the American Dental Education Association recently reported that in the last few years many schools have expanded the time that junior and senior students spend in community-based dental education.[54] Finally, most new dental schools have students spending a large part of their senior year in community clinics. Examples include AT Still, Western, Midwest, and East Carolina.

IV. Recommendations

In this section we provide a general description of the proposed strategy to reduce dental access disparities in New Mexico. The strategy has five major components: 1) Establishment of a dental school and residency programs; 2) Implementation of a telemedicine system in rural areas; 3) Development of statewide school-based delivery

system for low-income children; 4) Establishment of dental management organization to assist safety net dental clinics; and 5) Closer integration of private and public sector dental care systems in rural areas. All of these strategies are directly or indirectly related to the establishment of a SODM.

The proposal is at the strategic level, and does not provide a detailed operational plan. Some detail is provided for illustrative purposes and to provide a framework for making capital and operating budget estimates. If the State decides to establish a SODM, more detailed planning will be necessary. The plan assumes the SODM will be based at the UNM in Albuquerque, since the UNM Health Sciences Center has extensive operating experience in doctoral level health professional programs and an excellent faculty and physical plant.

Overview

Dental School

We recommend a class of 40 dental students recruited mainly from disadvantaged and rural backgrounds. Students will spend the first two years taking the basic medical sciences at the UNM SOM. Starting in the summer between their second and third years, students will begin intensive training in the dental clinical sciences and preclinical technique. They will spend approximately half of the third year providing care to patients under close faculty supervision in a dental school clinic located in Albuquerque. Students will then be assigned to dental safety-net clinics and private practices that provide care to underserved populations for half of the third year and most of the fourth year. During this time, junior and senior students will come back periodically to Albuquerque for didactic classes and rotations in Albuquerque dental clinics and teaching hospitals being supervised by SODM faculty. The School will expand the AEGD program to 25 residents from the current 10, and begin residency programs in Pediatric Dentistry and Oral and Maxillo-Facial Surgery (OMFS).

Working in partnership with FQHCs, the School will build four regional multi-chair FQHC dental clinics in rural areas of the State and one in the Albuquerque area, where community-based faculty, residents and students provide care to underserved patients. The rural clinics will serve as regional FQHC hubs for specialty dental services, including Pediatric Dentistry and OMFS and all dental specialties in the Albuquerque facility. Clinic space and equipment will be leased to the FQHCs, all the staff will be FQHC employees, and the FQHCs and dental school will work out a mutually agreeable approach to clinic management.

Telemedicine

The School will work with rural FQHCs to establish a telemedicine system, so all dentists, safety net and private practitioners, can bring patients for consultations with specialists based in Albuquerque or other urban areas. An effective telemedicine program will provide rural patients greater access to specialty level care and tie rural practitioners into the academic medical center.

School-Based Care System

Through the integration of currently operating dental sealant and school clinic programs and the establishment of FQHC operated school dental programs, dental access disparities will be substantially reduced.

Management Organization
The School and the New Mexico Primary Care Association will establish a dental management organization to assist FQHCs, and other safety net clinics in New Mexico and possibly neighboring states, establish new or expand existing dental clinics, recruit and train staff, consult on dental clinic operations, etc. More effective management systems will result in large increases in the capacity of FQHC dental clinics to care for more patients.

Public and Private Sector Dental Care in Rural Areas
FQHCs can play a major role in attracting more private sector dentists to rural areas of the State by offering them part-time positions, providing access to dental specialists and continuing education programs, and serving as centers for telemedicine.

The proposed School will provide an outstanding education to dental students and residents and will have a significant impact on reducing access disparities. The State's capital investment and operating subsidies to the School will be relatively modest, especially compared to traditional dental schools.

In the next section, we provide a more detailed description of each major program component. As previously noted, we appreciate that there are many permutations on these general suggestions, (e.g., course hours and sequence), and they may well change with more detailed planning. We do expect that the proposed strategy will remain largely intact.

School of Dental Medicine
Dental Student Curriculum
Basic Medical Sciences (BMS) - Dental students will spend most of the first two years taking basic medical sciences courses. During this time, students will also spend a few hours a week in dental clinics and practices, shadowing practitioners and learning about the delivery of dental care.

If fully integrated with the medical school classes, the marginal costs for including dental students will be minimal. In four academic health centers, medical and dental students take the same program, and in many others medical and dental students are integrated for some but not all the BMS. If there is a separate BMS for dental students, faculty costs will increase accordingly.

Preclinical Technique - As a surgical discipline, dental students need to have training in common surgical techniques before treating patients. There is great variation among dental schools in the time spent on these technical skills, but this course can be completed in the three summer months between the sophomore and junior years.

Clinical Dental Sciences - There is a significant body of scientific information that dental students are required to have that relate specifically to the oral cavity and patient care. Most of this material can be covered in the third year before students leave for their community assignments. These courses may extend into the senior year, since with distance education, schools are able to present course material to students who are providing patient care in multiple locations. In addition, students will return to Albuquerque periodically for intensive week long courses in selected clinical subjects (e.g., management of medically compromised patients).

Patient Care – Dental students will spend approximately six months of their third year in a dental school clinic located in Albuquerque, providing care to patients under close faculty supervision. This phase of the program will begin after completing the preclinical technique course. At the completion of their introductory patient care experience, students will be assigned to FQHC and other community clinics and private practices throughout the State. While this course will continue for the next 1.5 years, students will return to Albuquerque periodically to spend time in clinics and hospitals, where they will be supervised by SODM faculty.

Other Students – The SODM and FQHC dental clinics may serve as training sites for other health professional and business students. For example, dental hygiene, pharmacy, nursing, and medical students may have an interest in gaining clinical experience working in a multi-professional clinical environment. The clinics may also serve as training sites for MPH and MBA students interested in health administration.

Student Recruitment

The SODM is designed to graduate 40 students per year. This number is realistic relative to the likely number of qualified applicants and at the same time is large enough to have a significant impact on reducing access disparities.

About 100 students from New Mexico are now enrolled in dental school. Assuming State support for the WICHE program ends, there will be 160 dental students enrolled in the UNM SODM. Another 10 or so students will likely be enrolled in schools in other states. Thus, the school will increase the number of New Mexico residents receiving a dental education.

Assuming that 70 percent of New Mexican applicants (14 students) who now get into dental school select the UNM SODM, it will be necessary to upgrade the education of at least another 25 students to make their applications competitive. There are many ways to do this, including replicating the BA/MD program now used to recruit disadvantaged medical students, and summer enrichment and post-baccalaureate programs. The Medical School has considerable experience operating all of these enrichment programs and should have little problem extending these efforts to students interested in dentistry. One possible source of funds for these enrichment programs is the money now used for the WICHE program which will no longer be needed.

Longer term, there should be little problem attracting 40 well-qualified New Mexican dental students. With the likely changes from the recently passed health reform legislation, dentistry will become a more attractive occupation (relative to other health professions) in terms of life-style and income. However, it will take several years to get prospective applicants into the enrichment programs, so these programs should start a few years before the SODM takes its first class.

Faculty

The average dental school with 85 students has about 65 faculty and about 60 percent are specialists. Under the proposed education model the number of full-time academic faculty needed is 52, and most clinical faculty will be General and Pediatric dentists. We expect 16 to be employed in FQHCs, so the School will be financially responsible for 36. With this relatively small number of positions, it is important not to try to set-up an administrative model that parallels the SOM. Rather, to the extent possible, the SODM should build on the administrative and clinical infrastructure of the Medical School. Although a separate school, the SODM should operate similar to other Medical School departments.

The number and types of faculty are described:

Deans (2) – The Dean and Associate Dean for Clinical Programs will be needed. School functions related to admissions, basic science education, student affairs and finance should be managed by the appropriate Associate Dean of the Medical School with additional administrative staff.

Basic Medical Science Faculty (7) – Seven BMS faculty who have expertise in the basic sciences related to the oral diseases and conditions will be needed to teach the basic and clinical sciences specific to dentistry. These faculty should have their primary appointment in a BMS department of the Medical School and a joint appointment in the Dental School. Their offices and research laboratories should also be in the Medical School.

General Dentist Faculty (15) - These faculty should have patient care and clinical teaching responsibilities. They will be based in Albuquerque, and another eight will be in one of the four rural regional dental centers. They will serve as the primary role model for dental students and AEGD residents. Clinical faculty based in Albuquerque should generate at least 50 percent of their income from patient care and grants. One or two general dentistry faculty are expected to have specialty training in public health dentistry.

Pediatric Dentist Faculty (3) - These faculty should have patient care and clinical teaching responsibilities. Three should be based in Albuquerque, and another four will be located in one of the four rural regional dental centers. Faculty in Albuquerque should generate at least 60 percent of their income from patient care and grants as part of their teaching and research activities.

Specialty Dentist Faculty (9) - These faculty should have patient care and clinical teaching responsibilities. The specialties include periodontics, endodontics, orthodontics, and prosthodontics, and oral pathology/medicine. All should be based in Albuquerque but may spend some time in the four rural regional dental centers. Their primary teaching responsibility should be to provide specialty training to residents and dental students and specialty care to underserved patients. Clinical faculty should generate at least 60 percent of their income from patient care and grants.

Oral and Maxillo-Facial Surgery Faculty (?) – These faculty will be located in the Department of Surgery in the Medical School and will have joint appointments in the Dental School. They are not included in the SODM faculty count, since their income will come from the SOM and hospital. Some will be based in Albuquerque and some in one of the four rural regional dental centers. The SOM will need to determine the actual number and distribution OMFS faculty. Their primary responsibility should be to provide specialty training to oral surgery and other residents and dental students and care to underserved patients.

Community-Based Faculty – A large number of dentists practicing in safety net clinics and private practices will serve as faculty, supervising dental students and residents. These faculty will not be paid by the SODM. However, the clinics and practices are expected to generate additional income from student and resident provided patient care services, and this income is expected to exceed the marginal cost of having the students and residents in the clinics and practices. These faculty will continue to treat patients while supervising one or two students or residents. They will receive University appointments and have the same access to academic resources as the full-time faculty (e.g., library, computer center, continuing education courses).

Volunteer Faculty – In addition to full-time faculty and community-based faculty, the SODM should welcome and encourage local private dentists to participate in clinical and research programs on a part-time basis as volunteer faculty. This participation could take on many forms, e.g., giving presentations, leading seminars, presenting in grand rounds, and supervising students and residents. The volunteer faculty will not be involved in the direct delivery of patient care services. They will receive University appointments and have the same access to academic resources as the full time faculty (e.g., library, computer center, continuing education courses).

Residency Programs

General Practice – We recommend that the number of residents in this one year program be expanded from the current 10 to 20 and a small number (e.g., 5) of residents who complete the program should be offered another fellowship year. In total there may be 25 AEGD residents at any one time. They will receive GME support from the University of New Mexico teaching hospital. They will spend most of their time providing care in clinics and hospitals in Albuquerque, the community, and private practices. They will also have didactic course work in the SODM. In expanding the residency program, the SODM needs to consider the advantages of General Practice Residency programs versus AEGD programs.

Pediatric Dentistry - The number of residents in this two year program will be four per year. They will receive GME support from the University of New Mexico teaching hospital. They will spend most of their time providing care in existing clinics and hospitals in Albuquerque and the community. They will also have didactic course work in the SODM.

Oral and Maxillo-Facial Surgery - The oral surgery group should initiate an oral surgery residency program. The exact number of residents and program features will need to be determined.

Other Specialties – We do not recommend any other specialty residency or graduate programs at this time. Once the SODM if fully operational, this issue may be reconsidered.

Patient Care Clinics

Dental School Clinics - A new dental school clinic with 25 operatories will be required for the third year dental student's introductory patient care course. When not used by these students, the operatories will be assigned to some combination of senior students residents, faculty. Throughout the year, this clinic will always be used for patient care.

Currently, the AEGD program and faculty provide patient care in several small clinics, and a new 16 chair clinic is now under construction. These clinics treat mainly low-income Medicaid eligible or indigent patients.

Specialty care will be provided mainly in the dental school owned but leased FQHC clinic in Albuquerque. Assuming a total of nine specialists (endodontists, orthodontists, prosthodontists, periodontists, and oral medicine/pathology), they will provide clinical instruction and consultations to the General Dentistry residents, dental students, faculty based in community clinics, and private practice dentists in rural areas through telemedicine.

All Albuquerque clinics will have teaching conference rooms and faculty offices.

Community Clinics - When fully operational, the school will have about 40 junior and 40 senior students, and 25 AEGD, eight Pediatric and some OMFS residents rotating through University and community-based safety net clinics and private practices. Many community clinics will be FQHCs.

Students and residents will be assigned to community clinics for a minimum of one month and preferably longer. Shorter rotations are much less valuable in terms of patient care, education, and finances. All dentists supervising students and residents will have a University appointment and will have access to continuing education programs and telemedicine-based specialty consultation. They will continue to treat their usual panel of patients while supervising one student or resident. If the clinic is well-run, the combined output (patient visits and services) of the community dentist and student or resident will be substantially greater than the dentist by him/herself.

The four rural regional FQHC clinics will each have 17 or so chairs. Each clinic will have two staff general dentists, two specialty faculty, three hygienists, some combination (2) of a General, Pediatric Dentistry, or OMFS residents and two senior students. The number and types of specialists assigned to the regional centers may well vary by site and overtime. Faculty and residents will be expected to work out of multiple operatories. The regional centers will also have a conference room for teaching and shared academic offices for faculty. The regional specialty clinic in Albuquerque will have a similar design.

Faculty Practice - Since full-time general and specialty dentist faculty will be treating patients as part of their clinical teaching responsibilities in community or University owned clinics, most should generate adequate revenues to cover at least 50 percent to 60 percent of their salary and fringe benefits. For those who want to practice separately from their teaching responsibilities, there are no dental facilities in the UNM Medical and Dental Group practice, but in time, this could change.

Research

The UNM SOM is a major academic research center with extensive and nationally recognized basic science, translational and clinical research. As part of this academic community, the SODM needs to establish an outstanding oral health research program. For a small school, this is best done by building on the stronger research programs currently operating in the SOM. The dental faculty will join these research groups and provide the oral health component to the projects. To compete for grants from federal agencies and private foundations, the SODM BMS faculty must have excellent academic credentials. Likewise, a few general and specialist dentists must have advanced scientific training (e.g., PhDs) and an established record of obtaining nationally competitive research grants.

Capital Budget

The capital budget will provide the physical facilities and equipment required by the SODM. The facilities are divided into four types: didactic and laboratory space, research laboratories, school owned clinics in Albuquerque and school owned clinics in rural areas. The estimated construction cost by independent architects and builders is $300 per square foot for the didactic and laboratory space in the Domenici Building and $230 for the clinics.

Didactic and Laboratory Space – Overall, the additional space requested on the main campus is limited, because the SODM will be integrated into the educational, research and clinical programs of the Health Sciences Center. Thus, there is no need to duplicate any central facilities (e.g., library, learning resources, and biomedical communications) that are already available on campus. Also, the SOM will provide space for the additional BMS and OMFS faculty.

The SODM facility will be incorporated into Phase III of the Domenici Buildings located on the Health Science Center campus in Albuquerque. This building is now being designed and can accommodate the teaching space needs of the SODM. This building will serve all UNM health professional schools. Plans are to seek funding for this building in 2012. The required SODM facilities include a lecture room for 50 people;

four seminar rooms that will each hold 20 people, a preclinical laboratory, and a simulation room. The required space is about 16,000 square feet and the estimated cost with equipment is $6.7 million. The space and cost estimates are provided in more detail in Attachment D.

Research Laboratories - Perhaps five of the seven BMS faculty recruited for the SODM will be involved in bench laboratory research. Some may not require wet laboratory space (e.g. health services researcher). The SOM has tentative plans to construct a small research building, known as a RIB (Research Incubator Building), on the main campus that can provide laboratories. The construction and equipment costs are estimated at $12 million. Assuming five laboratories are allocated to the SODM faculty, the cost will be about four million dollars and another $1 million is needed for laboratory start up costs.

Albuquerque Patient Clinics - The school will construct a 25 chair clinic that will be used by third year students for their introductory patient care experiences, by residents and faculty, when the third year students are assigned to community sites, and by some junior and senior students returning from their community rotations. In addition, the school will construct a 17 chair clinic for use by SODM specialty faculty and leased to an FQHC.

Working with a national dental supplier with operations in Albuquerque, we obtained estimates of the construction and equipment costs for the two Albuquerque clinics (see Attachment E). The fully equipped and supplied 25 chair clinic is estimated to cost $4 million and the 17 chair clinic $3 million.

Rural Patient Clinics – The four regional dental centers that will be part of FQHCs in rural areas of the State will each have 17 chairs and are expected to cost the same to build and equip as the 17 chair clinic in Albuquerque. At three million dollars per clinic this comes to 12 million dollars.

With the coming expansion of FQHC nationally as a result of health care reform, one or more of the five dental clinics associated with FQHCs may be constructed and equipped using federal funds.

The requested capital for the SODM facilities and equipment comes to about $30 million. This assumes that the SOM does not have research laboratory space for the new SODM faculty and that no federal funds or debt financing are available to build the clinics associated with FQHCs.

The required space and estimated costs include:

Description	Sq. Ft.	Construction*	Equipment	Total
Didactic and Laboratory				
Didactic	1,965			
Laboratories and Simulation	3,070			
Simulation	1,325			
Departmental Circulation	768			
Building Grossing Factor: 1.82%	10,561			
Total Building Gross Area	16,363	$4,908,915	$1,844,337	$6,753,252
Research Laboratories				
Wet laboratories (5)	-	$4,000,000	$1,000,000	$5,000,000
Albuquerque Clinics				
25 Chairs	10,625	$2,443,750	$1,650,000	$4,093,750
17 Chairs	7,425	$1,707,750	$1,122,000	$2,829,750
Rural Clinics				
17 Chairs (4)	29,700	$6,831,000	$4,488,000	$11,319,000
Total				**$29,995,752**

*Constructions costs are estimated at $300/SF for the Domenici Building and $230/SF for the clinics.

The UNM Health Science Center leaders reviewed this capital budget and wanted several changes that will increase the cost of construction $2 to $4 million. There are differences in estimated construction costs, design and use of laboratories, and the need for an additional lecture room. These differences are easily resolved, when a more detailed implementation plan is prepared. The UNM estimates are seen in Attachment F.

Annual Operating Budget

The primary assumptions used in these calculations include:

1. Average clinical faculty salaries will be based on 70 to 80 percent of the average incomes of private practitioners with similar training. This is the percentage salary estimate used by many medical schools and will be necessary to attract faculty to serve in rural areas. The average income of general dentists is $250,000 and specialists $350,000. These are based on national estimates, since faculty recruitment will be done nationally.

2. Clinical faculty will cover 50 percent to 60 percent of their salaries from collected patient care revenues and grants. This is feasible because, with the exception of the third year clinic, faculty will practice as they supervise a few students or residents and because they will be providing care within FQHC clinics or SODM clinics which receive a special Medicaid per visit reimbursement rate.

3. The State Medicaid system will consider SODM run clinics in Albuquerque as part of the safety net system and negotiate a special payment per Medicaid patient visit. Other states such as North Carolina, Nebraska, and Massachusetts consider state educational institution care systems as part of the safety net and have negotiated Medicaid per patient visit rates similar to FQHCs (e.g., $150 per

visit). This allows SODM faculty, residents, and students to treat Medicaid patients without having a large State subsidy that comes from general revenues.

4. Faculty employed in FQHCs will receive all their income from the FQHCs. This is financially possible because the State Medicaid system is expected to incorporate the facility and equipment lease costs into the cost structure of the FQHC dental clinics and adjust Medicaid patient visit reimbursement rates accordingly. In addition, the clinics will be generating surplus funds from resident and dental student patient care services, since the residents and students are not paid by FQHCs.

5. All the dental residents will receive GME stipends from the hospital.

6. Community clinics and practices used for senior student and resident rotations that generate surplus revenues from services provided by SODM trainees after covering their marginal costs will share these revenues with the school. The estimated shared revenues for senior students are $100/day and for residents $200/day. This rate is much lower than rates charged by schools in other states and should be economically feasible for most well-run safety net clinics.

7. The lease rate paid by FQHCs for SODM owned clinics and equipment will be approximately $30 per square foot for a 10,000 square foot 17 chair clinic. This comes to $1.5 million annually for the five clinics.

8. The SODM will amortize the clinic equipment over a 10 year period and the buildings over 20 years. Assuming average initial equipment costs of $5 million and building costs of $10 million, the annual expense for the five clinics will be $1 million ($500,000 for equipment and $500,000 for buildings). The SODM will also amortize the cost of the equipment in the two Albuquerque clinics (a total of 41 operatories).

The annual operating budget, expenses and revenues, includes:

Expenses	
BMS Faculty (7) Salaries and Fringe Benefits (@25%)	$1, 000,000
Clinical Faculty (29) Salaries and Fringe Benefits	$7,500,000
Non Faculty Staff (72) Salaries and Fringe Benefits (50% academic faculty salaries)	$4,250,000
Academic Supplies	$200,000
Residents (33) Salaries and Fringe Benefits	$2,000,000
SODM Clinic Equipment	$250,000
FQHC Clinic and Equipment	$1,000,000
Student Community Travel etc.	$250,000
Payment to SOM for BMS Program etc.	$500,000
Student Recruitment and Scholarships	$750,000
University Administrative Fees	$350,000
Miscellaneous	$250,000
Total Expenses	**$18,300,000**
Revenues	
Clinic Leases from FQHCs	$1,500,000
Resident Support (GME)	$2,000,000
GME Supported Faculty (3)	$500,000
Faculty Patient Care	$4,000,000
Faculty Research Grant Support	$500,000
Student and Resident Patient Care	$500,000
Payments from Clinics and Practices	$500,000
Student Tuition and Fees @$19,000	$3,040,000
State Appropriations	$5,760,000
Total Revenues	**$18,300,00**

Operating expenses and revenues come to about $18.3 million per year. To break even, the State will need to make an annual contribution of about $6 million. The State is now spending about $2 million on dental education, so the net increase will be $4 million/year.

Telemedicine Program

We recommend that the SODM work with the New Mexico Dental Association and FQHC and IHS dental clinics to establish a telemedicine system so dentists living in rural areas can have their patients obtain consults from SODM specialists using telemedicine technology. Accessing specialty dental services is a serious problem in rural areas because of the lack of specialists. Through the use of telemedicine, patients can be seen directly or their records can be electronically stored and forwarded to specialists for review. The University of Nebraska, School of Dentistry now runs a successful service of this type for rural dentists. The system allows rural general dentists to provide specialty care to patients under the supervision of specialists, and it reduces the high costs and travel time for many patients who need specialty consultations. The UNM SOM also has considerable experience in this area with the Extension for Community Healthcare Outcomes (ECHO) program.[55] Many FQHCs already have the necessary equipment for telemedicine consultations and the UNM SOM is also well-equipped. Further work is needed to assure that both dentists located

in rural areas and the consulting specialists can receive payment for their services. This is also a problem for medical and behavioral health services.

School-Based Delivery System

Many low-income children receive dental sealants and fluorides in school, provided by many different state and local organizations. At the same time there are dental clinics in several schools where students receive both preventive and curative care. These school dental clinics are funded largely by Medicaid which pay a fixed fee per encounter. The State needs to develop a strategic plan for school-based dental (and medical) care that will operationally merge these two dental efforts and extend the program to all schools with significant numbers of Medicaid eligible and low-income children.

Following the lead of several other states,[56] New Mexico FQHCs need to work with other community groups to develop an organized school-based dental care system. Using portable equipment and temporary school space, dental hygienists screen children, put them into risk groups, apply preventive services, and identify children needing restorative and other dentist-level care. Most dentist services can also be delivered in schools under the same general arrangement. The FQHCs are reimbursed their usual per visit charge for providing care to children, and most (80%) of the costs are covered by the federal government's Medicaid match. Thus, the system for financing the program is already in place. Since this system requires minimal capital investment and can work in schools of varying size, the only barriers to immediate implementation are organizational and managerial.

Dental Management Organization

In most safety net clinics run by FQHCS or the IHS, dental care constitutes only a small percentage of clinic revenues (e.g., 10%) and as a result, in many clinics dental receives limited management attention.[39] Likewise, most CEOs, CFOs, and Chief Medical Officers in safety net clinics have limited experience managing dental services. As a result, many safety net clinics have difficulty designing new or expanding existing dental clinics, selecting and training dental staff etc. Likewise, the evidence suggests that many dental safety net clinics could operate more efficiently, see more patients and generate more net revenues with better use of space and allied dental health personnel. Another concern with the current structure of safety net clinics is their isolation from each other, the lack of training programs for professional and non-professional staff, and the limited opportunities for career advancement.

For these and related reasons, there is an opportunity for the New Mexico Primary Care Association, the SODM and possibly other organizations to form a management group to provide clinical and financial consulting services to safety net clinics in New Mexico and in bordering states. This new organization will be available to design and manage the construction of new dental clinics, to recruit and train clinic personnel, and to help organize a communication system among dentists, hygienists, and others working in safety net clinics. Longer term, as this new organization gains expertise, it may even

take direct responsibility for managing dental safety net clinics under contract with clinic owners.

This new organization may need some start-up funds, but the amount needed will be modest and may be available from a local medical foundation or bank loan. Once established, the management group should not require an operating subsidy.

Public and Private Sector Dental Care in Rural Areas

The paucity of dentists in rural areas is the result of several factors: 1) Dentists cannot make an adequate income, because many rural residents have low family incomes and do not have private or public dental insurance; 2) Few specialists are available to provide care to their patients; and 3) They are isolated professionally from other dentists. FQHCs have the opportunity to address these problems and increase the number of private dentists practicing in rural areas. FQHCs can employ private dentists part-time (e.g., two days per week), substantially increasing their net income. The proposed four regional dental centers and telemedicine system will provide specialty care to their patients. Rural FQHCs can be a center for continuing education and professional fellowship. Further, as students and residents rotate in rural FQHCs and private practices, there is the opportunity to develop strong positive relationships between private and public sector dental providers.

V. Other Considerations

With support from a Macy Foundation grant, dental faculty of the UNM SOM prepared a plan to expand the number of New Mexico dental students enrolled in the A.T. Still University, School of Dentistry and Oral Health (ASDOH) in Mesa Arizona.[57] Under the plan ASDOH would accept up to 20 New Mexican students annually. Students would spend their first three years in Mesa and then spend most of their senior year rotating through community clinics in New Mexico. After graduating, they would be required to spend a year in New Mexico as a resident providing care to low income patients. To accommodate the additional students from New Mexico, ASDOH proposed that the State of New Mexico provide $25 million dollars for a new building on the Mesa campus. In addition, the proposal calls for the State to make up the difference between the UNM tuition of about $19,000 per year (tuition and fees paid by medical students) and the ASDOH tuition of $53,000 per year. Over four years, the State subsidy comes to about $150,000 per student or $3,000,000 for the 20 students. This is an annually recurring expense.

This is an interesting proposal, but it has several significant limitations. First, ASDOH is a new school and has few basic science or clinical faculty and has generally weak didactic and clinical programs. The education plan proposed for the UNM SODM is much stronger. Second, only 20 students would be accepted annually (versus 40). Third, the State would have to pay for a building on the ASDOH campus and contribute $3 million annually to subsidize tuition payments. Fourth, and perhaps most importantly, the ASDOH strategy would have a limited impact on access disparities compared to the proposed UNM SODM. For all these reasons, we do not recommend this option.

VI. Timeline

School of Dental Medicine

If the general plan proposed in this report is approved, the next step is to appoint a group from the UNM, the NM Primary Care Association and perhaps other stakeholders (e.g., State Health Department) and have them develop a detailed implementation plan. Assuming it will take six months to complete the plan, the legislature will receive the completed proposal in the Spring of 2011. If approved, a SODM Dean and core faculty will be recruited. The first priority of the Dean is to expand the current AEGD program from 10 to 25 and begin new residencies in Pediatric Dentistry and OMFS. At the same time construction can begin on the five regional dental centers. Ideally, the proposed SODM clinical delivery system should have several years of operational experience before third and fourth year dental students begin their community rotations.

The BA/DMD program needs to begin even before the new Dean is appointed. It will take at least five or more years before enough qualified students from disadvantaged backgrounds are prepared to enroll in the SODM.

The first class of perhaps 20 NM SODM students can begin their BMS program in 2014 or 2015. Over time, the number of students will be increased to 40 per class.

Other Strategic Initiatives

As soon as the SODM is approved and a few faculty are recruited, the telemedicine project can begin. The school-based dental delivery system can begin immediately and is not dependent on the decision to support a UNM SODM. The dental management organization requires having a few SODM faculty with the time to work on this effort. Finally, the closer integration of private and public sector practitioners in rural areas can begin immediately, since it does not depend on the establishment of the SODM.

VII. Program Impact

Access Disparities

The proposed School has a unique opportunity to develop an outstanding dental school and also have a significant impact reducing access disparities. Indeed, the School can serve as a model for other schools in rural states. Disparities will be reduced using several strategies:

1. The educational system is built around safety net clinics and private practices serving low income patients. The number of students, residents, and faculty delivering care to low income patients will increase from the current 13 to about 160.

2. The SODM will recruit students from disadvantaged families (underrepresented minorities, low family income) and from rural areas of the State. These students are much more likely to provide care to underserved populations and to open practices in rural areas.

3. The SODM and Primary Care Association will form a management group to assist FQHC and other safety net clinics operate more effectively. The average increase in the number of patients treated per dentist per year in safety net clinics should approach 20 percent.

4. The school-based care system when fully implemented can be expected to treat thousands of additional children each year. For example, one dental hygiene team can easily see 10 patients per day, and this comes to 2,000 to 3,000 patients annually. In a few years, most low-income children in New Mexico will have adequate access to dental care.

5. The telemedicine and private/public integration efforts in rural areas of the state will play a role in attracting more private dentists to these areas and providing patients better access to basic and specialty dental care services.

Rural Economic Development

The construction and operation of five large dental centers in low-income areas of the state will assist in the economic development of these areas. The local labor force will be used to construct and operate the facilities. This means perhaps 150 people will be recruited and trained to work in these community clinics. They will gain the skills and experience needed to move on to private sector positions if they are so inclined.

Work Force Diversity

The health professional workforce is not very diverse, and this is a barrier to care for the large minority population of New Mexico and other states. The SODM will make every effort to recruit students and residents from diverse racial, economic, and geographic backgrounds, and this includes majority students from low-income families. In time the dental workforce will be representative of the State's population.

VIII. Conclusions

The State appears to have a significant dental access problem, especially in rural areas. This report first examined the basic features of the dental care delivery system in the State and attempted to design a SODM that builds on the current system of care and takes into account the special features of the State's population, geography, and resources. The proposed SODM and related strategies will have a major impact on reducing access disparities if they are effectively implemented and managed. Because the SODM and the other strategies are built around the dental safety net system and the UNM SOM, the additional capital and operating costs for the SODM that the State will need to finance are very modest, especially compared to traditional dental schools.

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Figure 1
Distribution of FQHC Clinics in New Mexico

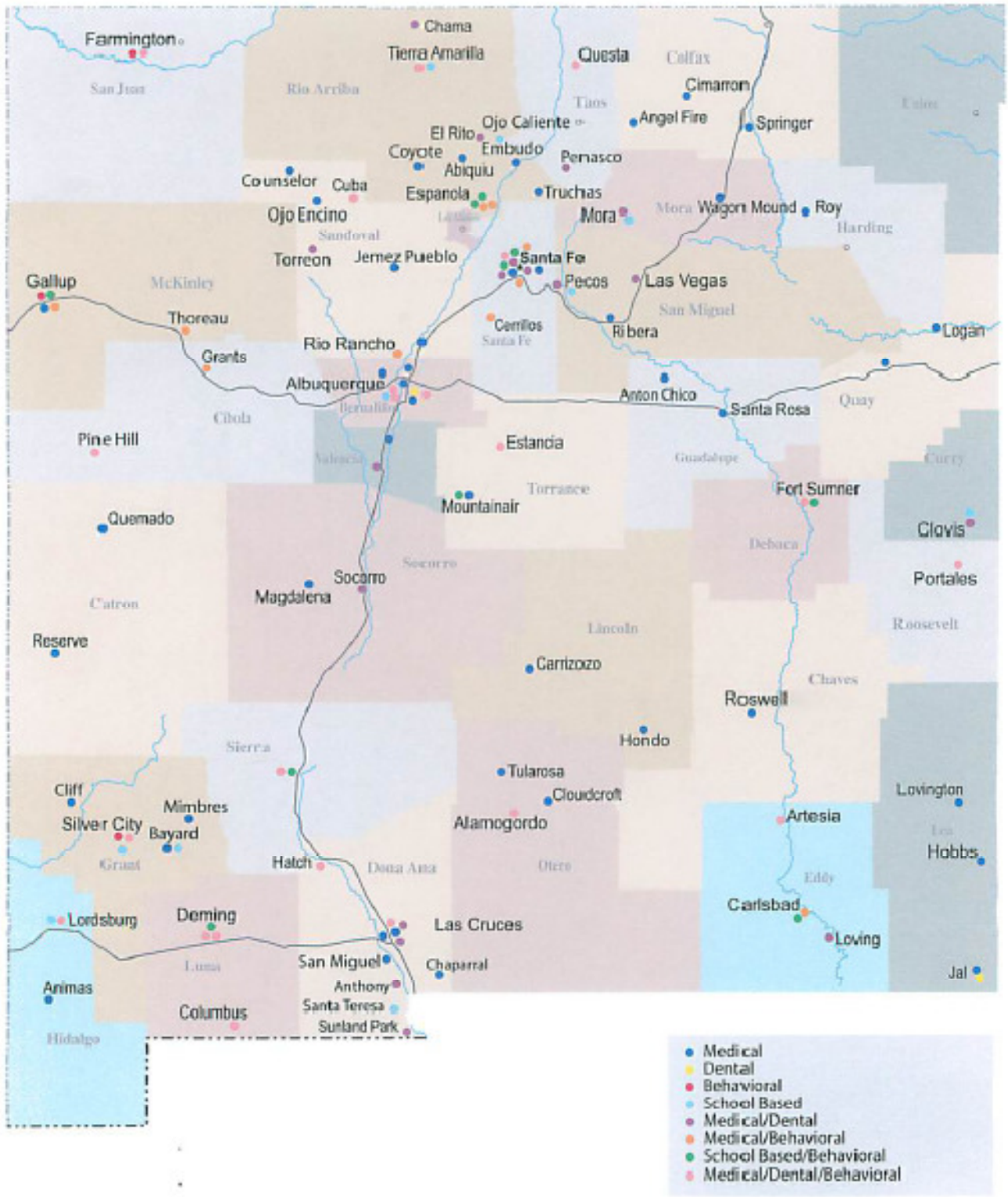

Table 1
Delta Dental of New Mexico Utilization Rates
for 12 Month Enrolled Children by County, 2009

County	Percent Utilization
Bernalillo	70.24%
Catron	55.32%
Chaves	58.39%
Cibola	49.93%
Colfax	66.18%
Curry	59.22%
DeBaca	54.35%
Dona Ana	71.99%
Eddy	63.82%
Grant	60.73%
Guadalupe	64.37%
Harding	63.33%
Hidalgo	50.41%
Lea	51.14%
Lincoln	64.82%
Luna	57.87%
McKinley	42.31%
Mora	67.52%
Otero	66.50%
Quay	65.00%
Rio Arriba	46.20%
Roosevelt	56.42%
San Juan	67.04%
San Miguel	63.64%
Sandoval	69.00%
Santa Fe	69.25%
Sierra	46.77%
Socorro	55.00%
Taos	60.61%
Torrance	59.73%
Union	50.00%
Valencia	60.27%
State Wide Average	59.61%

Table 2

Characteristics of 41 FQHC Dental Clinics in New Mexico

Variable	Number	Range Per Clinic	Patient Encounters
Dental Operatories	209	2-20	-
FTE Dentists	78.4	1-12.2	138,900
FTE Hygienists	21.5	0-3.8	32,466
FTE Dental Assistants	138	1-12	-

Table 3
Characteristics of 16 Indian Health Service Dental Clinics in New Mexico*

Service Units	Dental Chairs	FTE Dentists	FTE Hygienists	Other Staff	Patients
ACL	6				
Laguna	3				
Canoncito	5	3	1	6	3,545
Albuquerque	21	6		18	6,143
Dulce	9	3		3	1,518
Isleta	8	2		4	No Data
Jemez	6	2	1.5	4	No Data
Mescalero	3	1	-	2	1,544
Pine Hill	4	2		4	1,367
San Felipe	6	2		2	No Data
Santa Fe	8	4		4	2,399
Santo Domingo	4	1		1	594
Southern Ute	3	1		1	431
Taos/Picuris	5	1		3	1,116
Ute Mountain	4	1.5	.5	3	1,370
Zuni	12	8		8	3,345
Totals	107	40.5		65	23,372

* Data from five IHS clinics from northwest New Mexico (e.g., Gallup, Shiprock, Crown P oint) were not available at the time this report was prepared.

Table 4
Dental School Applicants and Enrollees from New Mexico, 2009

	N	Ethnicity						Qualifications	
		White	Asian	Black	Hispanic	Native American	Unknown	Grade Point Average	Dental Aptitude Test
Applicants	42	47.6%	9.5%	0	28.5%	4.7%	9.5%	3.2	17.8
Enrollees	20	55.0%	0	0	20.0%	10.0%	15.0%	3.6	18.5

Attachment A
Issues Addressed in Report

1. Scope of Service
   a. Based on an assessment of both existing and innovative of dental schools, make a recommendation for a model of dental education that will meet the oral health care needs of vulnerable and underserved populations in New Mexico.
   b. Determine the risks and rewards of starting the recommended model of dental education.
   c. Determine what facilities and staffing would be required initially and ongoing.
   d. Provide a realistic timeline for start-up and opening to the first class of students.
   e. Provide a reliable estimate of the start-up and annual costs of the recommended model.
   f. Suggest methods for financially supporting it. Address facilities, equipment, staffing and operating costs.

2. Dental Education Issues
   a. Describe what approval/certifications/accreditations would be required.
   b. Determine what would be required to attract qualified faculty to a new school.
   c. Address both full-time generalist faculty and part-time specialists.

3. Dental Student Issues
   a. Provide a reliable estimate of the student demand for the recommended model, and assess the ability of such a program to attract students over a 20-year period. How many students should the program plan to serve?
   b. Estimate the likelihood of graduates of such a program to stay in New Mexico and practice dentistry in underserved communities and suggest retention strategies to maximize this likelihood.
   c. Estimate the impact of the educational debt burden on graduating dental students. For example, will the debt burden affect choice of practice type and location?

4. Dental Education Funding Issues
   a. Provide a reliable estimate of the start-up and annual costs of the model of dental education and determine the best methods for financially supporting it. Address facilities, equipment, faculty and staff, and operating costs.
   b. What sources of recurring revenues would be available to meet annual operating needs? Include estimates for tuition and fees, patient service revenue, dental education funds, grants and contributions, government subsidies. Would they be sufficient to assure the financial success of the program?
   c. Describe the strategies to access other funding sources to support the recommended model. Include considerations of the location of the clinics and the populations served.

5. Dental Student Service to the Community Issues
   a. Determine whether the school would draw a sufficient number and diversity of patients to meet its accreditation requirements.
   b. Discuss the relationship the school could have with the current safety-net clinics.
   c. Determine whether the recommended model would help with access to oral health care issues currently being experienced and projected to worsen in New Mexico.

6. Relationship to existing dental, medical, and public health education programs in New Mexico
   a. Describe how the recommended model will align/collaborate/integrate with, and build on, the existing schools of dental hygiene, and the University of New Mexico Advanced Education in General Dentistry Residency and BA/DDS programs.
   b. Considering the importance of oral health to overall health, as well as the interrelationship between oral disease and systemic disease, describe how the recommended model will align/collaborate/integrate with the medical school.
   c. Recognizing the importance of producing dentists who will serve vulnerable and underserved populations in New Mexico, describe how the recommended model will align/collaborate/integrate with schools of public health.

Attachment B
List of People Interviewed

Contact		Organization
ADERA	Tilahun	NM State University
ALFERO	Charles	Hidalgo Medical Services
ALTENBERG	Mary	NM Department of Health, Health Systems Bureau
ARCHULETA	Christopher	Henry Schein
BLEA	Rudy	NM Department of Health, Office of Oral Health
BOLIC	Walter	NM Delta Dental
CATRON	Britt	NM Human Services/MEDICAID
CHADWICK	Gregory	East Carolina University School of Dentistry
CORDOVA	Yolanda	NM Department of Health, Office of School and Adol. Health
COSGROVE	Ellen	UNM/ School of Medicine
CUTTRELL	Gary	UNM/ School of Medicine
DALTON	Amber	NM Department of Health, Office of Oral Health
FELDMAN	Dede	NM Senate
GRANNAN	Gregory	NM Delta Dental
GIANNINI	Robert	NM Board of Dental Care
GILBERT	Sasha	NM Dental Hygienists' Association
HANSON	Carol	NM Department of Health, Office of Oral Health
HARRISON	Jerry	NM Health Resources
JENSEN	Peter	UNM/School of Medicine
KAUFMAN	Arthur	UNM/School of Medicine /Family/Community Medicine
LEAVELL	Carroll	NM Senate
LOGOTHETIS	Demetra	UNM/Div Dental Hygiene
LYONS	Ray	Las Lunas Community Program
MOORES	Mark	NM Dental Association
MOYA	Cathie	Community Dental Services, Albuquerque
NATHE	Christine	UNM/Division Dental Hygiene
ORTIZ Y PINO	Jerry	NM Senate
PEREZ	Jessica	Office of U.S. Senator Bingaman (ABQ)
POSLER	Barbara	NM Dental Hygienists' Association
POSTON	Stephine	Poston & Associates, LLC
POWELL	Wayne	UNM Health Sciences Ctr
RODDY	David	NM Primary Care Association
ROMERO	Ronald	Former Dental Director Oral Health
ROTH	Paul	UNM/School of Medicine
RUSSELL	John	UNM/School of Medicine
SALLEE	Alvin	NM Board of Dental Care/NM State University
SASI	Frederick	Office of U.S. Senator Bingaman (WashDC)
SCHRIPSEMA	Thomas	NM Dental Association
SEWELL	Robert	NM Indian Health Service
SORRELL	Darlene	DMD/Indian Health Service
STEVENS	Robert	NM Human Services/MEDICAID
TATLOCK	Charles	UNM/ School of Medicine
TOMLIMSON	Kenneth	East Carolina University School of Dental Medicine
VIGIL	Alfredo	NM Secretary of Health
WELBY	Michelle	Molina Health Care
YACHYSHEN	Brian	Bohlin Cywinski Jackson

Attachment C
Review of New Mexico Medicaid Utilization and Oral Health Status Data

Utilization Rates

The 2009 Annual EPSTD Participation Report stated that 45 percent of eligible Medicaid children (198,757) visited a dentist.[14] For children enrolled in the Medicaid dental managed care plans run by Molina and Lovelace, utilization rates ranged from 40 percent to 75 percent, depending on the age group.[15] For adults, the Annual Report of the New Mexico Oral Health Surveillance System (NMOHSS) indicated that 66.4 percent of the adult population visited a dentist in 2004.[30]

The New Mexico Medicaid and adult utilization rates are high compared to those reported in other states, and at face value, they suggest that the State does not have a serious disparity problem. However, in all likelihood, the methods used to collect and analyze data over-estimate utilization rates.

Oral Health

The NMOHSS study reported that 43.0 percent of adults 65 years of age and older had lost six or more teeth, and tooth loss was about three times higher in those from low versus high income families (e.g., 24.1 percent versus 60.5 percent).[30] Some 21.8 percent of seniors were edentulous. An examination of third graders reported that 37.0 percent had untreated decay.[32] These oral disease prevalence rates are close to the averages reported in national studies.[33] The disparities in oral health status by family income group are seen throughout the United States.

Although the data are limited and sometimes conflicting, the State does have significant access and oral health status problems.

Attachment D
Design and Cost of SODM Teaching Facilities at the UNM Health Sciences Center Campus

UNIVERSITY OF NEW MEXICO PRELIMINARY AREA PROJECTIONS Brian Yachyshen, Bohlin Cywinski Jackson				
ROOM / LOCATION	**UNIT AREA ASF**	**QTY**	**SUBTOTAL**	**COMMENTS**
DIDACTIC SPACES				
Auditorium: 50 students (plus 10%) plus room for AV/IT equipment and presenter's lecturn.	27	55	1,485	
Seminar Rooms: 20 students	24	20	480	
Subtotal, Didactic Spaces			**1,965**	**NSF**
CLINICAL TEACHING SPACES				
Pre-Clinical Teaching Lab: 25 student positions	45	25	1,125	
Pre-Clinical Teaching Lab: 1 instructor's station	200	1	200	
Wet Lab to Support PC Tech Lab	25	25	625	
Dispensary to Support PC Tech Lab and Sim Clinic	400	1	400	includes 100 sf office for manager
Simulation Clinic: 8 student stations plus room for AV/IT equipment.	65	8	520	
Simulation Clinic: 1 instructor's station	200	1	200	
Subtotal, Clinical Teaching Spaces			**3,070**	**NSF**
Departmental Circulation (25%)			768	Accounts for circulation between operatories that is not accounted for in Building Grossing Factor.
Subtotal, Clnical Teaching Spaces with Dept Circ.			**3,838**	**NSF**
Subtotal, Net Program Area			**5,803**	**NSF**
BUILDING GROSSING FACTOR: 1.82%			**10,561**	
TOATL BUILDING GROSS AREA			**16,363**	**GSF**

Projected Probable Cost: Approximately $300/SF +/- 10 - 15%			**$4,908,915**
Projected Equipment Cost			
Simulation Stations	$100,000	9	$900,000
PC Tech Lab Stations	$8,000	26	$208,000
Balance of Equipment = Between 10 - 15% of Construciton (15% used for this calc)			$736,337
Total, Projected Probable Cost, Equipment			$1,844,337

Attachment E
Design and Cost of Dental Clinics

HENRY SCHEIN® DENTAL

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Chris Archuleta

Equipment Sales Specialist

University of New Mexico Project

17 Operatory Facility

Square footage needed – 17 ops x 400 = 6,800 square feet + 625 (conference room) = 7,425 square feet

Land requirement – square feet of building x 6 = 37,350 sq. ft = .857438 – 1.0 acre

*Building cost – 7,425 sq ft x $230.00 per square foot = 1,707,750

*Equipment cost $1,222,000

*Architect Fee - $85,000-$100,000

***Estimate Only**

25 Operatory Facility

Square footage needed – 25 ops x 400 = 10,000 square feet + 625 (conference room) = 10,625 square feet

Land requirement – square feet of building x 6 = 63,750 sq. ft = 1.47 – 1.75 acre

*Building cost – 10,625 sq ft x $230.00 per square foot = 2,443,750

*Equipment cost $1,650,000

*Architect Fee - $100,000-$115,000

***Estimate Only**

Attachment F

Capital Budget Estimates by the University of New Mexico

1) This request would be for Phase 1 of the Dental School that would be incorporated into Dom.Ctr Phase 3b.
2) As per the draft report, additional phases would be required:
a) Funding for a portion of the next "RIB" research building to house the faculty, and 2) funding for clinics off site.
3) 4-year Program would have 40 students in each year; student in classroom setting for the first two years.
4) Pre-clinical teaching lab is a wet-lab setting requiring a flat work surface, access to sinks. It can be a combination of the Pre-Clinical Lab + Wet lab
5) Dr. Jensen prefers a lower-tech simulation clinic than what is proposed in the draft. Experience from other schools indicates high-tech hard to maintain.
6) Equipment estimate for new dental clinic is ~$1.5 million; the expensive components of this project are the sim lab, wet lab, and classroom a/v
7) Instead of using $300/GSF plus equipment, this ROM scenario uses $400/gsf + equipment (Note: new clinic, a very different project, is $535/gsf)

UNIVERSITY OF NEW MEXICO PRELIMINARY AREA PROJECTIONS * Brian Yachyshen, Bohlin Cywinski Jackson

ROOM / LOCATION	29-Jul-06 UNIT AREA ASF	# occ	SUBTOTAL	40 Students COMMENTS
DIDACTIC SPACES				
Auditorium: 50 students (plus 10%) plus room for AV/IT equipment and presenter's lecturn.	27	55	1,485	
Seminar Rooms: 20 students	24	20	480	
Subtotal, Didactic Spaces			**1,965**	NSF
CLINICAL TEACHING SPACES				
Pre-Clinical Teaching Lab: 25 student positions	45	25	1,125	
Pre-Clinical Teaching Lab: 1 instructor's station	200	1	200	
Wet Lab to Support PC Tech Lab	25	25	625	
Dispensary to Support PC Tech Lab and Sim Clinic	400	1	400	includes 100 sf office
Simulation Clinic: 8 student stations plus room for AV/IT	65	8	520	
Simulation Clinic: 1 instructor's station	200	1	200	
Subtotal, Clinical Teaching Spaces			3,070	NSF
Departmentall Circulation (25%) circulation between operatories that is not accounted for in Building Grossing factor			768	Accounts for
Subtotal, Clnical Teaching Spaces with Dept Circ.			**3,838**	**NSF**

UNM: BCo / PCD / OCP draft 11 August 10

Space	Qty	ASF/	# occ	Subtotal
Classroom/Didactic				
50 occ classrm (flat floor)	2	27	50	2,700
Seminar/ tutorials Rooms	4	24	20	1,920
Subtotal Classroom				**4,620**
CLINICAL TEACHING SPACES				
Pre-clinical teach lab	1	60	40	2,400
Instructor's station	1	200	1	200
Wet lab to Support PC Tech	0	0	0	0
Dispensary	1	400	1	400
Simulation Clinic	1	65	40	2,600
Sim Clinic Instructor	1	200	1	200
Subtotal Clinical				5,800
Dept cir not account for 25%				0
UNM includes dept cir in GSF eff				
Subtotal, Clinical				**5,800**

Subtotal, Net Program Area			**5,803**	**NSF**
BUILDING GROSSING FACTOR: 1.82%			10,561	
TOATL BUILDING GROSS AREA			16,363	GSF
				Note: this calcs to 35% eff (5803/16363 = 35%)
Projected Probable Cost: Approximately $300/SF +/- 10 - 15%			$4,908,915	
Projected Equipment Cost				
Simulation Stations	$100,000	9	$900,000	
PC Tech Lab Stations	$8,000	26	$208,000	
Balance of Equipment = Between 10 - 15% of Construciton (15% used for			$736,337	
Total Equip etc.			$1,844,337	
Total Project			$6,753,252	
cost/gsf			$413	

Subtotal Net Prog Area			**10,420**
Eff @ 55%, GSF =			**18,945**
UNM GSF calculation includes dept cir.			
Subtotal Projected Probable Cost @ $400/SF			$7,578,182
Equipment			
Simulation Stations	$20,000 $8,00	40	$800,000
PC Tech Lab	0	40	$320,000
Balance of Equip. 10%			$757,818
Total Equipment			$1,877,818
Total Project			$9,456,000
cost/gsf			$499